Standart

Pump • Fire Fighting Units • Booster Set

# PRODUCT CATALOGUE

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# PUMPS

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# ECO SNT

## EN 733 NORM PUMPS

ErP

ECO SNT Rev.11 09.2021

## Handled Liquids

Clean or slightly contaminated low viscosity liquids without solid & fibrous particles.

## Technical Data

Discharge Flange_____DN 32.....DN 250 mm

Capacity_____up to 1200 $m^3/h$(*)

Head_____up to 160 m(*)

Speed_____up to 3600 rpm(*)

Design Temperature_____-10 °C' to +140 °C(**)

Casing Pressure (Pmax)_____10 bar (16 bar)(**)

(Pmax: Suction Pressure + Shut off Head)

(*) Contact company for higher capacity and head values.

(**) The Material of pump differs according to the type of pumped liquid, operating temperature and pressure. Contact for detailed information.

## Design Features

•Horizontal , radially split volute casing type , single stage, end suction centrifugal pump with closed impeller.

•Dimensionally complies with EN 733.

•Complies EU547/2012 regulations.

•In addition to 29 basic sizes conforming with EN 733, there are 17 additional sizes. Dimensions of additional sizes may differ from other suppliers.

•ECO SNT 40-315, 50-315, 65-315, 80-315, 100-315, 125-250 pumps are given with 2900 rpm only for fire fighting application.

•Suction and discharge flanges conform to EN 1092-2 / PN 16. (EN 1092-1/PN16 for steel or stainless steel casing). In case of request, ANSI/ASME flanges can be supplied.

•Due to the back-pull-out design, the complete bearing assembly including impeller and casing cover can be dismantled without removing the volute casing from the piping system. With spacer coupling application, also possible to take out the rotor group without dismantling the electric motor.

•All impellers are balanced dynamically or statically according to ISO 1940 grade 6.3.

•Axial thrust is balanced by impeller balancing holes system.

•Direction of rotation is clockwise viewed from drive end.

•In case of request, wear ring and/or shaft sleeve can be supplied.

•Bearings of ECO SNT type pumps are normally "life time grease lubricated" ball bearings. In case of demand, oil lubrication or re-greasable bearing can be supplied.

•For ECO SNT drawings, please look at below adress **www.standartpompa.com**.

## Shaft Sealing

•In standard production, soft packed stuffing boxes are used.

•Depending on customer request, mechanical seals are available. In this case, pump shaft is always stainless steel.

## Pump Designation

**ECO SNT 100 - 250 - XXX**

**Pump Type**

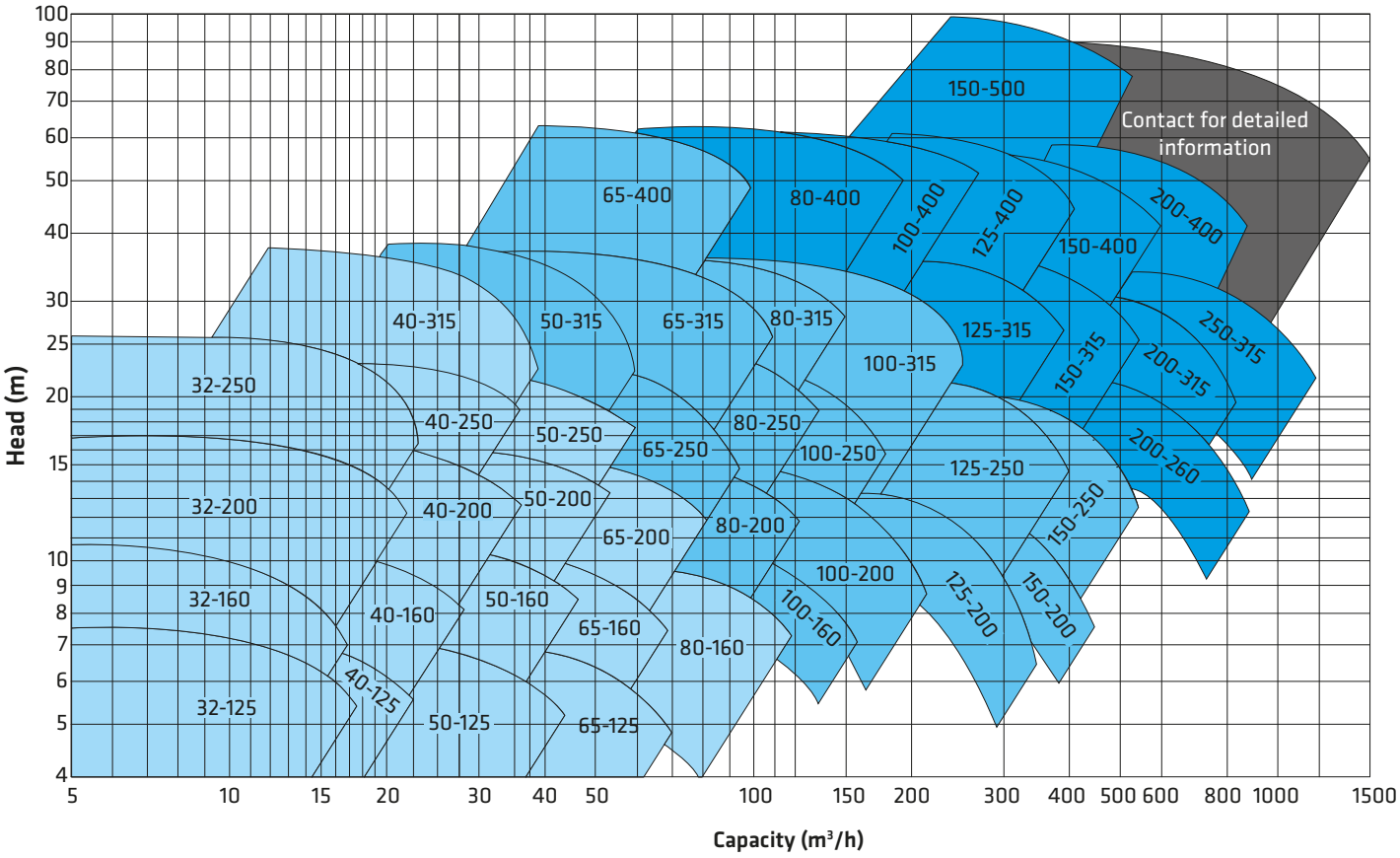
**Discharge Nozzle (DN-mm)**

**Nominal Impeller Diameter (mm)**

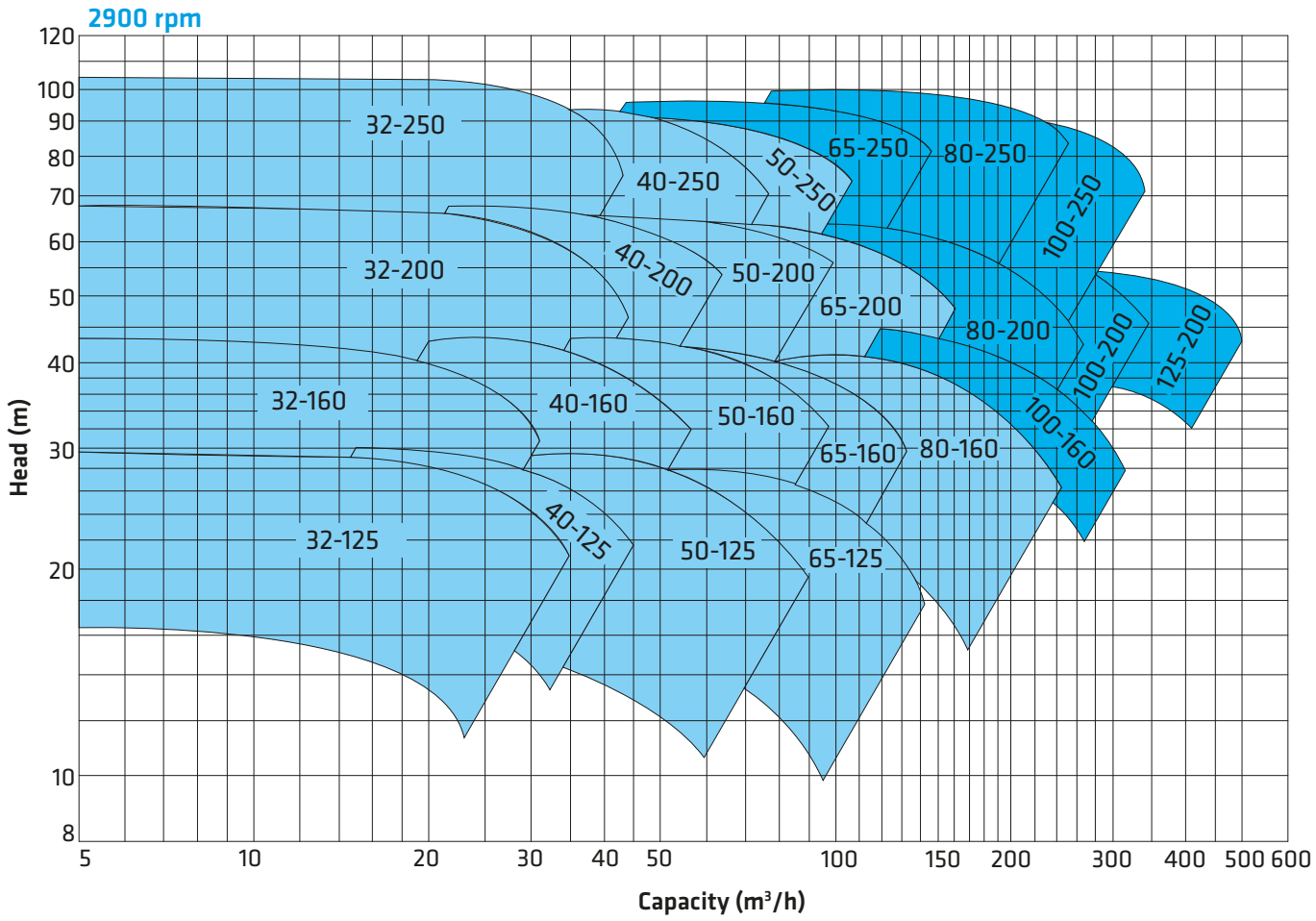
**Special Application**

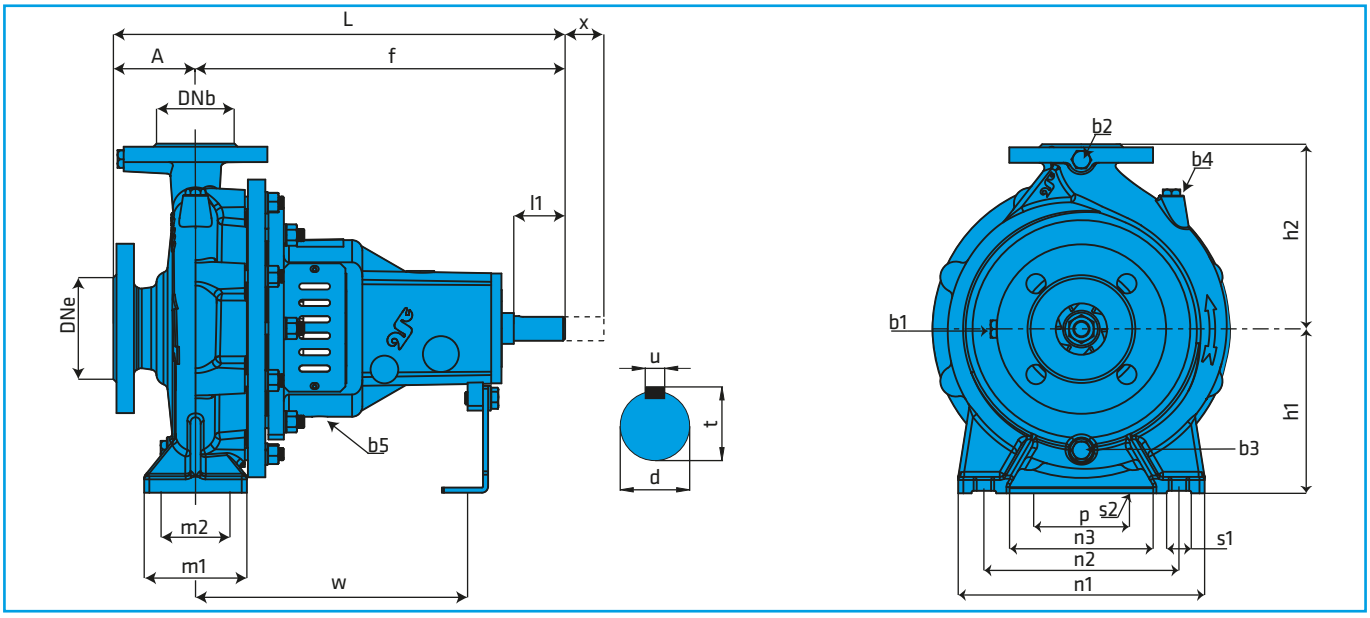
## Field Chart

1450 rpm




2900 rpm

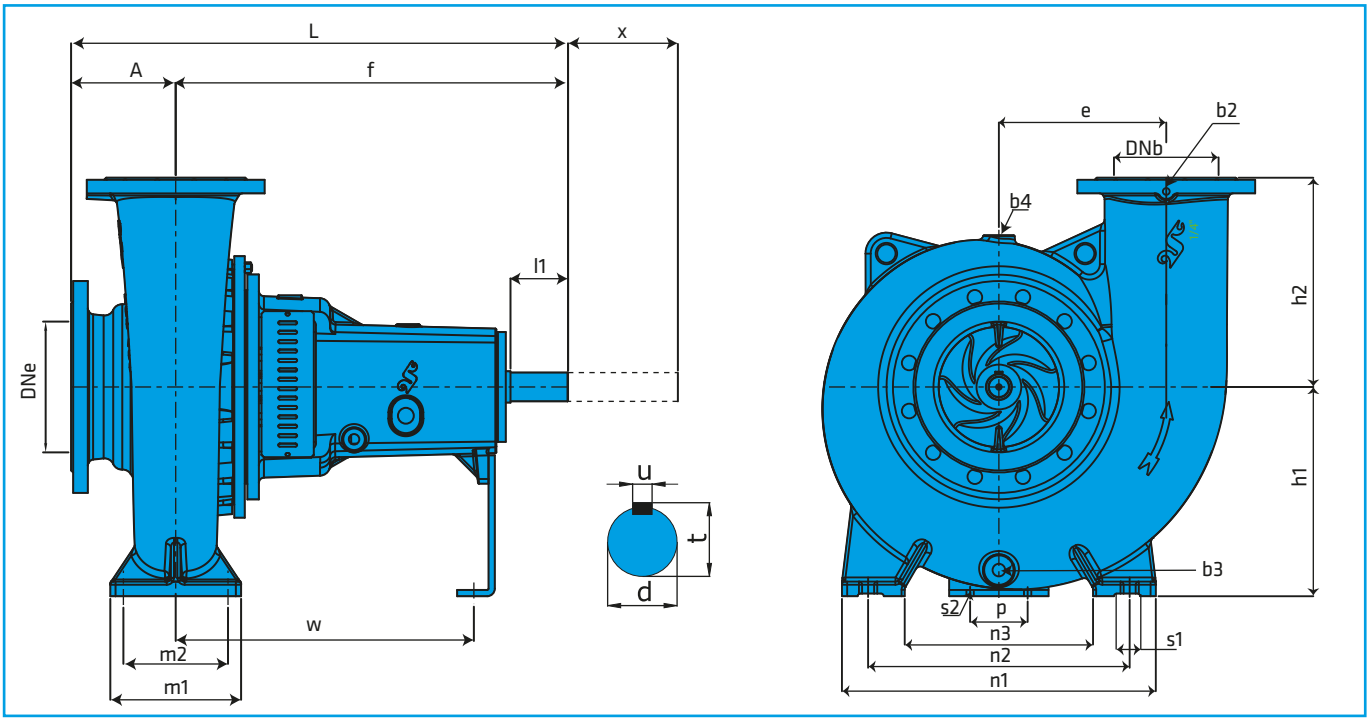





| DIMENSIONS (mm) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Weight | Space |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pump Types | | Form | Overall Dimensions | | | | | | | Foot Dimensions | | | | | | | | | Shaft End | | | | Support Connections | | | | | | | | |
| EN 733 | Other | | DNe | DNb | A | f | L | h1 | h2 | m1 | m2 | n1 | n2 | n3 | s1 | p | s2 | w | d | l1 | t | u | b1 | b2 | b3 | b4 | b5 | (kg) | x(*) |
| 32-125 | | F1 | 50 | 32 | 80 | 360 | 440 | 112 | 140 | 100 | 70 | 190 | 140 | 90 | 14 | 110 | 14 | 260 | 24 | 50 | 27 | 8 | ¼" | ¼" | ¼" | ¼" | ⅜" | 30 | 100 |
| 32-160 | | F1 | 50 | 32 | 80 | 360 | 440 | 132 | 160 | 100 | 70 | 240 | 190 | 140 | 14 | 110 | 14 | 260 | 24 | 50 | 27 | 8 | ¼" | ¼" | ¼" | ¼" | ⅜" | 33 | 100 |
| 32-200 | | F2 | 50 | 32 | 80 | 360 | 440 | 160 | 180 | 100 | 70 | 240 | 190 | 140 | 14 | 110 | 14 | 260 | 24 | 50 | 27 | 8 | ¼" | ¼" | ¼" | ¼" | ⅜" | 42 | 100 |
| | 32-250 | F2 | 50 | 32 | 100 | 360 | 460 | 180 | 225 | 125 | 95 | 320 | 250 | 190 | 14 | 110 | 14 | 260 | 24 | 50 | 27 | 8 | ¼" | ¼" | ¼" | ¼" | ⅜" | 50 | 100 |
| 40-125 | | F1 | 65 | 40 | 80 | 360 | 440 | 112 | 140 | 100 | 70 | 210 | 160 | 110 | 14 | 110 | 14 | 260 | 24 | 50 | 27 | 8 | ¼" | ¼" | ¼" | ¼" | ⅜" | 33 | 100 |
| 40-160 | | F1 | 65 | 40 | 80 | 360 | 440 | 132 | 160 | 100 | 70 | 240 | 190 | 140 | 14 | 110 | 14 | 260 | 24 | 50 | 27 | 8 | ¼" | ¼" | ¼" | ¼" | ⅜" | 35 | 100 |
| 40-200 | | F2 | 65 | 40 | 100 | 360 | 460 | 160 | 180 | 100 | 70 | 265 | 212 | 165 | 14 | 110 | 14 | 260 | 24 | 50 | 27 | 8 | ¼" | ¼" | ¼" | ¼" | ⅜" | 43 | 100 |
| 40-250 | | F2 | 65 | 40 | 100 | 360 | 460 | 180 | 225 | 125 | 95 | 320 | 250 | 190 | 14 | 110 | 14 | 260 | 24 | 50 | 27 | 8 | ¼" | ¼" | ¼" | ¼" | ⅜" | 52 | 100 |
| | 40-315 | F2 | 65 | 40 | 100 | 360 | 460 | 200 | 250 | 125 | 95 | 345 | 280 | 190 | 14 | 110 | 14 | 260 | 24 | 50 | 27 | 8 | ¼" | ¼" | ¼" | ¼" | ⅜" | 64 | 100 |
| 50-125 | | F1 | 65 | 50 | 100 | 360 | 460 | 132 | 160 | 100 | 70 | 240 | 190 | 140 | 14 | 110 | 14 | 260 | 24 | 50 | 27 | 8 | ¼" | ¼" | ¼" | ¼" | ⅜" | 36 | 100 |
| 50-160 | | F1 | 65 | 50 | 100 | 360 | 460 | 160 | 180 | 100 | 70 | 265 | 212 | 165 | 14 | 110 | 14 | 260 | 24 | 50 | 27 | 8 | ¼" | ¼" | ¼" | ¼" | ⅜" | 37 | 100 |
| 50-200 | | F2 | 65 | 50 | 100 | 360 | 460 | 160 | 200 | 100 | 70 | 265 | 212 | 165 | 14 | 110 | 14 | 260 | 24 | 50 | 27 | 8 | ¼" | ¼" | ¼" | ¼" | ⅜" | 46 | 100 |
| 50-250 | | F2 | 65 | 50 | 100 | 360 | 460 | 180 | 225 | 125 | 95 | 320 | 250 | 190 | 14 | 110 | 14 | 260 | 24 | 50 | 27 | 8 | ¼" | ¼" | ¼" | ¼" | ⅜" | 52 | 100 |
| | 50-315 | F2 | 65 | 50 | 125 | 470 | 595 | 225 | 280 | 125 | 95 | 345 | 280 | 190 | 19 | 110 | 14 | 340 | 32 | 80 | 35 | 10 | ¼" | ¼" | ¼" | ¼" | ⅜" | 84 | 100 |
| 65-125 | | F1 | 80 | 65 | 100 | 360 | 460 | 160 | 180 | 125 | 95 | 280 | 212 | 150 | 14 | 110 | 14 | 260 | 24 | 50 | 27 | 8 | ¼" | ¼" | ⅜" | ⅜" | ⅜" | 42 | 100 |
| 65-160 | | F1 | 80 | 65 | 100 | 360 | 460 | 160 | 200 | 125 | 95 | 280 | 212 | 150 | 14 | 110 | 14 | 260 | 24 | 50 | 27 | 8 | ¼" | ¼" | ⅜" | ⅜" | ⅜" | 42 | 100 |
| 65-200 | | F2 | 80 | 65 | 100 | 360 | 460 | 180 | 225 | 125 | 95 | 320 | 250 | 190 | 14 | 110 | 14 | 260 | 24 | 50 | 27 | 8 | ¼" | ¼" | ⅜" | ⅜" | ⅜" | 50 | 140 |
| 65-250 | | F2 | 80 | 65 | 100 | 470 | 570 | 200 | 250 | 160 | 120 | 360 | 280 | 200 | 19 | 110 | 14 | 340 | 32 | 80 | 35 | 10 | ¼" | ¼" | ⅜" | ⅜" | ⅜" | 73 | 140 |
| 65-315 | | F2 | 80 | 65 | 125 | 470 | 595 | 225 | 280 | 160 | 120 | 400 | 315 | 240 | 19 | 110 | 14 | 340 | 32 | 80 | 35 | 10 | ¼" | ¼" | ⅜" | ⅜" | ⅜" | 91 | 140 |
| | 65-400 | F2 | 100 | 65 | 125 | 470 | 595 | 260 | 355 | 160 | 120 | 435 | 355 | 275 | 19 | 110 | 14 | 340 | 32 | 80 | 35 | 10 | ¼" | ¼" | ⅜" | ⅜" | ⅜" | 109 | 140 |
| 80-160 | | F1 | 100 | 80 | 125 | 360 | 485 | 180 | 225 | 125 | 95 | 320 | 250 | 190 | 14 | 110 | 14 | 260 | 24 | 50 | 27 | 8 | ¼" | ¼" | ⅜" | ⅜" | ⅜" | 47 | 140 |
| 80-200 | | F1 | 100 | 80 | 125 | 470 | 595 | 180 | 250 | 125 | 95 | 345 | 280 | 215 | 14 | 110 | 14 | 340 | 32 | 80 | 35 | 10 | ¼" | ¼" | ⅜" | ⅜" | ⅜" | 62 | 140 |
| 80-250 | | F2 | 100 | 80 | 125 | 470 | 595 | 200 | 280 | 160 | 120 | 400 | 315 | 240 | 19 | 110 | 14 | 340 | 32 | 80 | 35 | 10 | ¼" | ¼" | ⅜" | ⅜" | ⅜" | 77 | 140 |
| 80-315 | | F2 | 100 | 80 | 125 | 470 | 595 | 250 | 315 | 160 | 120 | 400 | 315 | 240 | 19 | 110 | 14 | 340 | 32 | 80 | 35 | 10 | ¼" | ¼" | ⅜" | ⅜" | ⅜" | 101 | 140 |
| | 80-400 | F2 | 100 | 80 | 125 | 530 | 655 | 280 | 355 | 160 | 120 | 435 | 355 | 275 | 19 | 110 | 14 | 360 | 42 | 110 | 45 | 12 | ¼" | ¼" | ⅜" | ⅜" | ⅜" | 158 | 140 |
| | 100-160 | F1 | 125 | 100 | 125 | 470 | 595 | 200 | 280 | 160 | 120 | 360 | 280 | 200 | 19 | 110 | 14 | 340 | 32 | 80 | 35 | 10 | ¼" | ¼" | ⅜" | ⅜" | ⅜" | 69 | 140 |
| 100-200 | | F1 | 125 | 100 | 125 | 470 | 595 | 200 | 280 | 160 | 120 | 360 | 280 | 200 | 19 | 110 | 14 | 340 | 32 | 80 | 35 | 10 | ¼" | ¼" | ⅜" | ⅜" | ⅜" | 74 | 140 |
| 100-250 | | F2 | 125 | 100 | 140 | 470 | 610 | 225 | 280 | 160 | 120 | 400 | 315 | 240 | 19 | 110 | 14 | 340 | 32 | 80 | 35 | 10 | ¼" | ¼" | ⅜" | ⅜" | ⅜" | 86 | 140 |
| 100-315 | | F2 | 125 | 100 | 140 | 470 | 610 | 250 | 315 | 160 | 120 | 400 | 315 | 240 | 19 | 110 | 14 | 340 | 32 | 80 | 35 | 10 | ¼" | ¼" | ⅜" | ⅜" | ⅜" | 111 | 140 |
| 100-400 | | F2 | 125 | 100 | 140 | 530 | 670 | 280 | 355 | 200 | 150 | 500 | 400 | 300 | 23 | 110 | 14 | 360 | 42 | 110 | 45 | 12 | ¼" | ¼" | ⅜" | ⅜" | ⅜" | 174 | 140 |
| | 125-200 | F1 | 150 | 125 | 140 | 470 | 610 | 250 | 315 | 160 | 120 | 400 | 315 | 240 | 19 | 110 | 14 | 340 | 32 | 80 | 35 | 10 | ¼" | ¼" | ½" | ½" | ⅜" | 90 | 140 |
| 125-250 | | F2 | 150 | 125 | 140 | 470 | 610 | 250 | 355 | 160 | 120 | 400 | 315 | 240 | 19 | 110 | 14 | 340 | 32 | 80 | 35 | 10 | ¼" | ¼" | ½" | ½" | ⅜" | 97 | 140 |
| 125-315 | | F1 | 150 | 125 | 140 | 530 | 670 | 280 | 355 | 200 | 150 | 500 | 400 | 300 | 23 | 110 | 14 | 360 | 42 | 110 | 45 | 12 | ¼" | ¼" | ½" | ½" | ⅜" | 159 | 140 |
| 125-400 | | F2 | 150 | 125 | 140 | 530 | 670 | 315 | 400 | 200 | 150 | 500 | 400 | 300 | 23 | 110 | 14 | 360 | 42 | 110 | 45 | 12 | ¼" | ¼" | ½" | ½" | ⅜" | 188 | 140 |
| | 150-200 | F1 | 200 | 150 | 160 | 470 | 630 | 280 | 355 | 200 | 150 | 500 | 400 | 300 | 23 | 110 | 14 | 340 | 32 | 80 | 35 | 10 | ¼" | ¼" | ½" | ½" | ⅜" | 116 | 140 |
| | 150-250 | F2 | 200 | 150 | 160 | 470 | 630 | 280 | 375 | 200 | 150 | 500 | 400 | 300 | 23 | 110 | 14 | 340 | 32 | 80 | 35 | 10 | ¼" | ¼" | ½" | ½" | ⅜" | 132 | 140 |
| 150-315 | | F1 | 200 | 150 | 160 | 530 | 690 | 280 | 400 | 200 | 150 | 550 | 450 | 350 | 23 | 110 | 14 | 360 | 42 | 110 | 45 | 12 | ¼" | ¼" | ½" | ½" | ⅜" | 168 | 140 |
| 150-400 | | F2 | 200 | 150 | 160 | 530 | 690 | 315 | 450 | 200 | 150 | 550 | 450 | 350 | 23 | 110 | 14 | 360 | 42 | 110 | 45 | 12 | ¼" | ¼" | ½" | ½" | ⅜" | 201 | 140 |
| | 200-260 | F1 | 250 | 200 | 200 | 560 | 760 | 315 | 450 | 250 | 200 | 600 | 500 | 360 | 23 | 110 | 14 | 390 | 42 | 110 | 45 | 12 | ¼" | ¼" | ½" | ½" | ⅜" | 244 | 250 |
| | 200-315 | F1 | 250 | 200 | 200 | 545 | 745 | 315 | 450 | 250 | 200 | 600 | 500 | 360 | 23 | 110 | 14 | 375 | 42 | 110 | 45 | 12 | ¼" | ¼" | ½" | ½" | ⅜" | 220 | 250 |
| | 250-315 | F1 | 250 | 250 | 250 | 750 | 1000 | 355 | 525 | 300 | 240 | 660 | 550 | 400 | 27 | 110 | 14 | 570 | 55 | 110 | 59 | 16 | ¼" | ¼" | ½" | ½" | ½" | 371 | 250 |

(*) Gap necessary for the withdrawal of the pump rotor from the driven end without the need for dismantling the motor and pipework (spacer coupling application)

(*) b1, b2 and b4 holes are not drilled in ductile iron, cast steel and stainless steel volute casings.

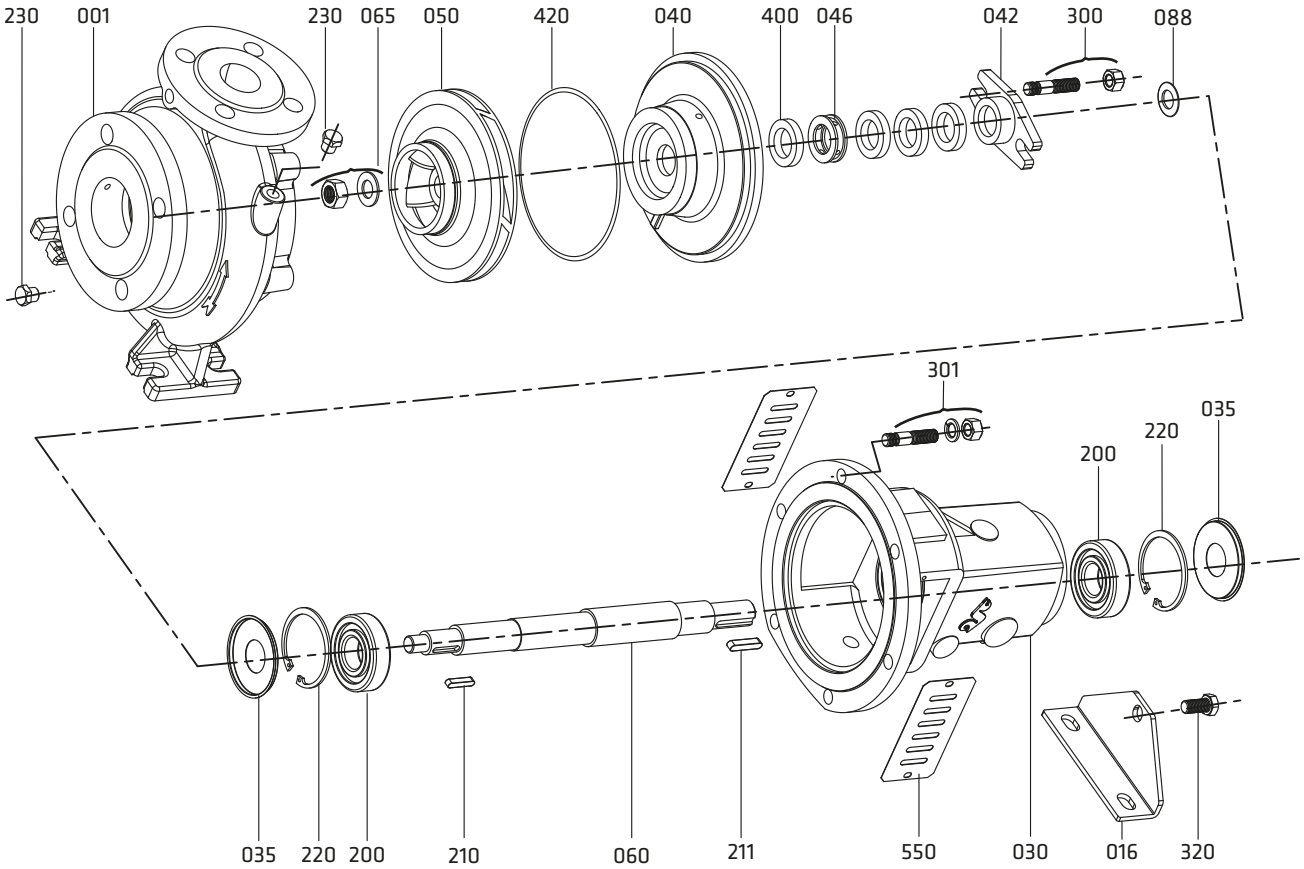



| ÖLÇÜLER (mm) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pump Types | Form | Overall Dimensions | | | | | | | | Foot Dimensions | | | | | | | | | Shaft End | | | | Support Connections | | | | | Weight | Space |
| | | DNe | DNb | A | f | L | h1 | h2 | e | m1 | m2 | n1 | n2 | n3 | s1 | p | s2 | w | d | l1 | t | u | b1 | b2 | b3 | b4 | b5 | (kg) | x(*) |
| 150-500 | F2 | 200 | 150 | 200 | 750 | 950 | 400 | 450 | 350 | 250 | 200 | 720 | 600 | 435 | 27 | 140 | 20 | 560 | 55 | 110 | 59 | 16 | ¼" | ¼" | ¾" | ¾" | ½" | 410 | 210 |
| 200-400 | F2 | 250 | 200 | 200 | 750 | 950 | 400 | 400 | 320 | 250 | 200 | 600 | 500 | 360 | 23 | 110 | 14 | 570 | 55 | 110 | 59 | 16 | ¼" | ¼" | ¾" | ¾" | ½" | 410 | 210 |
| 200-500 | F2 | 250 | 200 | 200 | 775 | 975 | 450 | 475 | 370 | 300 | 200 | 720 | 600 | 435 | 27 | 110 | 14 | 580 | 65 | 110 | 69 | 16 | ¼" | ¼" | ¾" | ¾" | ½" | | 250 |
| 250-400 | F2 | 300 | 250 | 230 | 775 | 1005 | 450 | 480 | 350 | 300 | 240 | 720 | 600 | 435 | 27 | 110 | 14 | 560 | 65 | 110 | 69 | 16 | ¼" | ¼" | ¾" | ¾" | ½" | | 250 |

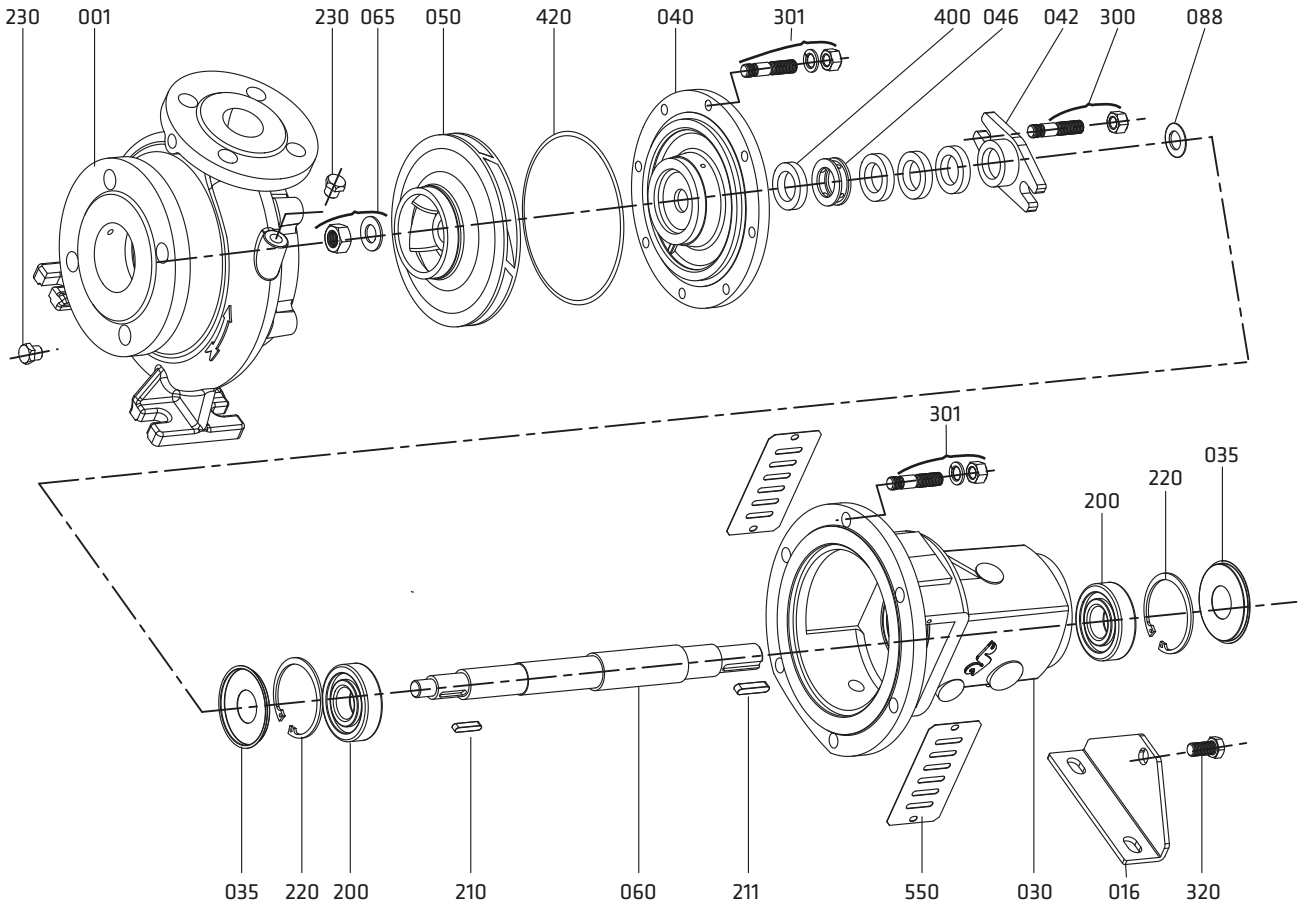
(*) Gap necessary for the withdrawal of the pump rotor from the driven end without the need for dismantling the motor and pipework (spacer coupling application)

(*) b1, b2 and b4 holes are not drilled in ductile iron, cast steel and stainless steel volute casings.

## Form: F1 (Soft Packing Seal Pump)

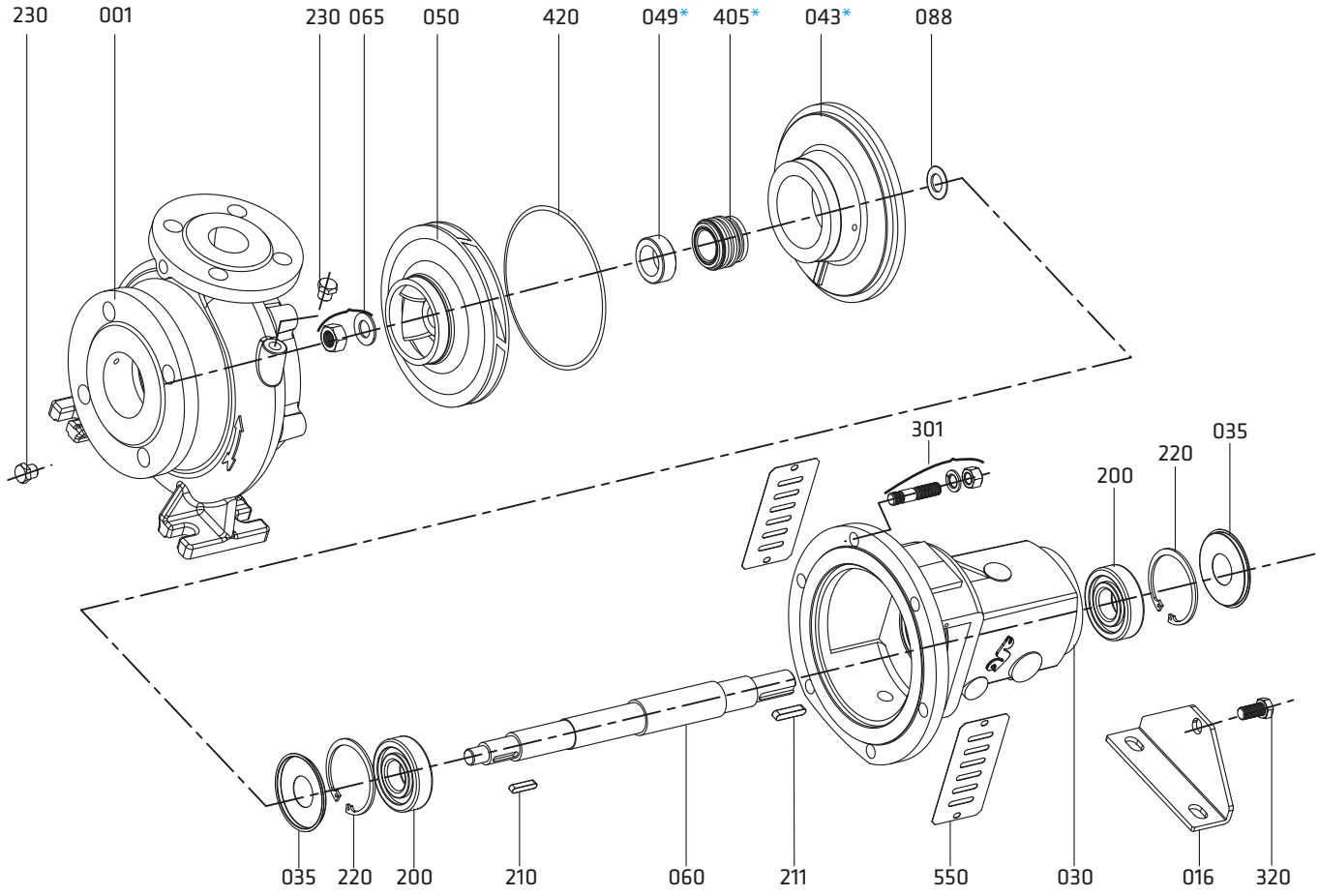



## Form: F2 (Soft Packing Seal Pump)

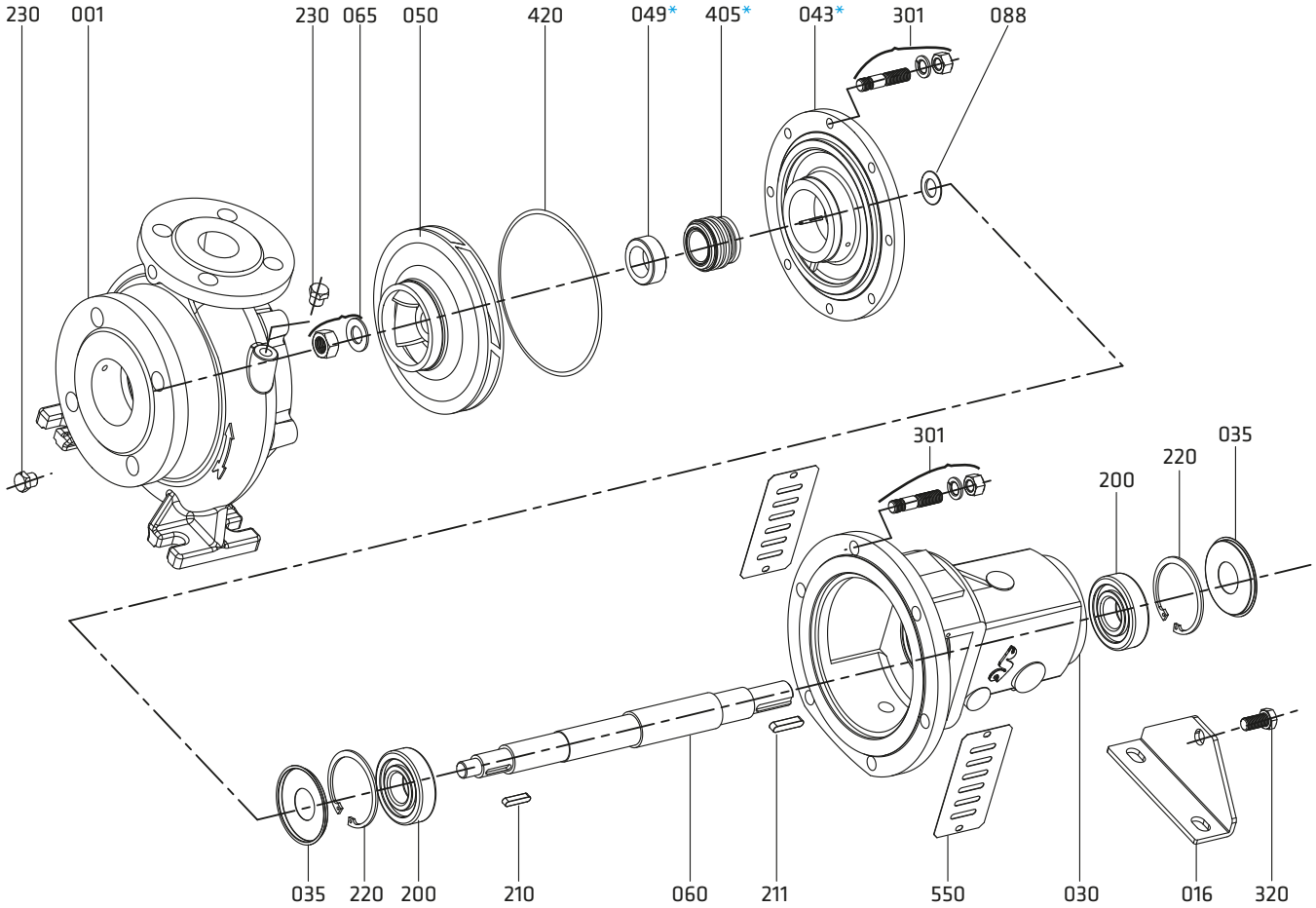


## Assembly Drawings

### Form: F1 (Mechanical Seal Pump)

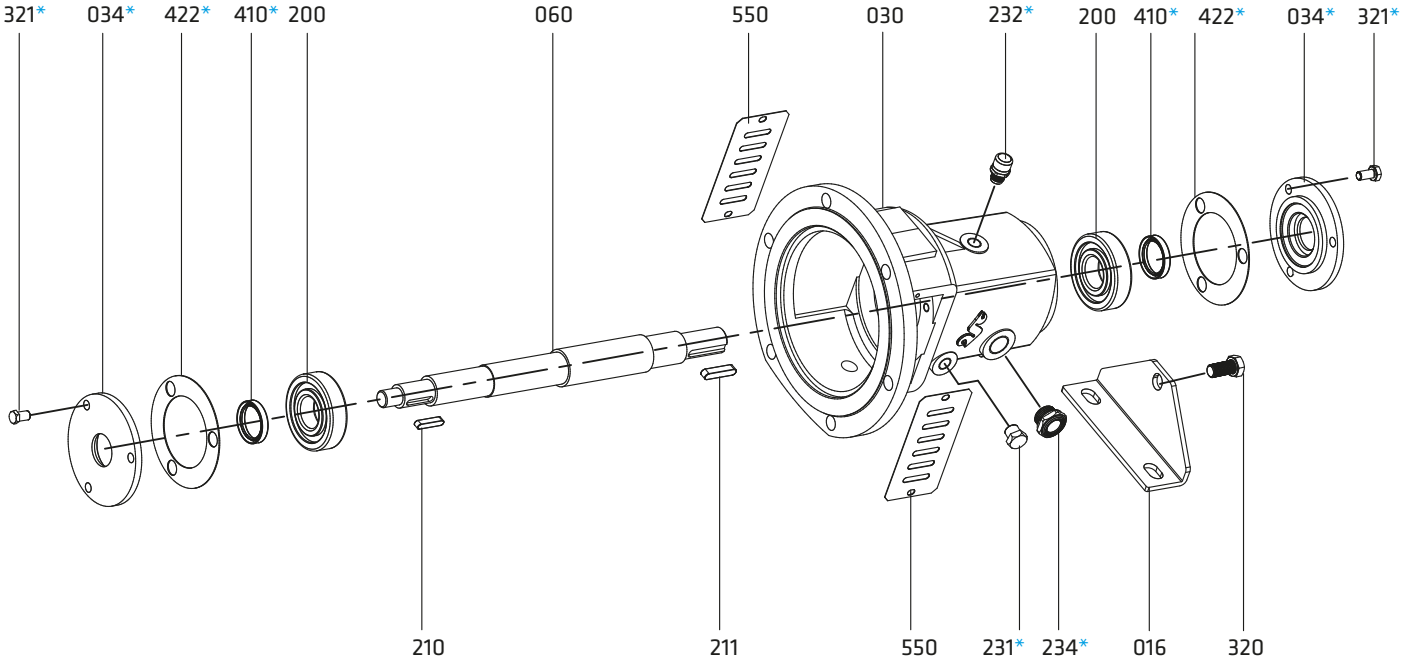



### Form: F2 (Mechanical Seal Pump)

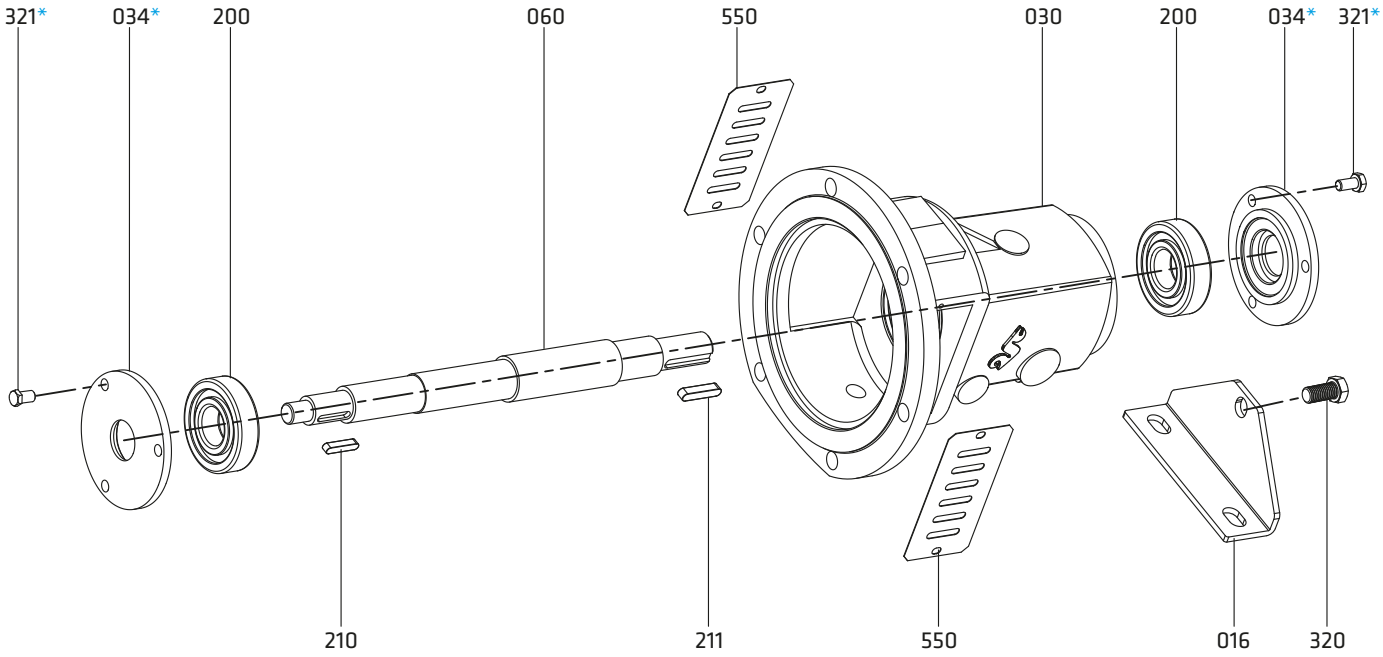


# Assembly Drawings

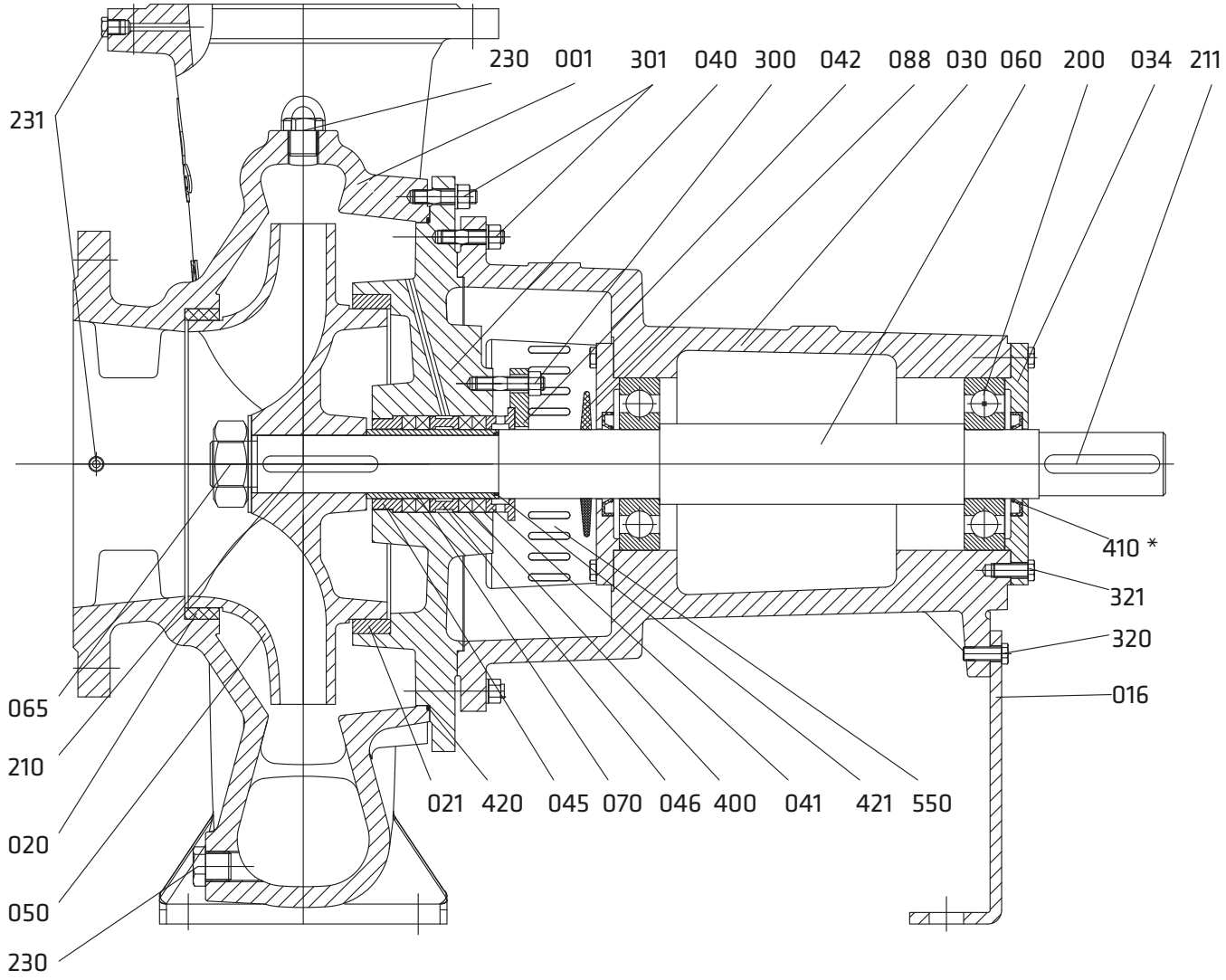
## Oil Lubrication Bearing Housing



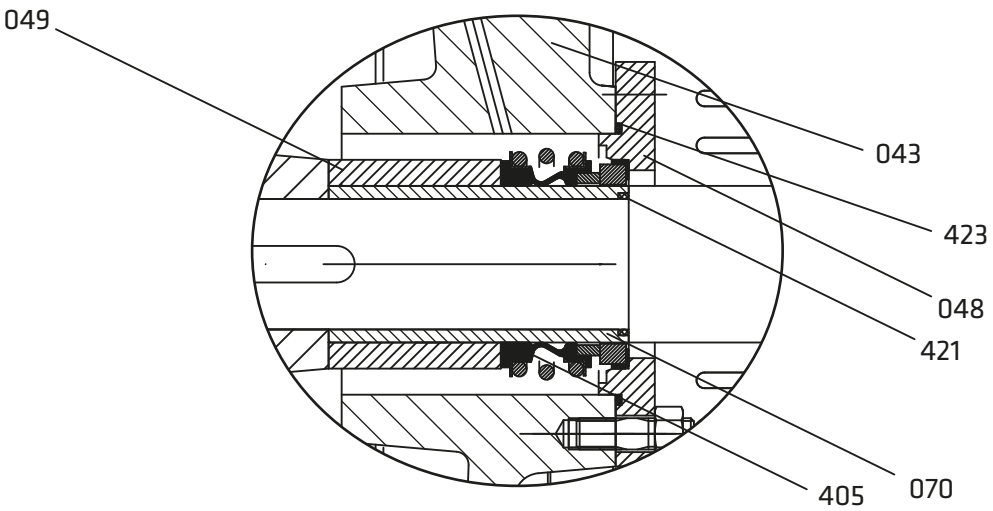

## Re-greasable Bearing Housing



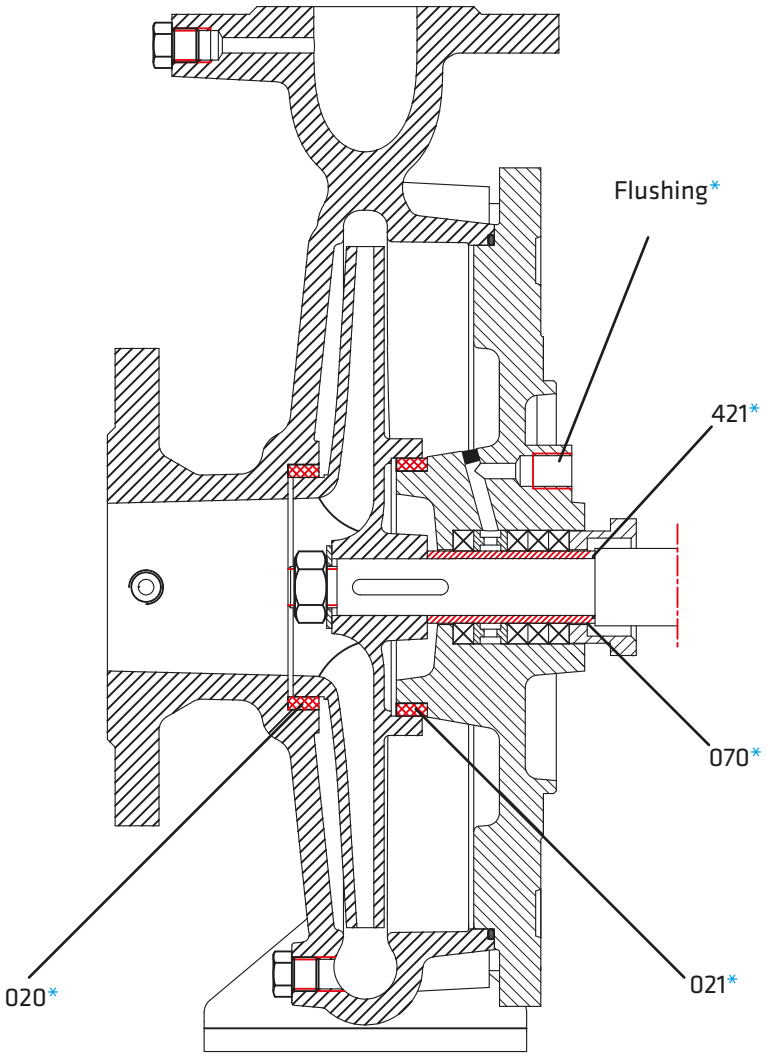
## Cross Section of ECO SNT 150-500, 200-400, 200-500, 250-400




## ECO SNT 150-500, 200-400, 200-500, 250-400 for mechanical sealing application



## Assembly Drawings




## Part List

| | |
|---|---|
| 001 | Volute Casing |
| 016 | Support Foot |
| 020* | Wear Ring (Casing) |
| 021* | Wear Ring (Seal Cover) |
| 030 | Bearing Housing |
| 034* | Bearing Cover (GG) |
| 035 | Bearing Cover (St) |
| 040 | Soft Packing Seal Cover |
| 041 | Gland Sleeve |
| 042 | Gland |
| 043* | Mechanical Seal Cover |
| 046 | Lantern Ring |
| 048 | Cover |
| 049* | Mechanical Seal Spacer Sleeve |
| 050 | Impeller |
| 060 | Shaft |
| 065 | Impeller Nut and Washer |
| 070* | Shaft Sleeve |
| 088 | Thrower |
| 200 | Ball Bearing |
| 210 | Impeller Key |
| 211 | Coupling Key |
| 220 | Circlip |
| 230 | Screw |
| 231* | Screw |
| 232* | Oil Filling Plug and Breather |
| 234* | Oil Level Indicator |
| 300 | Gland Stud and Nut |
| 301 | Stud, Washer and Nut |
| 320 | Screw |
| 321* | Screw |
| 400 | Soft Packing |
| 405* | Mechanical Seal |
| 410* | Lip Seal |
| 420 | O-ring |
| 421* | O-ring |
| 422* | Gasket |
| 423 | O-ring |
| 550 | Guard |

(*) Optional

## Material Option

| Part List | 10 | 30 | 3S | 20 | 60 | 6L | 70 | 7L | 8M | 7D | 7S | 8N | 80 | 4C | 4A | 40 | 20 | 80 | 8T | 60 | 7L | 7E | 7D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.6025 | 0.7040 | 0.7043 | 1.0619 | 1.4308 | 1.4309 | 1.4408 | 1.4409 | 1.4500 | 1.4517 | 1.4469 | 1.4317 | 1.4008 | 2.1050.01 | 2.0975.01 | 2.1096.01 | 1.0503 | 1.4021 | 1.4021+QT | 1.4301 | 1.4404 | 1.4460 | 1.4462 |
| Volute Casing | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | |
| Seal Cover (Mech. or Soft) | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | |
| Impeller | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | ○ | |
| Shaft | | | | | | | | | | | | | | | | | ● | ○ | ○ | ○ | ○ | | ○ |
| Bearing House | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | |
| Wear Ring | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | |
| Shaft Sleeve | | | | | | | | | | | | | | | | | ○ | ○ | ○ | ○ | ○ | | ○ |
| Mechanical Seal (*) | EN 12756 | | | | | | | | | | | | | | | | | | | | | | |

(*) Optional :Depending on customer requirement or request different types and brands of mechanical seals are applicable.

NOTE: Depends on the request, different than above casting and shaft material can be supplied.

● Standard manufacturing
○ Optional

## Material Equivalents

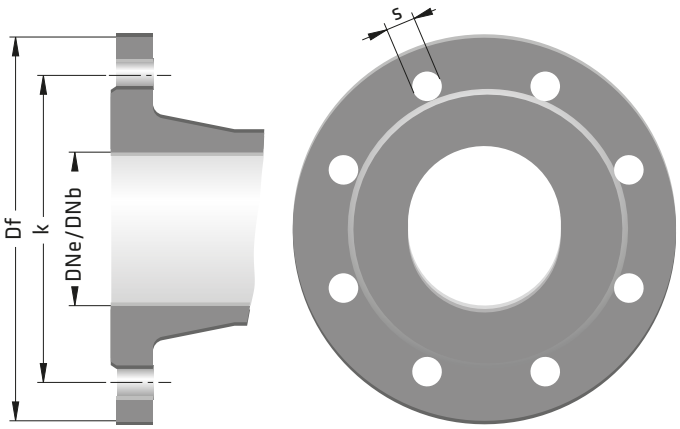
| Description | DIN / EN | | AISI / SAE / ASTM |
|---|---|---|---|
| Cast Iron | 0.6025 | EN-GJL-250 (GG25) | A48 Class 40B |
| Nodular Cast Iron | 0.7040 | EN-GJS-400-15 (GGG40) | A536 60-40-18 |
| Nodular Cast Iron | 0.7043 | EN-GJS-400-18-LT (GGG40.3) | A536 60-40-18 |
| Cast Steel | 1.0619 | GP240GHGS-C25 | A216 WCB |
| Chrome Nickel Cast Steel | 1.4308 | GX5CrNi19-10 | A351 CF8 |
| Chrome Nickel Cast Steel (low carbon) | 1.4309 | GX2CrNi19-11 | A351 CF3 |
| Chrome Nickel Molybdenum Cast Steel | 1.4408 | GX5CrNiMo19-11-2 | A351 CF8M |
| Chrome Nickel Molybdenum Cast Steel (low carbon) | 1.4409 | GX2CrNiMo19-11-2 | A351 CF3M |
| Austenitic Cast Steel | 1.4500 | GX7NiCrMoCuNb25-20 | A351 CN7M |
| Austenitic - Ferritic Cast Steel (duplex) | 1.4517 | GX2CrNiMoCuN25-6-3-3 | A890 CD4MCuN |
| Austenitic - Ferritic Cast Steel (super duplex) | 1.4469 | GX2CrNiMoN26-7-4 | A890 CE3MN |
| Martenzitic Stainless Cast Steel | 1.4317 | GX4CrNi13-4 | A352 CA6NM |
| Martenzitic Stainless Cast Steel | 1.4008 | GX7CrNiMo12-1 | A217 CA15 |
| Cast Bronze (tin alloy) | 2.1050.01 | G-CuSn10 | B427 C90700 |
| Cast Bronze (nickel alloy) | 2.0975.01 | G-CuAl10Ni | B148 C95500 |
| Cast Bronze (Leaded) | 2.1096.01 | G-CuSn5ZnPb | B584 C83600 |
| Carbon Steel | 1.0503 | C45 | AISI 1045 |
| Chrome Steel | 1.4021 | X20Cr13 | A276 Type 420 |
| Chrome Steel (Heat treated) | 1.4021 | X20Cr13 | A276 Type 420+QT |
| Chrome Nickel Steel | 1.4301 | X5CrNi18-10 | A276 Type 304 |
| Chrome Nickel Steel (low carbon) | 1.4404 | X2CrNiMo17-12-2 | A276 Type 316L |
| Duplex (austenitic-ferritic) Steel | 1.4460 | X3CrNiMoN27-5-2 | AISI 329 |
| Duplex (austenitic-ferritic) Steel | 1.4462 | X2CrNiMoN22-5-3 | UNS S32205 |

## Flange Dimensions

EN 1092 - 2

| DNe/DNb | Suction & Discharge (PN 16) | | | |
|---|---|---|---|---|
| | Df | k | s | n |
| 32 | 140 | 100 | 19 | 4 |
| 40 | 150 | 110 | 19 | 4 |
| 50 | 165 | 125 | 19 | 4 |
| 65 | 185 | 145 | 19 | 4 |
| 80 | 200 | 160 | 19 | 8 |
| 100 | 220 | 180 | 19 | 8 |
| 125 | 250 | 210 | 19 | 8 |
| 150 | 285 | 240 | 23 | 8 |
| 200 | 340 | 295 | 23 | 12 |
| 250 | 405 | 355 | 28 | 12 |
| 300 | 460 | 410 | 28 | 12 |

" n " number of holes



Standart

Pump • Fire Fighting Units • Booster Set

# ECO SNM

## CLOSED COUPLED CENTRIFUGAL PUMPS

ErP

Ex

ECO SNM Rev.11 09.2021

## Handled Liquids

Clean or slightly contaminated low viscosity liquids without solid & fibrous particles.

## Technical Data

Discharge Flange_____DN 32.....DN 150 mm

Capacity_____up to 600 $m^3/h$(*)

Head_____up to 100 m(*)

Speed_____up to 3600 rpm(*)

Design Temperature_____-10 °C' to +140 °C(** )

Casing Pressure (Pmax)_____10 bar (16 bar)(**)

(Pmax: Suction Pressure + Shut off Head)
(*) Contact company for higher capacity and head values.
(**) The Material of pump differs according to the type of pumped liquid, operating temperature and pressure. Contact for detailed information.

## Design Features

•Horizontal / Vertical closed-coupled, volute casing, single stage, end suction centrifugal pump with closed impeller.

•Volute casing dimensions comply with EN 733.

•Complies EU547/2012 regulations.

•Suction and discharge flanges conform to EN 1092-2 / PN 16. The flanges are according to EN 1092-1 / PN 16 for steel or stainless steel casing. In case of request, ANSI/ASME flanges can be supplied.

•Pumps are closed coupled with electric motors of IEC frame sizes with high efficiency class.

•All impellers are balanced dynamically or statically according to ISO 1940 grade 6.3.

•Axial thrust is balanced by impeller balancing holes system.

•Direction of rotation is clockwise viewed from drive end.

•In case of request, wear ring can be supplied.

•The pump and motor have separate shafts connected by a rigid coupling or through slide fit shaft. Axial and radial forces are absorbed by electric motor bearings.

•Closed coupled pumps are lighter and smaller comparing to the norm centrifugal pumps of same hydraulic specifications.

•When the elbow is mounted on the suction of the pump, the name is changed to ECO SNM-V. In this case, the pump is always installed verticaly.

•The electrical motor powers of ECO SNM-V pumps are limited because of its installation type.

•For ECO SNM and ECO SNM-V drawings, please look at below adress **www.standartpompa.com**.

## Shaft Sealing

•Different mechanical seals are available according to customer request or liquid type.

## Pump Designation

**ECO SNM-V 100 - 250 - XXX**

**Pump Type**

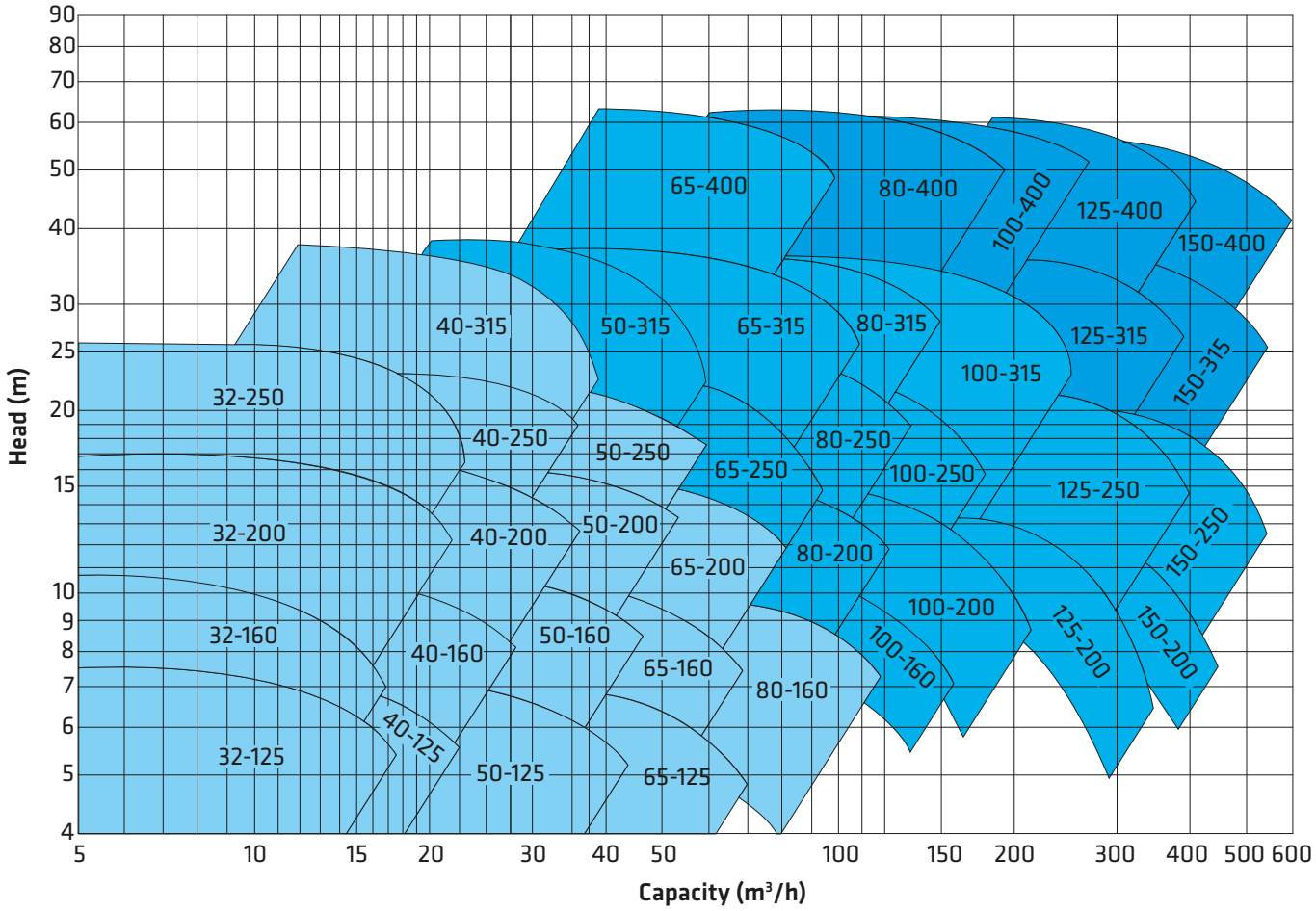
**Vertical**

**Discharge Nozzle (DN-mm)**

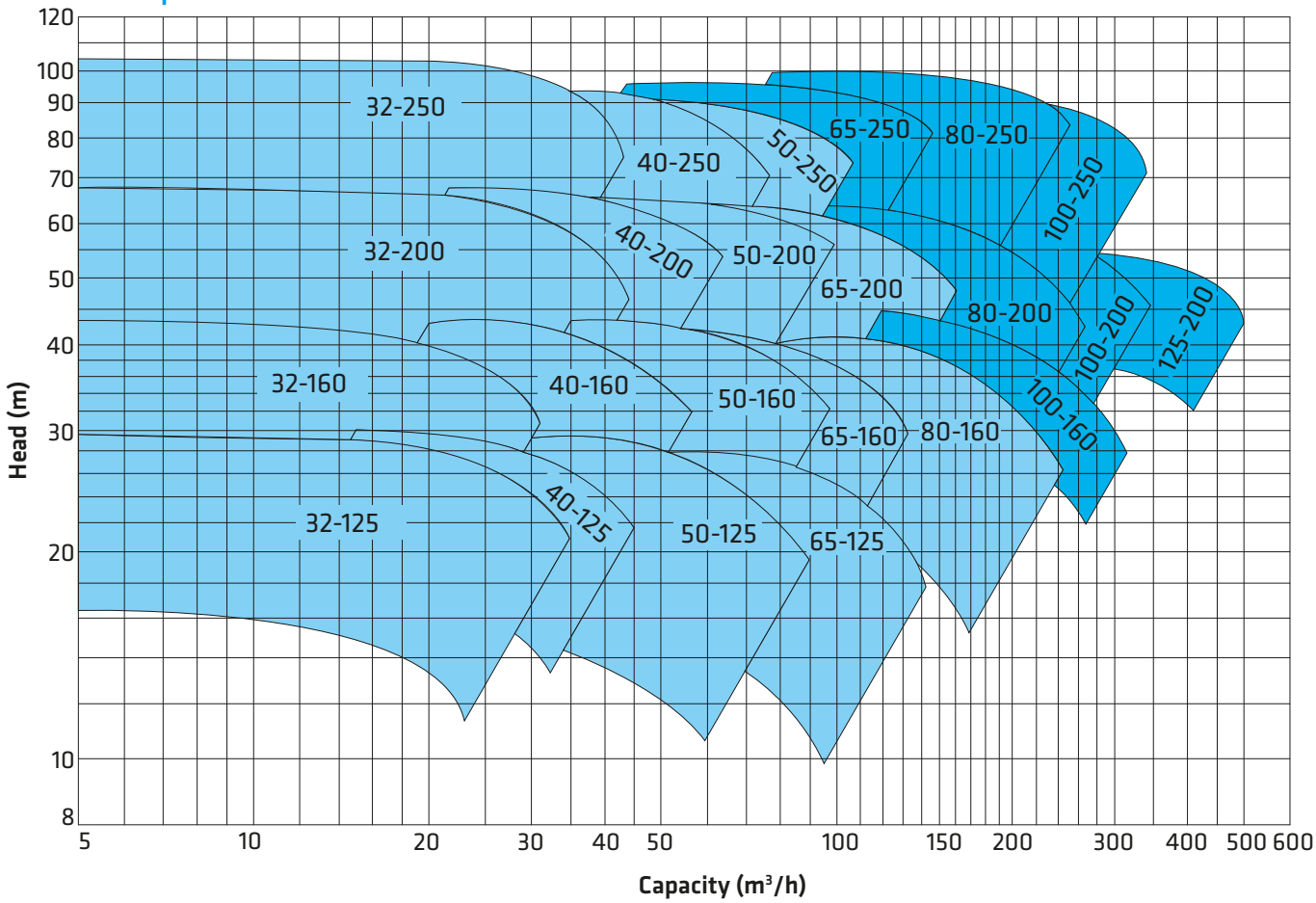
**Nominal Impeller Diameter (mm)**

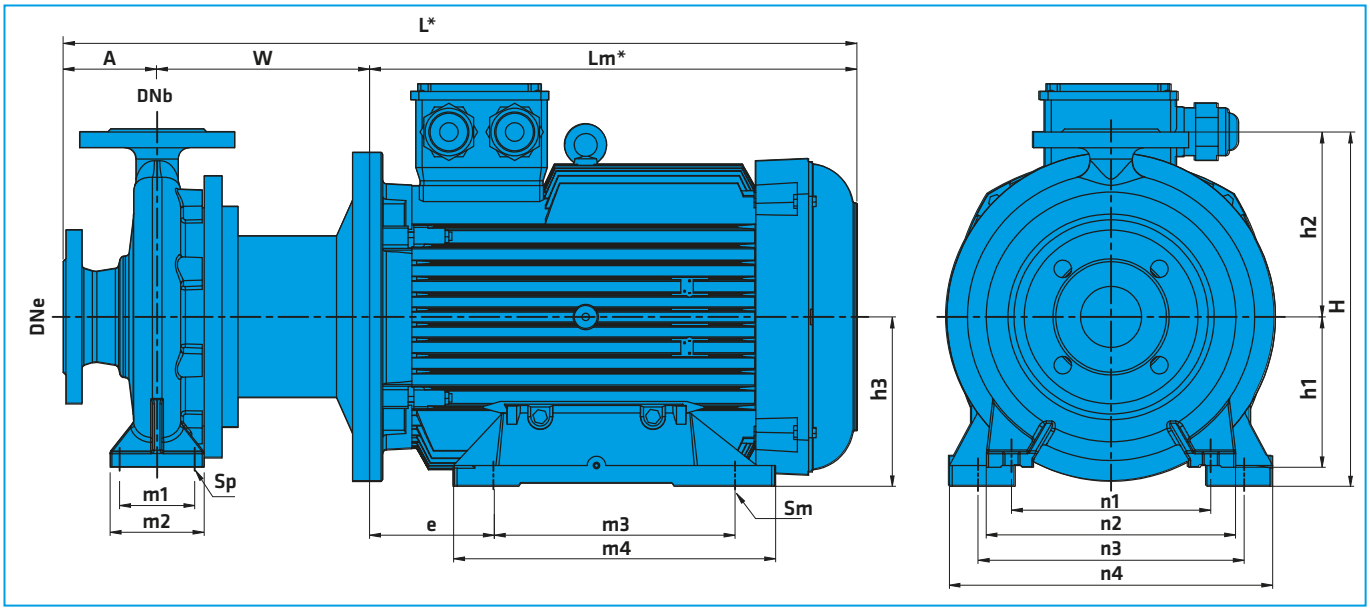
**Special Application**

1450 rpm




2900 rpm






* Differs according to motor manufacturer.

## 2900 rpm (2 Pole Motor)

| FORM | Pump Type | MOTOR | | ECO SNM INSTALLATION DIMENSIONS (mm) | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | kW | IEC | DNe | DNb | A | W | Lm* | L* | H | h1 | h2 | h3 | e | m1 | m2 | m3 | m4 | n1 | n2 | n3 | n4 | Sp | Sm |
| F1 | 32-125 | 1,5 | 90L | 50 | 32 | 80 | 156 | 266 | 503 | 252 | 112 | 140 | 90 | 56 | 70 | 100 | 125 | 158 | 140 | 190 | 140 | 190 | 14 | 10 |
| F1 | 32-125 | 2,2 | 90L | 50 | 32 | 80 | 156 | 266 | 503 | 252 | 112 | 140 | 90 | 56 | 70 | 100 | 125 | 158 | 140 | 190 | 140 | 190 | 14 | 10 |
| F1 | 32-125 | 3 | 100L | 50 | 32 | 80 | 179 | 292 | 551 | 252 | 112 | 140 | 100 | 63 | 70 | 100 | 140 | 178 | 140 | 190 | 160 | 192 | 14 | 12 |
| F1 | 32-125 | 4 | 112M | 50 | 32 | 80 | 179 | 336 | 595 | 252 | 112 | 140 | 112 | 70 | 70 | 100 | 140 | 176 | 140 | 190 | 190 | 220 | 14 | 12 |
| F1 | 32-160 | 2,2 | 90L | 50 | 32 | 80 | 156 | 267 | 503 | 292 | 132 | 160 | 90 | 56 | 70 | 100 | 125 | 158 | 190 | 240 | 140 | 190 | 14 | 10 |
| F1 | 32-160 | 3 | 100L | 50 | 32 | 80 | 179 | 292 | 551 | 292 | 132 | 160 | 100 | 63 | 70 | 100 | 140 | 178 | 190 | 240 | 160 | 192 | 14 | 12 |
| F1 | 32-160 | 4 | 112M | 50 | 32 | 80 | 179 | 336 | 595 | 292 | 132 | 160 | 112 | 70 | 70 | 100 | 140 | 176 | 190 | 240 | 190 | 220 | 14 | 12 |
| F1 | 32-160 | 5,5 | 132S | 50 | 32 | 80 | 189 | 360 | 629 | 292 | 132 | 160 | 132 | 89 | 70 | 100 | 140 | 180 | 190 | 240 | 216 | 252 | 14 | 12 |
| F2 | 32-200 | 5,5 | 132S | 50 | 32 | 80 | 189 | 360 | 629 | 340 | 160 | 180 | 132 | 89 | 70 | 100 | 140 | 180 | 190 | 240 | 216 | 252 | 14 | 12 |
| F2 | 32-200 | 7,5 | 132M | 50 | 32 | 80 | 189 | 396 | 665 | 340 | 160 | 180 | 132 | 89 | 70 | 100 | 178 | 218 | 190 | 240 | 216 | 252 | 14 | 12 |
| F2 | 32-200 | 11 | 160M | 50 | 32 | 80 | 226 | 466 | 772 | 340 | 160 | 180 | 160 | 108 | 70 | 100 | 210 | 311 | 190 | 240 | 254 | 298 | 14 | 15 |
| F2 | 32-250 | 7,5 | 132M | 50 | 32 | 100 | 189 | 396 | 685 | 405 | 180 | 225 | 132 | 89 | 95 | 125 | 178 | 218 | 250 | 320 | 216 | 252 | 14 | 12 |
| F2 | 32-250 | 11 | 160M | 50 | 32 | 100 | 226 | 466 | 792 | 405 | 180 | 225 | 160 | 108 | 95 | 125 | 210 | 311 | 250 | 320 | 254 | 298 | 14 | 15 |
| F2 | 32-250 | 15 | 160L | 50 | 32 | 100 | 226 | 466 | 792 | 405 | 180 | 225 | 160 | 108 | 95 | 125 | 210 | 311 | 250 | 320 | 254 | 298 | 14 | 15 |
| F2 | 32-250 | 18,5 | 160L | 50 | 32 | 100 | 226 | 466 | 792 | 405 | 180 | 225 | 160 | 108 | 95 | 125 | 210 | 311 | 250 | 320 | 254 | 298 | 14 | 15 |
| F2 | 32-250 | 22 | 180M | 50 | 32 | 100 | 226 | 519 | 845 | 405 | 180 | 225 | 180 | 121 | 95 | 125 | 241 | 343 | 250 | 320 | 279 | 344 | 14 | 15 |
| F1 | 40-125 | 2,2 | 90L | 65 | 40 | 80 | 156 | 267 | 503 | 252 | 112 | 140 | 90 | 56 | 70 | 100 | 125 | 158 | 160 | 210 | 140 | 190 | 14 | 10 |
| F1 | 40-125 | 3 | 100L | 65 | 40 | 80 | 179 | 292 | 551 | 252 | 112 | 140 | 100 | 63 | 70 | 100 | 140 | 178 | 160 | 210 | 160 | 192 | 14 | 12 |
| F1 | 40-125 | 4 | 112M | 65 | 40 | 80 | 179 | 335 | 594 | 252 | 112 | 140 | 112 | 70 | 70 | 100 | 140 | 176 | 160 | 210 | 190 | 220 | 14 | 12 |
| F1 | 40-125 | 5,5 | 132S | 65 | 40 | 80 | 189 | 360 | 629 | 252 | 112 | 140 | 132 | 89 | 70 | 100 | 140 | 180 | 160 | 210 | 216 | 252 | 14 | 12 |
| F1 | 40-160 | 4 | 112M | 65 | 40 | 80 | 179 | 336 | 595 | 292 | 132 | 160 | 112 | 70 | 70 | 100 | 140 | 176 | 190 | 240 | 190 | 220 | 14 | 12 |
| F1 | 40-160 | 5,5 | 132S | 65 | 40 | 80 | 189 | 361 | 629 | 292 | 132 | 160 | 132 | 89 | 70 | 100 | 140 | 180 | 190 | 240 | 216 | 252 | 14 | 12 |
| F1 | 40-160 | 7,5 | 132M | 65 | 40 | 80 | 189 | 396 | 665 | 292 | 132 | 160 | 132 | 89 | 70 | 100 | 178 | 218 | 190 | 240 | 216 | 252 | 14 | 12 |
| F2 | 40-200 | 7,5 | 132M | 65 | 40 | 100 | 189 | 396 | 685 | 340 | 160 | 180 | 132 | 89 | 70 | 100 | 178 | 218 | 212 | 265 | 216 | 252 | 14 | 12 |
| F2 | 40-200 | 11 | 160M | 65 | 40 | 100 | 226 | 466 | 792 | 340 | 160 | 180 | 160 | 108 | 70 | 100 | 210 | 311 | 212 | 265 | 254 | 298 | 14 | 15 |
| F2 | 40-200 | 15 | 160L | 65 | 40 | 100 | 226 | 466 | 792 | 340 | 160 | 180 | 160 | 108 | 70 | 100 | 210 | 311 | 212 | 265 | 254 | 298 | 14 | 15 |
| F2 | 40-200 | 18,5 | 160L | 65 | 40 | 100 | 226 | 466 | 792 | 340 | 160 | 180 | 160 | 108 | 70 | 100 | 210 | 311 | 212 | 265 | 254 | 298 | 14 | 15 |
| F2 | 40-250 | 15 | 160L | 65 | 40 | 100 | 226 | 466 | 792 | 405 | 180 | 225 | 160 | 108 | 70 | 125 | 210 | 311 | 250 | 320 | 254 | 298 | 14 | 15 |
| F2 | 40-250 | 18,5 | 160L | 65 | 40 | 100 | 226 | 466 | 792 | 405 | 180 | 225 | 160 | 108 | 70 | 125 | 210 | 311 | 250 | 320 | 254 | 298 | 14 | 15 |
| F2 | 40-250 | 22 | 180M | 65 | 40 | 100 | 226 | 519 | 845 | 405 | 180 | 225 | 180 | 121 | 70 | 125 | 241 | 343 | 250 | 320 | 279 | 344 | 14 | 15 |
| F2 | 40-250 | 30 | 200L | 65 | 40 | 100 | 226 | 555 | 881 | 425 | 180 | 225 | 200 | 133 | 70 | 125 | 305 | 365 | 250 | 320 | 318 | 388 | 14 | 19 |
| F1 | 50-125 | 3 | 100L | 65 | 50 | 100 | 179 | 292 | 571 | 292 | 132 | 160 | 100 | 63 | 70 | 100 | 140 | 178 | 190 | 240 | 160 | 192 | 14 | 12 |
| F1 | 50-125 | 4 | 112M | 65 | 50 | 100 | 179 | 336 | 615 | 292 | 132 | 160 | 112 | 70 | 70 | 100 | 140 | 176 | 190 | 240 | 190 | 220 | 14 | 12 |
| F1 | 50-125 | 5,5 | 132S | 65 | 50 | 100 | 189 | 361 | 650 | 292 | 132 | 160 | 132 | 89 | 70 | 100 | 140 | 180 | 190 | 240 | 216 | 252 | 14 | 12 |
| F1 | 50-125 | 7,5 | 132M | 65 | 50 | 100 | 189 | 396 | 685 | 292 | 132 | 160 | 132 | 89 | 70 | 100 | 178 | 218 | 190 | 240 | 216 | 252 | 14 | 12 |
| F1 | 50-160 | 5,5 | 132S | 65 | 50 | 100 | 189 | 360 | 649 | 340 | 160 | 180 | 132 | 89 | 70 | 100 | 140 | 180 | 212 | 265 | 216 | 252 | 14 | 12 |
| F1 | 50-160 | 7,5 | 132M | 65 | 50 | 100 | 189 | 396 | 685 | 340 | 160 | 180 | 132 | 89 | 70 | 100 | 178 | 218 | 212 | 265 | 216 | 252 | 14 | 12 |
| F1 | 50-160 | 11 | 160M | 65 | 50 | 100 | 226 | 466 | 792 | 340 | 160 | 180 | 160 | 108 | 70 | 100 | 210 | 311 | 212 | 265 | 254 | 298 | 14 | 15 |
| F1 | 50-160 | 15 | 160L | 65 | 50 | 100 | 226 | 466 | 792 | 340 | 160 | 180 | 160 | 108 | 70 | 100 | 210 | 311 | 212 | 265 | 254 | 298 | 14 | 15 |
| F2 | 50-200 | 11 | 160M | 65 | 50 | 100 | 226 | 466 | 792 | 360 | 160 | 200 | 160 | 108 | 70 | 100 | 210 | 311 | 212 | 265 | 254 | 298 | 14 | 15 |
| F2 | 50-200 | 15 | 160L | 65 | 50 | 100 | 226 | 466 | 792 | 360 | 160 | 200 | 160 | 108 | 70 | 100 | 210 | 311 | 212 | 265 | 254 | 298 | 14 | 15 |
| F2 | 50-200 | 18,5 | 160L | 65 | 50 | 100 | 226 | 466 | 792 | 360 | 160 | 200 | 160 | 108 | 70 | 100 | 210 | 311 | 212 | 265 | 254 | 298 | 14 | 15 |
| F2 | 50-200 | 22 | 180L | 65 | 50 | 100 | 226 | 519 | 845 | 380 | 160 | 200 | 180 | 121 | 70 | 100 | 241 | 343 | 212 | 265 | 279 | 344 | 14 | 15 |

## 2900 rpm (2 Pole Motor)

| FORM | Pump Type | MOTOR | | ECO SNM INSTALLATION DIMENSIONS (mm) | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | kW | IEC | DNe | DNb | A | W | Lm* | L* | H | h1 | h2 | h3 | e | m1 | m2 | m3 | m4 | n1 | n2 | n3 | n4 | Sp | Sm |
| F2 | 50-250 | 18,5 | 160L | 65 | 50 | 100 | 226 | 466 | 792 | 405 | 180 | 225 | 160 | 108 | 95 | 125 | 210 | 311 | 250 | 320 | 254 | 298 | 14 | 15 |
| F2 | 50-250 | 22 | 180M | 65 | 50 | 100 | 226 | 519 | 845 | 405 | 180 | 225 | 180 | 121 | 95 | 125 | 241 | 343 | 250 | 320 | 279 | 344 | 14 | 15 |
| F2 | 50-250 | 30 | 200L | 65 | 50 | 100 | 226 | 555 | 881 | 425 | 180 | 225 | 200 | 133 | 95 | 125 | 305 | 365 | 250 | 320 | 318 | 388 | 14 | 19 |
| F2 | 50-250 | 37 | 200L | 65 | 50 | 100 | 226 | 555 | 881 | 425 | 180 | 225 | 200 | 133 | 95 | 125 | 305 | 365 | 250 | 320 | 318 | 388 | 14 | 19 |
| F1 | 65-125 | 4 | 112M | 80 | 65 | 100 | 179 | 336 | 615 | 340 | 160 | 180 | 112 | 70 | 95 | 125 | 140 | 176 | 212 | 280 | 190 | 220 | 14 | 12 |
| F1 | 65-125 | 5,5 | 132S | 80 | 65 | 100 | 189 | 360 | 649 | 340 | 160 | 180 | 132 | 89 | 95 | 125 | 140 | 180 | 212 | 280 | 216 | 252 | 14 | 12 |
| F1 | 65-125 | 7,5 | 132M | 80 | 65 | 100 | 189 | 396 | 685 | 340 | 160 | 180 | 132 | 89 | 95 | 125 | 178 | 218 | 212 | 280 | 216 | 252 | 14 | 12 |
| F1 | 65-125 | 11 | 160M | 80 | 65 | 100 | 226 | 466 | 792 | 340 | 160 | 180 | 160 | 108 | 95 | 125 | 210 | 311 | 212 | 280 | 254 | 298 | 14 | 15 |
| F1 | 65-160 | 7,5 | 132M | 80 | 65 | 100 | 189 | 396 | 685 | 360 | 160 | 200 | 132 | 89 | 95 | 125 | 178 | 218 | 212 | 280 | 216 | 252 | 14 | 12 |
| F1 | 65-160 | 11 | 160M | 80 | 65 | 100 | 226 | 466 | 792 | 360 | 160 | 200 | 160 | 108 | 95 | 125 | 210 | 311 | 212 | 280 | 254 | 298 | 14 | 15 |
| F1 | 65-160 | 15 | 160L | 80 | 65 | 100 | 226 | 466 | 792 | 360 | 160 | 200 | 160 | 108 | 95 | 125 | 210 | 311 | 212 | 280 | 254 | 298 | 14 | 15 |
| F2 | 65-200 | 15 | 160L | 80 | 65 | 100 | 226 | 466 | 792 | 405 | 180 | 225 | 160 | 108 | 95 | 125 | 210 | 311 | 250 | 320 | 254 | 298 | 14 | 15 |
| F2 | 65-200 | 18,5 | 160L | 80 | 65 | 100 | 226 | 466 | 792 | 405 | 180 | 225 | 160 | 108 | 95 | 125 | 210 | 311 | 250 | 320 | 254 | 298 | 14 | 15 |
| F2 | 65-200 | 22 | 180M | 80 | 65 | 100 | 226 | 519 | 845 | 405 | 180 | 225 | 180 | 121 | 95 | 125 | 241 | 343 | 250 | 320 | 279 | 344 | 14 | 15 |
| F2 | 65-200 | 30 | 200L | 80 | 65 | 100 | 226 | 555 | 881 | 425 | 180 | 225 | 200 | 133 | 95 | 125 | 305 | 365 | 250 | 320 | 318 | 388 | 14 | 19 |
| F2 | 65-250 | 30 | 200L | 80 | 65 | 100 | 246 | 555 | 901 | 450 | 200 | 250 | 200 | 133 | 120 | 160 | 305 | 365 | 280 | 360 | 318 | 388 | 19 | 19 |
| F2 | 65-250 | 37 | 200L | 80 | 65 | 100 | 246 | 555 | 901 | 450 | 200 | 250 | 200 | 133 | 120 | 160 | 305 | 365 | 280 | 360 | 318 | 388 | 19 | 19 |
| F2 | 65-250 | 45 | 225M | 80 | 65 | 100 | 248 | 625 | 973 | 475 | 200 | 250 | 225 | 149 | 120 | 160 | 311 | 383 | 280 | 360 | 356 | 442 | 19 | 19 |
| F2 | 65-250 | 55 | 250M | 80 | 65 | 100 | 294 | 753 | 1147 | 500 | 200 | 250 | 250 | 168 | 120 | 160 | 349 | 409 | 280 | 360 | 406 | 506 | 19 | 24 |
| F1 | 80-160 | 11 | 160M | 100 | 80 | 125 | 226 | 466 | 817 | 405 | 180 | 225 | 160 | 108 | 95 | 125 | 210 | 311 | 250 | 320 | 254 | 298 | 14 | 15 |
| F1 | 80-160 | 15 | 160L | 100 | 80 | 125 | 226 | 466 | 817 | 405 | 180 | 225 | 160 | 108 | 95 | 125 | 210 | 311 | 250 | 320 | 254 | 298 | 14 | 15 |
| F1 | 80-160 | 18,5 | 160L | 100 | 80 | 125 | 226 | 466 | 817 | 405 | 180 | 225 | 160 | 108 | 95 | 125 | 210 | 311 | 250 | 320 | 254 | 298 | 14 | 15 |
| F1 | 80-160 | 22 | 180M | 100 | 80 | 125 | 226 | 519 | 870 | 405 | 180 | 225 | 180 | 121 | 95 | 125 | 241 | 343 | 250 | 320 | 279 | 344 | 14 | 15 |
| F1 | 80-160 | 30 | 200L | 100 | 80 | 125 | 226 | 555 | 906 | 425 | 180 | 225 | 200 | 133 | 95 | 125 | 305 | 365 | 250 | 320 | 318 | 388 | 14 | 19 |
| F1 | 80-200 | 22 | 180M | 100 | 80 | 125 | 234 | 519 | 878 | 430 | 180 | 250 | 180 | 121 | 95 | 125 | 279 | 343 | 280 | 345 | 279 | 344 | 14 | 15 |
| F1 | 80-200 | 30 | 200L | 100 | 80 | 125 | 236 | 555 | 916 | 450 | 180 | 250 | 200 | 133 | 95 | 125 | 305 | 365 | 280 | 345 | 318 | 388 | 14 | 19 |
| F1 | 80-200 | 37 | 200L | 100 | 80 | 125 | 236 | 555 | 916 | 450 | 180 | 250 | 200 | 133 | 95 | 125 | 305 | 365 | 280 | 345 | 318 | 388 | 14 | 19 |
| F1 | 80-200 | 45 | 225M | 100 | 80 | 125 | 238 | 625 | 988 | 475 | 180 | 250 | 225 | 149 | 95 | 125 | 311 | 383 | 280 | 345 | 356 | 442 | 14 | 19 |
| F2 | 80-250 | 37 | 200L | 100 | 80 | 125 | 246 | 555 | 926 | 480 | 200 | 280 | 200 | 133 | 120 | 160 | 305 | 365 | 315 | 400 | 318 | 388 | 19 | 19 |
| F2 | 80-250 | 45 | 225M | 100 | 80 | 125 | 248 | 625 | 998 | 505 | 200 | 280 | 225 | 149 | 120 | 160 | 311 | 383 | 315 | 400 | 356 | 442 | 19 | 19 |
| F2 | 80-250 | 55 | 250M | 100 | 80 | 125 | 294 | 753 | 1172 | 530 | 200 | 280 | 250 | 168 | 120 | 160 | 349 | 409 | 315 | 400 | 406 | 506 | 19 | 24 |
| F2 | 80-250 | 75 | 280M | 100 | 80 | 125 | 294 | 885 | 1304 | 560 | 200 | 280 | 280 | 188 | 120 | 160 | 419 | 500 | 315 | 400 | 457 | 554 | 19 | 24 |
| F2 | 80-250 | 90 | 280M | 100 | 80 | 125 | 294 | 885 | 1304 | 560 | 200 | 280 | 280 | 188 | 120 | 160 | 419 | 500 | 315 | 400 | 457 | 554 | 19 | 24 |
| F1 | 100-160 | 22 | 180M | 125 | 100 | 125 | 244 | 519 | 888 | 480 | 200 | 280 | 180 | 121 | 120 | 160 | 279 | 343 | 280 | 360 | 279 | 344 | 19 | 15 |
| F1 | 100-160 | 30 | 200L | 125 | 100 | 125 | 246 | 555 | 926 | 480 | 200 | 280 | 200 | 133 | 120 | 160 | 305 | 365 | 280 | 360 | 318 | 388 | 19 | 19 |
| F1 | 100-160 | 37 | 200L | 125 | 100 | 125 | 246 | 555 | 926 | 480 | 200 | 280 | 200 | 133 | 120 | 160 | 305 | 365 | 280 | 360 | 318 | 388 | 19 | 19 |
| F1 | 100-200 | 30 | 200L | 125 | 100 | 125 | 246 | 555 | 926 | 480 | 200 | 280 | 200 | 133 | 120 | 160 | 305 | 365 | 280 | 360 | 318 | 388 | 19 | 19 |
| F1 | 100-200 | 37 | 200L | 125 | 100 | 125 | 246 | 555 | 926 | 480 | 200 | 280 | 200 | 133 | 120 | 160 | 305 | 365 | 280 | 360 | 318 | 388 | 19 | 19 |
| F1 | 100-200 | 45 | 225M | 125 | 100 | 125 | 248 | 625 | 998 | 505 | 200 | 280 | 225 | 149 | 120 | 160 | 311 | 383 | 280 | 360 | 356 | 442 | 19 | 19 |
| F1 | 100-200 | 55 | 250M | 125 | 100 | 125 | 294 | 754 | 1173 | 530 | 200 | 280 | 250 | 168 | 120 | 160 | 349 | 409 | 280 | 360 | 406 | 506 | 19 | 24 |
| F2 | 100-250 | 45 | 225M | 125 | 100 | 140 | 248 | 625 | 1013 | 505 | 225 | 280 | 225 | 149 | 120 | 160 | 311 | 383 | 315 | 400 | 356 | 442 | 19 | 19 |
| F2 | 100-250 | 55 | 250M | 125 | 100 | 140 | 294 | 753 | 1187 | 530 | 225 | 280 | 250 | 168 | 120 | 160 | 349 | 409 | 315 | 400 | 406 | 506 | 19 | 24 |
| F2 | 100-250 | 75 | 280M | 125 | 100 | 140 | 294 | 885 | 1319 | 560 | 225 | 280 | 280 | 188 | 120 | 160 | 419 | 500 | 315 | 400 | 457 | 554 | 19 | 24 |
| F2 | 100-250 | 90 | 280M | 125 | 100 | 140 | 294 | 885 | 1319 | 560 | 225 | 280 | 280 | 188 | 120 | 160 | 419 | 500 | 315 | 400 | 457 | 554 | 19 | 24 |
| F1 | 125-200 | 55 | 250M | 150 | 125 | 140 | 294 | 753 | 1187 | 565 | 250 | 315 | 250 | 168 | 120 | 160 | 349 | 409 | 315 | 400 | 406 | 506 | 19 | 24 |
| F1 | 125-200 | 75 | 280M | 150 | 125 | 140 | 294 | 885 | 1319 | 595 | 250 | 315 | 280 | 188 | 120 | 160 | 419 | 500 | 315 | 400 | 457 | 554 | 19 | 24 |
| F1 | 125-200 | 90 | 280M | 150 | 125 | 140 | 294 | 885 | 1319 | 595 | 250 | 315 | 280 | 188 | 120 | 160 | 419 | 500 | 315 | 400 | 457 | 554 | 19 | 24 |

## 1450 rpm (4 Pole Motor)

| FORM | Pump Type | MOTOR | | ECO SNM INSTALLATION DIMENSIONS (mm) | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | kW | IEC | DNe | DNb | A | W | Lm* | L* | H | h1 | h2 | h3 | e | m1 | m2 | m3 | m4 | n1 | n2 | n3 | n4 | Sp | Sm |
| F1 | 32-125 | 0,37 | 71M | 50 | 32 | 80 | 136 | 222 | 439 | 252 | 112 | 140 | 71 | 45 | 70 | 100 | 90 | 106 | 140 | 190 | 112 | 128 | 14 | 7 |
| F1 | 32-125 | 0,55 | 80M | 50 | 32 | 80 | 156 | 244 | 480 | 252 | 112 | 140 | 80 | 50 | 70 | 100 | 100 | 120 | 140 | 190 | 125 | 165 | 14 | 10 |
| F1 | 32-160 | 0,37 | 71M | 50 | 32 | 80 | 136 | 222 | 439 | 292 | 132 | 160 | 71 | 45 | 70 | 100 | 90 | 106 | 190 | 240 | 112 | 128 | 14 | 7 |
| F1 | 32-160 | 0,55 | 80M | 50 | 32 | 80 | 156 | 244 | 480 | 292 | 132 | 160 | 80 | 50 | 70 | 100 | 100 | 120 | 190 | 240 | 125 | 165 | 14 | 10 |
| F1 | 32-160 | 0,75 | 80M | 50 | 32 | 80 | 156 | 244 | 480 | 292 | 132 | 160 | 80 | 50 | 70 | 100 | 100 | 120 | 190 | 240 | 125 | 165 | 14 | 10 |
| F2 | 32-200 | 0,75 | 80M | 50 | 32 | 80 | 156 | 244 | 480 | 340 | 160 | 180 | 80 | 50 | 70 | 100 | 100 | 120 | 190 | 240 | 125 | 165 | 14 | 10 |
| F2 | 32-200 | 1,1 | 90L | 50 | 32 | 80 | 156 | 267 | 503 | 340 | 160 | 180 | 90 | 56 | 70 | 100 | 125 | 158 | 190 | 240 | 140 | 190 | 14 | 10 |
| F2 | 32-200 | 1,5 | 90L | 50 | 32 | 80 | 156 | 267 | 503 | 340 | 160 | 180 | 90 | 56 | 70 | 100 | 125 | 158 | 190 | 240 | 140 | 190 | 14 | 10 |
| F2 | 32-250 | 1,1 | 90L | 50 | 32 | 100 | 156 | 267 | 523 | 405 | 180 | 225 | 90 | 56 | 95 | 125 | 125 | 158 | 250 | 320 | 140 | 190 | 14 | 10 |
| F2 | 32-250 | 1,5 | 90L | 50 | 32 | 100 | 156 | 267 | 523 | 405 | 180 | 225 | 90 | 56 | 95 | 125 | 125 | 158 | 250 | 320 | 140 | 190 | 14 | 10 |
| F2 | 32-250 | 2,2 | 100L | 50 | 32 | 100 | 179 | 292 | 571 | 405 | 180 | 225 | 100 | 63 | 95 | 125 | 140 | 178 | 250 | 320 | 160 | 192 | 14 | 12 |
| F2 | 32-250 | 3 | 100L | 50 | 32 | 100 | 179 | 292 | 571 | 405 | 180 | 225 | 100 | 63 | 95 | 125 | 140 | 178 | 250 | 320 | 160 | 192 | 14 | 12 |
| F1 | 40-125 | 0,37 | 71M | 65 | 40 | 80 | 136 | 223 | 439 | 252 | 112 | 140 | 71 | 45 | 70 | 100 | 90 | 106 | 160 | 210 | 112 | 128 | 14 | 7 |
| F1 | 40-125 | 0,55 | 80M | 65 | 40 | 80 | 156 | 243 | 479 | 252 | 112 | 140 | 80 | 50 | 70 | 100 | 100 | 120 | 160 | 210 | 125 | 165 | 14 | 10 |
| F1 | 40-160 | 0,55 | 80M | 65 | 40 | 80 | 156 | 243 | 479 | 292 | 132 | 160 | 80 | 50 | 70 | 100 | 100 | 120 | 190 | 240 | 125 | 165 | 14 | 10 |
| F1 | 40-160 | 0,75 | 80M | 65 | 40 | 80 | 156 | 243 | 479 | 292 | 132 | 160 | 80 | 50 | 70 | 100 | 100 | 120 | 190 | 240 | 125 | 165 | 14 | 10 |
| F1 | 40-160 | 1,1 | 90L | 65 | 40 | 80 | 156 | 267 | 503 | 292 | 132 | 160 | 90 | 56 | 70 | 100 | 125 | 158 | 190 | 240 | 140 | 190 | 14 | 10 |

## 1450 rpm (4 Pole Motor)

| FORM | Pump Type | MOTOR | | ECO SNM INSTALLATION DIMENSIONS (mm) | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | kW | IEC | DNe | DNb | A | W | Lm* | L* | H | h1 | h2 | h3 | e | m1 | m2 | m3 | m4 | n1 | n2 | n3 | n4 | Sp | Sm |
| F2 | 40-200 | 1,1 | 90L | 65 | 40 | 100 | 156 | 266 | 523 | 340 | 160 | 180 | 90 | 56 | 70 | 100 | 125 | 158 | 212 | 265 | 140 | 190 | 14 | 10 |
| F2 | 40-200 | 1,5 | 90L | 65 | 40 | 100 | 156 | 266 | 523 | 340 | 160 | 180 | 90 | 56 | 70 | 100 | 125 | 158 | 212 | 265 | 140 | 190 | 14 | 10 |
| F2 | 40-200 | 2,2 | 100L | 65 | 40 | 100 | 179 | 292 | 571 | 340 | 160 | 180 | 90 | 63 | 70 | 100 | 140 | 178 | 212 | 265 | 160 | 192 | 14 | 12 |
| F2 | 40-250 | 2,2 | 100L | 65 | 40 | 100 | 179 | 292 | 571 | 405 | 180 | 225 | 100 | 63 | 70 | 125 | 140 | 178 | 250 | 320 | 160 | 192 | 14 | 12 |
| F2 | 40-250 | 3 | 100L | 65 | 40 | 100 | 179 | 292 | 571 | 405 | 180 | 225 | 100 | 63 | 70 | 125 | 140 | 178 | 250 | 320 | 160 | 192 | 14 | 12 |
| F2 | 40-250 | 4 | 112M | 65 | 40 | 100 | 179 | 335 | 614 | 405 | 180 | 225 | 112 | 63 | 70 | 125 | 140 | 176 | 250 | 320 | 190 | 220 | 14 | 12 |
| F2 | 40-315 | 3 | 100L | 65 | 40 | 100 | 177 | 292 | 569 | 450 | 200 | 250 | 100 | 63 | 95 | 125 | 140 | 178 | 280 | 345 | 160 | 192 | 14 | 12 |
| F2 | 40-315 | 4 | 112M | 65 | 40 | 100 | 177 | 335 | 612 | 450 | 200 | 250 | 112 | 70 | 95 | 125 | 140 | 176 | 280 | 345 | 190 | 220 | 14 | 12 |
| F2 | 40-315 | 5,5 | 132M | 65 | 40 | 100 | 187 | 396 | 683 | 450 | 200 | 250 | 132 | 89 | 95 | 125 | 178 | 218 | 280 | 345 | 216 | 252 | 14 | 12 |
| F2 | 40-315 | 7,5 | 132M | 65 | 40 | 100 | 187 | 396 | 683 | 450 | 200 | 250 | 132 | 89 | 95 | 125 | 178 | 218 | 280 | 345 | 216 | 252 | 14 | 12 |
| F1 | 50-125 | 0,55 | 80M | 65 | 50 | 100 | 156 | 244 | 500 | 292 | 132 | 160 | 80 | 50 | 70 | 100 | 100 | 120 | 190 | 240 | 125 | 165 | 14 | 10 |
| F1 | 50-125 | 0,75 | 80M | 65 | 50 | 100 | 156 | 244 | 500 | 292 | 132 | 160 | 80 | 50 | 70 | 100 | 100 | 120 | 190 | 240 | 125 | 165 | 14 | 10 |
| F1 | 50-125 | 1,1 | 90L | 65 | 50 | 100 | 156 | 267 | 523 | 292 | 132 | 160 | 90 | 56 | 70 | 100 | 125 | 158 | 190 | 240 | 140 | 190 | 14 | 10 |
| F1 | 50-160 | 0,75 | 80M | 65 | 50 | 100 | 156 | 243 | 500 | 340 | 160 | 180 | 80 | 50 | 70 | 100 | 100 | 120 | 212 | 265 | 125 | 165 | 14 | 10 |
| F1 | 50-160 | 1,1 | 90L | 65 | 50 | 100 | 156 | 267 | 523 | 340 | 160 | 180 | 90 | 56 | 70 | 100 | 125 | 158 | 212 | 265 | 140 | 190 | 14 | 10 |
| F1 | 50-160 | 1,5 | 90L | 65 | 50 | 100 | 156 | 267 | 523 | 340 | 160 | 180 | 90 | 56 | 70 | 100 | 125 | 158 | 212 | 265 | 140 | 190 | 14 | 10 |
| F1 | 50-160 | 2,2 | 100L | 65 | 50 | 100 | 179 | 292 | 571 | 340 | 160 | 180 | 100 | 63 | 70 | 100 | 140 | 178 | 212 | 265 | 160 | 192 | 14 | 12 |
| F2 | 50-200 | 1,1 | 90L | 65 | 50 | 100 | 156 | 267 | 523 | 360 | 160 | 200 | 90 | 56 | 70 | 100 | 125 | 158 | 212 | 265 | 140 | 190 | 14 | 10 |
| F2 | 50-200 | 1,5 | 90L | 65 | 50 | 100 | 156 | 267 | 523 | 360 | 160 | 200 | 90 | 56 | 70 | 100 | 125 | 158 | 212 | 265 | 140 | 190 | 14 | 10 |
| F2 | 50-200 | 2,2 | 100L | 65 | 50 | 100 | 179 | 292 | 571 | 360 | 160 | 200 | 100 | 63 | 70 | 100 | 140 | 178 | 212 | 265 | 160 | 192 | 14 | 12 |
| F2 | 50-200 | 3 | 100L | 65 | 50 | 100 | 179 | 292 | 571 | 360 | 160 | 200 | 100 | 63 | 70 | 100 | 140 | 178 | 212 | 265 | 160 | 192 | 14 | 12 |
| F2 | 50-250 | 2,2 | 100L | 65 | 50 | 100 | 179 | 292 | 571 | 405 | 180 | 225 | 100 | 63 | 95 | 125 | 140 | 178 | 250 | 320 | 160 | 192 | 14 | 12 |
| F2 | 50-250 | 3 | 100L | 65 | 50 | 100 | 179 | 292 | 571 | 405 | 180 | 225 | 100 | 63 | 95 | 125 | 140 | 178 | 250 | 320 | 160 | 192 | 14 | 12 |
| F2 | 50-250 | 4 | 112M | 65 | 50 | 100 | 179 | 336 | 615 | 405 | 180 | 225 | 112 | 70 | 95 | 125 | 140 | 176 | 250 | 320 | 190 | 220 | 14 | 12 |
| F2 | 50-250 | 5,5 | 132M | 65 | 50 | 100 | 189 | 396 | 685 | 405 | 180 | 225 | 132 | 89 | 95 | 125 | 178 | 218 | 250 | 320 | 216 | 252 | 14 | 12 |
| F2 | 50-315 | 5,5 | 132M | 65 | 50 | 125 | 214 | 396 | 735 | 505 | 225 | 280 | 132 | 89 | 95 | 125 | 178 | 218 | 280 | 345 | 216 | 252 | 14 | 12 |
| F2 | 50-315 | 7,5 | 132M | 65 | 50 | 125 | 214 | 396 | 735 | 505 | 225 | 280 | 132 | 89 | 95 | 125 | 178 | 218 | 280 | 345 | 216 | 252 | 14 | 12 |
| F2 | 50-315 | 11 | 160M | 65 | 50 | 125 | 244 | 466 | 835 | 505 | 225 | 280 | 160 | 108 | 95 | 125 | 254 | 311 | 280 | 345 | 254 | 298 | 14 | 15 |
| F1 | 65-125 | 0,55 | 80M | 80 | 65 | 100 | 156 | 243 | 500 | 340 | 160 | 180 | 80 | 50 | 95 | 125 | 100 | 120 | 212 | 280 | 125 | 165 | 14 | 10 |
| F1 | 65-125 | 0,75 | 80M | 80 | 65 | 100 | 156 | 243 | 500 | 340 | 160 | 180 | 80 | 50 | 95 | 125 | 100 | 120 | 212 | 280 | 125 | 165 | 14 | 10 |
| F1 | 65-125 | 1,1 | 90L | 80 | 65 | 100 | 156 | 267 | 523 | 340 | 160 | 180 | 90 | 56 | 95 | 125 | 125 | 158 | 212 | 280 | 140 | 190 | 14 | 10 |
| F1 | 65-160 | 1,1 | 90L | 80 | 65 | 100 | 156 | 267 | 523 | 360 | 160 | 200 | 90 | 56 | 95 | 125 | 125 | 158 | 212 | 280 | 140 | 190 | 14 | 10 |
| F1 | 65-160 | 1,5 | 90L | 80 | 65 | 100 | 156 | 267 | 523 | 360 | 160 | 200 | 90 | 56 | 95 | 125 | 125 | 158 | 212 | 280 | 140 | 190 | 14 | 10 |
| F1 | 65-160 | 2,2 | 100L | 80 | 65 | 100 | 179 | 292 | 571 | 360 | 160 | 200 | 100 | 63 | 95 | 125 | 140 | 178 | 212 | 280 | 160 | 192 | 14 | 12 |
| F2 | 65-200 | 1,5 | 90L | 80 | 65 | 100 | 156 | 266 | 523 | 405 | 180 | 225 | 90 | 56 | 95 | 125 | 125 | 158 | 250 | 320 | 140 | 190 | 14 | 10 |
| F2 | 65-200 | 2,2 | 100L | 80 | 65 | 100 | 179 | 292 | 571 | 405 | 180 | 225 | 100 | 63 | 95 | 125 | 140 | 178 | 250 | 320 | 160 | 192 | 14 | 12 |
| F2 | 65-200 | 3 | 100L | 80 | 65 | 100 | 179 | 292 | 571 | 405 | 180 | 225 | 100 | 63 | 95 | 125 | 140 | 178 | 250 | 320 | 160 | 192 | 14 | 12 |
| F2 | 65-200 | 4 | 112M | 80 | 65 | 100 | 179 | 336 | 615 | 405 | 180 | 225 | 112 | 70 | 95 | 125 | 140 | 176 | 250 | 320 | 190 | 220 | 14 | 12 |
| F2 | 65-250 | 3 | 100L | 80 | 65 | 100 | 189 | 292 | 581 | 450 | 200 | 250 | 100 | 63 | 120 | 160 | 140 | 178 | 280 | 360 | 160 | 192 | 19 | 12 |
| F2 | 65-250 | 4 | 112M | 80 | 65 | 100 | 189 | 336 | 625 | 450 | 200 | 250 | 112 | 70 | 120 | 160 | 140 | 176 | 280 | 360 | 190 | 220 | 19 | 12 |
| F2 | 65-250 | 5,5 | 132M | 80 | 65 | 100 | 214 | 396 | 710 | 450 | 200 | 250 | 132 | 89 | 120 | 160 | 178 | 218 | 280 | 360 | 216 | 252 | 19 | 12 |
| F2 | 65-250 | 7,5 | 132M | 80 | 65 | 100 | 214 | 396 | 710 | 450 | 200 | 250 | 132 | 89 | 120 | 160 | 178 | 218 | 280 | 360 | 216 | 252 | 19 | 12 |
| F2 | 65-315 | 5,5 | 132M | 80 | 65 | 125 | 214 | 396 | 735 | 505 | 225 | 280 | 132 | 89 | 120 | 160 | 178 | 218 | 315 | 400 | 216 | 252 | 19 | 12 |
| F2 | 65-315 | 7,5 | 132M | 80 | 65 | 125 | 214 | 396 | 735 | 505 | 225 | 280 | 132 | 89 | 120 | 160 | 178 | 218 | 315 | 400 | 216 | 252 | 19 | 12 |
| F2 | 65-315 | 11 | 160M | 80 | 65 | 125 | 244 | 466 | 835 | 505 | 225 | 280 | 160 | 108 | 120 | 160 | 254 | 311 | 315 | 400 | 254 | 298 | 19 | 15 |
| F2 | 65-315 | 15 | 160L | 80 | 65 | 125 | 244 | 466 | 835 | 505 | 225 | 280 | 160 | 108 | 120 | 160 | 254 | 311 | 315 | 400 | 254 | 298 | 19 | 15 |
| F2 | 65-400 | 15 | 160L | 100 | 65 | 125 | 244 | 466 | 835 | 615 | 260 | 355 | 160 | 108 | 120 | 160 | 254 | 311 | 355 | 435 | 254 | 298 | 19 | 15 |
| F2 | 65-400 | 18,5 | 180M | 100 | 65 | 125 | 244 | 519 | 888 | 615 | 260 | 355 | 180 | 121 | 120 | 160 | 279 | 343 | 355 | 435 | 279 | 344 | 19 | 15 |
| F2 | 65-400 | 22 | 180L | 100 | 65 | 125 | 244 | 519 | 888 | 615 | 260 | 355 | 180 | 121 | 120 | 160 | 279 | 343 | 355 | 435 | 279 | 344 | 19 | 15 |
| F2 | 65-400 | 30 | 200L | 100 | 65 | 125 | 246 | 555 | 926 | 615 | 260 | 355 | 200 | 133 | 120 | 160 | 305 | 365 | 355 | 435 | 318 | 388 | 19 | 19 |
| F1 | 80-160 | 1,5 | 90L | 100 | 80 | 125 | 156 | 266 | 548 | 405 | 180 | 225 | 90 | 56 | 95 | 125 | 125 | 158 | 250 | 320 | 140 | 190 | 14 | 10 |
| F1 | 80-160 | 2,2 | 100L | 100 | 80 | 125 | 179 | 292 | 596 | 405 | 180 | 225 | 100 | 63 | 95 | 125 | 140 | 178 | 250 | 320 | 160 | 192 | 14 | 12 |
| F1 | 80-160 | 3 | 100L | 100 | 80 | 125 | 179 | 292 | 596 | 405 | 180 | 225 | 100 | 63 | 95 | 125 | 140 | 178 | 250 | 320 | 160 | 192 | 14 | 12 |
| F1 | 80-200 | 3 | 100L | 100 | 80 | 125 | 179 | 292 | 596 | 430 | 180 | 250 | 100 | 63 | 95 | 125 | 140 | 178 | 280 | 345 | 160 | 192 | 14 | 12 |
| F1 | 80-200 | 4 | 112M | 100 | 80 | 125 | 179 | 336 | 640 | 430 | 180 | 250 | 112 | 70 | 95 | 125 | 140 | 176 | 280 | 345 | 190 | 220 | 14 | 12 |
| F1 | 80-200 | 5,5 | 132M | 100 | 80 | 125 | 204 | 396 | 725 | 430 | 180 | 250 | 132 | 89 | 95 | 125 | 178 | 218 | 280 | 345 | 216 | 252 | 14 | 12 |
| F2 | 80-250 | 4 | 112M | 100 | 80 | 125 | 189 | 336 | 650 | 480 | 200 | 280 | 112 | 70 | 120 | 160 | 140 | 176 | 315 | 400 | 190 | 220 | 19 | 12 |
| F2 | 80-250 | 5,5 | 132M | 100 | 80 | 125 | 214 | 396 | 735 | 480 | 200 | 280 | 132 | 89 | 120 | 160 | 178 | 218 | 315 | 400 | 216 | 252 | 19 | 12 |
| F2 | 80-250 | 7,5 | 132M | 100 | 80 | 125 | 214 | 396 | 735 | 480 | 200 | 280 | 132 | 89 | 120 | 160 | 178 | 218 | 315 | 400 | 216 | 252 | 19 | 12 |
| F2 | 80-250 | 11 | 160M | 100 | 80 | 125 | 244 | 466 | 835 | 480 | 200 | 280 | 160 | 108 | 120 | 160 | 254 | 311 | 315 | 400 | 254 | 298 | 19 | 15 |
| F2 | 80-315 | 11 | 160M | 100 | 80 | 125 | 244 | 466 | 835 | 565 | 250 | 315 | 160 | 108 | 120 | 160 | 254 | 311 | 315 | 400 | 254 | 298 | 19 | 15 |
| F2 | 80-315 | 15 | 160L | 100 | 80 | 125 | 244 | 466 | 835 | 565 | 250 | 315 | 160 | 108 | 120 | 160 | 254 | 311 | 315 | 400 | 254 | 298 | 19 | 15 |
| F2 | 80-315 | 18,5 | 180M | 100 | 80 | 125 | 244 | 519 | 888 | 565 | 250 | 315 | 180 | 121 | 120 | 160 | 279 | 343 | 315 | 400 | 279 | 344 | 19 | 15 |
| F2 | 80-400 | 18,5 | 180M | 100 | 80 | 125 | 256 | 519 | 900 | 635 | 280 | 355 | 180 | 121 | 120 | 160 | 279 | 343 | 355 | 435 | 279 | 344 | 19 | 15 |
| F2 | 80-400 | 22 | 180L | 100 | 80 | 125 | 256 | 519 | 900 | 635 | 280 | 355 | 180 | 121 | 120 | 160 | 279 | 343 | 355 | 435 | 279 | 344 | 19 | 15 |
| F2 | 80-400 | 30 | 200L | 100 | 80 | 125 | 256 | 555 | 936 | 635 | 280 | 355 | 200 | 133 | 120 | 160 | 305 | 365 | 355 | 435 | 318 | 388 | 19 | 19 |
| F2 | 80-400 | 37 | 225M | 100 | 80 | 125 | 316 | 625 | 1068 | 635 | 280 | 355 | 225 | 149 | 120 | 160 | 311 | 383 | 355 | 435 | 318 | 388 | 19 | 19 |
| F2 | 80-400 | 45 | 225M | 100 | 80 | 125 | 316 | 625 | 1068 | 635 | 280 | 355 | 225 | 225 | 120 | 160 | 311 | 383 | 355 | 435 | 318 | 388 | 19 | 19 |
| F1 | 100-160 | 3 | 100L | 125 | 100 | 125 | 189 | 292 | 606 | 480 | 200 | 280 | 100 | 63 | 120 | 160 | 140 | 178 | 280 | 360 | 160 | 192 | 19 | 12 |
| F1 | 100-160 | 4 | 112M | 125 | 100 | 125 | 189 | 336 | 650 | 480 | 200 | 280 | 112 | 70 | 120 | 160 | 140 | 176 | 280 | 360 | 190 | 220 | 19 | 12 |
| F1 | 100-200 | 4 | 112M | 125 | 100 | 125 | 189 | 336 | 650 | 480 | 200 | 280 | 112 | 70 | 120 | 160 | 140 | 176 | 280 | 360 | 190 | 220 | 19 | 12 |
| F1 | 100-200 | 5,5 | 132M | 125 | 100 | 125 | 214 | 396 | 735 | 480 | 200 | 280 | 132 | 89 | 120 | 160 | 178 | 218 | 280 | 360 | 216 | 252 | 19 | 12 |
| F1 | 100-200 | 7,5 | 132M | 125 | 100 | 125 | 214 | 396 | 735 | 480 | 200 | 280 | 132 | 89 | 120 | 160 | 178 | 218 | 280 | 360 | 216 | 252 | 19 | 12 |

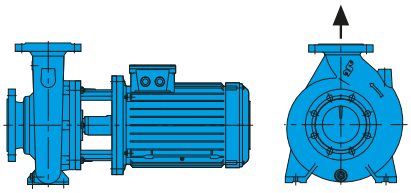
## 1450 rpm (4 Pole Motor)

| FORM | Pump Type | MOTOR | | ECO SNM INSTALLATION DIMENSIONS (mm) | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | kW | IEC | DNe | DNb | A | W | Lm* | L* | H | h1 | h2 | h3 | e | m1 | m2 | m3 | m4 | n1 | n2 | n3 | n4 | Sp | Sm |
| F2 | 100-250 | 5,5 | 132M | 125 | 100 | 140 | 214 | 396 | 750 | 505 | 225 | 280 | 132 | 89 | 120 | 160 | 178 | 218 | 315 | 400 | 216 | 252 | 19 | 12 |
| F2 | 100-250 | 7,5 | 132M | 125 | 100 | 140 | 214 | 396 | 750 | 505 | 225 | 280 | 132 | 89 | 120 | 160 | 178 | 218 | 315 | 400 | 216 | 252 | 19 | 12 |
| F2 | 100-250 | 11 | 160M | 125 | 100 | 140 | 244 | 466 | 850 | 505 | 225 | 280 | 160 | 108 | 120 | 160 | 254 | 311 | 315 | 400 | 254 | 298 | 19 | 15 |
| F2 | 100-250 | 15 | 160L | 125 | 100 | 140 | 244 | 466 | 850 | 505 | 225 | 280 | 160 | 108 | 120 | 160 | 254 | 311 | 315 | 400 | 254 | 298 | 19 | 15 |
| F2 | 100-315 | 15 | 160L | 125 | 100 | 140 | 244 | 466 | 850 | 565 | 250 | 315 | 160 | 108 | 120 | 160 | 254 | 311 | 315 | 400 | 254 | 298 | 19 | 15 |
| F2 | 100-315 | 18,5 | 180M | 125 | 100 | 140 | 244 | 519 | 903 | 565 | 250 | 315 | 180 | 121 | 120 | 160 | 279 | 343 | 315 | 400 | 279 | 344 | 19 | 15 |
| F2 | 100-315 | 22 | 180L | 125 | 100 | 140 | 244 | 519 | 903 | 565 | 250 | 315 | 180 | 121 | 120 | 160 | 279 | 343 | 315 | 400 | 279 | 344 | 19 | 15 |
| F2 | 100-315 | 30 | 200L | 125 | 100 | 140 | 246 | 555 | 941 | 565 | 250 | 315 | 200 | 133 | 120 | 160 | 305 | 365 | 315 | 400 | 318 | 388 | 19 | 19 |
| F2 | 100-400 | 22 | 180L | 125 | 100 | 140 | 245 | 519 | 904 | 635 | 280 | 355 | 180 | 121 | 150 | 200 | 279 | 343 | 400 | 500 | 279 | 344 | 19 | 15 |
| F2 | 100-400 | 30 | 200L | 125 | 100 | 140 | 245 | 555 | 940 | 635 | 280 | 355 | 200 | 133 | 150 | 200 | 305 | 365 | 400 | 500 | 318 | 388 | 19 | 19 |
| F2 | 100-400 | 37 | 225M | 125 | 100 | 140 | 305 | 625 | 1070 | 635 | 280 | 355 | 200 | 133 | 150 | 200 | 305 | 365 | 400 | 500 | 318 | 388 | 19 | 19 |
| F2 | 100-400 | 45 | 225M | 125 | 100 | 140 | 305 | 625 | 1070 | 635 | 280 | 355 | 225 | 149 | 150 | 200 | 311 | 383 | 400 | 500 | 356 | 442 | 19 | 19 |
| F2 | 100-400 | 55 | 250M | 125 | 100 | 140 | 305 | 746 | 1195 | 635 | 280 | 355 | 250 | 168 | 150 | 200 | 349 | 421 | 400 | 500 | 406 | 506 | 19 | 24 |
| F2 | 100-400 | 75 | 280M | 125 | 100 | 140 | 305 | 885 | 1330 | 635 | 280 | 355 | 280 | 190 | 150 | 200 | 419 | 498 | 400 | 500 | 457 | 554 | 19 | 24 |
| F2 | 100-400 | 90 | 280M | 125 | 100 | 140 | 305 | 885 | 1330 | 635 | 280 | 355 | 280 | 190 | 150 | 200 | 419 | 498 | 400 | 500 | 457 | 554 | 19 | 24 |
| F1 | 125-200 | 7,5 | 132M | 150 | 125 | 140 | 214 | 396 | 750 | 565 | 250 | 315 | 132 | 89 | 120 | 160 | 178 | 218 | 315 | 400 | 216 | 252 | 19 | 12 |
| F1 | 125-200 | 11 | 160M | 150 | 125 | 140 | 244 | 466 | 850 | 565 | 250 | 315 | 160 | 108 | 120 | 160 | 254 | 311 | 315 | 400 | 254 | 298 | 19 | 15 |
| F2 | 125-250 | 15 | 160L | 150 | 125 | 140 | 244 | 466 | 850 | 605 | 250 | 355 | 160 | 108 | 120 | 160 | 254 | 311 | 315 | 400 | 254 | 298 | 19 | 15 |
| F2 | 125-250 | 18,5 | 180M | 150 | 125 | 140 | 244 | 519 | 903 | 605 | 250 | 355 | 180 | 121 | 120 | 160 | 279 | 343 | 315 | 400 | 279 | 344 | 19 | 15 |
| F2 | 125-250 | 22 | 180L | 150 | 125 | 140 | 244 | 519 | 903 | 605 | 250 | 355 | 180 | 121 | 120 | 160 | 279 | 343 | 315 | 400 | 279 | 344 | 19 | 15 |
| F1 | 125-315 | 11 | 160M | 150 | 125 | 140 | 256 | 466 | 862 | 635 | 280 | 355 | 160 | 108 | 150 | 220 | 254 | 311 | 400 | 500 | 254 | 298 | 23 | 15 |
| F1 | 125-315 | 15 | 160L | 150 | 125 | 140 | 256 | 466 | 862 | 635 | 280 | 355 | 160 | 108 | 150 | 220 | 254 | 311 | 400 | 500 | 254 | 298 | 23 | 15 |
| F1 | 125-315 | 18,5 | 180M | 150 | 125 | 140 | 256 | 519 | 915 | 635 | 280 | 355 | 180 | 121 | 150 | 220 | 279 | 343 | 400 | 500 | 279 | 344 | 23 | 15 |
| F1 | 125-315 | 22 | 180L | 150 | 125 | 140 | 256 | 519 | 915 | 635 | 280 | 355 | 180 | 121 | 150 | 220 | 279 | 343 | 400 | 500 | 279 | 344 | 23 | 15 |
| F1 | 125-315 | 30 | 200L | 150 | 125 | 140 | 256 | 555 | 951 | 635 | 280 | 355 | 200 | 133 | 150 | 220 | 305 | 365 | 400 | 500 | 318 | 388 | 23 | 19 |
| F1 | 125-315 | 37 | 225M | 150 | 125 | 140 | 316 | 625 | 1081 | 635 | 280 | 355 | 225 | 149 | 150 | 220 | 305 | 365 | 400 | 500 | 356 | 442 | 23 | 19 |
| F1 | 125-315 | 45 | 225M | 150 | 125 | 140 | 316 | 625 | 1081 | 635 | 280 | 355 | 225 | 149 | 150 | 220 | 305 | 365 | 400 | 500 | 356 | 442 | 23 | 19 |
| F2 | 125-400 | 37 | 225M | 150 | 125 | 140 | 316 | 625 | 1081 | 715 | 315 | 400 | 225 | 149 | 150 | 200 | 311 | 383 | 400 | 500 | 356 | 442 | 23 | 19 |
| F2 | 125-400 | 45 | 225M | 150 | 125 | 140 | 316 | 625 | 1081 | 715 | 315 | 400 | 225 | 149 | 150 | 200 | 311 | 383 | 400 | 500 | 356 | 442 | 23 | 19 |
| F2 | 125-400 | 55 | 250M | 150 | 125 | 140 | 316 | 753 | 1209 | 715 | 315 | 400 | 250 | 168 | 150 | 200 | 349 | 409 | 400 | 500 | 406 | 506 | 23 | 24 |
| F2 | 125-400 | 75 | 280M | 150 | 125 | 140 | 316 | 869 | 1325 | 715 | 315 | 400 | 280 | 180 | 150 | 200 | 419 | 501 | 400 | 500 | 457 | 554 | 23 | 24 |
| F2 | 125-400 | 90 | 280M | 150 | 125 | 140 | 316 | 869 | 1325 | 715 | 315 | 400 | 280 | 180 | 150 | 200 | 419 | 501 | 400 | 500 | 457 | 554 | 23 | 24 |
| F1 | 150-200 | 11 | 160M | 200 | 150 | 160 | 244 | 466 | 870 | 635 | 280 | 355 | 160 | 108 | 150 | 200 | 254 | 311 | 400 | 500 | 254 | 298 | 23 | 15 |
| F1 | 150-200 | 15 | 160L | 200 | 150 | 160 | 244 | 466 | 870 | 635 | 280 | 355 | 160 | 108 | 150 | 200 | 254 | 311 | 400 | 500 | 254 | 298 | 23 | 15 |
| F2 | 150-250 | 15 | 160L | 200 | 150 | 160 | 244 | 466 | 870 | 655 | 280 | 375 | 160 | 108 | 150 | 200 | 254 | 311 | 400 | 500 | 254 | 298 | 23 | 15 |
| F2 | 150-250 | 18,5 | 180M | 200 | 150 | 160 | 244 | 519 | 923 | 655 | 280 | 375 | 180 | 121 | 150 | 200 | 279 | 343 | 400 | 500 | 279 | 344 | 23 | 15 |
| F2 | 150-250 | 22 | 180L | 200 | 150 | 160 | 244 | 519 | 923 | 655 | 280 | 375 | 180 | 121 | 150 | 200 | 279 | 343 | 400 | 500 | 279 | 344 | 23 | 15 |
| F2 | 150-250 | 30 | 200L | 200 | 150 | 160 | 246 | 555 | 961 | 655 | 280 | 375 | 200 | 133 | 150 | 200 | 305 | 365 | 400 | 500 | 318 | 388 | 23 | 19 |
| F1 | 150-315 | 18,5 | 180M | 200 | 150 | 160 | 258 | 753 | 1229 | 680 | 280 | 400 | 180 | 168 | 150 | 200 | 349 | 409 | 450 | 550 | 279 | 344 | 23 | 24 |
| F1 | 150-315 | 22 | 180L | 200 | 150 | 160 | 258 | 753 | 1229 | 680 | 280 | 400 | 180 | 168 | 150 | 200 | 349 | 409 | 450 | 550 | 279 | 344 | 23 | 24 |
| F1 | 150-315 | 30 | 200L | 200 | 150 | 160 | 258 | 555 | 971 | 680 | 280 | 400 | 200 | 133 | 150 | 200 | 305 | 365 | 450 | 550 | 318 | 388 | 23 | 19 |
| F1 | 150-315 | 37 | 225M | 200 | 150 | 160 | 318 | 625 | 1101 | 680 | 280 | 400 | 225 | 149 | 150 | 200 | 311 | 383 | 450 | 550 | 356 | 442 | 23 | 19 |
| F1 | 150-315 | 45 | 225M | 200 | 150 | 160 | 318 | 625 | 1101 | 680 | 280 | 400 | 225 | 149 | 150 | 200 | 311 | 383 | 450 | 550 | 356 | 442 | 23 | 19 |
| F1 | 150-315 | 55 | 250M | 200 | 150 | 160 | 318 | 753 | 1229 | 680 | 280 | 400 | 250 | 168 | 150 | 200 | 349 | 409 | 450 | 550 | 406 | 506 | 23 | 24 |
| F2 | 150-400 | 45 | 225M | 200 | 150 | 160 | 315 | 625 | 1101 | 765 | 315 | 450 | 225 | 149 | 150 | 200 | 311 | 383 | 450 | 550 | 356 | 442 | 23 | 19 |
| F2 | 150-400 | 55 | 250M | 200 | 150 | 160 | 315 | 746 | 1222 | 765 | 315 | 450 | 250 | 168 | 150 | 200 | 349 | 421 | 450 | 550 | 406 | 506 | 23 | 24 |
| F2 | 150-400 | 75 | 280M | 200 | 150 | 160 | 315 | 885 | 1361 | 765 | 315 | 450 | 280 | 190 | 150 | 200 | 419 | 498 | 450 | 550 | 457 | 554 | 23 | 24 |
| F2 | 150-400 | 90 | 280M | 200 | 150 | 160 | 315 | 885 | 1361 | 765 | 315 | 450 | 280 | 190 | 150 | 200 | 419 | 498 | 450 | 550 | 457 | 554 | 23 | 24 |

NOTE: Dimensions may change according to motor brand and rights reserved to change without notice.

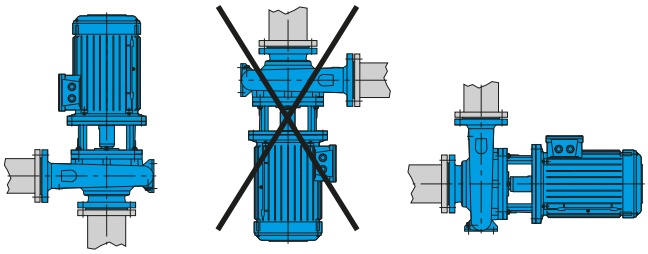
# Installation Arrangements

**ECO SNM / ECO SNM-V pumps can be installed in different arrangements**



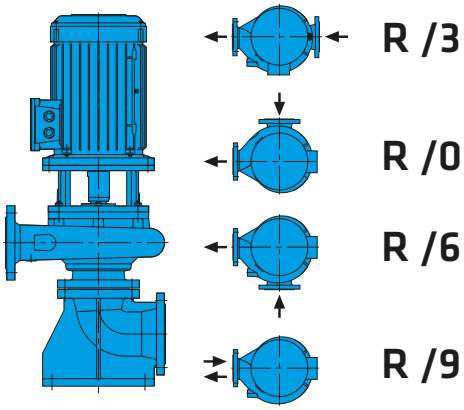
**Horizontal installation on ground**

Horizontal position on a base plate



Installation on perpendicular pipes

•Between two perpendicuar pipes in horizontal or vertical position. The axis of motor below the horizontal line is not admissible.




**R/3**

Suction Flange Position

Direction of Rotation (R)

Direction of rotation viewed from driver end: R : Right

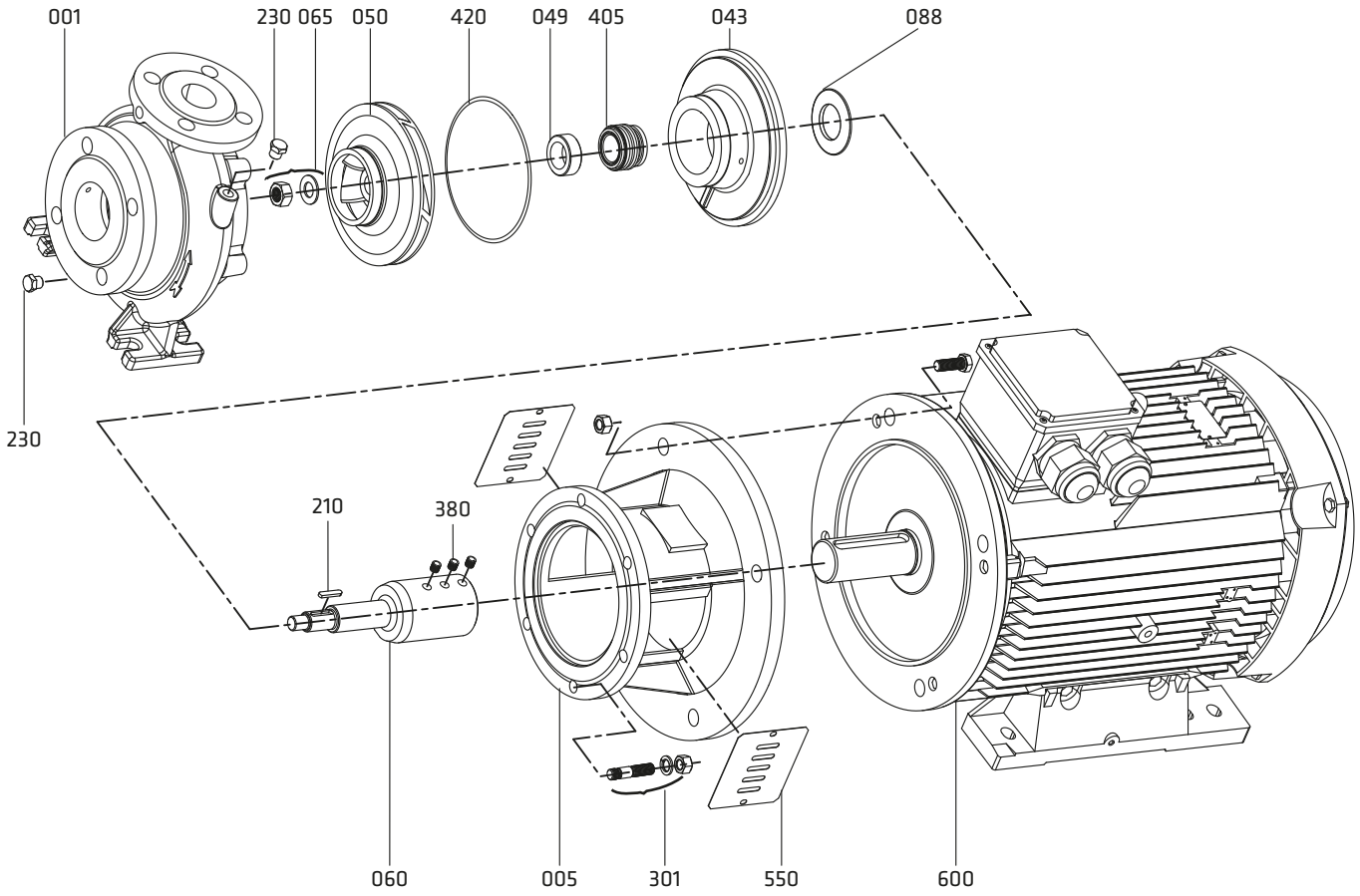
Veritical installation on ground

•Vertical position by means of a special suction elbow with foot.

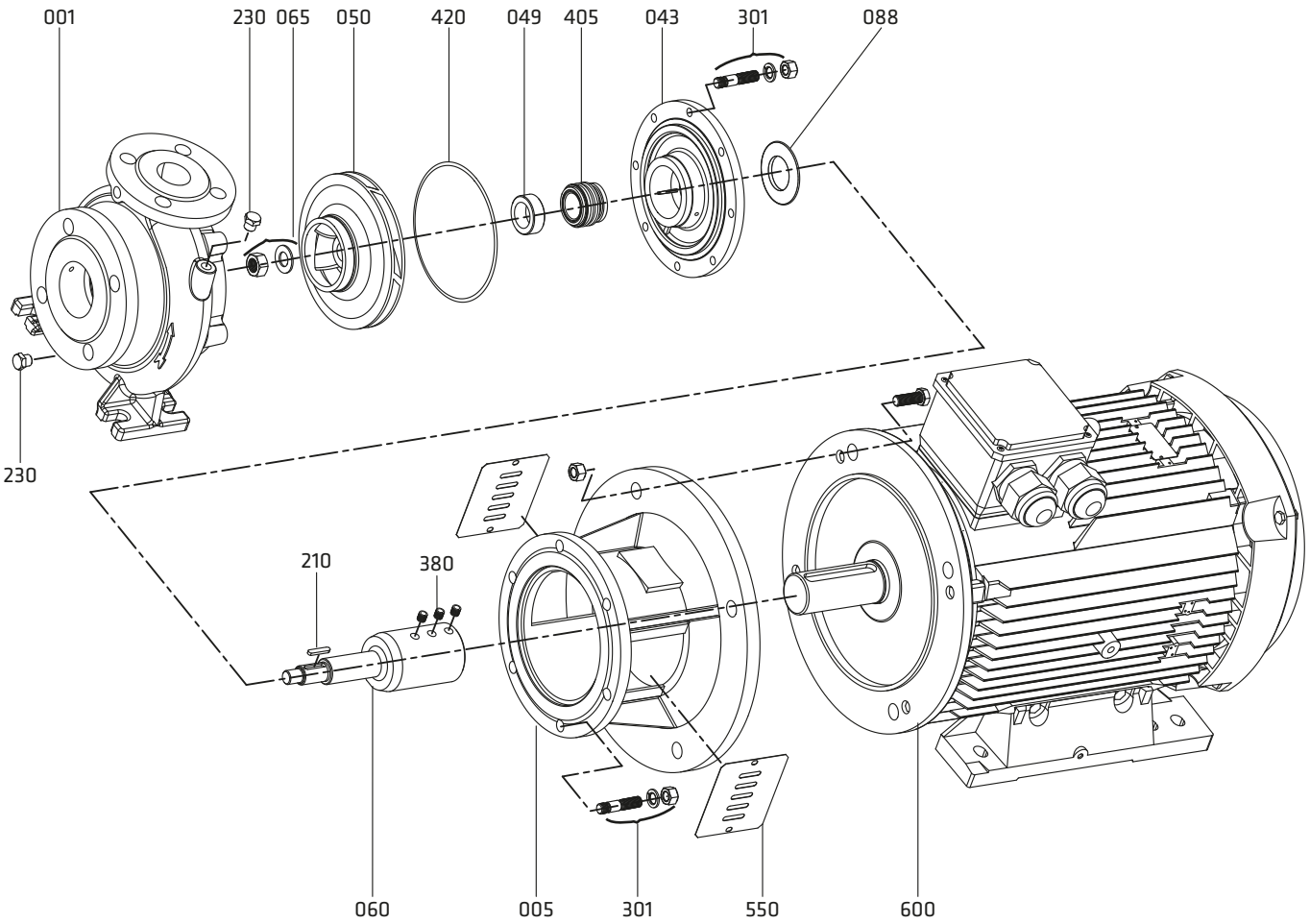
•Standard manufacturing is as in the drawings above (R/3). Suction elbow position can be adjusted for different positions.

# Assembly Drawings

## Form: F1 (Slide - fit shaft application)

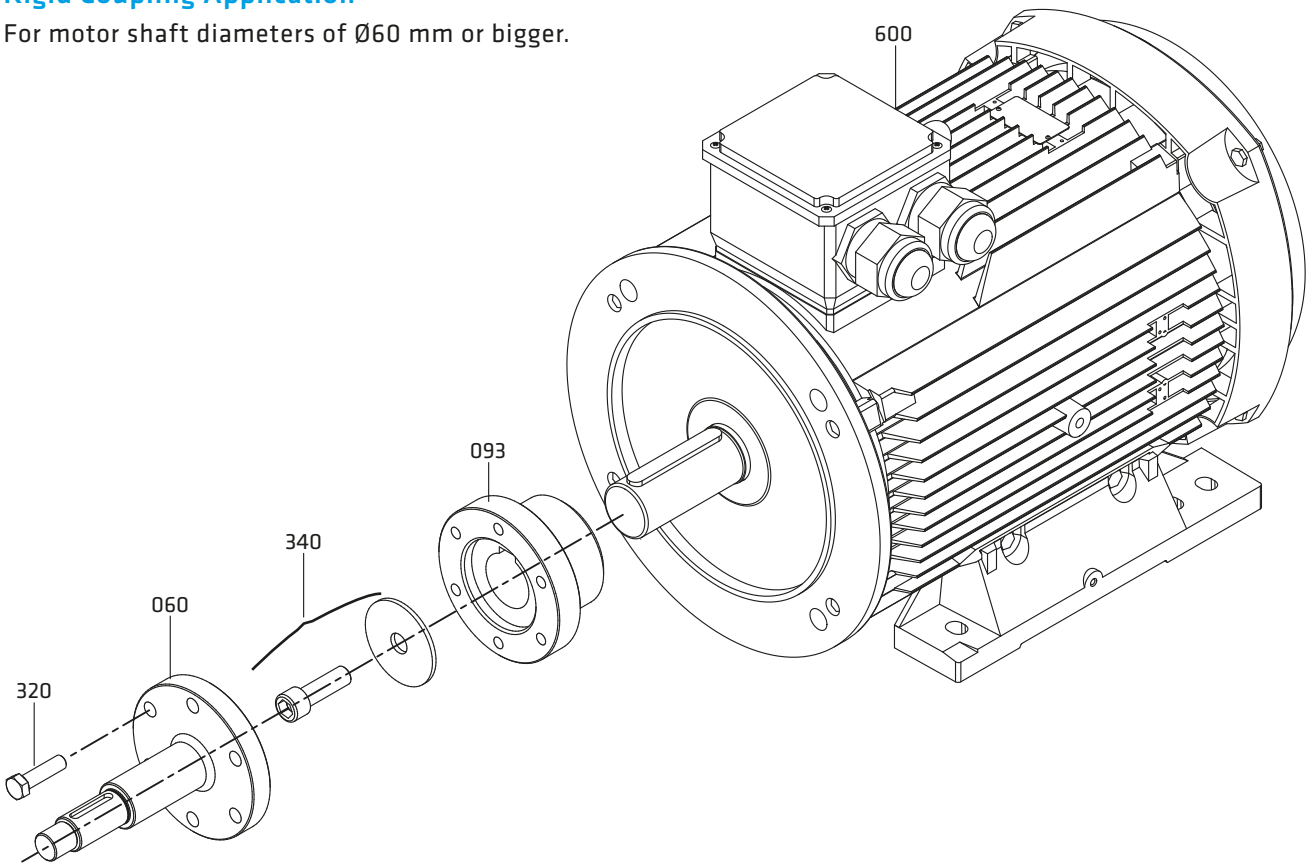


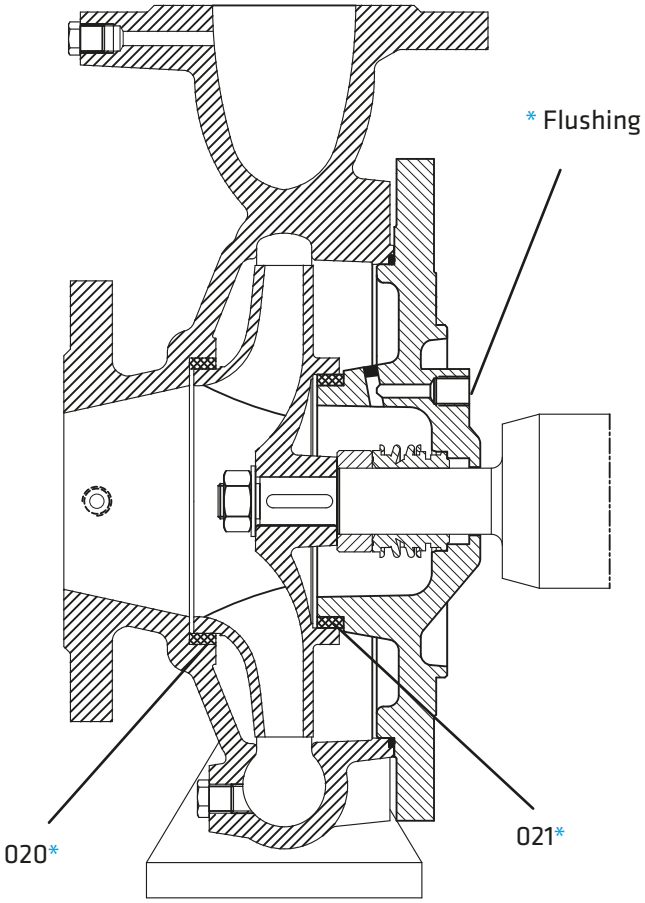

## Form: F2 (Slide - fit shaft application)



## Rigid Coupling Application

For motor shaft diameters of Ø60 mm or bigger.




## Part List

| | |
|---|---|
| 001 | Volute Casing |
| 005 | Motor Pedestal |
| 020* | Wear Ring (casing) |
| 021* | Wear Ring (seal cover) |
| 043 | Mechanical Seal Cover |
| 049 | Mechanical Seal Spacer Sleeve |
| 050 | Impeller |
| 060 | Shaft |
| 065 | Impeller Nut and Washer |
| 088 | Thrower |
| 093 | Rigid Coupling |
| 210 | Impeller Key |
| 230 | Screw |
| 301 | Stud, Washer and Nut |
| 320 | Screw |
| 340 | Allien Screw and Washer |
| 380 | Set Screw |
| 405 | Mechanical Seal |
| 420 | O-ring |
| 550 | Guard |
| 600 | Electric Motor |

(*) Optional

## Material Option

# ECO SNM

| Part List | 10 | 30 | 3S | 20 | 60 | 6L | 70 | 7L | 8M | 7D | 7S | 8N | 80 | 4C | 4A | 40 | 80 | 8T | 60 | 7L | 7E | 7D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.6025 | 0.7040 | 0.7043 | 1.0619 | 1.4308 | 1.4309 | 1.4408 | 1.4409 | 1.4500 | 1.4517 | 1.4469 | 1.4317 | 1.4008 | 2.1050.01 | 2.0975.01 | 2.1096.01 | 1.4021 | 1.4021+QT | 1.4301 | 1.4404 | 1.4460 | 1.4462 |
| Volute Casing | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | |
| Mechanical Seal Cover | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | |
| Impeller | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | ○ | |
| Shaft | | | | | | | | | | | | | | | | | ● | ○ | ○ | ○ | | ○ |
| Bearing Housing | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | |
| Wear Ring | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | |
| Mech. Seal Spacer Sleeve | | | | | | | | | | | | | | | | | ● | ○ | ○ | ○ | | ○ |
| Mechanical Seal (*) | EN 12756 | | | | | | | | | | | | | | | | | | | | | |

(*) Optional :Depending on customer requirement or request different types and brands of mechanical seals are applicable.

NOTE: Depends on the request, different than above casting and shaft material can be supplied.

● Standard manufacturing
○ Optional

## Material Equivalents

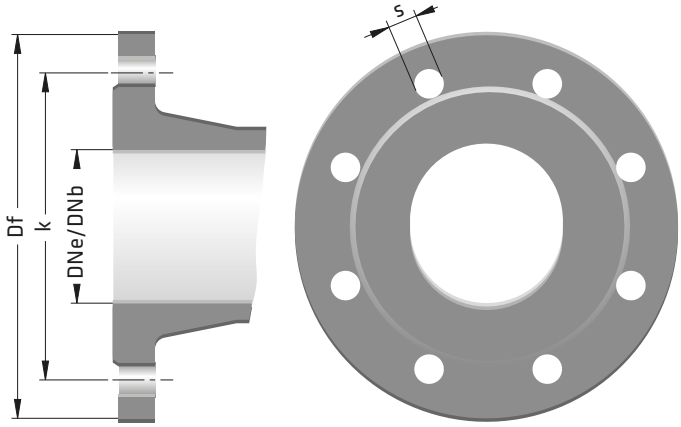
| Description | DIN / EN | | AISI / SAE / ASTM |
|---|---|---|---|
| Cast Iron | 0.6025 | EN-GJL-250 (GG25) | A48 Class 40B |
| Nodular Cast Iron | 0.7040 | EN-GJS-400-15 (GGG40) | A536 60-40-18 |
| Nodular Cast Iron | 0.7043 | EN-GJS-400-18-LT (GGG40.3) | A536 60-40-18 |
| Cast Steel | 1.0619 | GP240GHGS-C25 | A216 WCB |
| Chrome Nickel Cast Steel | 1.4308 | GX5CrNi19-10 | A351 CF8 |
| Chrome Nickel Cast Steel (low carbon) | 1.4309 | GX2CrNi19-11 | A351 CF3 |
| Chrome Nickel Molybdenum Cast Steel | 1.4408 | GX5CrNiMo19-11-2 | A351 CF8M |
| Chrome Nickel Molybdenum Cast Steel (low carbon) | 1.4409 | GX2CrNiMo19-11-2 | A351 CF3M |
| Austenitic Cast Steel | 1.4500 | GX7NiCrMoCuNb25-20 | A351 CN7M |
| Austenitic - Ferritic Cast Steel (duplex) | 1.4517 | GX2CrNiMoCuN25-6-3-3 | A890 CD4MCuN |
| Austenitic - Ferritic Cast Steel (super duplex) | 1.4469 | GX2CrNiMoN26-7-4 | A890 CE3MN |
| Martenzitic Stainless Cast Steel | 1.4317 | GX4CrNi13-4 | A352 CA6NM |
| Martenzitic Stainless Cast Steel | 1.4008 | GX7CrNiMo12-1 | A217 CA15 |
| Cast Bronze (tin alloy) | 2.1050.01 | G-CuSn10 | B427 C90700 |
| Cast Bronze (nickel alloy) | 2.0975.01 | G-CuAl10Ni | B148 C95500 |
| Cast Bronze (Leaded) | 2.1096.01 | G-CuSn5ZnPb | B584 C83600 |
| Chrome Steel | 1.4021 | X20Cr13 | A276 Type 420 |
| Chrome Steel(heat treated) | 1.4021 | X20Cr13 | A276 Type 420+QT |
| Chrome Nickel Steel | 1.4301 | X5CrNi18-10 | A276 Type 304 |
| Chrome Nickel Steel (low carbon) | 1.4404 | X2CrNiMo17-12-2 | A276 Type 316L |
| Duplex (austenitic-ferritic) Steel | 1.4460 | X3CrNiMoN27-5-2 | AISI 329 |
| Duplex (austenitic-ferritic) Steel | 1.4462 | X2CrNiMoN22-5-3 | UNS S32205 |

## Flange Dimensions

EN 1092 - 2

| DNe/DNb | Suction & Discharge (PN 16) | | | |
|---|---|---|---|---|
| | Df | k | s | n |
| 32 | 140 | 100 | 19 | 4 |
| 40 | 150 | 110 | 19 | 4 |
| 50 | 165 | 125 | 19 | 4 |
| 65 | 185 | 145 | 19 | 4 |
| 80 | 200 | 160 | 19 | 8 |
| 100 | 220 | 180 | 19 | 8 |
| 125 | 250 | 210 | 19 | 8 |
| 150 | 285 | 240 | 23 | 8 |
| 200 | 340 | 295 | 23 | 12 |

" n " number of holes



Standart

Pump • Fire Fighting Units • Booster Set

# ECO SNL

## IN-LINE PUMPS

ECO SNL Rev.11 09.2021

## Handled Liquids

Clean or slightly contaminated low viscosity liquids without solid & fibrous particles.

## Technical Data

Discharge Flange_____DN 40.....DN 200 mm

Capacity_____up to 850 $m^3/h$(*)

Head_____up to 100 m(*)

Speed_____up to 3600 rpm(*)

Design Temperature_____-10 °C' to +140 °C(**)

Casing Pressure (Pmax)_____10 bar (16 bar)(**)

(Pmax: Suction Pressure + Shut off Head)

(*) Contact company for higher capacity and head values.
(**) The Material of pump differs according to the type of pumped liquid, operating temperature and pressure. Contact for detailed information.

## Design Features

•In-line, closed-coupled, volute casing, single stage centrifugal pump with closed impeller.

•Complies EU547/2012 regulations.

•Suction and discharge flanges conform to EN 1092-2 / PN 16. The flanges are according to EN 1092-1 / PN 16 for steel or stainless steel casing. In case of request, ANSI/ASME flanges can be supplied.

•Pumps are closed coupled with electric motors of IEC frame sizes with high efficiency class.

•All impellers are balanced dynamically or statically according to ISO 1940 grade 6.3.

•Axial thrust is balanced by impeller balancing holes system.

•Direction of rotation is clockwise viewed from drive end.

•In case of request, wear ring can be supplied.

•The pump and motor have separate shafts connected by a rigid coupling or through slide fit shaft. Axial and radial forces are absorbed by electric motor bearings.

•For ECO SNL drawings, please look at below adress **www.standartpompa.com**.

## Shaft Sealing

•Different mechanical seals are available according to customer request or liquid type.

## Pump Designation

**ECO SNL 100 - 250 - XXX**

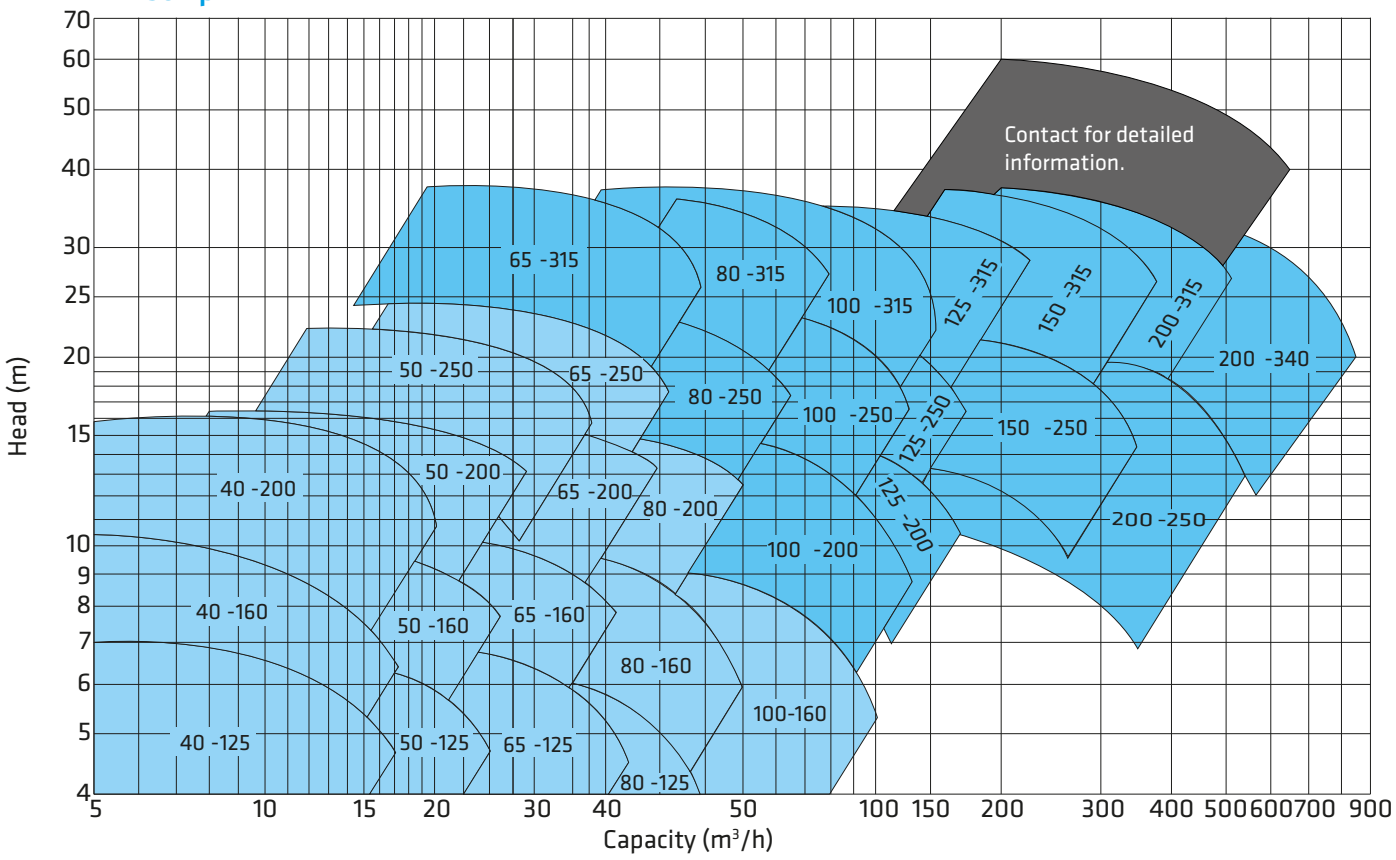
**Pump Type**

**Suction and Discharge Nozzle (DN-mm)**

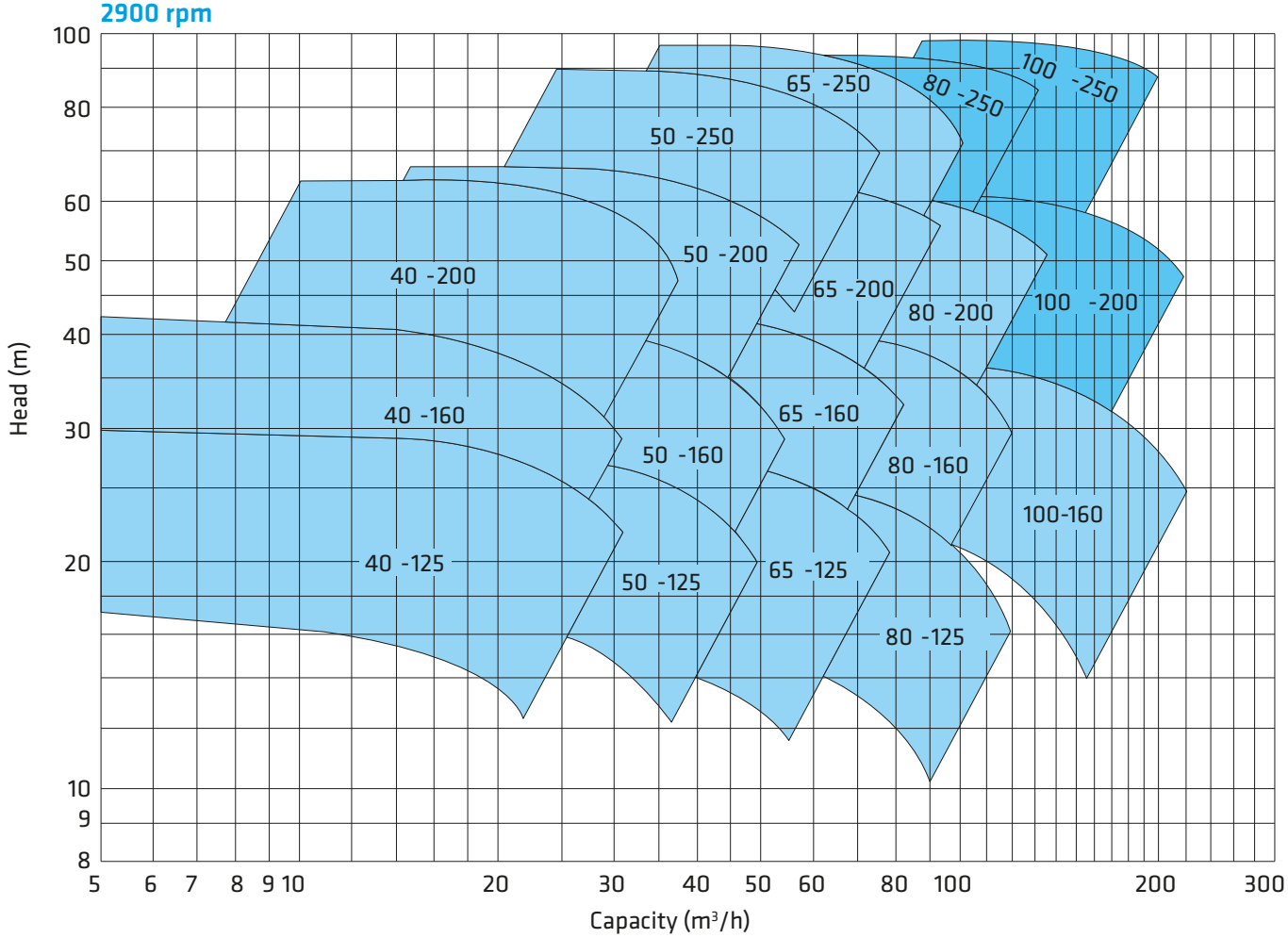
**Nominal Impeller Diameter (mm)**

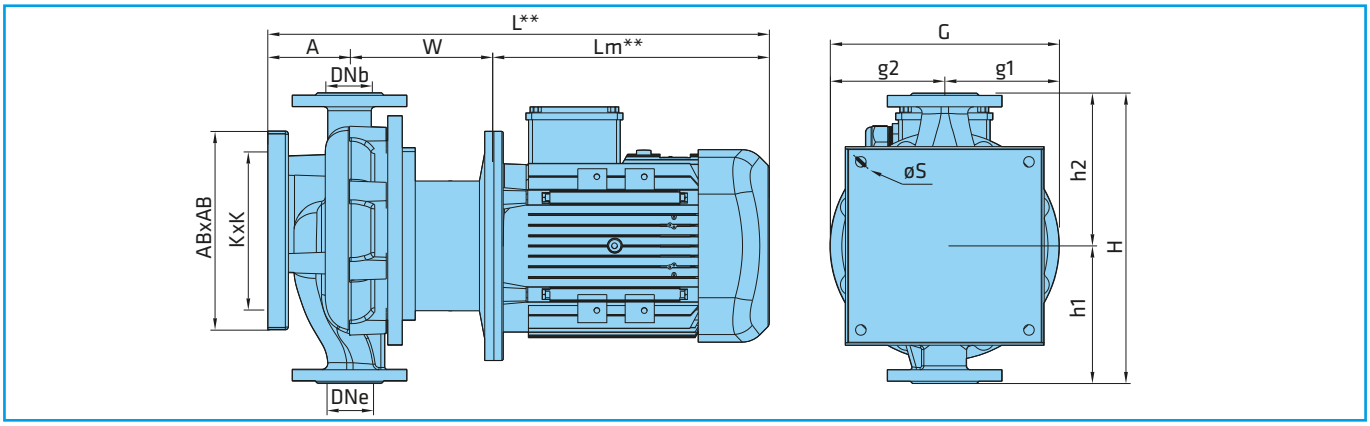
**Special Application**

## 1450 rpm




## 2900 rpm






** Ölçüler motor üreticisine göre değişkenlik gösterebilir.

## 2900 rpm ( 2 Pole Motor)

| FORM | Pump Type | MOTOR | | DNe DNb | ECO SNL DIMENSIONS (mm) | | | | | | | | | | | | | Bottom Plate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | kW | IEC | mm | A | W | Lm** | L** | H | h1 | h2 | G | g1 | g2 | ABxAB | KxK | øS | (*) |
| F1 | 40-125 | 1,5 | 90L | 50 | 109 | 156 | 267 | 532 | 300 | 140 | 160 | 210 | 110 | 100 | 170 | 130 | 14 | T0 |
| F1 | 40-125 | 2,2 | 90L | 50 | 109 | 156 | 267 | 532 | 300 | 140 | 160 | 210 | 110 | 100 | 170 | 130 | 14 | T0 |
| F1 | 40-125 | 3 | 100L | 50 | 109 | 179 | 292 | 580 | 300 | 140 | 160 | 210 | 110 | 100 | 200 | 160 | 14 | T1 |
| F1 | 40-125 | 4 | 112M | 50 | 109 | 179 | 336 | 624 | 300 | 140 | 160 | 210 | 110 | 100 | 200 | 160 | 14 | T1 |
| F1 | 40-160 | 2,2 | 90L | 50 | 103 | 156 | 267 | 526 | 340 | 160 | 180 | 245 | 130 | 115 | 170 | 130 | 14 | T0 |
| F1 | 40-160 | 3 | 100L | 50 | 103 | 179 | 292 | 574 | 340 | 160 | 180 | 245 | 130 | 115 | 200 | 160 | 14 | T1 |
| F1 | 40-160 | 4 | 112M | 50 | 103 | 179 | 336 | 618 | 340 | 160 | 180 | 245 | 130 | 115 | 200 | 160 | 14 | T1 |
| F1 | 40-160 | 5,5 | 132S | 50 | 103 | 189 | 361 | 652 | 340 | 160 | 180 | 245 | 130 | 115 | 200 | 160 | 14 | T1 |
| F2 | 40-200 | 5,5 | 132S | 50 | 107 | 189 | 361 | 657 | 380 | 180 | 200 | 275 | 140 | 135 | 260 | 220 | 14 | T2 |
| F2 | 40-200 | 7,5 | 132M | 50 | 107 | 189 | 396 | 692 | 380 | 180 | 200 | 275 | 140 | 135 | 260 | 220 | 14 | T2 |
| F2 | 40-200 | 11 | 160M | 50 | 107 | 226 | 466 | 799 | 380 | 180 | 200 | 275 | 140 | 135 | 260 | 220 | 14 | T2 |
| F1 | 50-125 | 2,2 | 90L | 50 | 133 | 156 | 267 | 556 | 360 | 160 | 200 | 220 | 120 | 100 | 200 | 160 | 14 | T1 |
| F1 | 50-125 | 3 | 100L | 50 | 133 | 179 | 292 | 604 | 360 | 160 | 200 | 220 | 120 | 100 | 200 | 160 | 14 | T1 |
| F1 | 50-125 | 4 | 112M | 50 | 133 | 179 | 335 | 647 | 360 | 160 | 200 | 220 | 120 | 100 | 200 | 160 | 14 | T1 |
| F1 | 50-125 | 5,5 | 132S | 50 | 133 | 189 | 361 | 683 | 360 | 160 | 200 | 220 | 120 | 100 | 200 | 160 | 14 | T1 |
| F1 | 50-160 | 4 | 112M | 50 | 138 | 179 | 336 | 653 | 340 | 160 | 180 | 255 | 135 | 120 | 200 | 160 | 14 | T1 |
| F1 | 50-160 | 5,5 | 132S | 65 | 138 | 189 | 361 | 687 | 340 | 160 | 180 | 255 | 135 | 120 | 200 | 160 | 14 | T1 |
| F1 | 50-160 | 7,5 | 132M | 65 | 138 | 189 | 396 | 723 | 340 | 160 | 180 | 255 | 135 | 120 | 200 | 160 | 14 | T1 |
| F2 | 50-200 | 7,5 | 132M | 65 | 122 | 189 | 396 | 707 | 425 | 200 | 225 | 280 | 145 | 135 | 260 | 220 | 14 | T2 |
| F2 | 50-200 | 11 | 160M | 65 | 122 | 226 | 466 | 814 | 425 | 200 | 225 | 280 | 145 | 135 | 260 | 220 | 14 | T2 |
| F2 | 50-200 | 15 | 160L | 65 | 122 | 226 | 466 | 814 | 425 | 200 | 225 | 280 | 145 | 135 | 260 | 220 | 14 | T2 |
| F2 | 50-200 | 18,5 | 160L | 65 | 122 | 226 | 466 | 814 | 425 | 200 | 225 | 280 | 145 | 135 | 260 | 220 | 14 | T2 |
| F2 | 50-250 | 15 | 160L | 65 | 117 | 226 | 466 | 809 | 475 | 225 | 250 | 340 | 175 | 165 | 260 | 220 | 14 | T2 |
| F2 | 50-250 | 18,5 | 160L | 65 | 117 | 226 | 466 | 809 | 475 | 225 | 250 | 340 | 175 | 165 | 260 | 220 | 14 | T2 |
| F2 | 50-250 | 22 | 180M | 65 | 117 | 226 | 519 | 862 | 475 | 225 | 250 | 340 | 175 | 165 | 260 | 220 | 14 | T2 |
| F2 | 50-250 | 30 | 200L | 65 | 124 | 226 | 555 | 905 | 475 | 225 | 250 | 340 | 175 | 165 | 320 | 270 | 18 | T3 |
| F1 | 65-125 | 3 | 100L | 65 | 163 | 179 | 292 | 634 | 340 | 160 | 180 | 250 | 140 | 110 | 200 | 160 | 14 | T1 |
| F1 | 65-125 | 4 | 112M | 65 | 163 | 179 | 336 | 678 | 340 | 160 | 180 | 250 | 140 | 110 | 200 | 160 | 14 | T1 |
| F1 | 65-125 | 5,5 | 132S | 65 | 163 | 189 | 361 | 712 | 340 | 160 | 180 | 250 | 140 | 110 | 200 | 160 | 14 | T1 |
| F1 | 65-125 | 7,5 | 132M | 65 | 163 | 189 | 396 | 748 | 340 | 160 | 180 | 250 | 140 | 110 | 200 | 160 | 14 | T1 |
| F1 | 65-160 | 5,5 | 132S | 65 | 147 | 189 | 361 | 696 | 380 | 180 | 200 | 280 | 150 | 130 | 260 | 220 | 14 | T2 |
| F1 | 65-160 | 7,5 | 132M | 65 | 147 | 189 | 396 | 732 | 380 | 180 | 200 | 280 | 150 | 130 | 260 | 220 | 14 | T2 |
| F1 | 65-160 | 11 | 160M | 65 | 147 | 226 | 466 | 839 | 380 | 180 | 200 | 280 | 150 | 130 | 260 | 220 | 14 | T2 |
| F1 | 65-160 | 15 | 160L | 65 | 147 | 226 | 466 | 839 | 380 | 180 | 200 | 280 | 150 | 130 | 260 | 220 | 14 | T2 |
| F2 | 65-200 | 11 | 160M | 65 | 132 | 226 | 466 | 824 | 475 | 225 | 250 | 300 | 155 | 145 | 260 | 220 | 14 | T2 |
| F2 | 65-200 | 15 | 160L | 65 | 132 | 226 | 466 | 824 | 475 | 225 | 250 | 300 | 155 | 145 | 260 | 220 | 14 | T2 |
| F2 | 65-200 | 18,5 | 160L | 65 | 132 | 226 | 466 | 824 | 475 | 225 | 250 | 300 | 155 | 145 | 260 | 220 | 14 | T2 |
| F2 | 65-200 | 22 | 180M | 65 | 132 | 226 | 519 | 877 | 475 | 225 | 250 | 300 | 155 | 145 | 260 | 220 | 14 | T2 |
| F2 | 65-250 | 18,5 | 160L | 65 | 132 | 226 | 466 | 824 | 475 | 225 | 250 | 345 | 180 | 165 | 260 | 220 | 14 | T2 |
| F2 | 65-250 | 22 | 180M | 65 | 132 | 226 | 519 | 877 | 475 | 225 | 250 | 345 | 180 | 165 | 260 | 220 | 14 | T2 |
| F2 | 65-250 | 30 | 200L | 65 | 139 | 226 | 555 | 920 | 475 | 225 | 250 | 345 | 180 | 165 | 320 | 270 | 18 | T3 |
| F2 | 65-250 | 37 | 200L | 65 | 139 | 226 | 555 | 920 | 475 | 225 | 250 | 345 | 180 | 165 | 320 | 270 | 18 | T3 |
| F1 | 80-125 | 4 | 112M | 80 | 172 | 179 | 336 | 687 | 400 | 180 | 220 | 280 | 160 | 120 | 260 | 220 | 14 | T2 |
| F1 | 80-125 | 5,5 | 132S | 80 | 172 | 179 | 361 | 712 | 400 | 180 | 220 | 280 | 160 | 120 | 260 | 220 | 14 | T2 |
| F1 | 80-125 | 7,5 | 132M | 80 | 172 | 179 | 396 | 748 | 400 | 180 | 220 | 280 | 160 | 120 | 260 | 220 | 14 | T2 |
| F1 | 80-125 | 11 | 160M | 80 | 172 | 217 | 466 | 855 | 400 | 180 | 220 | 280 | 160 | 120 | 260 | 220 | 14 | T2 |
| F1 | 80-160 | 7,5 | 132M | 80 | 162 | 189 | 396 | 748 | 425 | 200 | 225 | 295 | 160 | 135 | 260 | 220 | 14 | T2 |
| F1 | 80-160 | 11 | 160M | 80 | 162 | 226 | 466 | 854 | 425 | 200 | 225 | 295 | 160 | 135 | 260 | 220 | 14 | T2 |
| F1 | 80-160 | 15 | 160L | 80 | 162 | 226 | 466 | 854 | 425 | 200 | 225 | 295 | 160 | 135 | 260 | 220 | 14 | T2 |
| F2 | 80-200 | 15 | 160L | 80 | 152 | 226 | 466 | 844 | 475 | 225 | 250 | 315 | 170 | 145 | 260 | 220 | 14 | T2 |
| F2 | 80-200 | 18,5 | 160L | 80 | 152 | 226 | 466 | 844 | 475 | 225 | 250 | 315 | 170 | 145 | 260 | 220 | 14 | T2 |
| F2 | 80-200 | 22 | 180M | 80 | 152 | 226 | 519 | 897 | 475 | 225 | 250 | 315 | 170 | 145 | 260 | 220 | 14 | T2 |
| F2 | 80-200 | 30 | 200L | 80 | 159 | 226 | 555 | 940 | 475 | 225 | 250 | 315 | 170 | 145 | 320 | 270 | 18 | T3 |

## 2900 rpm ( 2 Pole Motor)

| FORM | Pump Type | MOTOR | | DNe DNb | ECO SNL DIMENSIONS (mm) | | | | | | | | | | | | | Bottom Plate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | kW | IEC | mm | A | W | Lm* | L* | H | h1 | h2 | G | g1 | g2 | ABxAB | KxK | øS | (*) |
| F2 | 80-250 | 30 | 200L | 80 | 184 | 246 | 555 | 985 | 560 | 280 | 280 | 375 | 195 | 180 | 320 | 270 | 18 | T3 |
| F2 | 80-250 | 37 | 200L | 80 | 184 | 246 | 555 | 985 | 560 | 280 | 280 | 375 | 195 | 180 | 320 | 270 | 18 | T3 |
| F2 | 80-250 | 45 | 225M | 80 | 184 | 248 | 625 | 1057 | 560 | 280 | 280 | 375 | 195 | 180 | 320 | 270 | 18 | T3 |
| F2 | 80-250 | 55 | 250M | 80 | 189 | 294 | 746 | 1236 | 560 | 280 | 280 | 375 | 195 | 180 | 400 | 350 | 18 | T4 |
| F1 | 100-160 | 11 | 160M | 100 | 224 | 226 | 466 | 916 | 475 | 175 | 300 | 370 | 200 | 170 | 320 | 270 | 18 | T3 |
| F1 | 100-160 | 15 | 160L | 100 | 224 | 226 | 466 | 916 | 475 | 175 | 300 | 370 | 200 | 170 | 320 | 270 | 18 | T3 |
| F1 | 100-160 | 18,5 | 160L | 100 | 224 | 226 | 466 | 916 | 475 | 175 | 300 | 370 | 200 | 170 | 320 | 270 | 18 | T3 |
| F1 | 100-160 | 22 | 180M | 100 | 224 | 226 | 519 | 969 | 475 | 175 | 300 | 370 | 200 | 170 | 320 | 270 | 18 | T3 |
| F1 | 100-160 | 30 | 200L | 100 | 224 | 226 | 555 | 1005 | 475 | 175 | 300 | 370 | 200 | 170 | 320 | 270 | 18 | T3 |
| F1 | 100-200 | 22 | 180M | 100 | 202 | 244 | 519 | 965 | 550 | 250 | 300 | 350 | 190 | 160 | 260 | 220 | 14 | T2 |
| F1 | 100-200 | 30 | 200L | 100 | 209 | 246 | 555 | 1010 | 550 | 250 | 300 | 350 | 190 | 160 | 320 | 270 | 18 | T3 |
| F1 | 100-200 | 37 | 200L | 100 | 209 | 246 | 555 | 1010 | 550 | 250 | 300 | 350 | 190 | 160 | 320 | 270 | 18 | T3 |
| F1 | 100-200 | 45 | 225M | 100 | 209 | 248 | 625 | 1082 | 550 | 250 | 300 | 350 | 190 | 160 | 320 | 270 | 18 | T3 |
| F2 | 100-250 | 37 | 200L | 100 | 204 | 246 | 555 | 1005 | 580 | 280 | 300 | 380 | 205 | 175 | 320 | 270 | 18 | T3 |
| F2 | 100-250 | 45 | 225M | 100 | 204 | 248 | 625 | 1077 | 580 | 280 | 300 | 380 | 205 | 175 | 320 | 270 | 18 | T3 |
| F2 | 100-250 | 55 | 250M | 100 | 209 | 294 | 754 | 1257 | 580 | 280 | 300 | 380 | 205 | 175 | 400 | 350 | 18 | T4 |
| F2 | 100-250 | 75 | 280M | 100 | 209 | 294 | 886 | 1389 | 580 | 280 | 300 | 380 | 205 | 175 | 400 | 350 | 18 | T4 |
| F2 | 100-250 | 90 | 280M | 100 | 209 | 294 | 886 | 1389 | 580 | 280 | 300 | 380 | 205 | 175 | 400 | 350 | 18 | T4 |

## 1450 rpm ( 4 Pole Motor)

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| F1 | 40-125 | 0,37 | 71M | 40 | 109 | 136 | 222 | 467 | 300 | 140 | 160 | 210 | 110 | 100 | 170 | 130 | 14 | T0 |
| F1 | 40-125 | 0,55 | 80M | 40 | 109 | 156 | 243 | 509 | 300 | 140 | 160 | 210 | 110 | 100 | 170 | 130 | 14 | T0 |
| F1 | 40-160 | 0,37 | 71M | 40 | 103 | 136 | 222 | 462 | 340 | 160 | 180 | 245 | 130 | 115 | 170 | 130 | 14 | T0 |
| F1 | 40-160 | 0,55 | 80M | 40 | 103 | 156 | 243 | 503 | 340 | 160 | 180 | 245 | 130 | 115 | 170 | 130 | 14 | T0 |
| F1 | 40-160 | 0,75 | 80M | 40 | 103 | 156 | 243 | 503 | 340 | 160 | 180 | 245 | 130 | 115 | 170 | 130 | 14 | T0 |
| F2 | 40-200 | 0,55 | 80M | 40 | 103 | 156 | 244 | 503 | 380 | 180 | 200 | 275 | 140 | 135 | 200 | 160 | 14 | T1 |
| F2 | 40-200 | 0,75 | 80M | 40 | 103 | 156 | 244 | 503 | 380 | 180 | 200 | 275 | 140 | 135 | 200 | 160 | 14 | T1 |
| F2 | 40-200 | 1,1 | 90L | 40 | 103 | 156 | 267 | 526 | 380 | 180 | 200 | 275 | 140 | 135 | 200 | 160 | 14 | T1 |
| F2 | 40-200 | 1,5 | 90L | 40 | 103 | 156 | 267 | 526 | 380 | 180 | 200 | 275 | 140 | 135 | 200 | 160 | 14 | T1 |
| F1 | 50-125 | 0,37 | 71M | 50 | 133 | 136 | 222 | 492 | 360 | 160 | 200 | 220 | 120 | 100 | 200 | 160 | 14 | T1 |
| F1 | 50-125 | 0,55 | 80M | 50 | 133 | 156 | 243 | 533 | 360 | 160 | 200 | 220 | 120 | 100 | 200 | 160 | 14 | T1 |
| F1 | 50-125 | 0,75 | 80M | 50 | 133 | 156 | 243 | 533 | 360 | 160 | 200 | 220 | 120 | 100 | 200 | 160 | 14 | T1 |
| F1 | 50-160 | 0,55 | 80M | 50 | 138 | 156 | 244 | 538 | 340 | 160 | 180 | 255 | 135 | 120 | 170 | 130 | 14 | T0 |
| F1 | 50-160 | 0,75 | 80M | 50 | 138 | 156 | 244 | 538 | 340 | 160 | 180 | 255 | 135 | 120 | 170 | 130 | 14 | T0 |
| F1 | 50-160 | 1,1 | 90L | 50 | 138 | 156 | 267 | 561 | 340 | 160 | 180 | 255 | 135 | 120 | 170 | 130 | 14 | T0 |
| F2 | 50-200 | 1,1 | 90L | 50 | 118 | 156 | 267 | 541 | 425 | 200 | 225 | 280 | 145 | 135 | 200 | 160 | 14 | T1 |
| F2 | 50-200 | 1,5 | 90L | 50 | 118 | 156 | 267 | 541 | 425 | 200 | 225 | 280 | 145 | 135 | 200 | 160 | 14 | T1 |
| F2 | 50-200 | 2,2 | 100L | 50 | 118 | 179 | 292 | 589 | 425 | 200 | 225 | 280 | 145 | 135 | 200 | 160 | 14 | T1 |
| F2 | 50-250 | 2,2 | 100L | 50 | 117 | 179 | 292 | 588 | 475 | 225 | 250 | 340 | 175 | 165 | 260 | 220 | 14 | T2 |
| F2 | 50-250 | 3 | 100L | 50 | 117 | 179 | 292 | 588 | 475 | 225 | 250 | 340 | 175 | 165 | 260 | 220 | 14 | T2 |
| F2 | 50-250 | 4 | 112M | 50 | 117 | 179 | 336 | 632 | 475 | 225 | 250 | 340 | 175 | 165 | 260 | 220 | 14 | T2 |
| F1 | 65-125 | 0,37 | 71M | 65 | 163 | 136 | 222 | 522 | 340 | 160 | 180 | 140 | 110 | 140 | 200 | 160 | 14 | T1 |
| F1 | 65-125 | 0,55 | 80M | 65 | 163 | 156 | 244 | 563 | 340 | 160 | 180 | 140 | 110 | 140 | 200 | 160 | 14 | T1 |
| F1 | 65-125 | 0,75 | 80M | 65 | 163 | 156 | 244 | 563 | 340 | 160 | 180 | 140 | 110 | 140 | 200 | 160 | 14 | T1 |
| F1 | 65-125 | 1,1 | 90L | 65 | 163 | 156 | 266 | 585 | 340 | 160 | 180 | 140 | 110 | 140 | 200 | 160 | 14 | T1 |
| F1 | 65-160 | 0,75 | 80M | 65 | 143 | 156 | 244 | 543 | 380 | 180 | 200 | 150 | 130 | 150 | 200 | 160 | 14 | T1 |
| F1 | 65-160 | 1,1 | 90L | 65 | 143 | 156 | 267 | 566 | 380 | 180 | 200 | 150 | 130 | 150 | 200 | 160 | 14 | T1 |
| F1 | 65-160 | 1,5 | 90L | 65 | 143 | 156 | 267 | 566 | 380 | 180 | 200 | 150 | 130 | 150 | 200 | 160 | 14 | T1 |
| F1 | 65-160 | 2,2 | 100L | 65 | 143 | 179 | 292 | 614 | 380 | 180 | 200 | 150 | 130 | 150 | 200 | 160 | 14 | T1 |
| F2 | 65-200 | 1,1 | 90L | 65 | 132 | 156 | 267 | 555 | 475 | 225 | 250 | 300 | 155 | 145 | 260 | 220 | 14 | T2 |
| F2 | 65-200 | 1,5 | 90L | 65 | 132 | 156 | 267 | 555 | 475 | 225 | 250 | 300 | 155 | 145 | 260 | 220 | 14 | T2 |
| F2 | 65-200 | 2,2 | 100L | 65 | 132 | 179 | 292 | 603 | 475 | 225 | 250 | 300 | 155 | 145 | 260 | 220 | 14 | T2 |
| F2 | 65-200 | 3 | 100L | 65 | 132 | 179 | 292 | 603 | 475 | 225 | 250 | 300 | 155 | 145 | 260 | 220 | 14 | T2 |
| F2 | 65-250 | 2,2 | 100L | 65 | 132 | 179 | 292 | 603 | 475 | 225 | 250 | 345 | 180 | 165 | 260 | 220 | 14 | T2 |
| F2 | 65-250 | 3 | 100L | 65 | 132 | 179 | 292 | 603 | 475 | 225 | 250 | 345 | 180 | 165 | 260 | 220 | 14 | T2 |
| F2 | 65-250 | 4 | 112M | 65 | 132 | 179 | 336 | 647 | 475 | 225 | 250 | 345 | 180 | 165 | 260 | 220 | 14 | T2 |
| F2 | 65-250 | 5,5 | 132M | 65 | 132 | 189 | 396 | 717 | 475 | 225 | 250 | 345 | 180 | 165 | 260 | 220 | 14 | T2 |
| F2 | 65-315 | 5,5 | 132M | 65 | 169 | 215 | 396 | 780 | 560 | 280 | 280 | 420 | 220 | 200 | 400 | 350 | 18 | T4 |
| F2 | 65-315 | 7,5 | 132M | 65 | 169 | 215 | 396 | 780 | 560 | 280 | 280 | 420 | 220 | 200 | 400 | 350 | 18 | T4 |
| F2 | 65-315 | 11 | 160M | 65 | 169 | 245 | 466 | 880 | 560 | 280 | 280 | 420 | 220 | 200 | 400 | 350 | 18 | T4 |
| F1 | 80-125 | 0,55 | 80M | 80 | 172 | 146 | 245 | 563 | 400 | 180 | 220 | 280 | 160 | 120 | 260 | 220 | 14 | T2 |
| F1 | 80-125 | 0,75 | 80M | 80 | 172 | 146 | 245 | 563 | 400 | 180 | 220 | 280 | 160 | 120 | 260 | 220 | 14 | T2 |
| F1 | 80-125 | 1,1 | 90L | 80 | 172 | 146 | 268 | 586 | 400 | 180 | 220 | 280 | 160 | 120 | 260 | 220 | 14 | T2 |
| F1 | 80-160 | 1,1 | 90L | 80 | 158 | 156 | 267 | 581 | 425 | 200 | 225 | 295 | 160 | 135 | 200 | 160 | 14 | T1 |
| F1 | 80-160 | 1,5 | 90L | 80 | 158 | 156 | 267 | 581 | 425 | 200 | 225 | 295 | 160 | 135 | 200 | 160 | 14 | T1 |
| F1 | 80-160 | 2,2 | 100L | 80 | 158 | 179 | 292 | 629 | 425 | 200 | 225 | 295 | 160 | 135 | 200 | 160 | 14 | T1 |
| F2 | 80-200 | 1,5 | 90L | 80 | 152 | 156 | 267 | 575 | 475 | 225 | 250 | 315 | 170 | 145 | 260 | 220 | 14 | T2 |
| F2 | 80-200 | 2,2 | 100L | 80 | 152 | 179 | 282 | 623 | 475 | 225 | 250 | 315 | 170 | 145 | 260 | 220 | 14 | T2 |
| F2 | 80-200 | 3 | 100L | 80 | 152 | 179 | 282 | 623 | 475 | 225 | 250 | 315 | 170 | 145 | 260 | 220 | 14 | T2 |
| F2 | 80-200 | 4 | 112M | 8 | 152 | 179 | 336 | 667 | 475 | 225 | 250 | 315 | 170 | 145 | 260 | 220 | 14 | T2 |
| F2 | 80-250 | 3 | 100L | 80 | 184 | 189 | 292 | 665 | 560 | 280 | 280 | 375 | 195 | 180 | 320 | 270 | 18 | T3 |
| F2 | 80-250 | 4 | 112M | 80 | 184 | 189 | 336 | 709 | 560 | 280 | 280 | 375 | 195 | 180 | 320 | 270 | 18 | T3 |
| F2 | 80-250 | 5,5 | 132M | 80 | 184 | 214 | 396 | 794 | 560 | 280 | 280 | 375 | 195 | 180 | 320 | 270 | 18 | T3 |
| F2 | 80-250 | 7,5 | 132M | 80 | 184 | 214 | 396 | 794 | 560 | 280 | 280 | 375 | 195 | 180 | 320 | 270 | 18 | T3 |

## 1450 rpm ( 4 Pole Motor)

# ECO SNL

| FORM | Pump Type | MOTOR | | DNe | DNb | ECO SNL DIMENSIONS (mm) | | | | | | | | | | | | | Bottom Plate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | kW | IEC | mm | mm | A | W | Lm** | L** | H | h1 | h2 | G | g1 | g2 | ABxAB | KxK | øS | (*) |
| F2 | 80-315 | 5,5 | 132M | 80 | 80 | 194 | 215 | 396 | 805 | 595 | 280 | 315 | 425 | 220 | 205 | 400 | 350 | 18 | T4 |
| F2 | 80-315 | 7,5 | 132M | 80 | 80 | 194 | 215 | 396 | 805 | 595 | 280 | 315 | 425 | 220 | 205 | 400 | 350 | 18 | T4 |
| F2 | 80-315 | 11 | 160M | 80 | 80 | 194 | 245 | 466 | 905 | 595 | 280 | 315 | 425 | 220 | 205 | 400 | 350 | 18 | T4 |
| F2 | 80-315 | 15 | 160L | 80 | 80 | 194 | 245 | 466 | 905 | 595 | 280 | 315 | 425 | 220 | 205 | 400 | 350 | 18 | T4 |
| F1 | 100-160 | 1,5 | 90L | 100 | 100 | 224 | 156 | 267 | 647 | 475 | 175 | 300 | 370 | 200 | 170 | 320 | 270 | 18 | T3 |
| F1 | 100-160 | 2,2 | 100L | 100 | 100 | 224 | 179 | 292 | 695 | 475 | 175 | 300 | 370 | 200 | 170 | 320 | 270 | 18 | T3 |
| F1 | 100-160 | 3 | 100L | 100 | 100 | 224 | 179 | 292 | 695 | 475 | 175 | 300 | 370 | 200 | 170 | 320 | 270 | 18 | T3 |
| F1 | 100-200 | 3 | 100L | 100 | 100 | 202 | 189 | 292 | 683 | 550 | 250 | 300 | 350 | 190 | 160 | 260 | 220 | 14 | T2 |
| F1 | 100-200 | 4 | 112M | 100 | 100 | 202 | 189 | 336 | 727 | 550 | 250 | 300 | 350 | 190 | 160 | 260 | 220 | 14 | T2 |
| F1 | 100-200 | 5,5 | 132M | 100 | 100 | 202 | 214 | 396 | 812 | 550 | 250 | 300 | 350 | 190 | 160 | 260 | 220 | 14 | T2 |
| F2 | 100-250 | 4 | 112M | 100 | 100 | 204 | 189 | 336 | 729 | 580 | 280 | 300 | 380 | 205 | 175 | 320 | 270 | 18 | T3 |
| F2 | 100-250 | 5,5 | 132M | 100 | 100 | 204 | 214 | 396 | 814 | 580 | 280 | 300 | 380 | 205 | 175 | 320 | 270 | 18 | T3 |
| F2 | 100-250 | 7,5 | 132M | 100 | 100 | 204 | 214 | 396 | 814 | 580 | 280 | 300 | 380 | 205 | 175 | 320 | 270 | 18 | T3 |
| F2 | 100-250 | 11 | 160M | 100 | 100 | 204 | 244 | 466 | 914 | 580 | 280 | 300 | 380 | 205 | 175 | 320 | 270 | 18 | T3 |
| F2 | 100-315 | 7,5 | 132M | 100 | 100 | 199 | 215 | 396 | 810 | 670 | 315 | 355 | 455 | 240 | 215 | 400 | 350 | 18 | T4 |
| F2 | 100-315 | 11 | 160M | 100 | 100 | 199 | 245 | 466 | 910 | 670 | 315 | 355 | 455 | 240 | 215 | 400 | 350 | 18 | T4 |
| F2 | 100-315 | 15 | 160L | 100 | 100 | 199 | 245 | 466 | 910 | 670 | 315 | 355 | 455 | 240 | 215 | 400 | 350 | 18 | T4 |
| F2 | 100-315 | 18,5 | 180M | 100 | 100 | 199 | 245 | 519 | 963 | 670 | 315 | 355 | 455 | 240 | 215 | 400 | 350 | 18 | T4 |
| F1 | 125-200 | 4 | 112M | 125 | 125 | 220 | 213 | 336 | 769 | 560 | 280 | 280 | 390 | 210 | 180 | 400 | 350 | 18 | T4 |
| F1 | 125-200 | 5,5 | 132M | 125 | 125 | 220 | 238 | 396 | 854 | 560 | 280 | 280 | 390 | 210 | 180 | 400 | 350 | 18 | T4 |
| F1 | 125-200 | 7,5 | 132M | 125 | 125 | 220 | 238 | 396 | 854 | 560 | 280 | 280 | 390 | 210 | 180 | 400 | 350 | 18 | T4 |
| F2 | 125-250 | 5,5 | 132M | 125 | 125 | 220 | 239 | 396 | 854 | 630 | 315 | 315 | 410 | 215 | 195 | 400 | 350 | 18 | T4 |
| F2 | 125-250 | 7,5 | 132M | 125 | 125 | 220 | 239 | 396 | 854 | 630 | 315 | 315 | 410 | 215 | 195 | 400 | 350 | 18 | T4 |
| F2 | 125-250 | 11 | 160M | 125 | 125 | 220 | 269 | 466 | 954 | 630 | 315 | 315 | 410 | 215 | 195 | 400 | 350 | 18 | T4 |
| F2 | 125-250 | 15 | 160L | 125 | 125 | 220 | 269 | 466 | 954 | 630 | 315 | 315 | 410 | 215 | 195 | 400 | 350 | 18 | T4 |
| F2 | 125-315 | 11 | 160M | 125 | 125 | 200 | 240 | 396 | 835 | 710 | 355 | 355 | 490 | 260 | 230 | 400 | 350 | 18 | T4 |
| F2 | 125-315 | 15 | 160L | 125 | 125 | 200 | 240 | 396 | 835 | 710 | 355 | 355 | 490 | 260 | 230 | 400 | 350 | 18 | T4 |
| F2 | 125-315 | 18,5 | 180M | 125 | 125 | 200 | 270 | 519 | 988 | 710 | 355 | 355 | 490 | 260 | 230 | 400 | 350 | 18 | T4 |
| F2 | 125-315 | 22 | 180L | 125 | 125 | 200 | 270 | 519 | 988 | 710 | 355 | 355 | 490 | 260 | 230 | 400 | 350 | 18 | T4 |
| F2 | 125-315 | 30 | 200L | 125 | 125 | 200 | 272 | 555 | 1026 | 710 | 355 | 355 | 490 | 260 | 230 | 400 | 350 | 18 | T4 |
| F2 | 150-250 | 11 | 160M | 150 | 150 | 223 | 290 | 466 | 974 | 710 | 355 | 355 | 470 | 250 | 220 | 400 | 350 | 18 | T4 |
| F2 | 150-250 | 15 | 160L | 150 | 150 | 223 | 290 | 466 | 974 | 710 | 355 | 355 | 470 | 250 | 220 | 400 | 350 | 18 | T4 |
| F2 | 150-250 | 18,5 | 180M | 150 | 150 | 223 | 290 | 519 | 1032 | 710 | 355 | 355 | 470 | 250 | 220 | 400 | 350 | 18 | T4 |
| F2 | 150-250 | 22 | 180L | 150 | 150 | 223 | 290 | 519 | 1032 | 710 | 355 | 355 | 470 | 250 | 220 | 400 | 350 | 18 | T4 |
| F1 | 150-315 | 15 | 160L | 150 | 150 | 224 | 304 | 490 | 1018 | 755 | 355 | 400 | 545 | 295 | 250 | 443 | 380 | 23 | T5 |
| F1 | 150-315 | 18,5 | 180M | 150 | 150 | 224 | 304 | 519 | 1047 | 755 | 355 | 400 | 545 | 295 | 250 | 443 | 380 | 23 | T5 |
| F1 | 150-315 | 22 | 180L | 150 | 150 | 224 | 304 | 519 | 1047 | 755 | 355 | 400 | 545 | 295 | 250 | 443 | 380 | 23 | T5 |
| F1 | 150-315 | 30 | 200L | 150 | 150 | 224 | 304 | 555 | 1083 | 755 | 355 | 400 | 545 | 295 | 250 | 443 | 380 | 23 | T5 |
| F1 | 150-315 | 37 | 225M | 150 | 150 | 224 | 364 | 701 | 1289 | 755 | 355 | 400 | 545 | 295 | 250 | 443 | 380 | 23 | T5 |
| F1 | 150-315 | 45 | 225M | 150 | 150 | 224 | 364 | 701 | 1289 | 755 | 355 | 400 | 545 | 295 | 250 | 443 | 380 | 23 | T5 |
| F2 | 200-250 | 11 | 160M | 200 | 200 | 263 | 324 | 466 | 1053 | 850 | 400 | 450 | 525 | 290 | 235 | 443 | 380 | 23 | T5 |
| F2 | 200-250 | 15 | 160L | 200 | 200 | 263 | 324 | 466 | 1053 | 850 | 400 | 450 | 525 | 290 | 235 | 443 | 380 | 23 | T5 |
| F2 | 200-250 | 18,5 | 180M | 200 | 200 | 263 | 324 | 519 | 1106 | 850 | 400 | 450 | 525 | 290 | 235 | 443 | 380 | 23 | T5 |
| F2 | 200-250 | 22 | 180L | 200 | 200 | 263 | 324 | 519 | 1106 | 850 | 400 | 450 | 525 | 290 | 235 | 443 | 380 | 23 | T5 |
| F2 | 200-250 | 30 | 200L | 200 | 200 | 263 | 326 | 555 | 1144 | 850 | 400 | 450 | 525 | 290 | 235 | 443 | 380 | 23 | T5 |
| F1 | 200-315 | 22 | 180L | 200 | 200 | 243 | 356 | 519 | 1118 | 850 | 400 | 450 | 540 | 300 | 240 | 443 | 380 | 23 | T5 |
| F1 | 200-315 | 30 | 200L | 200 | 200 | 243 | 356 | 555 | 1154 | 850 | 400 | 450 | 540 | 300 | 240 | 443 | 380 | 23 | T5 |
| F1 | 200-315 | 37 | 225M | 200 | 200 | 243 | 416 | 701 | 1360 | 850 | 400 | 450 | 540 | 300 | 240 | 443 | 380 | 23 | T5 |
| F1 | 200-315 | 45 | 225M | 200 | 200 | 243 | 416 | 701 | 1360 | 850 | 400 | 450 | 540 | 300 | 240 | 443 | 380 | 23 | T5 |
| F1 | 200-315 | 55 | 250M | 200 | 200 | 243 | 416 | 755 | 1414 | 850 | 400 | 450 | 540 | 300 | 240 | 443 | 380 | 23 | T5 |
| F1 | 200-315 | 75 | 280M | 200 | 200 | 243 | 416 | 885 | 1544 | 850 | 400 | 450 | 540 | 300 | 240 | 443 | 380 | 23 | T5 |
| F1 | 200-340 | 37 | 200L | 250 | 200 | 340 | 271 | 555 | 1166 | 1050 | 450 | 600 | 631 | 292 | 339 | 580 | 500 | 23 | - |
| F1 | 200-340 | 45 | 225M | 250 | 200 | 340 | 331 | 625 | 1296 | 1050 | 450 | 600 | 631 | 292 | 339 | 580 | 500 | 23 | - |
| F1 | 200-340 | 55 | 250M | 250 | 200 | 340 | 329 | 755 | 1424 | 1050 | 450 | 600 | 631 | 292 | 339 | 580 | 500 | 23 | - |
| F1 | 200-340 | 75 | 280M | 250 | 200 | 340 | 329 | 886 | 1555 | 1050 | 450 | 600 | 631 | 292 | 339 | 580 | 500 | 23 | - |

## SNL series 1450 rpm

# SNL

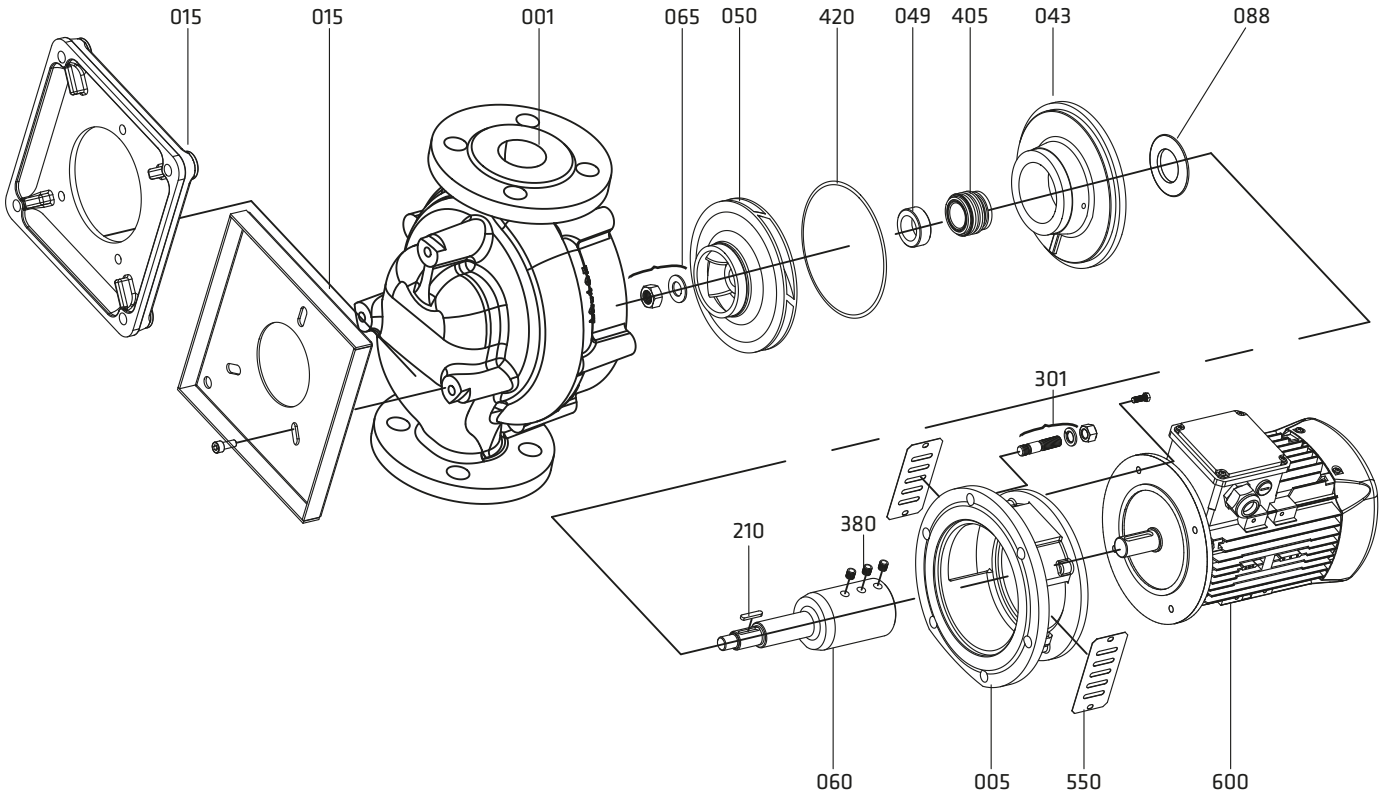
| FORM | Pump Type | MOTOR | | DNe DNb | SNL DIMENSIONS (mm) | | | | | | | | | | | | | Bottom Plate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | kW | IEC | mm | A | W | Lm* | L* | H | h1 | h2 | G | g1 | g2 | ABxAB | KxK | øS | (**) |
| F1 | 150-400 | 37 | 225S | 150 | 225 | 360 | 625 | 1210 | 800 | 400 | 400 | 604 | 314 | 290 | 440 | 380 | 23 | T5 |
| F1 | 150-400 | 45 | 225M | 150 | 225 | 360 | 625 | 1210 | 800 | 400 | 400 | 604 | 314 | 290 | 440 | 380 | 23 | T5 |
| F1 | 150-400 | 55 | 250M | 150 | 225 | 360 | 644 | 1229 | 800 | 400 | 400 | 604 | 314 | 290 | 440 | 380 | 23 | T5 |
| F1 | 150-400 | 75 | 280M4 | 150 | 225 | 360 | 885 | 1470 | 800 | 400 | 400 | 604 | 314 | 290 | 440 | 380 | 23 | T5 |
| F1 | 150-400 | 90 | 280M4 | 150 | 225 | 360 | 885 | 1470 | 800 | 400 | 400 | 604 | 314 | 290 | 440 | 380 | 23 | T5 |
| F1 | 200-400 | 37 | 225S | 200 | 245 | 400 | 625 | 1270 | 900 | 400 | 500 | 618 | 328 | 290 | 440 | 380 | 23 | T5 |
| F1 | 200-400 | 45 | 225M | 200 | 245 | 400 | 625 | 1270 | 900 | 400 | 500 | 618 | 328 | 290 | 440 | 380 | 23 | T5 |
| F1 | 200-400 | 55 | 250M | 200 | 245 | 400 | 644 | 1289 | 900 | 400 | 500 | 618 | 328 | 290 | 440 | 380 | 23 | T5 |
| F1 | 200-400 | 75 | 280M4 | 200 | 245 | 400 | 885 | 1530 | 900 | 400 | 500 | 618 | 328 | 290 | 440 | 380 | 23 | T5 |
| F1 | 200-400 | 90 | 280M4 | 200 | 245 | 400 | 885 | 1530 | 900 | 400 | 500 | 618 | 328 | 290 | 440 | 380 | 23 | T5 |

1- (*) Optional. Rights reserved to change without notice.

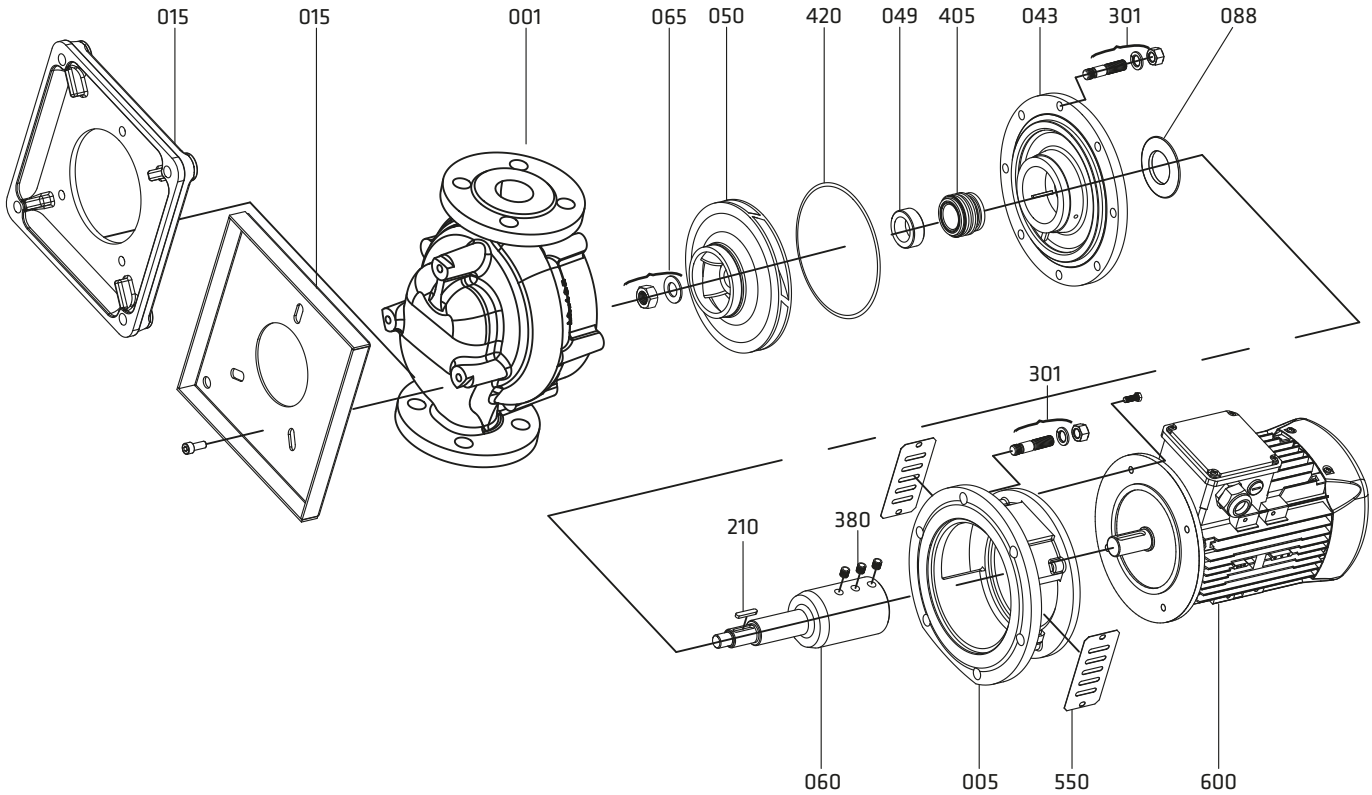
2- Base plate (foot) may differ for marine sector. Please consult to sales depermant for more information.

## Assembly Drawings

### Form: F1 (Slide - fit shaft application)

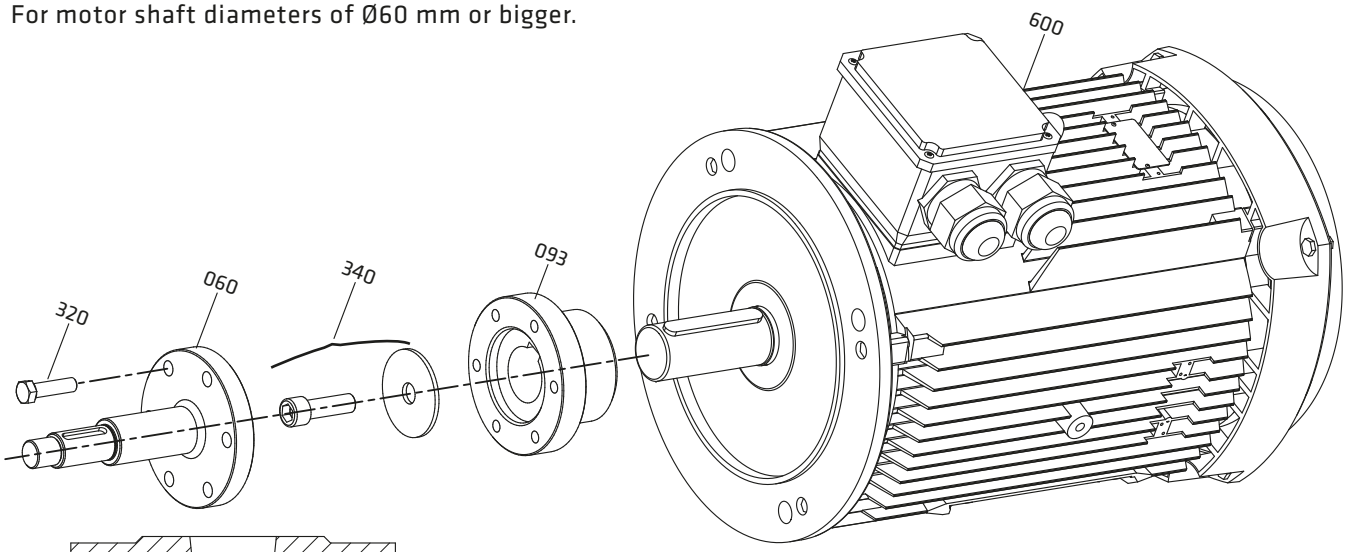


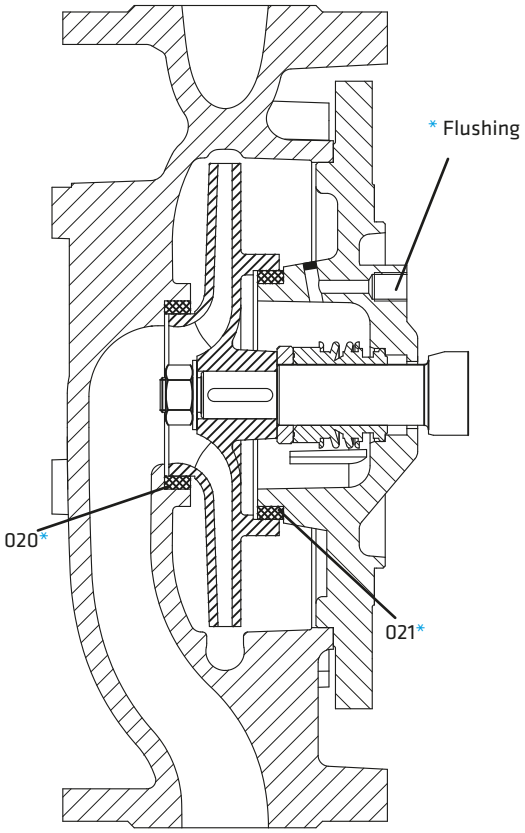

### Form: F2 (Slide - fit shaft application)



## Rigid Coupling Application

For motor shaft diameters of Ø60 mm or bigger.



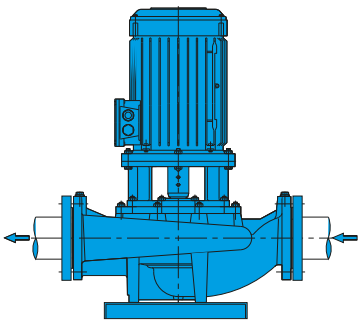




## Part List

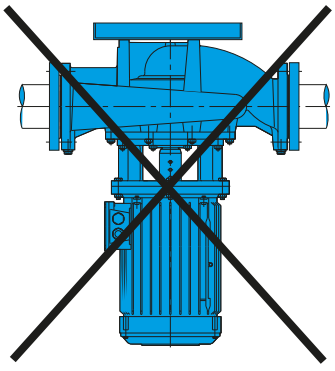
| | |
|---|---|
| 001 | Volute Casing |
| 005 | Motor Pedestal |
| 015 | Bottom Plate |
| 020* | Wear Ring (casing) |
| 021* | Wear Ring (seal cover) |
| 043 | Mechanical Seal Cover |
| 049 | Mechanical Seal Spacer Sleeve |
| 050 | Impeller |
| 060 | Shaft |
| 065 | Impeller Nut and Washer |
| 088 | Thrower |
| 093 | Rigid Coupling |
| 210 | Impeller Key |
| 230 | Screw |
| 301 | Stud, Washer and Nut |
| 320 | Screw |
| 340 | Allien Screw and Washer |
| 380 | Set Screw |
| 405 | Mechanical Seal |
| 420 | O-ring |
| 550 | Guard |
| 600 | Electric Motor |

(*) Optional

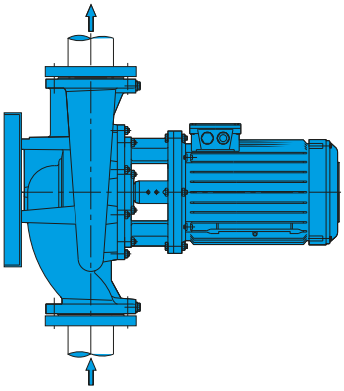
## Installation Arrangements



Standard installation type to horizontal pipe. (on ground)



The axis of motor below the horizontal line is **not** admissible.



Please consult to Standart Pompa in case of installation to vertical pipes.

## Material Option

| PART LIST | 10 | 30 | 3S | 20 | 60 | 6L | 70 | 7L | 8M | 7D | 7S | 8N | 80 | 4C | 4A | 40 | 80 | 8T | 60 | 7L | 7E | 7D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.6025 | 0.7040 | 0.7043 | 1.0619 | 1.4308 | 1.4309 | 1.4408 | 1.4409 | 1.4500 | 1.4517 | 1.4469 | 1.4317 | 1.4008 | 2.1050.01 | 2.0975.01 | 2.1096.01 | 1.4021 | 1.4021+QT | 1.4301 | 1.4404 | 1.4460 | 1.4462 |
| Volute Casing | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | |
| Mechanical Seal Cover | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | |
| Impeller | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | ○ | |
| Shaft | | | | | | | | | | | | | | | | | ● | ○ | ○ | ○ | | ○ |
| Motor Pedestal | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | |
| Wear Ring | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | |
| Mech Seal Spacer Sleeve | | | | | | | | | | | | | | | | | ● | ○ | ○ | ○ | | ○ |
| Mechanical Seal (*) | EN 12756 | | | | | | | | | | | | | | | | | | | | | |
| Bottom Plate | According to pump types, steel or cast iron material can be used. Contact company for non-standard application. | | | | | | | | | | | | | | | | | | | | | |

(*) Optional :Depending on customer requirement or request different types and brands of mechanical seals are applicable.

NOTE: Depends on the request, different than above casting and shaft material can be supplied.

● Standard manufacturing
○ Optional

## Material Equivalents

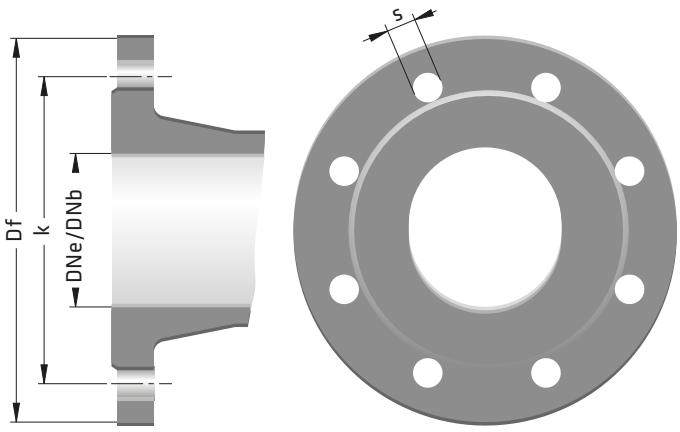
| Description | DIN / EN | | AISI / SAE / ASTM |
|---|---|---|---|
| Cast Iron | 0.6025 | EN-GJL-250 (GG25) | A48 Class 40B |
| Nodular Cast Iron | 0.7040 | EN-GJS-400-15 (GGG40) | A536 60-40-18 |
| Nodular Cast Iron | 0.7043 | EN-GJS-400-18-LT (GGG40.3) | A536 60-40-18 |
| Cast Steel | 1.0619 | GP240GHGS-C25 | A216 WCB |
| Chrome Nickel Cast Steel | 1.4308 | GX5CrNi19-10 | A351 CF8 |
| Chrome Nickel Cast Steel (low carbon) | 1.4309 | GX2CrNi19-11 | A351 CF3 |
| Chrome Nickel Molybdenum Cast Steel | 1.4408 | GX5CrNiMo19-11-2 | A351 CF8M |
| Chrome Nickel Molybdenum Cast Steel (low carbon) | 1.4409 | GX2CrNiMo19-11-2 | A351 CF3M |
| Austenitic Cast Steel | 1.4500 | GX7NiCrMoCuNb25-20 | A351 CN7M |
| Austenitic - Ferritic Cast Steel (duplex) | 1.4517 | GX2CrNiMoCuN25-6-3-3 | A890 CD4MCuN |
| Austenitic - Ferritic Cast Steel (super duplex) | 1.4469 | GX2CrNiMoN26-7-4 | A890 CE3MN |
| Martenzitic Stainless Cast Steel | 1.4317 | GX4CrNi13-4 | A352 CA6NM |
| Martenzitic Stainless Cast Steel | 1.4008 | GX7CrNiMo12-1 | A217 CA15 |
| Cast Bronze (tin alloy) | 2.1050.01 | G-CuSn10 | B427 C90700 |
| Cast Bronze (nickel alloy) | 2.0975.01 | G-CuAl10Ni | B148 C95500 |
| Cast Bronze (Leaded) | 2.1096.01 | G-CuSn5ZnPb | B584 C83600 |
| Chrome Steel | 1.4021 | X20Cr13 | A276 Type 420 |
| Chrome Steel(heat treated) | 1.4021 | X20Cr13 | A276 Type 420+QT |
| Chrome Nickel Steel | 1.4301 | X5CrNi18-10 | A276 Type 304 |
| Chrome Nickel Steel (low carbon) | 1.4404 | X2CrNiMo17-12-2 | A276 Type 316L |
| Duplex (austenitic-ferritic) Steel | 1.4460 | X3CrNiMoN27-5-2 | AISI 329 |
| Duplex (austenitic-ferritic) Steel | 1.4462 | X2CrNiMoN22-5-3 | UNS S32205 |

## Flange Dimensions

EN 1092 - 2

| DNe/DNb | Suction & Discharge (PN 16) | | | |
|---|---|---|---|---|
| | Df | k | s | n |
| 40 | 150 | 110 | 19 | 4 |
| 50 | 165 | 125 | 19 | 4 |
| 65 | 185 | 145 | 19 | 4 |
| 80 | 200 | 160 | 19 | 8 |
| 100 | 220 | 180 | 19 | 8 |
| 125 | 250 | 210 | 19 | 8 |
| 150 | 285 | 240 | 23 | 8 |
| 200 | 340 | 295 | 23 | 12 |
| 250 | 405 | 355 | 28 | 12 |

" n " number of holes



Standart

Pump • Fire Fighting Units • Booster Set

# ECO SKY

## THERMAL OIL PUMPS

ECO SKY Rev.11 09.2021

## Handled Liquids

Heat transfer oil or low viscosity industrial oil without agressive solid particles.

## Technical Data

Discharge Flange_____DN 32.....DN 150 mm

Capacity _____up to 550 $m^3/h$*

Head _____up to 105 m*

Design Temperature_____up to 350 °C

Cooling Method_____With Air

Casing Pressure (Pmax)_____10 bar (16 bar)**

(Pmax: Suction Pressure + Shut off Head)

(*) Contact company for higher capacity and head values.

(**) The Material of pump differs according to the type of pumped liquid, operating temperature and pressure. Contact for detailed information.

## Design Features

•Horizontal, radially split volute casing type, single stage, end suction, air cooled centrifugal pumps with closed impeller.

•Suction and discharge flanges conform to EN 1092-2 / PN 16. For stainless steel casing, flanges are according EN 1092-1 / PN 16.

•Due to the back-pull-out design, the complete bearing assembly including impeller and casing cover can be dismantled without removing the volute casing from the pipe system. With spacer coupling application, also possible to take out the rotor group without dismantling the electric motor.

•All impellers are balanced dynamically according to ISO 1940 class 6.3.

•Axial thrust is balanced by impeller balancing holes system.

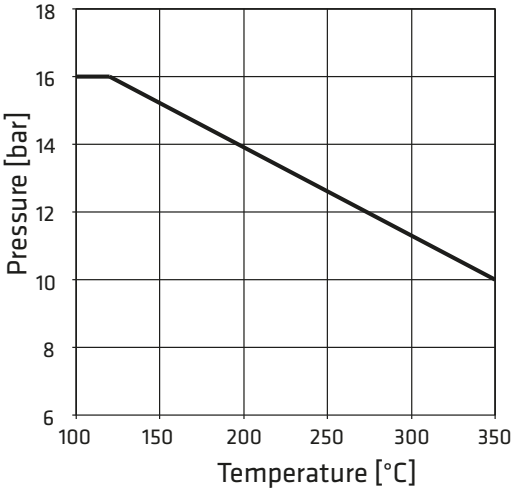
•Direction of rotation is clockwise viewed from drive end.

•Bearings of ECO SKY type pumps are “grease lubricated” ball bearings.

## Shaft Sealing

•High temperature resistant mechanical seals are used.

## Pressure & Temperature Limits



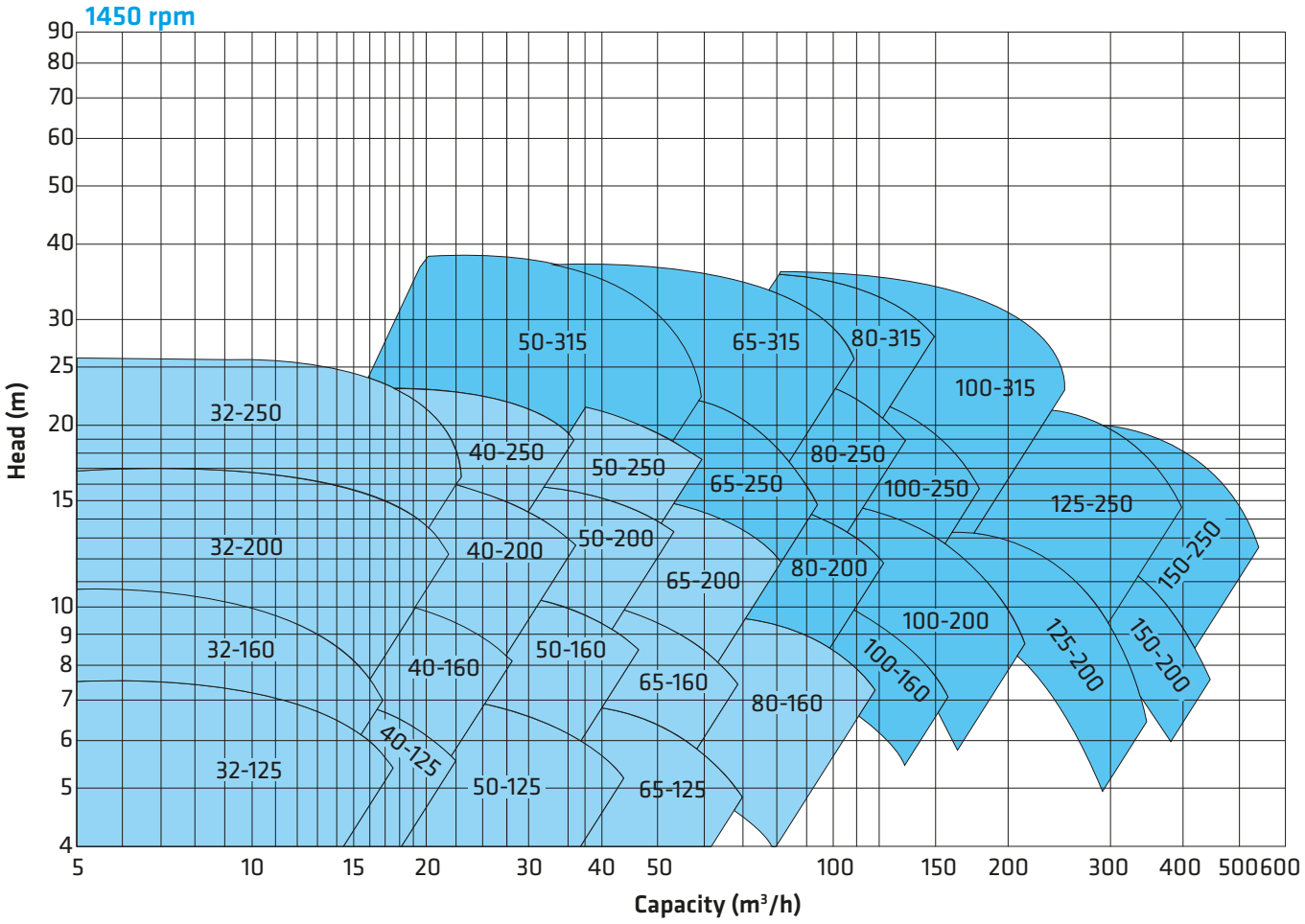

## Pump Designation

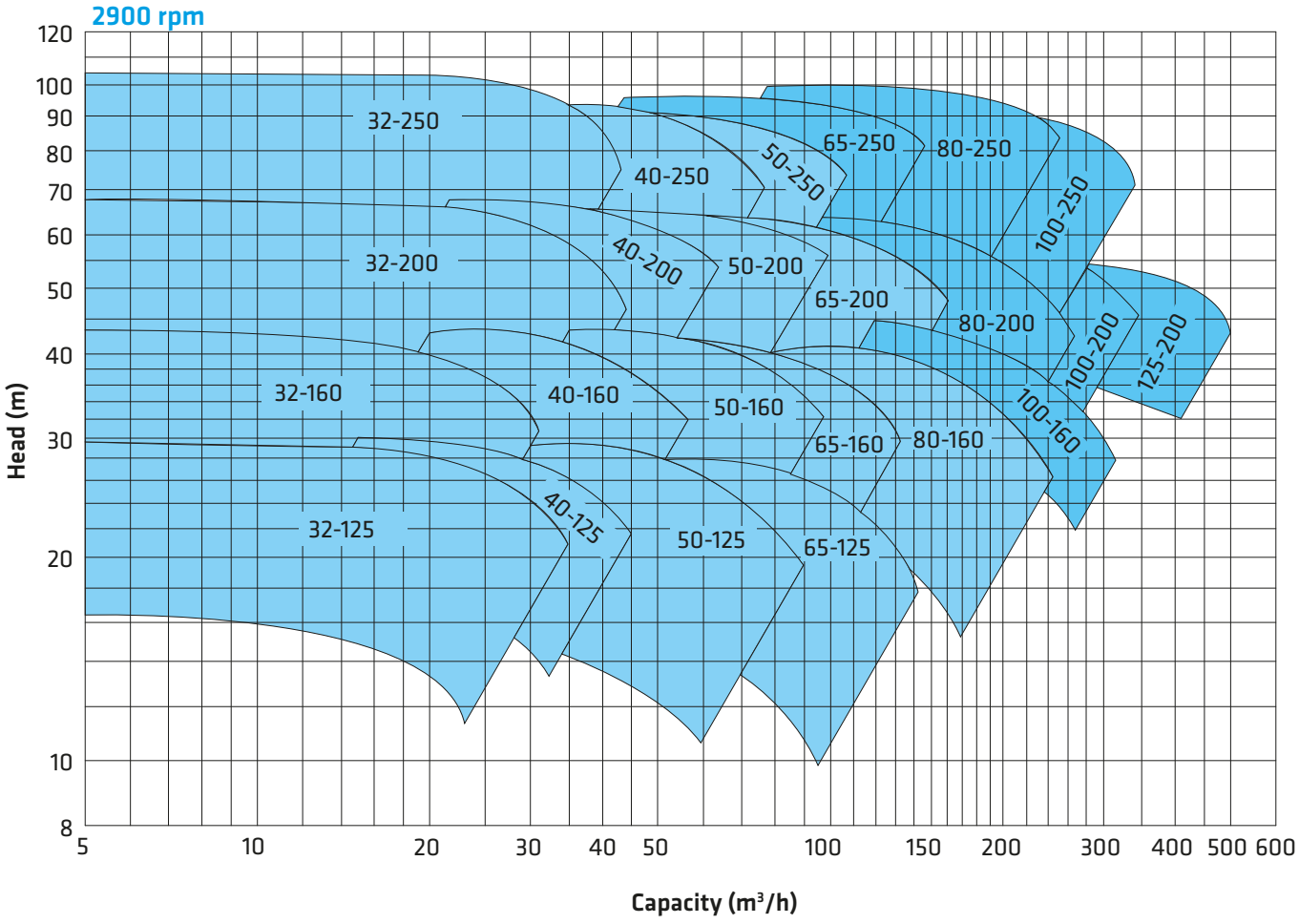
ECO SKY 100 - 250

**Pump Type**

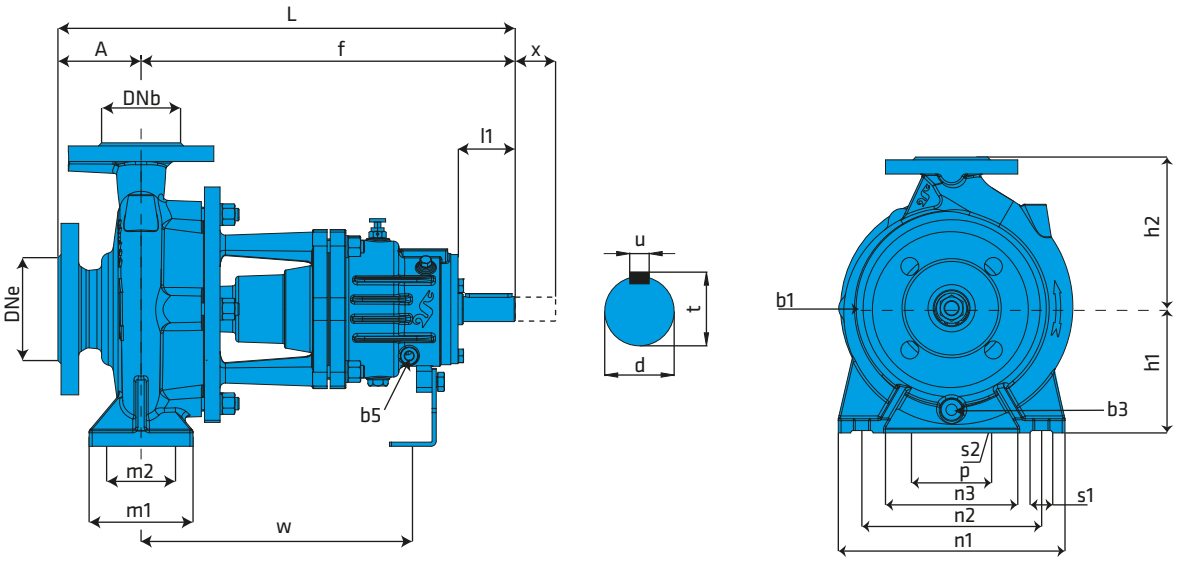
**Discharge Nozzle (DN-mm)**

**Nominal Impeller Diameter (mm)**


1450 rpm
Head (m)
Capacity (m³/h)
32-250
40-250
50-250
65-250
80-250
100-250
125-250
150-250
32-200
40-200
50-200
65-200
80-200
100-200
125-200
150-200
32-160
40-160
50-160
65-160
80-160
100-160
32-125
40-125
50-125
65-125
50-315
65-315
80-315
100-315


2900 rpm
Head (m)
Capacity (m³/h)
32-250
40-250
50-250
65-250
80-250
100-250
32-200
40-200
50-200
65-200
80-200
100-200
125-200
32-160
40-160
50-160
65-160
80-160
100-160
32-125
40-125
50-125
65-125

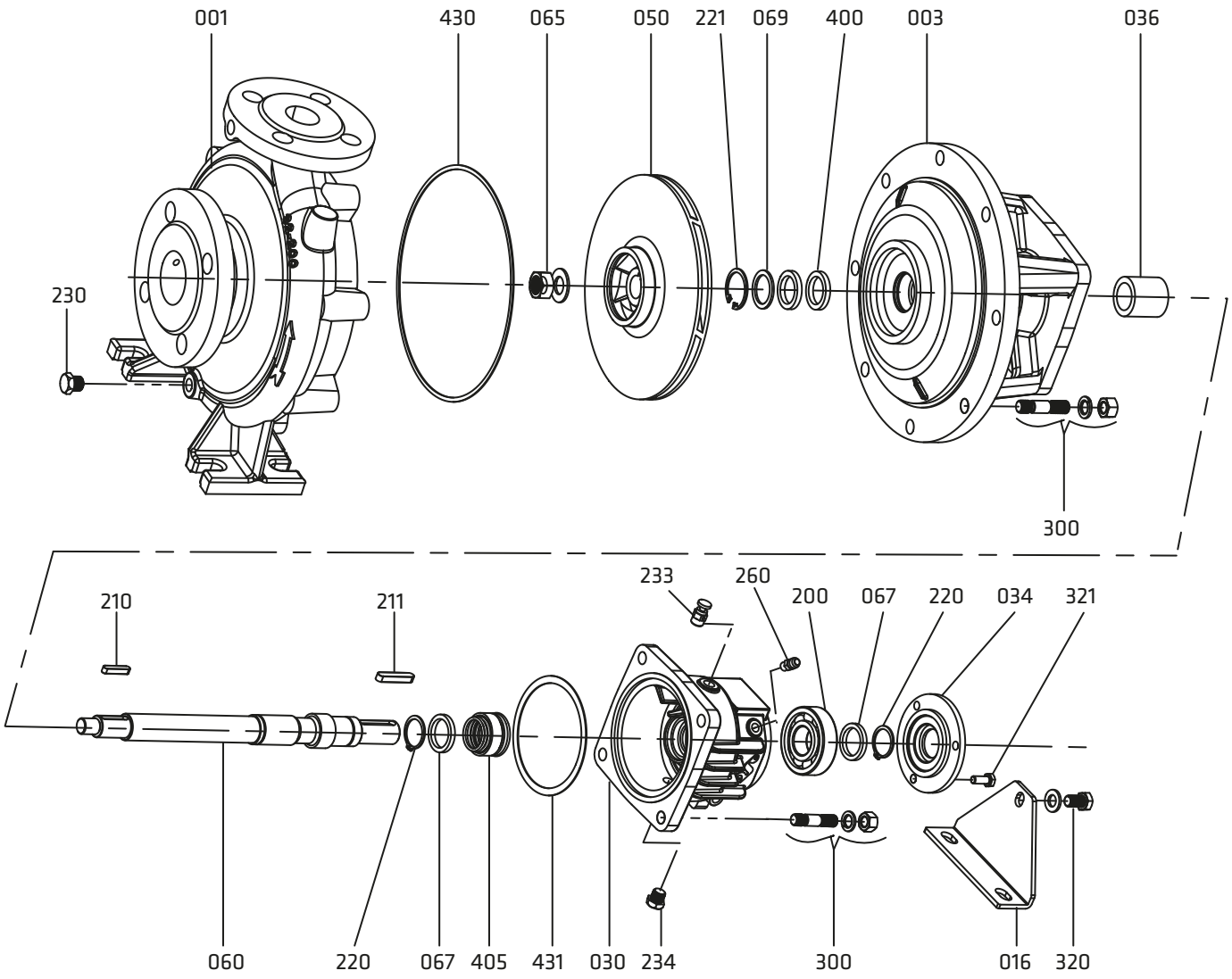
# Dimensions




| DIMENSIONS (mm) | | | | | | | | | | | | | | | | | | | | | | | | | Weight | Spacer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pump Type | | Overall Dimensions | | | | | | | Support & Foot Dimensions | | | | | | | | | Shaft End | | | | Auxiliary Connections | | | |
| EN 733 | Other | DNe | DNb | A | f | L | h1 | h2 | m1 | m2 | n1 | n2 | n3 | s1 | p | s2 | w | d | l1 | t | u | b3 | b5 | (kg) | x** |
| 32-125 | | 50 | 32 | 80 | 360 | 440 | 112 | 140 | 100 | 70 | 190 | 140 | 90 | 14 | 110 | 14 | 260 | 24 | 50 | 27 | 8 | ¼" | ⅜" | 32 | 100 |
| 32-160 | | 50 | 32 | 80 | 360 | 440 | 132 | 160 | 100 | 70 | 240 | 190 | 140 | 14 | 110 | 14 | 260 | 24 | 50 | 27 | 8 | ¼" | ⅜" | 39 | 100 |
| 32-200 | | 50 | 32 | 80 | 360 | 440 | 160 | 180 | 100 | 70 | 240 | 190 | 140 | 14 | 110 | 14 | 260 | 24 | 50 | 27 | 8 | ¼" | ⅜" | 41 | 100 |
| | 32-250 | 50 | 32 | 100 | 360 | 460 | 180 | 225 | 125 | 95 | 320 | 250 | 190 | 14 | 110 | 14 | 260 | 24 | 50 | 27 | 8 | ¼" | ⅜" | 53 | 100 |
| 40-125 | | 65 | 40 | 80 | 360 | 440 | 112 | 140 | 100 | 70 | 210 | 160 | 110 | 14 | 110 | 14 | 260 | 24 | 50 | 27 | 8 | ¼" | ⅜" | 33 | 100 |
| 40-160 | | 65 | 40 | 80 | 360 | 440 | 132 | 160 | 100 | 70 | 240 | 190 | 140 | 14 | 110 | 14 | 260 | 24 | 50 | 27 | 8 | ¼" | ⅜" | 40 | 100 |
| 40-200 | | 65 | 40 | 100 | 360 | 460 | 160 | 180 | 100 | 70 | 265 | 212 | 165 | 14 | 110 | 14 | 260 | 24 | 50 | 27 | 8 | ¼" | ⅜" | 45 | 100 |
| 40-250 | | 65 | 40 | 100 | 360 | 460 | 180 | 225 | 125 | 95 | 320 | 250 | 190 | 14 | 110 | 14 | 260 | 24 | 50 | 27 | 8 | ¼" | ⅜" | 57 | 100 |
| 50-125 | | 65 | 50 | 100 | 360 | 460 | 132 | 160 | 100 | 70 | 240 | 190 | 140 | 14 | 110 | 14 | 260 | 24 | 50 | 27 | 8 | ¼" | ⅜" | 34 | 100 |
| 50-160 | | 65 | 50 | 100 | 360 | 460 | 160 | 180 | 100 | 70 | 265 | 212 | 165 | 14 | 110 | 14 | 260 | 24 | 50 | 27 | 8 | ¼" | ⅜" | 42 | 100 |
| 50-200 | | 65 | 50 | 100 | 360 | 460 | 160 | 200 | 100 | 70 | 265 | 212 | 165 | 14 | 110 | 14 | 260 | 24 | 50 | 27 | 8 | ¼" | ⅜" | 48 | 100 |
| 50-250 | | 65 | 50 | 100 | 360 | 460 | 180 | 225 | 125 | 95 | 320 | 250 | 190 | 14 | 110 | 14 | 260 | 24 | 50 | 27 | 8 | ¼" | ⅜" | 57 | 100 |
| | 50-315 | 65 | 50 | 125 | 470 | 595 | 225 | 280 | 125 | 95 | 345 | 280 | 190 | 19 | 110 | 14 | 340 | 32 | 80 | 35 | 10 | ¼" | ⅜" | 90 | 100 |
| 65-125 | | 80 | 65 | 100 | 360 | 460 | 160 | 180 | 125 | 95 | 280 | 212 | 150 | 14 | 110 | 14 | 260 | 24 | 50 | 27 | 8 | ⅜" | ⅜" | 40 | 100 |
| 65-160 | | 80 | 65 | 100 | 360 | 460 | 160 | 200 | 125 | 95 | 280 | 212 | 150 | 14 | 110 | 14 | 260 | 24 | 50 | 27 | 8 | ⅜" | ⅜" | 46 | 100 |
| 65-200 | | 80 | 65 | 100 | 360 | 460 | 180 | 225 | 125 | 95 | 320 | 250 | 190 | 14 | 110 | 14 | 260 | 24 | 50 | 27 | 8 | ⅜" | ⅜" | 51 | 140 |
| 65-250 | | 80 | 65 | 100 | 470 | 570 | 200 | 250 | 160 | 120 | 360 | 280 | 200 | 19 | 110 | 14 | 340 | 32 | 80 | 35 | 10 | ⅜" | ⅜" | 90 | 140 |
| 65-315 | | 80 | 65 | 125 | 470 | 595 | 225 | 280 | 160 | 120 | 400 | 315 | 240 | 19 | 110 | 14 | 340 | 32 | 80 | 35 | 10 | ⅜" | ⅜" | 105 | 140 |
| 80-160 | | 100 | 80 | 125 | 360 | 485 | 180 | 225 | 125 | 95 | 320 | 250 | 190 | 14 | 110 | 14 | 260 | 24 | 50 | 27 | 8 | ⅜" | ⅜" | 49 | 140 |
| 80-200 | | 100 | 80 | 125 | 470 | 595 | 180 | 250 | 125 | 95 | 345 | 280 | 215 | 14 | 110 | 14 | 340 | 32 | 80 | 35 | 10 | ⅜" | ⅜" | 63 | 140 |
| 80-250 | | 100 | 80 | 125 | 470 | 595 | 200 | 280 | 160 | 120 | 400 | 315 | 240 | 19 | 110 | 14 | 340 | 32 | 80 | 35 | 10 | ⅜" | ⅜" | 95 | 140 |
| 80-315 | | 100 | 80 | 125 | 470 | 595 | 250 | 315 | 160 | 120 | 400 | 315 | 240 | 19 | 110 | 14 | 340 | 32 | 80 | 35 | 10 | ⅜" | ⅜" | 125 | 140 |
| | 100-160 | 125 | 100 | 125 | 470 | 595 | 200 | 280 | 160 | 120 | 360 | 280 | 200 | 19 | 110 | 14 | 340 | 32 | 80 | 35 | 10 | ⅜" | ⅜" | 80 | 140 |
| 100-200 | | 125 | 100 | 125 | 470 | 595 | 200 | 280 | 160 | 120 | 360 | 280 | 200 | 19 | 110 | 14 | 340 | 32 | 80 | 35 | 10 | ⅜" | ⅜" | 87 | 140 |
| 100-250 | | 125 | 100 | 140 | 470 | 610 | 225 | 280 | 160 | 120 | 400 | 315 | 240 | 19 | 110 | 14 | 340 | 32 | 80 | 35 | 10 | ⅜" | ⅜" | 100 | 140 |
| 100-315 | | 125 | 100 | 140 | 470 | 610 | 250 | 315 | 160 | 120 | 400 | 315 | 240 | 19 | 110 | 14 | 340 | 32 | 80 | 35 | 10 | ⅜" | ⅜" | 130 | 140 |
| | 125-200 | 150 | 125 | 140 | 470 | 610 | 250 | 315 | 160 | 120 | 400 | 315 | 240 | 19 | 110 | 14 | 340 | 32 | 80 | 35 | 10 | ½" | ⅜" | 97 | 140 |
| 125-250 | | 150 | 125 | 140 | 470 | 610 | 250 | 355 | 160 | 120 | 400 | 315 | 240 | 19 | 110 | 14 | 340 | 32 | 80 | 35 | 10 | ½" | ⅜" | 110 | 140 |
| | 150-200 | 200 | 150 | 160 | 470 | 630 | 280 | 355 | 200 | 150 | 500 | 400 | 300 | 23 | 110 | 14 | 340 | 32 | 80 | 35 | 10 | ½" | ⅜" | 116 | 140 |
| | 150-250 | 200 | 150 | 160 | 470 | 630 | 280 | 375 | 200 | 150 | 500 | 400 | 300 | 23 | 110 | 14 | 340 | 32 | 80 | 35 | 10 | ½" | ⅜" | 132 | 140 |

(**) Gap necessary for the withdrawal of the pump rotor from the driven end without the need for dismantling the motor and pipework (spacer coupling application)

## Assembly Drawings




## Part List

| | | | |
|---|---|---|---|
| 001 | Volute Casing | 221 | Circlip |
| 003 | Casing Cover | 230 | Screw |
| 016 | Support Foot | 233 | Breather |
| 030 | Bearing Housing | 234 | Screw |
| 034 | Bearing Cover | 260 | Grease Nipple |
| 036 | Sleeve Bearing | 300 | Stud Bolt, Washer and Nut |
| 050 | Impeller | 320 | Screw |
| 060 | Shaft | 321 | Screw |
| 065 | Impeller Nut and Washer | 400 | Soft Packing |
| 067 | Spacer Sleeve | 405 | Mechanical Seal |
| 069 | Seal Sleeve | 430 | Gasket |
| 200 | Ball Bearing | 431 | Gasket |
| 210 | Impeller Key | | |
| 211 | Coupling Key | | |
| 220 | Circlip | | |

## Material Equivalents

| Description | DIN / EN | | AISI / SAE / ASTM |
|---|---|---|---|
| Cast Iron | 0.6025 | EN-GJL-250 (GG25) | A48 Class 40B |
| Nodular Cast Iron | 0.7040 | EN-GJS-400-15 (GGG40) | A 536 Gr. 60-40-18 |
| Chrome Nickel Moly. Cast Steel | 1.4408 | GX5CrNiMo19-11-2 | A351 CF8M |
| Chrome Steel | 1.4021 | X20Cr13 | A276 Type 420 |
| Chrome Nickel Steel (low carbon) | 1.4404 | X2CrNiMo17-12-2 | A276 Type 316L |

## Material Options

| Part List | 10 | 30 | 70 | 80 | 7L |
|---|---|---|---|---|---|
| | 0.6025 | 0.7040 | 1.4408 | 1.4021 | 1.4404 |
| Volute Casing | | ● | ○ | | |
| Casing Cover | | ● | ○ | | |
| Impeller | ● | ○ | ○ | | |
| Shaft | | | | ● | ○ |
| Bearing House | | ● | ○ | | |
| Mechanical Seal | EN 12756 | | | | |

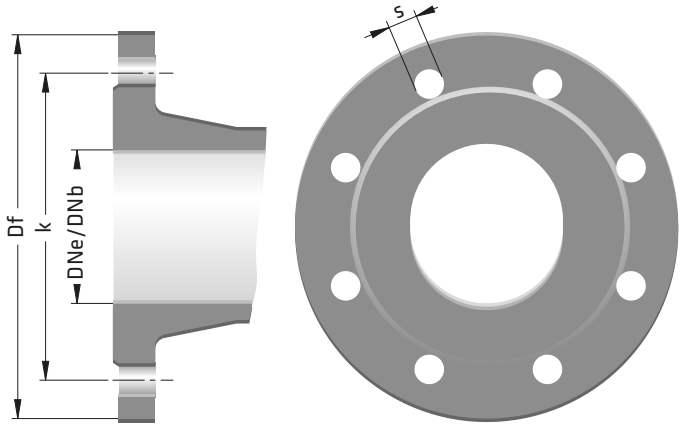
● Standard manufacturing
○ Optional

## Flange Dimensions

EN 1092 - 2

| DNe/DNb | Suction & Discharge (PN 16) | | | |
|---|---|---|---|---|
| | Df | k | s | n |
| 32 | 140 | 100 | 19 | 4 |
| 40 | 150 | 110 | 19 | 4 |
| 50 | 165 | 125 | 19 | 4 |
| 65 | 185 | 145 | 19 | 4 |
| 80 | 200 | 160 | 19 | 8 |
| 100 | 220 | 180 | 19 | 8 |
| 125 | 250 | 210 | 19 | 8 |
| 150 | 285 | 240 | 23 | 8 |
| 200 | 340 | 295 | 23 | 12 |

" n " number of holes




500ml
APPROX.
400
250ml
APPROX.

Standart

Pump • Fire Fighting Units • Booster Set

# ECO SNV

## SUMP PUMP

ECO SNV Rev.11 09.2021

## Handled Liquids

Clean or normal contaminated low or medium viscosity liquids without solid & fibrous particles.

## Technical Data

Discharge Flange_____DN 32....DN 200 mm

Capacity_____up to 900 $m^3/h$

Head_____up to 60 m

Speed_____up to 1500 rpm

Design Temperature_____up to +95 °C

Casing Pressure (Pmax)_____10 bar

## Design Features

•Vertical, volute casing, single stage, end suction centrifugal sump pumps with enclosed type impeller.

•Up to 4 m. column length.

•Discharge pipe is extended up to base plate for easy installation.

•Suciton and discharge flanges conform to EN 1092-2 / PN 16. (EN 1092-1 / PN 16 for steel or stainless steel casing)

•All impellers are balanced dynamically or statically according to ISO 1940 class 6.3.

•Axial thrust is balanced by impeller balancing holes system.

•Direction of rotation is clockwise viewed from driver.

•Bearings of ECO SNV type pumps are grease lubricated. Bottom and internal slide bearings are lubricated by the pumping liquid.

•Discharge flange is screwed onto the discharge pipe.

•Head is calculated at the discharge of the volute casing.

## Shaft Sealing

•No sealing is required.

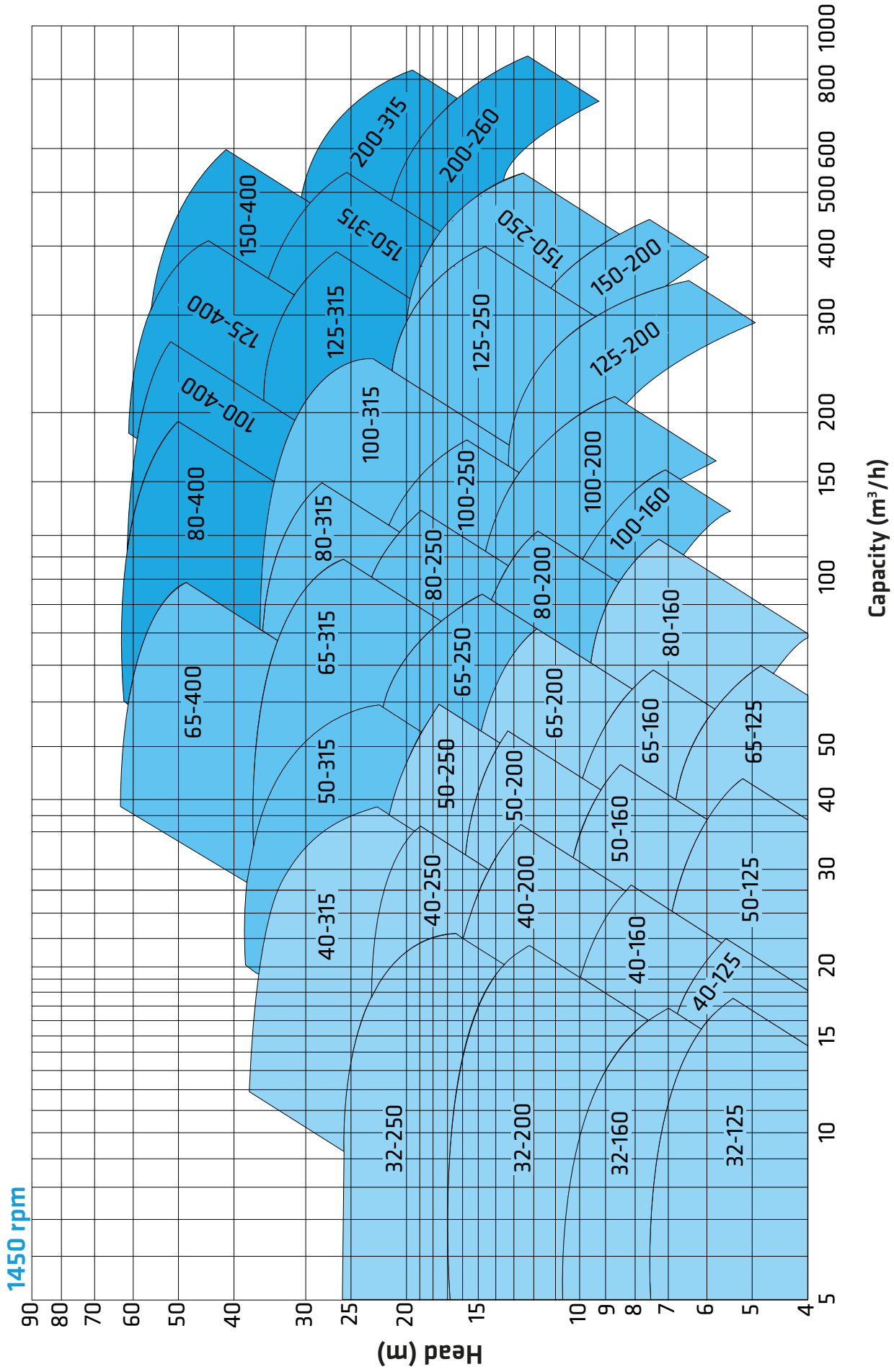
## Pump Designation

ECO SNV 100 - 250

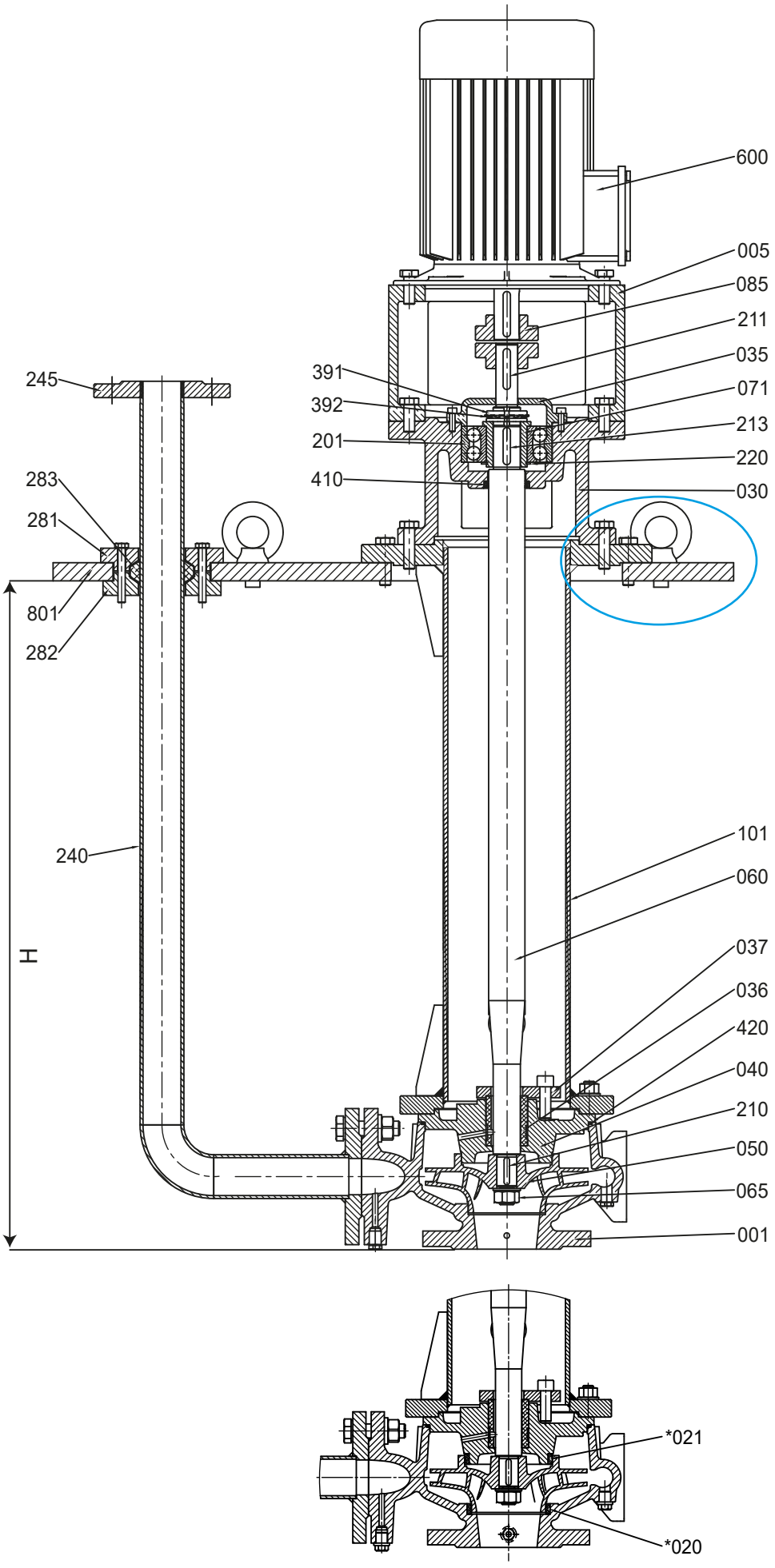
**Pump Type**

**Discharge Nozzle (DN-mm)**

**Nominal Impeller Diameter (mm)**

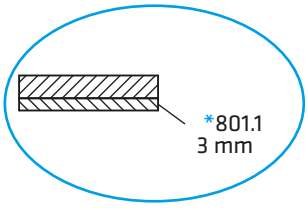

1450 rpm
Head (m)
Capacity (m³/h)
90
80
70
60
50
40
30
25
20
15
10
9
8
7
6
5
4
5
10
15
20
30
40
50
100
150
200
300
400
500
600
800
1000
200-315
200-260
150-400
150-315
150-250
150-200
125-400
125-315
125-250
125-200
100-400
100-315
100-250
100-200
100-160
80-400
80-315
80-250
80-200
80-160
65-400
65-315
65-250
65-200
65-160
65-125
50-315
50-250
50-200
50-160
50-125
40-315
40-250
40-200
40-160
40-125
32-250
32-200
32-160
32-125

## Sectional Drawing (Colum height H=up to 1.5 m)




## Part List

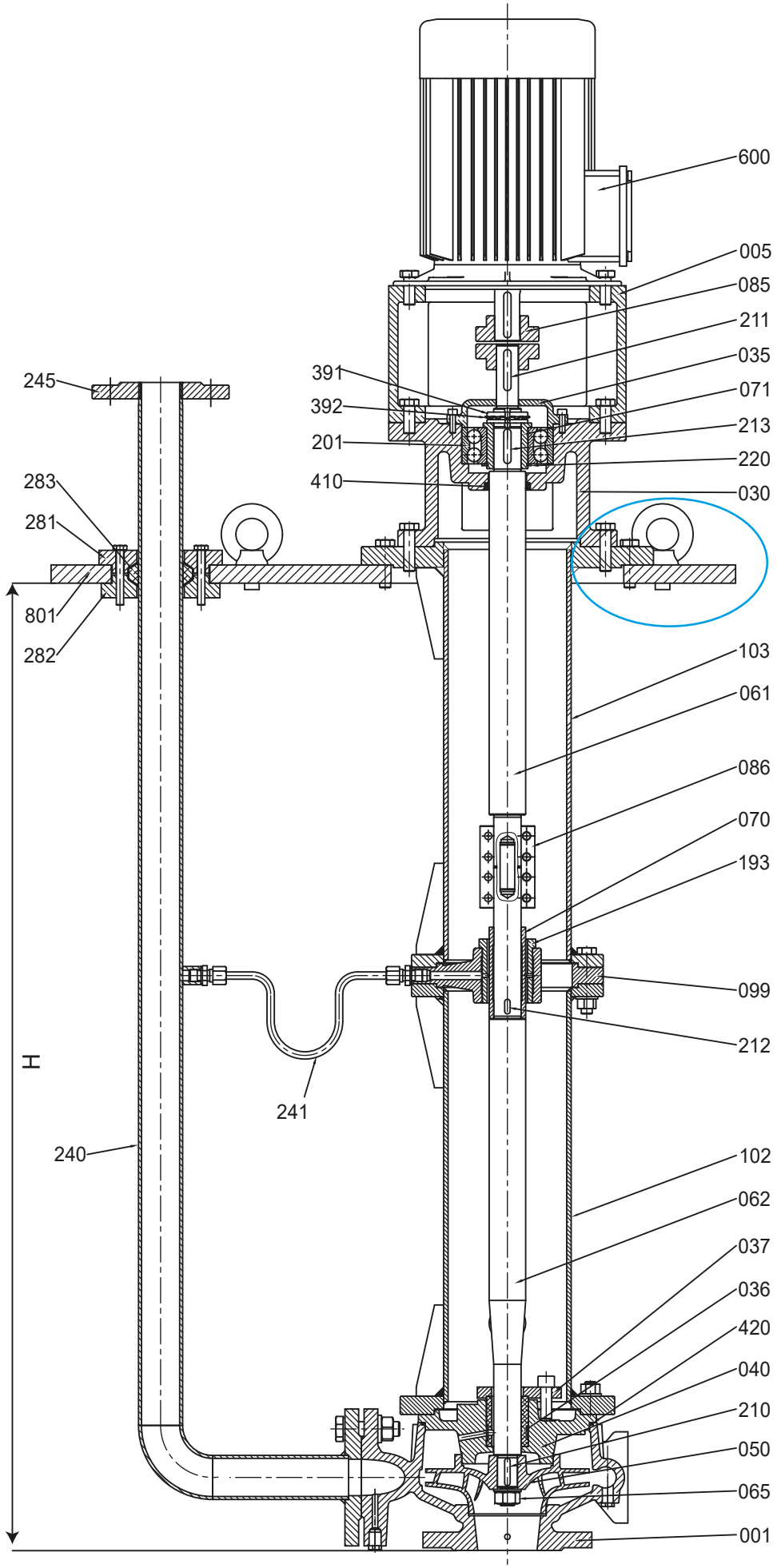
| | |
|---|---|
| 001 | Volute Casing |
| 011 | Motor Pedestal |
| 020* | Wear Ring (casing) |
| 021* | Wear Ring (seal cover) |
| 030 | Bearing Housing |
| 035 | Bearing Cover |
| 036 | Slide Bearing |
| 037 | Slide Bearing Cover |
| 040 | Casing Cover |
| 050 | Impeller |
| 060 | Shaft |
| 065 | Impeller Nut |
| 071 | Intermediate Bearing Sleeve |
| 085 | Flexible Coupling |
| 101 | Column Pipe |
| 201 | Double Row Ball Bearing |
| 210 | Impeller Key |
| 211 | Coupling Key |
| 213 | Bearing Sleeve Key |
| 220 | Circlip |
| 240 | Discharge Pipe |
| 245 | Discharge Flange |
| 281 | Top Fixing Flange |
| 282 | Bottom Fixing Flange |
| 283 | Rubber Gasket |
| 391 | Shaft end nut |
| 392 | Lock Washer |
| 410 | Lip Seal |
| 420 | O-Ring |
| 600 | Electric Motor |
| 801 | Baseplate |
| *801.1 | Stainless Steel Plate |




***Optional**

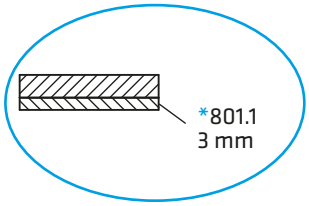
Stainless steel pump base plate can be asked for stainless steel pump as shown in the figure. 3 mm stainless steel plate is added at the bottom of steel baseplate.

## Sectional Drawing (Colum height H= greater than 1.5 m)




## Part List

| | |
|---|---|
| 001 | Volute Casing |
| 011 | Motor Pedestal |
| 020* | Wear Ring (casing) |
| 021* | Wear Ring (seal cover) |
| 030 | Bearing Housing |
| 035 | Bearing Cover |
| 036 | Slide Bearing |
| 037 | Slide Bearing Cover |
| 040 | Casing Cover |
| 050 | Impeller |
| 061 | Shaft (top) |
| 062 | Shaft (bottom) |
| 065 | Impeller Nut and Washer |
| 070 | Spacer Sleeve |
| 071 | Intermediate Bearing Sleeve |
| 085 | Flexible Coupling |
| 086 | Rigid Coupling |
| 099 | Intermediate Bearing Housing |
| 102 | Column Pipe (bottom) |
| 103 | Column Pipe (top) |
| 193 | Intermediate Slide Bearing |
| 201 | Double Row Ball Bearing |
| 210 | Impeller Key |
| 211 | Coupling Key |
| 212 | Spacer Sleeve Key |
| 213 | Bearing Sleeve Key |
| 220 | Circlip |
| 240 | Discharge Pipe |
| 241 | Cooling Pipe |
| 245 | Discharge Flange |
| 281 | Top Fixing Flange |
| 282 | Bottom Fixing Flange |
| 283 | Rubber Gasket |
| 391 | Shaft end nut |
| 392 | Lock Washer |
| 410 | Lip Seal |
| 420 | O-Ring |
| 600 | Electric Motor |
| 801 | Baseplate |
| *801.1 | Stainless Steel Plate |




***Optional**

Stainless steel pump base plate can be asked for stainless steel pump as shown in the figure. 3 mm stainless steel plate is added at the bottom of steel baseplate.

## Material Options

| PART LIST | 0.6025 | 0.7040 | 1.0619 | 1.4308 | 1.4309 | 1.4408 | 1.4409 | 1.4500 | 1.4517 | 1.4469 | 1.4317 | 1.4008 | 2.1050.01 | 2.0975.01 | 2.1096.01 | 1.0037 | 1.0503 | 1.4021 | 1.4021+QT | 1.4301 | 1.4404 | 1.4460 | 1.4462 | Tungsten Carbide | PTFE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volute Casing | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | |
| Casing Cover | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | |
| Impeller | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | ○ | | | |
| Shaft | | | | | | | | | | | | | | | | | ● | ○ | ○ | ○ | ○ | | ○ | | |
| Bearing Housing | ● | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | | | |
| Column Pipe | | | | | | | | | | | | | | | | ● | | | | ○ | ○ | | | | |
| Slide Bearing | | | | | | | | | | | | | ● | | | | | | | | | | | ○ | ○ |

● Standard manufacturing
○ Optional

## Material Equivalents

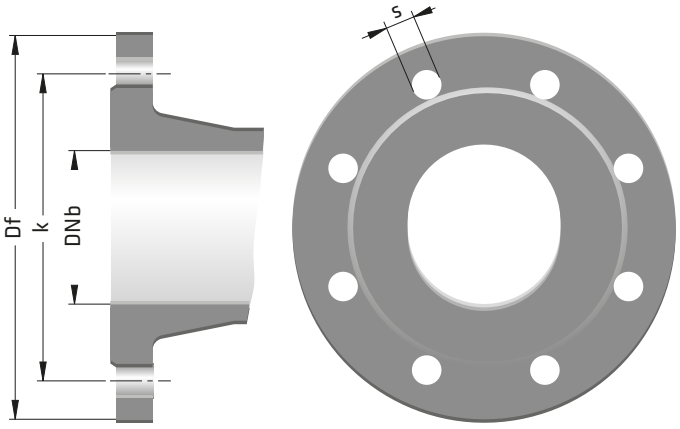
| Description | DIN / EN | | AISI / SAE / ASTM |
|---|---|---|---|
| Cast Iron | 0.6025 | EN-GJL-250 (GG25) | A48 Class 40B |
| Nodular Cast Iron | 0.7040 | EN-GJS-400-15 (GGG40) | A536 60-40-18 |
| Nodular Cast Iron | 0.7043 | EN-GJS-400-18-LT (GGG40.3) | A536 60-40-18 |
| Cast Steel | 1.0619 | GP240GHGS-C25 | A216 WCB |
| Chrome Nickel Cast Steel | 1.4308 | GX5CrNi19-10 | A351 CF8 |
| Chrome Nickel Cast Steel (low carbon) | 1.4309 | GX2CrNi19-11 | A351 CF3 |
| Chrome Nickel Molybdenum Cast Steel | 1.4408 | GX5CrNiMo19-11-2 | A351 CF8M |
| Chrome Nickel Molybdenum Cast Steel (low carbon) | 1.4409 | GX2CrNiMo19-11-2 | A351 CF3M |
| Austenitic Cast Steel | 1.4500 | GX7NiCrMoCuNb25-20 | A351 CN7M |
| Austenitic - Ferritic Cast Steel (duplex) | 1.4517 | GX2CrNiMoCuN25-6-3-3 | A890 CD4MCuN |
| Austenitic - Ferritic Cast Steel (super duplex) | 1.4469 | GX2CrNiMoN26-7-4 | A890 CE3MN |
| Martenzitic Stainless Cast Steel | 1.4317 | GX4CrNi13-4 | A352 CA6NM |
| Martenzitic Stainless Cast Steel | 1.4008 | GX7CrNiMo12-1 | A217 CA15 |
| Cast Bronze (tin alloy) | 2.1050.01 | G-CuSn10 | B427 C90700 |
| Cast Bronze (nickel alloy) | 2.0975.01 | G-CuAl10Ni | B148 C95500 |
| Cast Bronze (leaded) | 2.1096.01 | G-CuSn5ZnPb | B584 C83600 |
| Steel | 1.0037 | St37 | A 29 1015 |
| Carbon Steel | 1.0503 | C45 | AISI 1045 |
| Chrome Steel | 1.4021 | X20Cr13 | A276 Type 420 |
| Chrome Steel (heat treated) | 1.4021 | X20Cr13 | A276 Type 420+QT |
| Chrome Nickel Steel | 1.4301 | X5CrNi18-10 | A276 Type 304 |
| Chrome Nickel Steel (low carbon) | 1.4404 | X2CrNiMo17-12-2 | A276 Type 316L |
| Duplex (austenitic-ferritic) Steel | 1.4460 | X3CrNiMoN27-5-2 | AISI 329 |
| Duplex (austenitic-ferritic) Steel | 1.4462 | X2CrNiMoN22-5-3 | UNS S32205 |

## Flange Dimensions

EN 1092 - 2

| DNe/DNb | Discharge (PN 16) | | | |
|---|---|---|---|---|
| | Df | k | s | n |
| 32 | 140 | 100 | 19 | 4 |
| 40 | 150 | 110 | 19 | 4 |
| 50 | 165 | 125 | 19 | 4 |
| 65 | 185 | 145 | 19 | 4 |
| 80 | 200 | 160 | 19 | 8 |
| 100 | 220 | 180 | 19 | 8 |
| 125 | 250 | 210 | 19 | 8 |
| 150 | 285 | 240 | 23 | 8 |
| 200 | 340 | 295 | 23 | 12 |

" n " number of holes



Standart

Pump • Fire Fighting Units • Booster Set

# ECO SNMV-H

## VERTICAL CENTRIFUGAL PUMPS

ECO SNMV-H Rev.11 09.2021

## Handled Liquids

Clean or slightly contaminated low viscosity liquids without solid & fibrous particles.

## Technical Data

Discharge Flange_____DN 32.....DN 250 mm

Capacity_____up to 1200 $m^3/h$(*)

Head_____up to 160 m(*)

Speed_____up to 3600 rpm(*)

Design Temperature_____-10 °C' to +140 °C(**)

Casing Pressure (Pmax)_____10 bar (16 bar)(**)

(Pmax: Suction Pressure + Shut off Head)

(*) The Material of pumps differ according to the type of pumped liquid, operating temperature and pressure. Contact for detailed information.

## Design Features

•Vertical, radially split volute casing type, single stage, end suction centrifugal pump with closed impeller.

•Suction and discharge flanges conform to EN 1092-2 / PN 16. (EN 1092-1 / PN 16 for steel or stainless steel casing)

•Due to the back-pull-out design, the complete bearing assembly including impeller and casing cover can be dismantled without removing the volute casing from the pipe system. With spacer coupling application, also possible to take out the rotor group without dismantling the electric motor.

•All impellers are balanced dynamically or statically according to ISO 1940 class 6.3.

•Axial thrust is balanced by impeller balancing holes system.

•Direction of rotation is clockwise viewed from drive end.

•Bearings of ECO SNMV-H type pumps are greased lubricated ball bearings.

## Shaft Sealing

•In standard production mechanical seals are used according to pumped liquid and working conditions.

## Pump Designation

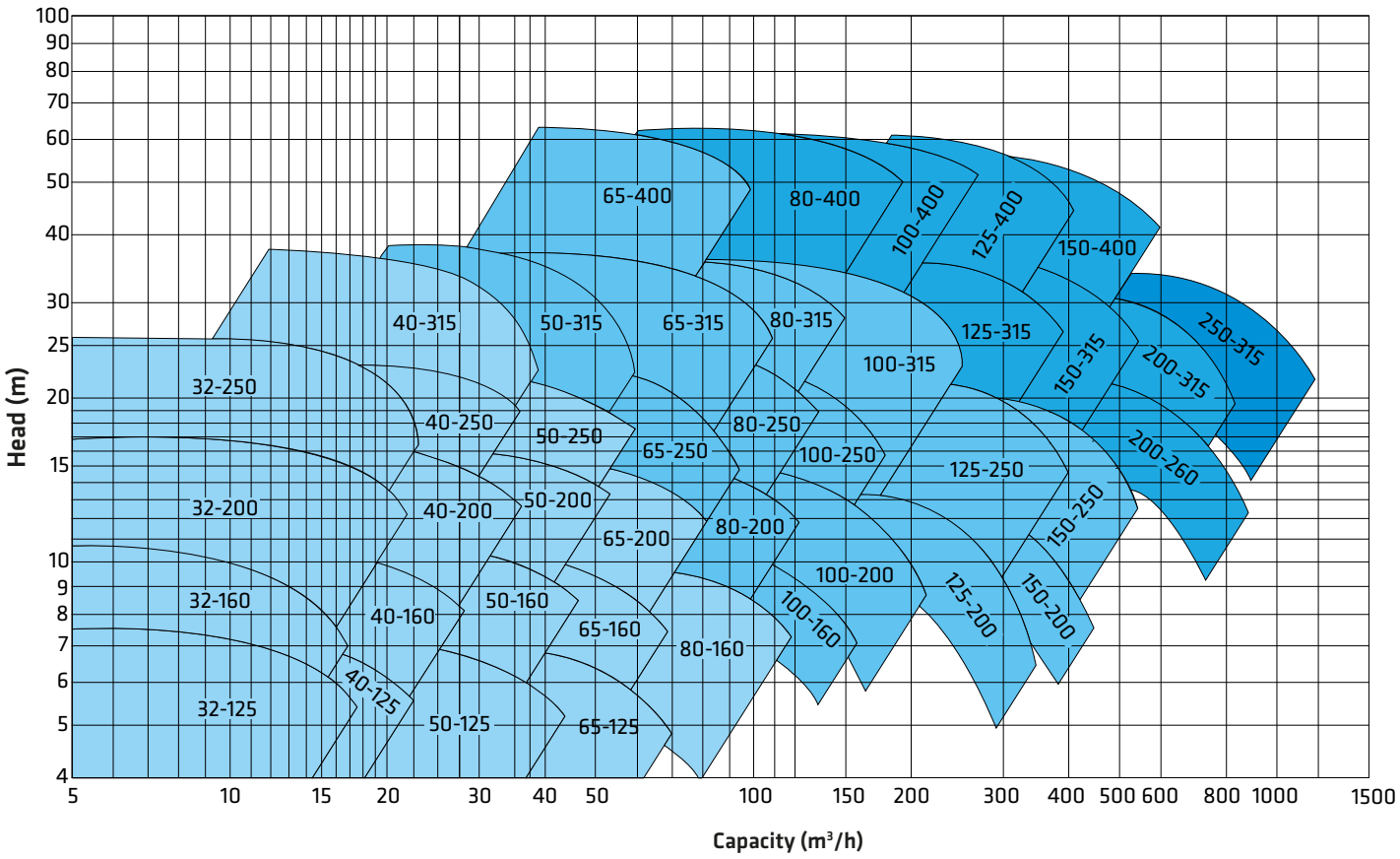
**ECO SNMV-H 125 - 315**

**Pump Type**

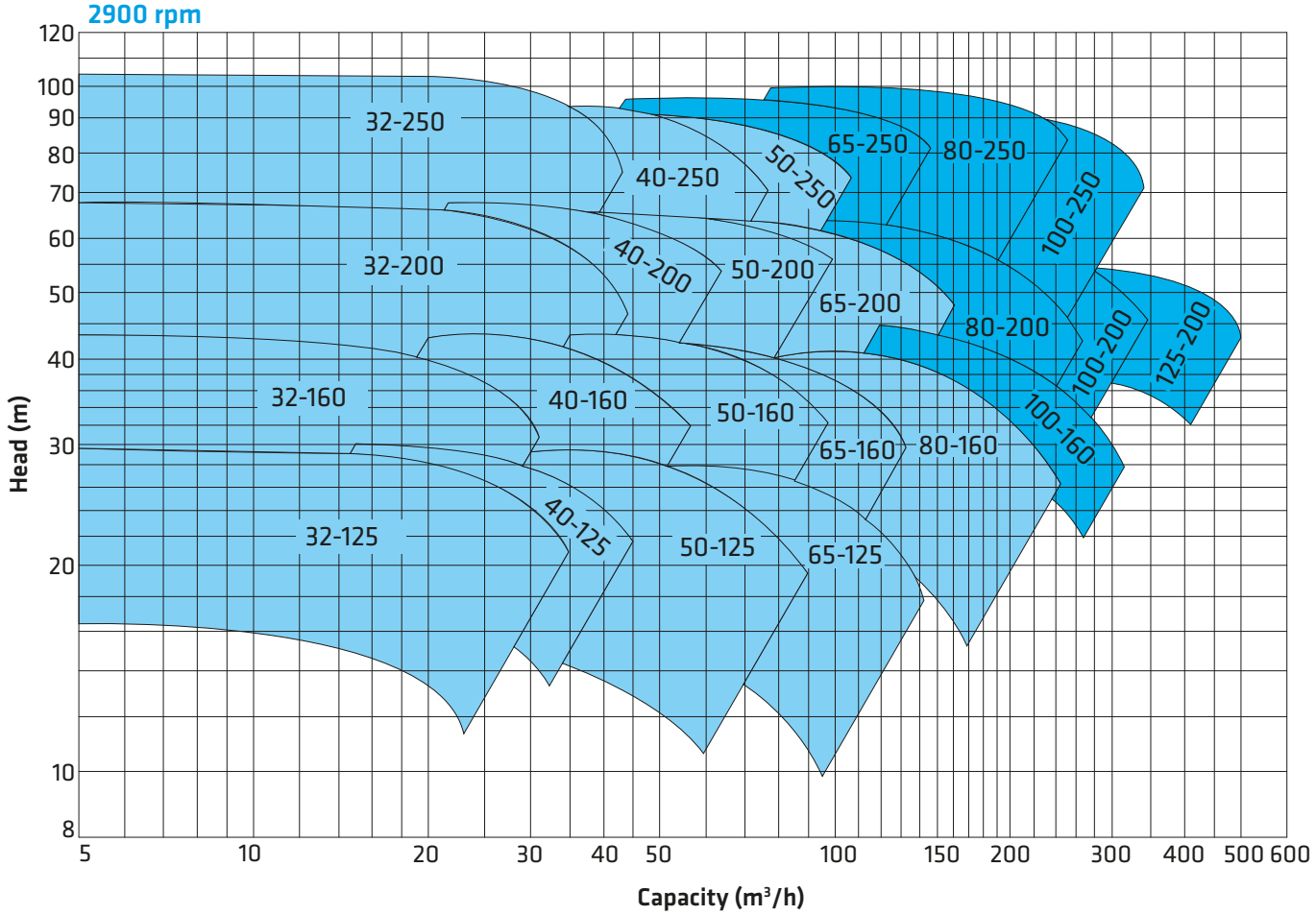
**Discharge Nozzle (DN-mm)**

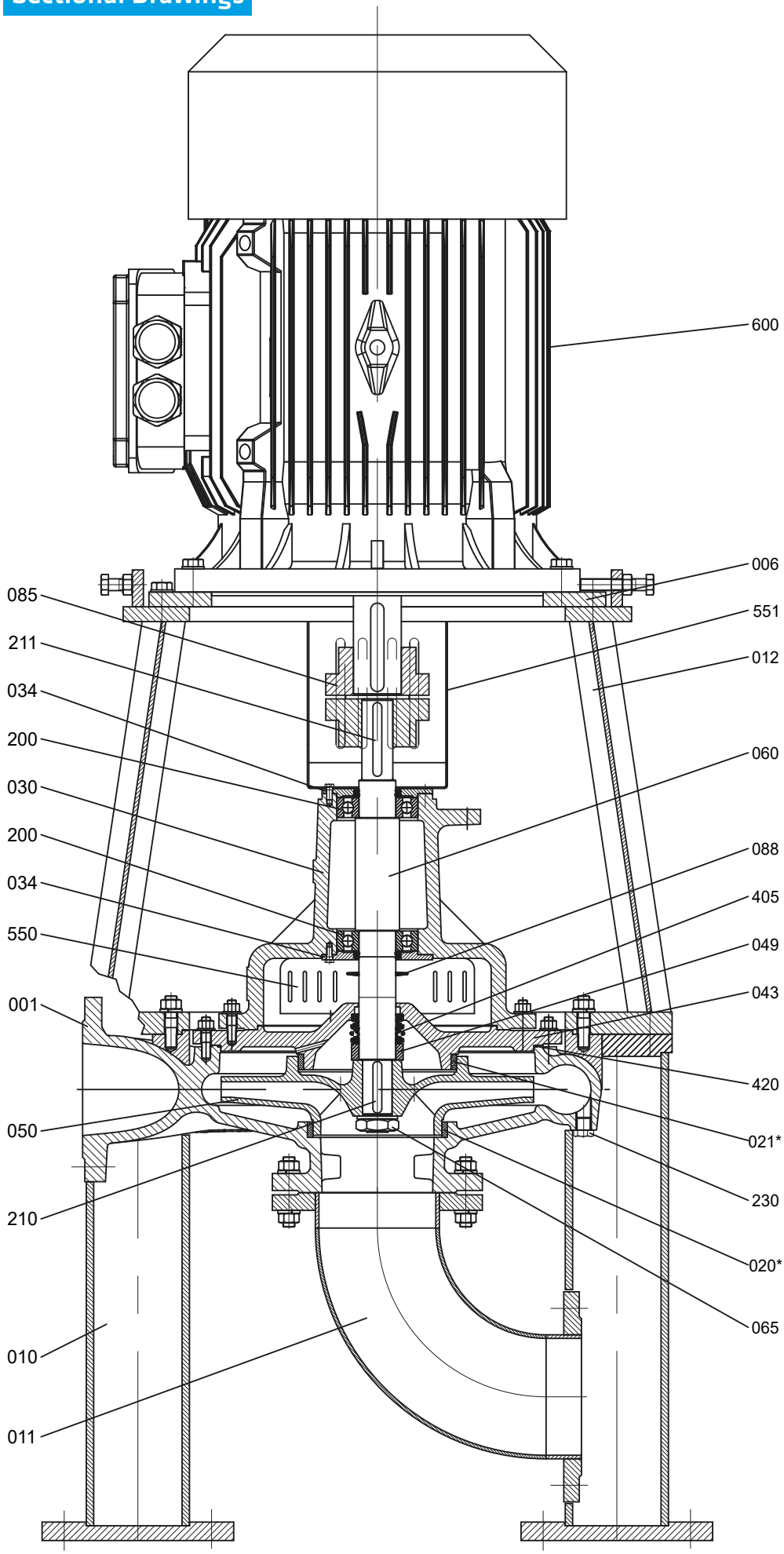
**Nominal Impeller Diameter (mm)**

1450 rpm




2900 rpm






## Part List

| | |
|---|---|
| 001 | Volute Casing |
| 005 | Motor Pedestal |
| 006 | Motor Spacer Flange |
| 010 | Pump Foot |
| 011 | Suction Elbow |
| 020* | Wear Ring (Casing) |
| 021* | Wear Ring (Seal Cover) |
| 030 | Bearing Housing |
| 034 | Bearing Cover |
| 043 | Mechanical Seal Cover |
| 049 | Mechanical Seal Spacer Sleeve |
| 050 | Impeller |
| 060 | Pump Shaft |
| 065 | Impeller Nut |
| 085 | Coupling |
| 088 | Thrower |
| 200 | Ball Bearing |
| 210 | Impeller Key |
| 211 | Coupling Key |
| 230 | Drain Plug |
| 405 | Mechanical Seal |
| 420 | O-Ring |
| 550 | Guard |
| 551 | Coupling Guard |
| 600 | Electric Motor |

( * ) Optional

## Technical Data

# ECO SNMV-H

| Part List | 10 | 30 | 3S | 20 | 60 | 6L | 70 | 7L | 8M | 7D | 7S | 8N | 80 | 4C | 4A | 40 | 80 | 8T | 60 | 7L | 7E | 7D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.6025 | 0.7040 | 0.7043 | 1.0619 | 1.4308 | 1.4309 | 1.4408 | 1.4409 | 1.4500 | 1.4517 | 1.4469 | 1.4317 | 1.4008 | 2.1050.01 | 2.0975.01 | 2.1096.01 | 1.4021 | 1.4021+QT | 1.4301 | 1.4404 | 1.4460 | 1.4462 |
| Volute Casing | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | |
| Casing Cover | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | |
| Impeller | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | ○ | |
| Shaft | | | | | | | | | | | | | | | | | ● | ○ | ○ | ○ | | ○ |
| Bearing Housing | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | |
| Mechanical Seal | EN 12756 | | | | | | | | | | | | | | | | | | | | | |

(*) Optional :Depending on customer requirement or request different types and brands of mechanical seals are applicable.

● Standard manufacturing
○ Optional

## Material Equivalents

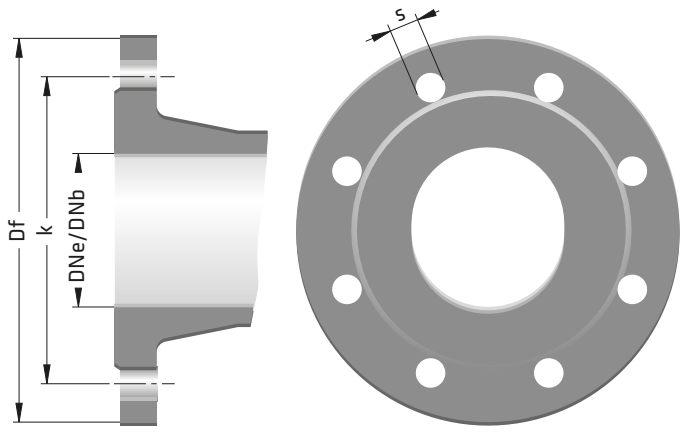
| Description | DIN / EN | | AISI / SAE / ASTM |
|---|---|---|---|
| Cast Iron | 0.6025 | EN-GJL-250 (GG25) | A48 Class 40B |
| Nodular Cast Iron | 0.7040 | EN-GJS-400-15 (GGG40) | A536 60-40-18 |
| Nodular Cast Iron | 0.7043 | EN-GJS-400-18-LT (GGG40.3) | A536 60-40-18 |
| Cast Steel | 1.0619 | GP240GHGS-C25 | A216 WCB |
| Chrome Nickel Cast Steel | 1.4308 | GX5CrNi19-10 | A351 CF8 |
| Chrome Nickel Cast Steel (low carbon) | 1.4309 | GX2CrNi19-11 | A351 CF3 |
| Chrome Nickel Molybdenum Cast Steel | 1.4408 | GX5CrNiMo19-11-2 | A351 CF8M |
| Chrome Nickel Molybdenum Cast Steel (low carbon) | 1.4409 | GX2CrNiMo19-11-2 | A351 CF3M |
| Austenitic Cast Steel | 1.4500 | GX7NiCrMoCuNb25-20 | A351 CN7M |
| Austenitic - Ferritic Cast Steel (duplex) | 1.4517 | GX2CrNiMoCuN25-6-3-3 | A890 CD4MCuN |
| Austenitic - Ferritic Cast Steel (super duplex) | 1.4469 | GX2CrNiMoN26-7-4 | A890 CE3MN |
| Martenzitic Stainless Cast Steel | 1.4317 | GX4CrNi13-4 | A352 CA6NM |
| Martenzitic Stainless Cast Steel | 1.4008 | GX7CrNiMo12-1 | A217 CA15 |
| Cast Bronze (tin alloy) | 2.1050.01 | G-CuSn10 | B427 C90700 |
| Cast Bronze (nickel alloy) | 2.0975.01 | G-CuAl10Ni | B148 C95500 |
| Cast Bronze (leaded) | 2.1096.01 | G-CuSn5ZnPb | B584 C83600 |
| Chrome Steel | 1.4021 | X20Cr13 | A276 Type 420 |
| Chrome Steel(heat treated) | 1.4021 | X20Cr13 | A276 Type 420+QT |
| Chrome Nickel Steel | 1.4301 | X5CrNi18-10 | A276 Type 304 |
| Chrome Nickel Steel (low carbon) | 1.4404 | X2CrNiMo17-12-2 | A276 Type 316L |
| Duplex (austenitic-ferritic) Steel | 1.4460 | X3CrNiMoN27-5-2 | AISI 329 |
| Duplex (austenitic-ferritic) Steel | 1.4462 | X2CrNiMoN22-5-3 | UNS S32205 |

## Flange Dimensions

EN 1092 - 2

| DNe/DNb | Suction & Discharge (PN 16) | | | |
|---|---|---|---|---|
| | Df | k | s | n |
| 32 | 140 | 100 | 19 | 4 |
| 40 | 150 | 110 | 19 | 4 |
| 50 | 165 | 125 | 19 | 4 |
| 65 | 185 | 145 | 19 | 4 |
| 80 | 200 | 160 | 19 | 8 |
| 100 | 220 | 180 | 19 | 8 |
| 125 | 250 | 210 | 19 | 8 |
| 150 | 285 | 240 | 23 | 8 |
| 200 | 340 | 295 | 23 | 12 |
| 250 | 405 | 355 | 28 | 12 |
| 300 | 460 | 410 | 28 | 12 |

" n " number of holes



Standart

Pump • Fire Fighting Units • Booster Set

# ECO SNLV-H

## IN-LINE PUMPS

ECO SNLV-H Rev.11 09.2021

## Handled Liquids

Clean or slightly contaminated low viscosity liquids without solid & fibrous particles.

## Technical Data

Discharge Flange_____DN 40.....DN 250 mm

Capacity_____up to 800 $m^3/h$

Head_____up to 95 m

Speed_____up to 2900 rpm

Design Temperature_____-10 °C' to +140 °C*

Casing Pressure (Pmax)_____10 bar (16 bar)*

(Pmax: Suction Pressure + Shut off Head)

(*) The Material of pumps differ according to the type of pumped liquid, operating temperature and pressure. Contact for detailed information.

## Design Features

•Volute casing, single stage, vertical in-line centrifugal pump with closed impeller and with seperate own bearing bracket.

•Suction and discharge flanges conform to EN 1092-2 / PN 16. (EN 1092-1 / PN 16 for steel or stainless steel casing)

•ECO SNLV-H pumps are short coupled with electric motors of IEC frame sizes with high efficiency class.

•Due to the back-pull-out design, the complete bearing assembly including impeller and casing cover can be dismantled without removing the volute casing from the pipe system. With spacer coupling application, also possible to take out the rotor group without dismantling the electric motor.

•All impellers are balanced dynamically or statically according to ISO 1940 class 6.3.

•Axial thrust is balanced by impeller balancing holes system.

•Direction of rotation is clockwise viewed from drive end.

•Bearings of ECO SNLV-H type pumps are greased lubricated ball bearings.

## Shaft Sealing

•In standard production mechanical seals are used according to pumped liquid and working conditions.

## Pump Designation

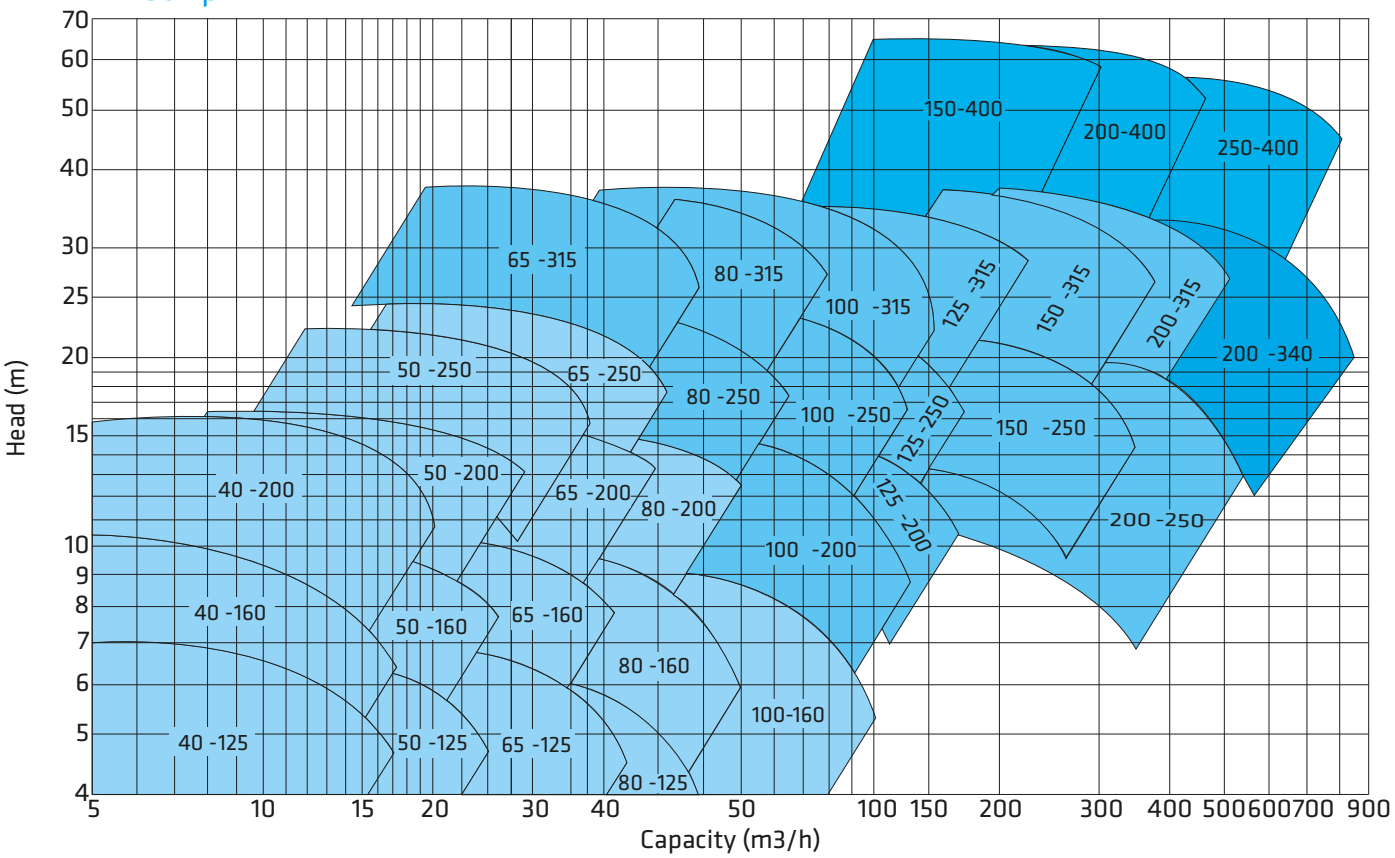
**ECO SNLV-H 100 - 250**

**Pump Type**

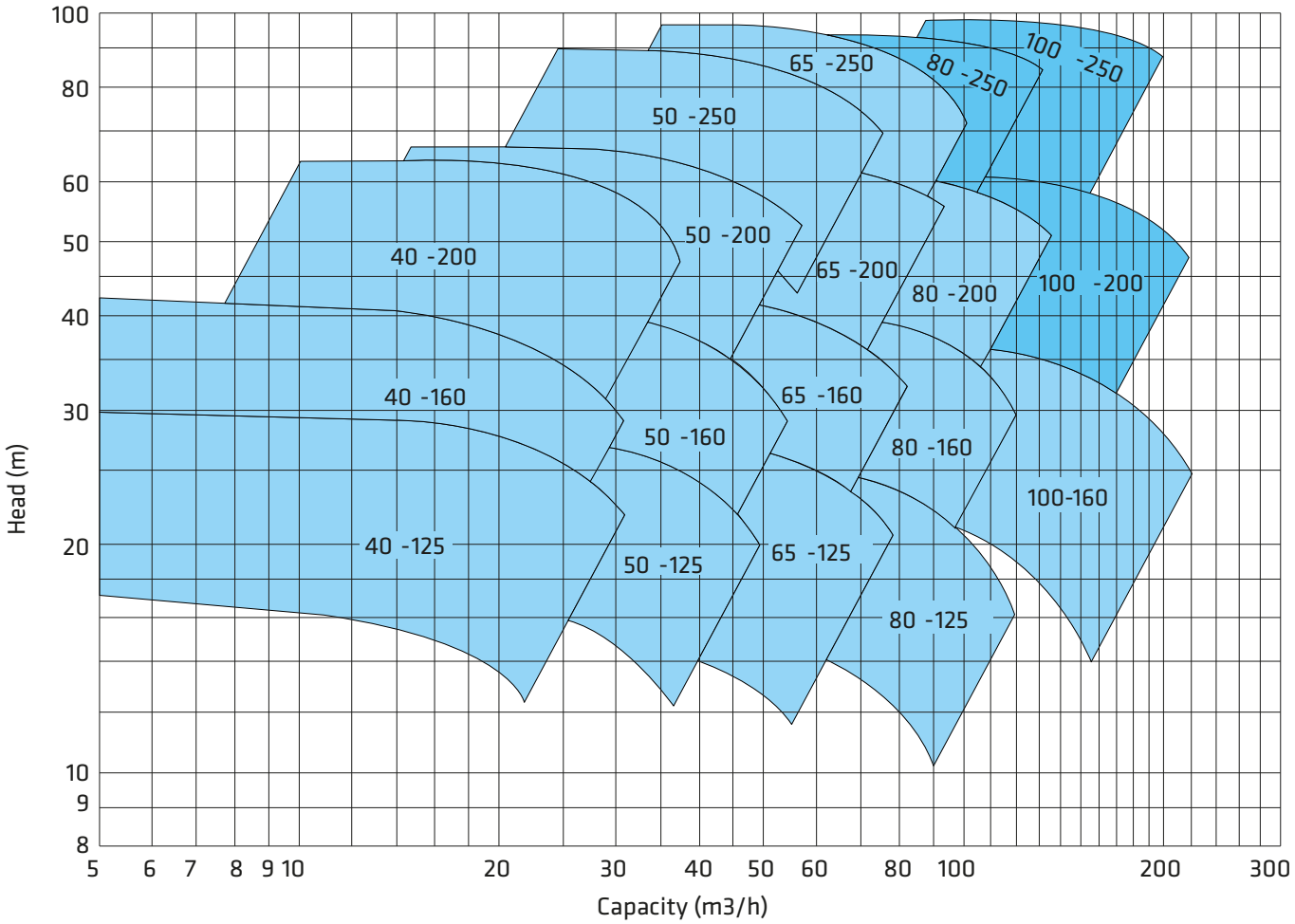
**Suction and Discharge Nozzle (DN-mm)**

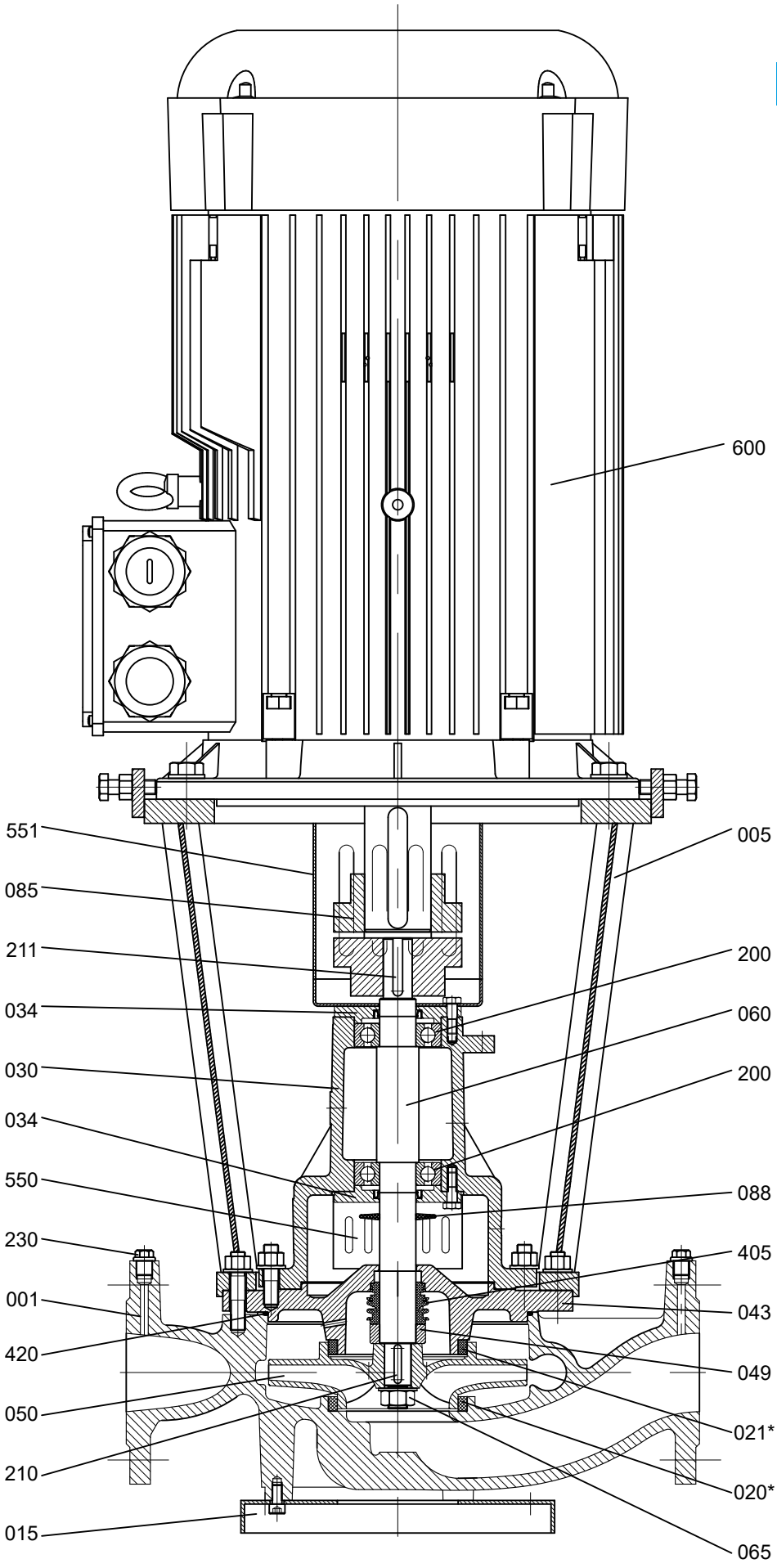
**Nominal Impeller Diameter (mm)**

1450 rpm




2900 rpm






## Part List

| | |
|---|---|
| 001 | Volute Casing |
| 005 | Motor Pedestal |
| 015 | Bottom Plate |
| 020* | Wear Ring (casing) |
| 021* | Wear Ring (seal cover) |
| 030 | Bearing Housing |
| 034 | Bearing Cover |
| 043 | Mechanical Seal Cover |
| 049 | Mechanical Seal Spacer Sleeve |
| 050 | Impeller |
| 060 | Pump Shaft |
| 065 | Impeller Nut |
| 085 | Coupling |
| 088 | Thrower |
| 200 | Ball Bearing |
| 210 | Impeller Key |
| 211 | Coupling Key |
| 230 | Drain Plug |
| 405 | Mechanical Seal |
| 420 | O-Ring |
| 550 | Guard |
| 551 | Coupling Guard |
| 600 | Electric Motor |

( * ) Optional

## Technical Data

| PART LIST | 10 | 30 | 3S | 20 | 60 | 6L | 70 | 7L | 8M | 7D | 7S | 8N | 80 | 4C | 4A | 40 | 80 | 8T | 60 | 7L | 7E | 7D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.6025 | 0.7040 | 0.7043 | 1.0619 | 1.4308 | 1.4309 | 1.4408 | 1.4409 | 1.4500 | 1.4517 | 1.4469 | 1.4317 | 1.4008 | 2.1050.01 | 2.0975.01 | 2.1096.01 | 1.4021 | 1.4021+QT | 1.4301 | 1.4404 | 1.4460 | 1.4462 |
| Volute Casing | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | |
| Casing Cover | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | |
| Impeller | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | ○ | |
| Shaft | | | | | | | | | | | | | | | | | ● | ○ | ○ | ○ | | ○ |
| Bearing Housing | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | |
| Wear Ring | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | |
| Mechanical Seal | EN 12756 | | | | | | | | | | | | | | | | | | | | | |

(*) Optional :Depending on customer requirement or request different types and brands of mechanical seals are applicable.

● Standard manufacturing
○ Optional

## Material Equivalents

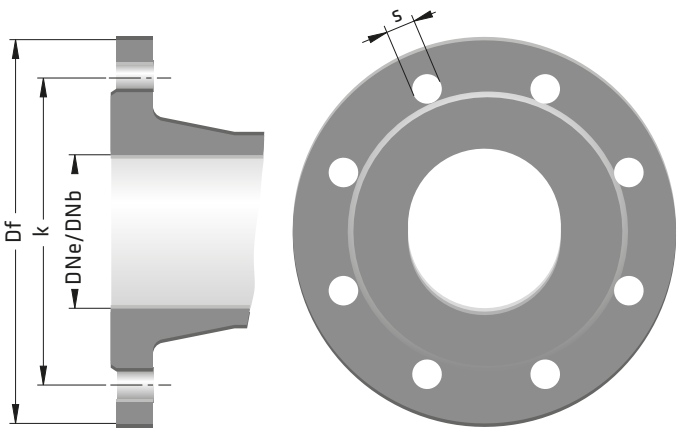
| Description | DIN / EN | | AISI / SAE / ASTM |
|---|---|---|---|
| Cast Iron | 0.6025 | EN-GJL-250 (GG25) | A48 Class 40B |
| Nodular Cast Iron | 0.7040 | EN-GJS-400-15 (GGG40) | A536 60-40-18 |
| Nodular Cast Iron | 0.7043 | EN-GJS-400-18-LT (GGG40.3) | A536 60-40-18 |
| Cast Steel | 1.0619 | GP240GHGS-C25 | A216 WCB |
| Chrome Nickel Cast Steel | 1.4308 | GX5CrNi19-10 | A351 CF8 |
| Chrome Nickel Cast Steel (low carbon) | 1.4309 | GX2CrNi19-11 | A351 CF3 |
| Chrome Nickel Molybdenum Cast Steel | 1.4408 | GX5CrNiMo19-11-2 | A351 CF8M |
| Chrome Nickel Molybdenum Cast Steel (low carbon) | 1.4409 | GX2CrNiMo19-11-2 | A351 CF3M |
| Austenitic Cast Steel | 1.4500 | GX7NiCrMoCuNb25-20 | A351 CN7M |
| Austenitic - Ferritic Cast Steel (duplex) | 1.4517 | GX2CrNiMoCuN25-6-3-3 | A890 CD4MCuN |
| Austenitic - Ferritic Cast Steel (super duplex) | 1.4469 | GX2CrNiMoN26-7-4 | A890 CE3MN |
| Martenzitic Stainless Cast Steel | 1.4317 | GX4CrNi13-4 | A352 CA6NM |
| Martenzitic Stainless Cast Steel | 1.4008 | GX7CrNiMo12-1 | A217 CA15 |
| Cast Bronze (tin alloy) | 2.1050.01 | G-CuSn10 | B427 C90700 |
| Cast Bronze (nickel alloy) | 2.0975.01 | G-CuAl10Ni | B148 C95500 |
| Cast Bronze (leaded) | 2.1096.01 | G-CuSn5ZnPb | B584 C83600 |
| Chrome Steel | 1.4021 | X20Cr13 | A276 Type 420 |
| Chrome Steel(heat treated) | 1.4021 | X20Cr13 | A276 Type 420+QT |
| Chrome Nickel Steel | 1.4301 | X5CrNi18-10 | A276 Type 304 |
| Chrome Nickel Steel (low carbon) | 1.4404 | X2CrNiMo17-12-2 | A276 Type 316L |
| Duplex (austenitic-ferritic) Steel | 1.4460 | X3CrNiMoN27-5-2 | AISI 329 |
| Duplex (austenitic-ferritic) Steel | 1.4462 | X2CrNiMoN22-5-3 | UNS S32205 |

## Flange Dimensions

EN 1092 - 2

| DNe/DNb | Suction & Discharge (PN 16) | | | |
|---|---|---|---|---|
| | Df | k | s | n |
| 40 | 150 | 110 | 19 | 4 |
| 50 | 165 | 125 | 19 | 4 |
| 65 | 185 | 145 | 19 | 4 |
| 80 | 200 | 160 | 19 | 8 |
| 100 | 220 | 180 | 19 | 8 |
| 125 | 250 | 210 | 19 | 8 |
| 150 | 285 | 240 | 23 | 8 |
| 200 | 340 | 295 | 23 | 12 |
| 250 | 405 | 355 | 28 | 12 |

" n " number of holes



Standart

Pump • Fire Fighting Units • Booster Set

# SCP

## ISO 2858
## NORM PUMPS

SCP Rev.11 09.2021

## Handled Liquids

Clean or normal contaminated low or medium viscosity liquids without solid & fibrous particles.

## Technical Data

Discharge Flange_____DN 32.....DN 250 mm

Capacity_____up to 1500 $m^3/h$

Head_____up to 160 m

Speed_____up to 2900 rpm

Operating Temperature_____-10 °C' to +175 °C*

Casing Pressure (Pmax)_____16 bar (25 bar)*

(Pmax: Suction Pressure + Shut off Head)

(*) The Material of pumps differ according to the type of pumped liquid, operating temperature and pressure. Contact for detailed information.

## Design Features

•Horizontal, radially split volute casing type, single stage, end suction centrifugal pumps with closed or semi-open impeller.

•In addition to 28 basic sizes conforming with ISO 2858, there are 10 additional sizes. Dimensions of additional sizes may differ from other suppliers.

•Heavy duty shaft not in contact with the medium handled (dry shaft)

•For casing sealing, confined gaskets are used to prevent blow-out under pressure.

•Suction and discharge flanges conform to EN 1092-2 / PN 16. (EN 1092-1 / PN 16 for steel or stainless steel casing)

•Due to the back-pull-out design, the complete bearing assembly including impeller and casing cover can be dismantled without removing the volute casing from the pipe system. (With spacer coupling application, also possible to take out the rotor group without dismantling the electric motor.)

•All impellers are balanced dynamically or statically according to ISO 1940 class 6.3.

•For closed impellers, axial thrust is balanced by impeller balancing holes system while for semi-open impellers, it is balanced by back ribs.

•Direction of rotation is clockwise viewed from drive end.

•Bearings of SCP type pumps are always oil lubricated.

## Shaft Sealing

•Depending on request or requirement, pumps with soft packing or single, double and catridge type mechanical seals can be supplied.

•External seal cooling system may be used if required.

## Pump Designation

SCP 125 - 315 -A

**Pump Type**

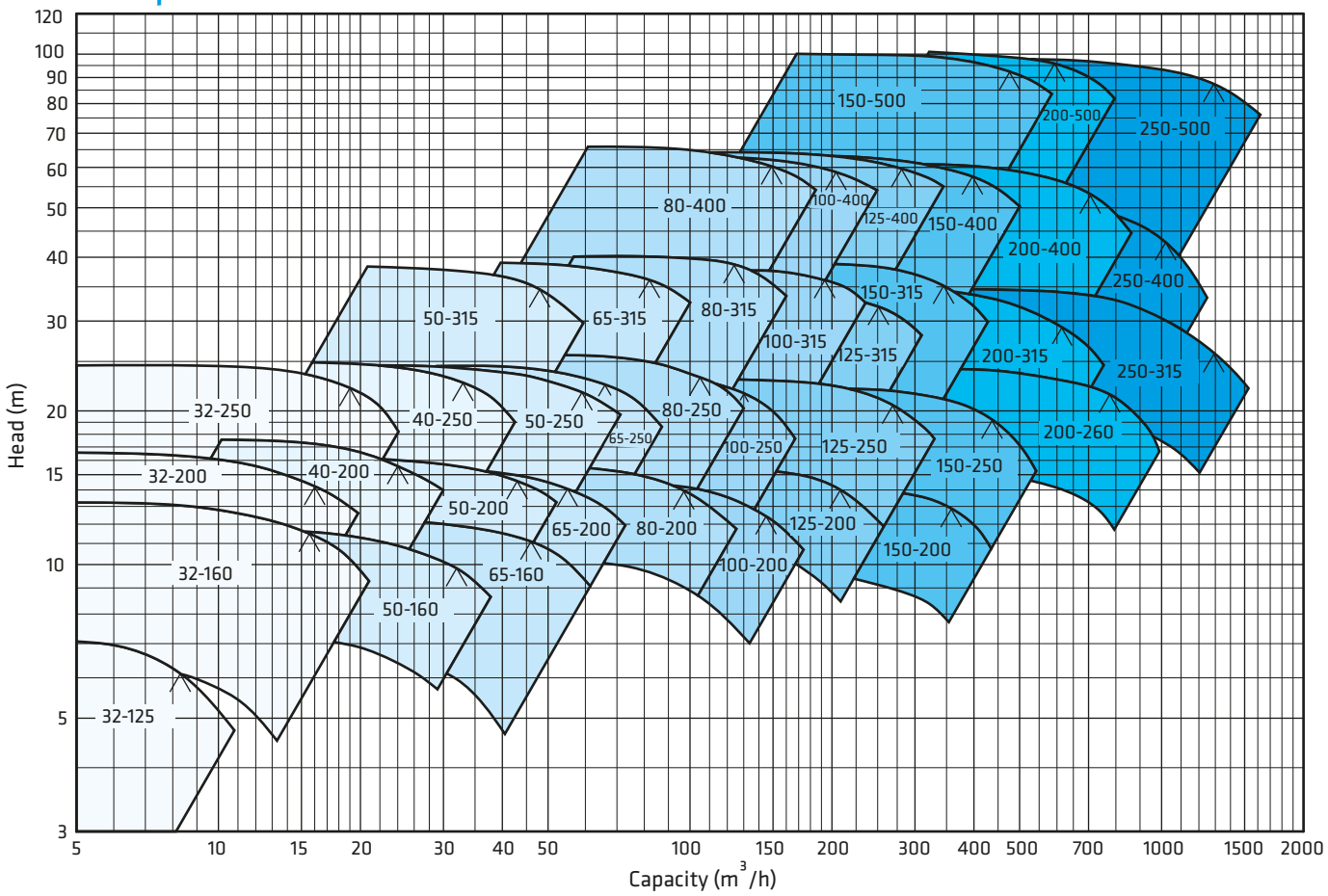
**Discharge Nozzle (DN-mm)**

**Nominal Impeller Diameter(mm)**

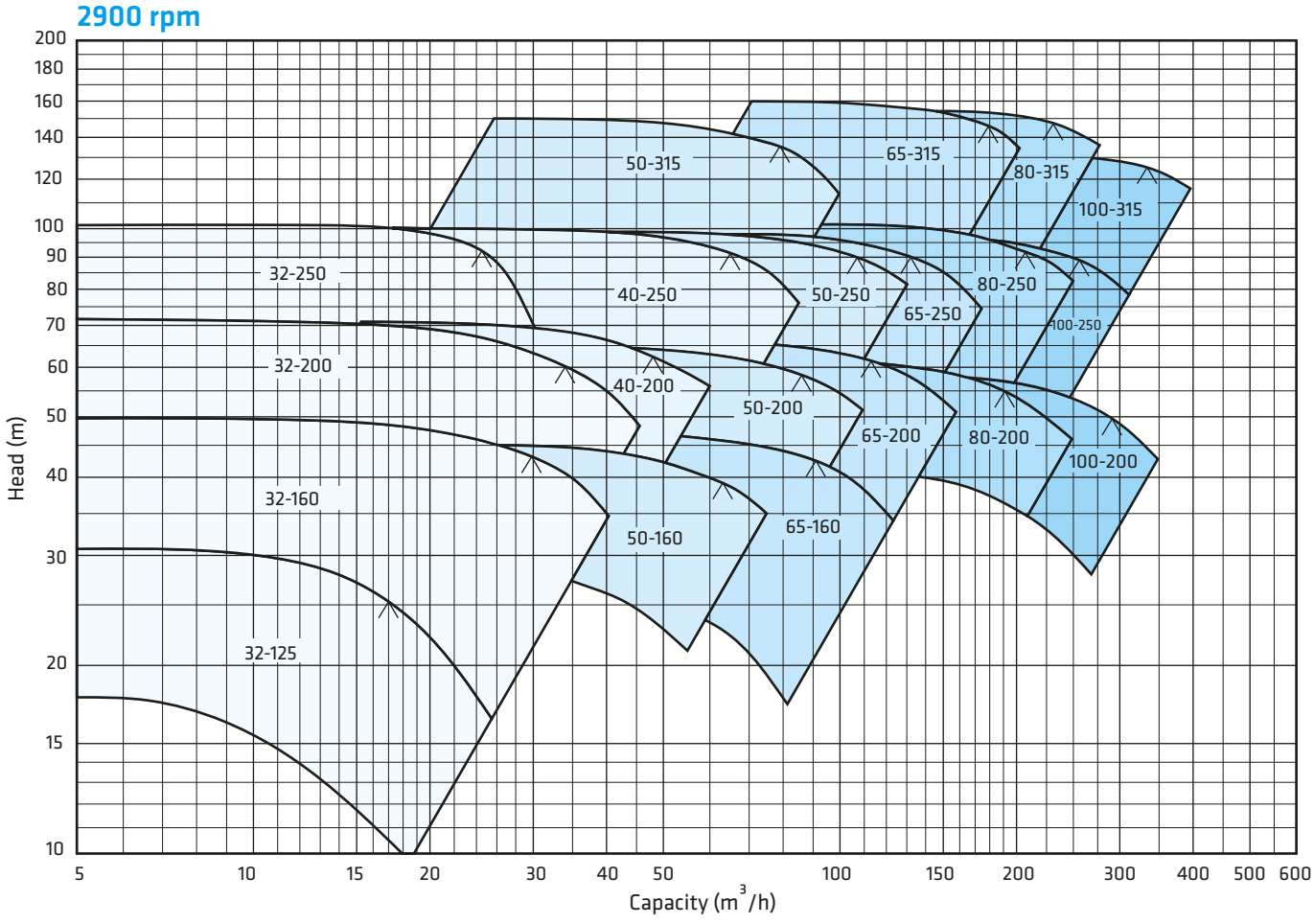
**Impeller Type (A: semi-open)**

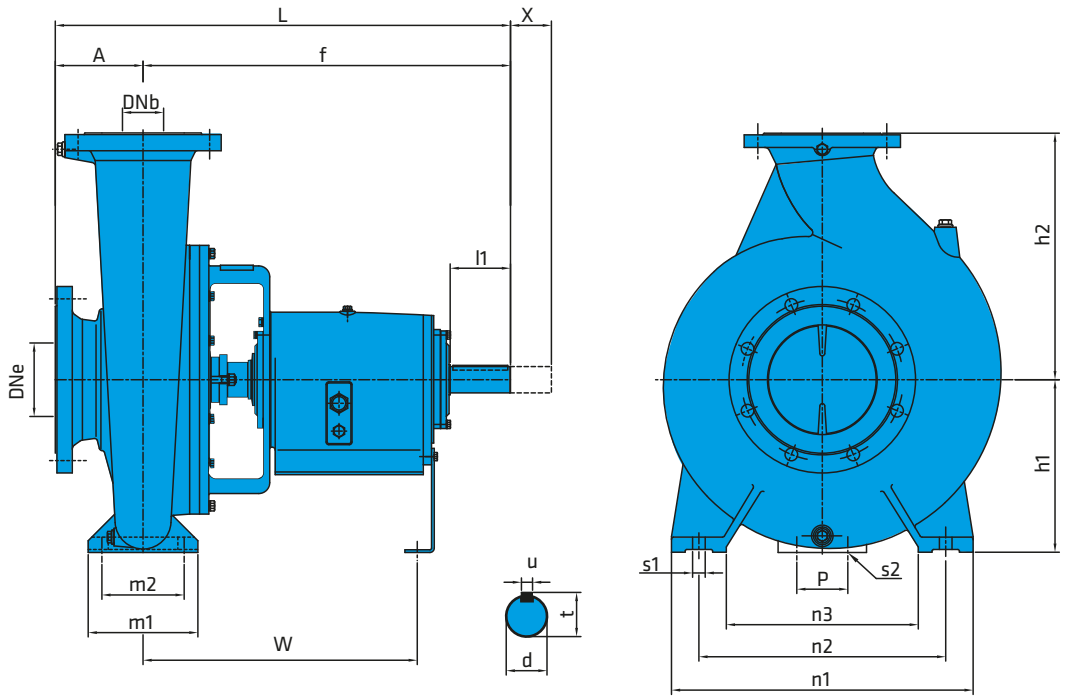
## Field Chart

### 1450 rpm

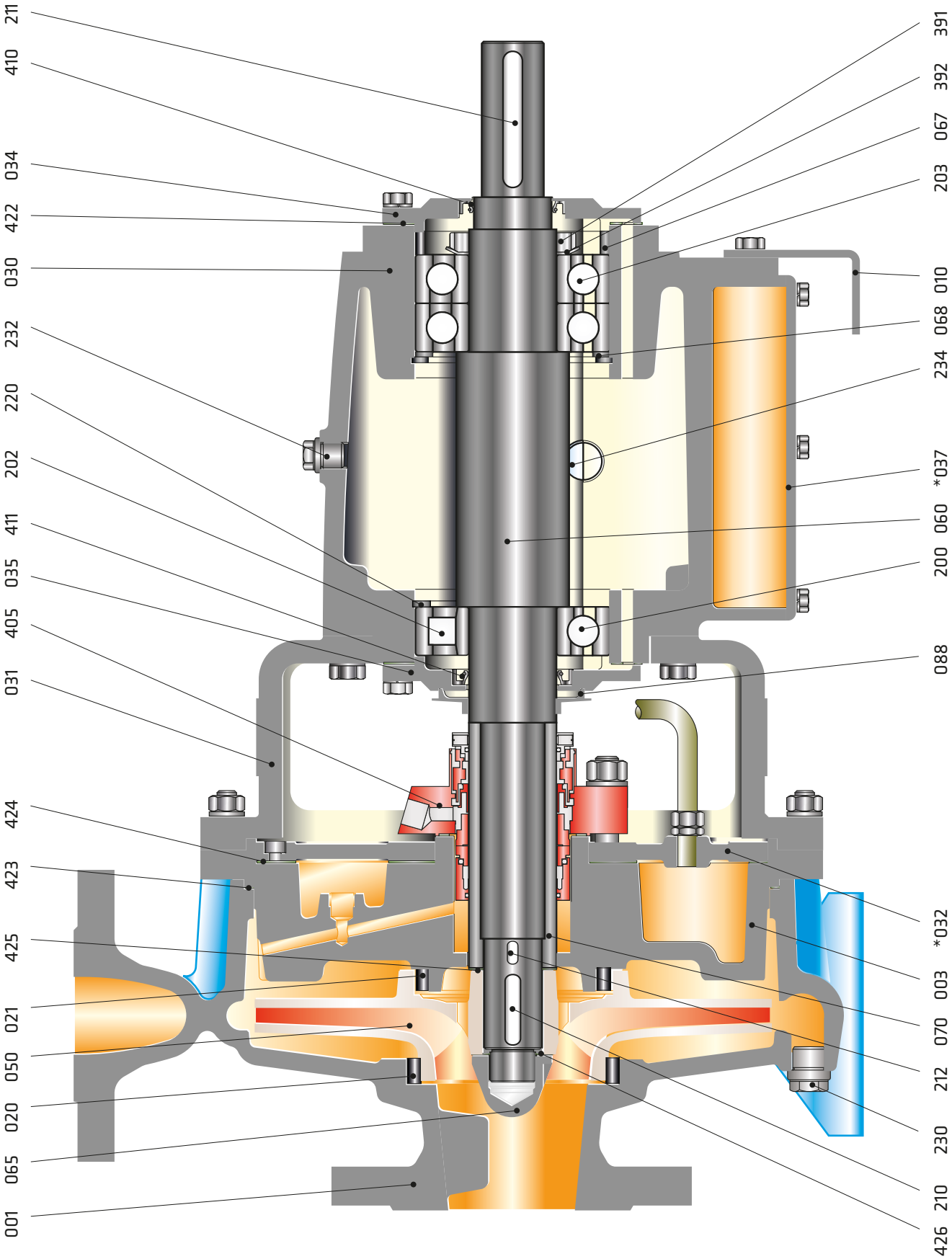



### 2900 rpm






| PUMP TYPE | | Dimensions (mm) | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Overall Dimensions | | | | | | | Support and Foot Dimensions | | | | | | | | | Shaft End | | | | Spacer |
| ISO 2858 | Additional | DNe | DNb | A | f | L | h1 | h2 | m1 | m2 | n1 | n2 | n3 | s1 | p | s2 | w | d | l1 | t | u | x |
| 32-125 | | 50 | 32 | 80 | 385 | 465 | 112 | 140 | 100 | 70 | 190 | 140 | 90 | 14 | 110 | 14 | 285 | 24 | 50 | 27 | 8 | 100 |
| 32-160 | | 50 | 32 | 80 | 385 | 465 | 132 | 160 | 100 | 70 | 240 | 190 | 140 | 14 | 110 | 14 | 285 | 24 | 50 | 27 | 8 | 100 |
| 32-200 | | 50 | 32 | 80 | 385 | 465 | 160 | 180 | 100 | 70 | 240 | 190 | 140 | 14 | 110 | 14 | 285 | 24 | 50 | 27 | 8 | 100 |
| 32-250 | | 50 | 32 | 80 | 385 | 465 | 180 | 225 | 125 | 95 | 320 | 250 | 190 | 14 | 110 | 14 | 370 | 32 | 80 | 35 | 10 | 100 |
| 40-200 | | 65 | 40 | 100 | 385 | 485 | 160 | 180 | 100 | 70 | 265 | 212 | 165 | 14 | 110 | 14 | 285 | 24 | 50 | 27 | 8 | 100 |
| 40-250 | | 65 | 40 | 100 | 500 | 600 | 180 | 225 | 125 | 95 | 320 | 250 | 190 | 14 | 110 | 14 | 370 | 32 | 80 | 35 | 10 | 100 |
| 50-160 | | 80 | 50 | 100 | 385 | 485 | 160 | 180 | 100 | 70 | 265 | 212 | 165 | 14 | 110 | 14 | 285 | 24 | 50 | 27 | 8 | 100 |
| 50-200 | | 80 | 50 | 100 | 385 | 485 | 160 | 200 | 100 | 70 | 265 | 212 | 165 | 14 | 110 | 14 | 285 | 24 | 50 | 27 | 8 | 100 |
| 50-250 | | 80 | 50 | 125 | 500 | 625 | 180 | 225 | 125 | 95 | 320 | 250 | 190 | 14 | 110 | 14 | 370 | 32 | 80 | 35 | 10 | 100 |
| 50-315 | | 80 | 50 | 125 | 500 | 625 | 225 | 280 | 125 | 95 | 345 | 280 | 215 | 14 | 110 | 14 | 370 | 32 | 80 | 35 | 10 | 100 |
| 65-160 | | 100 | 65 | 100 | 500 | 600 | 160 | 200 | 125 | 95 | 280 | 212 | 150 | 14 | 110 | 14 | 370 | 32 | 80 | 35 | 10 | 140 |
| 65-200 | | 100 | 65 | 100 | 500 | 600 | 180 | 225 | 125 | 95 | 320 | 250 | 190 | 14 | 110 | 14 | 370 | 32 | 80 | 35 | 10 | 140 |
| 65-250 | | 100 | 65 | 125 | 500 | 625 | 200 | 250 | 160 | 120 | 360 | 280 | 200 | 19 | 110 | 14 | 370 | 32 | 80 | 35 | 10 | 140 |
| 65-315 | | 100 | 65 | 125 | 530 | 655 | 225 | 280 | 160 | 120 | 400 | 315 | 240 | 19 | 110 | 14 | 370 | 42 | 110 | 45 | 12 | 140 |
| 80-200 | | 125 | 80 | 125 | 500 | 625 | 180 | 250 | 125 | 95 | 345 | 280 | 215 | 14 | 110 | 14 | 370 | 32 | 80 | 35 | 10 | 140 |
| 80-250 | | 125 | 80 | 125 | 500 | 625 | 225 | 280 | 160 | 120 | 400 | 315 | 240 | 19 | 110 | 14 | 370 | 32 | 80 | 35 | 10 | 140 |
| 80-315 | | 125 | 80 | 125 | 530 | 655 | 250 | 315 | 160 | 120 | 400 | 315 | 240 | 19 | 110 | 14 | 370 | 42 | 110 | 45 | 12 | 140 |
| 80-400 | | 125 | 80 | 125 | 530 | 655 | 280 | 355 | 160 | 120 | 435 | 355 | 275 | 19 | 110 | 14 | 370 | 42 | 110 | 45 | 12 | 140 |
| 100-200 | | 125 | 100 | 125 | 500 | 625 | 200 | 280 | 160 | 120 | 360 | 280 | 200 | 19 | 110 | 14 | 370 | 32 | 80 | 35 | 10 | 140 |
| 100-250 | | 125 | 100 | 140 | 530 | 670 | 225 | 280 | 160 | 120 | 400 | 315 | 240 | 19 | 110 | 14 | 370 | 42 | 110 | 45 | 12 | 140 |
| 100-315 | | 125 | 100 | 140 | 530 | 670 | 250 | 315 | 160 | 120 | 400 | 315 | 240 | 19 | 110 | 14 | 370 | 42 | 110 | 45 | 12 | 140 |
| 100-400 | | 125 | 100 | 140 | 530 | 670 | 280 | 355 | 200 | 150 | 500 | 400 | 300 | 23 | 110 | 14 | 370 | 42 | 110 | 45 | 12 | 140 |
| | 125-200 | 150 | 125 | 140 | 500 | 640 | 250 | 315 | 160 | 120 | 400 | 315 | 240 | 19 | 110 | 14 | 370 | 32 | 80 | 35 | 10 | 140 |
| 125-250 | | 150 | 125 | 140 | 530 | 670 | 250 | 355 | 160 | 120 | 400 | 315 | 240 | 19 | 110 | 14 | 370 | 42 | 110 | 45 | 12 | 140 |
| 125-315 | | 150 | 125 | 140 | 530 | 670 | 280 | 355 | 200 | 150 | 500 | 400 | 300 | 23 | 110 | 14 | 370 | 42 | 110 | 45 | 12 | 140 |
| 125-400 | | 150 | 125 | 140 | 530 | 670 | 315 | 400 | 200 | 150 | 500 | 400 | 300 | 23 | 110 | 14 | 370 | 42 | 110 | 45 | 12 | 140 |
| | 150-200 | 200 | 150 | 160 | 545 | 705 | 280 | 355 | 200 | 150 | 550 | 450 | 350 | 23 | 140 | 14 | 381 | 42 | 110 | 45 | 10 | 180 |
| 150-250 | | 200 | 150 | 160 | 530 | 690 | 280 | 375 | 200 | 150 | 550 | 450 | 350 | 23 | 140 | 14 | 366 | 42 | 110 | 45 | 12 | 180 |
| 150-315 | | 200 | 150 | 160 | 670 | 830 | 315 | 400 | 200 | 150 | 550 | 450 | 350 | 23 | 140 | 19 | 500 | 48 | 110 | 51,5 | 14 | 180 |
| 150-400 | | 200 | 150 | 160 | 670 | 830 | 315 | 450 | 200 | 150 | 550 | 450 | 350 | 23 | 140 | 19 | 500 | 48 | 110 | 51,5 | 14 | 180 |
| | 150-500 | 200 | 150 | 200 | 730 | 930 | 400 | 525 | 250 | 200 | 720 | 600 | 435 | 27 | 140 | 19 | 495 | 55 | 110 | 59 | 16 | 140 |
| | 200-260 | 250 | 200 | 200 | 630 | 830 | 355 | 450 | 250 | 200 | 600 | 500 | 360 | 23 | 140 | 20 | 410 | 48 | 110 | 51,55 | 14 | 160 |
| | 200-315 | 250 | 200 | 200 | 684 | 884 | 355 | 450 | 250 | 200 | 600 | 500 | 360 | 23 | 140 | 20 | 520 | 48 | 110 | 45 | 14 | 160 |
| | 200-400 | 250 | 200 | 180 | 725 | 905 | 400 | 500 | 250 | 200 | 600 | 500 | 360 | 23 | 140 | 20 | 490 | 55 | 110 | 59 | 16 | 160 |
| | 200-500 | 250 | 200 | 210 | 925 | 1135 | 400 | 525 | 300 | 240 | 720 | 600 | 435 | 27 | 140 | 20 | 640 | 70 | 140 | 74,5 | 20 | 160 |
| | 250-315 | 300 | 250 | 230 | 730 | 960 | 400 | 525 | 300 | 240 | 720 | 600 | 435 | 27 | 140 | 20 | 515 | 55 | 110 | 59 | 16 | 200 |
| | 250-400 | 300 | 250 | 230 | 750 | 980 | 400 | 525 | 300 | 240 | 720 | 600 | 435 | 27 | 140 | 20 | 515 | 55 | 110 | 59 | 16 | 200 |
| | 250-500 | 300 | 250 | 225 | 940 | 1165 | 450 | 630 | 300 | 240 | 720 | 600 | 435 | 27 | 140 | 20 | 670 | 70 | 140 | 74,5 | 20 | 200 |


211
410
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422
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232
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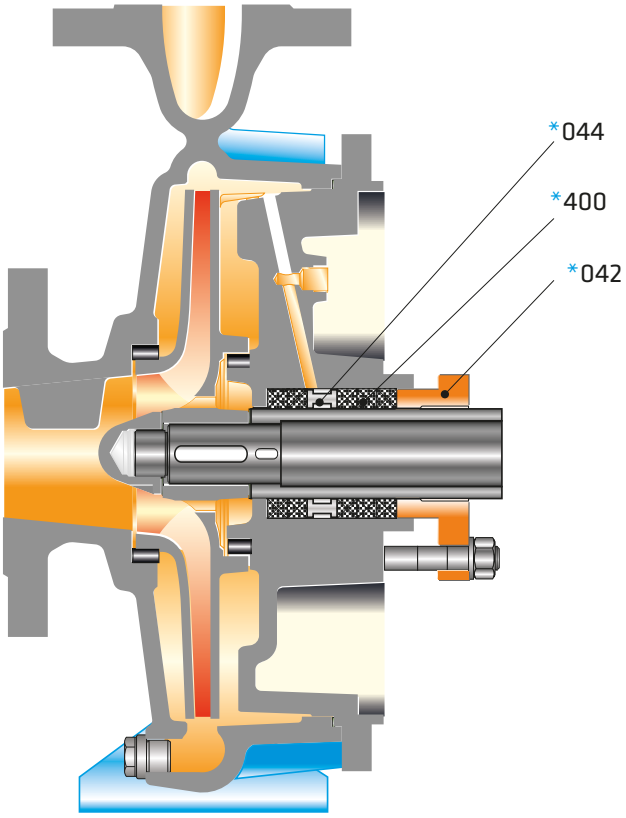
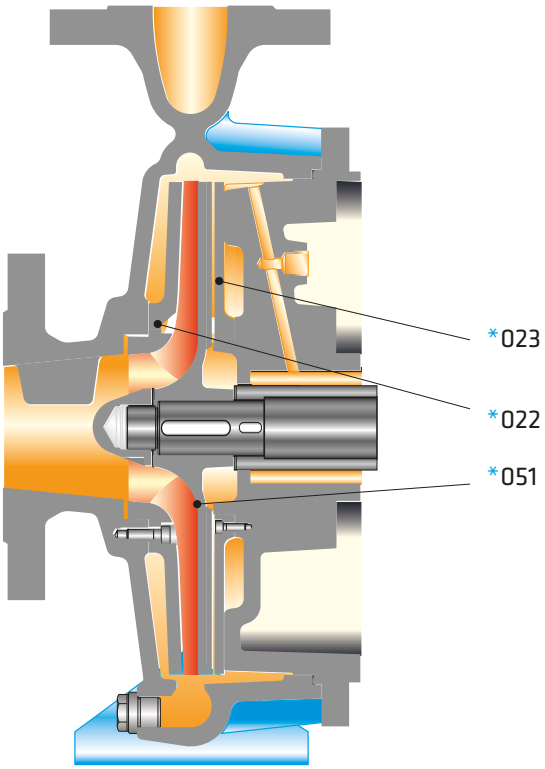
426

## Sectional Drawings

### Soft Packing Application




### Semi-open Impeller Application




## Part List

| | |
|---|---|
| 001 | Volute Casing |
| 003 | Casing Cover |
| 010 | Support Foot |
| 020 | Wear Ring (casing) |
| 021 | Wear Ring (casing cover) |
| *022 | Front Wear Plate |
| *023 | Back Wear Plate |
| 030 | Bearing Bracket |
| 031 | Bearing Bracket Lantern |
| *032 | Cooling-Heating Jacket Cover |
| 034 | Bearing Cover (outboard) |
| 035 | Bearing Cover (inboard) |
| *037 | Bearing Cooling Cover |
| *042 | Gland |
| *044 | Lantern Ring |
| 050 | Impeller |
| *051 | Semi-open impeller |
| 060 | Shaft |
| 065 | Impeller Nut |
| 067 | Bearing Spacer Sleeve |
| 068 | Bearing Spacer Sleeve |
| 070 | Shaft Protecting Sleeve |
| 088 | Thrower |
| 200 | Ball Bearing |
| 202 | Cylindrical Roller Bearing |
| 203 | Angular Contact Ball Bearing |
| 210 | Key (impeller) |
| 211 | Key (coupling) |
| 212 | Shaft Sleeve Key |
| 220 | Circlip |
| 230 | Drain Plug |
| 232 | Oil Filling Plug |
| 234 | Oil Sight Gauge |
| 391 | Shaft Nut |
| 392 | Lock Washer |
| *400 | Soft Packing |
| 405 | Mechanical Seal |
| 410 | Lip Seal |
| 411 | Lip Seal |
| 422 | Gasket |
| 423 | Gasket |
| 424 | Gasket |
| 425 | Gasket |
| 426 | Gasket |

* Optional

## Technical Data

| PART LIST | 10 | 30 | 3S | 20 | 60 | 6L | 70 | 7L | 8M | 7D | 7S | 8N | 80 | 4C | 4A | 40 | 80 | 8T | 60 | 7L | 7E | 7D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.6025 | 0.7040 | 0.7043 | 1.0619 | 1.4308 | 1.4309 | 1.4408 | 1.4409 | 1.4500 | 1.4517 | 1.4469 | 1.4317 | 1.4008 | 2.1050.01 | 2.0975.01 | 2.1096.01 | 1.4021 | 1.4021+QT | 1.4301 | 1.4404 | 1.4460 | 1.4462 |
| Volute Casing | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | |
| Casing Cover | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | |
| Impeller | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | ○ | |
| Shaft | | | | | | | | | | | | | | | | | ● | ○ | ○ | ○ | | ○ |
| Bearing Bracket | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | |
| Wear Ring | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | |
| Shaft Protecting Sleeve | | | | | | | | | | | | | | | | | ● | ○ | ○ | ○ | | ○ |
| Mechanical Seal (*) | EN 12756 | | | | | | | | | | | | | | | | | | | | | |

(*) Optional :Depending on customer requirement or request different types and brands of mechanical seals are applicable.

● Standard manufacturing
○ Optional

## Material Equivalents

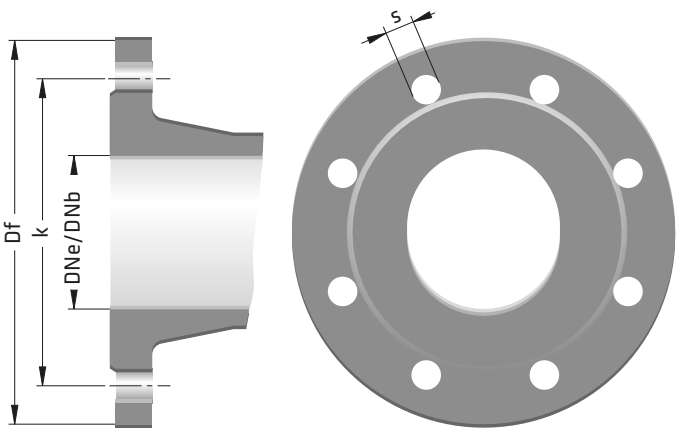
| Description | DIN / EN | | AISI / SAE / ASTM |
|---|---|---|---|
| Cast Iron | 0.6025 | EN-GJL-250 (GG25) | A48 Class 40B |
| Nodular Cast Iron | 0.7040 | EN-GJS-400-15 (GGG40) | A536 60-40-18 |
| Nodular Cast Iron | 0.7043 | EN-GJS-400-18-LT (GGG40.3) | A536 60-40-18 |
| Cast Steel | 1.0619 | GP240GHGS-C25 | A216 WCB |
| Chrome Nickel Cast Steel | 1.4308 | GX5CrNi19-10 | A351 CF8 |
| Chrome Nickel Cast Steel (low carbon) | 1.4309 | GX2CrNi19-11 | A351 CF3 |
| Chrome Nickel Molybdenum Cast Steel | 1.4408 | GX5CrNiMo19-11-2 | A351 CF8M |
| Chrome Nickel Molybdenum Cast Steel (low carbon) | 1.4409 | GX2CrNiMo19-11-2 | A351 CF3M |
| Austenitic Cast Steel | 1.4500 | GX7NiCrMoCuNb25-20 | A351 CN7M |
| Austenitic - Ferritic Cast Steel (duplex) | 1.4517 | GX2CrNiMoCuN25-6-3-3 | A890 CD4MCuN |
| Austenitic - Ferritic Cast Steel (super duplex) | 1.4469 | GX2CrNiMoN26-7-4 | A890 CE3MN |
| Martenzitic Stainless Cast Steel | 1.4317 | GX4CrNi13-4 | A352 CA6NM |
| Martenzitic Stainless Cast Steel | 1.4008 | GX7CrNiMo12-1 | A217 CA15 |
| Cast Bronze (tin alloy) | 2.1050.01 | G-CuSn10 | B427 C90700 |
| Cast Bronze (nickel alloy) | 2.0975.01 | G-CuAl10Ni | B148 C95500 |
| Cast Bronze (leaded) | 2.1096.01 | G-CuSn5ZnPb | B584 C83600 |
| Chrome Steel | 1.4021 | X20Cr13 | A276 Type 420 |
| Chrome Steel(heat treated) | 1.4021 | X20Cr13 | A276 Type 420+QT |
| Chrome Nickel Steel | 1.4301 | X5CrNi18-10 | A276 Type 304 |
| Chrome Nickel Steel (low carbon) | 1.4404 | X2CrNiMo17-12-2 | A276 Type 316L |
| Duplex (austenitic-ferritic) Steel | 1.4460 | X3CrNiMoN27-5-2 | AISI 329 |
| Duplex (austenitic-ferritic) Steel | 1.4462 | X2CrNiMoN22-5-3 | UNS S32205 |

## Flange Dimensions

EN 1092 - 2

| DNe/DNb | Suction & Discharge (PN 16) | | | |
|---|---|---|---|---|
| | Df | k | s | n |
| 32 | 140 | 100 | 19 | 4 |
| 40 | 150 | 110 | 19 | 4 |
| 50 | 165 | 125 | 19 | 4 |
| 65 | 185 | 145 | 19 | 4 |
| 80 | 200 | 160 | 19 | 8 |
| 100 | 220 | 180 | 19 | 8 |
| 125 | 250 | 210 | 19 | 8 |
| 150 | 285 | 240 | 23 | 8 |
| 200 | 340 | 295 | 23 | 12 |
| 250 | 405 | 355 | 28 | 12 |
| 300 | 460 | 410 | 28 | 12 |

" n " number of holes



Standart

Pump • Fire Fighting Units • Booster Set

# SCP-HT

## HOT WATER PUMPS

SCP-HT Rev.11 09.2021

## Handled Liquids

SCP-HT pumps are speacially designed for hot water and geothermal water application.

## Technical Data

Discharge Flange_____DN 32.....DN 250 mm

Capacity_____up to 1500 $m^3/h$

Head_____up to 160 m

Speed_____up to 2900 rpm

Design Temperature_____up to +230 °C*

Casing Pressure (Pmax)_____25 bar (40 bar)*

(Pmax: Suction Pressure + Shut off Head)

(*) The Material of pumps differ according to the type of pumped liquid, operating temperature and pressure. Contact for detailed information.

## Design Features

•Horizontal, radially split volute casing type, single stage, end suction centrifugal pumps with closed impeller.

•Heavy duty shaft not in contact with the medium handled (dry shaft)

•For casing sealing, confined gaskets are used to prevent blow-out under pressure.

•Coupling misalignment due to thermal expansions are mainly reduced with centerline mounting design.

•Suction and discharge flanges conform to EN 1092-2 / PN 25. (EN 1092-1 / PN 25 for steel or stainless steel casing)

•Due to the back-pull-out design, the complete bearing assembly including impeller and casing cover can be dismantled without removing the volute casing from the pipe system. (With spacer coupling application, also possible to take out the rotor group without dismantling the electric motor.)

•All impellers are balanced dynamically or statically according to ISO 1940 class 6.3.

•Axial thrust is balanced by impeller balancing holes system.

•Direction of rotation is clockwise viewed from drive end.

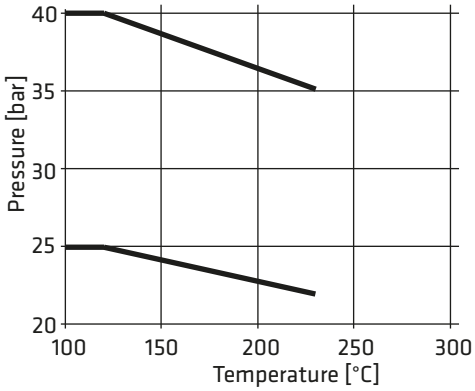
•Bearings of SCP-HT type pumps are always oil lubricated.

## Shaft Sealing

•Depending on request or requirement, pumps with soft packing or single, double and catridge type mechanical seals can be supplied.

•External seal cooling system may be used if required.

## Pressure & Temperature Limits




## Pump Designation

**SCP-HT 100 - 250**

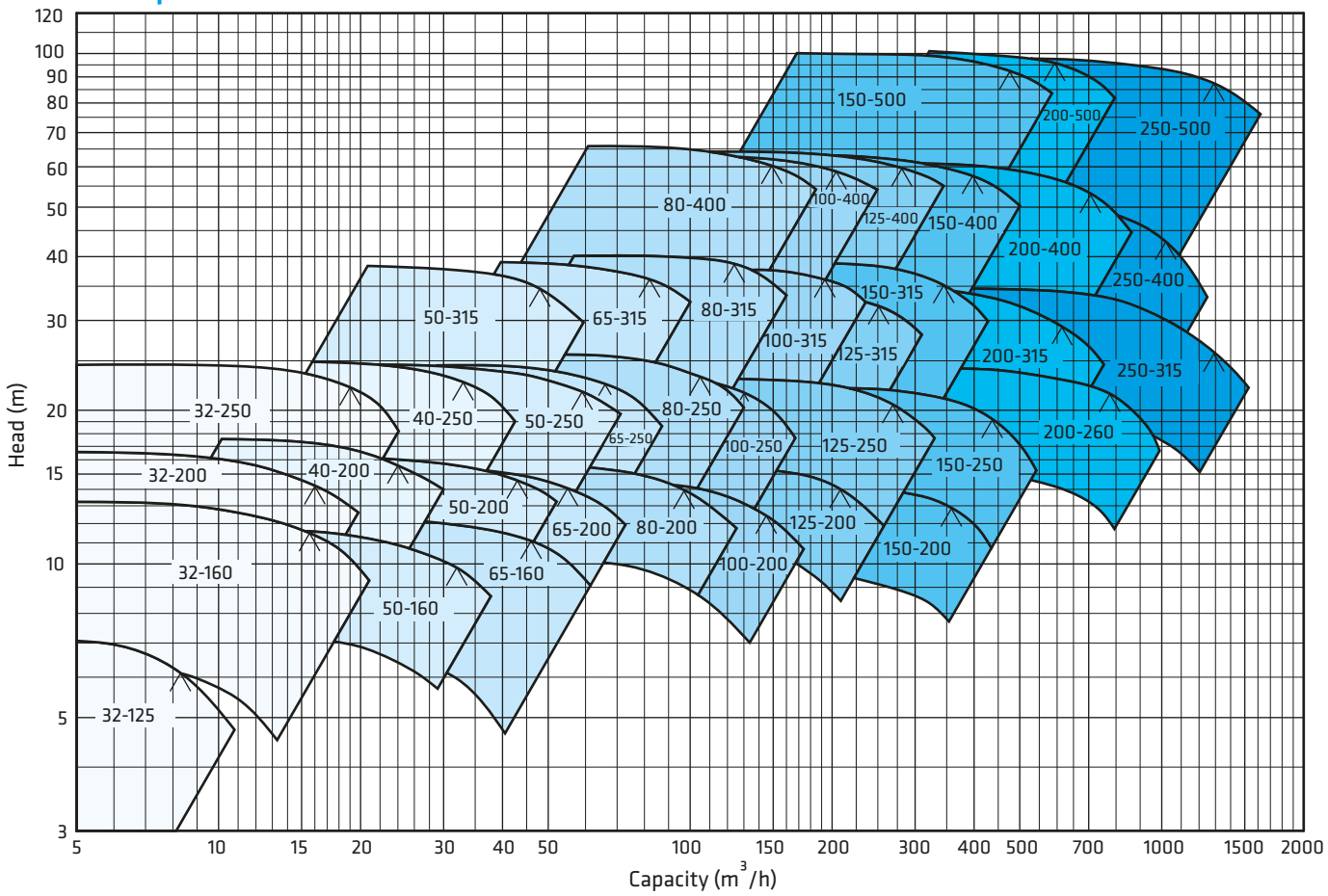
**Pump Type**

**Discharge Nozzle (DN-mm)**

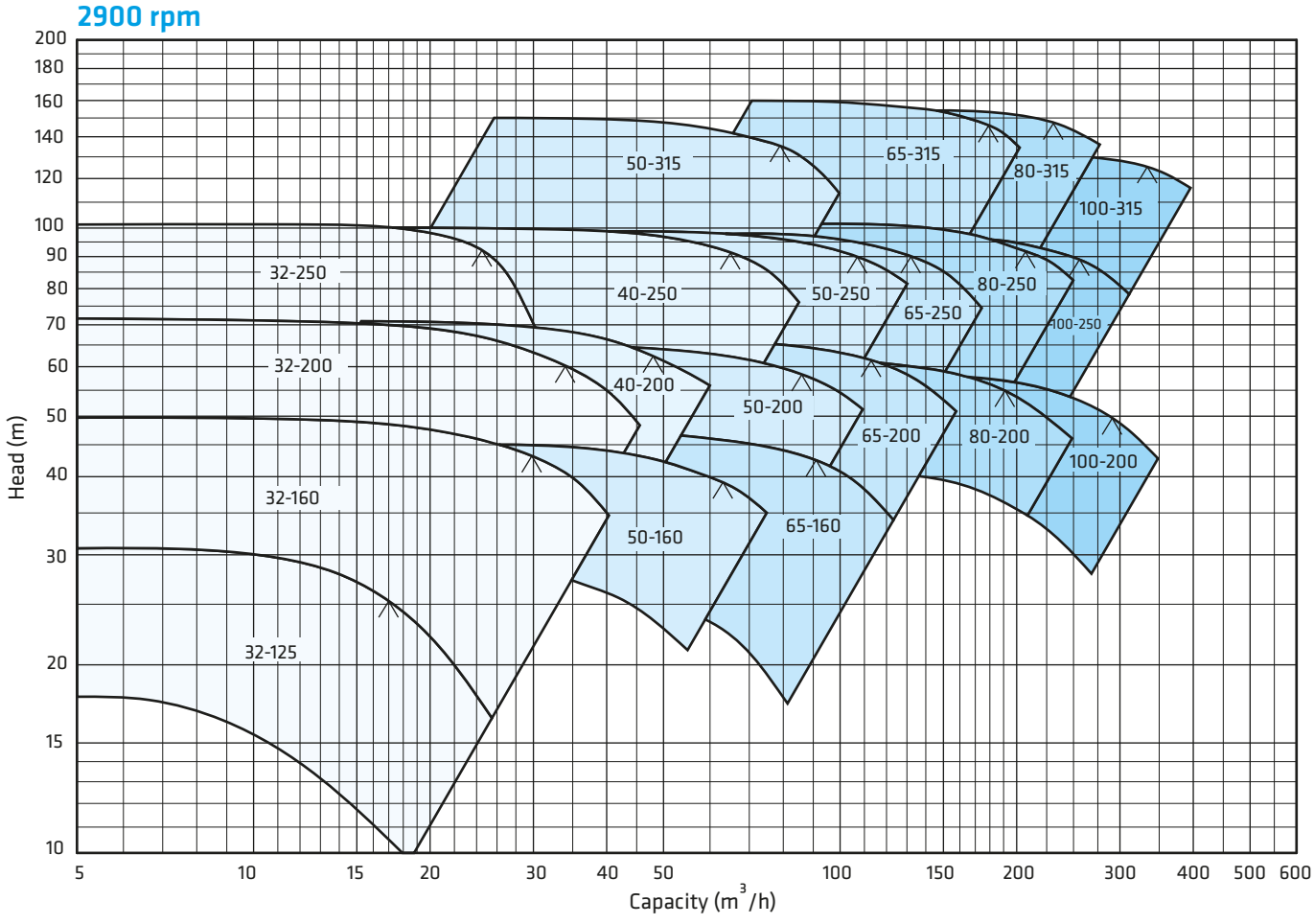
**Nominal Impeller Diameter (mm)**

02.2020 / Rev. 3

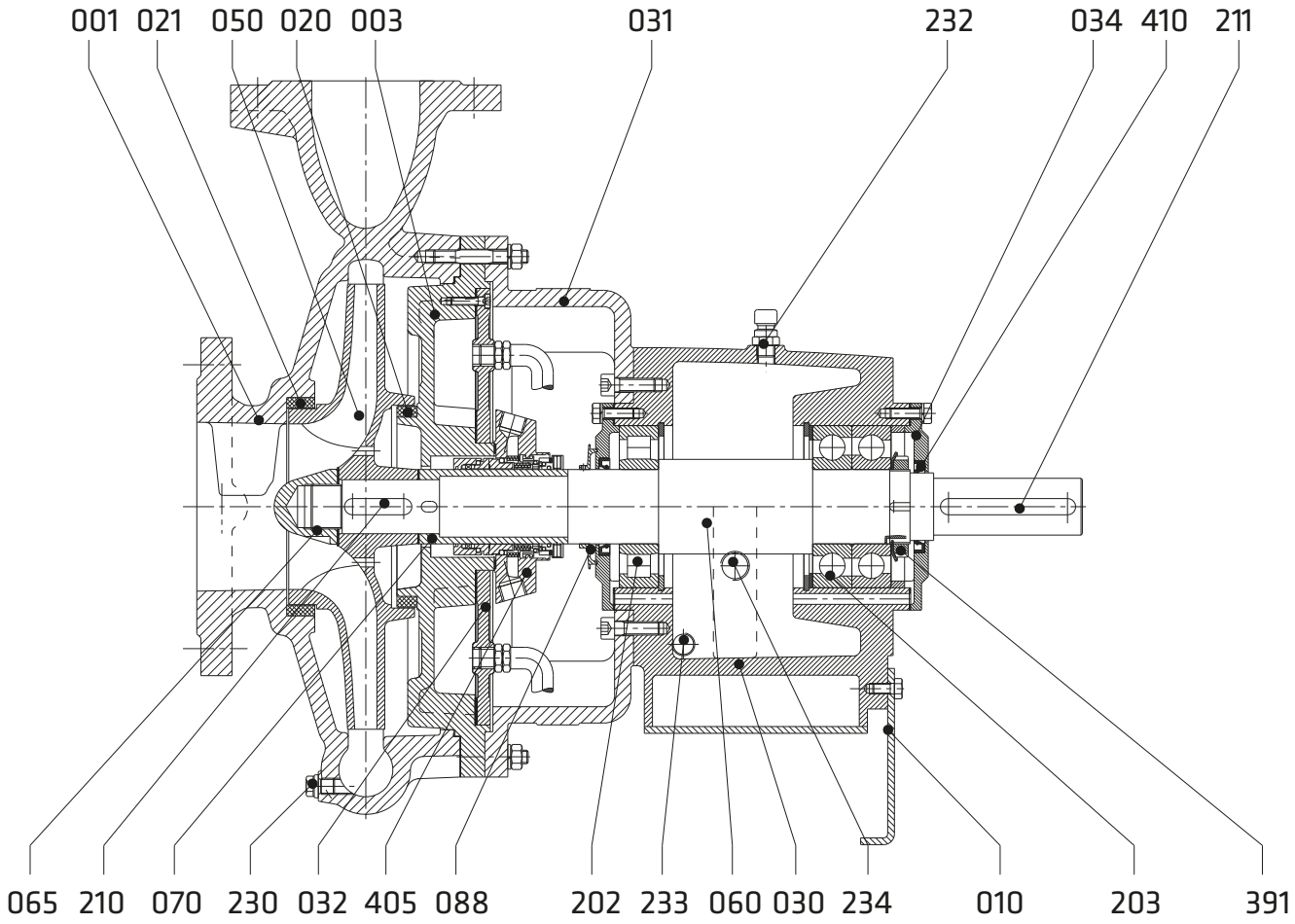
## 1450 rpm




## 2900 rpm



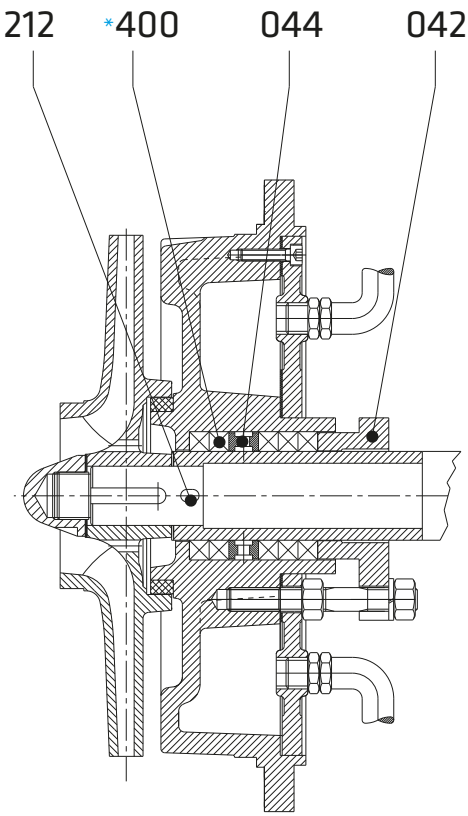
## Sectional Drawings




## Part List

| | |
|---|---|
| 001 | Volute Casing |
| 003 | Casing Cover |
| 010 | Support Foot |
| 020 | Wear Ring (casing) |
| 021 | Wear Ring (casing cover) |
| 030 | Bearing Bracket |
| 031 | Bearing Bracket Lantern |
| 032 | Cooling - Heating jacket Cover |
| 034 | Bearing Cover |
| 042 | Gland |
| 044 | Lantern Ring |
| 050 | Impeller |
| 060 | Shaft |
| 065 | Impeller Nut |
| 070 | Shaft Protecting Sleeve |
| 088 | Thrower |
| 202 | Cylindrical Roller Bearing |
| 203 | Angular Contact Ball Bearing |
| 210 | Impeller Key |
| 211 | Key (coupling) |
| 212 | Shaft Sleeve Key |
| 230 | Drain Plug |
| 232 | Oil Filling Plug |
| 233 | Oil Drain Plug |
| 234 | Oil Sight Gauge |
| 391 | Shaft Nut |
| 400* | Soft Packing Seal |
| 405 | Mechanical Seal |
| 410 | Lip Seal |

* Optional



## Technical Data

| Part List | 10 | 30 | 20 | 60 | 6L | 70 | 7L | 8M | 7D | 7S | 8N | 80 | 80 | 8T | 60 | 7L | 7E | 7D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.6025 | 0.7040 | 1.0619 | 1.4308 | 1.4309 | 1.4408 | 1.4409 | 1.4500 | 1.4517 | 1.4469 | 1.4317 | 1.4008 | 1.4021 | 1.4021+QT | 1.4301 | 1.4404 | 1.4460 | 1.4462 |
| Volute Casing | | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | |
| Casing Cover | | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | |
| Impeller | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | ○ | |
| Shaft | | | | | | | | | | | | | ● | ○ | ○ | ○ | | ○ |
| Bearing Bracket | ● | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | |
| Wear Ring | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | |
| Shaft Protecting Sleeve | | | | | | | | | | | | | ● | ○ | ○ | ○ | | ○ |
| Mechanical Seal (*) | EN 12756 | | | | | | | | | | | | | | | | | |

(*) Optional :Depending on customer requirement or request different types and brands of mechanical seals are applicable.

● Standard manufacturing
○ Optional

## Material Equivalents

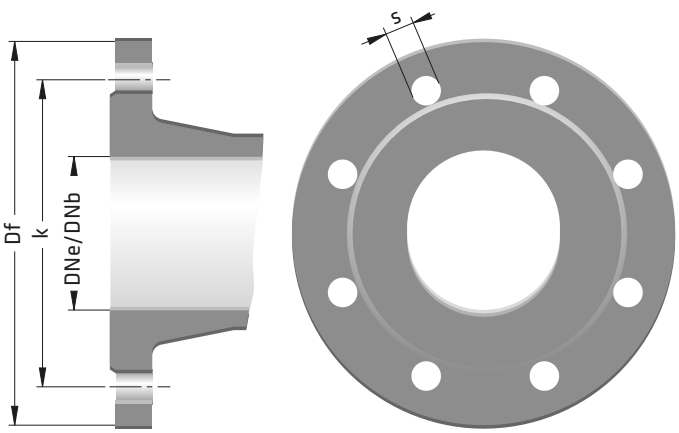
| Description | DIN / EN | | AISI / SAE / ASTM |
|---|---|---|---|
| Cast Iron | 0.6025 | EN-GJL-250 (GG25) | A48 Class 40B |
| Nodular Cast Iron | 0.7040 | EN-GJS-400-15 (GGG40) | A536 60-40-18 |
| Cast Steel | 1.0619 | GP240GHGS-C25 | A216 WCB |
| Chrome Nickel Cast Steel | 1.4308 | GX5CrNi19-10 | A351 CF8 |
| Chrome Nickel Cast Steel (low carbon) | 1.4309 | GX2CrNi19-11 | A351 CF3 |
| Chrome Nickel Molybdenum Cast Steel | 1.4408 | GX5CrNiMo19-11-2 | A351 CF8M |
| Chrome Nickel Molybdenum Cast Steel (low carbon) | 1.4409 | GX2CrNiMo19-11-2 | A351 CF3M |
| Austenitic Cast Steel | 1.4500 | GX7NiCrMoCuNb25-20 | A351 CN7M |
| Austenitic - Ferritic Cast Steel (duplex) | 1.4517 | GX2CrNiMoCuN25-6-3-3 | A890 CD4MCuN |
| Austenitic - Ferritic Cast Steel (super duplex) | 1.4469 | GX2CrNiMoN26-7-4 | A890 CE3MN |
| Martenzitic Stainless Cast Steel | 1.4317 | GX4CrNi13-4 | A352 CA6NM |
| Martenzitic Stainless Cast Steel | 1.4008 | GX7CrNiMo12-1 | A217 CA15 |
| Chrome Steel | 1.4021 | X20Cr13 | A276 Type 420 |
| Chrome Steel(heat treated) | 1.4021 | X20Cr13 | A276 Type 420+QT |
| Chrome Nickel Steel | 1.4301 | X5CrNi18-10 | A276 Type 304 |
| Chrome Nickel Steel (low carbon) | 1.4404 | X2CrNiMo17-12-2 | A276 Type 316L |
| Duplex (austenitic-ferritic) Steel | 1.4460 | X3CrNiMoN27-5-2 | AISI 329 |
| Duplex (austenitic-ferritic) Steel | 1.4462 | X2CrNiMoN22-5-3 | UNS S32205 |

## Flange Dimensions

EN 1092 - 2

| DNe/DNb | Suction & Discharge (PN 16) | | | |
|---|---|---|---|---|
| | Df | k | s | n |
| 32 | 140 | 100 | 19 | 4 |
| 40 | 150 | 110 | 19 | 4 |
| 50 | 165 | 125 | 19 | 4 |
| 65 | 185 | 145 | 19 | 4 |
| 80 | 200 | 160 | 19 | 8 |
| 100 | 220 | 180 | 19 | 8 |
| 125 | 250 | 210 | 19 | 8 |
| 150 | 285 | 240 | 23 | 8 |
| 200 | 340 | 295 | 23 | 12 |
| 250 | 405 | 355 | 28 | 12 |
| 300 | 460 | 410 | 28 | 12 |

" n " number of holes



Standart

Pump • Fire Fighting Units • Booster Set

# SSP-H

## Extra Heavy Duty Slurry Pumps

SSP-H Rev.11 09.2021

## Handled Liquids

Slurry, highly contaminated, viscous, corrosive and abrasive liquids with solid or fibrous particles.

## Technical Data

Discharge Flange_____DN 50.....DN 350 mm

Capacity _____up to 3500 $m^3/h$

Head _____up to 100 m

Temperature Operation_____-10°C up to+110 °C

Generating Steam Temperature_____up to 300°C

**Note:** The Material of pump differs according to the type of pumped liquid, operating temperature and pressure. Contact for detailed information.

## Fields of Application

- Mining and mineral processing
- Sand and gravel processing plants
- Abrasive slurry transfer
- Industrial plants
- Pulp and paper industry
- Cyclone feed
- Mine wastes transfer
- Fly ash and bottom ash transport
- Manure transfer
- Lime mud transport
- Waste water systems
- Chemical slurries

## Design Features

- SSP-H pump series are carefully designed by taking into consideration years of production experience of STANDART POMPA and field experiences of our customers using process and slurry pumps. Hydraulic efficiency and hardwearing are considerate and optimised while hard solid particles were pumping.

- SSP-H pump series users are offered with advantages of resistant to extensive wear, high reliability, high hydraulic efficiency, cost effective spare parts and continous spare part supply in short lead time.

## Bearing Design

- SSP-H pump series are produced with extra heavy duty (EHD) design. Grease lubricated bearings of EHD can be replaced with oil lubricated as well.

## Pump Designation

SSP - H 80 3/2 HC

**Pump Type**

**Installation Arrangement Horizontally (H) / Vertically (V)**

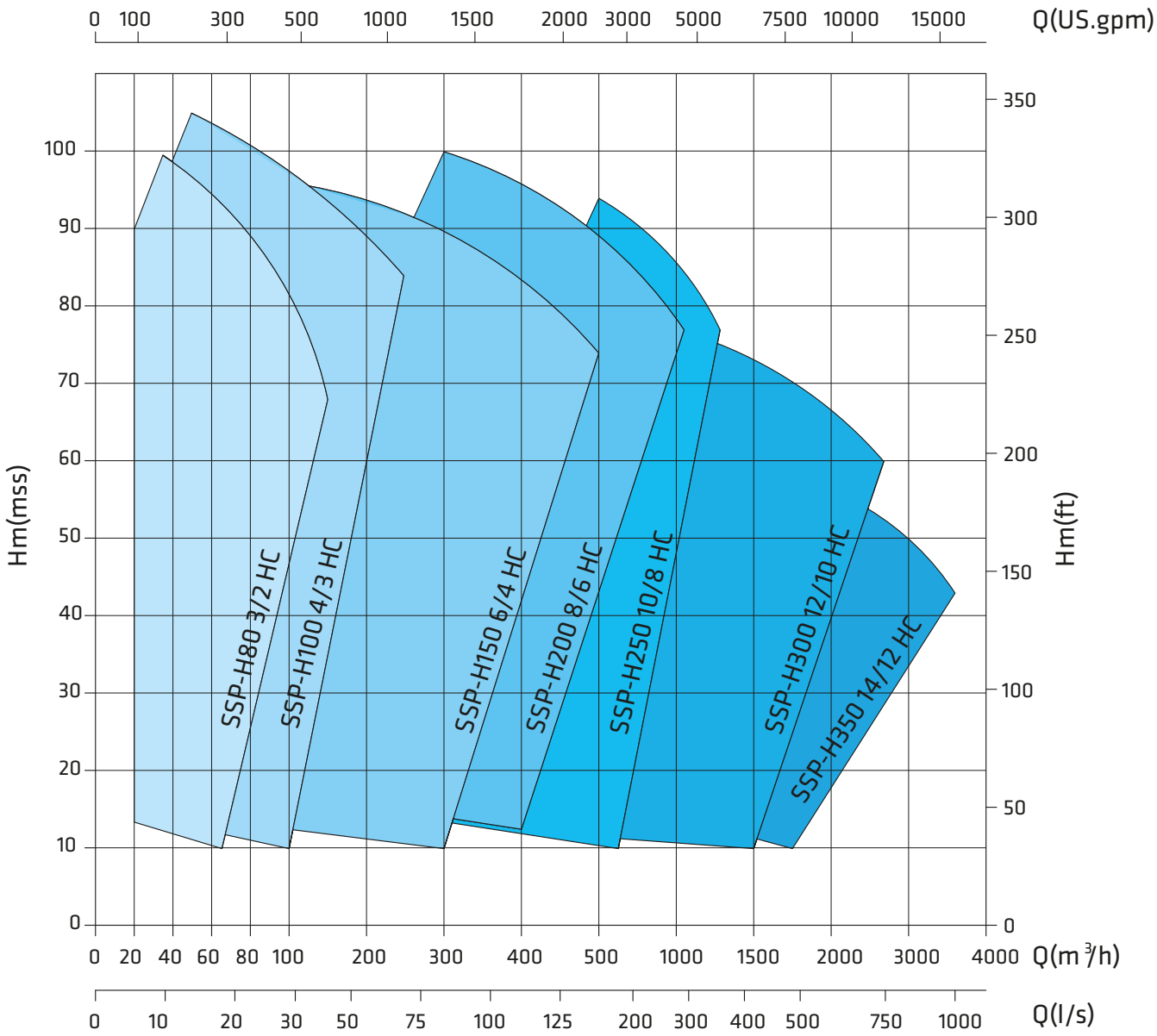
**Discharge Nozzle (DN-mm)**

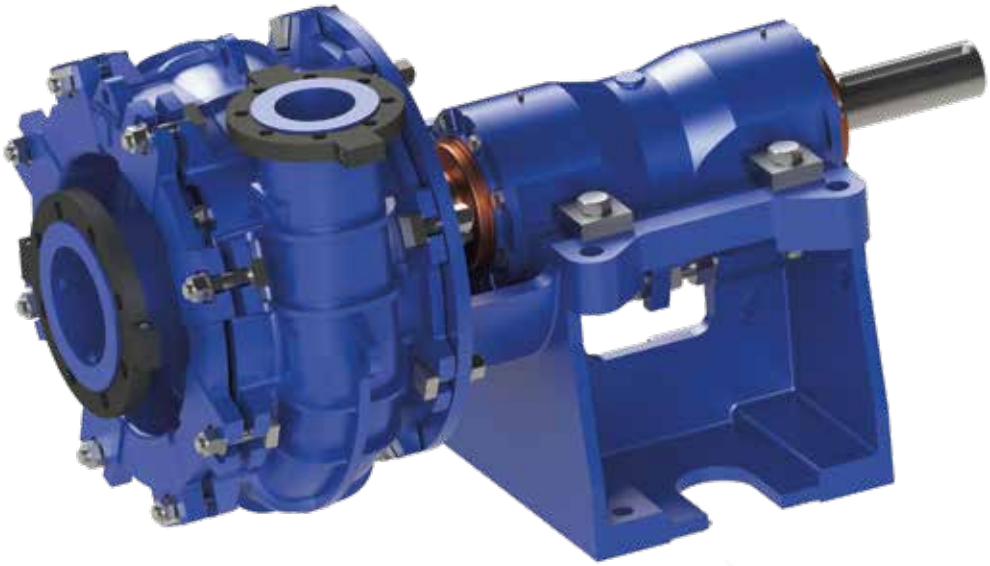
**Pump Suction / Discharge Size (inch)**

**Pump Material Selection**

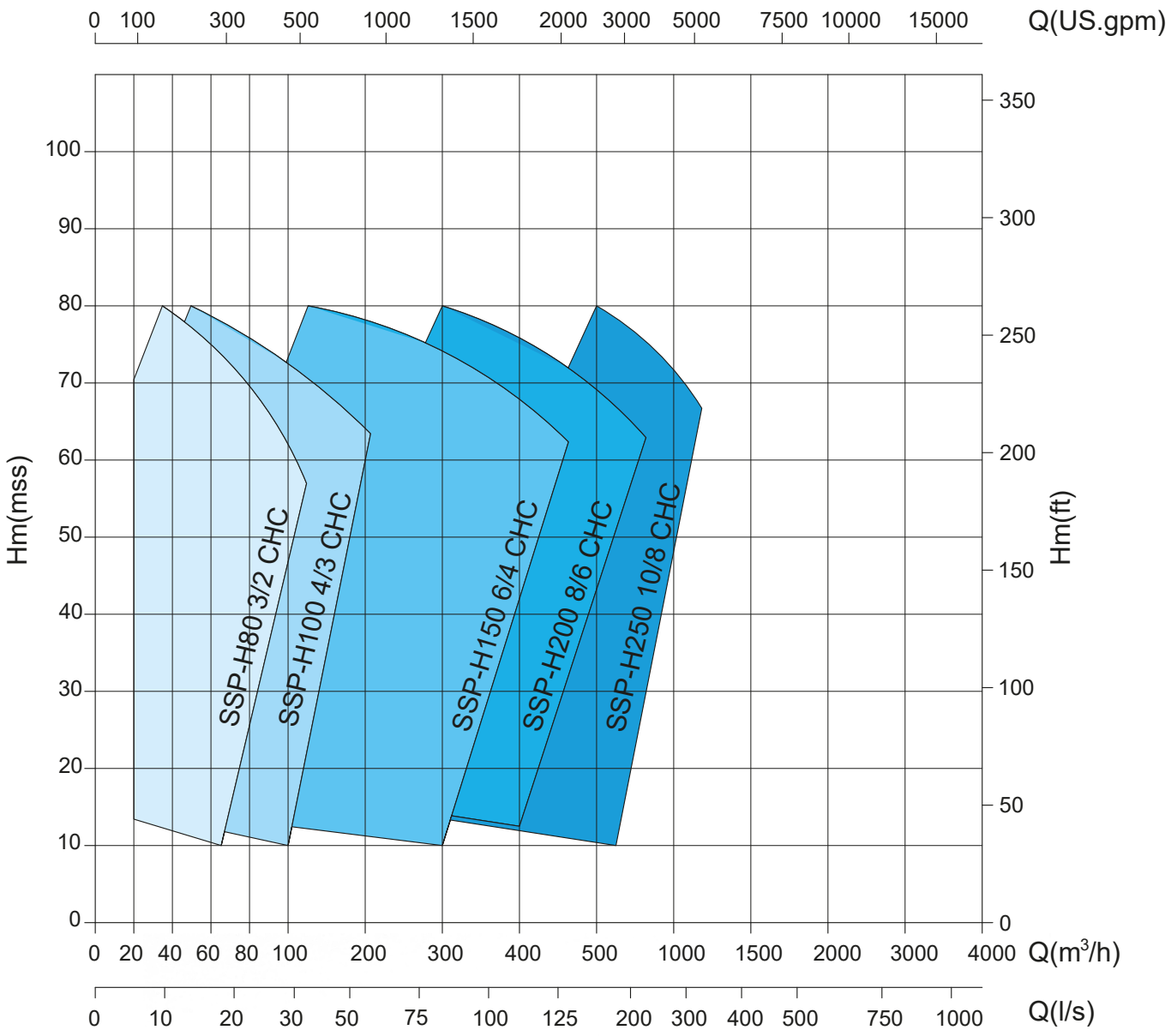
# HORIZONTAL SHAFT EXTRA HEAVY DUTY SLURRY PUMPS

## SSP-H FIELD CHART (HC)

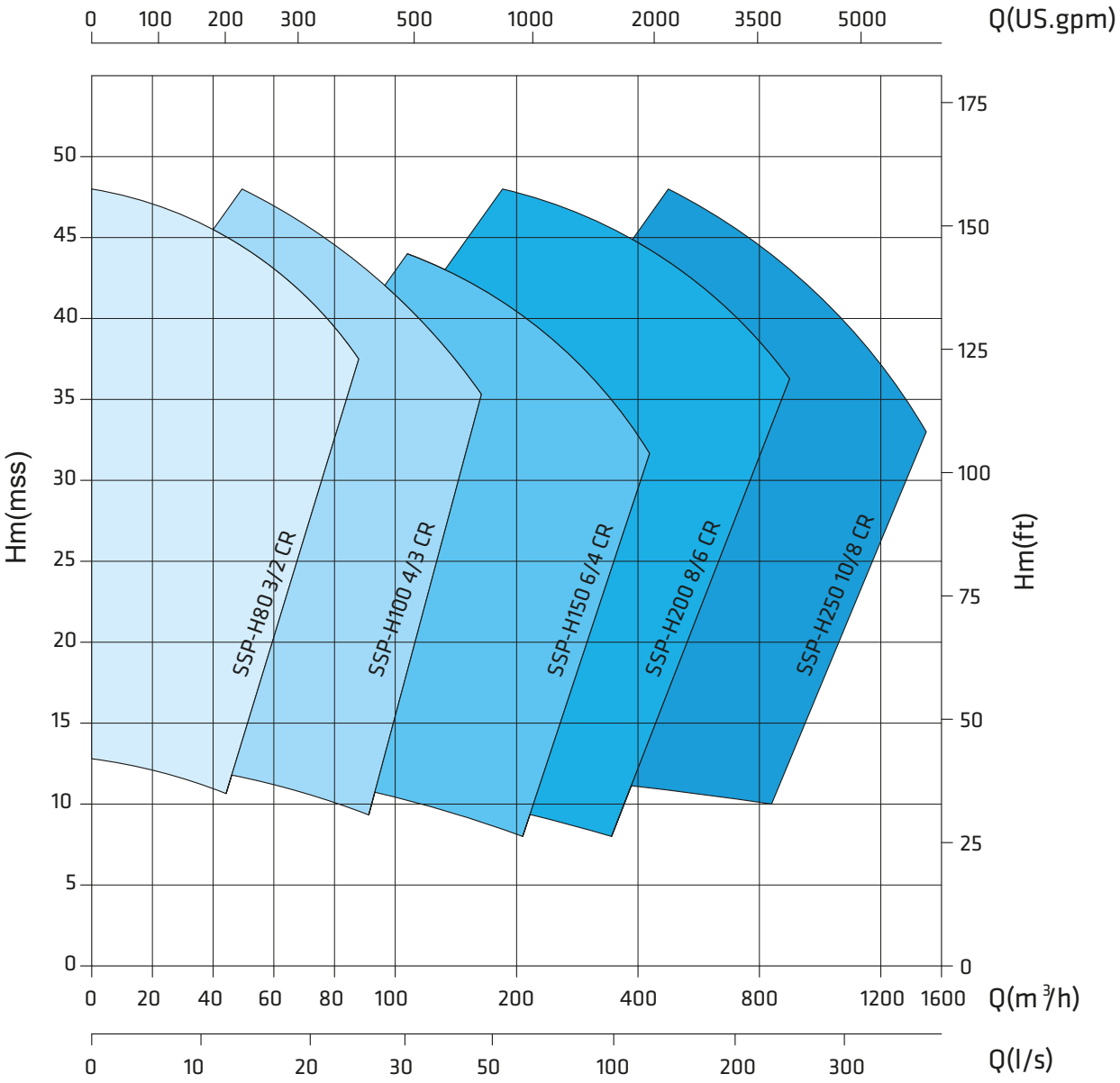


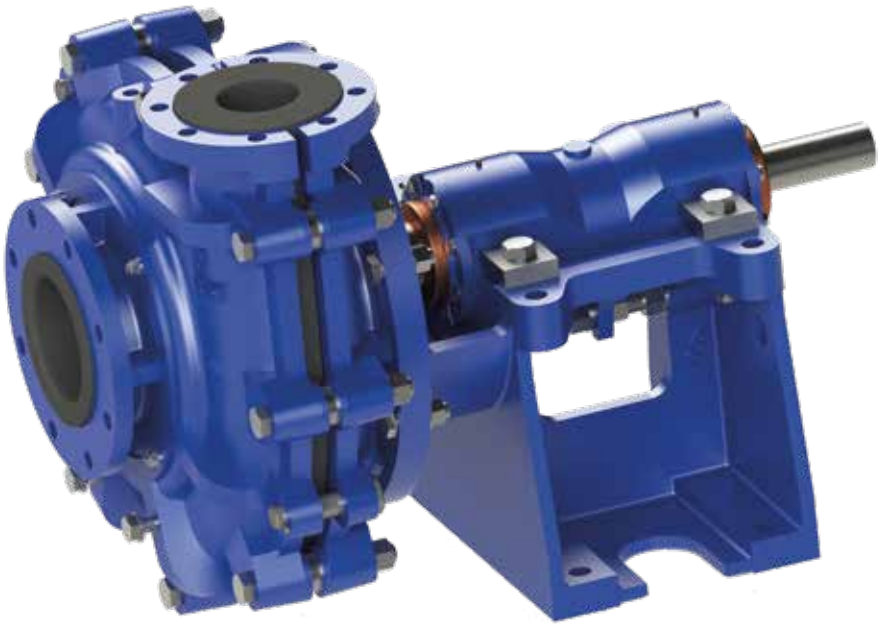



## SSP-H FIELD CHART (CHC)




## SSP-H FIELD CHART (CR)



## Impeller Types

SSP-H series HC model pumps are centrifugal pumps that have horizontal shaft, volute casing, single stage and closed impeller. Semi-open or vortex impeller types can be applied in different requirements.

### Standard Impeller

Small and medium solid particles are transferred with standard impeller type. On the other hand these impeller types are more efficient than the others. It offers high efficient and more durable solutions regarding material selection and abrasive properties of the handled fluid. It is used for high demanding heads and more efficiency.

### Semi-open Impeller

Large and medium solid particles are transferred with semi-open impeller type. It offers high efficient and more durable solutions regarding material selection and abrasive properties of the handled fluid. Semi-open impellers prevent greater efficient loss in use of larger particles. It is preferred low and medium heads.

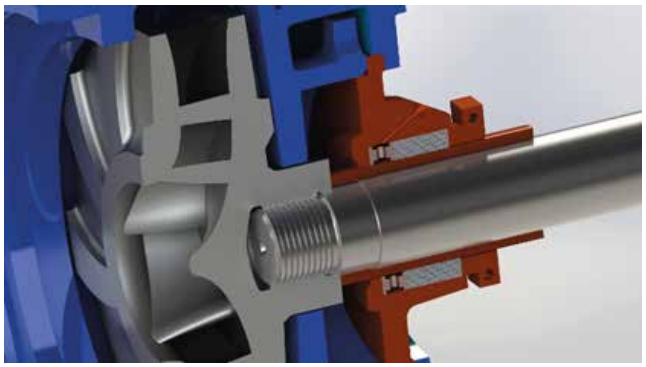
### Vortex Impeller

Vortex impellers are used in transfer of fluids containing large solid particles at low head. More life time is offered since large solid particles would have less contact area with the vortex impeller. These impellers are less efficient than the others.

## Recessed Vortex Impeller

Recessed Vortex impellers are applied when large, solid and fibrous particles involved in handled fluid. Minimum contact area is accomplished between solid particles in fluid and the impeller. These impeller types are preferred for preventing damages to solid particles in fluid.

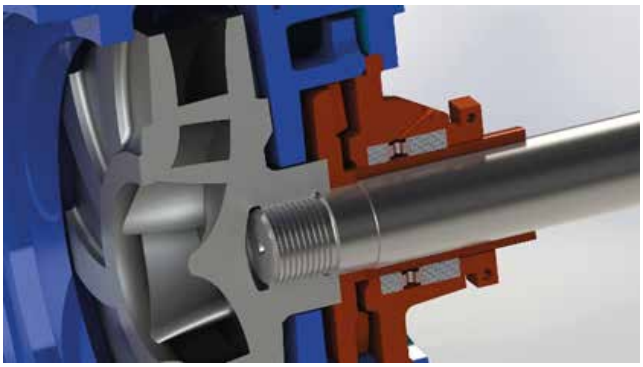
# Shaft Sealing



## SSP HC, CR, CHC Stuffing Box Sealing

• Shaft sleeve and stuffing box sealing can be cooled and lubricated by a external cooling system or the pumping liquid.

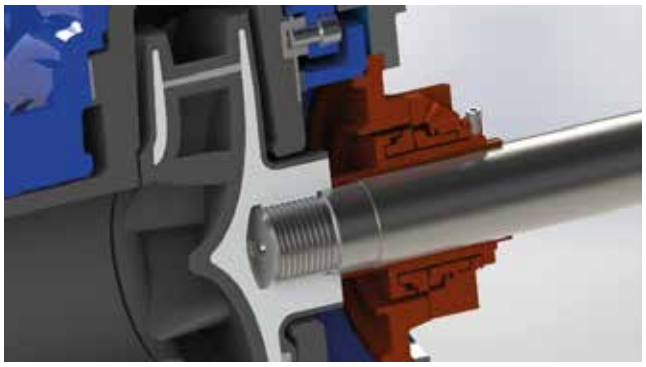
• Distance adjustment between wear plate and back vanes of the impeller can set the pressure on sealing.



## SSP HC, CR, CHC Hydrodynamic and Stuffing Box Sealing

• Shaft sleeve and stuffing box sealing can be cooled and lubricated by a external cooling system or the pumping liquid.

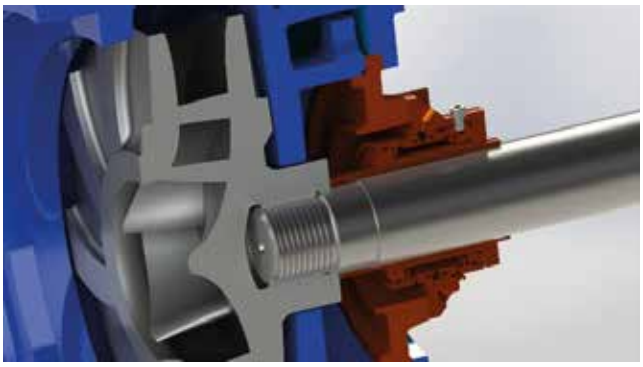
• Expeller provides hydrodynamic sealing by depressurizing on stuffing box sealing. It improves lifetime of shaft sleeve and the stuffing box sealing.



## SSP HC, CR, CHC Cartridge Type Single Mechanical Sealing

• Hydraulic film between sealing surface elements is formed by pumping fluid or externally injected liquid which is the way of API 682 approved.

• Distance adjustment between wear plate and back vanes of the impeller can set the pressure on cartridge mechanical sealing.



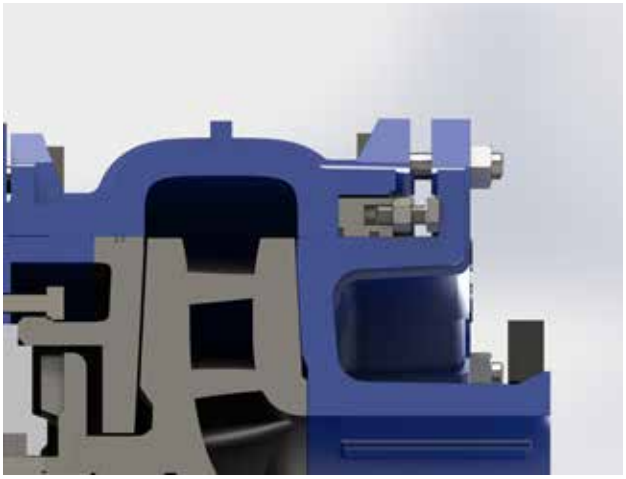
## SSP HC, CR, CHC Cartridge Type Double Mechanical Sealing

• Hydraulic film between sealing surface elements is formed by an pressured barrier liquid externally which is the way of API 682 approved.

• Distance adjustment between wear plate and back vanes of the impeller can set the pressure on cartridge mechanical sealing.

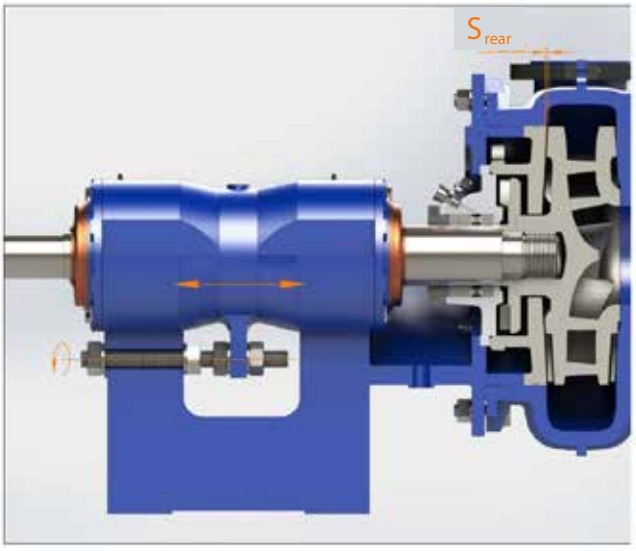
# Adjustment Mechanism

## General



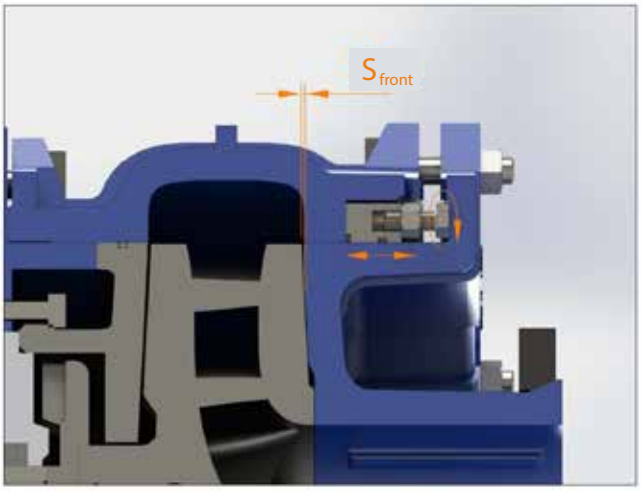
SSP-H pump series have major advantages to transfer fluid that has corrosive and abrasive properties. Even though these properties would have decrease pump performances in time, distance adjustment mechanisms on the SSP-H pump series can optimise the pump performances and improve service time.

## Back-side Clearance




Stud bolts on bearing housing lead the movement of cartridge housing at SSP-H series HC/CR/CHC model pumps. Therefore distance between impeller and wear plate can be controlled. Rear clearance adjustment keep the pump performance up even wearing happens between the wear plate and the impeller.

## Front-side clearance




SSP-H series HC model pumps have front gap adjustment. Stop bolts in front of volute casing can set the gap between inlet port and impeller. Therefore negative effects of wearing optimise and service time of the pump improves. Besides that there is no need disassembly of volute casing and time is saved accordingly.

## Material Options (HC)

| PART LIST | 0.6025 | 0.7040 | 0.7043 | 0.7050 | 1.0619 | 1.0037 | 1.3505 | 1.4317 | 1.4525 | 1.4308 | 1.4412 | 1.4527 | 1.4468 | 1.4517 | 1.4469 | 5.5610 | 2.1050.01 | 2.0975.01 | 2.1096.01 | 2.0975 | 1.4021 | 1.4021(QT) | 1.4301 | 1.4404 | 1.4460 | 1.4462 | 1.0503 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volute Casing | ○ | ○ | ○ | ○ | ○ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ | | | | | | | |
| Impeller | ○ | ○ | ○ | ○ | ○ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ | | | | | | | |
| Back Wear Plate | ○ | ○ | ○ | ○ | ○ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ | | | | | | | |
| Expeller Ring | ○ | ○ | ○ | ○ | ○ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ | | | | | | | |
| Stuffing Box | ○ | ○ | ○ | ○ | ○ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ | | | | | | | |
| Expeller | ○ | ○ | ○ | ○ | ○ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ | | | | | | | |
| Bearing Housing | ● | ○ | ○ | ○ | | | | | | | | | | | | | | | | | | | | | | | |
| Cartridge Housing | ● | ○ | ○ | ○ | | | | | | | | | | | | | | | | | | | | | | | |
| Shaft | | | | | | | | | | | | | | | | | | | | | ● | ○ | ○ | ○ | ○ | ○ | ○ |
| Shaft Sleeve | | | | | | | ● | | | | | | | | | | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Pump Flanges | ○ | ○ | ○ | ○ | | ● | | | | | | | | | | ○ | | | | | | | | | | | |
| Bolt, Nut and Washer | | | | | | | | | | | | | | | | | | | | | | | ● | ○ | | | |

| PART LIST | EPDM | VİTON | NR |
|---|---|---|---|
| O-Ring | ● | ○ | ○ |
| Gasket | ● | ○ | ○ |

● Standard manufacturing
○ Optional

## Material Options (CHC)

| PART LIST | 0.6025 | 0.7040 | 0.7043 | 0.7050 | 1.0619 | 1.0037 | 1.3505 | 1.4317 | 1.4525 | 1.4308 | 1.4412 | 1.4527 | 1.4468 | 1.4517 | 1.4469 | 5.5610 | 2.1050.01 | 2.0975.01 | 2.1096.01 | 2.0975 | 1.4021 | 1.4021(QT) | 1.4301 | 1.4404 | 1.4460 | 1.4462 | 1.0503 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volute Casing | ○ | ● | ○ | ○ | ○ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | |
| Inner Volute Lining | ○ | ○ | ○ | ○ | ○ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ | | | | | | | |
| Impeller | ○ | ○ | ○ | ○ | ○ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ | | | | | | | |
| Back Wear Plate | ○ | ○ | ○ | ○ | ○ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ | | | | | | | |
| Expeller Ring | ○ | ○ | ○ | ○ | ○ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ | | | | | | | |
| Stuffing Box | ○ | ○ | ○ | ○ | ○ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ | | | | | | | |
| Expeller | ○ | ○ | ○ | ○ | ○ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ | | | | | | | |
| Bearing Housing | ● | ○ | ○ | ○ | | | | | | | | | | | | | | | | | | | | | | | |
| Cartridge Housing | ● | ○ | ○ | ○ | | | | | | | | | | | | | | | | | | | | | | | |
| Shaft | | | | | | | | | | | | | | | | | | | | | ● | ○ | ○ | ○ | ○ | ○ | ○ |
| Shaft Sleeve | | | | | | | ● | | | | | | | | | | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Pump Flanges | ○ | ○ | ○ | ○ | | ● | | | | | | | | | | ○ | | | | | | | | | | | |
| Bolt, Nut and Washer | | | | | | | | | | | | | | | | | | | | | | | ● | ○ | | | |

| PART LIST | EPDM | VİTON | NR |
|---|---|---|---|
| O-Ring | ● | ○ | ○ |
| Gasket | ● | ○ | ○ |

● Standard manufacturing
○ Optional

## Material Options (CR)

| PART LIST | 0.6025 | 0.7040 | 0.7043 | 0.7050 | 1.0619 | 1.0037 | 1.3505 | 1.4317 | 1.4525 | 1.4308 | 1.4412 | 1.4527 | 1.4468 | 1.4517 | 1.4469 | 5.5610 | 2.1050.01 | 2.0975.01 | 2.1096.01 | 2.0975 | 1.4021 | 1.4021(QT) | 1.4301 | 1.4404 | 1.4460 | 1.4462 | 1.0503 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volute Casing | ○ | ● | ○ | ○ | ○ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | |
| Impeller (Cast) | ○ | ● | ○ | ○ | ○ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | |
| Expeller Ring | ○ | ○ | ○ | ○ | ○ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ | | | | | | | |
| Stuffing Box | ○ | ○ | ○ | ○ | ○ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ | | | | | | | |
| Expeller | ○ | ○ | ○ | ○ | ○ | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ | | | | | | | |
| Bearing Housing | ● | ○ | ○ | ○ | | | | | | | | | | | | | | | | | | | | | | | |
| Cartridge Housing | ● | ○ | ○ | ○ | | | | | | | | | | | | | | | | | | | | | | | |
| Shaft | | | | | | | ● | | | | | | | | | | | | | | ● | ○ | ○ | ○ | ○ | ○ | ○ |
| Shaft Sleeve | | | | | | | ● | | | | | | | | | | | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Pump Flanges | ○ | ○ | ○ | ○ | | ● | | | | | | | | | | ○ | | | | | | | | | | | |
| Bolt, Nut and Washer | | | | | | | | | | | | | | | | | | | | | | | ● | ○ | | | |

| PART LIST | NR | CR | IIR | NBR | PU | UR | CSM | FKM | CIIR | EPDM |
|---|---|---|---|---|---|---|---|---|---|---|
| Inner Volute Lining | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Impeller (Coating) | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| O-Ring | ○ | | | | | | | ○ | | ● |
| Gasket | ○ | | | | | | | ○ | | ● |

● Standard manufacturing
○ Optional

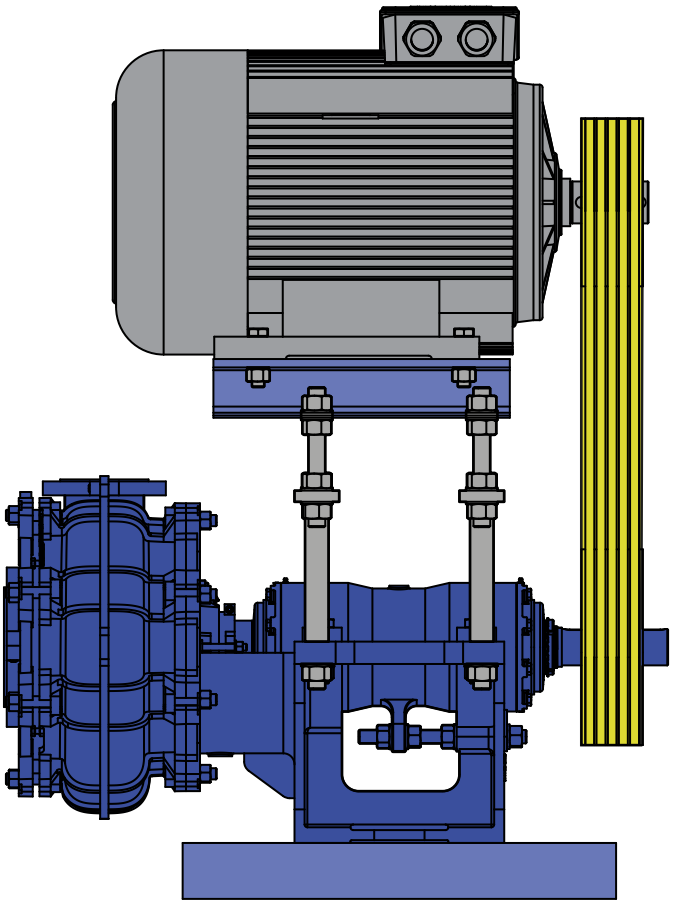
## Material Equivalents

| Description | DIN 17007 | EN-DIN | AISI / SAE / ASTM |
|---|---|---|---|
| Cast Iron | 0.6025 | EN-GJL-250 (GG 25) | A48 Class 40B |
| Nodular Cast Iron | 0.7040 | EN-GJS-400-15 (GGG 40) | A536 60-40-18 |
| Nodular Cast Iron | 0.7043 | EN-GJS-400-18-LT (GGG 40.3) | A536 60-40-18 |
| Nodular Cast Iron | 0.7050 | EN-GJS-500-7 (GGG 50) | A536 88-55-06 |
| Cast Steel | 1.0619 | GP240GHGS-C25 | A216 WCB |
| Steel | 1.0037 | St 37-2 | A238Gr.C |
| Bearing Steel | 1.3505 | 100Cr6 | 52100 |
| Martenzitic Stainless Cast Steel | 1.4317 | G-X 4 CrNi 13 4 | A743 CA-6NM |
| Martenzitic Stainless Cast Steel | 1.4525 | G-X 5 CrNiCu 16 4 | A747 CB7Cu-2 |
| Chrome Nickel Cast Steel (Heat Treated) | 1.4308 | G-X 6 CrNi 19 10 | A743 CF-8 |
| Austenitic Cast Steel (Heat Treated) | 1.4412 | C-X 5 CrNiMo 19 11 3 | A743 CG-3M |
| Austenitic Cast Steel (Heat Treated) | 1.4527 | C-X 4 NiCrCuMo 30 20 4 | A743 CN-7M |
| Duplex Steel (Austenitic-Ferritic, Heat Treated) | 1.4468 | G-X 2 CrNiMoN 25 6 3 | A890 3A |
| Duplex Steel (Austenitic-Ferritic, Heat Treated) | 1.4517 | G-X 2 CrNiMoN 25 6 3 3 | A890 1B |
| Duplex Steel (Austenitic-Ferritic, Heat Treated) | 1.4469 | G-X 2 CrNiMo 26 7 4 | A890 5A |
| Wear Resistant Casts | 5.5610 | EN-GJN-HV600 (XCr23) | A532 Class III Type A |
| Cast Bronze (Tin Alloy) | 2.1050.01 | CuSn10 | B427 C90700 |
| Cast Bronze (Nickel Alloy) | 2.0975.01 | CuAl 10Ni | B148 C95500 |
| Cast Bronze (Leaded) | 2.1096.01 | CuSn5ZnPb | B584 C83600 |
| Cast Aliminium Bronze | 2.0975 | CuAl10 Fe5Ni5 | B505 C95800 |
| Carbon Steel | 1.0503 | C45 | AISI 1045 |
| Chrome Steel | 1.4021 | X20Cr13 | A276 Type 420 |
| Chrome Steel (Heat Treated) | 1.4021(QT) | X20Cr13 | A276 Type 420+QT |
| Chrome Nickel Steel | 1.4301 | X5CrNi18-10 | A276 Type 304 |
| Chrome Nickel Steel (Low Carbon) | 1.4404 | X2CrNiMo17-12-2 | A276 Type 316 |
| Duplex (Austenitic-Ferritic) Steel | 1.4460 | X3CrNiMoN27-5-2 | AISI 329 |
| Duplex (Austenitic-Ferritic) Steel | 1.4462 | X2CrNiMoN22-5-3 | UNS S32205 |

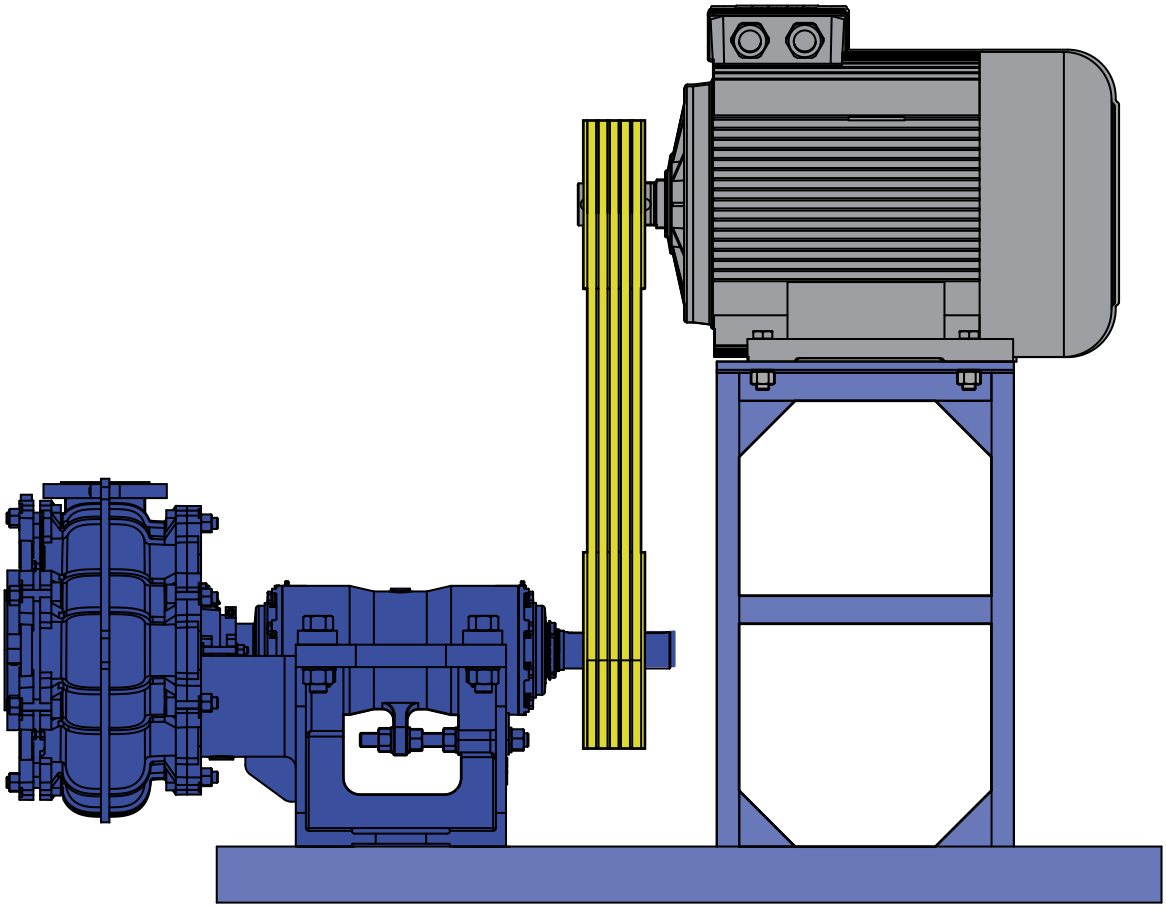
| RUBBER MATERIALS | | | |
|---|---|---|---|
| Natural Rubber | NR | Urethane | UR |
| Neoprene | CR | Hypalon | CSM |
| Synthetic Rubber (Butyl) | IIR | Viton | FKM |
| Nitril Rubber | NBR | Chlorobutyl | CIIR |
| Polyurethane | PU | Ethylene Propylene Diene | EPDM |

## Installation Types

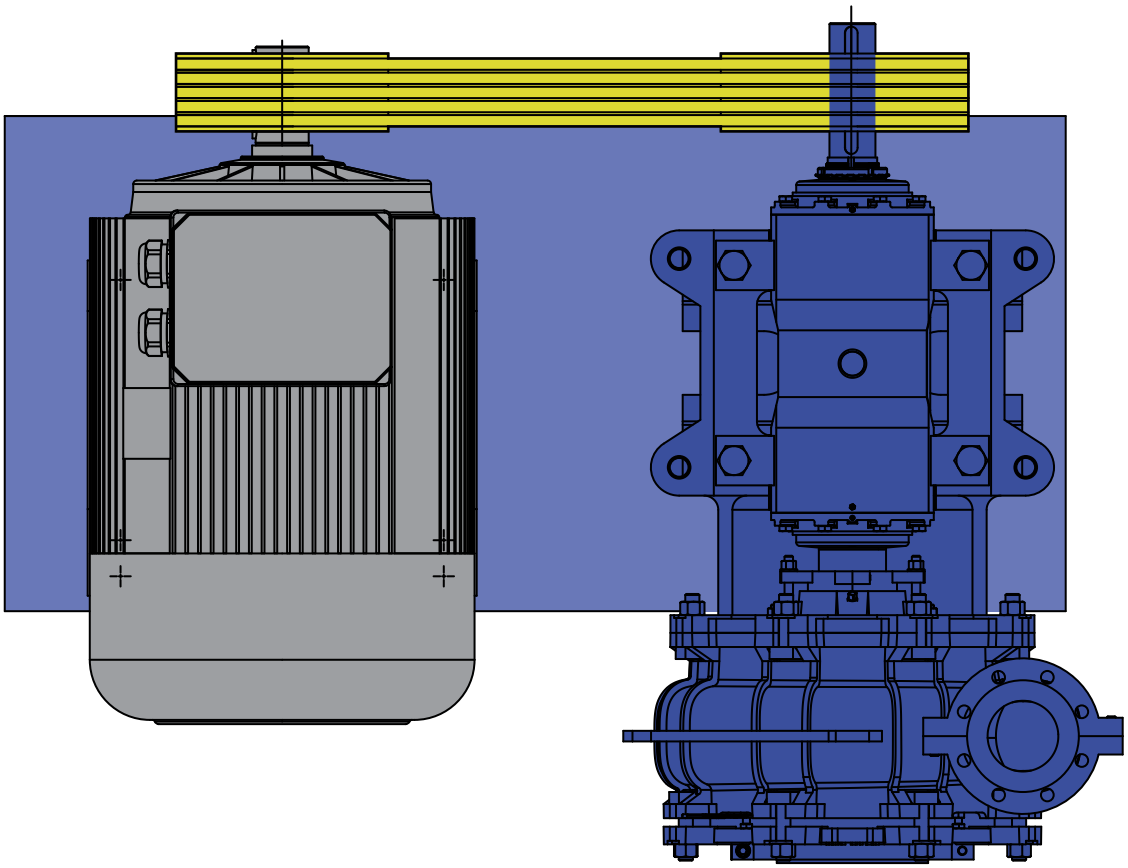
### TP 01



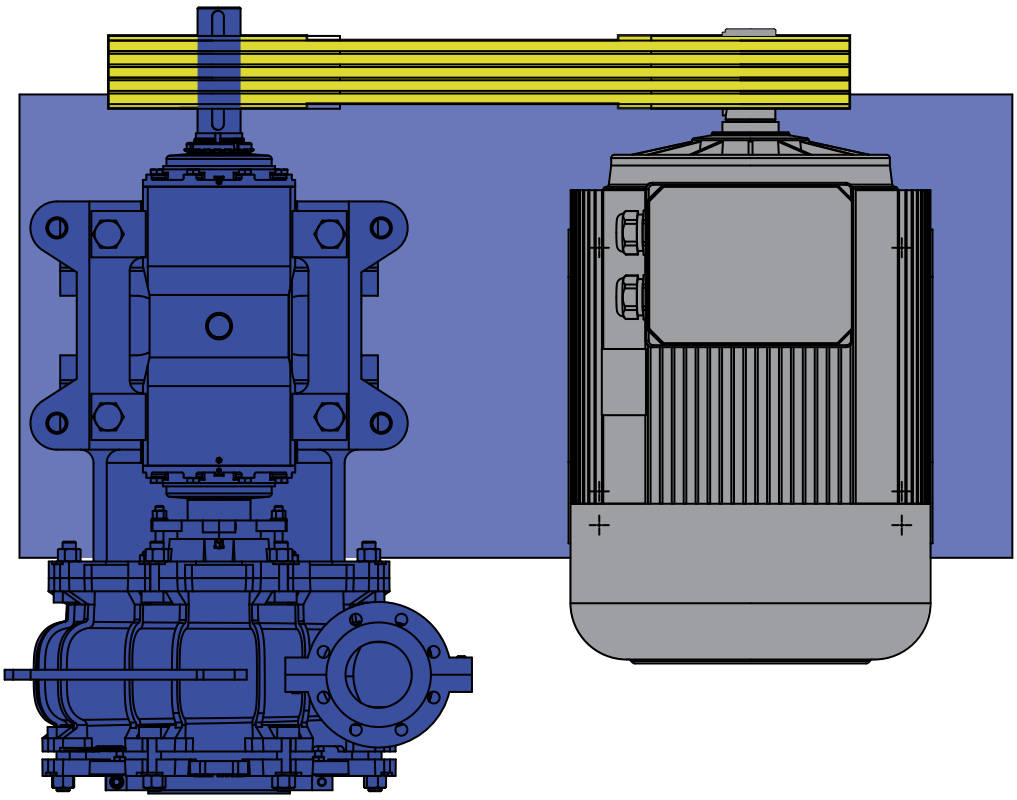
### TP 02



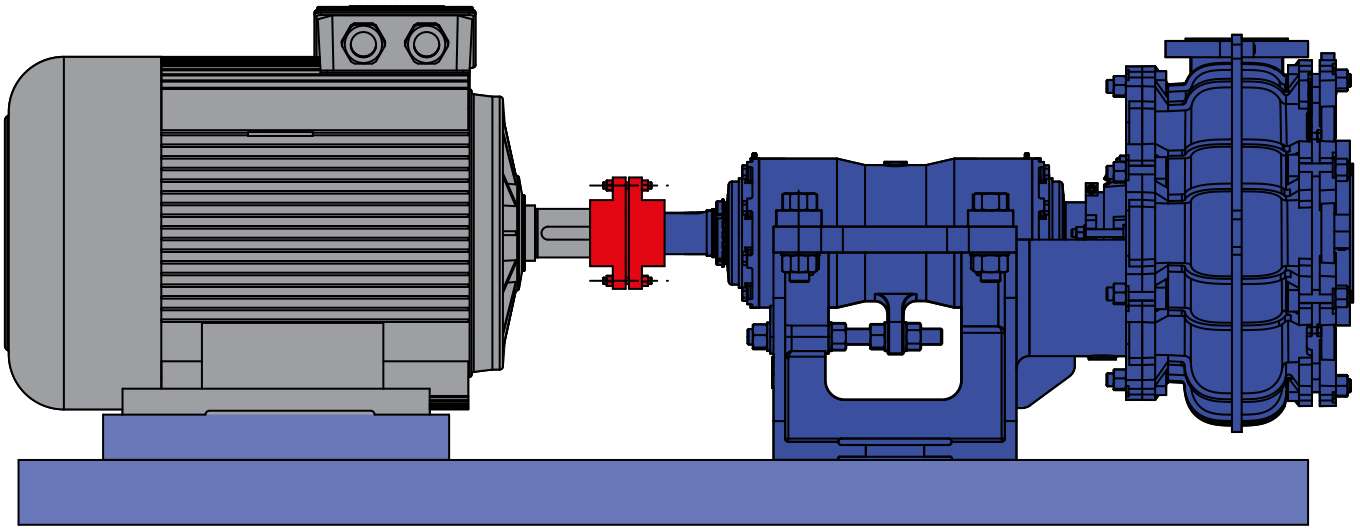
## TP 03



## TP 04



TP 05



**Manual or hydraulic slide base is applied optionally at chassis manufacturing.**

Standart

Pump • Fire Fighting Units • Booster Set

# SSP-V

## Extra Heavy Duty Slurry Pumps

SSP-V Rev.11 09.2021

## Handled Liquids

Slurry, highly contaminated, viscous, corrosive and abrasive liquids with solid or fibrous particles

## Technical Data

Discharge Flange_____DN 50.....DN 250 mm

Capacity _____up to 1000 $m^3/h$

Head _____up to 400 m

Temperature Operation_____-10°C up to+110 °C

Generating Steam Temperature_____up to 300°C

**Not:** The Material of pump differs according to the type of pumped liquid, operating temperature and pressure. Contact for detailed information.

## Fields of Application

- Mining and mineral processing
- Sand and gravel processing plants
- Abrasive slurry transfer
- Industrial plants
- Pulp and paper industry
- Cyclone feed
- Mine wastes transfer
- Fly ash and bottom ash transport
- Manure transfer
- Lime mud transport
- Waste water systems
- Chemical slurries

## Design Features

- SSP-V pump series are carefully designed by taking into consideration years of production experience of STANDART POMPA and field experiences of our customers using process and slurry pumps. Hydraulic efficiency and hardwearing are considerate and optimised while hard solid particles were pumping.

- SSP-V pump series users are offered with advantages of resistant to extensive wear, high reliability, high hydraulic efficiency, cost effective spare parts and continous spare part supply in short lead time.

## Bearing Design

- SSP-V pump series are produced with extra heavy duty (EHD) design. EHD bearings are greased lubricated.

## Pump Designation

**SSP - V 80 3/2 HC**

**Pump Type**

**Installation Arrangement Horizontally (H) / Vertically (V)**

**Discharge Nozzle (DN-mm)**

**Pump Suction / Discharge Size (inch)**

**Pump Material Selection**

## Features

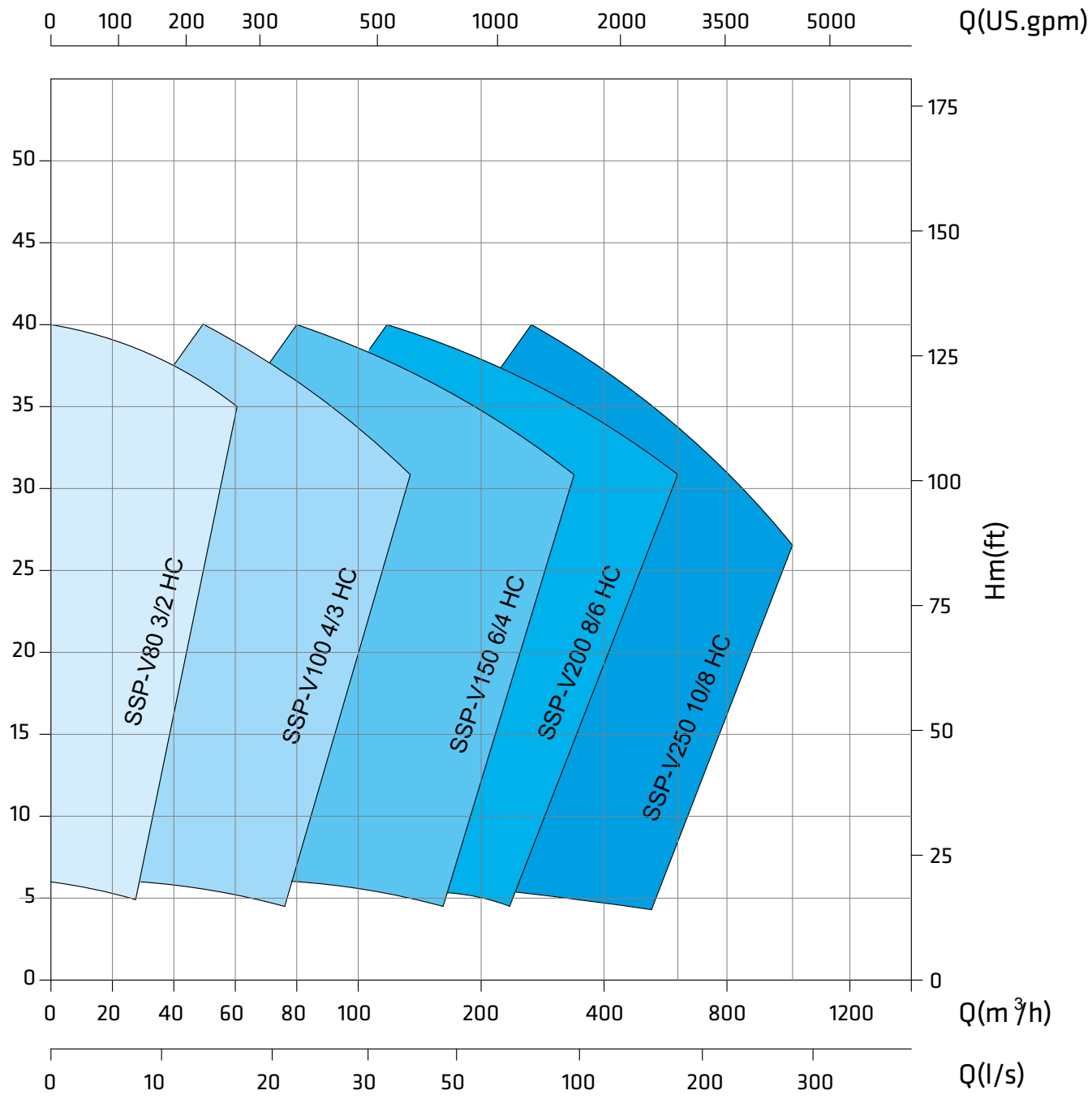
SSP-V pump series, the bearing group is designed for encountering loads on long column lengths and keeping bearing life much higher than $L_{10}$ nominal bearing life. Corrosive and abrasive properties decrease pump performances in time, distance adjustment between suction side and wear plate on the SSP-V pump series can optimise the pump performances and improve service time. These distance adjustment mechanism does not require any disassemble and distance can be adjusted easily by loosing bolts.

**ATTENTION**

- HC models in figures have casting volute casing, impeller and wear plates. These parts can be manufactured by rubber and rubber coating.
- Pump and motor connect with belt & pulley. In case of demand, coupling is used for direct connection between motor and pump
- Please get confirmation from our company for dimension of column lengths at pump installation.

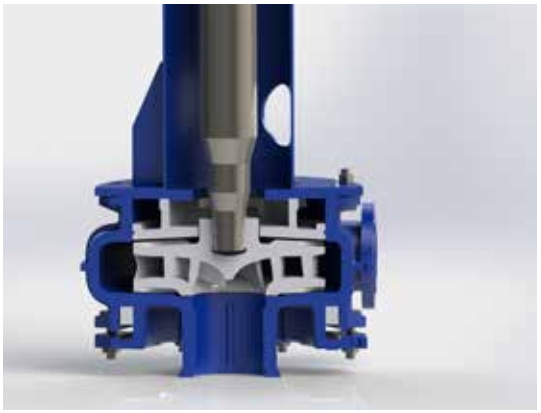
## Vertical Shaft Extra Heavy Duty Slurry Pumps

### SSP-V Field Chart (HC series)



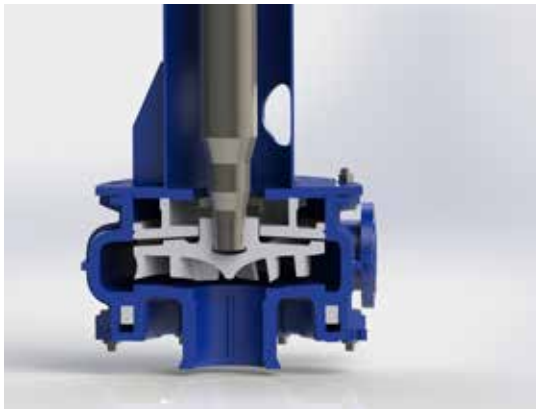
## Impeller Types

SSP-V series HC model pumps are centrifugal pumps that have vertical shaft, volute casing, single stage and closed impeller. Semi-open or vortex impeller types can be applied in different requirements. Besides that, mixer feature can be applied on suction side by extending shaft length and helps to avoid clogging by solid particles at suction side



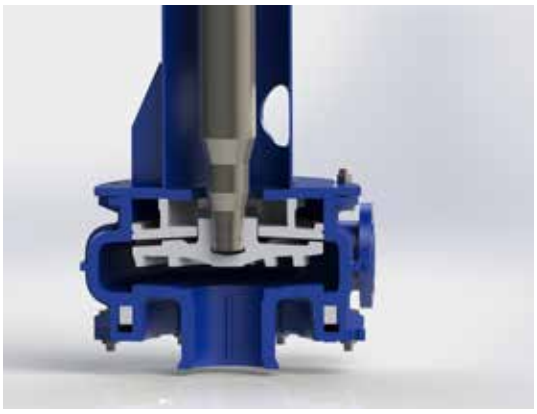
### Standard Impeller

Small and medium solid particles are transferred with standard impeller type. On the other hand these impeller types are more efficient than the others. It offers high efficient and more durable solutions regarding material selection and abrasive properties of the handled fluid. It is used for high demanding heads and more efficiency.



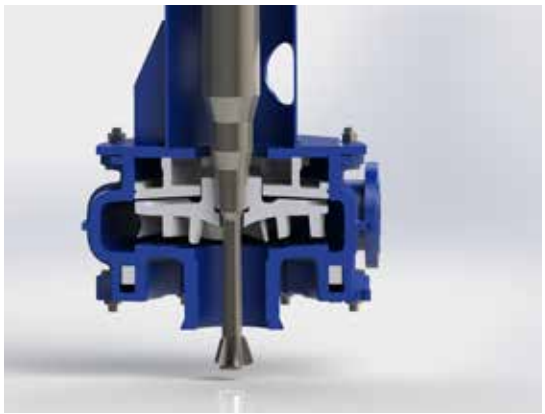
### Semi-open Impeller

Large and medium solid particles are transferred with semi-open impeller type. It offers high efficient and more durable solutions regarding material selection and abrasive properties of the handled fluid. Semi-open impellers prevent greater efficient loss in use of larger particles. It is preferred low and medium heads.



### Vortex Impeller

Vortex impellers are used in transfer of fluids containing large solid particles at low head. More life time is offered since large solid particles would have less contact area with the vortex impeller. These impellers are less efficient than the others.



### Impeller with Mixer

Add-on mixer provides a homogeneous mixture that has high amount of solid particles at suction side of the pump and prevents over wearing and clogging. Homogeneous fluid that contains high amount of solid particles improves impeller performance due to mixturing effect. Mixer in the image is the application on semi-open impeller and same application can be applied on standard and vortex impellers as well.

## Recessed Vortex Impeller

Recessed Vortex impellers are applied when large, solid and fibrous particles involved in handled fluid. Minimum contact area is accomplished between solid particles in fluid and the impeller. These impeller types are preferred for preventing damages to solid particles in fluid.

## SSP-V Material Options (HC Serisi)

| PART LIST | 0.6025 | 0.7040 | 0.7043 | 0.7050 | 1.0619 | 1.0037 | 1.4317 | 1.4525 | 1.4527 | 1.4308 | 1.4412 | 1.4517 | 1.4468 | 1.4469 | 5.5610 | 2.1050.01 | 2.0975.01 | 2.1096.01 | 2.0975 | 1.4021 | 1.4021(QT) | 1.4301 | 1.4404 | 1.4460 | 1.4462 | 1.0503 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volute Casing | ○ | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ | | | | | | | |
| Impeller | ○ | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ | | | | | | | |
| Back Wear Plate | ○ | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ | | | | | | | |
| Suction Side | ○ | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ | | | | | | | |
| Column Pipe (*) | | | | | | ● | | | | | | | | | | | | | | | | | ○ | ○ | | |
| Base Plate | | | | | | ● | | | | | | | | | | | | | | | | | ○ | ○ | | |
| Discharge Pipe (*) | | | | | | ● | | | | | | | | | | | | | | | | | ○ | ○ | | |
| Cartridge Housing | ● | ○ | ○ | ○ | | | | | | | | | | | | | | | | | | | | | | |
| Shaft | | | | | | | | | | | | | | | | | | | | ● | ○ | ○ | ○ | ○ | ○ | ○ |
| Bolt, Nut and Washer | | | | | | | | | | | | | | | | | | | | | | ● | ○ | | | |

(*) Note: **Discharge and column pipes** can be made of 1.0037 + NBR optionally.

● Standard manufacturing
○ Optional

| PART LIST | EPDM | VITON | NBR |
|---|---|---|---|
| O-Ring | ● | ○ | ○ |
| Gasket | ● | ○ | ○ |

## Material Equivalents

| Description | DIN 17007 | EN-DIN | AISI / SAE / ASTM |
|---|---|---|---|
| Cast Iron | 0.6025 | EN-GJL-250 (GG 25 | A48 Class 40B |
| Nodular Cast Iron | 0.7040 | EN-GJS-400-15 (GGG 40) | A536 60-40-18 |
| Nodular Cast Iron | 0.7043 | EN-GJS-400-18-LT (GGG 40.3) | A536 60-40-18 |
| Nodular Cast Iron | 0.7050 | EN-GJS-500-7 (GGG 50) | A536 88-55-06 |
| Cast Steel | 1.0619 | GP240GHGS-C25 | A216 WCB |
| Steel | 1.0037 | St 37-2 | A238Gr.C |
| Martenzitic Stainless Cast Steel | 1.4317 | G-X 4 CrNi 13 4 | A743 CA-6NM |
| Martenzitic Stainless Cast Steel | 1.4525 | G-X 5 CrNiCu 16 4 | A747 CB7Cu-2 |
| Chrome Nickel Cast Steel (Heat Treated) | 1.4308 | G-X 6 CrNi 19 10 | A743 CF-8 |
| Austenitic Cast Steel (Heat Treated) | 1.4412 | C-X 5 CrNiMo 19 11 3 | A743 CG-3M |
| Austenitic Cast Steel (Heat Treated) | 1.4527 | C-X 4 NiCrCuMo 30 20 4 | A743 CN-7M |
| Duplex Steel (Austenitic-Ferritic, Heat Treated) | 1.4468 | G-X 2 CrNiMoN 25 6 3 | A890 3A |
| Duplex Steel (Austenitic-Ferritic, Heat Treated) | 1.4517 | G-X 2 CrNiMoN 25 6 3 3 | A890 1B |
| Duplex Steel (Austenitic-Ferritic, Heat Treated) | 1.4469 | G-X 2 CrNiMo 26 7 4 | A890 5A |
| Wear Resistant Casts | 5.5610 | EN-GJN-HV600 (XCr23) | A532 Class III Type A |
| Cast Bronze (Tin Alloy) | 2.1050.01 | CuSn10 | B427 C90700 |
| Cast Bronze (Nickel Alloy) | 2.0975.01 | CuAl 10Ni | B148 C95500 |
| Cast Bronze (Leaded) | 2.1096.01 | CuSn5ZnPb | B584 C83600 |
| Cast Aliminium Bronze | 2.0975 | CuAl10 Fe5Ni5 | B505 C95800 |
| Carbon Steel | 1.0503 | C45 | AISI 1045 |
| Chrome Steel | 1.4021 | X20Cr13 | A276 Type 420 |
| Chrome Steel (Heat Treated) | 1.4021(QT) | X20Cr13 | A276 Type 420+QT |
| Chrome Nickel Steel | 1.4301 | X5CrNi18-10 | A276 Type 304 |
| Chrome Nickel Steel (Low Carbon) | 1.4404 | X2CrNiMo17-12-2 | A276 Type 316 |
| Duplex (Austenitic-Ferritic) Steel | 1.4460 | X3CrNiMoN27-5-2 | AISI 329 |
| Duplex (Austenitic-Ferritic) Steel | 1.4462 | X2CrNiMoN22-5-3 | UNS S32205 |

Standart

Pump • Fire Fighting Units • Booster Set

# SPO

## API 610 11th Edition
## ISO 13709 Process Pumps

SSO Rev.11 09.2021

## Application Areas and Pumped Liquids

Petroleum industry, power plants and chemical industry.
Fuel oil, motorin, gasoline, LPG, lubricants, kerosene, etc.

## Technical Data

Discharge Flange_____NPS 1" -NPS 10"

Capacity_____up to 1000 $m^3/h$

Head_____up to 350 m

Speed_____up to 3600 m

Design Temperature_____up to +350 °C(* )

Design Pressure_____51 bar (*)

Design Type_____OH2

(*) The Material of pump differs according to the type of pumped liquid, operating temperature and pressure. Contact for detailed information.

## Design Features

• According to API 610 11th edition (ISO 13709).

•Center line volute casing design for high pressure and temperature.

•Tangential outlet design for high efficiency at the volute casing.

•For special application double volute casing can be applied.

•Due to the back-pull-out design, the complete bearing assembly including impeller and casing cover can be dismantled without removing the volute casing from the pipe system. With spacer coupling application, also possible to take out the rotor group without dismantling the electric motor.

•The suction and discharge flanges are capable for handling the forces and moments which are mentioned in API 610.

•The material of casing gasket is spiral wound gasket for handling high pressure.

•In case of pumping hot liquid there is cooling devices on bearing housing and special construction for mechanical seal.

•Heavy duty type shaft and bearings.

•All impellers are balanced dynamically or statically according to ISO 1940 grade 2.5.

•In case of preventive maintenance, temperature and vibration sensors can be applied.

• For high bearing life time, the constant level oilers are supplied in order to keep oil level in proper level.

•Oil ring is used in standart production and these rings prevent oil foaming.

•The base plate construction is highly rigid as defined in to API 610 standard.

## Shaft Sealing

•Mechanical seal cover is designed according to API 610. This mechanical seal cover is suitable to assemble every kind of mechanical seal according to API 682.

## Pump Designation

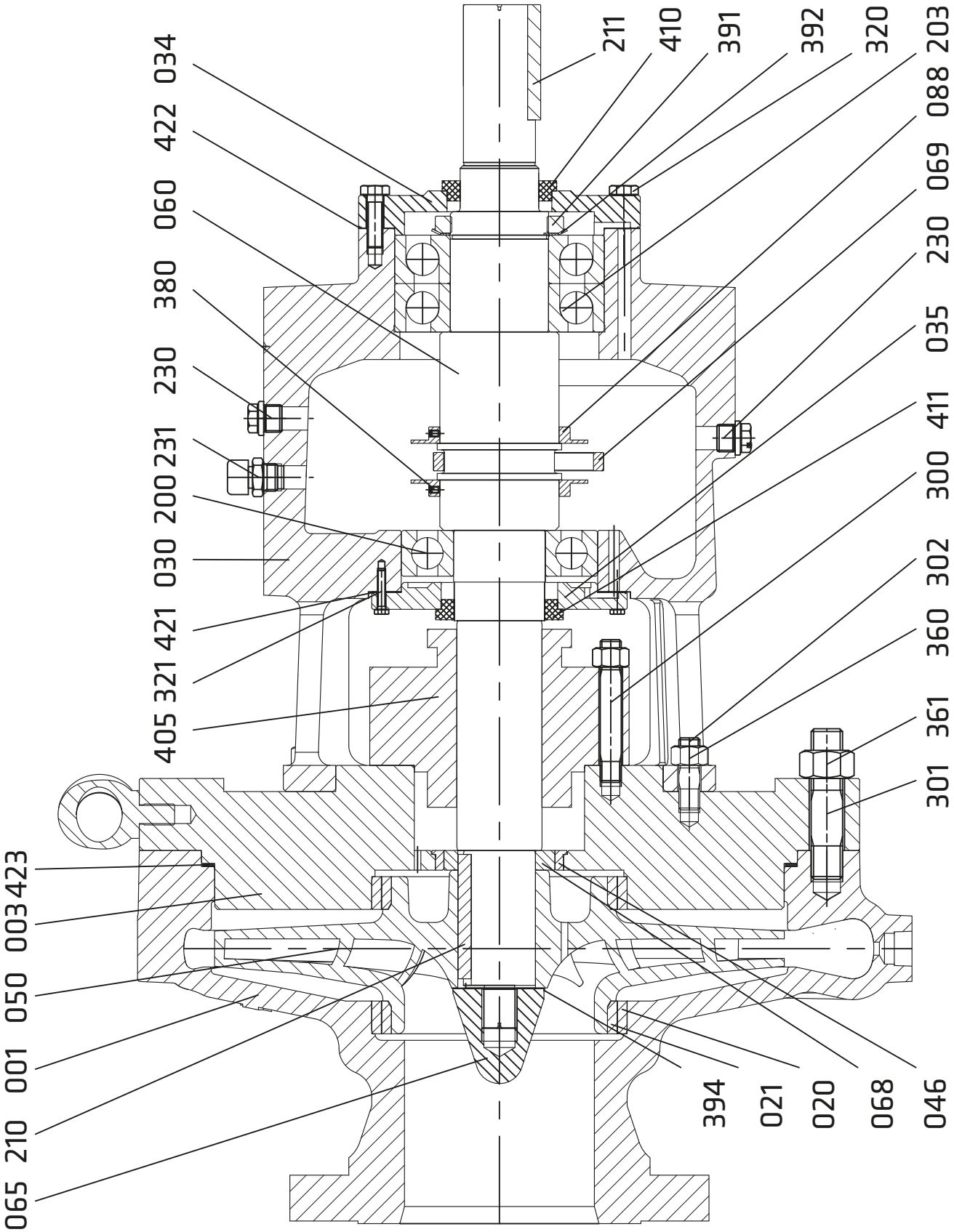
**SPO 6 - 4 - 17**

**Pump Type**

**Discharge Nozzle (inch)**

**Suction Nozzle (inch)**

**Nominal Impeller Diameter (inch)**


065
210
001
050
003
423
405
321
421
030
200
231
230
380
060
422
034
211
410
391
392
320
203
088
069
230
035
411
300
302
360
361
301
394
021
020
068
046

## Part List

| | | | |
|---|---|---|---|
| 423 | CASING GASKET | 230 | SCREW |
| 422 | GASKET | 211 | COUPLING KEY |
| 421 | GASKET | 210 | IMPELLER KEY |
| 411 | LIP SEAL | 203 | ANGULAR BALL BEARING |
| 410 | LIP SEAL | 200 | BALL BEARING |
| 405 | MECHANICAL SEAL | 088 | THROWER |
| 394 | LOCK WASHER | 069 | OIL RING |
| 392 | LOCK WASHER | 068 | SHAFT SLEEVE |
| 391 | LOCK NUT | 065 | IMPELLER NUT |
| 380 | SETSCREW | 060 | SHAFT |
| 361 | CASING NUT | 050 | IMPELLER |
| 360 | NUT | 046 | THROUTLING BUSH |
| 321 | SCREW | 035 | BEARING COVER |
| 320 | SCREW | 034 | BEARING COVER |
| 302 | STUD | 030 | BEARING HOUSING |
| 301 | CASING STUD | 021 | WEAR RING (CASING COVER) |
| 300 | STUD | 020 | WEAR RING (CASING) |
| 231 | OIL FILLING PLUG AND BREATHER | 003 | CASING COVER |
| | | 001 | VOLUTE CASING |

## Material Options

| Part No | | API 610 MATERIAL CLASS | | | | |
|---|---|---|---|---|---|---|
| | | S-5 | S-6 | S-8 | C-6 | A-8 |
| 001 | VOLUTE CASING | STEEL | | | %12 Chrome | 316 SS |
| 050 | IMPELLER | STEEL | %12 Chrome | 316 SS | %12 Chrome | 316 SS |
| 003 | CASING COVER | STEEL | | | %12 Chrome | 316 SS |
| 060 | SHAFT | AISI 4140 | | 316 SS | 420 SS | 316 SS |
| 030 | BEARING HOUSING | STEEL | | | | |
| 065 | IMPELLER NUT | STEEL | 316 SS | | | |
| 034 | BEARING COVER | STEEL | | | | |
| 035 | BEARING COVER | STEEL | | | | |
| 069 | OIL RING | Bronze | | | | |
| 411 | LIP SEAL | Bronze / Viton | | | | |
| 410 | LIP SEAL | Bronze / Viton | | | | |
| 046 | THROUTLING BUSH | 420 SS | | 316 SS | 420 SS | 316 SS |
| 020 | WEAR RING (CASING) | %12 Chrome | %12 Chrome | 316 SS | %12 Chrome | 316 SS |
| 021 | WEAR RING (CASING COVER) | %12 Chrome | %12 Chrome | 316 SS | %12 Chrome | 316 SS |
| 423 | CASING | 316 SS Spiral Wound | | | | |
| 301/361 | STUD AND NUT (CASING) | AISI 4140 | | | | |

Standart

Pump • Fire Fighting Units • Booster Set

# SDS / SDS-V

## DOUBLE SUCTION PUMPS

SDS / SDS-V Rev.11 09.2021

## Handled Liquids

Clean or slightly contaminated low viscosity liquids without solid & fibrous particles.

## Technical Data

Discharge Flange_____DN 65.....DN 600 mm

Capacity_____up to 6000 $m^3/h$

Head_____up to 180 m

Speed_____up to 2900 rpm

Design Temperature_____-10 °C' to +110 °C*

Casing Pressure (Pmax)_____16 bar - 25 bar*

(Pmax: Suction Pressure + Shut off Head)

(*) The Material of pumps differ according to the type of pumped liquid, operating temperature and pressure. Contact for detailed information.

## Design Features

•Horizontal or vertical manufacturing option. Axial split case, single stage, double suction centrifugal pumps.

•Suction and discharge flanges are on the same axis on the bottom casing. Split case design permits easy disassembly of the rotor group for maintenance or repair without distorting pump alignment and suction / discharge piping.

•Suction and Discharge Flanges are comform to EN 1092-2/PN 16 or PN25. (EN 1092-1 / PN 16 or PN 25 for steel or stainless steel casing)

•All impellers are balanced dynamically or statically according to ISO 1940 class 6.3.

•Impeller is of double suction design. This feature increases pump suction performance in addition with providing the balance of hydraulic axial forces resulting higher bearing lifes and higher reliability.

•In standard construction, the direction of rotation is clockwise when it is looked from drive end. In this case, suction flange is on right and discharge flange is on left. Upon request the direction of rotation can be reversed. This time the position of the suction and discharge flanges are also reversed.

•Grease lubricated ball bearings are used in horizontal installation. In case of vertical installation, pumping liquid lubricated journal bearings on top and grease lubricated ball bearings on bottom are used.

## Shaft Sealing

•Depending on request or requirement, pumps with soft packing or single, double and cartridge type mechanical seals can be supplied.

## Pump Designation

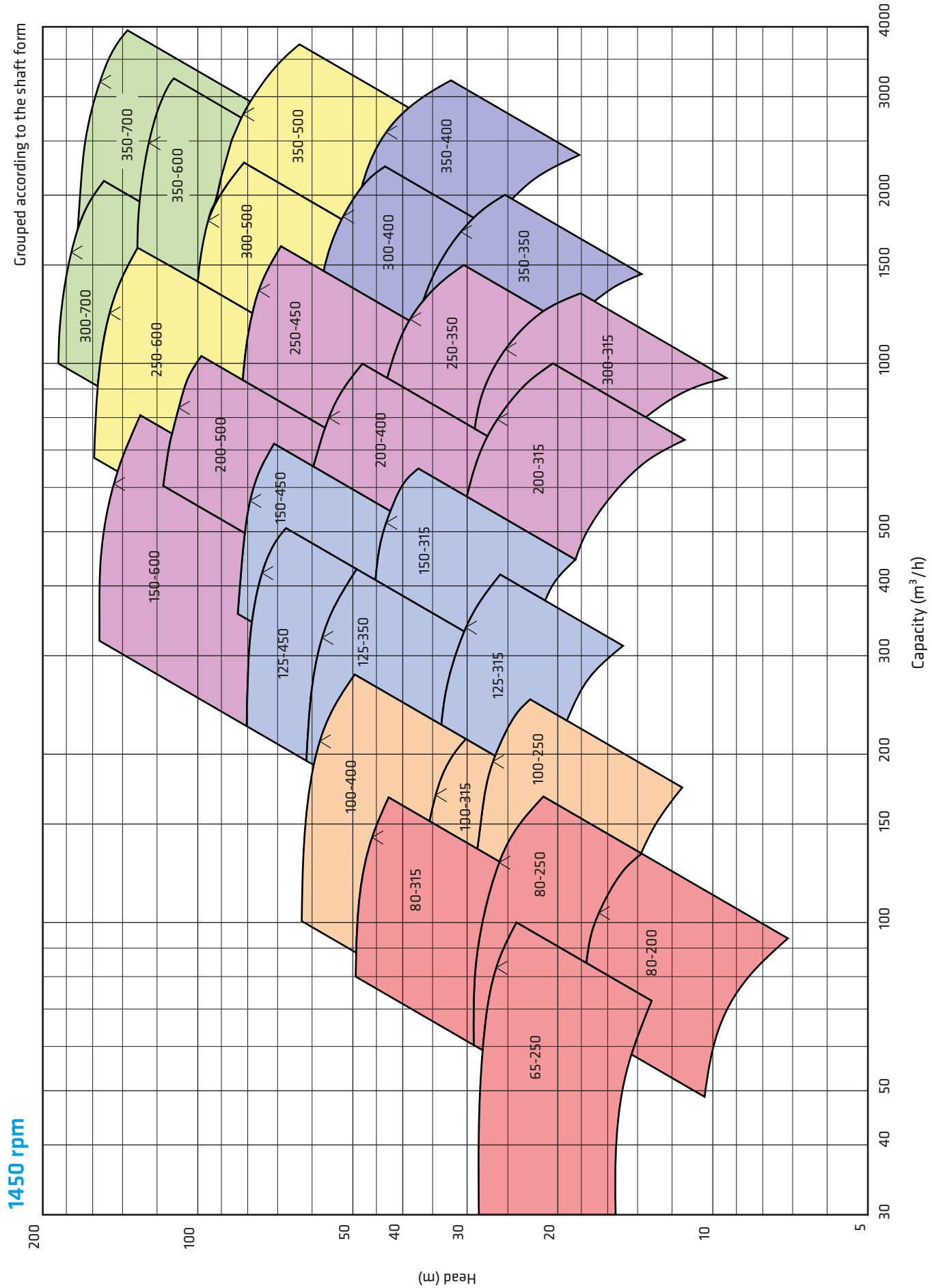
**SDS - V 200 - 500**

**Pump Type**

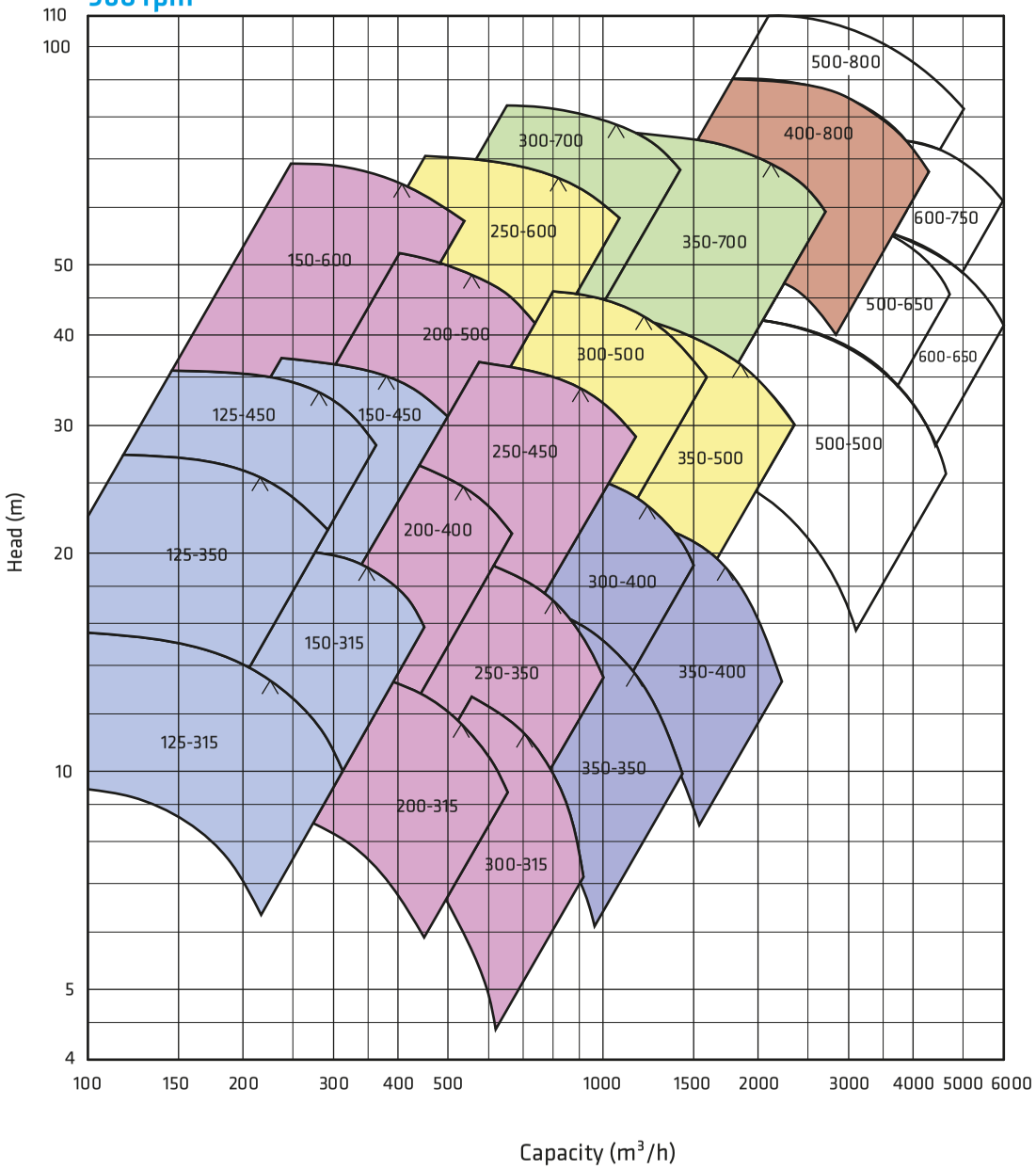
**Vertical Installation**

**Discharge Nozzle (DN-mm)**

**Nominal Impeller Diameter (mm)**

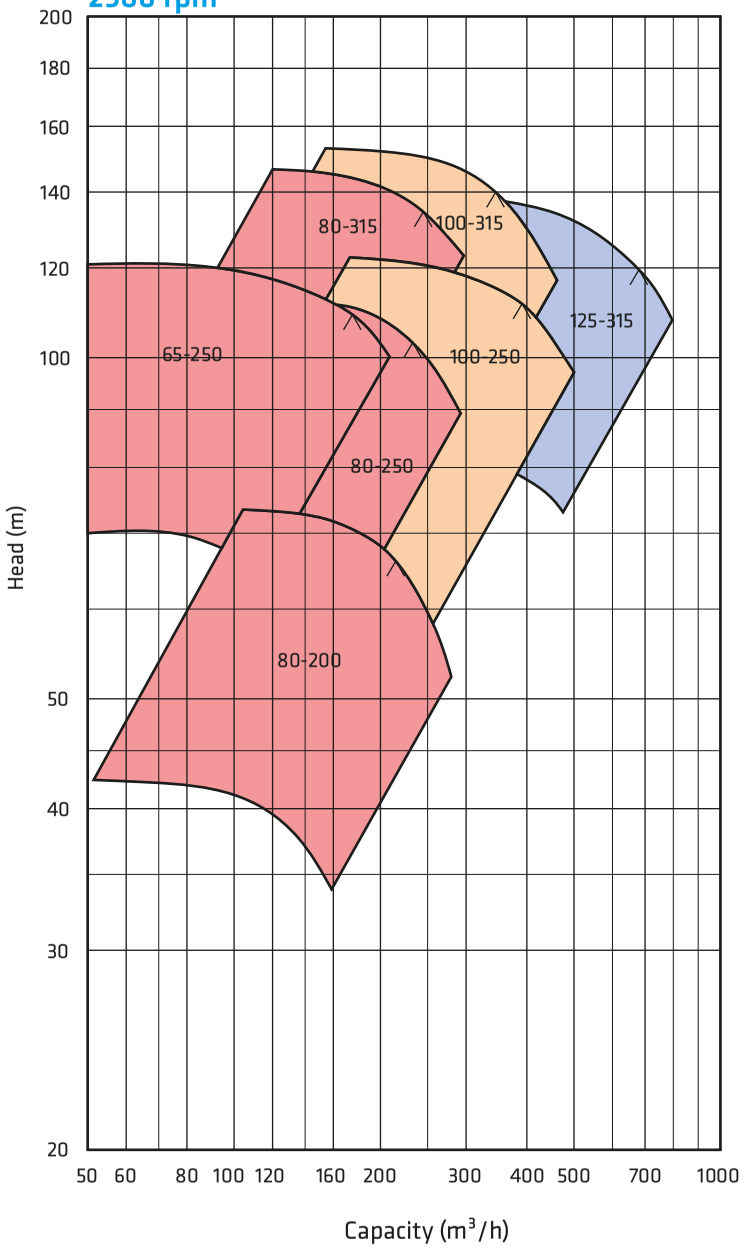

1450 rpm
Grouped according to the shaft form
Head (m)
Capacity (m³/h)
200
100
50
40
30
20
10
5
30
40
50
100
150
200
300
400
500
1000
1500
2000
3000
4000
350-700
350-600
350-500
350-400
300-700
300-500
300-400
350-350
250-600
250-450
250-350
300-315
200-500
200-400
200-315
150-600
150-450
150-315
125-450
125-350
125-315
100-400
100-315
100-250
80-315
80-250
80-200
65-250

## 960 rpm

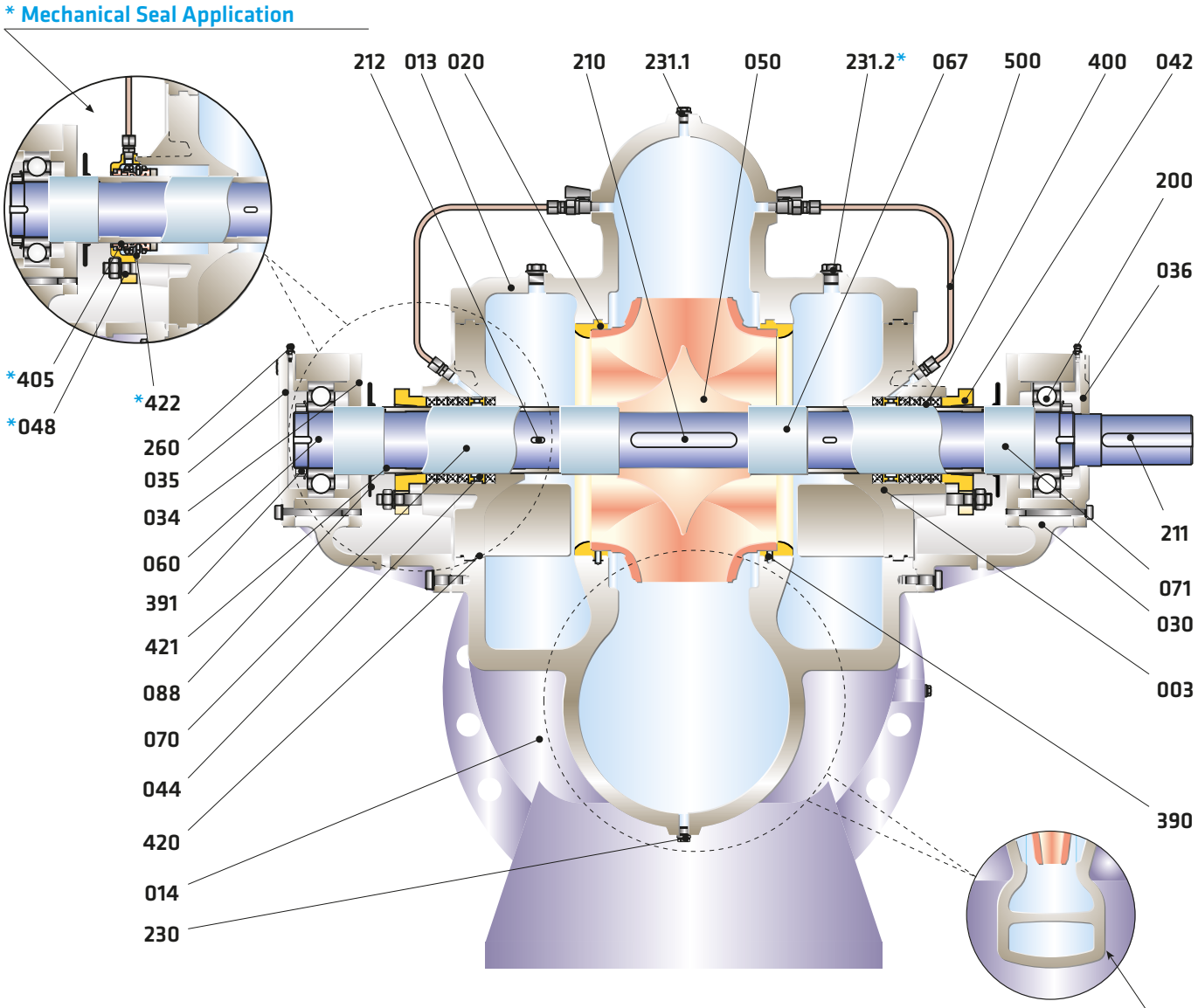



## 2900 rpm

Grouped according to the shaft from



## Sectional Drawings



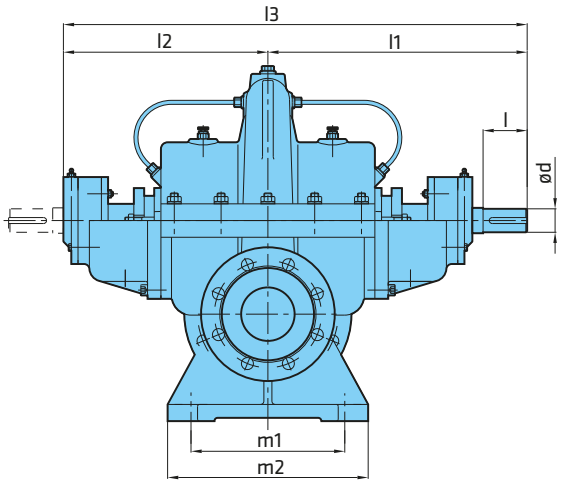

## Part List

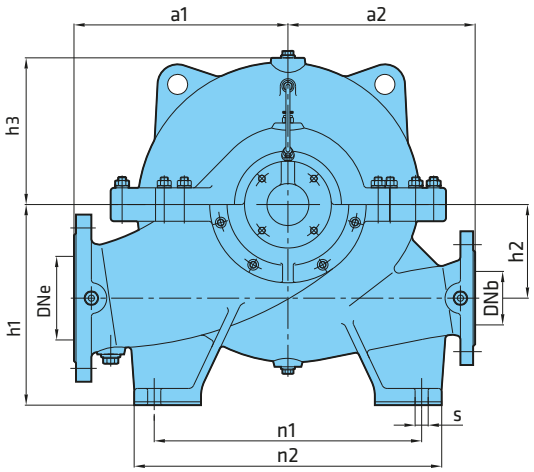
| | | | |
|---|---|---|---|
| 003 | Stuffing Box | 200 | Ball Bearing |
| 013 | Volute Casing (top half) | 210 | Impeller Key |
| 014 | Volute Casing (bottom half) | 211 | Coupling Key |
| 020 | Wear Ring | 212 | Spacer Sleeve Key |
| 030 | Bearing Bracket | 230 | Drain Plug |
| 034 | Bearing Cover (inboard) | 231.1 | Air Plug |
| 035 | Bearing Cover (outboard) | *231.2 | Air Plug |
| 036 | Bearing Cover (coupling) | 260 | Grease Nipple |
| 042 | Stuffing Box Gland | 390 | Pin |
| 044 | Lantern Ring | 391 | Shaft Nut & Lock Washer |
| *048 | Mechanical Seal Cover | 400 | Stuffing Box Packing |
| 050 | Impeller | *405 | Mechanical Seal |
| 060 | Pump Shaft | 420 | O-Ring |
| 067 | Spacer Sleeve | 421 | O-Ring |
| 070 | Shaft Protecting Sleeve | *422 | O-Ring |
| 071 | Shaft Protecting Sleeve | 500 | Flushing Pipe |
| 088 | Thrower | | |

( * ) Optional

( ** ) Doble Volute Desing Is Applied to :

SDS 200-500, 250-600, 300-500, 300-700, 350-500, 350-700




| Pump Type | Dimensions (mm) | | | | | | | | | | | | | | | | | | | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PNe | PNb | DNe | DNb | ød | l | l1 | l2 | l3 | a1 | a2 | h1 | h2 | h3 | n1 | n2 | m1 | m2 | s | (kg) |
| 65-250 | 16 | 16 | 100 | 65 | 35 | 80 | 400 | 310 | 710 | 320 | 280 | 300 | 140 | 200 | 400 | 460 | 230 | 300 | 20 | 165 |
| 80-200 | 16 | 16 | 125 | 80 | 35 | 80 | 400 | 310 | 710 | 320 | 280 | 300 | 140 | 200 | 400 | 460 | 230 | 300 | 20 | 165 |
| 80-250 | 16 | 16 | 125 | 80 | 35 | 80 | 400 | 310 | 710 | 320 | 280 | 300 | 140 | 200 | 400 | 460 | 230 | 300 | 20 | 175 |
| 80-315 | 16 | 16 | 125 | 80 | 35 | 80 | 400 | 310 | 710 | 360 | 300 | 300 | 140 | 260 | 400 | 460 | 230 | 300 | 20 | 197 |
| 100-250 | 16 | 16 | 150 | 100 | 42 | 90 | 450 | 350 | 800 | 360 | 310 | 355 | 170 | 235 | 400 | 480 | 280 | 340 | 20 | 220 |
| 100-315 | 16 | 16 | 150 | 100 | 42 | 90 | 450 | 350 | 800 | 360 | 310 | 355 | 170 | 250 | 400 | 480 | 280 | 340 | 20 | 230 |
| 100-400 | 16 | 16 | 150 | 100 | 42 | 90 | 450 | 350 | 800 | 420 | 370 | 355 | 170 | 300 | 460 | 540 | 280 | 340 | 20 | 290 |
| 125-315 | 16 | 16 | 200 | 125 | 55 | 120 | 555 | 420 | 975 | 420 | 370 | 400 | 200 | 280 | 460 | 540 | 320 | 380 | 22 | 330 |
| 125-350 | 16 | 16 | 200 | 125 | 55 | 120 | 555 | 420 | 975 | 470 | 450 | 400 | 200 | 300 | 540 | 660 | 320 | 380 | 22 | 380 |
| 125-450 | 16 | 16 | 200 | 125 | 55 | 120 | 555 | 420 | 975 | 500 | 450 | 400 | 200 | 350 | 540 | 640 | 320 | 380 | 22 | 410 |
| 150-315 | 16 | 16 | 200 | 150 | 55 | 120 | 555 | 420 | 975 | 470 | 400 | 400 | 200 | 310 | 540 | 640 | 320 | 380 | 22 | 395 |
| 150-450 | 16 | 16 | 200 | 150 | 55 | 120 | 555 | 420 | 975 | 500 | 450 | 400 | 200 | 365 | 540 | 640 | 320 | 380 | 22 | 430 |
| 150-600 | 25 | 25 | 250 | 150 | 65 | 130 | 645 | 500 | 1145 | 550 | 500 | 560 | 300 | 445 | 540 | 640 | 360 | 420 | 22 | 800 |
| 200-315 | 16 | 16 | 250 | 200 | 65 | 130 | 645 | 500 | 1145 | 500 | 450 | 500 | 240 | 315 | 540 | 640 | 360 | 420 | 22 | 570 |
| 200-400 | 16 | 16 | 250 | 200 | 65 | 130 | 645 | 500 | 1145 | 500 | 450 | 500 | 240 | 360 | 540 | 640 | 360 | 420 | 22 | 575 |
| 200-500 | 16 | 16 | 250 | 200 | 65 | 130 | 645 | 500 | 1145 | 550 | 500 | 560 | 300 | 380 | 620 | 720 | 360 | 420 | 22 | 700 |
| 250-350 | 16 | 16 | 300 | 250 | 65 | 130 | 645 | 500 | 1145 | 600 | 500 | 600 | 300 | 390 | 620 | 720 | 360 | 420 | 22 | 682 |
| 250-450 | 16 | 16 | 300 | 250 | 65 | 130 | 645 | 500 | 1145 | 600 | 500 | 600 | 300 | 415 | 620 | 720 | 360 | 420 | 22 | 780 |
| 250-600 | 25 | 25 | 300 | 250 | 80 | 170 | 720 | 540 | 1260 | 650 | 550 | 600 | 300 | 430 | 620 | 710 | 415 | 485 | 26 | 1190 |
| 300-315 | 16 | 16 | 350 | 300 | 65 | 130 | 645 | 500 | 1145 | 600 | 500 | 630 | 300 | 400 | 620 | 700 | 360 | 420 | 22 | 700 |
| 300-400 | 16 | 16 | 400 | 300 | 75 | 140 | 770 | 615 | 1385 | 700 | 550 | 710 | 350 | 450 | 720 | 800 | 420 | 520 | 26 | 1125 |
| 300-500 | 16 | 16 | 400 | 300 | 85 | 170 | 755 | 585 | 1340 | 700 | 750 | 710 | 350 | 425 | 700 | 800 | 420 | 520 | 26 | 1500 |
| 300-700 | 25 | 25 | 400 | 300 | 100 | 180 | 865 | 675 | 1540 | 750 | 800 | 710 | 350 | 470 | 720 | 880 | 420 | 520 | 26 | 1650 |
| 350-350 | 16 | 16 | 400 | 350 | 75 | 140 | 770 | 615 | 1385 | 700 | 550 | 670 | 350 | 450 | 720 | 800 | 420 | 520 | 26 | 1100 |
| 350-400 | 16 | 16 | 500 | 350 | 75 | 140 | 770 | 615 | 1385 | 800 | 600 | 800 | 380 | 500 | 800 | 960 | 500 | 600 | 26 | 1400 |
| 350-500 | 16 | 16 | 500 | 350 | 80 | 170 | 755 | 585 | 1340 | 800 | 600 | 800 | 400 | 435 | 740 | 900 | 500 | 600 | 26 | 1435 |
| 350-700 | 25 | 25 | 500 | 350 | 100 | 180 | 865 | 675 | 1540 | 850 | 750 | 850 | 450 | 525 | 720 | 880 | 500 | 600 | 26 | 2000 |
| 400-800 | 16 | 16 | 600 | 400 | 105 | 220 | 1035 | 810 | 1845 | 900 | 900 | 880 | 450 | 565 | 950 | 1120 | 630 | 740 | 26 | 3400 |
| 500-500 | 16 | 16 | 600 | 500 | Contact for detailed information | | | | | | | | | | | | | | | |
| 500-650 | 16 | 16 | 600 | 500 | | | | | | | | | | | | | | | | |
| 500-800 | 16 | 16 | 600 | 500 | | | | | | | | | | | | | | | | |
| 600-650 | 16 | 16 | 700 | 600 | | | | | | | | | | | | | | | | |
| 600-750 | 16 | 16 | 700 | 600 | | | | | | | | | | | | | | | | |

## Technical Data

| PART LIST | 10 | 30 | 3S | 20 | 60 | 6L | 70 | 7L | 8M | 7D | 7S | 8N | 80 | 4C | 4A | 40 | 80 | 8T | 60 | 7L | 7E | 7D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.6025 | 0.7040 | 0.7043 | 1.0619 | 1.4308 | 1.4309 | 1.4408 | 1.4409 | 1.4500 | 1.4517 | 1.4469 | 1.4317 | 1.4008 | 2.1050.01 | 2.0975.01 | 2.1096.01 | 1.4021 | 1.4021+QT | 1.4301 | 1.4404 | 1.4460 | 1.4462 |
| Volute Casing(**) | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | |
| Impeller | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | ○ | |
| Shaft | | | | | | | | | | | | | | | | | ● | ○ | ○ | ○ | | ○ |
| Bearing Housing | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | |
| Wear Ring (Casing) | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | |
| Shaft Protecting Sleeve | | | | | | | | | | | | | | | | | ● | ○ | ○ | ○ | | ○ |
| Mechanical Seal (*) | EN 12756 | | | | | | | | | | | | | | | | | | | | | |

(*) Optional :Depending on customer requirement or request different types and brands of mechanical seals are applicable.

(**) 0.7040 material is used in standard production for types which has PN 25 casing pressure class

● Standard manufacturing
○ Optional

## Material Equivalents

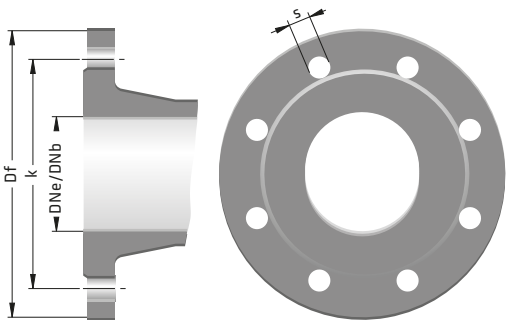
| Description | DIN / EN | | AISI / SAE / ASTM |
|---|---|---|---|
| Cast Iron | 0.6025 | EN-GJL-250 (GG25) | A48 Class 40B |
| Nodular Cast Iron | 0.7040 | EN-GJS-400-15 (GGG40) | A536 60-40-18 |
| Nodular Cast Iron | 0.7043 | EN-GJS-400-18-LT (GGG40.3) | A536 60-40-18 |
| Cast Steel | 1.0619 | GP240GHGS-C25 | A216 WCB |
| Chrome Nickel Cast Steel | 1.4308 | GX5CrNi19-10 | A351 CF8 |
| Chrome Nickel Cast Steel (low carbon) | 1.4309 | GX2CrNi19-11 | A351 CF3 |
| Chrome Nickel Molybdenum Cast Steel | 1.4408 | GX5CrNiMo19-11-2 | A351 CF8M |
| Chrome Nickel Molybdenum Cast Steel (low carbon) | 1.4409 | GX2CrNiMo19-11-2 | A351 CF3M |
| Austenitic Cast Steel | 1.4500 | GX7NiCrMoCuNb25-20 | A351 CN7M |
| Austenitic - Ferritic Cast Steel (duplex) | 1.4517 | GX2CrNiMoCuN25-6-3-3 | A890 CD4MCuN |
| Austenitic - Ferritic Cast Steel (super duplex) | 1.4469 | GX2CrNiMoN26-7-4 | A890 CE3MN |
| Martenzitic Stainless Cast Steel | 1.4317 | GX4CrNi13-4 | A352 CA6NM |
| Martenzitic Stainless Cast Steel | 1.4008 | GX7CrNiMo12-1 | A217 CA15 |
| Cast Bronze (tin alloy) | 2.1050.01 | G-CuSn10 | B427 C90700 |
| Cast Bronze (nickel alloy) | 2.0975.01 | G-CuAl10Ni | B148 C95500 |
| Cast Bronze (Leaded) | 2.1096.01 | G-CuSn5ZnPb | B584 C83600 |
| Chrome Steel | 1.4021 | X20Cr13 | A276 Type 420 |
| Chrome Steel(heat treated) | 1.4021 | X20Cr13 | A276 Type 420+QT |
| Chrome Nickel Steel | 1.4301 | X5CrNi18-10 | A276 Type 304 |
| Chrome Nickel Steel (low carbon) | 1.4404 | X2CrNiMo17-12-2 | A276 Type 316L |
| Duplex (austenitic-ferritic) Steel | 1.4460 | X3CrNiMoN27-5-2 | AISI 329 |
| Duplex (austenitic-ferritic) Steel | 1.4462 | X2CrNiMoN22-5-3 | UNS S32205 |

## Flange Dimensions

EN 1092 - 2

| DNe/DNb | Suction & Discharge (PN 16) | | | | Suction & Discharge (PN 25) | | | |
|---|---|---|---|---|---|---|---|---|
| | Df | k | s | n | Df | k | s | n |
| 65 | 185 | 145 | 19 | 4 | 185 | 145 | 19 | 8 |
| 80 | 200 | 160 | 19 | 8 | 200 | 160 | 19 | 8 |
| 100 | 220 | 180 | 19 | 8 | 235 | 190 | 23 | 8 |
| 125 | 250 | 210 | 19 | 8 | 270 | 220 | 28 | 8 |
| 150 | 285 | 240 | 23 | 8 | 300 | 250 | 28 | 8 |
| 200 | 340 | 295 | 23 | 12 | 360 | 310 | 28 | 12 |
| 250 | 405 | 355 | 28 | 12 | 425 | 370 | 31 | 12 |
| 300 | 460 | 410 | 28 | 12 | 485 | 430 | 31 | 16 |
| 350 | 520 | 470 | 28 | 16 | 555 | 490 | 34 | 16 |
| 400 | 580 | 525 | 31 | 16 | 620 | 550 | 37 | 16 |
| 500 | 715 | 650 | 34 | 20 | 730 | 660 | 37 | 20 |
| 600 | 840 | 770 | 37 | 20 | 845 | 770 | 41 | 20 |
| 700 | 910 | 840 | 37 | 24 | 960 | 875 | 41 | 24 |

" n " number of holes



Standart

Pump • Fire Fighting Units • Booster Set

# SKM

## MULTISTAGE CENTRIFUGAL PUMPS

SKM Rev.11 09.2021

## Handled Liquids

Clean or slightly contaminated low viscosity liquids without solid & fibrous particles.

## Technical Data

Discharge Flange_____DN 32.....DN 250 mm

Capacity_____up to 1000 $m^3/h$

Head_____up to 550 m

Speed_____up to 2900 rpm

Design Temperature_____10°C up to +140 °C*

Casing Pressure (Pmax)_____30 bar (63 bar)*

(Pmax: Suction Pressure + Shut off Head)

(*) The Material of pumps differ according to the type of pumped liquid, operating temperature and pressure. Contact for detailed information.

## Design Features

•Horizontal ring section, multistage, centrifugal pumps with closed impeller and diffuser.

•10 Models from DN 32 up to 250 discharge flange diameter.

•Suction nozzle flanges conform to EN 1092 - 2 / PN 16 and discharge nozzle flanges conform to EN 1092 - 2 / PN 40 (PN 63) (For steel or stainless steel casing pumps, flanges comform to related pressure class ratings defined in EN 1092 - 1)

•In standard production, suction flange is placed on the right side and close to the coupling while discharge flange is at the other end and radially upwards (R 3/0). If other flange position is required, it should be indicated in the order.

•All impellers are balanced dynamically or statically according to ISO 1940 class 6.3.

•Axial thrust is balanced by impeller balancing holes system.

•Direction of rotation is clockwise viewed from drive end.

•Bearings of SKM type pumps are always grease lubricated.

## Shaft Sealing

•In standard production soft packing application is applied up to 110 °C. Between 110 °C and 140 °C soft packing may also applied together with the stuffing box cooling.

•Pumps with mechanical seal can also be manufactured upon request.

## Pump Designation

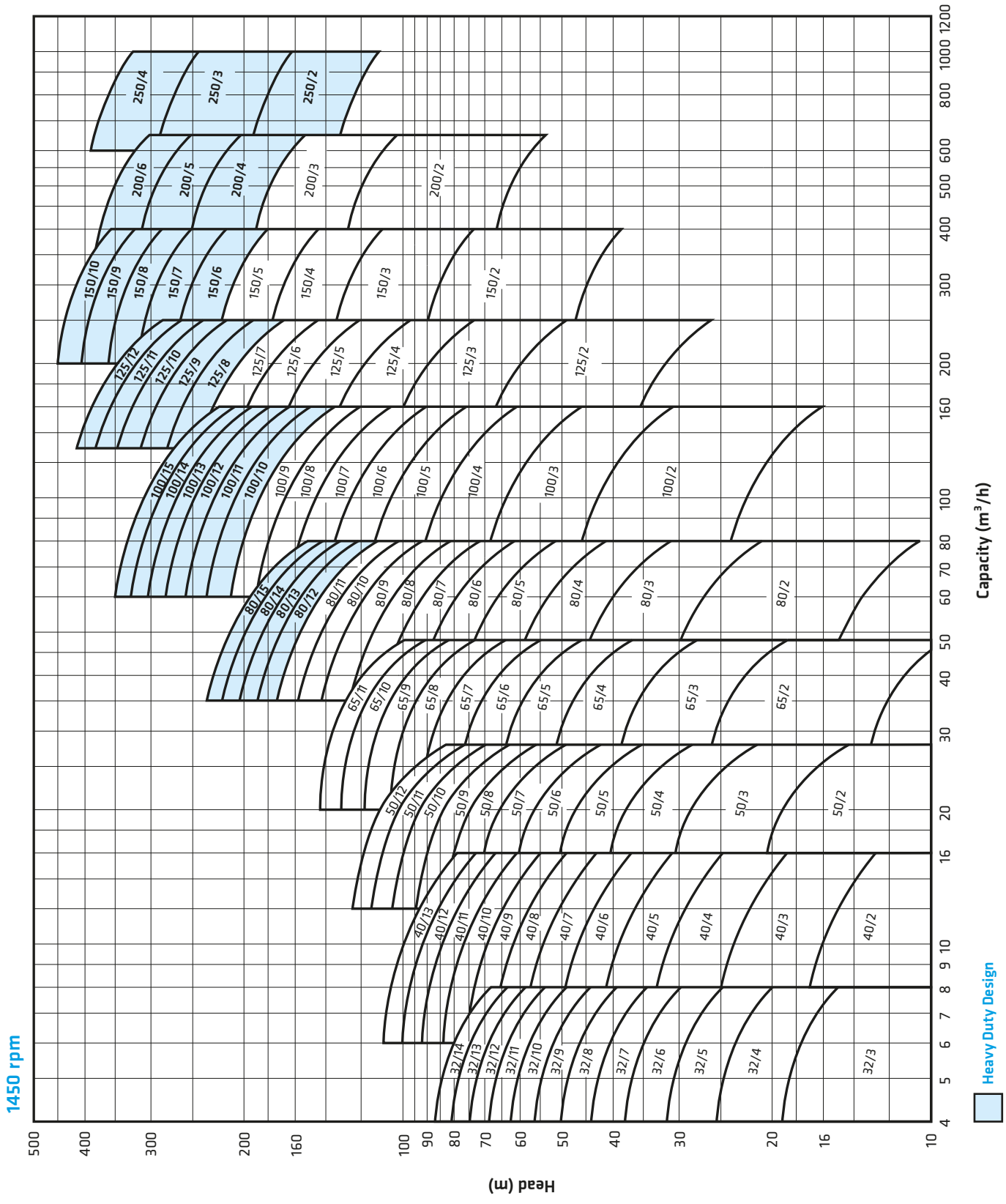
SKM - K 100 / 6

**Pump Type**

**Heavy Duty Design**

**Discharge Nozzle (DN-mm)**

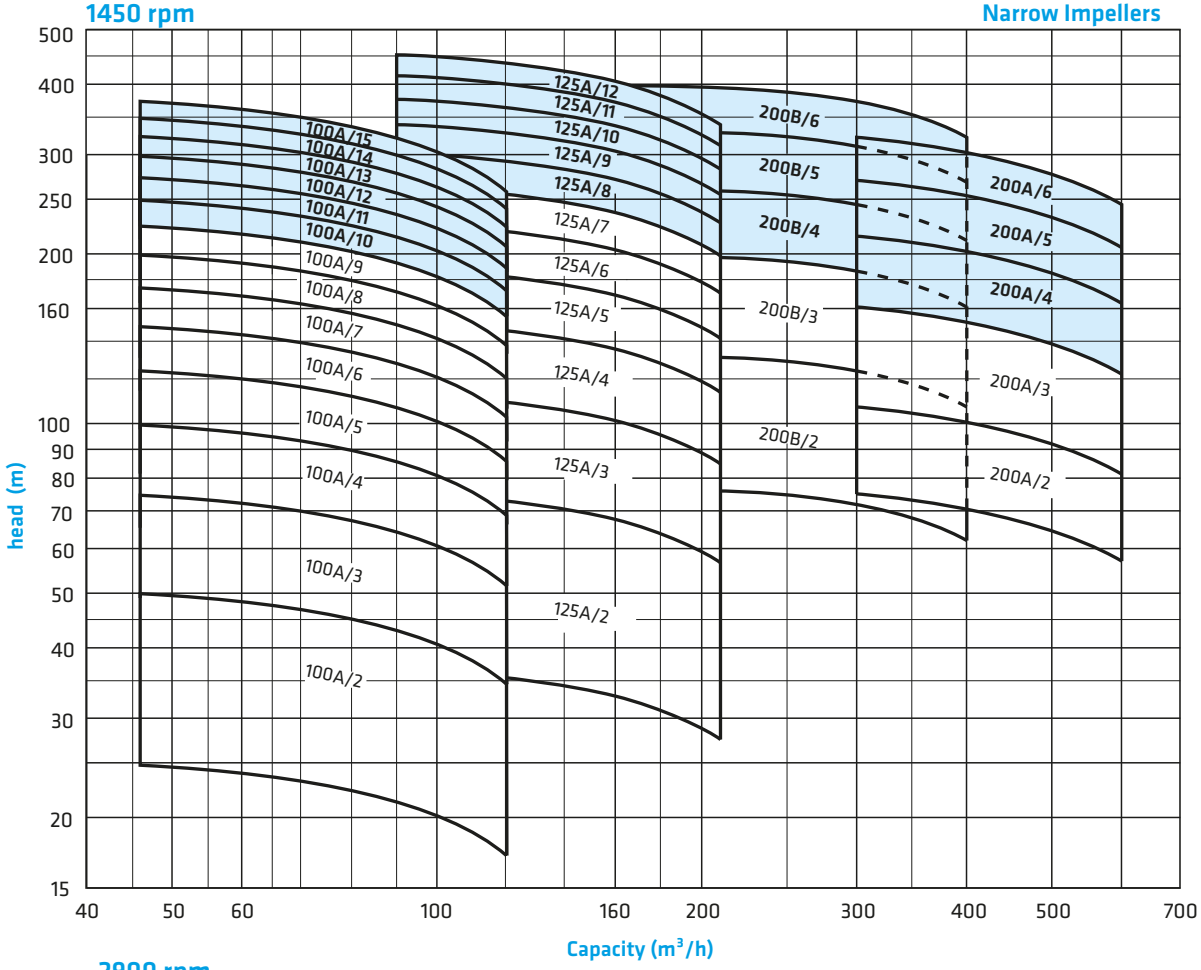
**Number of Stages**


1450 rpm
Head (m)
Capacity (m³/h)
Heavy Duty Design

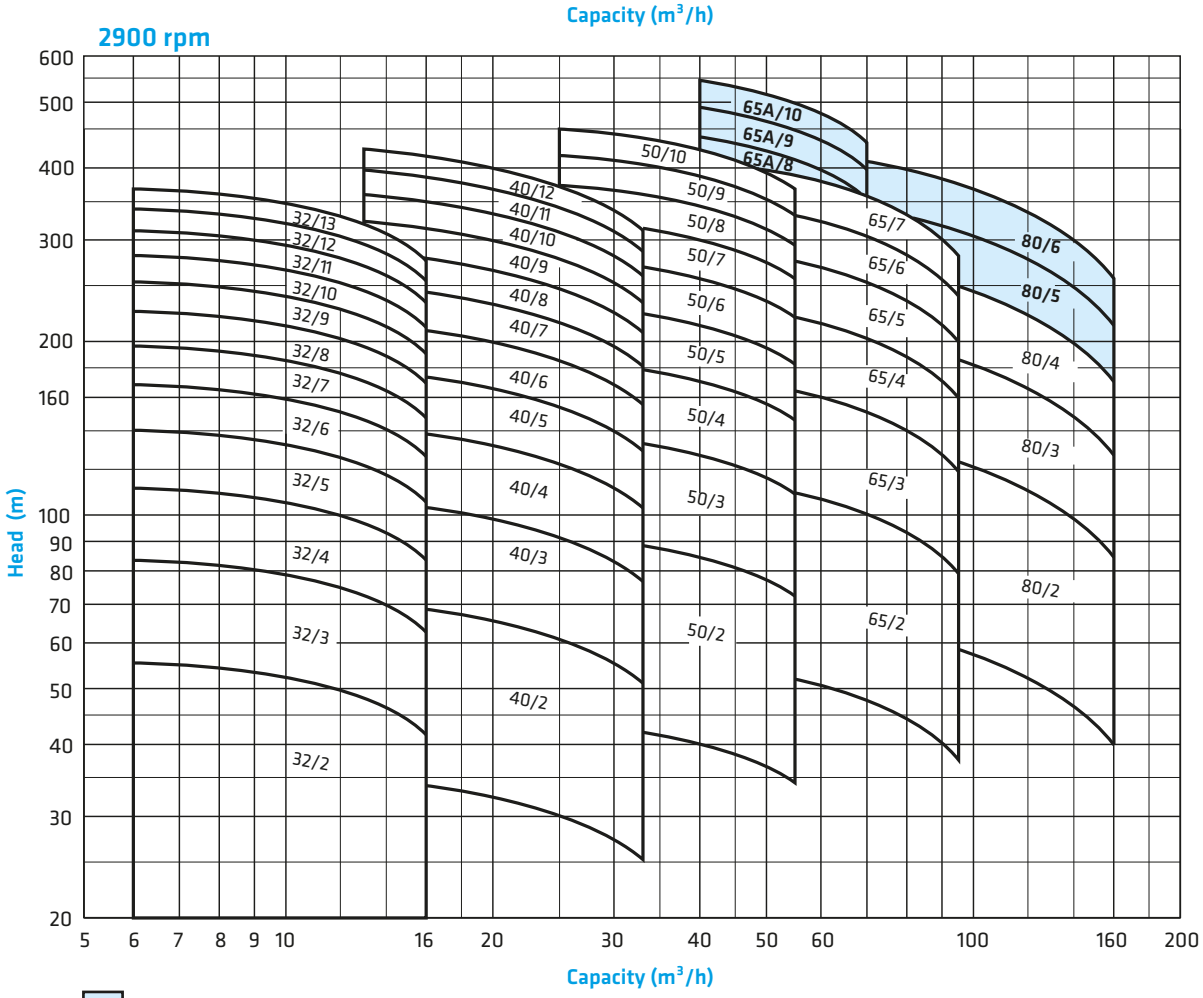
# Field Chart

## 1450 rpm

Narrow Impellers



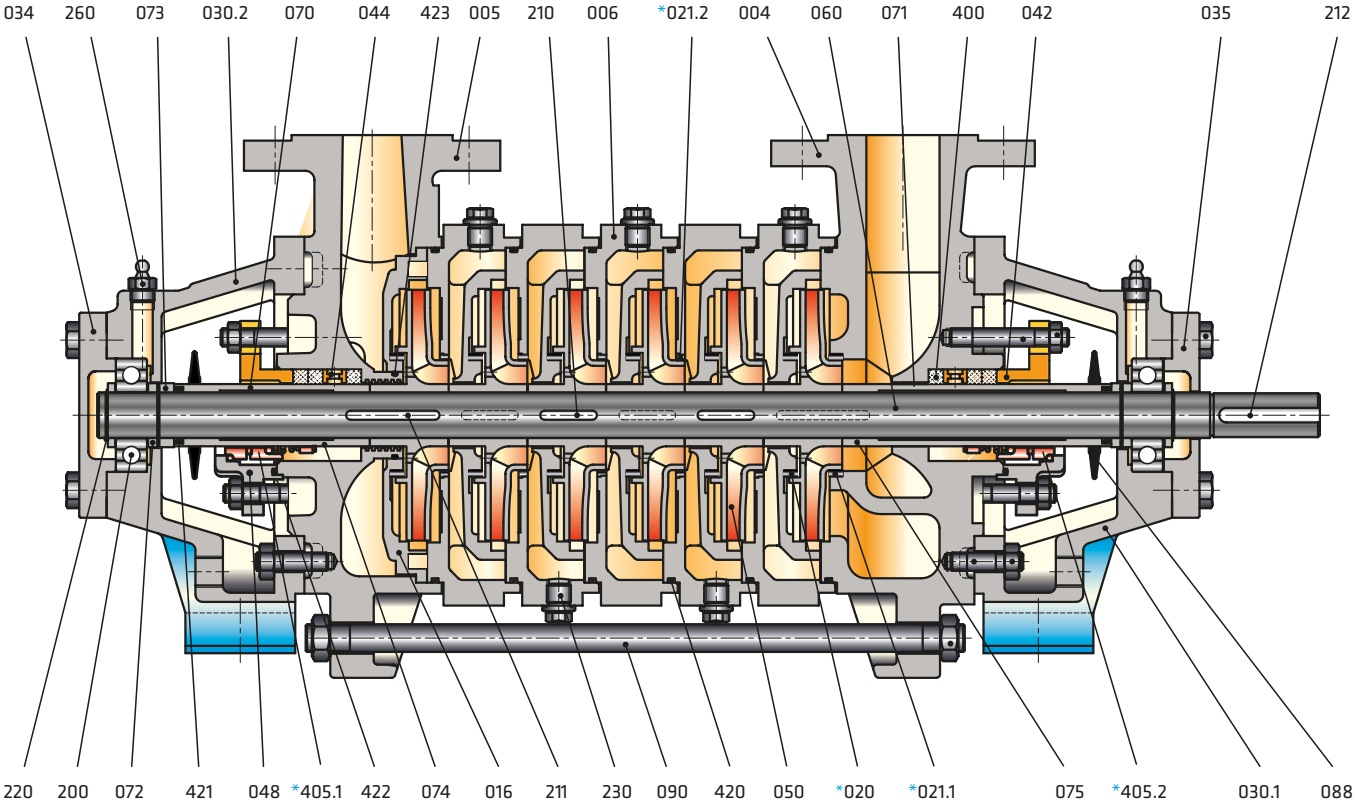

## 2900 rpm



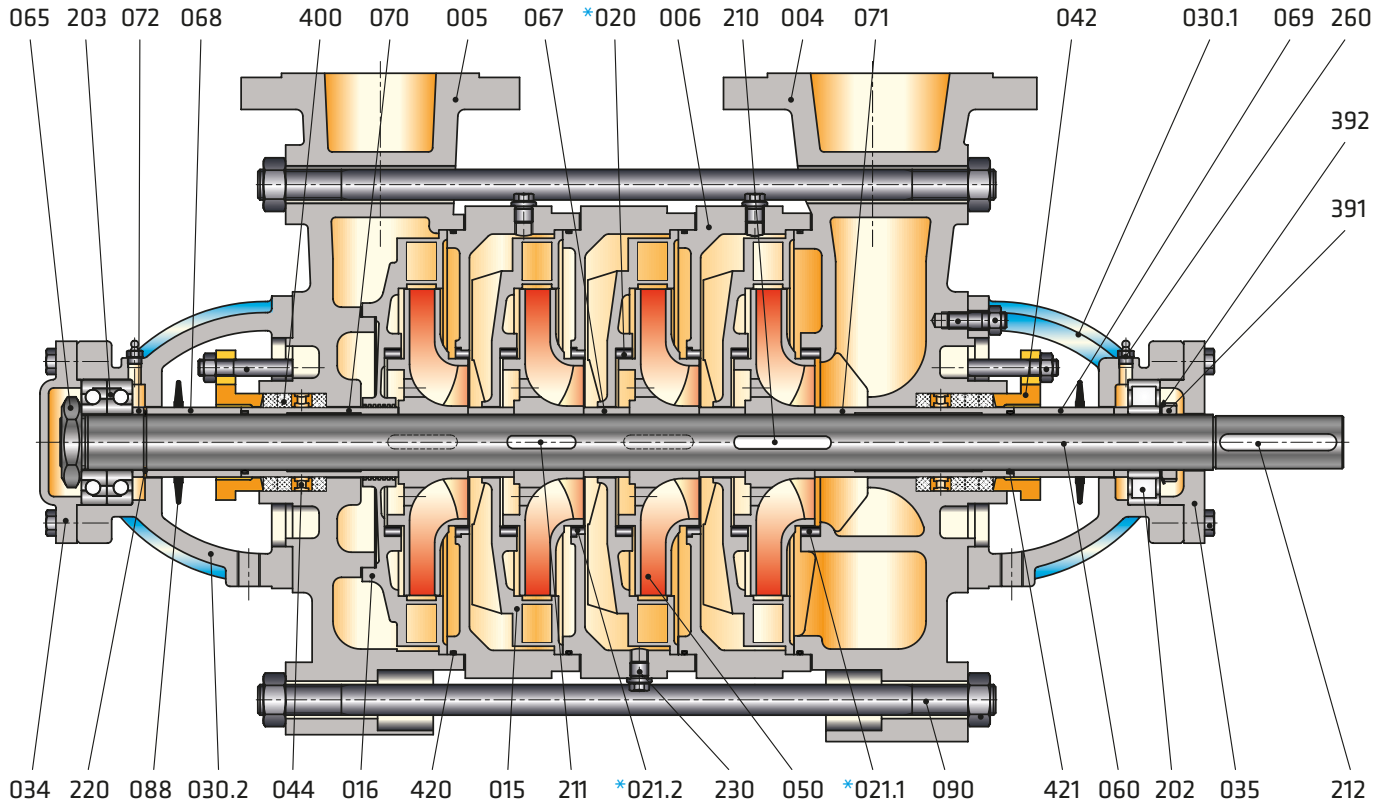

Heavy Duty Design

# Sectional Drawings

## SKM - 32 - 40 - 50 - 65 Series




## SKM - 80 - 100 - 125 - 150 - 200 - 250 Series

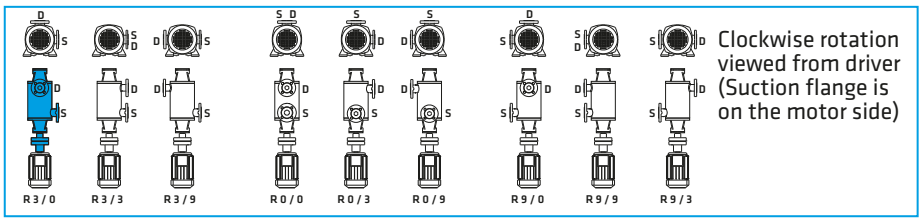


## Part List

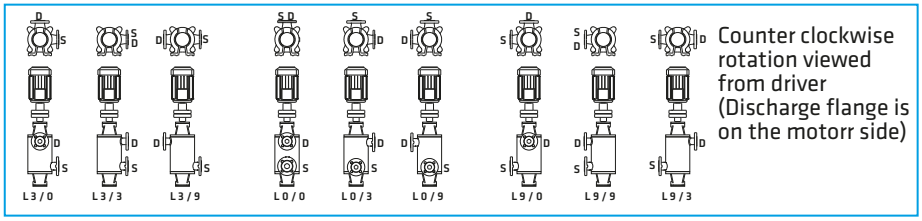
| | |
|---|---|
| 004 | Suction Casing |
| 005 | Discharge Casing |
| 006 | Stage Casing |
| 015 | Diffuser |
| 016 | Final Stage Diffuser |
| *020 | Wear Ring (stage casing) |
| *021.1 | Wear Ring (suction casing) |
| *021.2 | Wear Ring (stage casing) |
| 030.1 | Bearing Housing (suction casing) |
| 030.2 | Bearing Housing (discharge casing) |
| 034 | Bearing End Cover |
| 035 | Bearing Cover (coupling side) |
| 042 | Stuffing Box Gland |
| 044 | Lantern Ring |
| 048 | Mechanical Seal Cover |
| 050 | Impeller |
| 060 | Shaft |
| 065 | Shaft Nut |
| 067 | Interstage Sleeve |
| 068 | Spacer Sleeve (discharge side) |
| 069 | Spacer Sleeve (suction side) |
| 070 | Shaft Protecting Sleeve (discharge side) |
| 071 | Shaft Protecting Sleeve (suction side) |
| 072 | Spacer Sleeve (discharge side) |
| 073 | Spacer Sleeve |
| 074 | Mechanical Seal Sleeve (discharge) |
| 075 | Mechanical Seal Sleeve (suction) |
| 088 | Thrower |
| 090 | Casing Tiebolt |
| 200 | Ball Bearing |
| 202 | Cylindrical Roller Bearing |
| 203 | Angular Contact Ball Bearing |
| 210 | Impeller Key |
| 211 | Stage Key |
| 212 | Coupling Key |
| 220 | Retaining Ring |
| 230 | Drain Plug |
| 260 | Grease Nipple |
| 391 | Shaft Nut |
| 392 | Lock Washer |
| 400 | Stuffing Box Packing |
| *405.1 | Mechanical Seal (Discharge) |
| *405.2 | Mechanical Seal (Suction) |
| 420 | O-Ring (stage casing) |
| 421 | O-Ring (shaft protecting sleeve) |
| 422 | O-Ring (mechanical seal cover) |
| 423 | O-Ring (discharge casing) |

(*) Optional

## Flange Positions




Clockwise rotation viewed from driver (Suction flange is on the motor side)




Counter clockwise rotation viewed from driver (Discharge flange is on the motorr side)

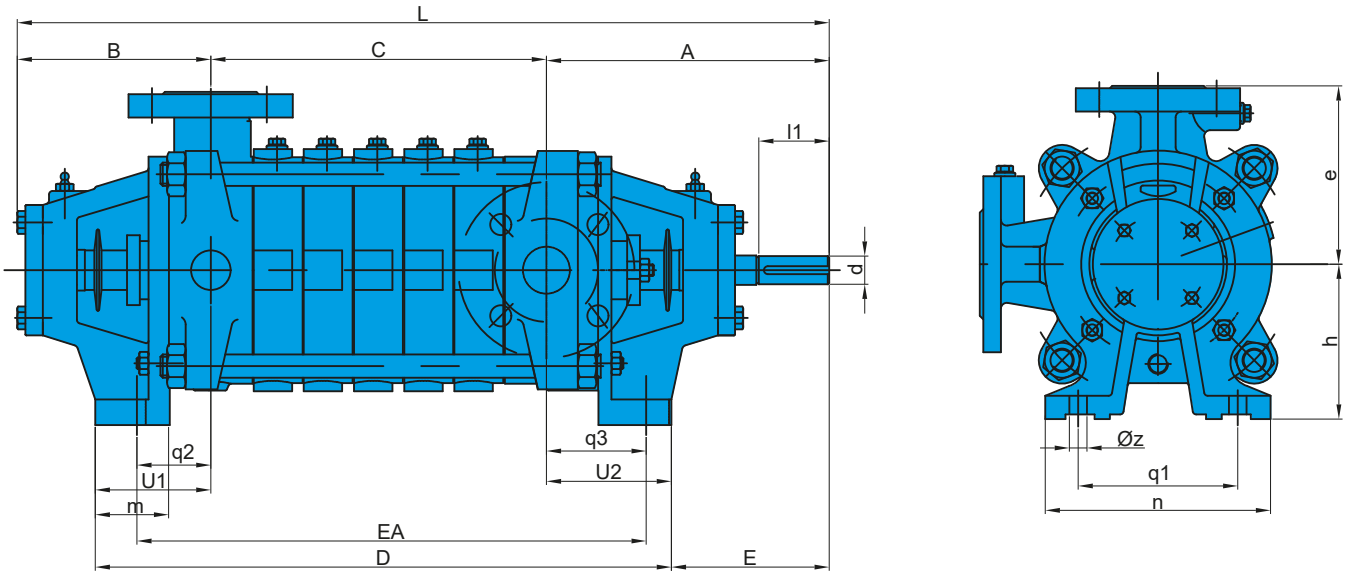
**R 3/0**

- 3/0 — Discharge Flange Position (D)
- 3 — Suction Flange Position (S)
- R — Direction of Rotation (R/L)

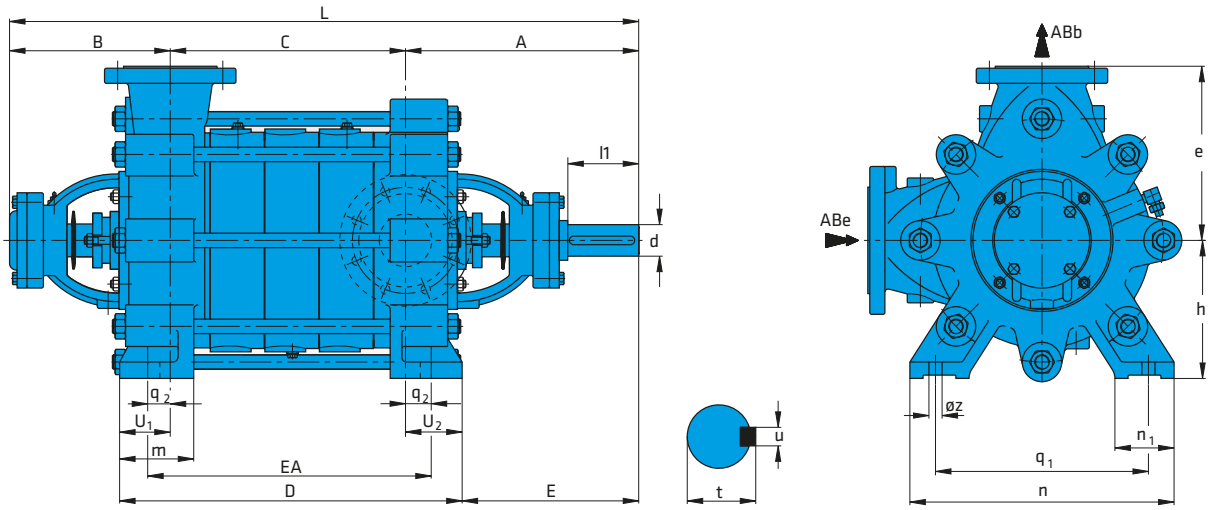
Direction of rotation viewed from driver end
R : Right
L : Left

# Technical Data

## For SKM - 32 - 40 - 50 - 65 series




## For SKM - 80 - 100 - 125 - 150 - 200 - 250 series




"C" according to the number of stages (mm)

| Pump Type | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 32 | 71 | 114 | 157 | 200 | 243 | 286 | 329 | 372 | 415 | 458 | 501 | 544 | 587 | 630 | |
| 40 | 78 | 133 | 188 | 243 | 298 | 353 | 408 | 463 | 518 | 573 | 628 | 683 | 738 | | |
| 50 | 90 | 152 | 214 | 276 | 338 | 400 | 462 | 524 | 586 | 648 | 710 | 772 | | | |
| 65 | 107 | 178 | 249 | 320 | 391 | 462 | 533 | 604 | 675 | 746 | 817 | | | | |
| 80 | 112 | 195 | 278 | 361 | 444 | 527 | 610 | 693 | 776 | 859 | 942 | **1025** | **1108** | **1191** | **1274** |
| 100 | 133 | 233 | 333 | 433 | 533 | 633 | 733 | 833 | 933 | **1033** | **1133** | **1233** | **1333** | **1433** | **1533** |
| 125 | 165 | 280 | 395 | 510 | 625 | 740 | 855 | **970** | **1085** | **1200** | **1315** | **1430** | | | |
| 150 | 218 | 363 | 508 | 653 | 798 | **943** | **1088** | **1233** | **1378** | **1523** | | | | | |
| 200 | 267 | 437 | 607 | **777** | **947** | **1117** | | | | | | | | | |
| 250 | | **520** | **722** | **924** | | | | | | | | | | | |

| Pump Type | Dimensions (mm) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ABe | ABb | A | B | EA | D | L | E | e | h | m | n | n1 | q1 | q2 | øz | u1 | u2 |
| 32 | 40 | 32 | 241 | 165 | C+170 | C+205 | C+406 | 145 | 152 | 132 | 60 | 192 | 55 | 136 | 85 | 15 | 98,5 | 106,5 |
| 40 | 50 | 40 | 238 | 165 | C+173 | C+219 | C+403 | 134 | 175 | 160 | 60 | 232 | 55 | 175 | 86,5 | 15 | 109,5 | 109,5 |
| 50 | 65 | 50 | 254 | 175 | C+183 | C+230 | C+429 | 145 | 190 | 160 | 60 | 256 | 60 | 200 | 91,5 | 15 | 117 | 113 |
| 65 | 80 | 65 | 271 | 195 | C+190 | C+234 | C+466 | 150 | 215 | 180 | 60 | 294 | 60 | 240 | 95 | 15 | 124 | 120 |
| 80 | 100 | 80 | 321 | 250 | C+84 | C+124 | C+571 | 259 | 265 | 210 | 85 | 410 | 90 | 340 | 42 | 15 | 62 | 62 |
| 100 | 125 | 100 | 389 | 285 | C+104 | C+140 | C+674 | 319 | 300 | 250 | 90 | 450 | 90 | 370 | 48 | 15 | 70 | 70 |
| 125 | 150 | 125 | 412 | 300 | C+110 | C+124 | C+712 | 332 | 375 | 300 | 105 | 560 | 105 | 450 | 55 | 20 | 83 | 83 |
| 150 | 200 | 150 | 486 | 360 | C+130 | C+208 | C+846 | 381 | 425 | 350 | 130 | 655 | 110 | 550 | 65 | 26 | 103 | 105 |
| 200 | 250 | 200 | 515 | 385 | C+138 | C+210 | C+900 | 410 | 500 | 400 | 130 | 675 | 120 | 550 | 65 | 27 | 105 | 105 |
| 250 | 300 | 250 | 708 | 444 | C+148 | C+260 | C+1152 | 577 | 627 | 472 | 155 | 775 | 150 | 625 | 74 | 32 | 130 | 129 |



Heavy Duty Design

# Technical Data

## Standard Application

| Pump Type | Shaft End | | | | Weight (kg) | |
|---|---|---|---|---|---|---|
| | d1 | l1 | v | u | G1 | g |
| 32 | 24 | 60 | 27 | 8 | 44 | 6 |
| 40 | 24 | 60 | 27 | 8 | 58 | 9,5 |
| 50 | 28 | 65 | 31 | 8 | 89 | 13 |
| 65 | 32 | 65 | 35 | 10 | 92 | 20 |
| 80 | 38 | 80 | 41 | 10 | 128 | 26 |
| 100 | 42 | 110 | 45 | 12 | 177 | 42 |
| 125 | 48 | 110 | 51,5 | 14 | 330 | 75 |
| 150 | 55 | 110 | 59 | 16 | 580 | 120 |
| 200 | 70 | 140 | 74,5 | 20 | 920 | 200 |

Pump weight = G1 + (s x g) (s : number of stage)

### Maximum number of stages according to shaft material

| Pump Type | 1.4462 / 1.4021 | | 1.4301 / 1.4404 | |
|---|---|---|---|---|
| | 1450 rpm (1750 rpm) | 2900 rpm (3500 rpm) | 1450 rpm (1750 rpm) | 2900 rpm (3500 rpm) |
| 32 | 14(14) | 13(9) | 14(14) | 13(8) |
| 40 | 13(13) | 12(8) | 13(13) | 7(3) |
| 50 | 12(12) | 10(6) | 12(10) | 7(2) |
| 65 | 11(11) | 7(4) | 11(8) | 5(2) |
| 80 | 11(11) | 4(2) | 11(8) | 3(N/A) |
| 100 | 9(7) | - | 6(4) | - |
| 125 | 7(5) | - | 4(2) | - |
| 150 | 5(3) | - | 3(N/A) | - |
| 200 | 3(2) | - | 3(N/A) | - |

## Heavy Duty Design

| Pump Type | Shaft End | | | | Weight (kg) | |
|---|---|---|---|---|---|---|
| | d1 | l1 | v | u | G1 | g |
| 65A | 38 | 88 | 41 | 10 | 105 | 20 |
| 80 | 42 | 80 | 45 | 12 | 146 | 26 |
| 100 | 48 | 143 | 51,5 | 14 | 205 | 42 |
| 125 | 55 | 110 | 59 | 16 | 370 | 75 |
| 150 | 65 | 110 | 69 | 18 | 630 | 120 |
| 200 | 70 | 140 | 74,5 | 20 | 945 | 200 |
| 250 | 100 | 245 | 106 | 28 | 1250 | 320 |

Pump weight = G1 + (s x g) (s : number of stage)

### Maximum number of stages according to shaft material

| Pump Type | 1.4462 / 1.4021 | | 1.4301 / 1.4404 | |
|---|---|---|---|---|
| | 1450 rpm (1750) rpm | 2900 rpm (3500) rpm | 1450 rpm (1750) rpm) | 2900 rpm (3500) rpm |
| 65A | - | 10(7) | - | N/A |
| 80 | 15(15) | 6(3) | 15(N/A) | N/A |
| 100 | 15(11) | - | N/A(N/A) | - |
| 125 | 12(8) | - | 8(N/A) | - |
| 150 | 10(6) | - | 7(N/A) | - |
| 200 | 6(4) | - | 5(N/A) | - |
| 250 | 4(3) | - | 4(N/A) | - |

# Bearing Type

## Standard Application

### 1450 rpm (1750 rpm)

| Pump Type | Number of Stages | Bearing Type | |
|---|---|---|---|
| | | Suciton | Discharge |
| 32 | 2....14(14) | 6305 | 6305 |
| 40 | 2....13(13) | 6305 | 6305 |
| 50 | 2....12(12) | 6306 | 6306 |
| 65 | 2....11(11) | 6307 | 6307 |
| 80 | 2....11(11) | NU 308 | 3308 |
| 100 | 2.....9(7) | NU 309 | 3309 |
| 125 | 2.....7(5) | NU 310 | 3310 |
| 150 | 2.....5(3) | NU 312 | 3312 |
| 200 | 2.....3(2) | NU 315 | 2x7315 |

### 2900 rpm (3500 rpm)

| Pump Type | Number of Stages | Bearing Type | | Number of Stages | Bearing Type | |
|---|---|---|---|---|---|---|
| | | Suciton | Discharge | | Suction | Discharge |
| 32 | 2....9(6) | 6305 | 6305 | 10(7)...13(9) | NU 305 | 6405 |
| 40 | 2....6(4) | 6305 | 6305 | 7(5)....12(8) | NU 305 | 6405 |
| 50 | 2....5(3) | 6306 | 6306 | 6(4)....10(6) | NU 306 | 6406 |
| 65 | 2....4(2) | 6307 | 6307 | 5(3).....7(4) | NU 307 | 6407 |
| 80 | - | - | - | 2(2).....4(2) | NU 308 | 3308 |

## Heavy Duty Design

### 1450 rpm (1750 rpm)

| Pump Type | Number of Stages | Bearing Type | |
|---|---|---|---|
| | | Suction | Discharge |
| 80 | 11(11)....15(15) | NU 309 | 2 x 7309 |
| 100 | 9(9).....15(11) | NU 310 | 2 x 7310 |
| 125 | 7(7).....12(8) | NU 312 | 2 x 7312 |
| 150 | 5(5).....10(6) | NU 314 | 2 x 7314 |
| 200 | 3(3).....6(4) | NU 316 | 2 x 7316 |
| 250 | 2(2).....4(3) | NU 321 | 2 x 7321 |

### 2900 rpm (3500 rpm)

| Pump Type | Number of Stages | Bearing Type | |
|---|---|---|---|
| | | Suction | Discharge |
| 65A | 8(N/A)....10(N/A) | NU 308 | 2 x 7308 |
| 80 | 5(N/A).....6(N/A) | NU 309 | 2 x 7309 |

## Technical Data

| PART LIST | 0.6025 | 0.7040 | 0.7043 | 1.0619 | 1.4308 | 1.4309 | 1.4408 | 1.4409 | 1.4500 | 1.4517 | 1.4469 | 1.4317 | 1.4008 | 2.1050.01 | 2.0975.01 | 2.1096.01 | 1.0503 | 1.4021 | 1.4021+QT | 1.4301 | 1.4404 | 1.4460 | 1.4462 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Suction Casing | ● | ○ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | |
| Discharge Casing | ● | ○ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | |
| Stage Casing | ● | ○ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | |
| Diffuser | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | |
| Impeller | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | ○ | |
| Shaft | | | | | | | | | | | | | | | | | | ● | ○ | ○ | ○ | | ○ |
| Bearing Housing | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | |
| Wear Ring | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | |
| Spacer Sleeve | | | | | | | | | | | | | | | | | ● | ○ | ○ | ○ | ○ | | ○ |
| Shaft Protecting Sleeve | | | | | | | | | | | | | | | | | ● | ○ | ○ | ○ | ○ | | ○ |
| Interstage Sleeve | | | | | | | | | | | | | | | | | ● | ○ | ○ | ○ | ○ | | ○ |
| Mechanical Seal (*) | EN 12756 | | | | | | | | | | | | | | | | | | | | | | |

(*) Optional :Depending on customer requirement or request different types and brands of mechanical seals are applicable.

● Standard manufacturing
○ Optional

## Material Equivalents

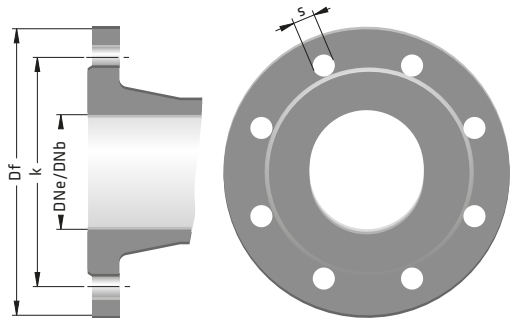
| Description | DIN / EN | | AISI / SAE / ASTM |
|---|---|---|---|
| Cast Iron | 0.6025 | EN-GJL-250 (GG25) | A48 Class 40B |
| Nodular Cast Iron | 0.7040 | EN-GJS-400-15 (GGG40) | A536 60-40-18 |
| Nodular Cast Iron | 0.7043 | EN-GJS-400-18-LT (GGG40.3) | A536 60-40-18 |
| Cast Steel | 1.0619 | GP240GHGS-C25 | A216 WCB |
| Chrome Nickel Cast Steel | 1.4308 | GX5CrNi19-10 | A351 CF8 |
| Chrome Nickel Cast Steel (low carbon) | 1.4309 | GX2CrNi19-11 | A351 CF3 |
| Chrome Nickel Molybdenum Cast Steel | 1.4408 | GX5CrNiMo19-11-2 | A351 CF8M |
| Chrome Nickel Molybdenum Cast Steel (low carbon) | 1.4409 | GX2CrNiMo19-11-2 | A351 CF3M |
| Austenitic Cast Steel | 1.4500 | GX7NiCrMoCuNb25-20 | A351 CN7M |
| Austenitic - Ferritic Cast Steel (duplex) | 1.4517 | GX2CrNiMoCuN25-6-3-3 | A890 CD4MCuN |
| Austenitic - Ferritic Cast Steel (super duplex) | 1.4469 | GX2CrNiMoN26-7-4 | A890 CE3MN |
| Martenzitic Stainless Cast Steel | 1.4317 | GX4CrNi13-4 | A352 CA6NM |
| Martenzitic Stainless Cast Steel | 1.4008 | GX7CrNiMo12-1 | A217 CA15 |
| Cast Bronze (tin alloy) | 2.1050.01 | G-CuSn10 | B427 C90700 |
| Cast Bronze (nickel alloy) | 2.0975.01 | G-CuAl10Ni | B148 C95500 |
| Cast Bronze (leaded) | 2.1096.01 | G-CuSn5ZnPb | B584 C83600 |
| Carbon Steel | 1.0503 | C45 | AISI 1045 |
| Chrome Steel | 1.4021 | X20Cr13 | A276 Type 420 |
| Chrome Steel (heat treated) | 1.4021 | X20Cr13 | A276 Type 420+QT |
| Chrome Nickel Steel | 1.4301 | X5CrNi18-10 | A276 Type 304 |
| Chrome Nickel Steel (low carbon) | 1.4404 | X2CrNiMo17-12-2 | A276 Type 316L |
| Duplex (austenitic-ferritic) Steel | 1.4460 | X3CrNiMoN27-5-2 | AISI 329 |
| Duplex (austenitic-ferritic) Steel | 1.4462 | X2CrNiMoN22-5-3 | UNS S32205 |

## Flange Dimensions

EN 1092 - 2

| DNe/DNb | Suction & Discharge (PN 16) | | | | Suction & Discharge (PN 40) | | | |
|---|---|---|---|---|---|---|---|---|
| | Df | k | s | n | Df | k | s | n |
| 32 | 140 | 100 | 19 | 4 | 140 | 100 | 19 | 4 |
| 40 | 150 | 110 | 19 | 4 | 150 | 110 | 19 | 4 |
| 50 | 165 | 125 | 19 | 4 | 165 | 125 | 19 | 4 |
| 65 | 185 | 145 | 19 | 4 | 185 | 145 | 19 | 8 |
| 80 | 200 | 160 | 19 | 8 | 200 | 160 | 19 | 8 |
| 100 | 220 | 180 | 19 | 8 | 235 | 190 | 23 | 8 |
| 125 | 250 | 210 | 19 | 8 | 270 | 220 | 28 | 8 |
| 150 | 285 | 240 | 23 | 8 | 300 | 250 | 28 | 8 |
| 200 | 340 | 295 | 23 | 12 | 375 | 320 | 31 | 12 |
| 250 | 405 | 355 | 28 | 12 | 450 | 385 | 34 | 12 |
| 300 | 460 | 410 | 28 | 12 | 515 | 450 | 34 | 16 |

" n " number of holes



Standart

Pump • Fire Fighting Units • Booster Set

# SKM-E

## MULTISTAGE PUMPS (END SUCTION)

SKM-E Rev.11 09.2021

## Handled Liquids

Clean or slightly contaminated low viscosity liquids without solid & fibrous particles.

## Technical Data

Discharge Flange_____DN 40....DN 150 mm

Capacity_____up to 400 $m^3/h$

Head_____up to 450 m

Speed_____up to 2900 rpm

Design Temperature_____-10°C up to +140 °C*

Casing Pressure (Pmax)_____30 bar (63 bar)*

(Pmax: Suction Pressure + Shut off Head)

(*) The Material of pumps differ according to the type of pumped liquid, operating temperature and pressure. Contact for detailed information.

## Design Features

•Horizontal ring section, multistage, centrifugal pumps with closed impellers and diffusers in end suction design.

•7 Models from DN 40 up to DN 150 discharge flange diameter.

•Suction nozzle flanges conform to EN 1092 - 2 / PN 16 and discharge nozzle flanges conform to EN 1092 - 2 / PN 40 (PN 63) (For steel or stainless steel casing pumps, flanges comform to related pressure class ratings defined in EN 1092 - 1)

•Discharge flange is on top for standard production, upon request different discharge flange positions can be applied.

•All impellers are balanced dynamically or statically according to ISO 1940 class 6.3.

•Axial thrust is balanced by impeller balancing holes system.

•Direction of rotation is always counter clockwise viewed from drive end. That's why these pumps can not be accouppled directly with diesel engines.

•Bearings of SKM-E type pumps are grease lubricated. Journal bearing used in the suction side is lubricated by the pumping liquid.

## Shaft Sealing

•In standard production soft packing application is applied up to 110 °C. Between 110 °C and 140 °C soft packing may also applied together with the stuffing box cooling.

•Pumps with mechanical seal can also be manufactured upon request.

## Pump Designation

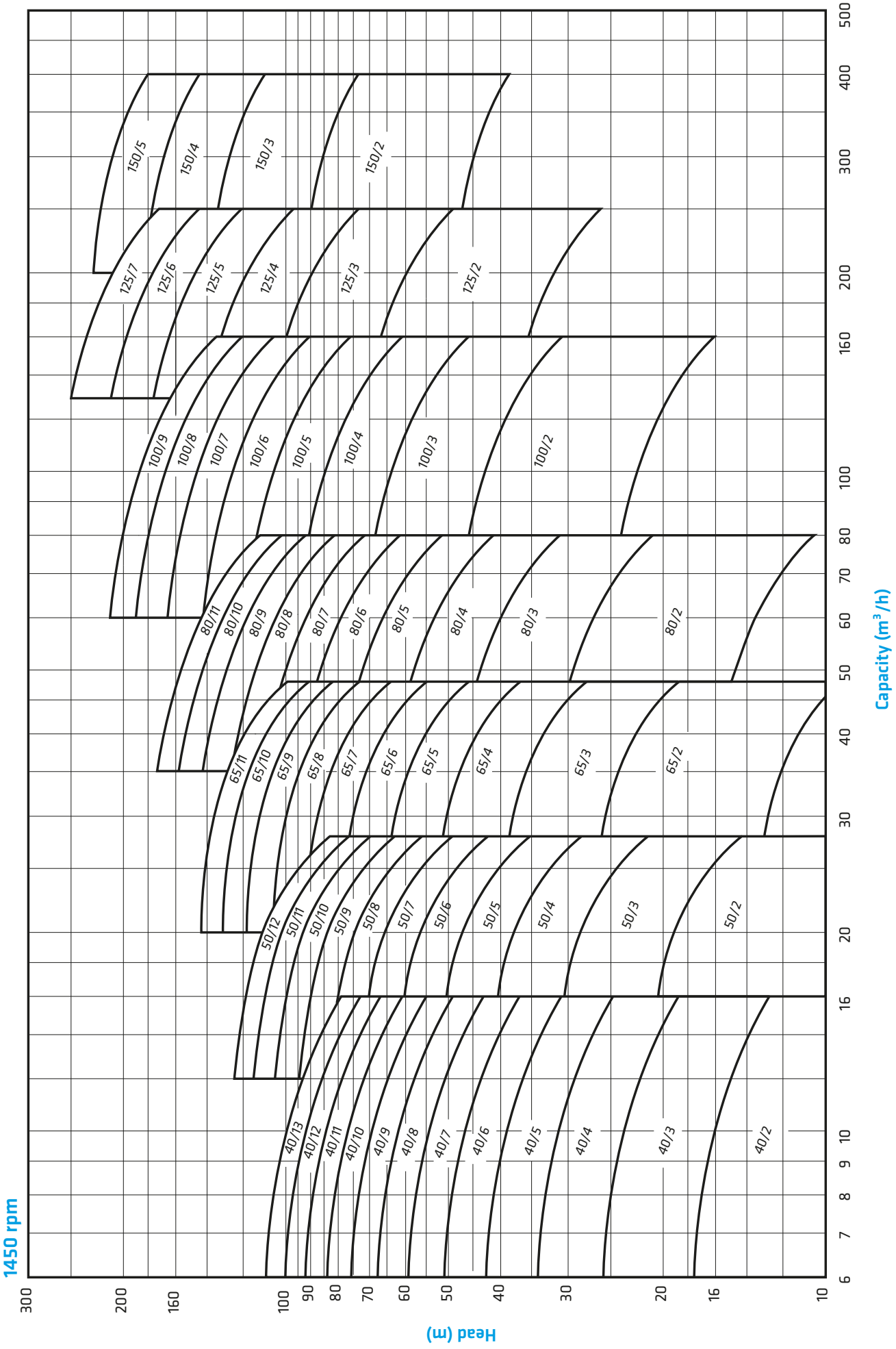
**SKM-E 100 / 6**

**Pump Type**

**Discharge Nozzle (DN-mm)**

**Number of Stages**

## Field Chart


1450 rpm
Head (m)
Capacity (m³/h)
300
200
160
100
90
80
70
60
50
40
30
20
16
10
6
7
8
9
10
16
20
30
40
50
60
70
80
100
160
200
300
400
500
150/5
150/4
150/3
150/2
125/7
125/6
125/5
125/4
125/3
125/2
100/9
100/8
100/7
100/6
100/5
100/4
100/3
100/2
80/11
80/10
80/9
80/8
80/7
80/6
80/5
80/4
80/3
80/2
65/11
65/10
65/9
65/8
65/7
65/6
65/5
65/4
65/3
65/2
50/12
50/11
50/10
50/9
50/8
50/7
50/6
50/5
50/4
50/3
50/2
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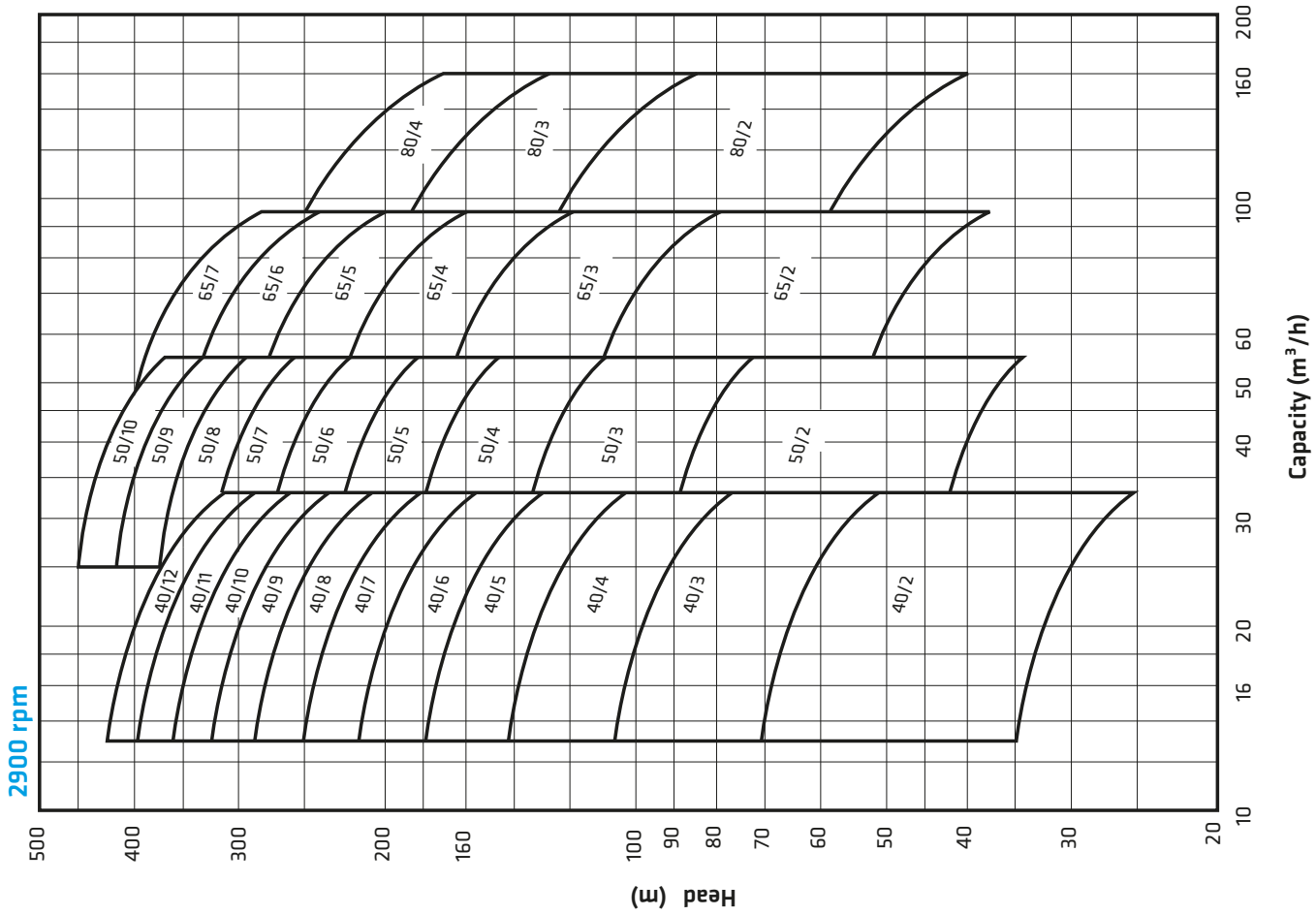
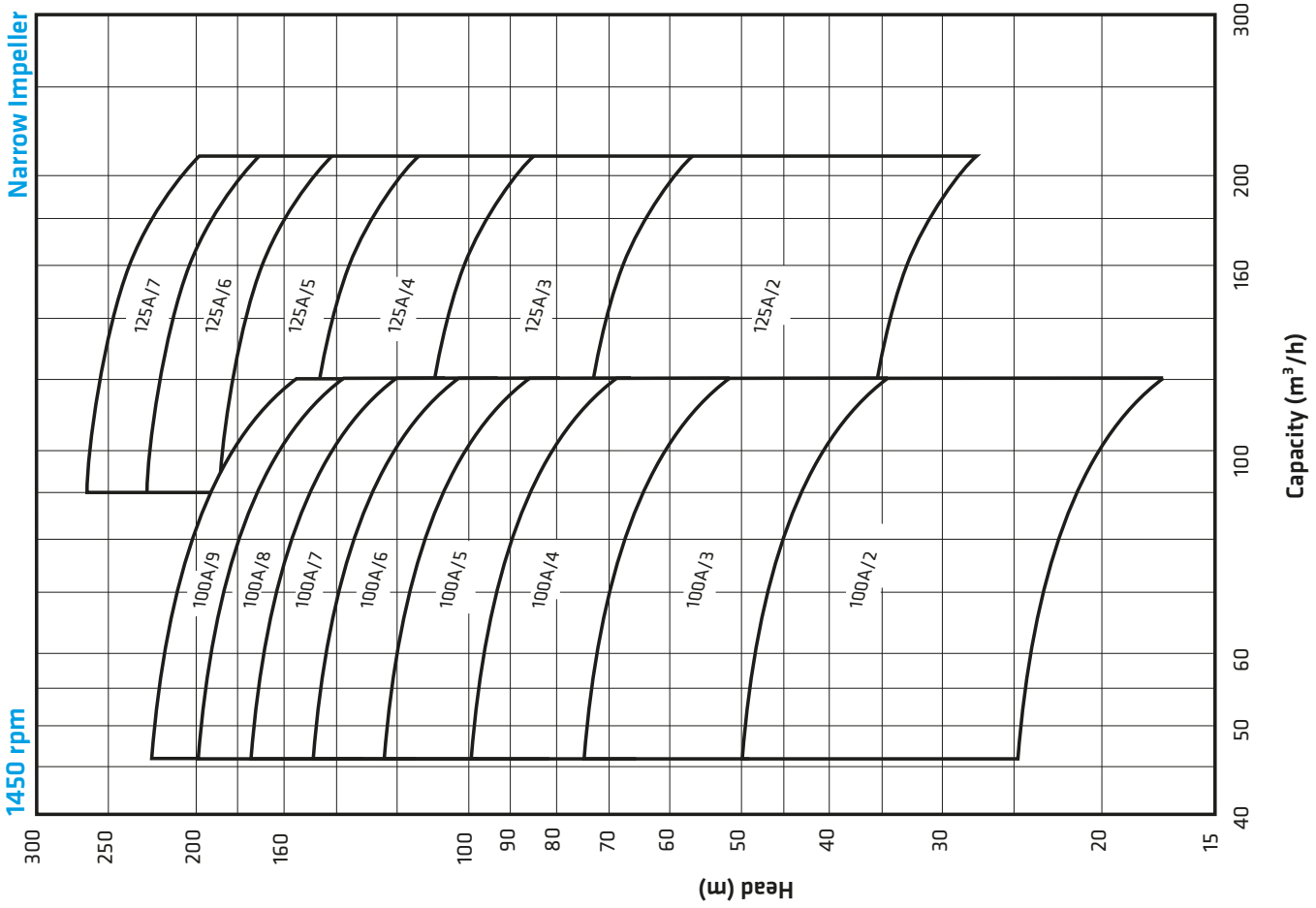
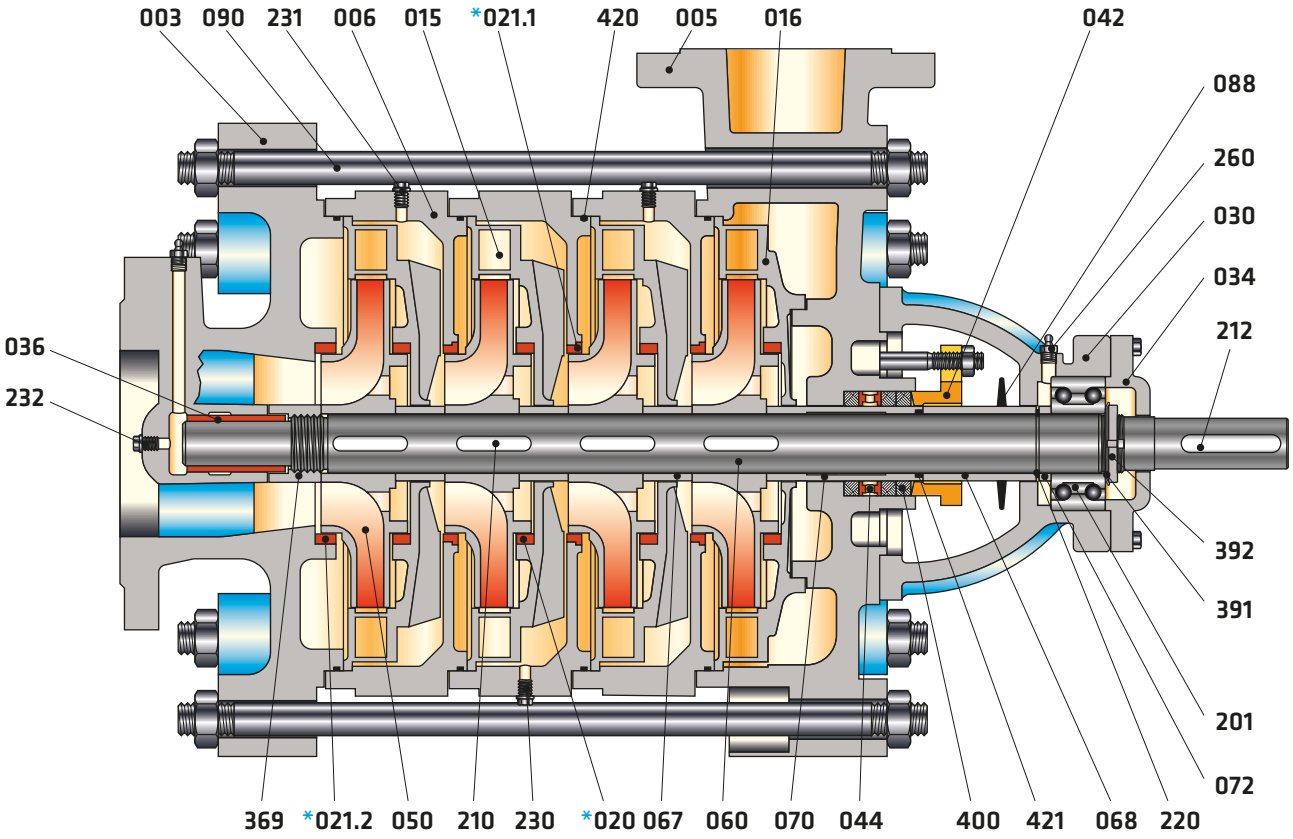
40/7
40/6
40/5
40/4
40/3
40/2


2900 rpm
Head (m)
Capacity (m³/h)
500
400
300
200
160
100
90
80
70
60
50
40
30
20
10
16
20
30
40
50
60
100
160
200
80/4
80/3
80/2
65/7
65/6
65/5
65/4
65/3
65/2
50/10
50/9
50/8
50/7
50/6
50/5
50/4
50/3
50/2
40/12
40/11
40/10
40/9
40/8
40/7
40/6
40/5
40/4
40/3
40/2

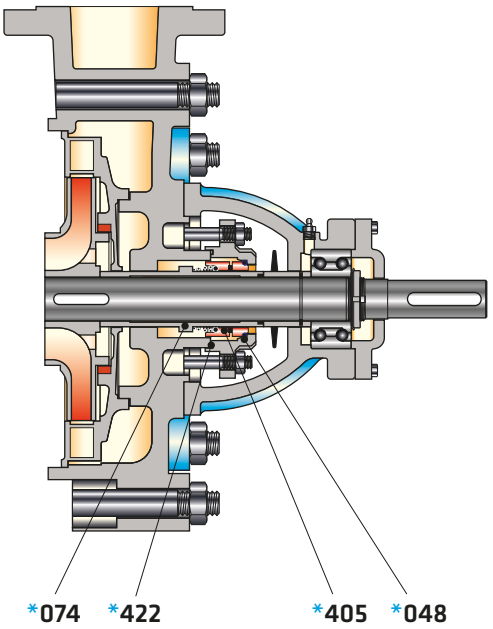

1450 rpm
Narrow Impeller
Head (m)
Capacity (m³/h)
300
250
200
160
100
90
80
70
60
50
40
30
20
15
40
50
60
100
160
200
300
125A/7
125A/6
125A/5
125A/4
125A/3
125A/2
100A/9
100A/8
100A/7
100A/6
100A/5
100A/4
100A/3
100A/2

## Field Chart



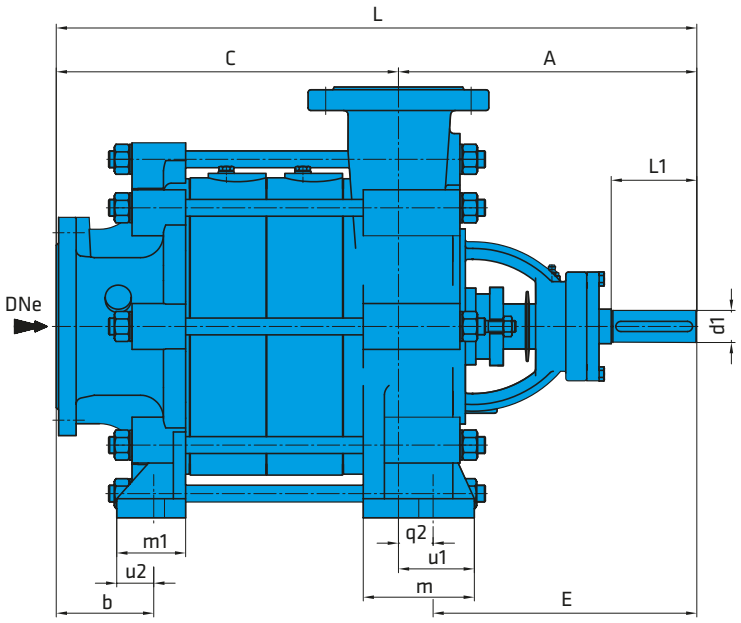

## Part List

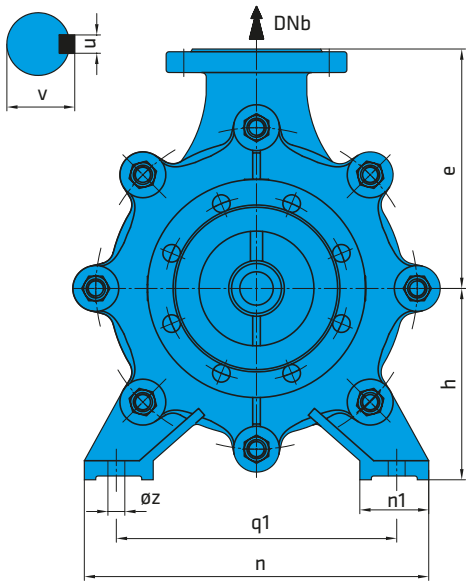
| | |
|---|---|
| 003 | Suction Casing |
| 005 | Discharge Casing |
| 006 | Stage Casing |
| 015 | Diffuser |
| 016 | Last Stage Diffuser |
| *020 | Wear Ring (diffuser) |
| *021.1 | Wear Ring (stage casing) |
| *021.2 | Wear Ring (suction casing) |
| 030 | Bearing Housing |
| 034 | Bearing Cover |
| 036 | Sleeve Bearing |
| 042 | Stuffing Box Gland |
| 044 | Lantern Ring |
| *048 | Mechanical Seal Cover |
| 050 | Impeller |
| 060 | Shaft |
| 067 | Interstage Sleeve |
| 068 | Spacer Sleeve (discharge side) |
| 070 | Shaft Sleeve (soft packing) |
| 072 | Spacer Sleeve (bearing) |
| *074 | Shaft Sleeve (mechanical seal) |
| 088 | Thrower |
| 090 | Tiebolt |
| 201 | Double Row Ball Bearing |
| 210 | Impeller Key |
| 212 | Coupling Key |
| 220 | Retaining Ring |
| 230 | Drain Plug |
| 231 | Filling Plug |
| 232 | Plug |
| 260 | Grease Nipple |
| 369 | Shaft Nut |
| 391 | Lock Washer |
| 392 | Shaft Nut |
| 400 | Soft Packing |
| *405 | Mechanical Seal |
| 420 | O-Ring |
| 421 | O-Ring |
| *422 | O-Ring |




(*) Optional

## Technical Data




**"C" according to the number of stages (mm)**

| Pump Type | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | 187 | 242 | 297 | 352 | 407 | 462 | 517 | 572 | 627 | 682 | 737 | 792 |
| 50 | 212 | 274 | 336 | 398 | 460 | 522 | 584 | 646 | 708 | 770 | 832 | |
| 65 | 247 | 318 | 389 | 460 | 531 | 602 | 673 | 744 | 815 | 886 | | |
| 80 | 280 | 363 | 446 | 529 | 612 | 695 | 778 | 861 | 944 | 1027 | | |
| 100 | 347 | 447 | 547 | 647 | 474 | 847 | 947 | 1047 | | | | |
| 125 | 364 | 479 | 594 | 709 | 824 | 939 | | | | | | |
| 150 | 437 | 582 | 727 | 872 | | | | | | | | |

**Maximum number of stages according to shaft material**

| Pump Type | 1.4462 / 1.4021 | | 1.4301 / 1.4401 | |
|---|---|---|---|---|
| | 1450 rpm 1750 rpm | 2900 rpm 3500 rpm | 1450 rpm 1750 rpm | 2900 rpm 3500 rpm |
| 40 | 13(13) | 12(8) | 13(13) | 7(3) |
| 50 | 12(12) | 10(6) | 12(10) | 7(2) |
| 65 | 11(11) | 7(4) | 11(8) | 5(2) |
| 80 | 11(11) | 4(2) | 11(8) | 3(N/A) |
| 100 | 9(7) | - | 6(4) | - |
| 125 | 7(5) | - | 4(2) | - |
| 150 | 5(3) | - | 3(N/A) | - |

**Bearing Type**

| Pump Type | Bearing Type |
|---|---|
| 40 | 6305 |
| 50 | 6306 |
| 65 | 6307 |
| 80 | 3308 |
| 100 | 3309 |
| 125 | 3310 |
| 150 | 3312 |

| Pump Type | Dimensions (mm) | | | | | | | | | | | | | | | | | Shaft | | | | Weight (kg) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | DNe | DNb | A | b | L | E | e | h | m | m1 | n | n1 | q1 | q2 | øz | u1 | u2 | d1 | l1 | v | u | G | g |
| 40 | 65 | 40 | 237 | 23 | C+237 | 147 | 175 | 160 | 60 | 75 | 232 | 55 | 175 | 90 | 15 | 109 | 20 | 24 | 60 | 27 | 8 | 54 | 9,5 |
| 50 | 80 | 50 | 258 | 23 | C+259 | 160 | 190 | 160 | 60 | 85 | 256 | 60 | 200 | 98 | 15 | 115 | 20 | 28 | 65 | 31 | 8 | 82 | 13 |
| 65 | 100 | 65 | 275 | 38 | C+275 | 170 | 215 | 180 | 60 | 85 | 294 | 60 | 240 | 121 | 15 | 125 | 25 | 32 | 65 | 35 | 10 | 85 | 20 |
| 80 | 125 | 80 | 331 | 75 | C+331 | 289 | 265 | 210 | 85 | 85 | 410 | 90 | 340 | 42 | 15 | 62 | 25 | 38 | 80 | 41 | 10 | 113 | 26 |
| 100 | 150 | 100 | 397 | 105 | C+397 | 349 | 300 | 250 | 90 | 90 | 450 | 90 | 370 | 48 | 15 | 70 | 30 | 42 | 110 | 45 | 12 | 150 | 42 |
| 125 | 200 | 125 | 410 | 70 | C+410 | 355 | 375 | 300 | 110 | 112 | 572 | 105 | 450 | 55 | 23 | 80 | 30 | 48 | 110 | 51,5 | 14 | 264 | 75 |
| 150 | 200 | 150 | 475 | 60 | C+475 | 410 | 425 | 350 | 130 | 135 | 655 | 110 | 550 | 65 | 23 | 103 | 30 | 55 | 110 | 59 | 16 | 455 | 120 |



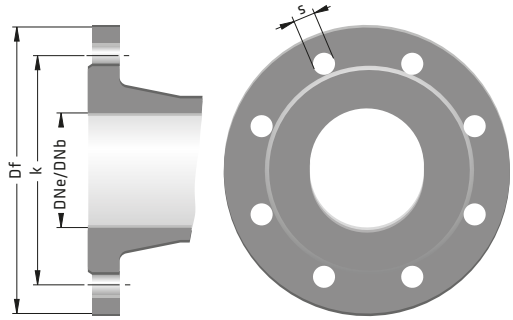
Pump weight= G + (s x g) (s: number of stage)

## Flange Dimensions

EN 1092 - 2

| DNe/DNb | Suction & Discharge (PN 16) | | | | Suction & Discharge (PN 40) | | | |
|---|---|---|---|---|---|---|---|---|
| | Df | k | s | n | Df | k | s | n |
| 40 | 150 | 110 | 19 | 4 | 150 | 110 | 19 | 4 |
| 50 | 165 | 125 | 19 | 4 | 165 | 125 | 19 | 4 |
| 65 | 185 | 145 | 19 | 4 | 185 | 145 | 19 | 8 |
| 80 | 200 | 160 | 19 | 8 | 200 | 160 | 19 | 8 |
| 100 | 220 | 180 | 19 | 8 | 235 | 190 | 23 | 8 |
| 125 | 250 | 210 | 19 | 8 | 270 | 220 | 28 | 8 |
| 150 | 285 | 240 | 23 | 8 | 300 | 250 | 28 | 8 |
| 200 | 340 | 295 | 23 | 12 | 375 | 320 | 31 | 12 |

" n " number of holes



## Technical Data

| Part List | 0.6025 | 0.7040 | 0.7043 | 1.0619 | 1.4308 | 1.4309 | 1.4408 | 1.4409 | 1.4500 | 1.4517 | 1.4469 | 1.4317 | 1.4008 | 2.1050.01 | 2.0975.01 | 2.1096.01 | 1.0503 | 1.4021 | 1.4021+QT | 1.4301 | 1.4404 | 1.4460 | 1.4462 | Tungsten Carbide |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Suction Casing | ● | ○ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | |
| Discharge Casing | ● | ○ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | |
| Stage Casing | ● | ○ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | |
| Diffuser | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | |
| Impeller | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | ○ | | |
| Shaft | | | | | | | | | | | | | | | | | | ● | ○ | ○ | ○ | | ○ | |
| Bearing Housing | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |
| Wear Ring | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | |
| Spacer Sleeve | | | | | | | | | | | | | | | | | ● | ○ | ○ | ○ | ○ | | ○ | |
| Shaft Sleeve | | | | | | | | | | | | | | | | | ● | ○ | ○ | ○ | ○ | | ○ | |
| Interstage Sleeve | | | | | | | | | | | | | | | | | ● | ○ | ○ | ○ | ○ | | ○ | |
| Sleeve Bearing | | | | | | | | | | | | | | ● | | | | | | | | | | ○ |
| Mechanical Seal (*) | EN 12756 | | | | | | | | | | | | | | | | | | | | | | | |

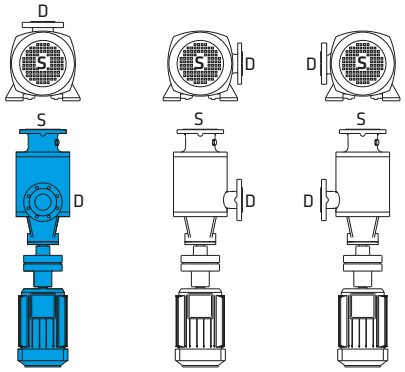
(*) Optional :Depending on customer requirement or request different types and brands of mechanical seals are applicable.

● Standard manufacturing
○ Optional

## Material Equivalent

| Description | DIN / EN | | AISI / SAE / ASTM |
|---|---|---|---|
| Cast Iron | 0.6025 | EN-GJL-250 (GG25) | A48 Class 40B |
| Nodular Cast Iron | 0.7040 | EN-GJS-400-15 (GGG40) | A536 60-40-18 |
| Nodular Cast Iron | 0.7043 | EN-GJS-400-18-LT (GGG40.3) | A536 60-40-18 |
| Cast Steel | 1.0619 | GP240GHGS-C25 | A216 WCB |
| Chrome Nickel Cast Steel | 1.4308 | GX5CrNi19-10 | A351 CF8 |
| Chrome Nickel Cast Steel (low carbon) | 1.4309 | GX2CrNi19-11 | A351 CF3 |
| Chrome Nickel Molybdenum Cast Steel | 1.4408 | GX5CrNiMo19-11-2 | A351 CF8M |
| Chrome Nickel Molybdenum Cast Steel (low carbon) | 1.4409 | GX2CrNiMo19-11-2 | A351 CF3M |
| Austenitic Cast Steel | 1.4500 | GX7NiCrMoCuNb25-20 | A351 CN7M |
| Austenitic - Ferritic Cast Steel (duplex) | 1.4517 | GX2CrNiMoCuN25-6-3-3 | A890 CD4MCuN |
| Austenitic - Ferritic Cast Steel (super duplex) | 1.4469 | GX2CrNiMoN26-7-4 | A890 CE3MN |
| Martenzitic Stainless Cast Steel | 1.4317 | GX4CrNi13-4 | A352 CA6NM |
| Martenzitic Stainless Cast Steel | 1.4008 | GX7CrNiMo12-1 | A217 CA15 |
| Cast Bronze (tin alloy) | 2.1050.01 | G-CuSn10 | B427 C90700 |
| Cast Bronze (nickel alloy) | 2.0975.01 | G-CuAl10Ni | B148 C95500 |
| Cast Bronze (leaded) | 2.1096.01 | G-CuSn5ZnPb | B584 C83600 |
| Carbon Steel | 1.0503 | C45 | AISI 1045 |
| Chrome Steel | 1.4021 | X20Cr13 | A276 Type 420 |
| Chrome Steel (heat treated) | 1.4021 | X20Cr13 | A276 Type 420+QT |
| Chrome Nickel Steel | 1.4301 | X5CrNi18-10 | A276 Type 304 |
| Chrome Nickel Steel (low carbon) | 1.4404 | X2CrNiMo17-12-2 | A276 Type 316L |
| Duplex (austenitic-ferritic) Steel | 1.4460 | X3CrNiMoN27-5-2 | AISI 329 |
| Duplex (austenitic-ferritic) Steel | 1.4462 | X2CrNiMoN22-5-3 | UNS S32205 |

## Flange Positions




Direction of rotation is counter clockwise viewed from driver end.
(Discharge flange is on motor side)

**Explanation :**

**L/0**

Discharge Flange (D)
Direction of Rotation (L)

Viewed from drive end.
L: Left

Standart

Pump • Fire Fighting Units • Booster Set

# SKMV-H

## MULTISTAGE PUMPS (VERTICAL)

SKMV-H Rev.11 09.2021

## Handled Liquids

Clean or slightly contaminated low viscosity liquids without solid & fibrous particles.

## Technical Data

Discharge Flange_____DN 32....DN 150 mm

Capacity_____up to 400 $m^3/h$

Head_____up to 450 m

Speed_____up to 2900 rpm

Operating Temperature_____-10°C up to +140 °C*

Casing Pressure (Pmax)_____30 bar (63 bar)*

(Pmax: Suction Pressure + Shut off Head)

(*) The Material of pumps differ according to the type of pumped liquid, operating temperature and pressure. Contact for detailed information.

## Design Features

•Vertical ring section, multistage, centrifugal pumps with closed impellers and diffusers.

•8 models from DN 32 up to DN 150 discharge flange diameter.

•Suction nozzle flanges conform to EN 1092 - 2 / PN 16 and discharge nozzle flanges conform to EN 1092 - 2 / PN 40 (PN 63) (For steel or stainless steel casing pumps, flanges comform to related pressure class ratings defined in EN 1092 - 1)

•SKMV-H pumps are short coupled with electric motors of IEC frame sizes with high efficiency class.

•Pump and motor shafts are connected to each other with flexible coupling.

•All impellers are balanced dynamically or statically according to ISO 1940 class 6.3.

•Axial thrust is balanced by impeller balancing holes system.

•Direction of rotation is always counter clockwise viewed from drive end.

•Bearings of SKMV-H type pumps are grease lubricated. Journal bearings used in the suction side is lubricated by the pumping liquid.

## Shaft Sealing

•Depending on request or requirment, pumps with soft packing or mechanical seals can be supplied.

## Pump Designation

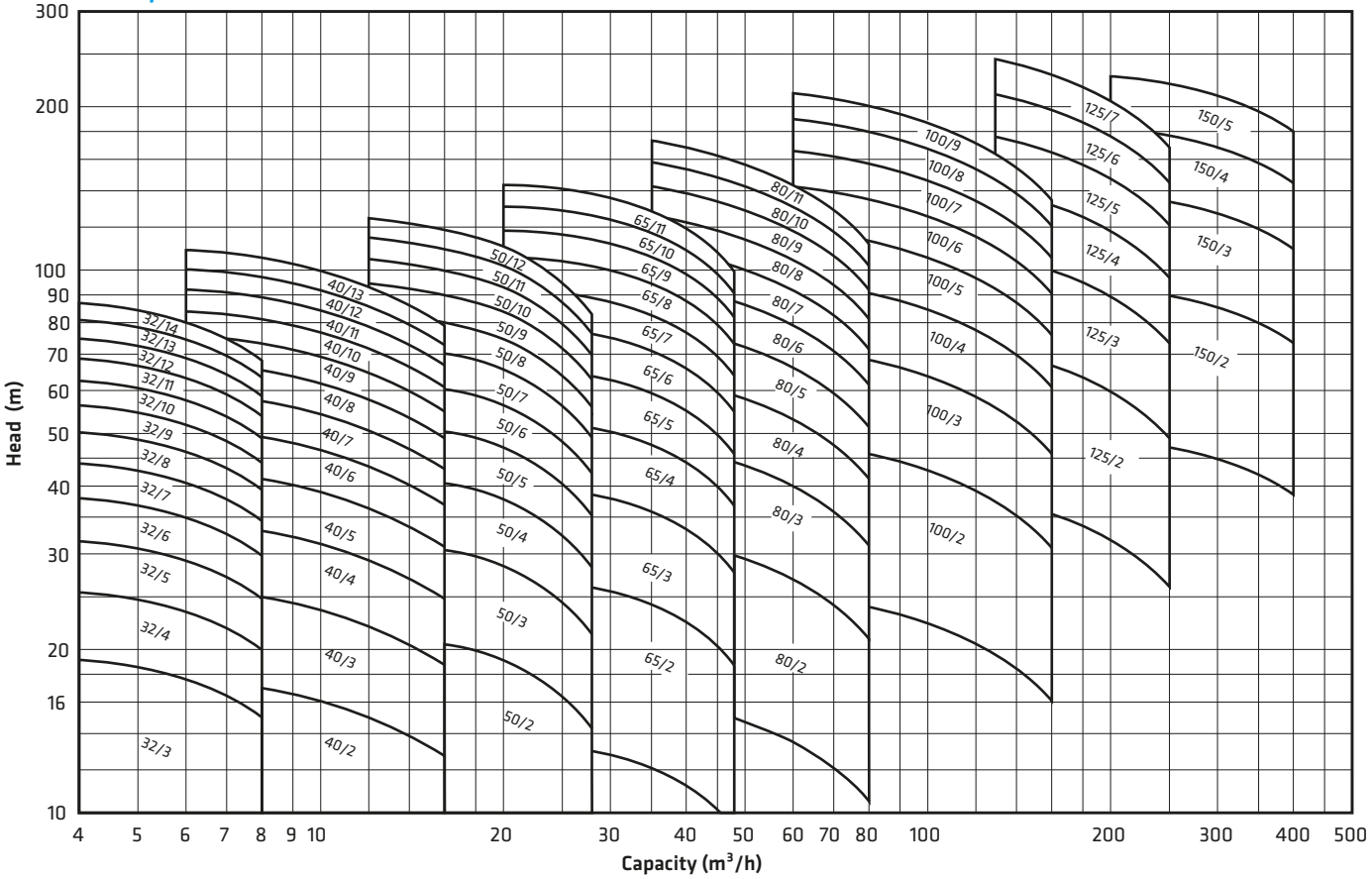
**SKMV-H 100 / 6**

**Pump Type**

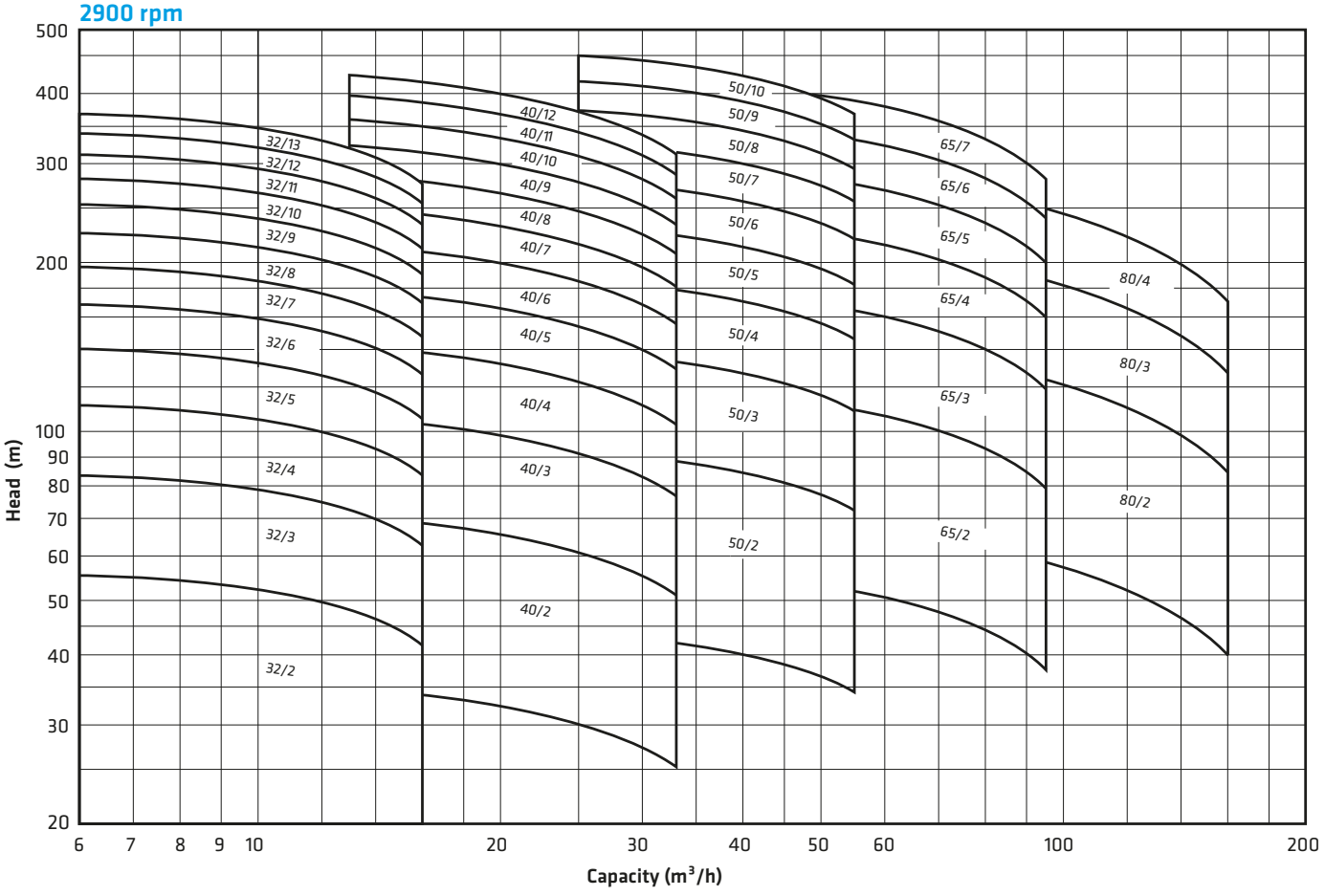
**Discharge Nozzle (DN-mm)**

**Number of Stage**

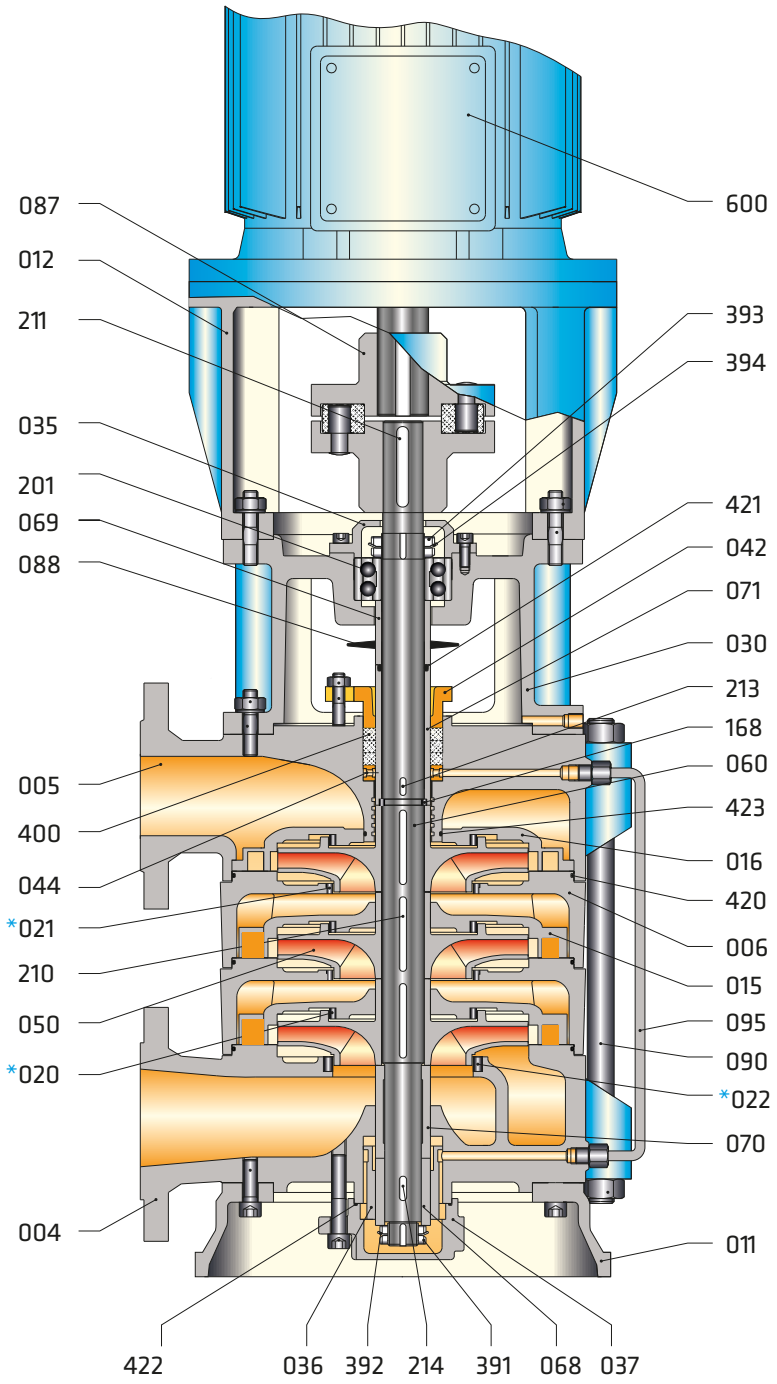
## 1450 rpm



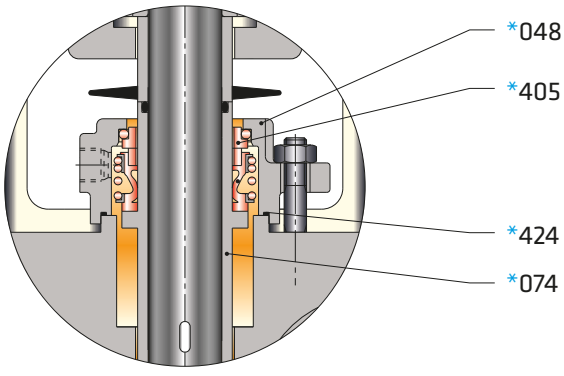

## 2900 rpm



## Secitonal Drawings




### Mechanical Seal Application

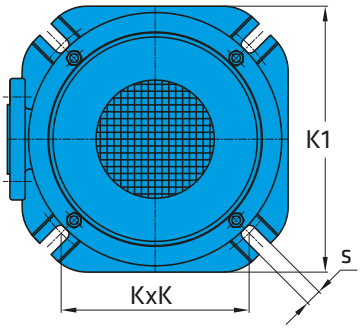


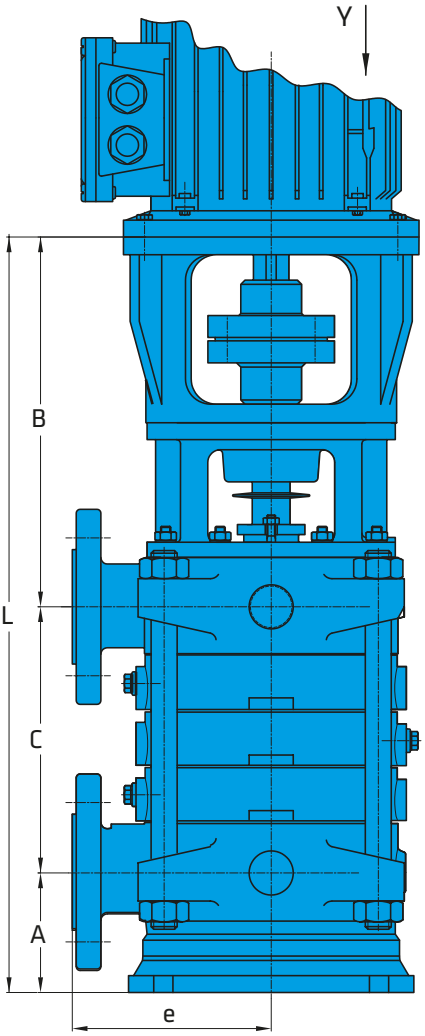

## Part List

| | |
|---|---|
| 004 | Suction Casing |
| 005 | Discharge Casing |
| 006 | Stage Casing |
| 011 | Pump Foot |
| 012 | Motor Pedestal |
| 015 | Diffuser |
| 016 | Last Stage Diffuser |
| *020 | Wear Ring (diffuser) |
| *021 | Wear Ring (stage casing) |
| *022 | Wear Ring (suction casing) |
| 030 | Bearing Housing |
| 035 | Bearing Cover |
| 036 | Sleeve Bearing |
| 037 | Sleeve Bearing Cover |
| 042 | Gland |
| 044 | Lantern Ring |
| *048 | Mechanical Seal Cover |
| 050 | Impeller |
| 060 | Pump Shaft |
| 068 | Shaft Sleeve (sleeve bearing) |
| 069 | Spacer Sleeve (bearing) |
| 070 | Shaft Sleeve (suction casing) |
| 071 | Shaft Protecting Sleeve (soft packing) |
| *074 | Shaft Protecting Sleeve (mechanical seal) |
| 087 | Flexible Coupling |
| 088 | Thrower |
| 090 | Tiebolt |
| 095 | Sleeve Bearing Flushing Pipe |
| 168 | Split Ring |
| 201 | Double Row Ball Bearing |
| 210 | Key (impeller) |
| 211 | Key (coupling) |
| 213 | Key (shaft protecting sleeve) |
| 214 | Key (sleeve bearing) |
| 391 | Shaft End Nut |
| 392 | Lock Washer |
| 393 | Shaft End Nut |
| 394 | Lock Washer |
| 400 | Soft Packing |
| *405 | Mechanical Seal |
| 420 | O-Ring |
| 421 | O-Ring |
| 422 | O-Ring |
| 423 | O-Ring |
| *424 | O-Ring |
| 600 | Electric Motor |

(*) Optional

Y View



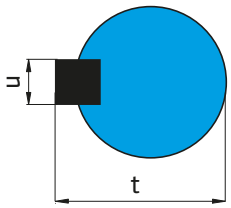



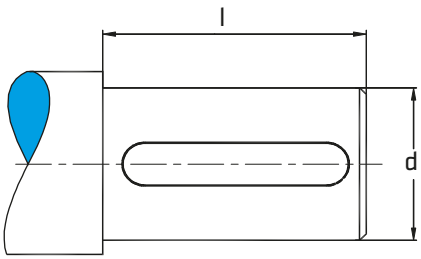

## Bearing Type

| Pump Type | Bearing Type |
|---|---|
| 32 | 3305 |
| 40 | 3305 |
| 50 | 3306 |
| 65 | 3307 |
| 80 | 3308 |
| 100 | 3309 |
| 125 | 3310 |
| 150 | 3312 |

## Shaft End Dimensions

| Pump Type | d | l | t | u |
|---|---|---|---|---|
| 32 | 22 | 50 | 25 | 6 |
| 40 | 22 | 50 | 25 | 6 |
| 50 | 28 | 65 | 31 | 8 |
| 65 | 32 | 65 | 35 | 10 |
| 80 | 38 | 80 | 41 | 10 |
| 100 | 42 | 110 | 45 | 12 |
| 125 | 48 | 110 | 51,5 | 14 |
| 150 | 55 | 110 | 59 | 16 |



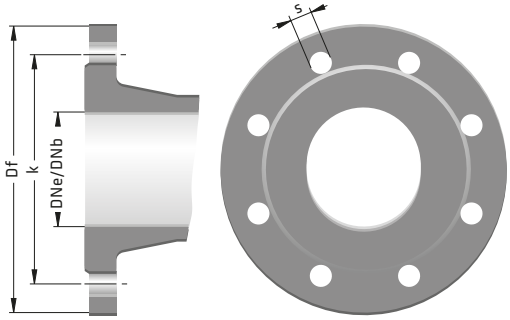




## Flange Dimensions

EN 1092 - 2

| DNe/DNb | Suction & Discharge (PN 16) | | | | Suction & Discharge (PN 40) | | | |
|---|---|---|---|---|---|---|---|---|
| | Df | k | s | n | Df | k | s | n |
| 32 | 140 | 100 | 19 | 4 | 140 | 100 | 19 | 4 |
| 40 | 150 | 110 | 19 | 4 | 150 | 110 | 19 | 4 |
| 50 | 165 | 125 | 19 | 4 | 165 | 125 | 19 | 4 |
| 65 | 185 | 145 | 19 | 4 | 185 | 145 | 19 | 8 |
| 80 | 200 | 160 | 19 | 8 | 200 | 160 | 19 | 8 |
| 100 | 220 | 180 | 19 | 8 | 235 | 190 | 23 | 8 |
| 125 | 250 | 210 | 19 | 8 | 270 | 220 | 28 | 8 |
| 150 | 285 | 240 | 23 | 8 | 300 | 250 | 28 | 8 |
| 200 | 340 | 295 | 23 | 12 | 375 | 320 | 31 | 12 |

“ n “ number of holes



## 1450 rpm

| Pump Type | Motor No IEC | Dimensions (mm) | | | | | | | | | C (mm) Number of Stages | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | DNe | DNb | L | A | B | e | KxK | K1 | s | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 32 | 80 | 40 | 32 | 399+C | 105 | 298 | 155 | 212 | 300 | 18 | 71 | 114 | 157 | 200 | 243 | 286 | 329 | 372 | 415 | 458 | 501 | 544 | 587 | 630 |
| 32 | 90 | 40 | 32 | 399+C | 105 | 298 | 155 | 212 | 300 | 18 | 71 | 114 | 157 | 200 | 243 | 286 | 329 | 372 | 415 | 458 | 501 | 544 | 587 | 630 |
| 32 | 100 | 40 | 32 | 409+C | 105 | 308 | 155 | 212 | 300 | 18 | 71 | 114 | 157 | 200 | 243 | 286 | 329 | 372 | 415 | 458 | 501 | 544 | 587 | 630 |
| 40 | 90 | 50 | 40 | 405+C | 103 | 302 | 175 | 212 | 300 | 18 | 78 | 133 | 188 | 243 | 298 | 353 | 408 | 463 | 518 | 573 | 628 | 683 | 738 | - |
| 40 | 100 | 50 | 40 | 415+C | 103 | 312 | 175 | 212 | 300 | 18 | 78 | 133 | 188 | 243 | 298 | 353 | 408 | 463 | 518 | 573 | 628 | 683 | 738 | - |
| 40 | 112 | 50 | 40 | 415+C | 103 | 312 | 175 | 212 | 300 | 18 | 78 | 133 | 188 | 243 | 298 | 353 | 408 | 463 | 518 | 573 | 628 | 683 | 738 | - |
| 40 | 132 | 50 | 40 | 435+C | 103 | 332 | 175 | 212 | 300 | 18 | 78 | 133 | 188 | 243 | 298 | 353 | 408 | 463 | 518 | 573 | 628 | 683 | 738 | - |
| 50 | 100 | 65 | 50 | 453+C | 114 | 340 | 190 | 247 | 350 | 18 | 90 | 152 | 214 | 276 | 338 | 400 | 462 | 524 | 586 | 648 | 710 | 772 | - | - |
| 50 | 112 | 65 | 50 | 453+C | 114 | 340 | 190 | 247 | 350 | 18 | 90 | 152 | 214 | 276 | 338 | 400 | 462 | 524 | 586 | 648 | 710 | 772 | - | - |
| 50 | 132 | 65 | 50 | 473+C | 114 | 360 | 190 | 247 | 350 | 18 | 90 | 152 | 214 | 276 | 338 | 400 | 462 | 524 | 586 | 648 | 710 | 772 | - | - |
| 50 | 160 | 65 | 50 | 503+C | 114 | 390 | 190 | 247 | 350 | 18 | 90 | 152 | 214 | 276 | 338 | 400 | 462 | 524 | 586 | 648 | 710 | 772 | - | - |
| 65 | 100 | 80 | 65 | 505+C | 135 | 368 | 215 | 247 | 350 | 18 | 107 | 178 | 249 | 320 | 391 | 462 | 533 | 604 | 675 | 746 | 817 | - | - | - |
| 65 | 112 | 80 | 65 | 505+C | 135 | 368 | 215 | 247 | 350 | 18 | 107 | 178 | 249 | 320 | 391 | 462 | 533 | 604 | 675 | 746 | 817 | - | - | - |
| 65 | 132 | 80 | 65 | 525+C | 135 | 388 | 215 | 247 | 350 | 18 | 107 | 178 | 249 | 320 | 391 | 462 | 533 | 604 | 675 | 746 | 817 | - | - | - |
| 65 | 160 | 80 | 65 | 555+C | 135 | 420 | 215 | 247 | 350 | 18 | 107 | 178 | 249 | 320 | 391 | 462 | 533 | 604 | 675 | 746 | 817 | - | - | - |
| 65 | 180 | 80 | 65 | 555+C | 135 | 420 | 215 | 247 | 350 | 18 | 107 | 178 | 249 | 320 | 391 | 462 | 533 | 604 | 675 | 746 | 817 | - | - | - |
| 80 | 132 | 100 | 80 | 568+C | 145 | 423 | 265 | 247 | 350 | 23 | 112 | 195 | 278 | 361 | 444 | 527 | 610 | 693 | 776 | 859 | 942 | - | - | - |
| 80 | 160 | 100 | 80 | 598+C | 145 | 453 | 265 | 247 | 350 | 23 | 112 | 195 | 278 | 361 | 444 | 527 | 610 | 693 | 776 | 859 | 942 | - | - | - |
| 80 | 180 | 100 | 80 | 598+C | 145 | 453 | 265 | 247 | 350 | 23 | 112 | 195 | 278 | 361 | 444 | 527 | 610 | 693 | 776 | 859 | 942 | - | - | - |
| 80 | 200 | 100 | 80 | 598+C | 145 | 453 | 265 | 247 | 350 | 23 | 112 | 195 | 278 | 361 | 444 | 527 | 610 | 693 | 776 | 859 | 942 | - | - | - |
| 80 | 225 | 100 | 80 | 628+C | 145 | 483 | 265 | 247 | 350 | 23 | 112 | 195 | 278 | 361 | 444 | 527 | 610 | 693 | 776 | 859 | 942 | - | - | - |
| 100 | 160 | 125 | 100 | 675+C | 170 | 504 | 300 | 318 | 450 | 23 | 133 | 233 | 333 | 433 | 533 | 633 | 733 | 833 | 933 | - | - | - | - | - |
| 100 | 180 | 125 | 100 | 675+C | 170 | 504 | 300 | 318 | 450 | 23 | 133 | 233 | 333 | 433 | 533 | 633 | 733 | 833 | 933 | - | - | - | - | - |
| 100 | 200 | 125 | 100 | 675+C | 170 | 504 | 300 | 318 | 450 | 23 | 133 | 233 | 333 | 433 | 533 | 633 | 733 | 833 | 933 | - | - | - | - | - |
| 100 | 225 | 125 | 100 | 705+C | 170 | 534 | 300 | 318 | 450 | 23 | 133 | 233 | 333 | 433 | 533 | 633 | 733 | 833 | 933 | - | - | - | - | - |
| 100 | 250 | 125 | 100 | 705+C | 170 | 534 | 300 | 318 | 450 | 23 | 133 | 233 | 333 | 433 | 533 | 633 | 733 | 833 | 933 | - | - | - | - | - |
| 100 | 280 | 125 | 100 | 705+C | 170 | 534 | 300 | 318 | 450 | 23 | 133 | 233 | 333 | 433 | 533 | 633 | 733 | 833 | 933 | - | - | - | - | - |
| 125 | 200 | 150 | 125 | 717+C | 178 | 538 | 375 | 424 | 600 | 27 | 165 | 280 | 395 | 510 | 625 | 740 | 855 | - | - | - | - | - | - | - |
| 125 | 225 | 150 | 125 | 747+C | 178 | 568 | 375 | 424 | 600 | 27 | 165 | 280 | 395 | 510 | 625 | 740 | 855 | - | - | - | - | - | - | - |
| 125 | 250 | 150 | 125 | 747+C | 178 | 568 | 375 | 424 | 600 | 27 | 165 | 280 | 395 | 510 | 625 | 740 | 855 | - | - | - | - | - | - | - |
| 125 | 280 | 150 | 125 | 747+C | 178 | 568 | 375 | 424 | 600 | 27 | 165 | 280 | 395 | 510 | 625 | 740 | 855 | - | - | - | - | - | - | - |
| 125 | 315 | 150 | 125 | 777+C | 178 | 598 | 375 | 424 | 600 | 27 | 165 | 280 | 395 | 510 | 625 | 740 | 855 | - | - | - | - | - | - | - |
| 150 | 250 | 200 | 150 | 888+C | 265 | 623 | 425 | 424 | 600 | 27 | 218 | 363 | 508 | 653 | 798 | - | - | - | - | - | - | - | - | - |
| 150 | 280 | 200 | 150 | 888+C | 265 | 623 | 425 | 424 | 600 | 27 | 218 | 363 | 508 | 653 | 798 | - | - | - | - | - | - | - | - | - |
| 150 | 315 | 200 | 150 | 918+C | 265 | 653 | 425 | 424 | 600 | 27 | 218 | 363 | 508 | 653 | 798 | - | - | - | - | - | - | - | - | - |

## 2900 rpm

| Pump Type | Motor No IEC | Dimensions (mm) | | | | | | | | | C (mm) Number of Stage | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | DNe | DNb | L | A | B | e | KxK | K1 | s | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 32 | 112 | 40 | 32 | 409+C | 105 | 306 | 155 | 212 | 300 | 18 | 71 | 114 | 157 | 200 | 243 | 286 | 329 | 372 | 415 | 458 | 501 | 544 | 544 |
| 32 | 132 | 40 | 32 | 429+C | 105 | 326 | 155 | 212 | 300 | 18 | 71 | 114 | 157 | 200 | 243 | 286 | 329 | 372 | 415 | 458 | 501 | 544 | 544 |
| 32 | 160 | 40 | 32 | 459+C | 105 | 356 | 155 | 212 | 300 | 18 | 71 | 114 | 157 | 200 | 243 | 286 | 329 | 372 | 415 | 458 | 501 | 544 | 544 |
| 40 | 132 | 50 | 40 | 435+C | 103 | 332 | 175 | 212 | 300 | 18 | 78 | 133 | 188 | 243 | 298 | 353 | 408 | 463 | 518 | 573 | 628 | 683 | - |
| 40 | 160 | 50 | 40 | 465+C | 103 | 362 | 175 | 212 | 300 | 18 | 78 | 133 | 188 | 243 | 298 | 353 | 408 | 463 | 518 | 573 | 628 | 683 | - |
| 40 | 180 | 50 | 40 | 465+C | 103 | 362 | 175 | 212 | 300 | 18 | 78 | 133 | 188 | 243 | 298 | 353 | 408 | 463 | 518 | 573 | 628 | 683 | - |
| 40 | 200 | 50 | 40 | 465+C | 103 | 362 | 175 | 212 | 300 | 18 | 78 | 133 | 188 | 243 | 298 | 353 | 408 | 463 | 518 | 573 | 628 | 683 | - |
| 40 | 225 | 50 | 40 | 495+C | 103 | 392 | 175 | 212 | 300 | 18 | 78 | 133 | 188 | 243 | 298 | 353 | 408 | 463 | 518 | 573 | 628 | 683 | - |
| 50 | 160 | 65 | 50 | 503+C | 114 | 389 | 190 | 247 | 350 | 18 | 90 | 152 | 214 | 276 | 338 | 400 | 462 | 524 | 586 | 648 | - | - | - |
| 50 | 180 | 65 | 50 | 503+C | 114 | 389 | 190 | 247 | 350 | 18 | 90 | 152 | 214 | 276 | 338 | 400 | 462 | 524 | 586 | 648 | - | - | - |
| 50 | 200 | 65 | 50 | 503+C | 114 | 389 | 190 | 247 | 350 | 18 | 90 | 152 | 214 | 276 | 338 | 400 | 462 | 524 | 586 | 648 | - | - | - |
| 50 | 225 | 65 | 50 | 503+C | 114 | 389 | 190 | 247 | 350 | 18 | 90 | 152 | 214 | 276 | 338 | 400 | 462 | 524 | 586 | 648 | - | - | - |
| 50 | 250 | 65 | 50 | 533+C | 114 | 419 | 190 | 247 | 350 | 18 | 90 | 152 | 214 | 276 | 338 | 400 | 462 | 524 | 586 | 648 | - | - | - |
| 65 | 160 | 80 | 65 | 555+C | 135 | 420 | 215 | 247 | 350 | 18 | 107 | 178 | 249 | 320 | 391 | 462 | 533 | - | - | - | - | - | - |
| 65 | 180 | 80 | 65 | 555+C | 135 | 420 | 215 | 247 | 350 | 18 | 107 | 178 | 249 | 320 | 391 | 462 | 533 | - | - | - | - | - | - |
| 65 | 200 | 80 | 65 | 555+C | 135 | 420 | 215 | 247 | 350 | 18 | 107 | 178 | 249 | 320 | 391 | 462 | 533 | - | - | - | - | - | - |
| 65 | 225 | 80 | 65 | 555+C | 135 | 420 | 215 | 247 | 350 | 18 | 107 | 178 | 249 | 320 | 391 | 462 | 533 | - | - | - | - | - | - |
| 65 | 250 | 80 | 65 | 615+C | 135 | 480 | 215 | 247 | 350 | 18 | 107 | 178 | 249 | 320 | 391 | 462 | 533 | - | - | - | - | - | - |
| 65 | 280 | 80 | 65 | 615+C | 135 | 480 | 215 | 247 | 350 | 18 | 107 | 178 | 249 | 320 | 391 | 462 | 533 | - | - | - | - | - | - |
| 80 | 200 | 100 | 80 | 598+C | 145 | 453 | 265 | 247 | 350 | 23 | 112 | 195 | 278 | 361 | - | - | - | - | - | - | - | - | - |
| 80 | 225 | 100 | 80 | 598+C | 145 | 453 | 265 | 247 | 350 | 23 | 112 | 195 | 278 | 361 | - | - | - | - | - | - | - | - | - |
| 80 | 250 | 100 | 80 | 628+C | 145 | 483 | 265 | 247 | 350 | 23 | 112 | 195 | 278 | 361 | - | - | - | - | - | - | - | - | - |
| 80 | 280 | 100 | 80 | 628+C | 145 | 483 | 265 | 247 | 350 | 23 | 112 | 195 | 278 | 361 | - | - | - | - | - | - | - | - | - |

## Technical Data

# SKMV-H

| PART LIST | 0.6025 | 0.7040 | 0.7043 | 1.0619 | 1.4308 | 1.4309 | 1.4408 | 1.4409 | 1.4500 | 1.4517 | 1.4469 | 1.4317 | 1.4008 | 2.1050.01 | 2.0975.01 | 2.1096.01 | 1.0503 | 1.4021 | 1.4021+QT | 1.4301 | 1.4404 | 1.4460 | 1.4462 | Tungsten Carbide |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Suction Casing | ● | ○ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | |
| Discharge Casing | ● | ○ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | |
| Stage Casing | ● | ○ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | |
| Diffuser | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | |
| Impeller | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | ○ | | |
| Shaft | | | | | | | | | | | | | | | | | | ● | ○ | ○ | ○ | | ○ | |
| Bearing Housing | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |
| Wear Ring (Casing) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | |
| Shaft Sleeve | | | | | | | | | | | | | | | | | ● | ○ | ○ | ○ | ○ | | ○ | |
| Shaft Pro. Sleeve | | | | | | | | | | | | | | | | | ● | ○ | ○ | ○ | ○ | | ○ | |
| Spacer Sleeve | | | | | | | | | | | | | | | | | ● | ○ | ○ | ○ | ○ | | ○ | |
| Sleeve Bearing | | | | | | | | | | | | | | ● | | | | | | | | | | ○ |
| Mechanical Seal (*) | EN 12756 | | | | | | | | | | | | | | | | | | | | | | | |

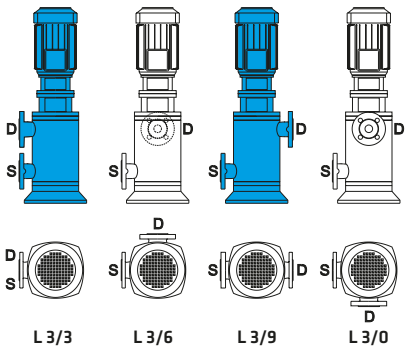
(*) Optional :Depending on customer requirement or request different types and brands of mechanical seals are applicable.

● Standard manufacturing
○ Optional

## Material Equivalents

| Description | DIN / EN | | AISI / SAE / ASTM |
|---|---|---|---|
| Cast Iron | 0.6025 | EN-GJL-250 (GG25) | A48 Class 40B |
| Nodular Cast Iron | 0.7040 | EN-GJS-400-15 (GGG40) | A536 60-40-18 |
| Nodular Cast Iron | 0.7043 | EN-GJS-400-18-LT (GGG40.3) | A536 60-40-18 |
| Cast Steel | 1.0619 | GP240GHGS-C25 | A216 WCB |
| Chrome Nickel Cast Steel | 1.4308 | GX5CrNi19-10 | A351 CF8 |
| Chrome Nickel Cast Steel (low carbon) | 1.4309 | GX2CrNi19-11 | A351 CF3 |
| Chrome Nickel Molybdenum Cast Steel | 1.4408 | GX5CrNiMo19-11-2 | A351 CF8M |
| Chrome Nickel Molybdenum Cast Steel (low carbon) | 1.4409 | GX2CrNiMo19-11-2 | A351 CF3M |
| Austenitic Cast Steel | 1.4500 | GX7NiCrMoCuNb25-20 | A351 CN7M |
| Austenitic - Ferritic Cast Steel (duplex) | 1.4517 | GX2CrNiMoCuN25-6-3-3 | A890 CD4MCuN |
| Austenitic - Ferritic Cast Steel (super duplex) | 1.4469 | GX2CrNiMoN26-7-4 | A890 CE3MN |
| Martenzitic Stainless Cast Steel | 1.4317 | GX4CrNi13-4 | A352 CA6NM |
| Martenzitic Stainless Cast Steel | 1.4008 | GX7CrNiMo12-1 | A217 CA15 |
| Cast Bronze (tin alloy) | 2.1050.01 | G-CuSn10 | B427 C90700 |
| Cast Bronze (nickel alloy) | 2.0975.01 | G-CuAl10Ni | B148 C95500 |
| Cast Bronze (leaded) | 2.1096.01 | G-CuSn5ZnPb | B584 C83600 |
| Carbon Steel | 1.0503 | C45 | AISI 1045 |
| Chrome Steel | 1.4021 | X20Cr13 | A276 Type 420 |
| Chrome Steel (heat treated) | 1.4021 | X20Cr13 | A276 Type 420+QT |
| Chrome Nickel Steel | 1.4301 | X5CrNi18-10 | A276 Type 304 |
| Chrome Nickel Steel (low carbon) | 1.4404 | X2CrNiMo17-12-2 | A276 Type 316L |
| Duplex (austenitic-ferritic) Steel | 1.4460 | X3CrNiMoN27-5-2 | AISI 329 |
| Duplex (austenitic-ferritic) Steel | 1.4462 | X2CrNiMoN22-5-3 | UNS S32205 |

## Flange Positions




**Explanation :**

**L 3 / 9**

- Discharge Flange Position (D)
- Suction Flange Position (S)
- Direction of Rotation (L)

Direction of rotation viewed from drive end
L : Left

**Attention :** In the absence of specific request, pumps are supplied with the following nozzle arrangement:
. L 3/9 : up to 2 stages
. L 3/3 : 3 or more stages

Standart

Pump • Fire Fighting Units • Booster Set

# C

# SUBMERSIBLE SEWAGE PUMPS

C Rev.11 09.2021

## Handled Liquids

Domestic and industrial waste water, raw sewage, liquids with fibrous and solid substances.

## Technical Data

Discharge Flange_____DN 50.....DN 300 mm

Capacity_____up to 1600 $m^3/h$

Head_____up to 95 m

Speed_____up to 2900 rpm

Design Temperature_____up to +40 °C*

Casing Pressure (Pmax)_____10 bar

(*) For higher temperatures, please contact with STANDART POMPA.

## Design Features

•Vertical, wide volute casing, single stage, end suction submersible type centrifugal pump with enclosed, semi-open or vortex types impeller.

•20 basic sizes covering wide range of operational area.

•Electric motor isolation class is IP 68.

•Discharge flanges conform to EN 1092-2 / PN 10. (EN 1092-1 / PN 10 for steel or stainless steel casing)

•All impellers are balanced dynamically or statically according to ISO 1940 class 6.3.

•Axial thrust is balanced by impeller back ribs.

•In case of request motor cooling jacket is also applicable (for pumps having bigger than 200 frame motor)

•Bearings of C type pumps are "life time grease lubricated" ball bearings.

## Shaft Sealing

•For pumps bigger than 12 HP, always double mechanical seal is applied while for pumps up to 12 HP, single mechanical seal is applied as standard.

•In case of request, double mechanical seal can also be applied for pumps up to 12HP.

## Pump Designation

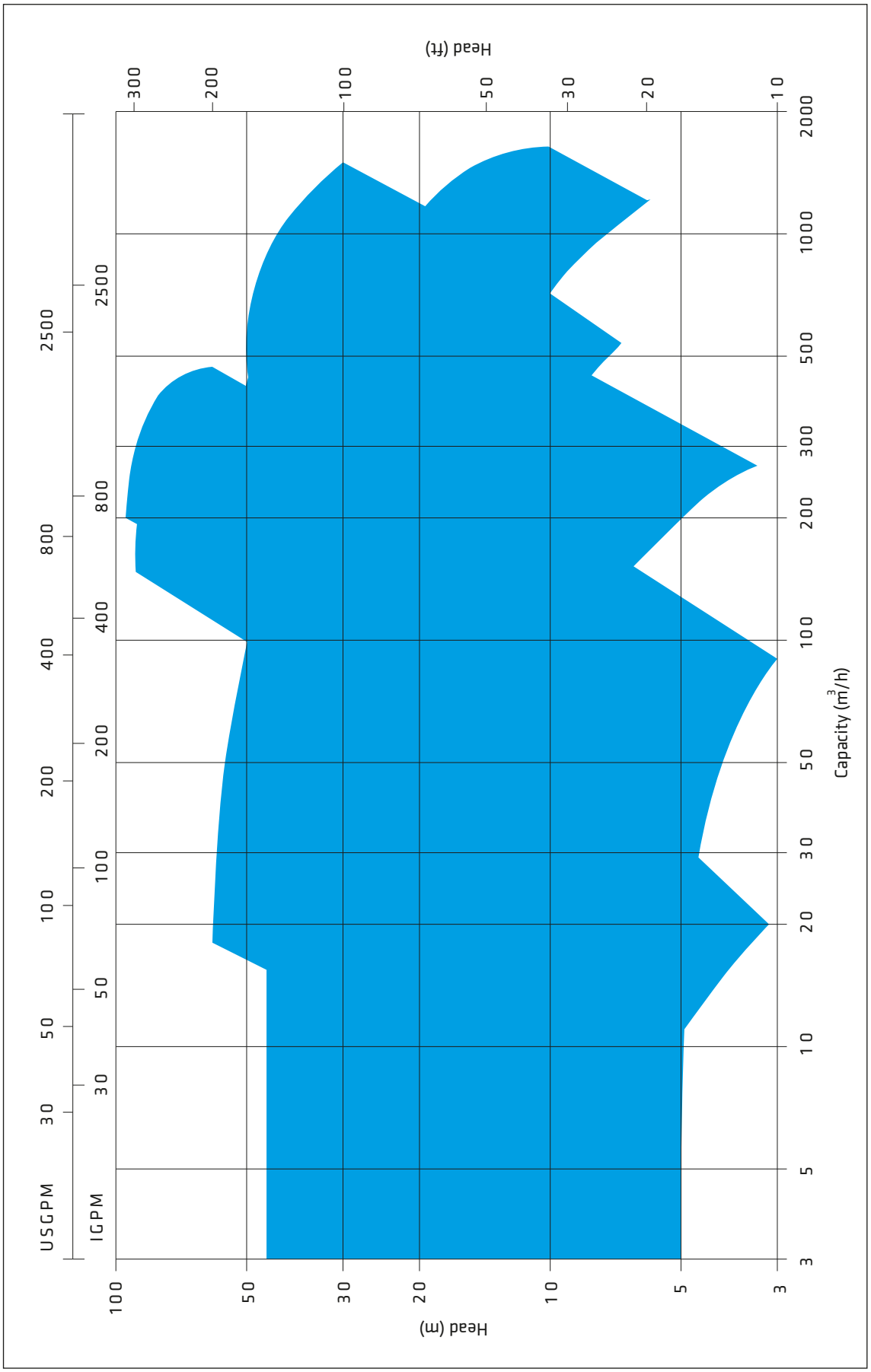
C 100 - 240 B

**Pump Type**

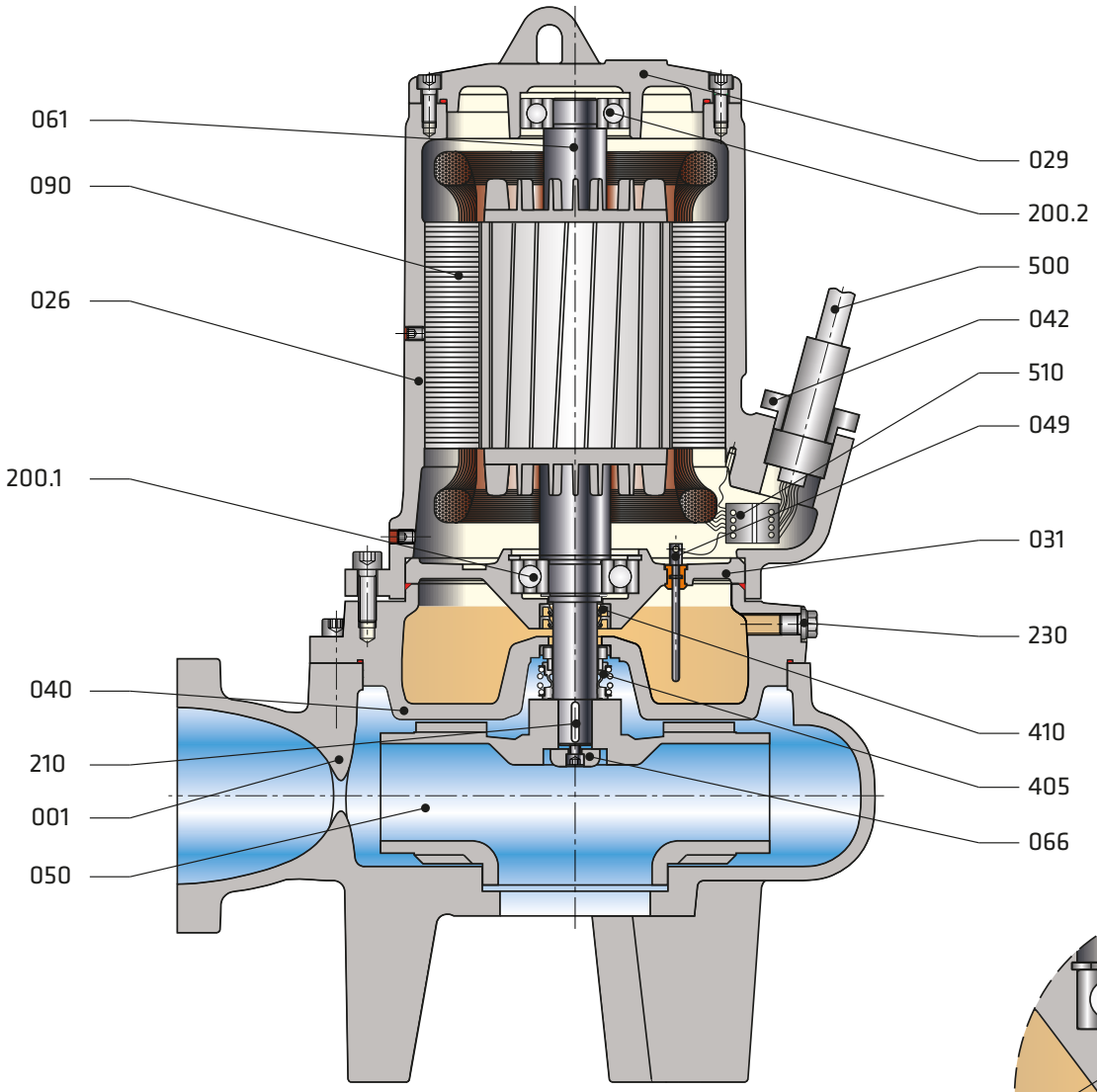
**Discharge Nozzle (DN-mm)**

**Impeller Nominal Diameter (mm)**

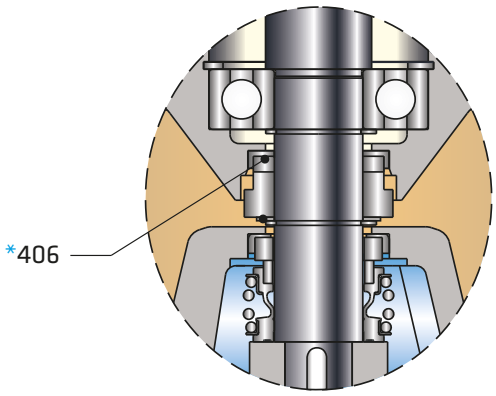
**Impeller Type**


Head (ft)
300
200
100
50
30
20
10
2000
1000
500
300
200
100
50
30
10
5
3
Capacity ($m^3$/h)
Head (m)
100
50
30
20
10
5
3
2500
800
400
200
100
50
30
IGPM
2500
800
400
200
100
50
30
USGPM

## Sectional Drawing (up to 12 HP)




Double Mechanical Seal Application

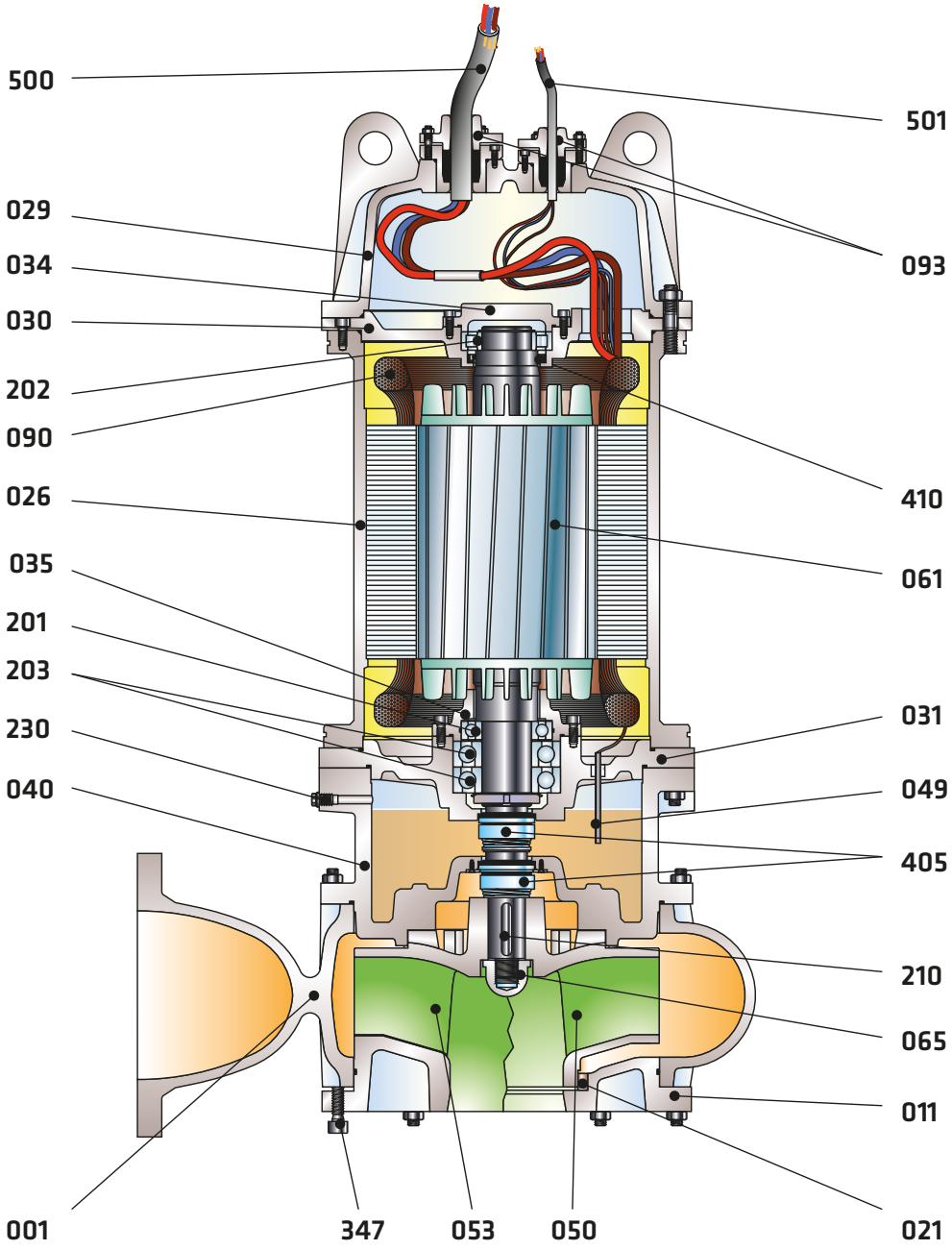



## Part List

| | | | |
|---|---|---|---|
| 001 | Volute Casing | 090 | Stator |
| 026 | Motor Casing | 200.1 | Bottom Bearing |
| 029 | Top Cover | 200.2 | Top Bearing |
| 031 | Bearing Housing | 210 | Impeller Key |
| 040 | Oil Chamber | 230 | Oil Plug |
| 042 | Gland | 405 | Mechanical Seal |
| 049 | Water Leakage Electrod | *406 | Mechanical Seal |
| 050 | Impeller | 410 | Oil Seal |
| 061 | Rotor Shaft | 500 | Energy and Control Cable with Plug |
| 066 | Impeller Nut | 510 | Socket |

(*) Optional

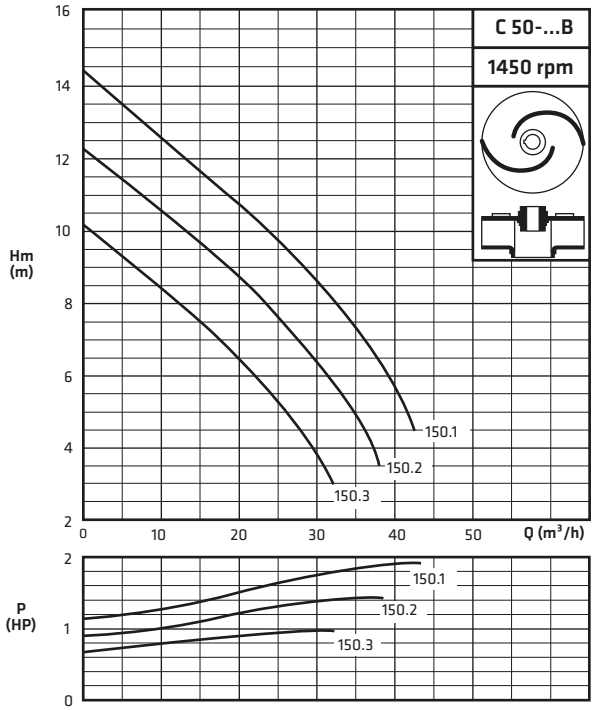
## Sectional Drawing (bigger than 12 HP)



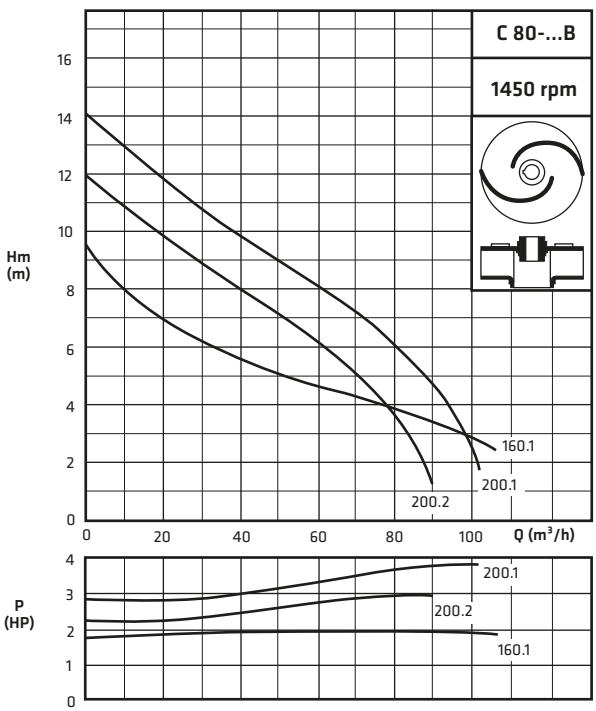

## Part List

| | | | | | |
|---|---|---|---|---|---|
| 001 | Volute Casing | 040 | Oil Chamber | 202 | Bottom Bearing |
| 011 | Bottom Cover | 049 | Water Leakage Electrode | 203 | Angular Contact Ball Bearing |
| 021 | Wear Ring | 050 | Closed Impeller | 210 | Impeller Key |
| 026 | Motor Casing | 053 | Semi-open Impeller | 230 | Oil Plug |
| 029 | Top Cover | 061 | Rotor Shaft | 347 | Adjusment Bolt |
| 030 | Top Bearing Housing | 065 | Impeller Nut | 405 | Mechanical Seal |
| 031 | Bottom Bearing Housing | 090 | Stator | 410 | Oil Seal |
| 034 | Top Bearing Cover | 093 | Gasket Compress Cover | 500 | Energy Cable |
| 035 | Bottom Bearing Cover | 201 | Bottom Bearing | 501 | Control Cable |

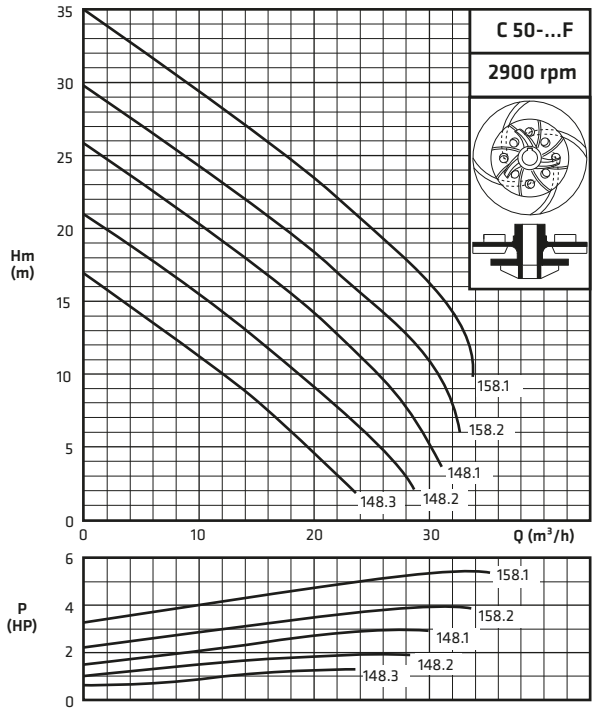
# Field Chart



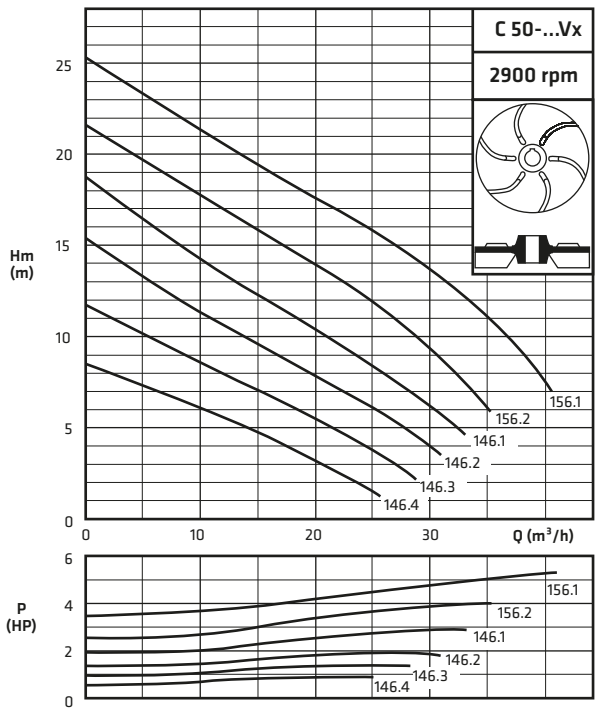

| Impeller No | Pump Type | Impeller Qty. | Solid mm | Motor HP |
|---|---|---|---|---|
| 150.1 | C 50-200B | 2 | 25 | 2 |
| 150.2 | C 50-200B | 2 | 25 | 1.5 |
| 150.3 | C 50-200B | 2 | 25 | 1 |



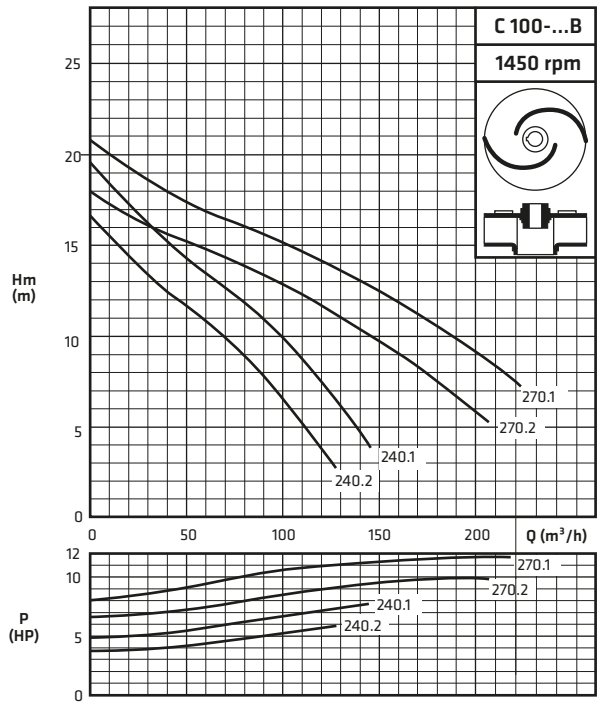

| Impeller No | Pump Type | Impeller Qty. | Solid mm | Motor HP |
|---|---|---|---|---|
| 200.1 | C 80-200B | 2 | 55 | 4 |
| 200.2 | C 80-200B | 2 | 55 | 3 |
| 160.1 | C 80-160B | 1 | 72 | 2 |



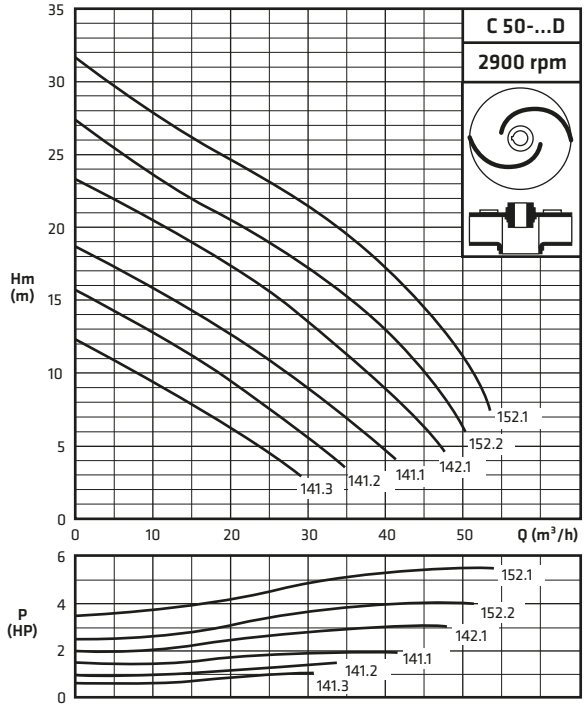

| Impeller No | Pump Type | Impeller Qty. | Solid mm | Motor HP |
|---|---|---|---|---|
| 158.1 | C 50-200F | 5 | 5 | 5.5 |
| 158.2 | C 50-200F | 5 | 5 | 4 |
| 148.1 | C 50-160F | 4 | 5 | 3 |
| 148.2 | C 50-160F | 4 | 5 | 2 |
| 148.3 | C 50-160F | 4 | 5 | 1.5 |



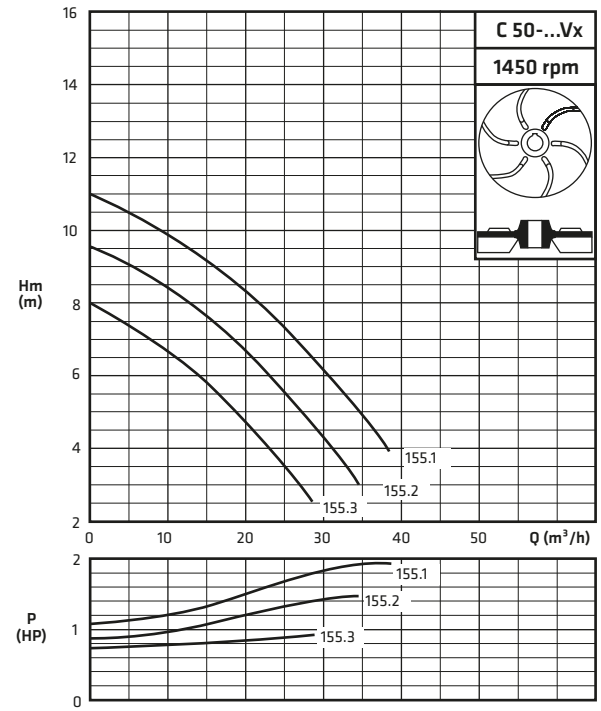

| Impeller No | Pump Type | Impeller Qty. | Solid mm | Motor HP |
|---|---|---|---|---|
| 156.1 | C 50-200Vx | 6 | 35 | 5.5 |
| 156.2 | C 50-200Vx | 6 | 35 | 4 |
| 146.1 | C 50-160Vx | 4 | 35 | 3 |
| 146.2 | C 50-160Vx | 4 | 35 | 2 |
| 146.3 | C 50-160Vx | 4 | 35 | 1.5 |
| 146.4 | C 50-160Vx | 4 | 35 | 1 |



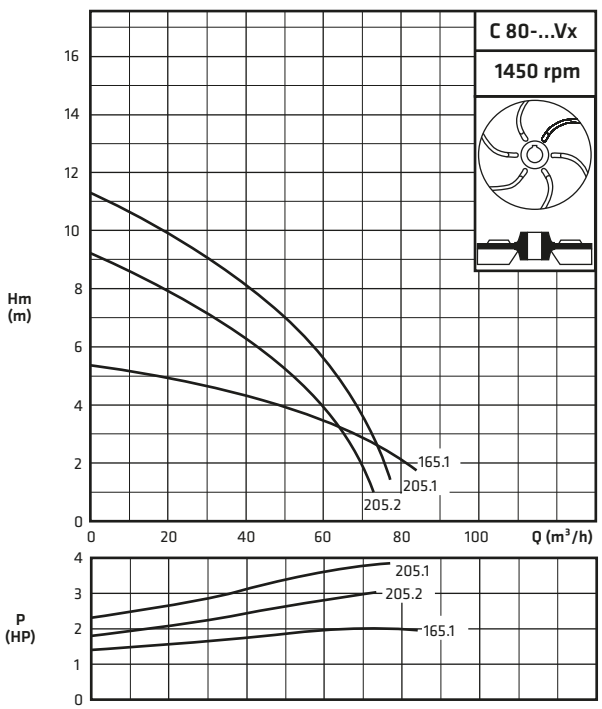

| Impeller No | Pump Type | Impeller Qty. | Solid mm | Motor HP |
|---|---|---|---|---|
| 270.1 | C 100-270B | 2 | 76 | 12 |
| 270.2 | C 100-270B | 2 | 76 | 10 |
| 240.1 | C 100-240B | 2 | 55 | 7.5 |
| 240.2 | C 100-240B | 2 | 55 | 5.5 |




| Impeller No | Pump Type | Impeller Qty. | Solid mm | Motor HP |
|---|---|---|---|---|
| 152.1 | C 50-200D | 2 | 25 | 5.5 |
| 152.2 | C 50-200D | 2 | 25 | 4 |
| 142.1 | C 50-160D | 2 | 25 | 3 |
| 141.1 | C 50-160D | 2 | 25 | 2 |
| 141.2 | C 50-160D | 2 | 25 | 1.5 |
| 141.3 | C 50-160D | 2 | 25 | 1 |

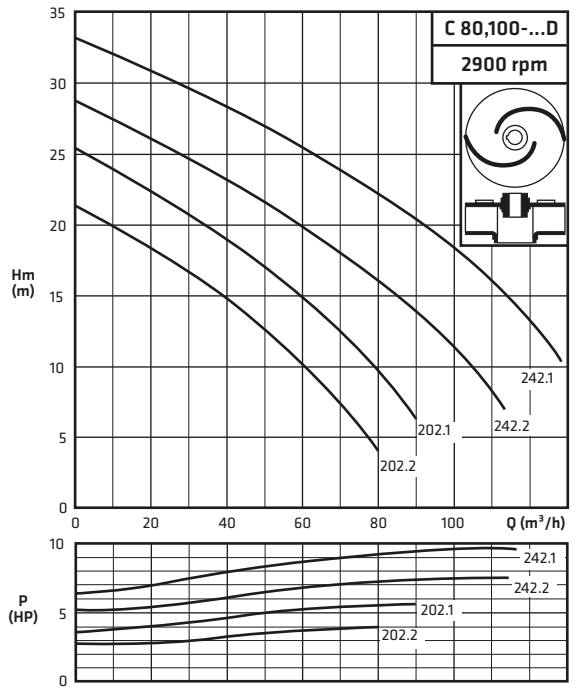



| Impeller No | Pump Type | Impeller Qty. | Solid mm | Motor HP |
|---|---|---|---|---|
| 155.1 | C 50-200Vx | 6 | 40 | 2 |
| 155.2 | C 50-200Vx | 6 | 40 | 1.5 |
| 155.3 | C 50-200Vx | 6 | 40 | 1 |

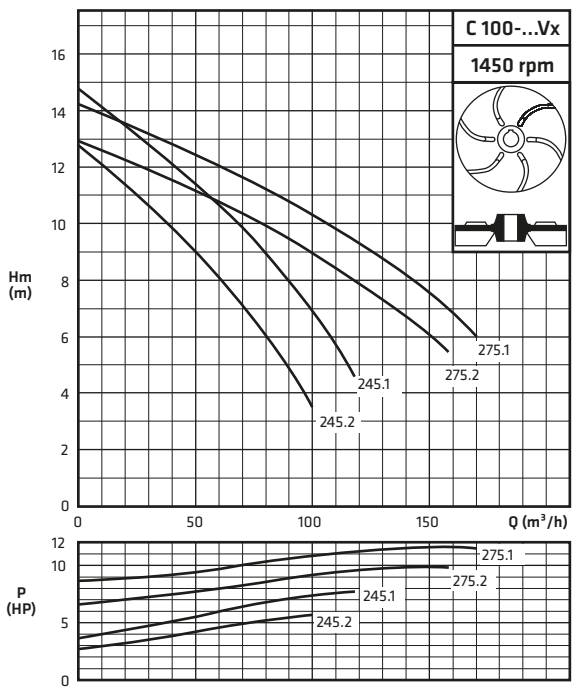



| Impeller No | Pump Type | Impeller Qty. | Solid mm | Motor HP |
|---|---|---|---|---|
| 205.1 | C 80-200Vx | 8 | 60 | 4 |
| 205.2 | C 80-200Vx | 8 | 60 | 3 |
| 165.1 | C 80-160Vx | 6 | 76 | 2 |

## Field Chart




| Impeller No | Pump Type | Impeller Qty. | Solid mm | Motor HP |
|---|---|---|---|---|
| 242.1 | C 100-240D | 2 | 38 | 10 |
| 242.2 | C 100-240D | 2 | 38 | 7.5 |
| 202.1 | C 80-200D | 2 | 35 | 5.5 |
| 202.2 | C 80-200D | 2 | 35 | 4 |




| Impeller No | Pump Type | Impeller Qty. | Solid mm | Motor HP |
|---|---|---|---|---|
| 275.1 | C 100-270Vx | 6 | 76 | 12 |
| 275.2 | C 100-270Vx | 6 | 76 | 10 |
| 245.1 | C 100-240Vx | 6 | 60 | 7.5 |
| 245.2 | C 100-240Vx | 6 | 60 | 5.5 |

## Material Options

| PART LIST | 0.6025 | 0.7040 | 1.0619 | 1.4308 | 1.4309 | 1.4408 | 1.4409 | 1.4517 | 1.4317 | 2.1050.01 | 2.0975.01 | 1.4021 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volute Casing | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | |
| Motor Casing | ● | ○ | | ○ | | ○ | | | | | | |
| Impeller | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| Rotor Shaft | | | | | | | | | | | | ● |
| Oil Chamber | ● | ○ | | | | | | | | | | |
| Mechanical Seal | EN 12756 / DIN 24960 | | | | | | | | | | | |

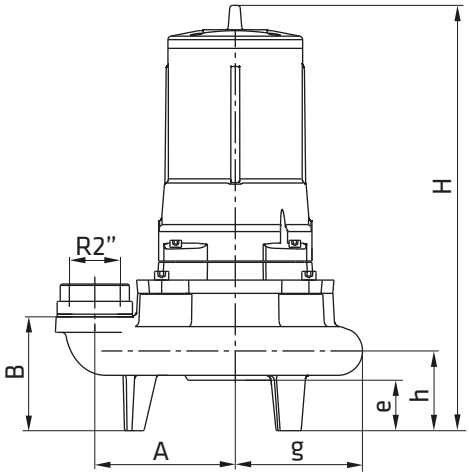
● Standard manufacturing
○ Optional

## Material Equivalents

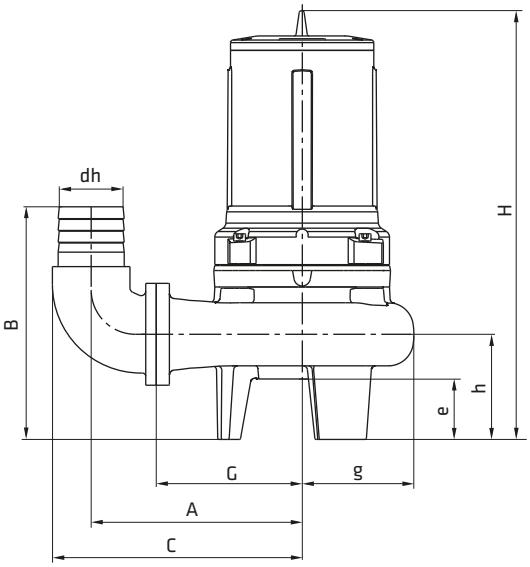
| Description | DIN / EN | | AISI / SAE / ASTM |
|---|---|---|---|
| Cast Iron | 0.6025 | EN-GJL-250 (GG25) | A48 Class 40B |
| Nodular Cast Iron | 0.7040 | EN-GJS-400-15 (GGG40) | A536 60-40-18 |
| Cast Steel | 1.0619 | GP240GHGS-C25 | A216 WCB |
| Chrome Nickel Cast Steel | 1.4308 | GX5CrNi19-10 | A351 CF8 |
| Chrome Nickel Cast Steel (low carbon) | 1.4309 | GX2CrNi19-11 | A351 CF3 |
| Chrome Nickel Molybdenum Cast Steel | 1.4408 | GX5CrNiMo19-11-2 | A351 CF8M |
| Chrome Nickel Molybdenum Cast Steel (low carbon) | 1.4409 | GX2CrNiMo19-11-2 | A351 CF3M |
| Austenitic - Ferritic Cast Steel (duplex) | 1.4517 | GX2CrNiMoCuN25-6-3-3 | A890 CD4MCuN |
| Martenzitic Stainless Cast Steel | 1.4317 | GX4CrNi13-4 | A352 CA6NM |
| Cast Bronze (tin alloy) | 2.1050.01 | G-CuSn10 | B427 C90700 |
| Cast Bronze (nickel alloy) | 2.0975.01 | G-CuAl10Ni | B584 C83600 |
| Chrome Steel | 1.4021 | X20Cr13 | A276 Type 420 |

# Technical Data (up to 12 HP) According to TS 12599

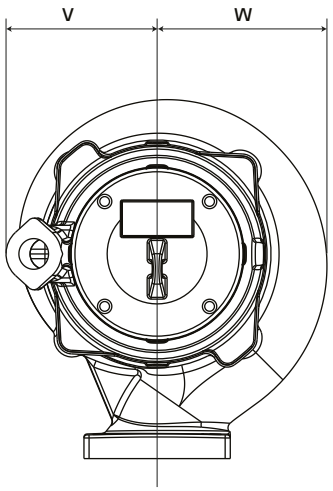





C 50 Hose Connection




C 80-100 Hose Connection




| Pump Type | Impeller Type | MOTOR Power - HP 1450 | MOTOR Power - HP 2900 | IEC No | DISCHARGE DN d | DISCHARGE R" | PUMP DIMENSIONS (mm) A | B | C | e | h | H | G | g | v | w | Oil (ml) | Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50-160 | Vx | - | 1 | 80 | 50 | 2" | 139 | 131 | - | 55 | 90 | 430 | 185 | 114 | 130 | 125 | 750 | 29 |
| 50-160 | Vx | - | 1,5 | 80 | 50 | 2" | 139 | 131 | - | 55 | 90 | 430 | 185 | 114 | 130 | 125 | 750 | 34 |
| 50-160 | Vx | - | 2 | 90 | 50 | 2" | 139 | 131 | - | 55 | 90 | 475 | 185 | 114 | 138 | 125 | 750 | 38 |
| 50-160 | Vx | - | 3 | 90 | 50 | 2" | 139 | 131 | - | 55 | 90 | 475 | 185 | 114 | 138 | 125 | 750 | 41 |
| 50-160 | D | - | 1 | 80 | 50 | 2" | 139 | 131 | - | 55 | 90 | 430 | 185 | 114 | 130 | 125 | 750 | 32 |
| 50-160 | D | - | 1,5 | 80 | 50 | 2" | 139 | 131 | - | 55 | 90 | 430 | 185 | 114 | 130 | 125 | 750 | 34 |
| 50-160 | D | - | 2 | 90 | 50 | 2" | 139 | 131 | - | 55 | 90 | 475 | 185 | 114 | 138 | 125 | 750 | 39 |
| 50-160 | D | - | 3 | 90 | 50 | 2" | 139 | 131 | - | 55 | 90 | 475 | 185 | 114 | 138 | 125 | 750 | 41 |
| 50-160 | F | - | 1,5 | 80 | 50 | 2" | 139 | 131 | - | 55 | 90 | 412 | 185 | 114 | 130 | 125 | 750 | 33 |
| 50-160 | F | - | 2 | 90 | 50 | 2" | 139 | 131 | - | 55 | 90 | 457 | 185 | 114 | 138 | 125 | 750 | 38 |
| 50-160 | F | - | 3 | 90 | 50 | 2" | 139 | 131 | - | 55 | 90 | 457 | 185 | 114 | 138 | 125 | 750 | 40 |
| 50-200 | Vx | 1 | - | 80 | 50 | 2" | 160 | 129 | - | 57 | 90 | 438 | 205 | 144 | 130 | 152 | 750 | 41 |
| 50-200 | Vx | 1,5 | - | 90 | 50 | 2" | 160 | 129 | - | 57 | 90 | 483 | 205 | 144 | 138 | 152 | 750 | 45 |
| 50-200 | Vx | 2 | - | 90 | 50 | 2" | 160 | 129 | - | 57 | 90 | 483 | 205 | 144 | 138 | 152 | 750 | 47 |
| 50-200 | Vx | - | 4 | 100 | 50 | 2" | 160 | 129 | - | 57 | 90 | 524 | 205 | 144 | 148 | 152 | 1000 | 54 |
| 50-200 | Vx | - | 5,5 | 112 | 50 | 2" | 160 | 129 | - | 57 | 90 | 529 | 205 | 144 | 158 | 152 | 1000 | 59 |
| 50-200 | B | 1 | - | 80 | 50 | 2" | 160 | 129 | - | 57 | 90 | 438 | 205 | 144 | 130 | 152 | 750 | 41 |
| 50-200 | B | 1,5 | - | 90 | 50 | 2" | 160 | 129 | - | 57 | 90 | 483 | 205 | 144 | 138 | 152 | 750 | 46 |
| 50-200 | B | 2 | - | 90 | 50 | 2" | 160 | 129 | - | 57 | 90 | 483 | 205 | 144 | 138 | 152 | 750 | 48 |
| 50-200 | D | - | 4 | 100 | 50 | 2" | 160 | 129 | - | 57 | 90 | 524 | 205 | 144 | 148 | 152 | 1000 | 54 |
| 50-200 | D | - | 5,5 | 112 | 50 | 2" | 160 | 129 | - | 57 | 90 | 529 | 205 | 144 | 158 | 152 | 1000 | 60 |
| 50-200 | F | - | 4 | 100 | 50 | 2" | 160 | 129 | - | 57 | 90 | 496 | 205 | 144 | 138 | 152 | 1000 | 52 |
| 50-200 | F | - | 5,5 | 112 | 50 | 2" | 160 | 129 | - | 57 | 90 | 501 | 205 | 144 | 135 | 152 | 1000 | 58 |
| 80-160 | Vx | 2 | - | 90 | 80 | - | 262 | 287 | 304 | 62 | 133 | 540 | 180 | 130 | 138 | 146 | 1000 | 58 |
| 80-160 | B | 2 | - | 90 | 80 | - | 262 | 287 | 304 | 62 | 133 | 540 | 180 | 130 | 138 | 146 | 1000 | 58 |
| 80-200 | Vx | 4 | - | 100 | 80 | - | 282 | 286 | 324 | 70 | 132 | 573 | 200 | 150 | 148 | 168 | 1000 | 62 |
| 80-200 | Vx | 3 | - | 100 | 80 | - | 282 | 286 | 324 | 70 | 132 | 573 | 200 | 150 | 148 | 168 | 1000 | 58 |
| 80-200 | B | 4 | - | 100 | 80 | - | 282 | 286 | 324 | 70 | 132 | 573 | 200 | 150 | 148 | 168 | 1000 | 64 |
| 80-200 | B | 3 | - | 100 | 80 | - | 282 | 286 | 324 | 70 | 132 | 573 | 200 | 150 | 148 | 168 | 1000 | 60 |
| 80-200 | D | - | 4 | 100 | 80 | - | 282 | 286 | 324 | 70 | 132 | 573 | 200 | 150 | 148 | 168 | 1000 | 59 |
| 80-200 | D | - | 5,5 | 112 | 80 | - | 282 | 286 | 324 | 70 | 132 | 578 | 200 | 150 | 158 | 168 | 1000 | 65 |
| 100-240 | Vx | 5,5 | - | 112 | 100 | - | 324 | 356 | 383 | 94 | 162 | 608 | 225 | 170 | 158 | 186 | 1000 | 80 |
| 100-240 | Vx | 7,5 | - | 132 | 100 | - | 324 | 356 | 383 | 94 | 162 | 657 | 225 | 170 | 190 | 186 | 2000 | 101 |
| 100-240 | B | 5,5 | - | 112 | 100 | - | 324 | 356 | 383 | 94 | 162 | 608 | 225 | 170 | 158 | 186 | 1000 | 82 |
| 100-240 | B | 7,5 | - | 132 | 100 | - | 324 | 356 | 383 | 94 | 162 | 657 | 225 | 170 | 190 | 186 | 2000 | 104 |
| 100-240 | D | - | 7,5 | 132 | 100 | - | 324 | 356 | 383 | 94 | 162 | 657 | 225 | 170 | 190 | 186 | 2000 | 94 |
| 100-240 | D | - | 10 | 132 | 100 | - | 324 | 356 | 383 | 94 | 162 | 657 | 225 | 170 | 190 | 186 | 2000 | 103 |
| 100-270 | Vx | 10 | - | 132 | 100 | - | 359 | 364 | 418 | 88 | 170 | 678 | 260 | 211 | 198 | 228 | 2000 | 123 |
| 100-270 | Vx | 12 | - | 132 | 100 | - | 359 | 364 | 418 | 88 | 170 | 678 | 260 | 211 | 198 | 228 | 2500 | 123 |
| 100-270 | B | 10 | - | 132 | 100 | - | 359 | 364 | 418 | 88 | 170 | 678 | 260 | 211 | 198 | 228 | 2500 | 126 |
| 100-270 | B | 12 | - | 132 | 100 | - | 359 | 364 | 418 | 88 | 170 | 678 | 260 | 211 | 198 | 228 | 2500 | 126 |

## Technical Data

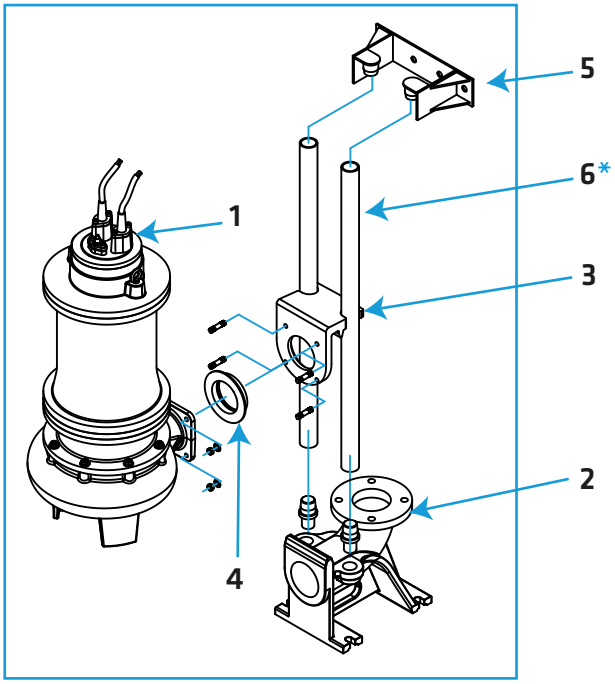
| Pump Type | Impeller Type | Rated Power (kW) | | |
|---|---|---|---|---|
| | | Rated Speed | | |
| | | 1000 (rpm) | 1500 (rpm) | 3000 (rpm) |
| 50-240 | D | - | - | 5,5 |
| 50-240 | D | - | - | 7,5 |
| 50-240 | D | - | - | 11 |
| 50-270 | Vx | - | 3 | - |
| 50-270 | Vx | - | 4 | - |
| 50-270 | Vx | - | 5,5 | - |
| 50-270 | Vx | - | 7,5 | - |
| 80-270 | D | - | - | 11 |
| 80-270 | D | - | - | 15 |
| 80-270 | D | - | - | 18,5 |
| 80-270 | D | - | - | 22 |
| 80-270 | D | - | - | 30 |
| 80-315 | AB | 7,5 | 11 | - |
| 80-315 | AB | - | 15 | - |
| 80-315 | AB | - | 18,5 | - |
| 100-270 | D | - | - | 11 |
| 100-270 | D | - | - | 15 |
| 100-270 | D | - | - | 18,5 |
| 100-270 | D | - | - | 22 |
| 100-270 | D | - | - | 30 |
| 100-270 | B | - | 11 | - |
| 100-270 | B | - | 15 | - |
| 100-270 | B | - | 18,5 | - |
| 100-315 | AB | 7,5 | 11 | - |
| 100-315 | AB | 11 | 15 | - |
| 100-315 | AB | - | 18,5 | - |
| 100-315 | AB | - | 22 | - |
| 100-315 | AB | - | 30 | - |
| 100-315 | B | - | 11 | - |
| 100-315 | B | - | 15 | - |
| 100-315 | B | - | 18,5 | - |
| 100-315 | B | - | 22 | - |
| 100-315 | B | - | 30 | - |

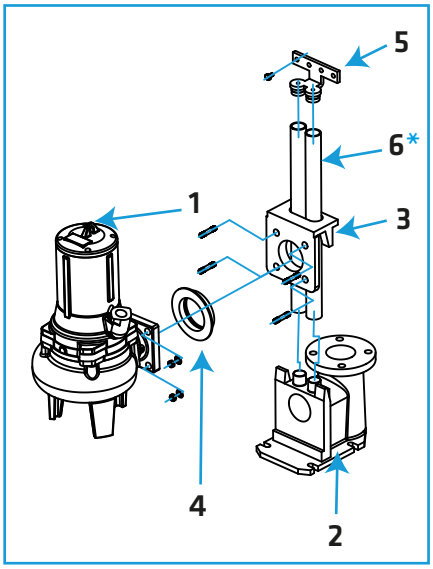
| Pump Type | Impeller Type | Rated Power (kW) | | |
|---|---|---|---|---|
| | | Rated Speed | | |
| | | 1000 (rpm) | 1500 (rpm) | 3000 (rpm) |
| 150-315 | AB | 7,5 | 11 | - |
| 150-315 | AB | 11 | 15 | - |
| 150-315 | AB | 15 | 18,5 | - |
| 150-315 | AB | 18,5 | 22 | - |
| 150-315 | AB | - | 30 | - |
| 150-315 | AB | - | 37 | - |
| 150-315 | AB | - | 45 | - |
| 150-315 | AB | - | 55 | - |
| 150-315 | B | 7,5 | 11 | - |
| 150-315 | B | 11 | 15 | - |
| 150-315 | B | 15 | 18,5 | - |
| 150-315 | B | 18,5 | 22 | - |
| 150-315 | B | - | 30 | - |
| 150-315 | B | - | 37 | - |
| 150-315 | B | - | 45 | - |
| 150-315 | B | - | 55 | - |
| 150-500 | AB | 45 | 75 | - |
| 150-500 | AB | 55 | 90 | - |
| 150-500 | AB | - | 110 | - |
| 150-500 | AB | - | 132 | - |
| 150-500 | AB | - | 160 | - |
| 150-500 | AB | - | 185 | - |
| 150-500 | AB | - | 200 | - |
| 200-315 | AB | 15 | - | - |
| 200-315 | AB | 18,5 | 30 | - |
| 200-315 | AB | 22 | 37 | - |
| 200-315 | AB | - | 45 | - |
| 200-315 | AB | - | 55 | - |
| 200-315 | AB | - | 75 | - |
| 200-315 | G2K | 15 | 22 | - |
| 200-315 | G2K | 18,5 | 30 | - |
| 200-315 | G2K | 22 | 37 | - |
| 200-315 | G2K | - | 45 | - |
| 200-315 | G2K | - | 55 | - |

| Pump Type | Impeller Type | Rated Power (kW) | | |
|---|---|---|---|---|
| | | Rated Speed | | |
| | | 1000 (rpm) | 1500 (rpm) | 3000 (rpm) |
| 200-400 | B | 30 | - | - |
| 200-400 | B | 37 | 55 | - |
| 200-400 | B | 45 | 75 | - |
| 200-400 | B | 55 | 90 | - |
| 200-400 | B | - | 110 | - |
| 200-400 | B | - | 132 | - |
| 200-400 | B | - | 160 | - |
| 200-500 | AB | 45 | 110 | - |
| 200-500 | AB | 55 | 132 | - |
| 200-500 | AB | - | 160 | - |
| 200-500 | AB | - | 185 | - |
| 250-315 | AB | 18,5 | 30 | - |
| 250-315 | AB | 22 | 37 | - |
| 250-315 | AB | 30 | 45 | - |
| 250-315 | AB | 37 | 55 | - |
| 250-315 | AB | - | 75 | - |
| 250-315 | AB | - | 90 | - |
| 300-400 | AB | 30 | 110 | - |
| 300-400 | AB | 37 | 132 | - |
| 300-400 | AB | 45 | 160 | - |
| 300-400 | AB | 55 | 185 | - |
| 300-400 | AB | 75 | 200 | - |
| 300-400 | AB | 90 | 250 | - |
| 300-400 | B | 30 | 110 | - |
| 300-400 | B | 37 | 132 | - |
| 300-400 | B | 45 | 160 | - |
| 300-400 | B | 55 | 185 | - |
| 300-400 | B | 75 | 200 | - |
| 300-400 | B | - | 250 | - |
| 300-500 | B | 90 | - | - |
| 300-500 | B | 110 | - | - |
| 300-500 | B | 132 | - | - |
| 300-500 | B | 160 | - | - |

Note: Please contact for further information.

## Guide Rail Pipe



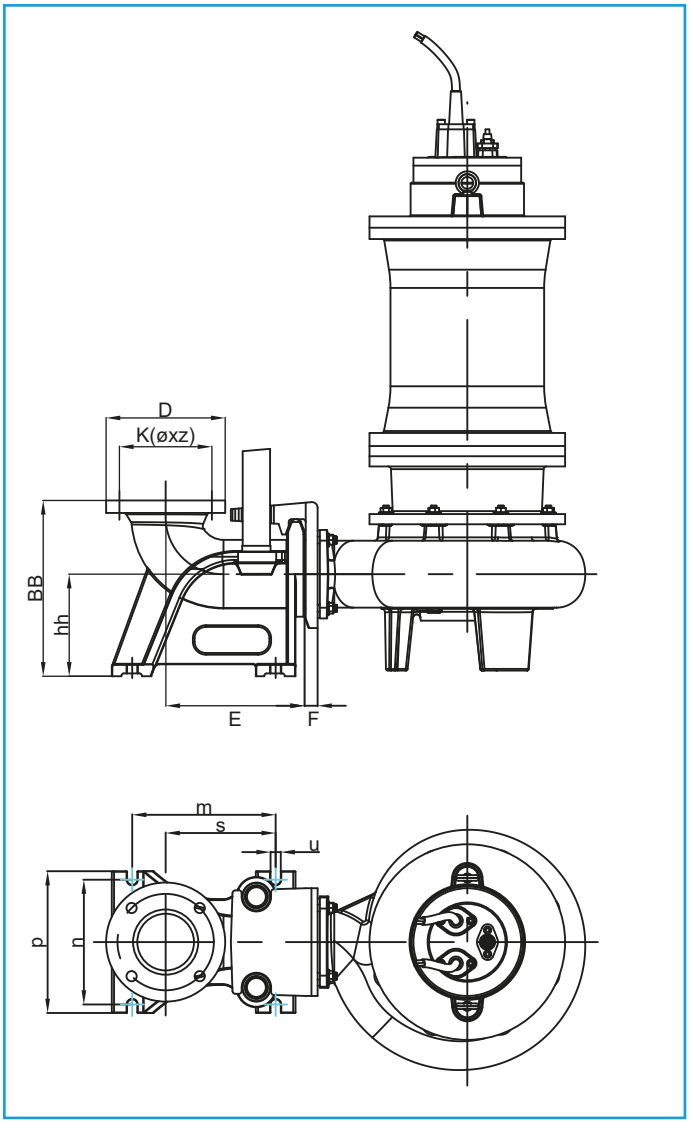

## Part List

1- Pump
2- Elbow
3- Flange
4- Rubber
5- Upper Guide
6- Guide Rail Pipe*

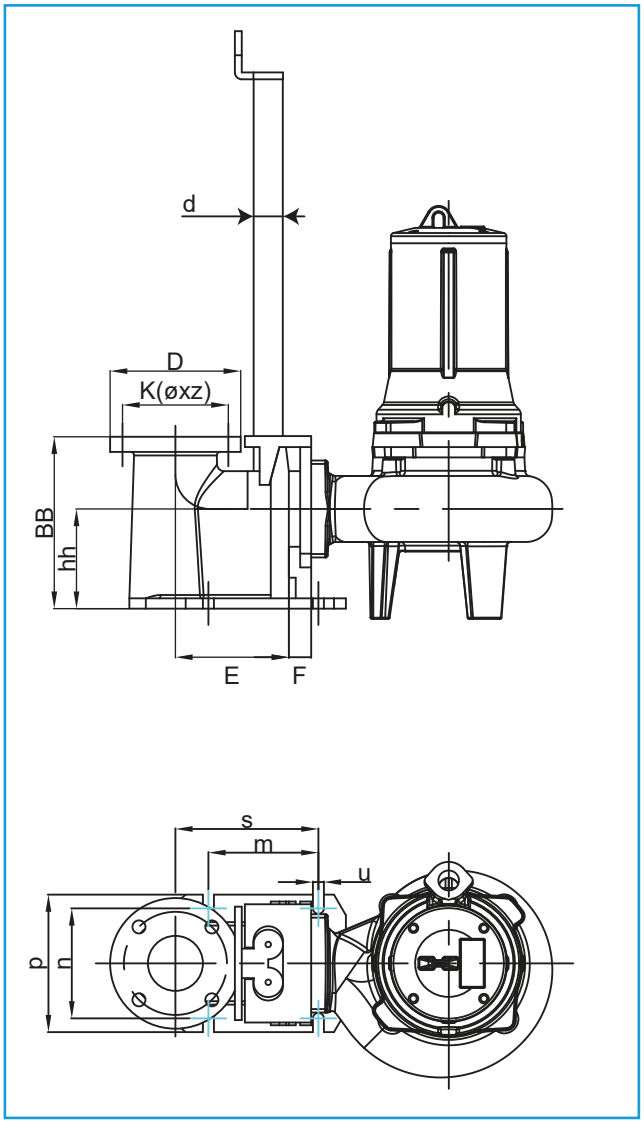
(*) Scope out of STANDART POMPA.

# Dimensions

## DN 100 and above



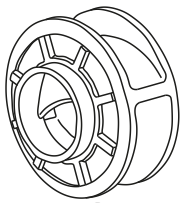

## DN 50 and DN 80



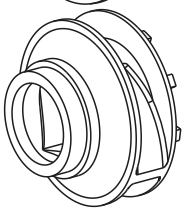

| Elbow No. | Guide Rail Pipe System Dimensions | | | | | | | | | | | Rail Pipe Diameter |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | F | E | hh | BB | s | m | u | p | n | D | K | d |
| 50 | 29 | 126 | 101 | 167 | 150 | 130 | 12 | 145 | 108 | 150 | 125(ø18/4 Ad.) | ¾" |
| 80 | 30 | 165 | 145 | 250 | 208 | 160 | 16 | 200 | 160 | 190 | 150(ø18/4 Ad.) | 1 ¼" |
| 100 | 21 | 245 | 180 | 310 | 193 | 253 | 18 | 250 | 220 | 190 | 170(ø18/4 Ad.) | 1 ½" |
| 150 | 33 | 371 | 270 | 466 | 295 | 385 | 27 | 375 | 330 | 285 | 240(ø22/8 Ad.) | 2" |
| 200 | 53 | 488 | 300 | 650 | 389 | 510 | 33 | 510 | 450 | 340 | 295(ø22/8 Ad.) | 2" |
| 250 | 55 | 610 | 365 | 800 | 485 | 635 | 41 | 640 | 565 | 395 | 350(ø23/12Ad.) | 2 ½" |
| 300 | 65 | 730 | 445 | 965 | 580 | 760 | 46 | 750 | 660 | 445 | 400(ø23/12Ad.) | 2 ½" |

## Impeller Type

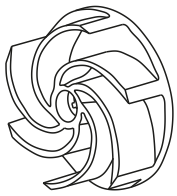
**B and G2K Type Impeller:** Enclosed type impellers with wide channels capable of pumping large size solid particles without clogging, for big capacity and low pressure. It is mainly used for 4 pole motors.



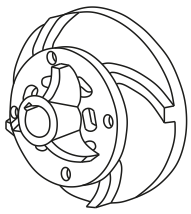
**D Type Impeller**: It is also enclosed type like B type but suitable for high speed motors (2 pole). It is convenient for high pressure, small capacity and smaller size solid particles.



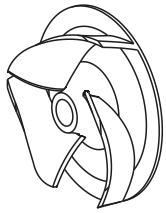
**VX Type Impeller:** Semi-open free vortex type impeller is placed on top of the volute. It creates a forced vortex motion in the casing. It is mostly suitable for fibrous materials. They are suitable for low head applications but pump efficiency is lower compare to other impeller types. The increased clearances limit the head that can be generated and reduce the attainable efficiency. Recessed type impellers are also possible for some models. With this type of design solid particles up to pump flanges size can pass through the pump. Please ask for more information.



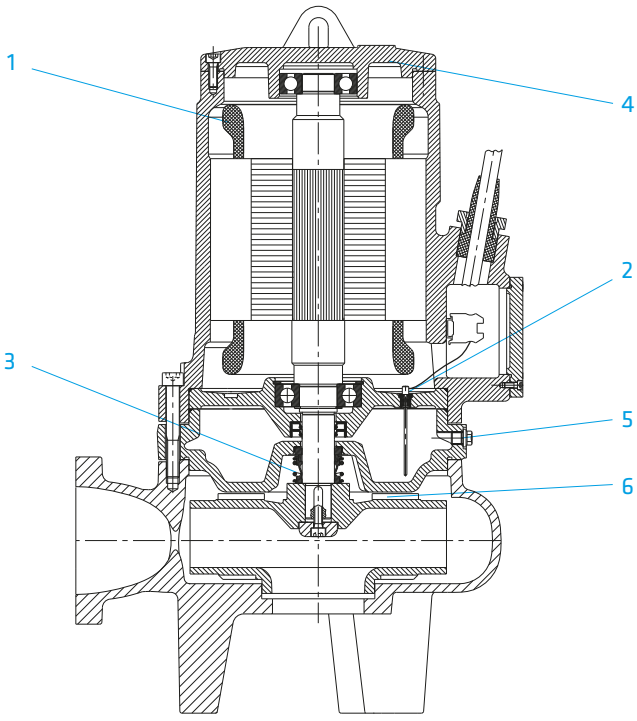
**F Type Impeller:** Semi-open type impeller with cutter. The cutting system is placed in front of the impeller and it breaks up the solid particles into smaller sizes that makes passing possible through the smaller pipes without stucking. F type impeller is suitable for small capacity, high pressure, but the pump efficiency is also low.



**AB Type Impeller:** Semi-open type impellers with wide channels capable of pumping large size solid particles without clogging, for big capacity and low pressure. It is more suitable for 4 pole motors. Designed for aggressive applications. Impeller works against a wear plate. Clearance between the wear plate and impeller blades is between 0.25 - 0.40 mm.



1 – Temperature SENSOR (130˚C) in F class winding head protection for overheating.
2 – Signaling ELECTRODE in case of leakage into the motor or into the oil chamber.
3 – MECHANICAL SEAL running in pumping liquid.
4 – Demountable TOP COVER for easy motor winding.
5 – Oil filling and inspection PLUG.
6 – BACK VANES for reducing axial load and sealing pressure.



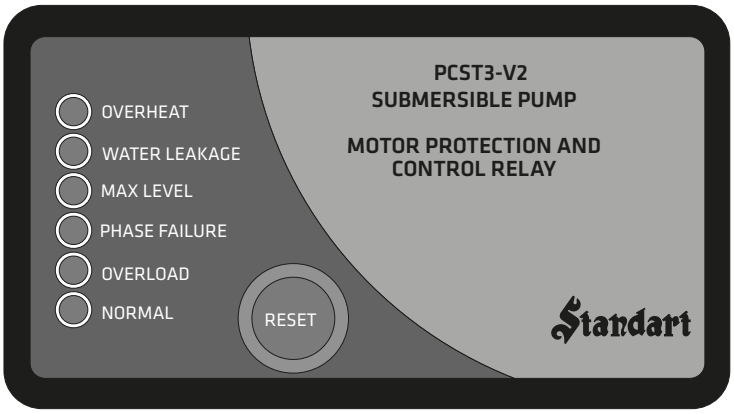
# PCST3-V2 MOTOR PROTECTION AND CONTROL RELAY

C

Standart PCST3-V2 Motor Protection and Control Relay is an indispensable part of Standart C type pumps. It is supplied with the pump and it shall be used to secure smooth operation of motor and the pump.

**FUNCTION**:

When the device is switched on, all indicator lights blinks in order and the control unit makes a self-check. If there is not any failure, NORMAL indicator light switches on in green indicating it is ready to run the motor.




**OVER HEAT**

In case of overheating of motor windings, in which the temperature exceeds 130°C, the red indicator light switches on and the relay shuts down the motor. Indicator light blinks in short periods at alarming position. When motor has cooled down, relay restarts the motor while alarming goes on until the RESET button is pressed. Pressing the RESET button disables the alarm relay and indicator light stops blinking.

**WATER LEAKAGE**

In case of water leakage into the motor casing or oil chamber, red indicator light switches on and the relay shuts down the motor. Alarm relay becomes activated and until the RESET button is pressed, alarming goes on by blinking of red indicator light in short periods. When this failure occurs, the pump needs to be overhauled.

**MAX LEVEL**

When water level reaches the maximum level, which is set by the user, float switch sends on alarm signal and yellow indicator light starts blinking. This alarm does not affect the current state (run or stop) of the pump. Pressing the RESET button disables the alarm relay and indicator light stops blinking.

**PHASE FAILURE**

An external phase protection relay, mounted in the control panel, is connected to PCST3-V2 for checking phase sequence and phase failures. When there is a failure in mains voltage or in phase sequence, the motor is shut down by the relay and red indicator light starts blinking. By the time the failure is fixed, the motor restarts automatically while alarming goes on until the RESET button is pressed.

**OVERLOAD**

The relay shuts down the motor, if the current overload limit is exceeded. Meanwhile, alarm relay becomes activated and red indicator light starts blinking. As the failure is fixed, pressing the RESET button will disable the overload and the alarm relay, so the system turns back to normal conditions.

**NORMAL**

By the time all red indicator lights on PCST3-V2 switch off, green indicator light switches on, meaning that it is ready to run the motor. In case of failure, green indicator light switches off and the relay shuts down the motor.

PCST3-V2 is an indispensable part of Standart C type pumps. If it is damaged, do not try to operate the motor without it.

**Optional Motor Protections**

- Humidity Sensor
- Bearing Thermal Sensor (PTC or/and PT100)

Standart

Pump • Fire Fighting Units • Booster Set

CONFLUX

# PACKAGE TYPE WASTE WATER PUMPING STATION

Conflux Rev.11 09.2021

## Package Type Waste Water Pumping Station

Package type waste water pumping stations consist of submersible pump, valves, float switches and control unit is suitable and a good solution for places with lower elevation of main waste water pumpline. They can be used everywhere safely where there is no sewer system or not possible (not economic) to build a sewer system.

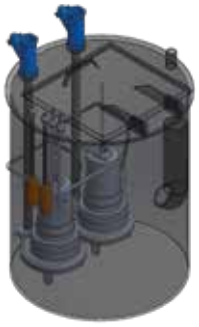
They present an enviromental approach with preventing pollution of underground waters. They also prevent developing of malodor. Their design permit easy installation and provide long life with corrosion resistant materials.

## Technical Data

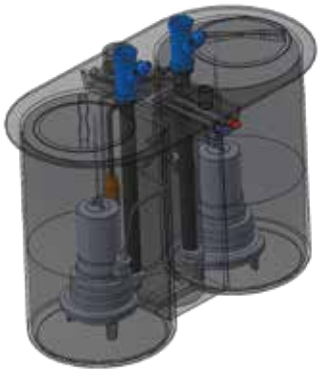
- Tank Volume : 300 - 500 liter
- Number of Pumps : 1 main or 1 main + 1 spare
- Piping Diameter : DN 50
- Material : Fiberglass compozite with polyester added
- Equipments : Connection pipes, rail pipes, valves, check valve and çekvalfleri, basket grid
- Water Temperature (max) : 40 °C

## Package Types

Conflux 300-1



Conflux 300-2



Conflux 500-2

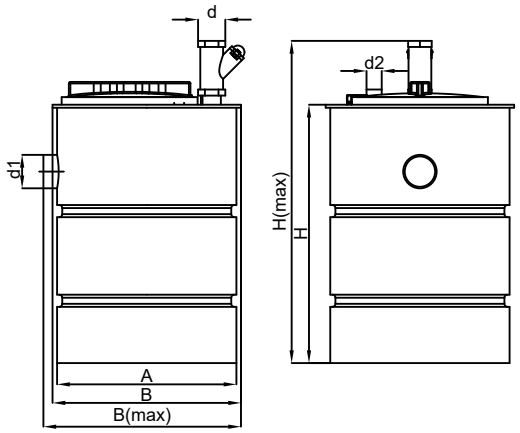
## Pump Designation

**Conflux 500 - 2 x 1.5 - 50**

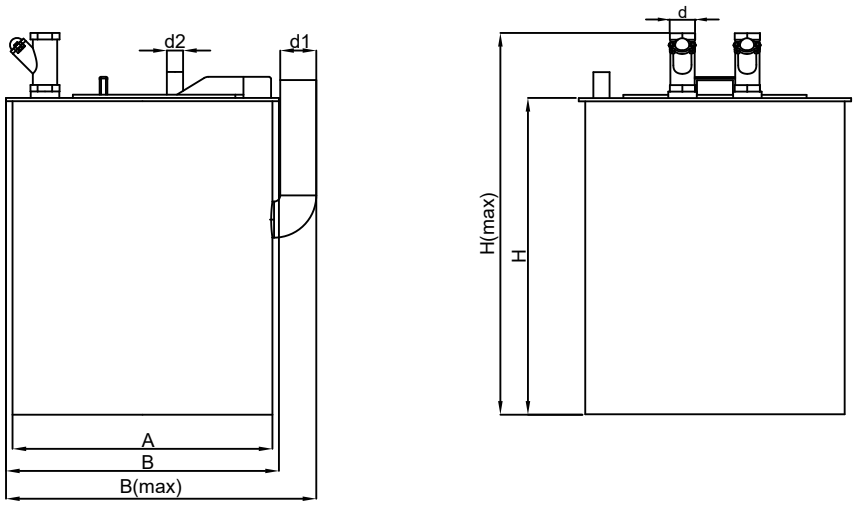
- **Model**
- **Capasity (Liter)**
- **Number of Pumps**
- **Motor Power (kW)**
- **Discharge Diameter (DN)**

# Dimensions

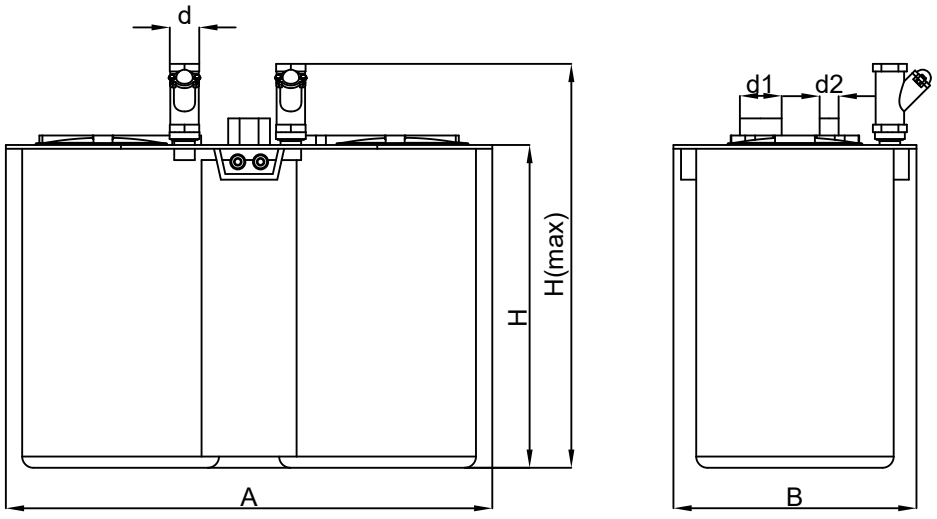
## Conflux 300-1




## Conflux 300-2




## Conflux 500-2




| Package Type | Conflux Dimension Table | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | A | B | B(max) | H | H(max) | d | d1 | d2 |
| Conflux 300-1 | 590 | 620 | 640 | 850 | 1040 | 2” | 3” | 1 ½” |
| Conflux 300-2 | 630 | 680 | 500 | 850 | 1040 | 2” | 3” | 1 ½” |
| Conflux 500-2 | 1280 | 640 | - | 850 | 1040 | 2” | 3” | 1 ½” |

Standart

Pump • Fire Fighting Units • Booster Set

# PC / PC-VM

## WASTE WATER AND PROCESS PUMPS

PC / PC-VM Rev.11 09.2021

## Handled Liquids

Domestic and industrial waste water, raw sewage, viscous and corrosive liquids, liquids with fibrous and solid substances.

## Technical Data

Discharge Flange_____DN 40....DN 300 mm

Capacity_____up to 1600 $m^3/h$

Head_____up to 95 m

Speed_____up to 2900 rpm

Design Temperature_____-10 °C up to +110 °C

Casing Pressure (Pmax)_____10 bar (16 bar)*

(Pmax: Suction Pressure + Shut off Head)

(*) The Material of pumps differ according to the type of pumped liquid, operating temperature and pressure. Contact for detailed information.

## Desing Features

•Horizontal / Vertical, wide volute casing, single stage, end suction, centrifugal pumps with enclosed, semi-open or vortex type impeller.

•18 basic sizes covering wide range of operational area.

•Due to the back-pull-out design, the complete bearing assembly including impeller and casing cover can be dismantled without removing the volute casing from the pipe system. (With spacer coupling application, also possible to take out the rotor group without dismantling the electric motor.)

•Discharge flanges conform to EN 1092-2 / PN 10. (EN 1092-1 / PN 10 for steel or stainless steel casing)

•All impellers are balanced dynamically or statically according to ISO 1940 class 6.3.

•Axial thrust is balanced by impeller back ribs.

•Direction of rotation is clockwise viewed from drive end.

•Bearings of PC type pumps are “life time grease lubricated” ball bearing up to 150-315 size. For bigger sizes oil lubricated bearings are used. In vertical design (PC-VM) always grease lubricated bearings are used.

## Shaft Sealing

•In standard production soft packed stuffing boxes are used.

•Depending on customer request, mechanical seals are avaible. In this case, pump shaft is always stainless steel.

•Only mechanical seal is applied for vertical type installation.

## Pump Designation

PC -VM 250-315 AB

**Pump Type**

**Vertical Installation**

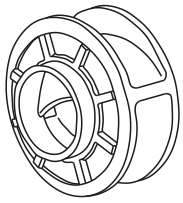
**Discharge Nozzle (DN-mm)**

**Nominal Impeller Diameter (mm)**

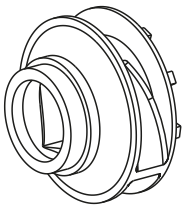
**Impeller Type**

## Impeller Type

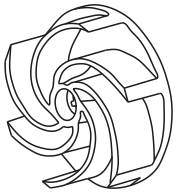
**B Type Impeller:** Enclosed type impellers with wide channels capable of pumping large size solid particles without clogging, for big capacity and low pressure. It is mainly used for 4 pole motors.



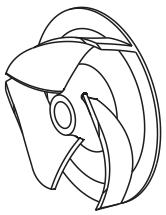
**D Type Impeller**: It is also enclosed type like B type but suitable for high speed motors (2 pole). It is convenient for high pressure, small capacity and smaller size solid particles.



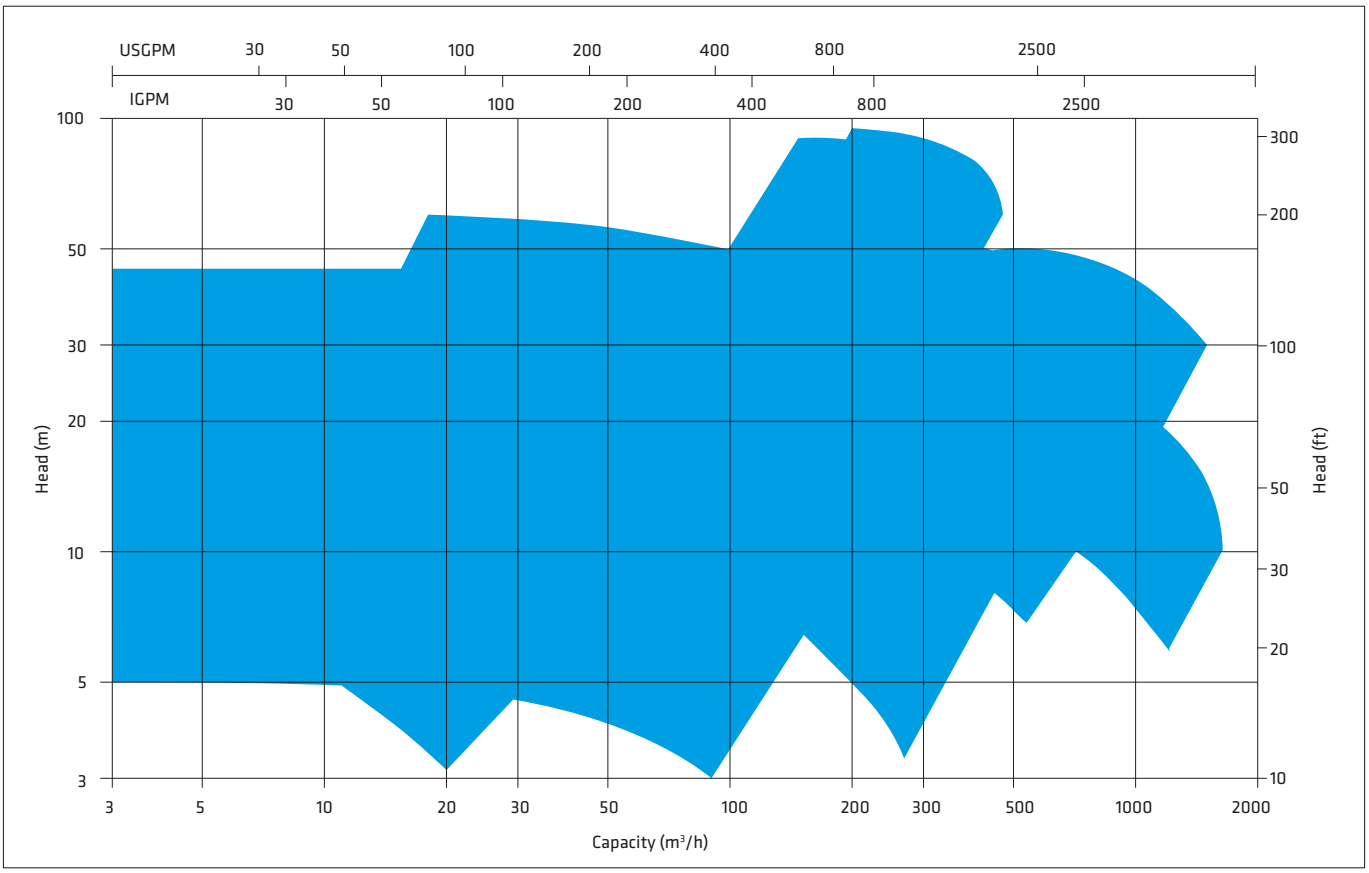
**VX Type Impeller:** Semi-open free vortex type impeller is placed on top of the volute. It creates a forced vortex motion in the casing. It is mostly suitable for fibrous materials. They are suitable for low head applications but pump efficiency is lower compare to other impeller types. The increased clearances limit the head that can be generated and reduce the attainable efficiency. Recessed type impellers are also possible for some models. With this type of design solid particles up to pump flanges size can pass through the pump. Please ask for more information.

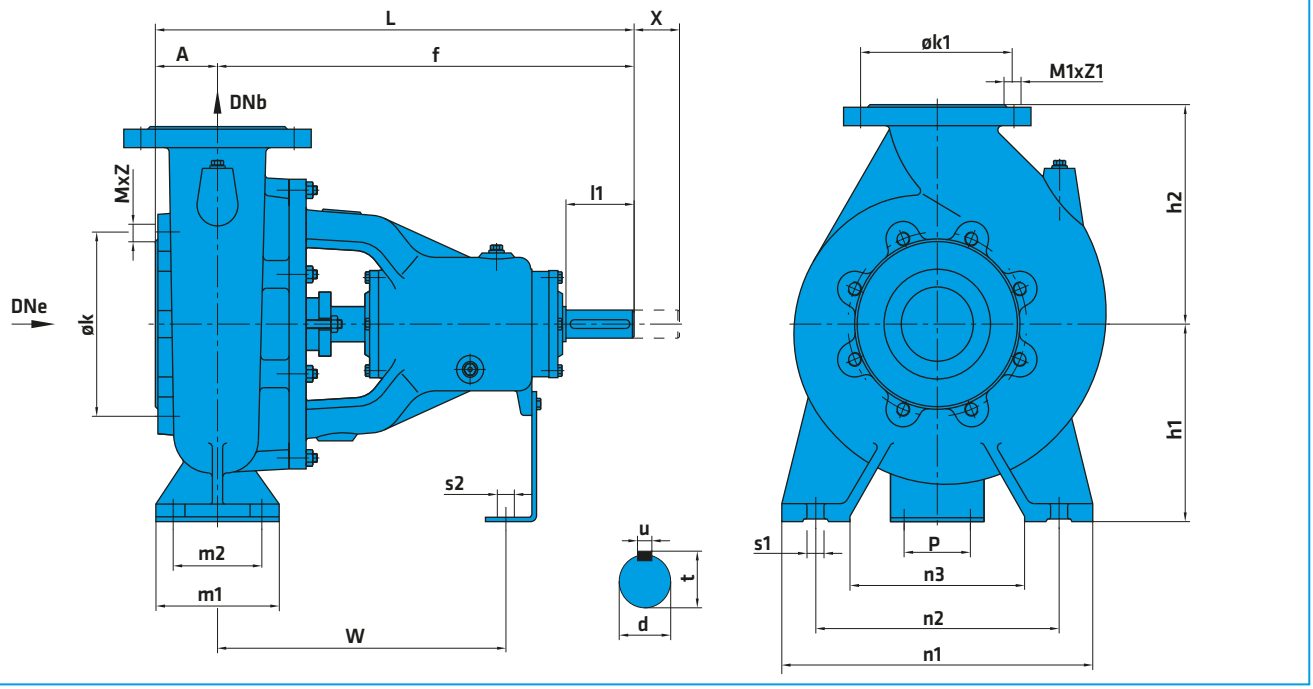


**AB Type Impeller:** Semi-open type impellers with wide channels capable of pumping large size solid particles without clogging, for big capacity and low pressure. It is more suitable for 4 pole motors. Designed for aggressive applications. Impeller works against a wear plate. Clearance between the wear plate and impeller blades is between 0.25 - 0.40 mm.



## Field Chart

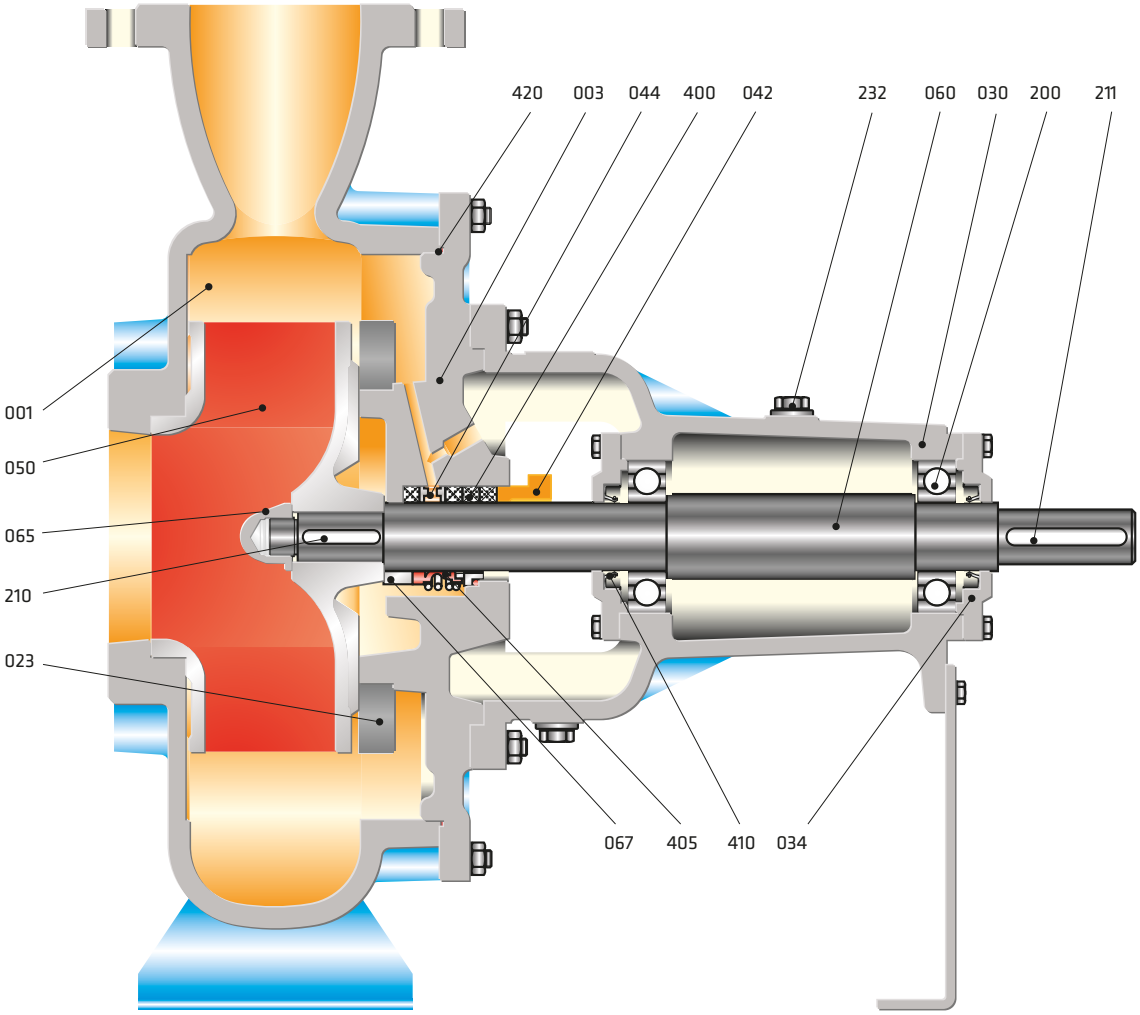




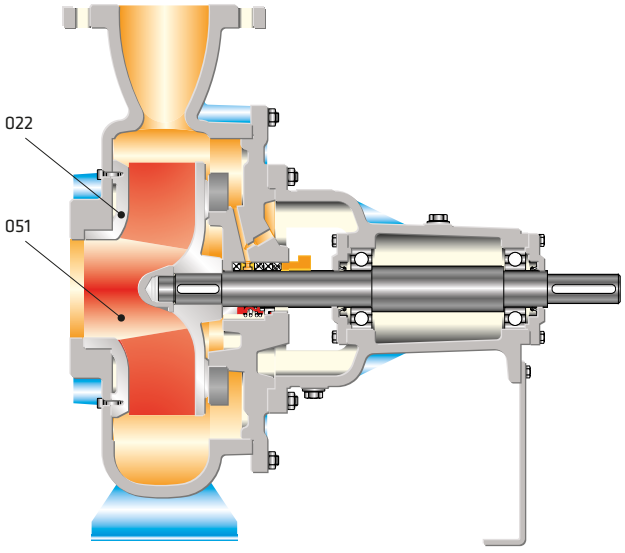

| Pump Type | | | Overall Dimensions (mm) | | | | | Support & Foot Dimensions (mm) | | | | | | | | Shaft (mm) | | | | | | Flange Dimensions Suction | | Flange Dimensions Discharge | | Weight (*) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | DNe | DNb | A | f | L | h1 | h2 | m1 | m2 | n1 | n2 | n3 | s1 | P | s2 | W | d | l1 | t | u | x(**) | k | MxZ | k1 | M1xZ1 | (kg) |
| 40-160 | 50 | 40 | 82 | 348 | 430 | 160 | 180 | 100 | 70 | 240 | 190 | 140 | 14 | 110 | 14 | 247 | 24 | 50 | 27 | 8 | 140 | 125 | M16x4 | 110 | 18x4 | 50 |
| 50-160 | 65 | 50 | 100 | 350 | 450 | 160 | 180 | 100 | 70 | 270 | 212 | 160 | 14 | 110 | 14 | 270 | 24 | 50 | 27 | 8 | 140 | 145 | M16x4 | 125 | 18x4 | 50 |
| 50-200 | 65 | 50 | 105 | 370 | 475 | 160 | 200 | 100 | 95 | 270 | 210 | 160 | 14 | 110 | 14 | 270 | 24 | 50 | 27 | 8 | 140 | 145 | M16x4 | 125 | 18x4 | 60 |
| 65-200 | 80 | 65 | 108 | 372 | 480 | 180 | 225 | 125 | 95 | 330 | 255 | 190 | 14 | 110 | 14 | 260 | 24 | 50 | 27 | 8 | 140 | 160 | M16x8 | 145 | 18x4 | 65 |
| 80-160 | 100 | 80 | 83 | 384 | 467 | 180 | 180 | 120 | 85 | 310 | 250 | 190 | 14 | 110 | 14 | 288 | 24 | 50 | 27 | 8 | 140 | 180 | M16x8 | 160 | 18x8 | 60 |
| 80-200 | 100 | 80 | 83 | 488 | 571 | 180 | 220 | 125 | 90 | 350 | 280 | 215 | 18 | 110 | 14 | 358 | 32 | 80 | 35 | 10 | 140 | 180 | M16x8 | 160 | 18x8 | 70 |
| 80-315 | 100 | 80 | 55 | 480 | 535 | 250 | 310 | 125 | 95 | 400 | 315 | 240 | 18 | 110 | 14 | 350 | 32 | 80 | 35 | 10 | 140 | 180 | M16x8 | 160 | 18x8 | 75 |
| 100-240 | 125 | 100 | 82 | 492 | 574 | 225 | 250 | 160 | 110 | 370 | 280 | 205 | 20 | 110 | 14 | 357 | 32 | 80 | 35 | 10 | 140 | 210 | M16x8 | 180 | 18x8 | 100 |
| 100-270 | 125 | 100 | 97 | 500 | 597 | 275 | 310 | 160 | 110 | 430 | 345 | 270 | 20 | 110 | 14 | 371 | 32 | 80 | 35 | 10 | 140 | 210 | M16x8 | 180 | 18x8 | 110 |
| 100-315 | 125 | 100 | 97 | 500 | 597 | 275 | 310 | 160 | 110 | 430 | 345 | 270 | 20 | 110 | 14 | 371 | 32 | 80 | 35 | 10 | 140 | 210 | M16x8 | 180 | 18x8 | 120 |
| 150-315 | 150 | 150 | 119 | 638 | 757 | 280 | 355 | 200 | 150 | 500 | 400 | 300 | 23 | 110 | 14 | 445 | 42 | 110 | 45 | 12 | 200 | 240 | M20x8 | 240 | 23x8 | 170 |
| 150-500 | 150 | 150 | 126 | 782 | 908 | 425 | 600 | 250 | 200 | 720 | 600 | 435 | 28 | 140 | 20 | 562 | 55 | 110 | 59 | 16 | 200 | 240 | M20x8 | 240 | 23x8 | 580 |
| 200-315 | 200 | 200 | 165 | 707 | 872 | 355 | 450 | 250 | 200 | 600 | 500 | 360 | 24 | 110 | 14 | 543 | 48 | 110 | 51 | 12 | 250 | 295 | M20x8 | 295 | 23x8 | 315 |
| 200-400 | 200 | 200 | 142 | 757 | 899 | 380 | 530 | 250 | 200 | 600 | 500 | 360 | 24 | 140 | 20 | 536 | 55 | 110 | 59 | 16 | 250 | 295 | M20x8 | 295 | 23x8 | 370 |
| 200-500 | 150 | 200 | 126 | 968 | 1094 | 425 | 600 | 300 | 240 | 720 | 580 | 435 | 28 | 140 | 20 | 700 | 70 | 140 | 74,5 | 20 | 170 | 240 | M20x8 | 295 | 23x8 | 600 |
| 250-315 | 200 | 250 | 145 | 1003 | 1148 | 335 | 475 | 300 | 230 | 680 | 540 | 400 | 27 | 140 | 20 | 730 | 70 | 140 | 74,5 | 20 | 265 | 295 | M20x12 | 350 | 23x12 | 430 |
| 300-400 | 300 | 300 | 201 | 974 | 1175 | 400 | 560 | 300 | 240 | 720 | 600 | 435 | 27 | 140 | 20 | 730 | 75 | 140 | 79,5 | 20 | 285 | 400 | M20x12 | 400 | 23x12 | 675 |
| 300-500 | 300 | 300 | 201 | 974 | 1175 | 450 | 600 | 300 | 230 | 800 | 660 | 520 | 27 | 140 | 20 | 700 | 75 | 140 | 79,5 | 20 | 300 | 400 | M20x12 | 400 | 23x12 | 750 |

(*) Dimensions may differ according to bearing housing type (normal, heavy duty etc). We have rights to make change with the dimensions.
(**) Gap necessary for the withdrawal of the pump rotor from the driven end without the need for disconnecting the motor and pipework (spacer coupling application).

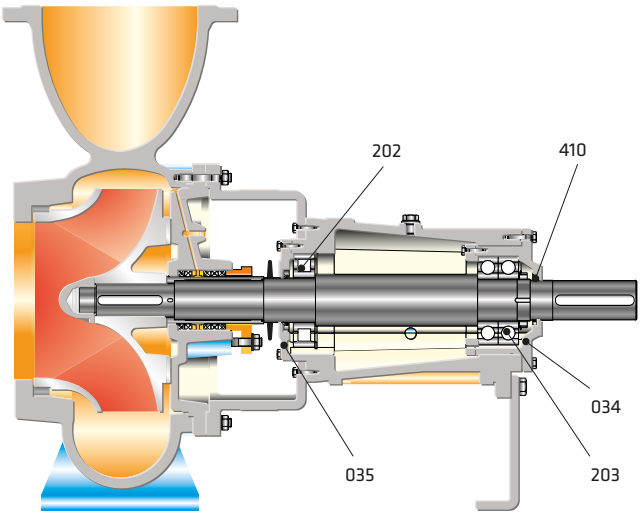
## Horizontal Installation (PC)



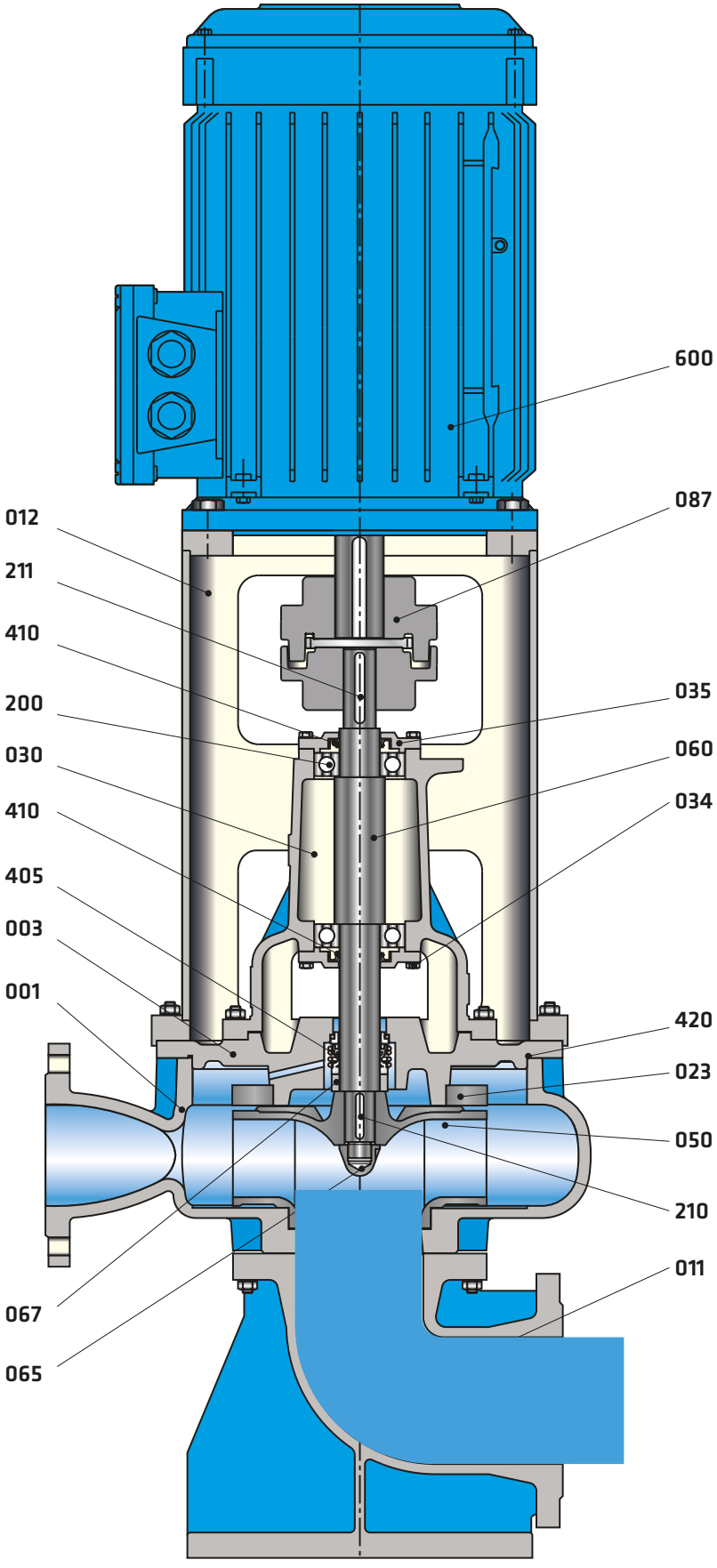

## Semi-Open Impeller Application




## Heavy Duty Type Bearing Application



Vertical Installation (PC-VM)




## Part List

| | |
|---|---|
| 001 | Volute Casing |
| 003 | Casing Cover |
| 011 | Elbow Foot |
| 012 | Motor Pedestal |
| 022 | Front Wear Plate |
| 023 | Back Wear Plate |
| 030 | Bearing Housing |
| 034 | Bearing Cover |
| 035 | Bearing Cover |
| 042 | Gland |
| 044 | Lantern Ring |
| 050 | Impeller |
| 051 | Semi-open Impeller |
| 060 | Pump Shaft |
| 065 | Impeller Nut |
| 067 | Spacer Sleeve |
| 087 | Flexible Coupling |
| 200 | Ball Bearing |
| 202 | Roller Bearing |
| 203 | Angular Contact Ball Bearing |
| 210 | Impeller Key |
| 211 | Coupling Key |
| 232 | Oil Filling Plug |
| 400 | Soft Packing |
| 405 | Mechanical Seal |
| 410 | Lip Seal |
| 420 | O-Ring |
| 600 | Electric Motor |

## Technical Data

| PART LIST | 0.6025 | 0.7040 | 0.7043 | 1.0619 | 1.4308 | 1.4309 | 1.4408 | 1.4409 | 1.4500 | 1.4517 | 1.4469 | 1.4317 | 1.4008 | 2.1050.01 | 2.0975.01 | 2.1096.01 | 1.0503 | 1.4021 | 1.4021+QT | 1.4301 | 1.4404 | 1.4460 | 1.4462 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volute Casing | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | |
| Casing Cover | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | |
| Impeller | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | ○ | |
| Shaft | | | | | | | | | | | | | | | | | ● | ○ | ○ | ○ | ○ | | ○ |
| Bearing Housing | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | |
| Front Wear Plate | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | |
| Back Wear Plate | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | |
| Spacer Sleeve | | | | | | | | | | | | | | | | | ● | ○ | ○ | ○ | ○ | | ○ |
| Mechanical Seal (*) | EN 12756 | | | | | | | | | | | | | | | | | | | | | | |

(*) Optional :Depending on customer requirement or request different types and brands of mechanical seals are applicable.

● Standard manufacturing
○ Optional

## Material Equivalents

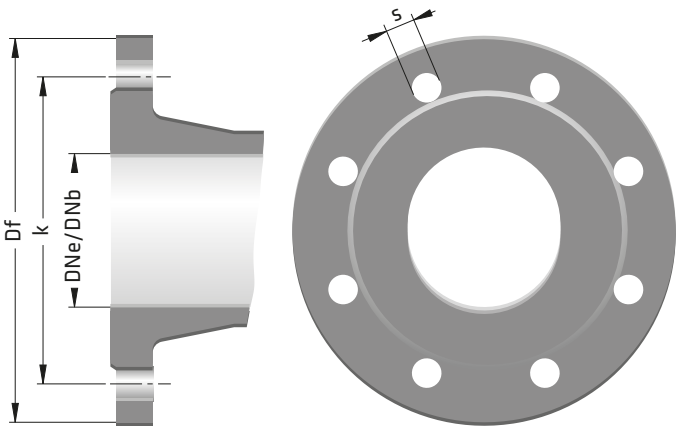
| Description | DIN / EN | | AISI / SAE / ASTM |
|---|---|---|---|
| Cast Iron | 0.6025 | EN-GJL-250 (GG25) | A48 Class 40B |
| Nodular Cast Iron | 0.7040 | EN-GJS-400-15 (GGG40) | A536 60-40-18 |
| Nodular Cast Iron | 0.7043 | EN-GJS-400-18-LT (GGG40.3) | A536 60-40-18 |
| Cast Steel | 1.0619 | GP240GHGS-C25 | A216 WCB |
| Chrome Nickel Cast Steel | 1.4308 | GX5CrNi19-10 | A351 CF8 |
| Chrome Nickel Cast Steel (low carbon) | 1.4309 | GX2CrNi19-11 | A351 CF3 |
| Chrome Nickel Molybdenum Cast Steel | 1.4408 | GX5CrNiMo19-11-2 | A351 CF8M |
| Chrome Nickel Molybdenum Cast Steel (low carbon) | 1.4409 | GX2CrNiMo19-11-2 | A351 CF3M |
| Austenitic Cast Steel | 1.4500 | GX7NiCrMoCuNb25-20 | A351 CN7M |
| Austenitic - Ferritic Cast Steel (duplex) | 1.4517 | GX2CrNiMoCuN25-6-3-3 | A890 CD4MCuN |
| Austenitic - Ferritic Cast Steel (super duplex) | 1.4469 | GX2CrNiMoN26-7-4 | A890 CE3MN |
| Martenzitic Stainless Cast Steel | 1.4317 | GX4CrNi13-4 | A352 CA6NM |
| Martenzitic Stainless Cast Steel | 1.4008 | GX7CrNiMo12-1 | A217 CA15 |
| Cast Bronze (tin alloy) | 2.1050.01 | G-CuSn10 | B427 C90700 |
| Cast Bronze (nickel alloy) | 2.0975.01 | G-CuAl10Ni | B148 C95500 |
| Cast Bronze (leaded) | 2.1096.01 | G-CuSn5ZnPb | B584 C83600 |
| Carbon Steel | 1.0503 | C45 | AISI 1045 |
| Chrome Steel | 1.4021 | X20Cr13 | A276 Type 420 |
| Chrome Steel (heat treated) | 1.4021 | X20Cr13 | A276 Type 420+QT |
| Chrome Nickel Steel | 1.4301 | X5CrNi18-10 | A276 Type 304 |
| Chrome Nickel Steel (low carbon) | 1.4404 | X2CrNiMo17-12-2 | A276 Type 316L |
| Duplex (austenitic-ferritic) Steel | 1.4460 | X3CrNiMoN27-5-2 | AISI 329 |
| Duplex (austenitic-ferritic) Steel | 1.4462 | X2CrNiMoN22-5-3 | UNS S32205 |

## Flange Dimensions

EN 1092 - 2

| DNe/DNb | Suction & Discharge (PN 10) | | | |
|---|---|---|---|---|
| | Df | k | s | n |
| 40 | 150 | 110 | 19 | 4 |
| 50 | 165 | 125 | 19 | 4 |
| 65 | 185 | 145 | 19 | 4 |
| 80 | 200 | 160 | 19 | 8 |
| 100 | 220 | 180 | 19 | 8 |
| 125 | 250 | 210 | 19 | 8 |
| 150 | 285 | 240 | 23 | 8 |
| 200 | 340 | 295 | 23 | 8 |
| 250 | 395 | 350 | 23 | 12 |
| 300 | 445 | 400 | 23 | 12 |

" n " number of holes



Standart

Pump • Fire Fighting Units • Booster Set

# PC - V

## WASTE WATER AND PROCESS PUMPS (SUMP DESIGN)

PC-V Rev.11 09.2021

## Handled Liquids

Domestic and industrial waste water, raw sewage, viscous and corrosive liquids, liquids with fibrous and solid substances.

## Technical Data

Discharge Flange_____DN 40....DN 300 mm

Capacity_____up to 1600 $m^3/h$

Head_____up to 95 m

Speed_____up to 1450 rpm

Design Temperature_____up to +95 °C

Casing Pressure (Pmax)_____10 bar

## Design Features

•Vertical, wide volute casing, single stage, end suction, centrifugal pumps with enclosed, semi-open or vortex type impeller.

•Up to 4 m. column length.

•Discharge pipe is extended up to base plate for easy installation.

•Closed, semi-open or free vortex type impeller design.

•Discharge flanges conform to EN 1092-2 / PN 10. (EN 1092-1 / PN 10 for steel or stainless steel casing)

•All impellers are dynamically or statically balanced according to ISO 1940 Class 6.3.

•Axial thrust is balanced by impeller back ribs.

•Direction of rotation is clockwise viewed from drive end.

•Bearings of PC-V type pumps are grease lubricated. Bottom and internal sleeve bearings are lubricated by the pumping liquid. (different lubrication systems can be applied for the sleeve bearings in case of request or requirement. Contact for detailed information)

## Shaft Sealing

•No sealing is required.

## Pump Designation

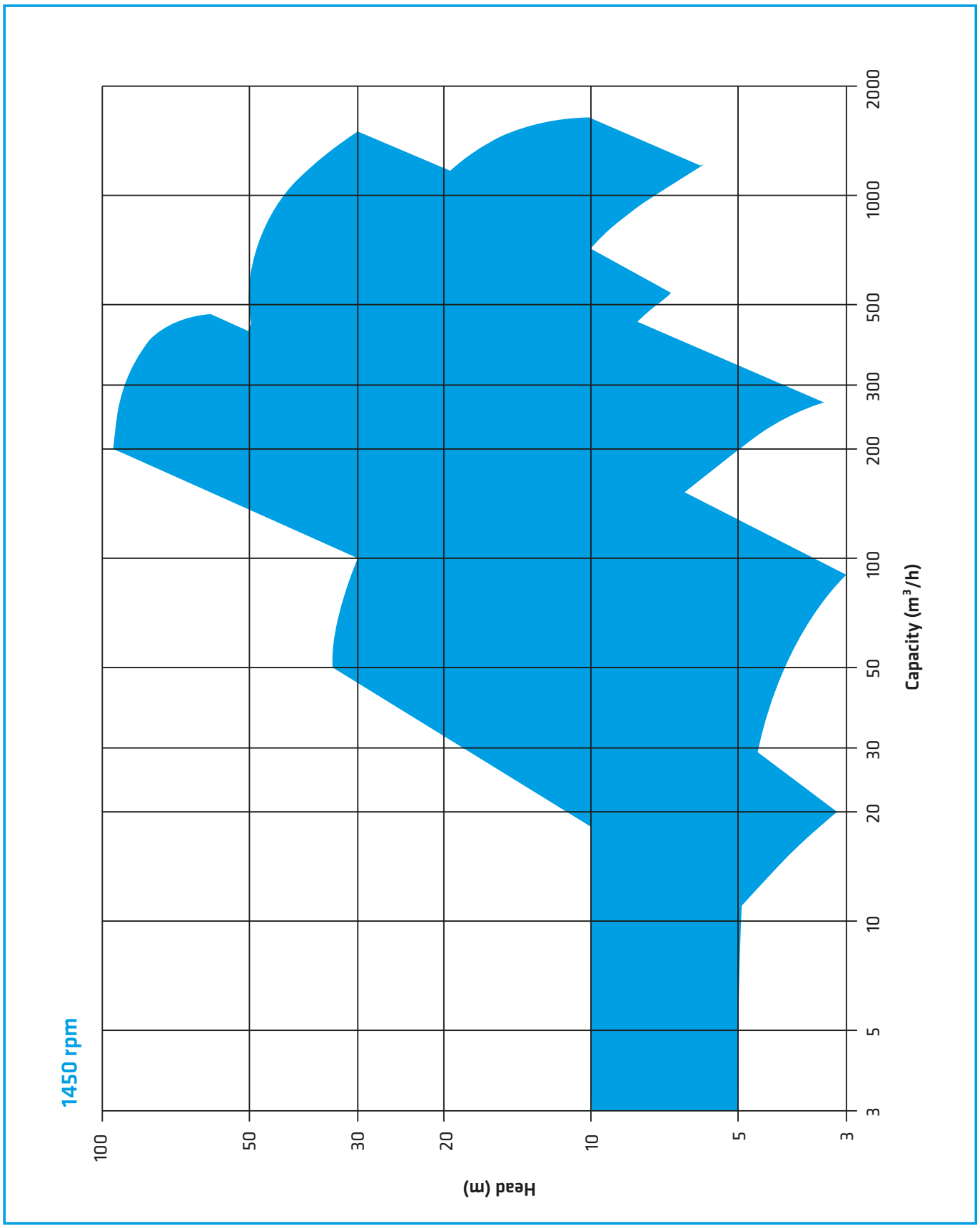
PC-V 250 - 315 AB

**Pump Type**

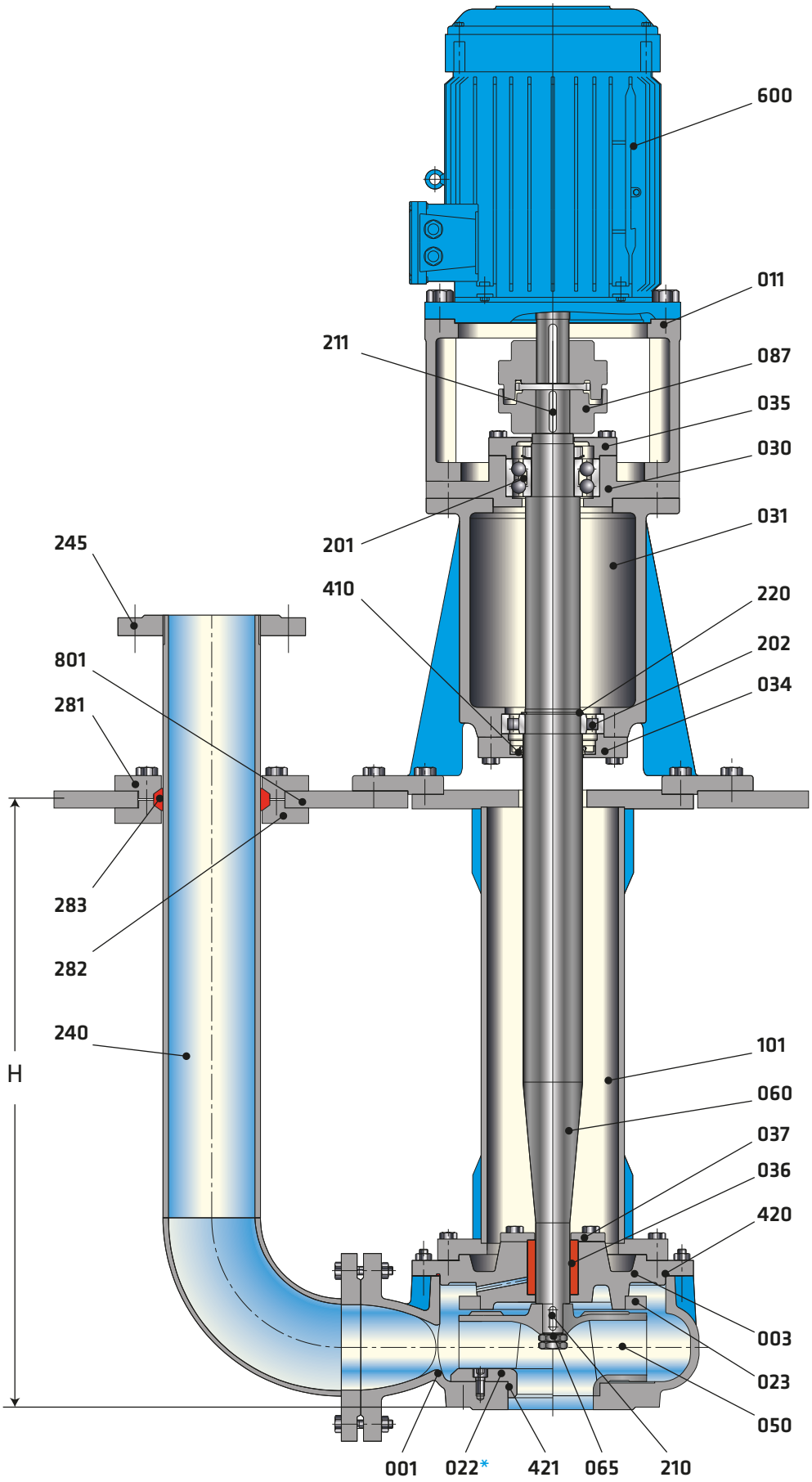
**Discharge Nozzle (DN-mm)**

**Nominal Impeller Diameter (mm)**

**Impeller Type**


1450 rpm
Head (m)
100
50
30
20
10
5
3
Capacity (m³/h)
3
5
10
20
30
50
100
200
300
500
1000
2000

## Sectional Drawings (up to “H” 1.5 m column height)




## Part List

| | |
|---|---|
| 001 | Volute Casing |
| 003 | Casing Cover |
| 011 | Motor Pedestal |
| 023 | Back Wear Plate |
| *022 | Front Wear Ring |
| 030 | Bearing Housing (top) |
| 031 | Bearing Housing (bottom) |
| 034 | Bearing Cover (bottom) |
| 035 | Bearing Cover (top) |
| 036 | Sleeve Bearing |
| 037 | Sleeve Bearing Cover |
| 050 | Impeller |
| 060 | Shaft |
| 065 | Impeller Nut |
| 087 | Flexible Coupling |
| 101 | Column Pipe |
| 201 | Double Row Ball Bearing |
| 202 | Cylindrical Roller Bearing |
| 210 | Impeller Key |
| 211 | Coupling Key |
| 220 | Circlip |
| 240 | Discharge Pipe |
| 245 | Discharge Flange |
| 281 | Top Fixing Flange |
| 282 | Bottom Fixing Flange |
| 283 | Rubber Gasket |
| 410 | Oil Seal |
| 420 | O-Ring |
| 421 | O-Ring |
| 600 | Electric Motor |
| 801 | Base Plate |

( * ) Optional

## Technical Data

| PART LIST | 0.6025 | 0.7040 | 1.0619 | 1.4308 | 1.4309 | 1.4408 | 1.4409 | 1.4500 | 1.4517 | 1.4469 | 1.4317 | 1.4008 | 2.1050.01 | 2.0975.01 | 2.1096.01 | 1.0037 | 1.0503 | 1.4021 | 1.4021+QT | 1.4301 | 1.4404 | 1.4460 | 1.4462 | Tungsten Carbide |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volute Casing | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | |
| Casing Cover | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | |
| Impeller | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | ○ | | |
| Shaft | | | | | | | | | | | | | | | | | ● | ○ | ○ | ○ | ○ | | ○ | |
| Bearing Housing | ● | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | | |
| Column Pipe | | | | | | | | | | | | | | | | ● | | | | ○ | ○ | | | |
| Front Wear Plate | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | |
| Back Wear Plate | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | |
| Sleeve Bearing | | | | | | | | | | | | | ● | | | | | | | | | | | ○ |

● Standard manufacturing
○ Optional

## Material Equivalents

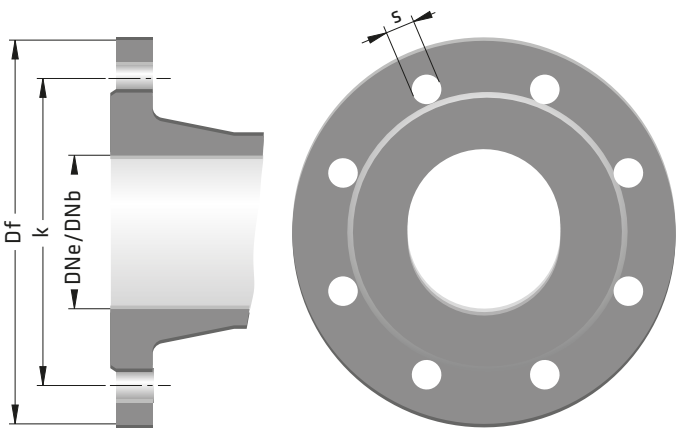
| Description | DIN / EN | | AISI / SAE / ASTM |
|---|---|---|---|
| Cast Iron | 0.6025 | EN-GJL-250 (GG25) | A48 Class 40B |
| Nodular Cast Iron | 0.7040 | EN-GJS-400-15 (GGG40) | A536 60-40-18 |
| Nodular Cast Iron | 0.7043 | EN-GJS-400-18-LT (GGG40.3) | A536 60-40-18 |
| Cast Steel | 1.0619 | GP240GHGS-C25 | A216 WCB |
| Chrome Nickel Cast Steel | 1.4308 | GX5CrNi19-10 | A351 CF8 |
| Chrome Nickel Cast Steel (low carbon) | 1.4309 | GX2CrNi19-11 | A351 CF3 |
| Chrome Nickel Molybdenum Cast Steel | 1.4408 | GX5CrNiMo19-11-2 | A351 CF8M |
| Chrome Nickel Molybdenum Cast Steel (low carbon) | 1.4409 | GX2CrNiMo19-11-2 | A351 CF3M |
| Austenitic Cast Steel | 1.4500 | GX7NiCrMoCuNb25-20 | A351 CN7M |
| Austenitic - Ferritic Cast Steel (duplex) | 1.4517 | GX2CrNiMoCuN25-6-3-3 | A890 CD4MCuN |
| Austenitic - Ferritic Cast Steel (super duplex) | 1.4469 | GX2CrNiMoN26-7-4 | A890 CE3MN |
| Martenzitic Stainless Cast Steel | 1.4317 | GX4CrNi13-4 | A352 CA6NM |
| Martenzitic Stainless Cast Steel | 1.4008 | GX7CrNiMo12-1 | A217 CA15 |
| Cast Bronze (tin alloy) | 2.1050.01 | G-CuSn10 | B427 C90700 |
| Cast Bronze (nickel alloy) | 2.0975.01 | G-CuAl10Ni | B148 C95500 |
| Cast Bronze (leaded) | 2.1096.01 | G-CuSn5ZnPb | B584 C83600 |
| Steel | 1.0037 | St37 | A 29 1015 |
| Carbon Steel | 1.0503 | C45 | AISI 1045 |
| Chrome Steel | 1.4021 | X20Cr13 | A276 Type 420 |
| Chrome Steel (heat treated) | 1.4021 | X20Cr13 | A276 Type 420+QT |
| Chrome Nickel Steel | 1.4301 | X5CrNi18-10 | A276 Type 304 |
| Chrome Nickel Steel (low carbon) | 1.4404 | X2CrNiMo17-12-2 | A276 Type 316L |
| Duplex (austenitic-ferritic) Steel | 1.4460 | X3CrNiMoN27-5-2 | AISI 329 |
| Duplex (austenitic-ferritic) Steel | 1.4462 | X2CrNiMoN22-5-3 | UNS S32205 |

## Flange Dimensions

EN 1092 - 2

| DNe/DNb | Suction & Discharge (PN 10) | | | |
|---|---|---|---|---|
| | Df | k | s | n |
| 40 | 150 | 110 | 19 | 4 |
| 50 | 165 | 125 | 19 | 4 |
| 65 | 185 | 145 | 19 | 4 |
| 80 | 200 | 160 | 19 | 8 |
| 100 | 220 | 180 | 19 | 8 |
| 125 | 250 | 210 | 19 | 8 |
| 150 | 285 | 240 | 23 | 8 |
| 200 | 340 | 295 | 23 | 8 |
| 250 | 395 | 350 | 23 | 12 |
| 300 | 445 | 400 | 23 | 12 |

" n " number of holes



Standart

Pump • Fire Fighting Units • Booster Set

# SKM-EVK

## PROCESS PUMPS (SUMP DESIGN)

SKM-EVK Rev.11 09.2021

## Handled Liquids

Clean or normal contaminated low or medium viscosity liquids without solid & fibrous particles.

## Technical Data

Discharge Flange_____DN 32....DN 150 mm

Capacity_____up to 400 $m^3/h$

Head_____up to 220 m

Speed_____up to 1450 rpm

Design Temperature_____up to +95 °C

Casing Pressure (Pmax)_____30 bar

## Design Features

•Vertical ring section, multistage, centrifugal pumps with closed impellers and diffusers.

•Up to 4 m. column length.

•Suction nozzle flanges conform to EN 1092 - 2 / PN 16 and discharge nozzle flanges conform to EN 1092 - 2 / PN 40 (PN 63) (For steel or stainless steel casing pumps, flanges comform to related pressure class ratings defined in EN 1092 - 1)

•All impellers are balanced dynamically or statically according to ISO 1940 class 6.3.

•Axial thrust is balanced by impeller balancing holes system.

•Direction of rotation is counter clockwise viewed from driver.

•Bearings of SKM-EVK type pumps are grease lubricated. Bottom and internal sleeve bearings are lubricated by the pumping liquid. (different lubrication systems can be applied for the sleeve bearings in case of request or requirement. Contact for detailed information)

## Shaft Sealing

•In standard production soft packed stuffing boxes are used.

•Depending on customer request, mechanical seals are available. In this case, pump shaft is always stainless steel.

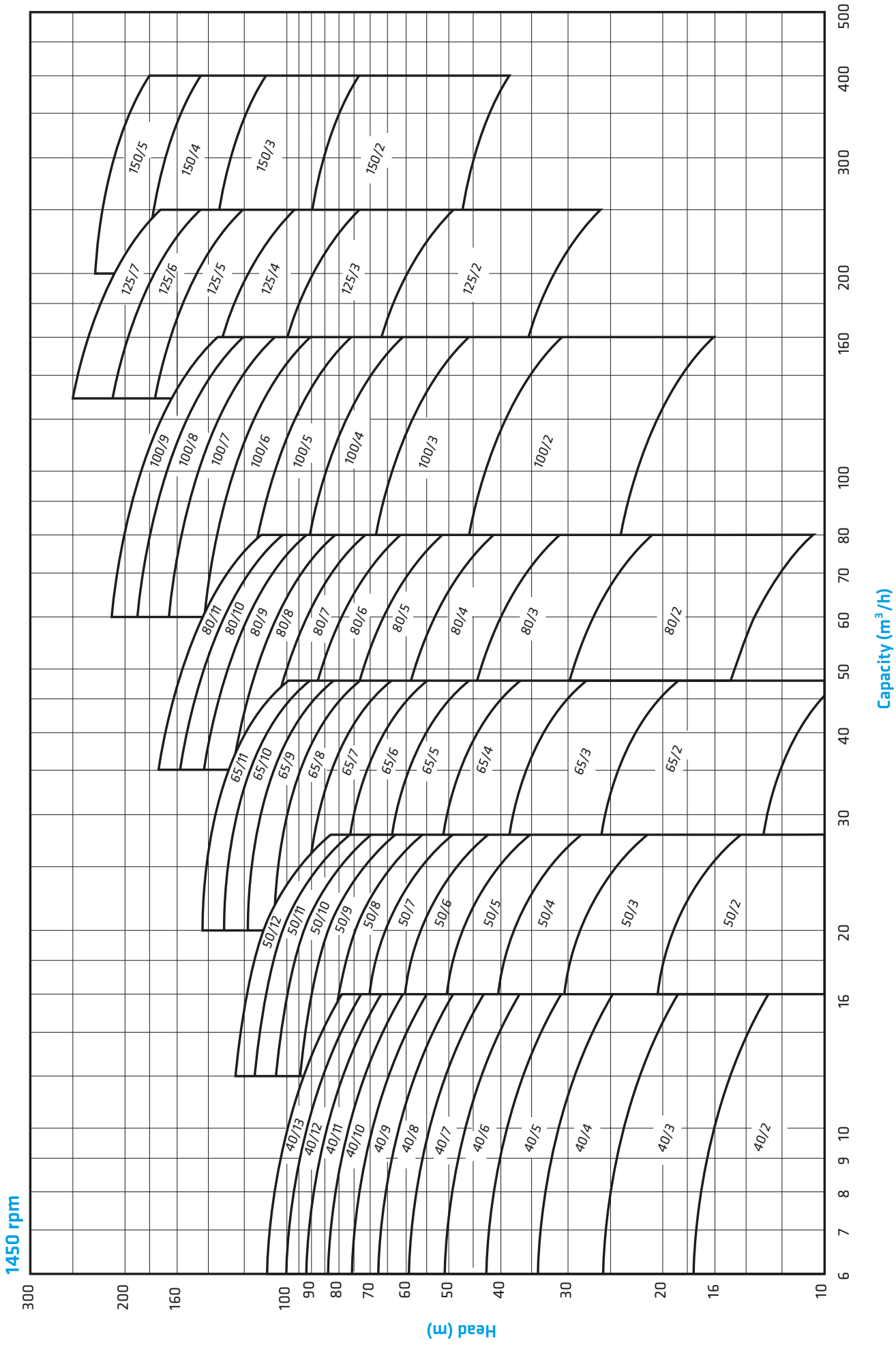
## Pump Designation

**SKM-EVK 40 / 3**

**Pump Type**

**Discharge Nozzle (DN-mm)**

**Nominal Impeller Diameter (mm)**


1450 rpm
Head (m)
Capacity (m³/h)
300
200
160
100
90
80
70
60
50
40
30
20
16
10
6
7
8
9
10
16
20
30
40
50
60
70
80
100
160
200
300
400
500
150/5
150/4
150/3
150/2
125/7
125/6
125/5
125/4
125/3
125/2
100/9
100/8
100/7
100/6
100/5
100/4
100/3
100/2
80/11
80/10
80/9
80/8
80/7
80/6
80/5
80/4
80/3
80/2
65/11
65/10
65/9
65/8
65/7
65/6
65/5
65/4
65/3
65/2
50/12
50/11
50/10
50/9
50/8
50/7
50/6
50/5
50/4
50/3
50/2
40/13
40/12
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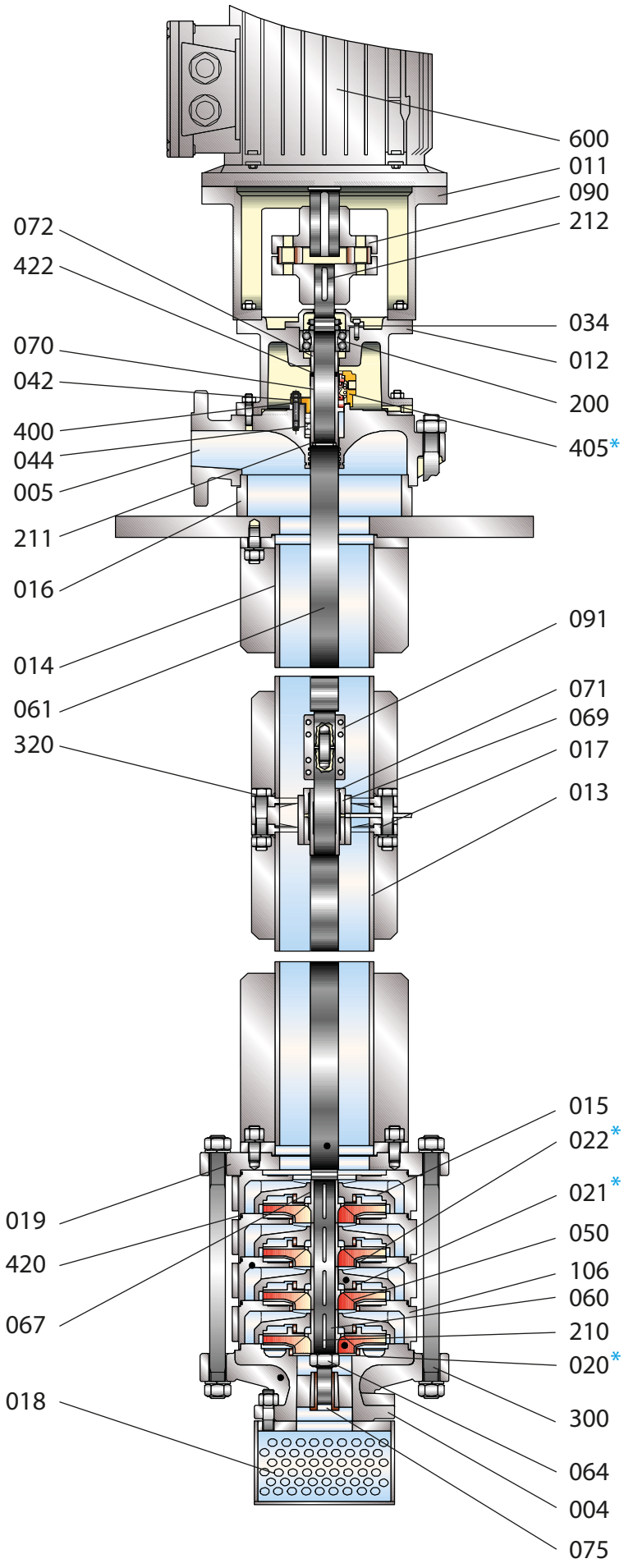
40/6
40/5
40/4
40/3
40/2

## Sectional Drawings




## Part List

| | |
|---|---|
| 004 | Suction Casing |
| 005 | Discharge Casing |
| 011 | Motor Pedestal |
| 012 | Bearing Housing |
| 013 | Column Pipe (Bottom) |
| 014 | Column Pipe (Up) |
| 015 | Diffuser |
| 016 | Base Plate |
| 017 | Intermediate Bearing Housing |
| 018 | Filter |
| 019 | Casing Flange |
| *020 | Wear Ring (Suction Casing) |
| *021 | Wear Ring (diffuser) |
| *022 | Wear Ring (Stage) |
| 034 | Bearing Housing Cover |
| 042 | Gland |
| 044 | Lantern Ring |
| 050 | Impeller |
| 060 | Shaft (Bottom) |
| 061 | Shaft (Up) |
| 064 | Impeller Nut |
| 067 | Interstage Sleeve |
| 069 | Intermediate Sleeve Bearing |
| 070 | Shaft Protecting Sleeve |
| 071 | Intermediate Bearing Sleeve |
| 072 | Spacer Sleeve |
| 075 | Bottom Sleeve Bearing |
| 090 | Flexible Coupling |
| 091 | Rigid Coupling |
| 106 | Stage Casing |
| 200 | Bearing |
| 210 | Impeller Key |
| 211 | Sleeve Key |
| 212 | Coupling Key |
| 300 | Stud |
| 320 | Screw |
| 400 | Soft Packing |
| *405 | Mechanical Seal |
| 420 | O-ring |
| 422 | O-ring |
| 600 | Electrical Motor |

(*) Optional

## Technical Data

| Part List | 0.6025 | 0.7040 | 1.0619 | 1.4308 | 1.4309 | 1.4408 | 1.4409 | 1.4500 | 1.4517 | 1.4469 | 1.4317 | 1.4008 | 2.1050.01 | 2.0975.01 | 2.1096.01 | 1.0037 | 1.0503 | 1.4021 | 1.4021+QT | 1.4301 | 1.4404 | 1.4460 | 1.4462 | Tungsten Carbide |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Suction Casing | ● | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | |
| Dischage Casing | ● | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | |
| Stage Casing | ● | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | |
| Diffuser | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | |
| Impeller | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | ○ | | |
| Shaft | | | | | | | | | | | | | | | | | ● | ○ | ○ | ○ | ○ | | ○ | |
| Bearing Housing | ● | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | | |
| Wear Ring | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | |
| Spacer Sleeve | | | | | | | | | | | | | | | | | ● | ○ | ○ | ○ | ○ | | ○ | |
| Shaft Protecting Sleeve | | | | | | | | | | | | | | | | | ● | ○ | ○ | ○ | ○ | | ○ | |
| Interstage Sleeve | | | | | | | | | | | | | | | | | ● | ○ | ○ | ○ | ○ | | ○ | |
| Sleeve Bearing | | | | | | | | | | | | | ● | | | | | | | | | | | ○ |
| Column Pipe | | | | | | | | | | | | | | | | ● | | | | ○ | ○ | | | |
| Mechanical Seal (*) | EN 12756 | | | | | | | | | | | | | | | | | | | | | | | |

● Standard manufacturing
○ Optional

## Material Equivalents

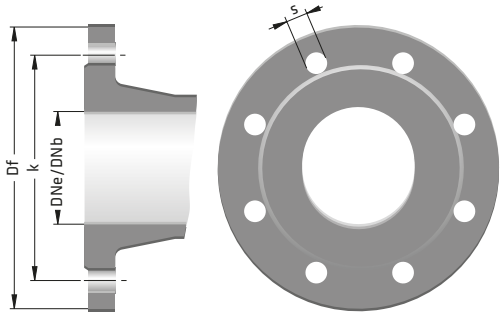
| Description | DIN / EN | | AISI / SAE / ASTM |
|---|---|---|---|
| Cast Iron | 0.6025 | EN-GJL-250 (GG25) | A48 Class 40B |
| Nodular Cast Iron | 0.7040 | EN-GJS-400-15 (GGG40) | A536 60-40-18 |
| Nodular Cast Iron | 0.7043 | EN-GJS-400-18-LT (GGG40.3) | A536 60-40-18 |
| Cast Steel | 1.0619 | GP240GHGS-C25 | A216 WCB |
| Chrome Nickel Cast Steel | 1.4308 | GX5CrNi19-10 | A351 CF8 |
| Chrome Nickel Cast Steel (low carbon) | 1.4309 | GX2CrNi19-11 | A351 CF3 |
| Chrome Nickel Molybdenum Cast Steel | 1.4408 | GX5CrNiMo19-11-2 | A351 CF8M |
| Chrome Nickel Molybdenum Cast Steel (low carbon) | 1.4409 | GX2CrNiMo19-11-2 | A351 CF3M |
| Austenitic Cast Steel | 1.4500 | GX7NiCrMoCuNb25-20 | A351 CN7M |
| Austenitic - Ferritic Cast Steel (duplex) | 1.4517 | GX2CrNiMoCuN25-6-3-3 | A890 CD4MCuN |
| Austenitic - Ferritic Cast Steel (super duplex) | 1.4469 | GX2CrNiMoN26-7-4 | A890 CE3MN |
| Martenzitic Stainless Cast Steel | 1.4317 | GX4CrNi13-4 | A352 CA6NM |
| Martenzitic Stainless Cast Steel | 1.4008 | GX7CrNiMo12-1 | A217 CA15 |
| Cast Bronze (tin alloy) | 2.1050.01 | G-CuSn10 | B427 C90700 |
| Cast Bronze (nickel alloy) | 2.0975.01 | G-CuAl10Ni | B148 C95500 |
| Cast Bronze (leaded) | 2.1096.01 | G-CuSn5ZnPb | B584 C83600 |
| Carbon Steel | 1.0503 | C45 | AISI 1045 |
| Chrome Steel | 1.4021 | X20Cr13 | A276 Type 420 |
| Chrome Steel (heat treated) | 1.4021 | X20Cr13 | A276 Type 420+QT |
| Chrome Nickel Steel | 1.4301 | X5CrNi18-10 | A276 Type 304 |
| Chrome Nickel Steel (low carbon) | 1.4404 | X2CrNiMo17-12-2 | A276 Type 316L |
| Duplex (austenitic-ferritic) Steel | 1.4460 | X3CrNiMoN27-5-2 | AISI 329 |
| Duplex (austenitic-ferritic) Steel | 1.4462 | X2CrNiMoN22-5-3 | UNS S32205 |

## Flange Dimensions

TS EN 1092 - 2

| DNe/DNb | Suction & Discharge (PN 16) | | | | Suction & Discharge (PN 40) | | | |
|---|---|---|---|---|---|---|---|---|
| | Df | k | s | n | Df | k | s | n |
| 40 | 150 | 110 | 19 | 4 | 150 | 110 | 19 | 4 |
| 50 | 165 | 125 | 19 | 4 | 165 | 125 | 19 | 4 |
| 65 | 185 | 145 | 19 | 4 | 185 | 145 | 19 | 8 |
| 80 | 200 | 160 | 19 | 8 | 200 | 160 | 19 | 8 |
| 100 | 220 | 180 | 19 | 8 | 235 | 190 | 23 | 8 |
| 125 | 250 | 210 | 19 | 8 | 270 | 220 | 28 | 8 |
| 150 | 285 | 240 | 23 | 8 | 300 | 250 | 28 | 8 |
| 200 | 340 | 295 | 23 | 12 | 375 | 320 | 31 | 12 |

" n " number of holes



Standart

Pump • Fire Fighting Units • Booster Set

# SMV

## Vertical Shaft Turbine Pump

SMV Rev.11 09.2021

## Handled Liquids

Clean or contaminated lake waters, rivers, dam waters, untreated industrial waters and liquids with fibrous and solid substances.

## Technical Data

Discharge Flange_____up to 1000 mm

Capacity_____up to 8000 $m^3/h$

Head _____up to 250 m

Speed_____up to 1450 rpm

Operating Temperature_____up to + 80 °C

## Design Features

•Single or multi stage mixed flow pumps.

•It usually consists of group of stages, columns and discharge caps.

•Flow capacity is between 300 – 8000 $m^3/h$ and head is up to 250m. Custom manufacturing is needed for larger capacities.

•They are usually mounted vertically.

•There are no suction problems at first motion since stages are in contact with fluid.

•High efficiency and low operating costs.

•Mounting and demounting are easier with flanged column pipes.

•Enclosed or semi-open impeller is used.

## Pump Designation

SMV 16 B - 3

**Pump Type**

**External Diameter of Stage**

**Impeller Type**

**Number of Stages**

•It can be lubricated with handled liquids or grease. It also can be lubricated with clean water or oils by customer request.

•Discharge head can be placed above ground or underground.

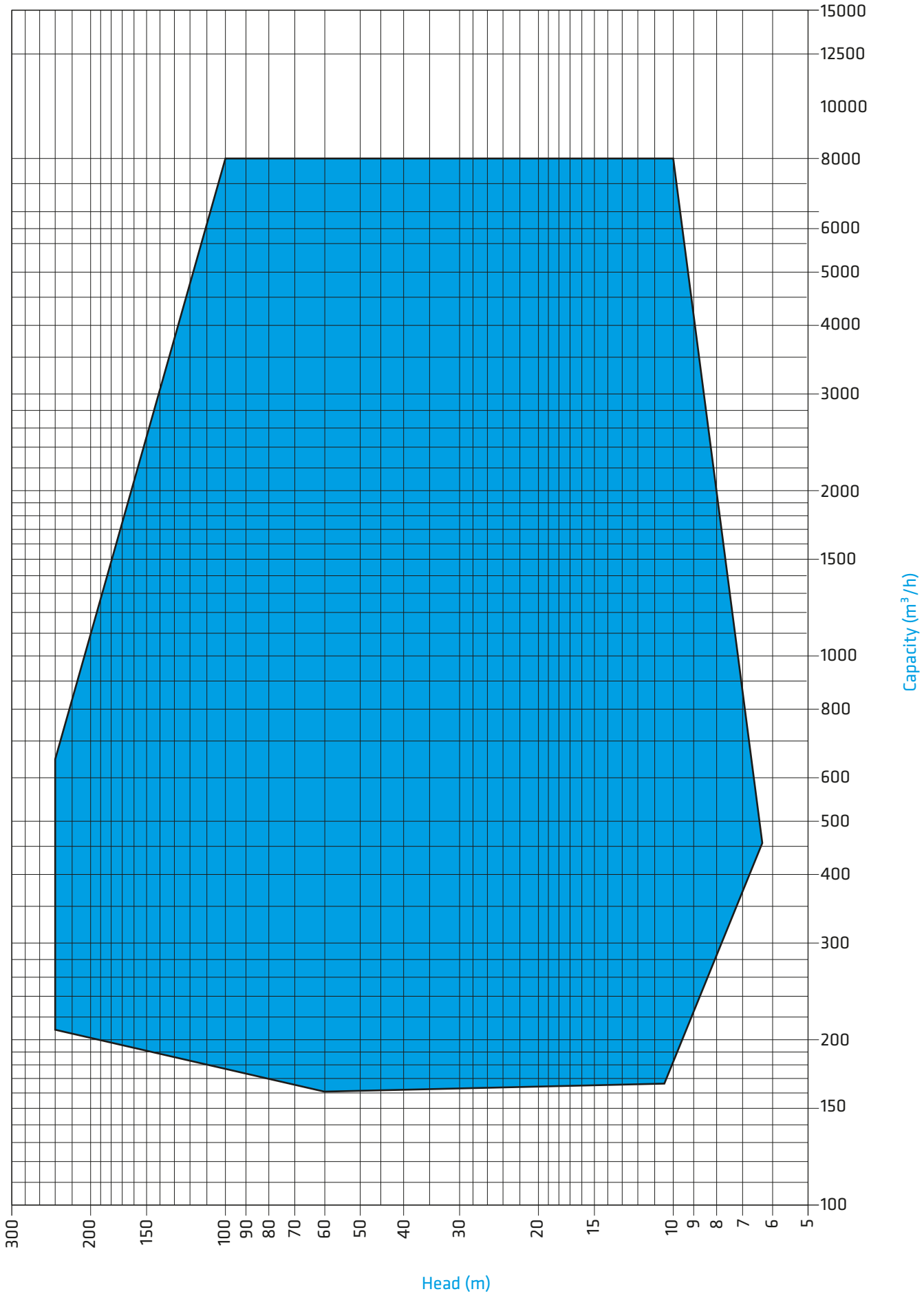
•VHS or V1 electric motor can be used.

•Bronze or rubber intermediate bearing can be selected.

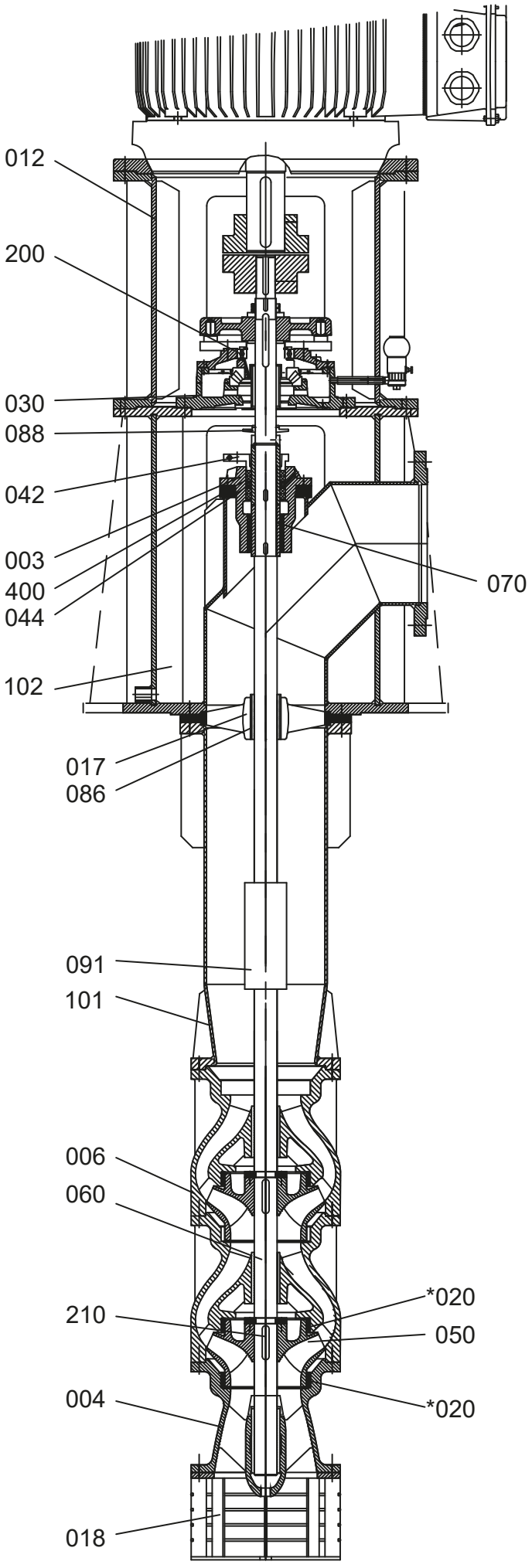
## Shaft Sealing

•Depending on type of the fluid and operating conditions, soft seal, single, double or cartridge type mechanical seal is used.

## Field Chart


15000
12500
10000
8000
6000
5000
4000
3000
2000
1500
1000
800
600
500
400
300
200
150
100
Capacity (m³/h)
300
200
150
100
90
80
70
60
50
40
30
20
15
10
9
8
7
6
5
Head (m)

## Sectional Drawings

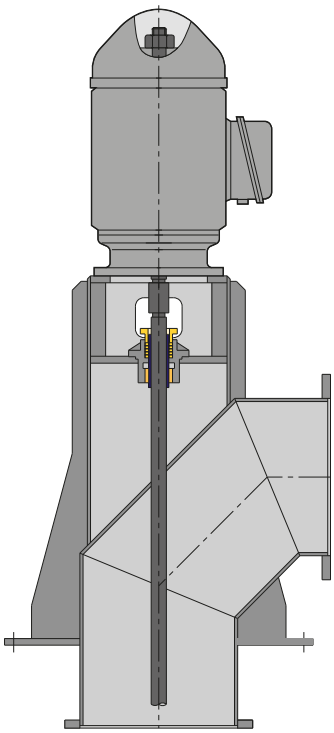



## Part List

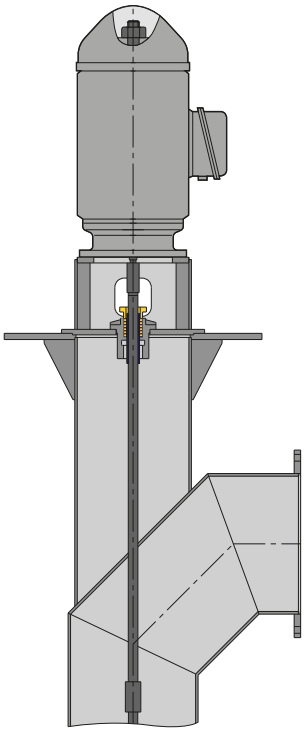
| | |
|---|---|
| 003 | Stuffing Box |
| 004 | Suction Bell |
| 006 | Stage |
| 012 | Motor Pedestal |
| 017 | Intermadiate Bearing Housing |
| 018 | Filter |
| 020 | Wear Ring |
| 030 | Thrust Bearing Housing |
| 042 | Gland |
| 044 | Lantern Ring |
| 050 | Impeller |
| 060 | Shaft |
| 070 | Shaft Sleeve |
| 086 | Intermadiate Bearing |
| 088 | Thrower |
| 091 | Coupling |
| 101 | Column Pipe |
| 102 | Discharge Head |
| 200 | Bearing |
| 210 | Key |
| 400 | Soft Packing |

## Sectional Drawings

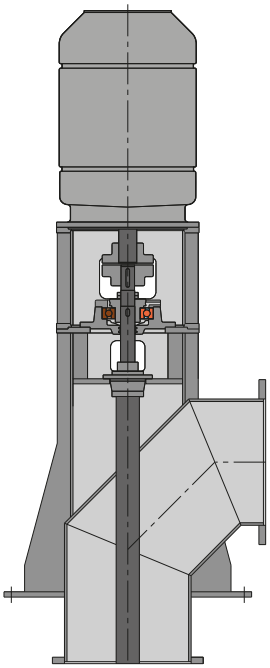
### Types of Discharge Head



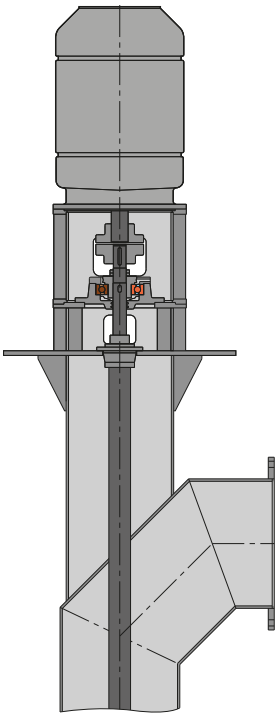
Above ground VHS electric motor



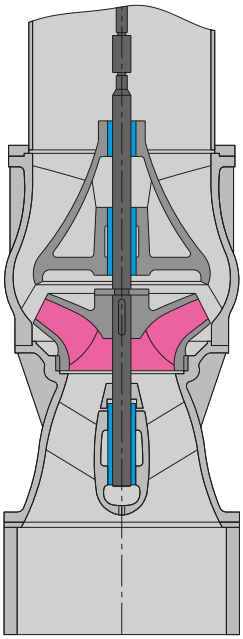
Underground VHS electric motor



Above Ground Thrust Bearing V1 electric motor

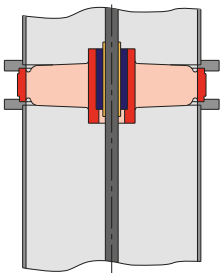


Underground Thrust Bearing V1 electric motor

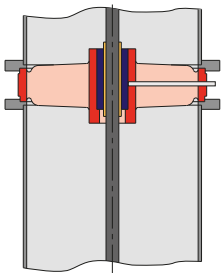


Stage group of mixed flow pump

### Column Bearing Housing



W/L Water Lubricated



G/L Grease Lubricated

Standart

Pump • Fire Fighting Units • Booster Set

# NMT

## WET ROTOR CIRCULATION PUMPS

ErP

NMT Rev.11 09.2021

## Handled Liquids

In use for pumping clean water or clean water & anti-freeze mixture liquids in heating systems. Water should be according to current quality standarts (such as VDI 2035). Liquid should not be contained with abrasive or explosive mixtures, mineral oil, solid or fibrous particles.

## Technical Data

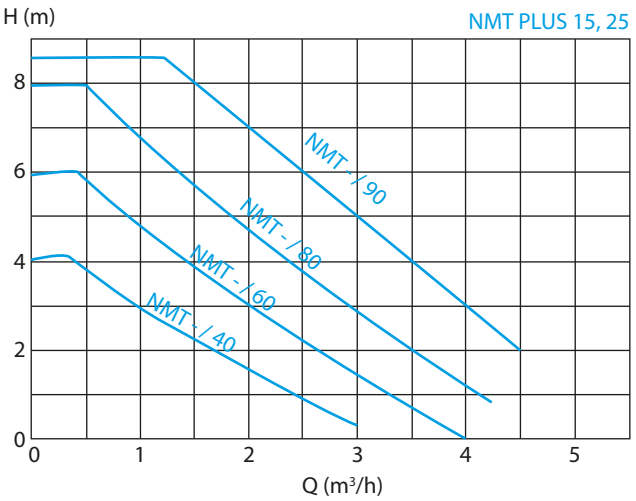
| | NMT PLUS NMTD PLUS | NMT SMART NMTD SMART | NMT SMART F NMTD SMART F | NMT MAX F NMTD MAX F | NMT LAN F NMTD LAN F |
|---|---|---|---|---|---|
| • Connection Dimension | 15-25-32 | 25-32 | 32-40-50 | 40-50 | 40-65-80-100 |
| • Connection type | Screwed | Screwed | Flange | Flange | Flange |
| • Maximum Capacity ($m^3/h$) | 5 | 11 | 11 | 37,5 | 78 |
| • Maximum Head (m) | 8 | 12 | 10 | 12 | 18 |
| • Pressure Class (PN) | 10 | 10 | 10 | 6 / 10 | 6 / 10 |
| • Maximum Power (W) | 55 | 180 | 180 | 560 | 1600 |
| • Voltage (V) | 1x230 | 1x230 | 1x230 | 1x230 | 1x230 |
| • Design Temperature (°C) | +5 / +95 | +2 / +110 | +2 / +110 | +2 / +110 | -10 / +110 |
| Material Information | | | | | |
| • Casing | Cast Iron | Cast Iron | Cast Iron | Cast Iron | Cast Iron |
| • Impeller | Polyamide | PES | PES | PES | S. Steel |
| • Shaft | Ceramic | S. Steel | S. Steel | S. Steel | S. Steel |
| • Bearing | Ceramic | Graphite | Graphite | Graphite | Graphite |
| • Rotor Can | S. Steel | S. Steel | S. Steel | S. Steel | S. Steel |

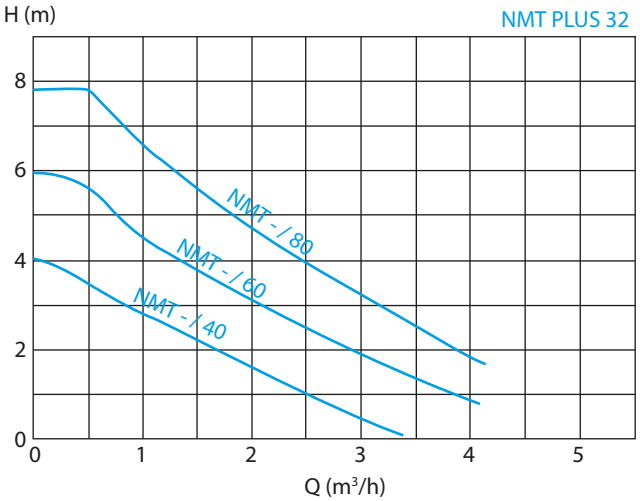
## Design Features

•NMT series pumps have variable speed design. Depending on request, they can be supplied as twin type.
• The bearings of the pumps are made of carbon and special hardened steel shaft prevents the wear of the bearings and ensures very quiet operation.
•Good choice for heating systems (Floor Heating – Radiator Heating – Air Conditioning Systems – Solar Systems)
•NMT series pumps, which reduce the electricity consumption to a minimum level, are produced with care as a complete engineering example in terms of efficiency and quality.
•All products (ISO 9001 - CE) are certified and manufactured in European (EU) standards.
•Designed to optimize your energy consumption with features such as variable pressure, constant pressure, constant speed and night mode.
•The full form of ERP regulation is "energy-related products". Purpose of 2009/125 / EC regulation is to reduce energy consumption according to environmental requirements. These environmental requirements are explained in 2013 for EU circulation pumps. From 2013 onwards, this regulation will be practically implemented in the following 2 steps within 7 years.

- The first phase; EEI max will be 0,23 from 01/08/2015 - Part 2
- The second phase; EEI max will be 0.23 from 01/01/2020 - Part 2 In this section will cover the replacement of pumps used in heating, ventilation and air conditioning systems.

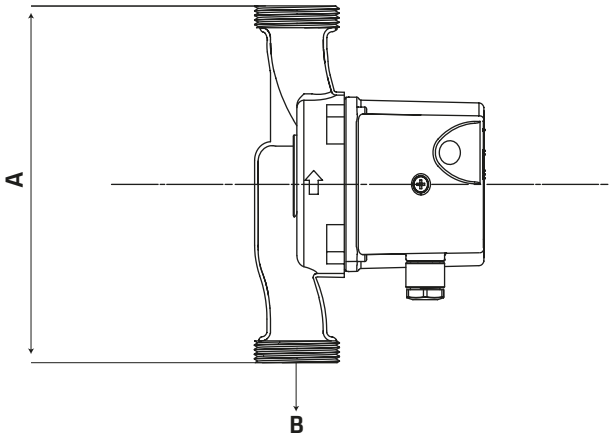
•Criteria for the best efficient circulators is EEI ≤ 0.20 - Part 2




| Pump Type | EEI | A (mm) | B | Pmax (w) |
|---|---|---|---|---|
| NMT PLUS 15/40-130 | 0,16 | 130 | Rp ½ | 20 |
| NMT PLUS 25/40-130 | 0,16 | 130 | Rp 1 | 20 |
| NMT PLUS 25/60-130 | 0,18 | 130 | Rp 1 | 35 |
| NMT PLUS 25/80-130 | 0,21 | 130 | Rp 1 | 55 |
| NMT PLUS 25/90-130 | 0,23 | 130 | Rp 1 | 100 |
| NMT PLUS 32/40-180 | 0,15 | 180 | Rp 1¼ | 20 |
| NMT PLUS 32/60-180 | 0,17 | 180 | Rp 1¼ | 35 |
| NMT PLUS 32/80-180 | 0,19 | 180 | Rp 1¼ | 55 |

| Pump Type | EEI | A (mm) | B | Pmax (w) |
|---|---|---|---|---|
| NMTD PLUS 25/60-180 | 0,17 | 180 | Rp 1 | 2x35 |
| NMTD PLUS 25/80-180 | 0,19 | 180 | Rp 1 | 2x55 |

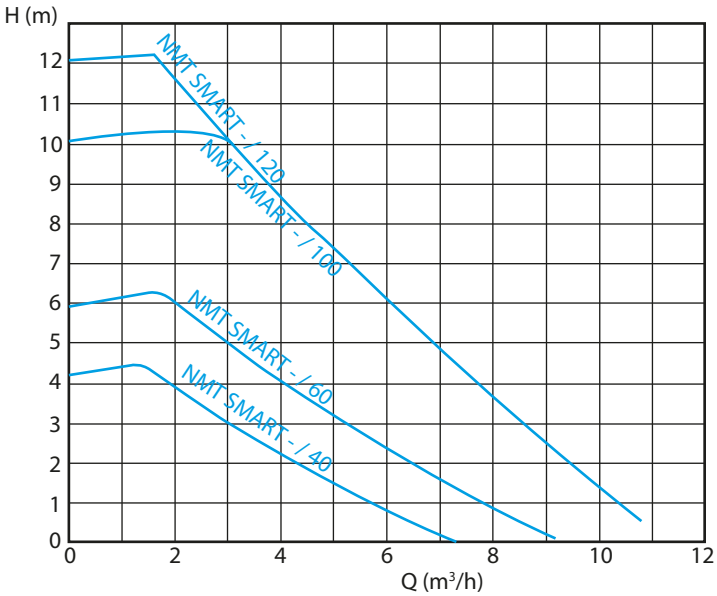



## Pump Designation

**NMT D PLUS 25 / 60 - 130**

- **Twin Type**
- **Pump Type**
- **Suction and Discharge Nozzle (DN-mm)**
- **Maximum Head x10**
- **Connection Length (mm)**

## NMT SMART




| Pump Type | EEI | A (mm) | B | Pmax (w) |
|---|---|---|---|---|
| NMT SMART 25/40-180 | ≤ 0,19 | 180 | Rp 1 | 70 |
| NMT SMART 25/60-180 | ≤ 0,21 | 180 | Rp 1 | 90 |
| NMT SMART 25/100-180 | ≤ 0,21 | 180 | Rp 1 | 180 |
| NMT SMART 32/60-180 | ≤ 0,21 | 180 | Rp 1¼ | 90 |
| NMT SMART 32/100-180 | ≤ 0,21 | 180 | Rp 1¼ | 180 |
| NMT SMART 32/120-180 | ≤ 0,21 | 180 | Rp 1¼ | 180 |

| Pump Type | EEI | A (mm) | B | Pmax (w) |
|---|---|---|---|---|
| NMT SMART 32/40 F | ≤ 0,21 | 220 | DN 32 | 60 |
| NMT SMART 32/60 F | ≤ 0,21 | 220 | DN 32 | 90 |
| NMT SMART 32/100 F | ≤ 0,21 | 220 | DN 32 | 180 |
| NMT SMART 40/60 F | ≤ 0,21 | 220 | DN 40 | 90 |
| NMT SMART 40/100 F | ≤ 0,21 | 220 | DN 40 | 180 |
| NMT SMART 50/100 F | ≤ 0,21 | 240 | DN 50 | 180 |

| Pump Type | EEI | A (mm) | B | Pmax (w) |
|---|---|---|---|---|
| NMTD SMART 32/60-180 | ≤ 0,21 | 180 | Rp 1¼ | 2x90 |
| NMTD SMART 32/100-180 | ≤ 0,21 | 180 | Rp 1¼ | 2x180 |

| Pump Type | EEI | A (mm) | B | Pmax (w) |
|---|---|---|---|---|
| NMTD SMART 40/60 F | ≤ 0,21 | 220 | DN 40 | 2x90 |
| NMTD SMART 40/100 F | ≤ 0,21 | 220 | DN 40 | 2x180 |

## Communication

(*)Smart C : Ethernet, Modbus RTU, Analog control input 0-10 V, 3 Analog input / output, 1 relay output

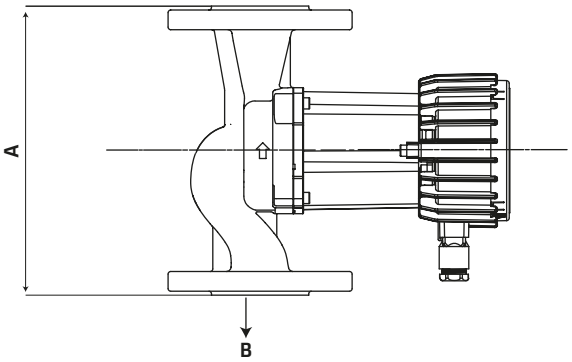
## Pump Designation

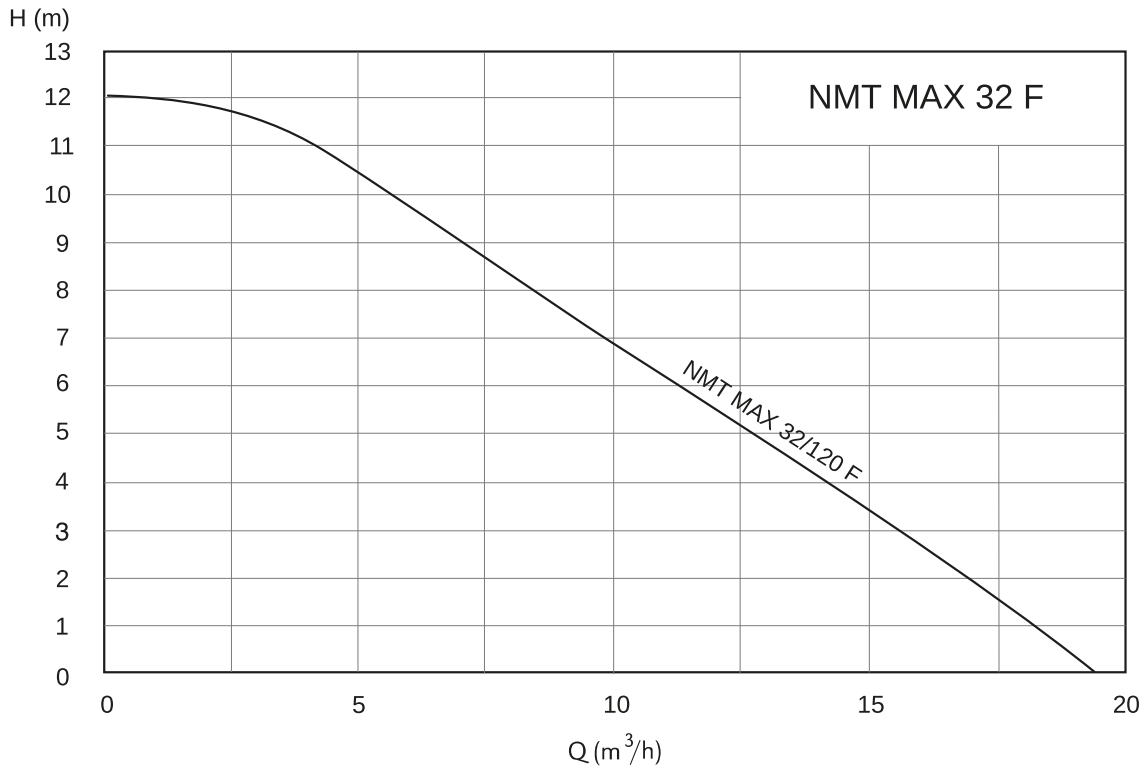
**NMT D SMART C 25 / 60 - 180 F**

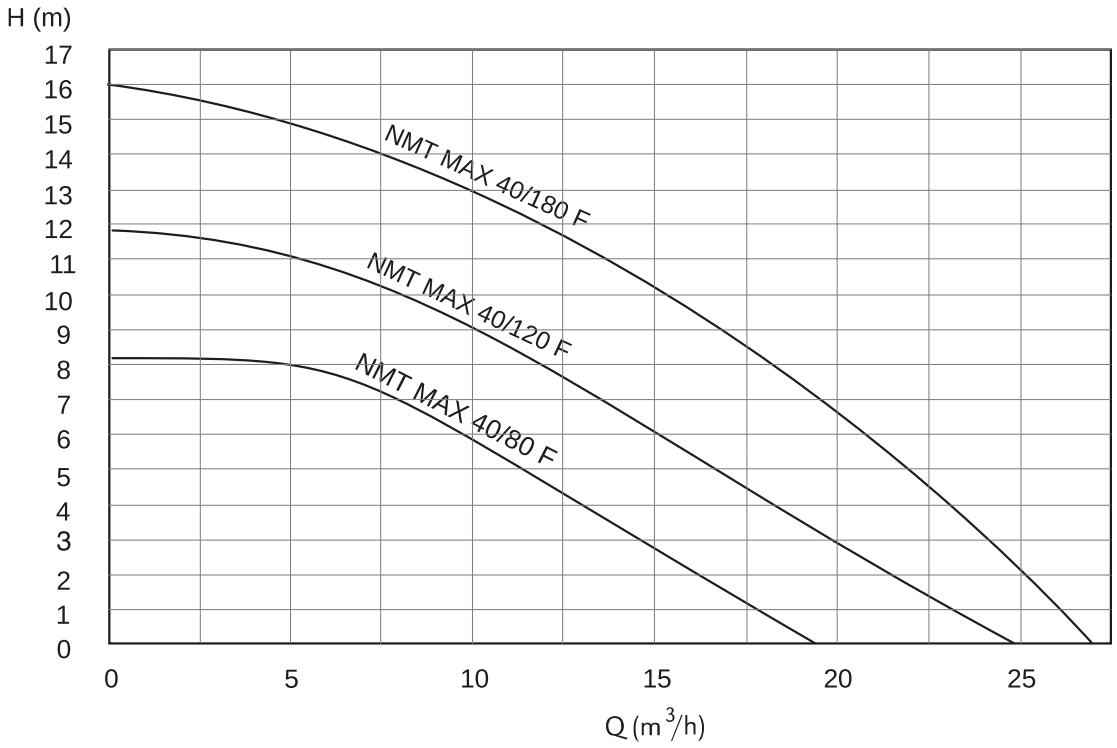
- **Twin Type**
- **Pump Type**
- **Communication**
- **Suction and Discharge Nozzle (DN-mm)**
- **Maximum Head x10**
- **Connection Length (mm)**
- **Flanged**

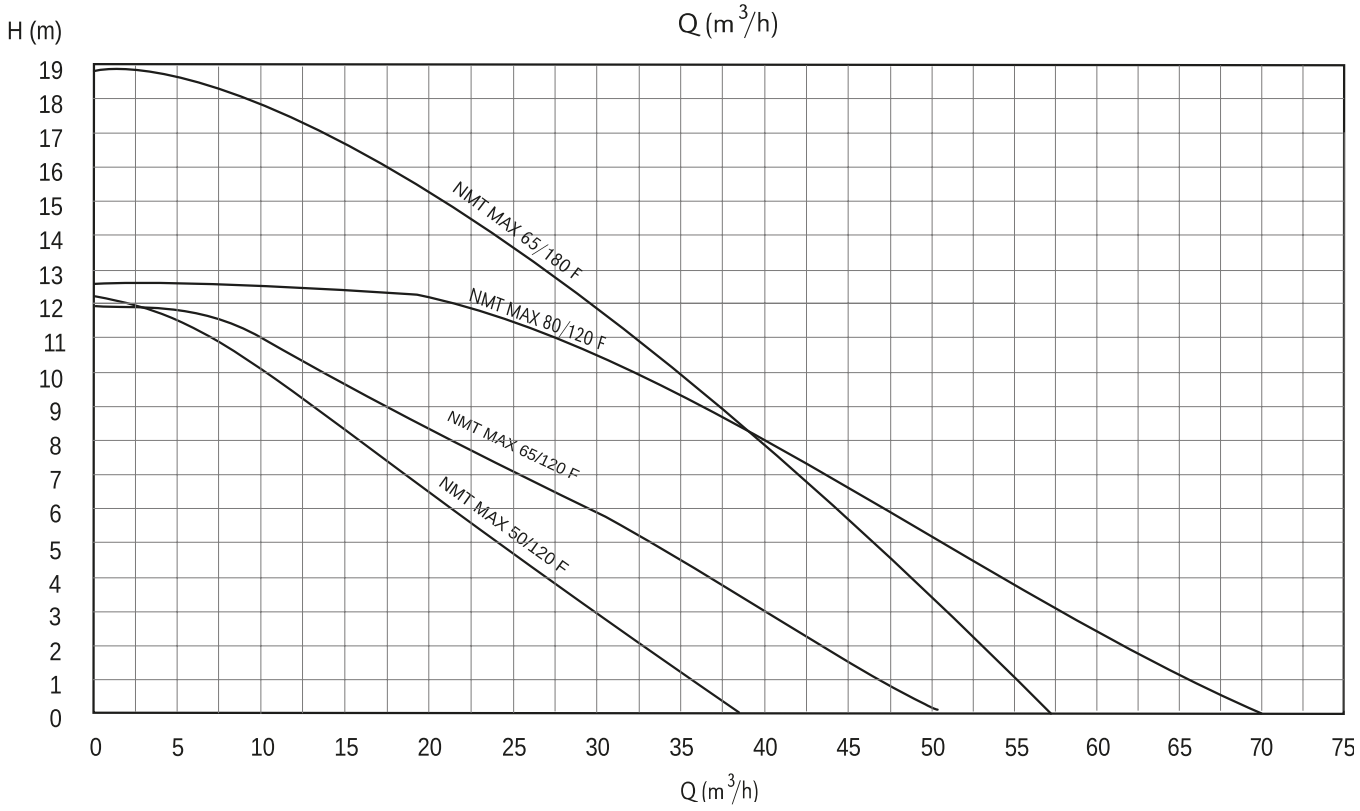
| Pompa Tipleri | EEI | A (mm) | B | PN | Pmax (w) |
|---|---|---|---|---|---|
| NMT MAX 32/120 F | ≤ 0,20 | 220 | DN 32 | 6/10 | 370 |
| NMT MAX 40/80 F | ≤ 0,21 | 250 | DN 40 | 6/10 | 270 |
| NMT MAX 40/120 F | ≤ 0,21 | 250 | DN 40 | 6/10 | 480 |
| NMT MAX 40/180 F | ≤ 0,21 | 250 | DN 40 | 6/10 | 680 |
| NMT MAX 50/120 F | ≤ 0,21 | 280 | DN 50 | 6/10 | 560 |
| NMT MAX 65/120 F | ≤ 0,20 | 340 | DN 65 | 6/10 | 810 |
| NMT MAX C 65/180 F | ≤ 0,20 | 340 | DN 65 | 6/10 | 1550 |
| NMT MAX C 80/120 F | ≤ 0,20 | 360 | DN 80 | 10 | 1380 |

| Pompa Tipleri | EEI | A (mm) | B | PN | Pmax (w) |
|---|---|---|---|---|---|
| NMTD MAX 40/120 F | ≤ 0,21 | 250 | DN 40 | 6/10 | 2x480 |
| NMTD MAX 50/120 F | ≤ 0,21 | 280 | DN 50 | 6/10 | 2x560 |
| NMTD MAX 65/120 F | ≤ 0,20 | 340 | DN 65 | 6/10 | 2x810 |
| NMTD MAX C 80/120 F | ≤ 0,20 | 360 | DN 80 | 10 | 2x1380 |






## Communication

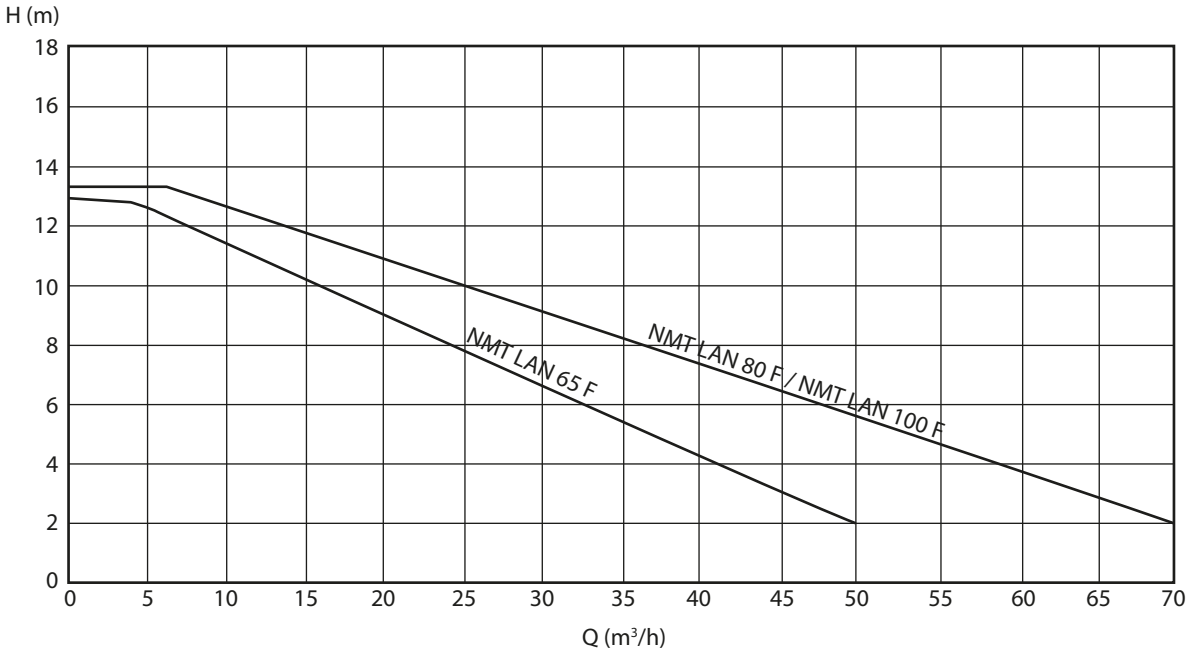
(*)Max C : Ethernet, Modbus RTU, Analog control input 0-10 V, 3 Analog input / output, 1 relay output

## Pump Designation

**NMT D MAX C 40 / 80 F**

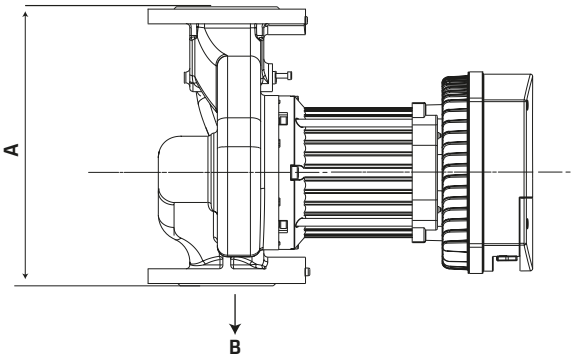
- **Twin Type**
- **Pump Type**
- **Communication**
- **Suction and Discharge Nozzle (DN-mm)**
- **Maximum Head x10**
- **Flanged**

## NMT LAN




| Pompa Tipleri | EEI | A (mm) | B | PN | Pmax (w) |
|---|---|---|---|---|---|
| NMT LAN 100 F | ≤ 0,23 | 360 | DN 100 | 10 | 1600 |

| Pompa Tipleri | EEI | A (mm) | B | PN | Pmax (w) |
|---|---|---|---|---|---|
| NMTD LAN 65 F | ≤ 0,23 | 340 | DN 65 | 6/10 | 2x1100 |
| NMTD LAN 80 F | ≤ 0,23 | 360 | DN 80 | 10 | 2x1600 |




## Haberleşme

Lan : Ethernet

(*)Lan C : Ethernet, Modbus RTU, Analog kontrol girişi 0-10 V, 3 Analog girişi / çıkışı, 1 röle çıkışı

## Pompanın İsimlendirilmesi

**NMT D LAN C 40 / 180 F**

- **İkiz Tip** — D
- **Pompa Tipi** — LAN
- **Haberleşme** — C
- **Emme - Basma Ölçüsü (DN-mm)** — 40
- **Maksimum Basma Yüksekliği x10** — 180
- **Flanşlı Tip** — F

Standart

Pump • Fire Fighting Units • Booster Set

hydropower

# PUMP as TURBINE

HYDROPOWER Rev.11 09.2021

## Application Areas

- Water supply lines
- Pressure regulated water network lines
- Waste water lines
- Geothermal energy plants
- Reverse osmosis applications
- Industrial facilities
- Agricultural irrigation applications
- Advanced test stands

## Tecnical Data

| | |
|---|---|
| Capacity | 30 - 4000 $m^3/h$ |
| Head | 10 - 200 m |
| Power | up to 1000 kW |
| Speed | 4 - 6 - 8 pole synchronous speed |
| Design type | Norm, double suction or multistage |

## Design Features

•Norm, multistage or double suction pump design can be delivered upon request.

•Hydropower, or in other words Pump as Turbine, is an affordable and easy alternative way of turbine usage for energy generation.

•Using turbine for energy resupply is a highly expensive investment for powers less than 150 kw, since the return on investment will cost the customer more than 10 years. The same payback period will be 2-3 years in maximum in Pump as Turbine systems.

•Hydropower can be used in parallel forms to meet the variable water capacity requirements. With these parallel forms, higher capacities become deliverable with more efficient systems.

•Plus, maintenance and operation is simpler and more economic comparing to the hydraulic turbines.

•Hydropower doesn't have any guide vanes for flow regulation. In addition to the by-pass of the excess capacities, more than one pump as turbine can be used to meet various needs through these systems.

•With hydropower
- It is possible to generate electiricty for off-grid regions, especially for drinking water transmission and network regions. Moreover, the losses can be decreased with the help of pressure regulations.
- It easily generates electricity for on-grid regions by directly connecting to electric networks with or without extra setting needs.
- It can be used as a driver by directly assembling with another machine.

## PaT Designation

**HydroPower DS-V-200-4-5-N**

| | |
|---|---|
| **Model** | |
| **Type** | **NT: End Suction**<br>**DS: Double Suction**<br>**KM: Multistage** |
| **Vertical Installation (optional)** | |
| **Installed Power (kW)** | |
| **Motor/Generator pole number** | |
| **Grid** | **5: 50 hz**<br>**6: 60 hz** |
| **System** | **N: On-Grid**<br>**F: Off-Grid** |

## Hydropower: End Suction Norm

Hydropwer / NT

•Horizontal radially split volute casing type, single stage, end suction, pump as turbine systems with closed impeller.

•Designed to work in between 100- 1800 m3/h capacities with 10-120 m net heads.

Hydropower / NT - V

•Vertical radially split volute casing type, single stage, end suction, pump as turbine systems with closed impeller.

•Designed to work in between 100- 1800 m3/h capacities with 10-120 m net heads.

## Hydropower: Multistage

Hydropower / KM

•Horizontal ring section, multi stage, pump as turbine systems with closed impeller and diffuser.

•Designed to work in between 30- 500 m3/h capacities with 10-250 m net heads.

Hydropower / KM - V

•Vertical ring section, multi stage, pump as turbine systems with closed impeller and diffuser.

•Designed to work in between 30- 500 m3/h capacities with 10-250 m net heads.

## Hydropower: Double Suction

Hydropower / DS

•Horizontal radially, axial splict case, single stage, double suction pump as turbine systems.

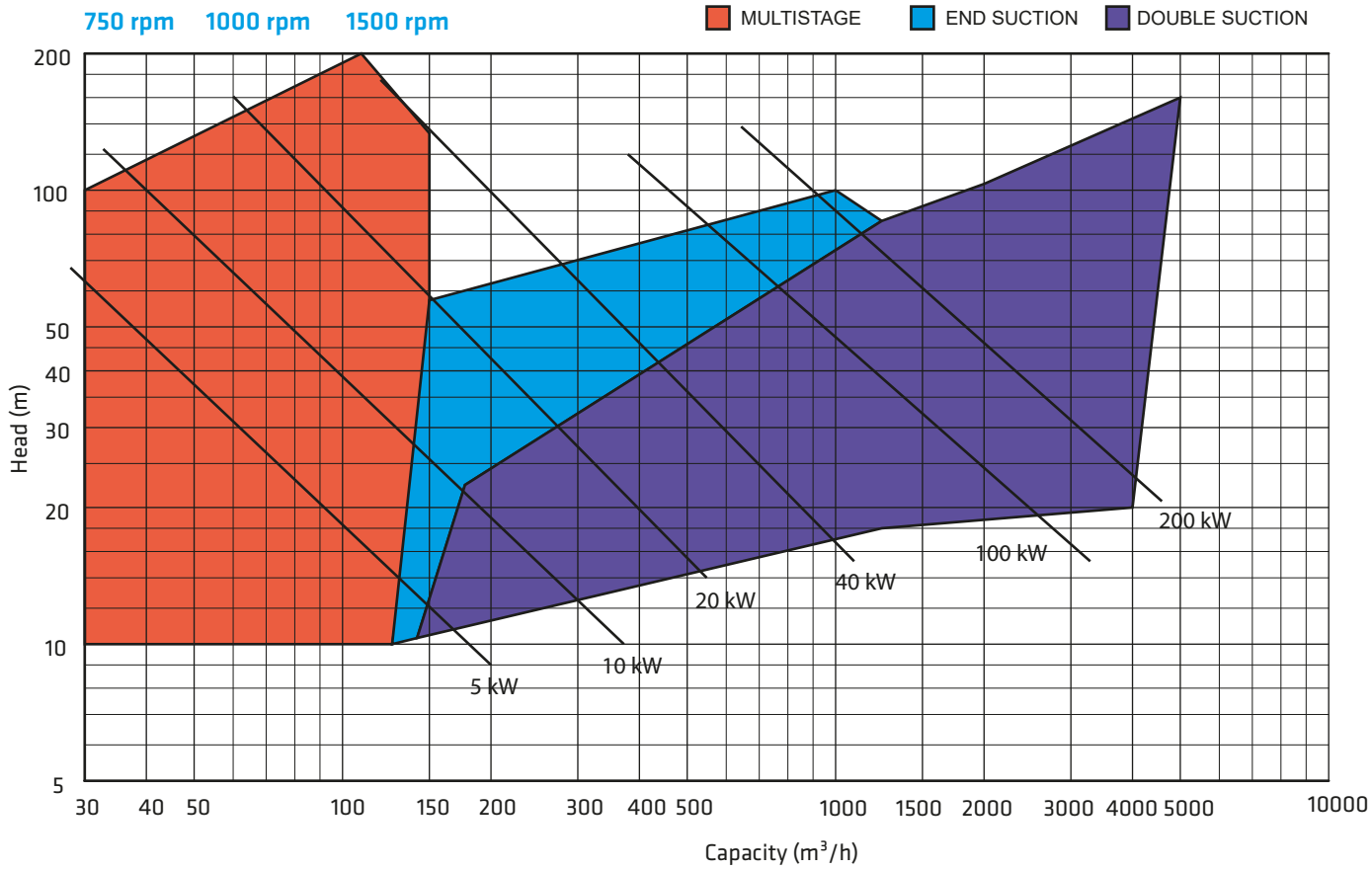
•Designed to work in between 150- 4000 m3/h capacities with 20-150 m net heads.

Hydropower / DS - V

•Vertical radially, axial splict case, single stage, double suction pump as turbine systems.

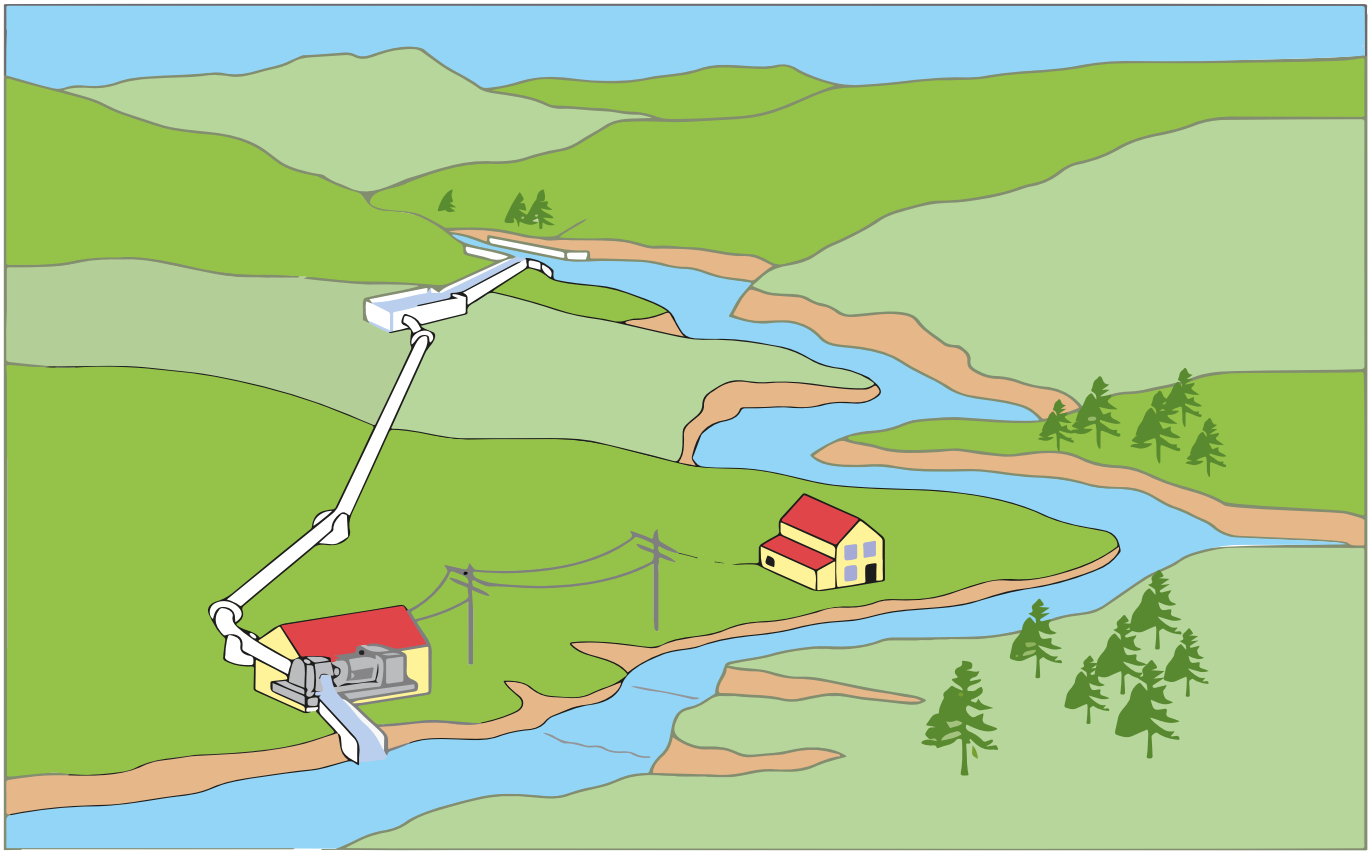
•Designed to work in between 150- 4000 m3/h capacities with 20-150 m net heads.

## Field Chart




For more capacity, head or power requirements, please get in contact with our company via our web site.

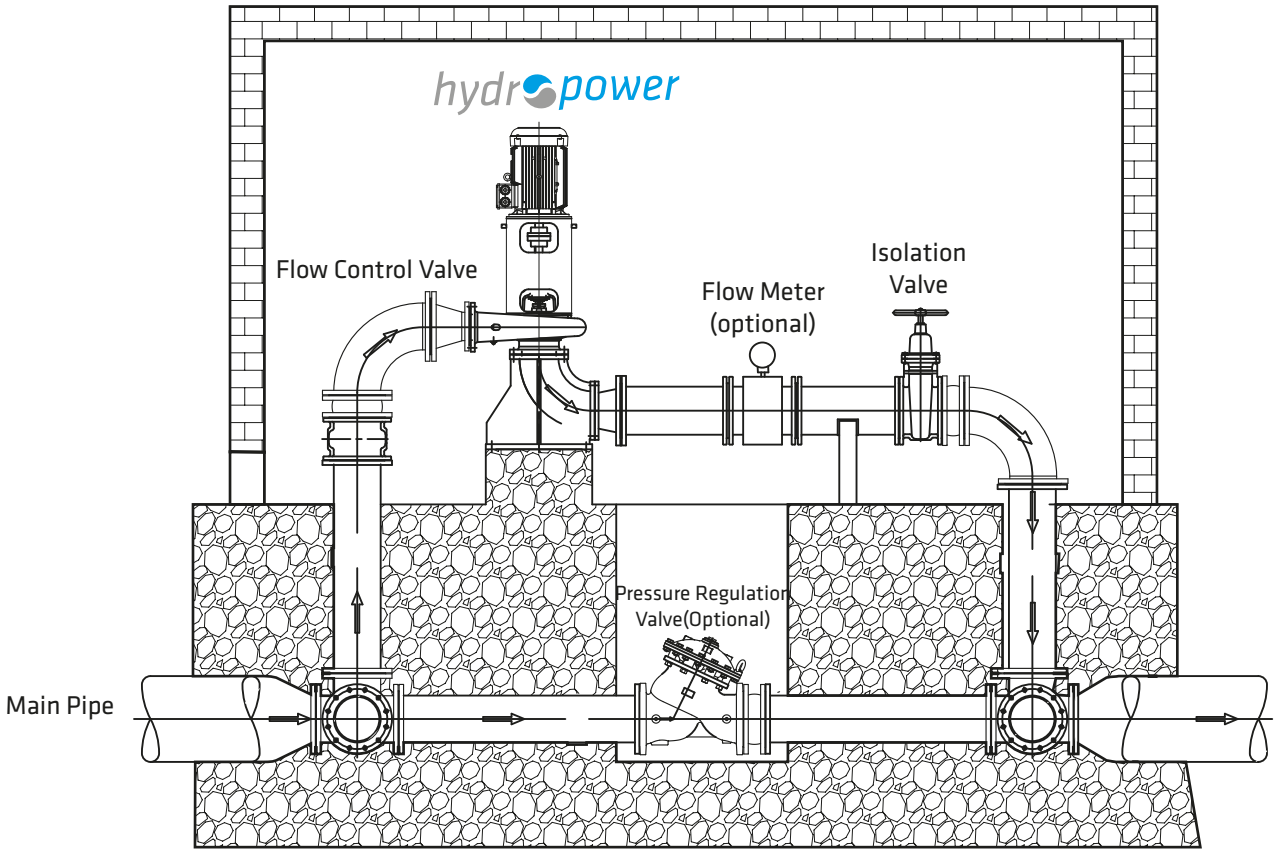
## Electric Generation for Isolated (Off-grid) Areas



## Generation of Electricity for Drinking Water Needs in off/on-grid regions:

There are so many alternative ways in the market and regulation due to pressure is one of the best ways of contolling losses regarding to resources in literature. To regulate pressure, atmospheric tanks and pressure regulating valves (PRV) can be alternatively used. Since, PRV needs extra investments and underutilizes the broken energy, it will not be a wise option to choose. Instead, it would be better to utilize the idle energy and re-generate it with either hydraulic turbines or pump as turbines, which we call “Hydropower” systems. Standart “Hydropower” series pump as turbines, provide both energy savings and efficient water loss controls where energy is broken in the systems.

## Hydropower Installation for a Typical City Drinking Water Piping System




## Pump as Turbine Projects

In order to calculate the needs, annual water capacity and head requirements shoul be known by our customers. With these statistical inputs, optimum systems can be designed.

In order to use Pumps as Turbine following issues should be covered:

•Since capacities in pump as turbines at best efficient points would be more than stand alone pumps, the mechanical stress should be carefully considered in these systems.

•Rotating items shouldn’t be harmed or discharged while rotating in opposite direction.

•Turbine should not run away during the bypass of excessive water.

•Extra precautions should be taken for cavitation and water hammer risks.

•System should be adoptable to new conditions according to changes in capacities and heads.

•It is generally a good option to use hydropower in parallel forms to maximize the outputs. This rule is eligible for both on-grid and off-grid regions.

Standart
Pump • Fire Fighting Units • Booster Set

# GENERAL INFORMATION ABOUT BOOSTER PUMPS

## What is booster pump ?

The pressurization systems which takes low pressured water from a tank or directly from city network and provide it with required flow rate and pressure are called booster pumps. Their operataions are completely automatic according to intended use.
Depending on the intended use, boosters are generally classified as follows;
•Domestic Water Booster Pumps
•Irrigation System Booster Pumps
•Process Water Booster pumps

## According to which Standarts booster pumps should be selected ?

Until today, in Europe, widely accepted standart which describes pressurization systems comprehensively is DIN 1988. Domestic water booster pumps are defined in DIN 1988-5, how and under what conditions they are selected and used are described.
The European Union EN 806 standard is valid in the countries of European Union members. However, in some cases it is still being in reference to DIN 1988 norm. Therefore, there is no problem with selections and calculations based on the DIN 1988 standard. Selection and calculation methods in this catalog are taken from DIN 1988-5 and EN 806 standards.

## Which parameters should be determined before selecting booster ?

The first condition for long-life booster is selecting according to suitable operating and environmental conditions and determining pump capacities correctly.
In choosing type of booster;
•Positioning of water tank relative to the booster (Does the water come on its own? Or is suction needed?)
•Characteristic of the space where booster will be installed (Is there enough space and air circulation?)
•Correct selection of the number of users and diversity factor
•Properties of the water to be pressurized (hardness, temperature)
•Required head
•Required flow rate and the volume of the expansion tank to be selected
When pump and equipments according to these material and functional characteristics are selected, the right type of booster pump which will be able to work without problems for many years.

## How to determine operating pressure range of booster system ?

The pressure in the outlet collector of the booster is the sum of the intake pressure in the inlet collector and the pressure generated by the booster. However, in Turkey boosters are generally supplied from a tank at the same level with the booster and open to atmosphere, so the inlet pressure of the booster is negligible.

While determining operating pressure of booster;
•The static height of the building
•The minimum flow pressure on top fllors
•Friction losses in the pipes
•Water meter losses
•Filters and other equipments losses should be calculated.

Minimum pressure of the booster, if there is no special conditions defined by the user, should be approximately 10-15 mwc on the highest settlement or the most critical user

$$H_{bot} = DPe + Pmin\ fl + S\ (I \times R + DpF) + DPwm + DPap - SPLN \qquad \textbf{(Formula 1)}$$

| | |
|---|---|
| $H_{bot}$ | *: Booster bottom pressure* |
| *DPe* | *: Building height (mWc)* |
| *Pmin fl* | *: Minimum flow pressure (mWc)* |
| *S ( I x R + DpF)* | *: Friction losses in pipes (mWc)* |
| *DPwm* | *: Water meter losses (mWc)* |
| *DPap* | *: Losses of filter and other equipments if known (mWc)* |
| *SPLN* | *: Minimum pressure at the booster inlet (mWc)* |

SPLN is often neglected in applications that booster is fed from a tank. However on some cases (especially oil filling plants), towers are used as water tanks. On that situation, 15-20 mWc inlet pressure is generated.

Another type of connection is to take water directly from the pressurized network and pressurize it where the network pressure is not enough. If this is the case, inlet pressure must be calculated.

Calculation of total losses in the installation may not always be easy. To do this, it is necessary to know the types, quantities and measurements of any fixtures, valves, pipes and fittings and to calculate the losses in the water flow that will pass through them.

*Example of bottom pressure calculation:*

| | |
|---|---|
| *Building Height* | *= 30m* |
| *Minimum flow pressure* | *= 15m* |
| *Total loss of installation* | *= 7,5m* |
| *Water meter loss* | *= 7,5m* |
| *Filter and otler losses* | *= 0 m* |
| *Inlet pressure* | *= 0 m* |

*Let's calculate bottom pressure value of a booster to be selected for an old apartment*

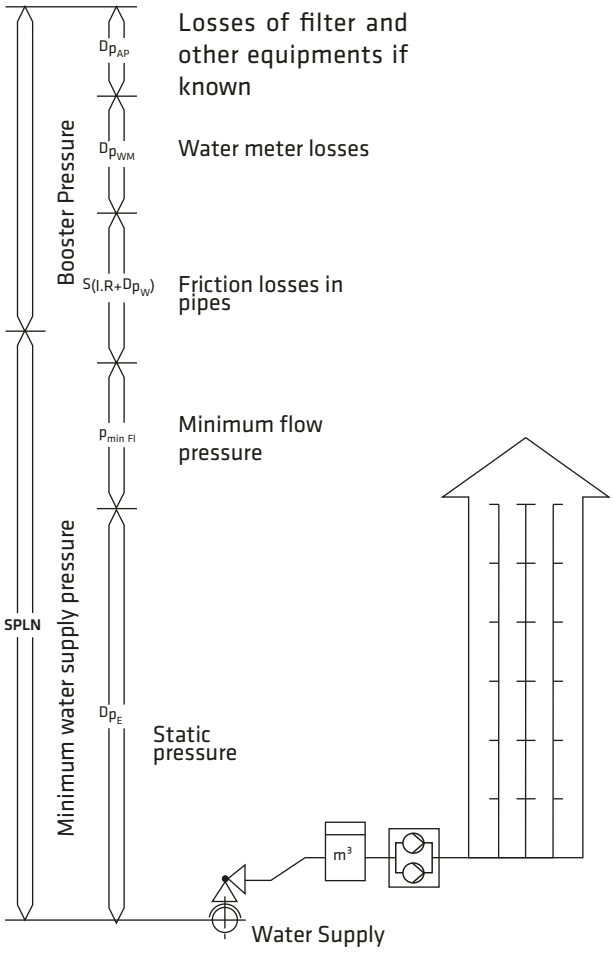



**Figure 1**

*$H_{bot}$ = DPe + Pmin fl + S ( I x R + DpF) + DPwm + DPap - SPLN*
*$H_{bot}$ = 30 + 15 + 7,5 + 7,5 + 0 - 0*
*$H_{bot}$ = 60 mSS*

The pressure difference called as operating pressure of the booster ($H_{üst}$-$H_{alt}$) should be as small as possible and the booster should be intended to give a constant pressure. As this value increases, surge pressure in the installation increases and the comfort of use decreases.

Therefore, ($H_{top}$-$H_{bot}$) 1,5 – 2bar difference as operating range is generally adequate and it is tried to be applied. This difference should not exceed 2.5 bar.
*$H_{top} = H_{bot} + 15$ mWc*
*$H_{top} = 75$ mWc*
*According to this, our operating pressure is 60-75 mWc.*

Another point to be aware of when calculating the required pressure to be ensured by the booster is that static water pressure should not exceed 5 bar (50mWc) at any point in the installation.
To ensure comfortable use of water and proper operation of fixtures, DIN 1988 standart requires the use of pressure reducer or zoning the installation (regional pressurization) if the inlet pressure exceeds 5 bar. (figure 2)

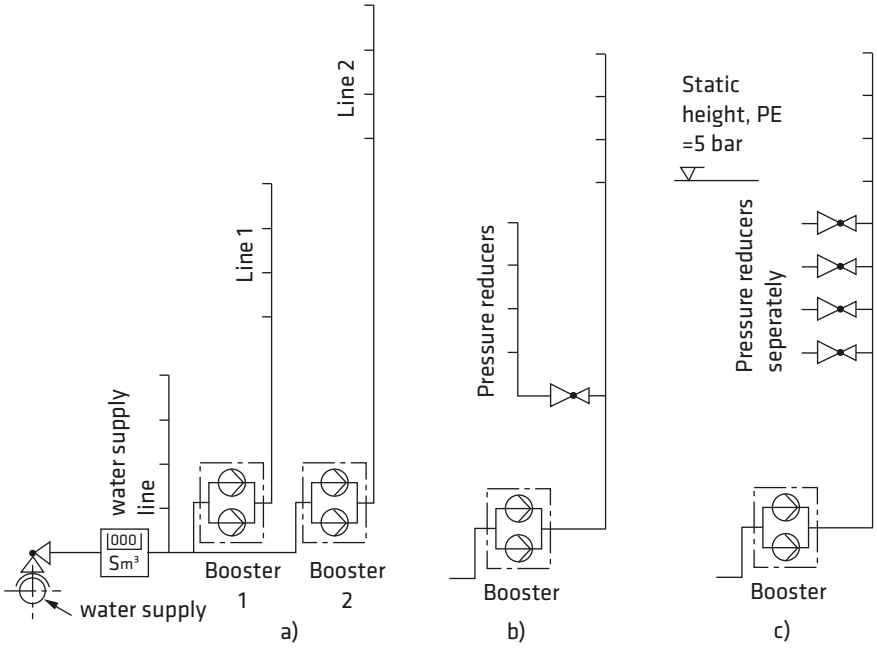



**Figure 2**

## How to determine flow rate of booster system?

| Number of flats | Factor of multi-user |
|---|---|
| 4 | 0,66 |
| 5-10 | 0,45 |
| 11-20 | 0,40 |
| 21-50 | 0,35 |
| 51-100 | 0,30 |
| more than 100 | 0,25 |

**Table 1**

| Application Areas | Daily Average. (lt/day) |
|---|---|
| Corporate housing | 150 |
| Luxury housing | 200 |
| Luxury Villas | 225 |
| Guesthouses | 100 |
| Hotels | 150 |
| Hospitals | 200 |
| Offices | 80 |
| Schools | 20 |
| Boarding Schools | 100 |
| Malls | 50 |

**Table 2**

Calculation of flow rate has two main criteria. First one is estimated volume of water in unit of time. The other is diversity factor of multi-user systems. We are going to use both critieria when calculating domestic water boosters.

**Example of flow rate calculation:**
Let's figure out the flow rate of a site where 100 families live in.
EN806 standardında belirtilen formüle göre;

$$Q = \frac{AxBxTxf}{1000} \qquad \textbf{(Formula 2)}$$

- *Q=Booster flow rate ($m^3/h$)*
- *A=Number of flats*
- *B= Number of individuals in the family*
- *T= Daily average water consumption of the individual (liter /day)*
- *f= Diversity factor*

We may take the number of individuals as 4-5 per average family in Turkey. We will use Table 1 for diversity factor and Table 2 for Daily average water consumption. According to this;

$$Q = \frac{100x4x150x0,30}{1000} = 18\ m^3/h$$

According to this result, we can select a single pump booster that provides 18 $m^3/h$ flow rate. However, as in the above example, it is more accurate to select multiple pump boosters in crowded places such as hospitals.

According to DIN standards pumps must be selected with backups. While the selected spare pump is not working, other operating pumps total flow rate should be equal to our calculated booster flow rate, which is 18 $m^3/h$

According to this;
- *2x 18 m3/h or*
- *3x 9 m3/h or*
- *4x 6 m3/h might be selected*

## CALCULATION AND SELECTION METHODS OF MEMBRANE EXPANSION/PRESSURED TANKS

Small volume membrane expansion tanks in booster sets, according to producers preference, are used from several liters to 5000 liter capacities. Membrane expansion tanks are produced in various types and capacities such as vertical, horizontal, footed and non-footed. Nowadays, the use of expansion tanks that have membrane made out of Butyl, EPDM or natural rubber separation for water and gas parts has become widespread.

When these tanks are not used or for example their membranes are exploded, irregularities occur in booster's start/stop functions and that causes operation difficulties.

The purpose of using membrane tanks connected to the discharge lines of booster sets is limiting number of switches of booster pumps.

Electric motor manufacturers switch number recommendation is around S=20-30 / hour. That means, more than 20-30 times of start/stop in an hour for motors is not recommended. Continuous start/stop function not only shortens the service life of electrical motor, pump parts and electrical panel equipments but also increases electrical energy consumption due to starting current. Therefore, especially for motors bigger than 3kW, it is advisable to limit switch number.

Absorbing possible system shocks, keeping the pressurized water in a certain amount as a reserve in short power cuts are other purposes of the use of these tanks.

In section 5 of DIN 1988 standard estimated volume calculation for membrane expansion tanks is developed based on calculation of pressure controlled air cushioned expansion tank in DIN 4810 standard.

Accordingly, the nominal volume of the expansion tank to be selected is calculated according to the Formule 3.

$$VE = 0{,}33 \times Vmax \quad \frac{H_{top} + 1}{(H_{top} - H_{bot}) \times S} \qquad \textbf{(Formula 3)}$$

- $VE$ : *Nominal volume of selected tank (liter)*
- $V_{max}$ : *Flow rate of a pump at H bottom pressure (m3/hour)*
- $H_{top}$ : *Booster's set top pressure (bar)*
- $(H_{top} - H_{bot})$ : *Booster's set operating pressure difference (bar)*
- $S$ : *Required number of switch (1/ hour)*

**Example of membrane nominal volume calculation**

In an example, the booster set wich has $H_{alt}$ equals to 45 mSS, $H_{üst}$ equals to 65 mSS and 44 $m^3$/hour are given. Also the number of pump in booster set is four wich are working rotatory. The required number of switch is given 30/hour.

- $V_{max}$ = *44 / 4 = 11 $m^3$/saat (maximum flow rate of a pump)*
- $H_{top}$ = *6,5 bar*
- $H_{bot}$ = *4,5 bar*
- $S$ = *30 / hour*

The nominal volume of required membrane expansion tank (VE)

$$VE = 0{,}33 \times 11 \quad \frac{6{,}5 + 1}{(6{,}5 - 4{,}5) \times 30} = 0{,}453\ m^3 = 453\ lt$$

The nominal volume of the tank is 500 liters. In the operating conditions of this tank, the useful water volume (VF)

$$VF = VE \quad \frac{H_{top} - H_{bot}}{H_{top} + 1} \qquad \textbf{(Formula 4)}$$

$$VF = 500 \quad \frac{6{,}5 - 4{,}5}{6{,}5 + 1} = 133 \text{ liters are calculated.}$$

Another criteria in membrane expansion tank selection is pressure class that tank should have.

The zero flow rate pressures of the pumps used in boosters are determining the pressure class of the tank. Tank nominal operating pressure should be higher than zero flow rate pressures of pumps.

The pre-air pressure of the tank is dependent of operating conditions and should be set to a value that 10% lower than the $H_{bot}$ operating pressure.

In the above example booster application with $H_{bot}$ =45 mWc, pre-gas pressure of required membrane expansion tank should be set to approximately 40 mWc = 4 bar.

There are varios methods of connecting membrane tanks to the booster's discharge line. Generally, one side of the pressure collector connects to the tank and the other side to the installation. It is also possible to connect the tank to anywhere on building's installation line.

Important point of making connections is that the connections can be quickly detached for membrane change or equivalent situation and can be isolated from installation by using an additional valve.

| ACCORDING TO PUMP TYPES RECOMMENDED MINIMUM TANK VOLUMES | | | |
|---|---|---|---|
| SB M/T 80 PUMPS | 100 lt. | CDLF 4 PUMPS | 200 lt. |
| SB M/T 90 PUMPS | 200 lt. | CDLF 8 PUMPS | 300 lt. |
| SB M/T 100 PUMPS | 300 lt. | CDLF 12 PUMPS | 500 lt. |
| SB /T 130 PUMPS | 500 lt. | CDLF 16 PUMPS | 500 lt. |
| GRV VD PUMPS | 200 lt. | CDLF 20 PUMPS | 750 lt. |
| GRV VB PUMPS | 300 lt. | CDLF 32 PUMPS | 750 lt. |
| SKMV 32 PUMPS | 500 lt. | CDLF 42 PUMPS | 1000 lt. |
| SKMV 40 PUMPS | 750 lt. | CDLF 65 PUMPS | 2x1000 lt. |
| SKMV 50 PUMPS | 1000 lt. | CDLF 85 PUMPS | 2x1500 lt. |
| SKMV 65 PUMPS | 2x1000 lt. | | |

**Table 3**

## INSTALLATION OF BOOSTERS

Boosters can operate connected to a tank or directly to city network. (Figure 3)

For directly connected to city network boosters, it is precondition that inlet pressure is not surging more than 1 bar and is not lower than 0,5 bar. In networks with unfulfilled regarding conditions, it is not true to connect the booster directly to the city network. Due to inadequacy in network pressures, this system is rarely used in Turkey.

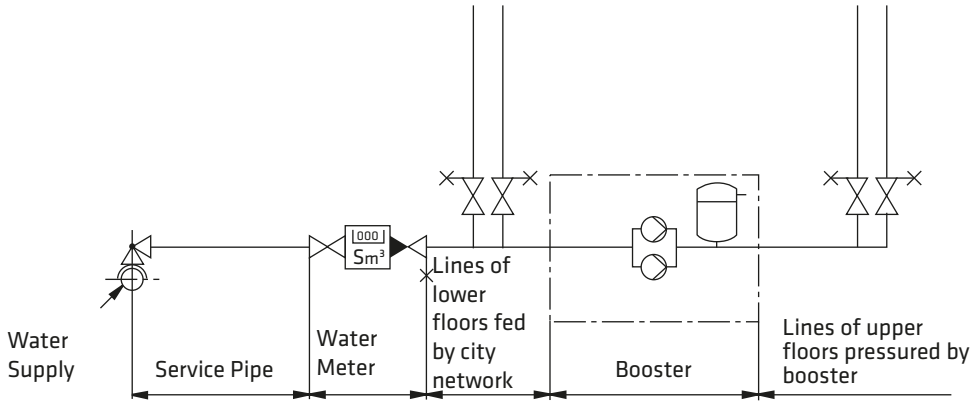


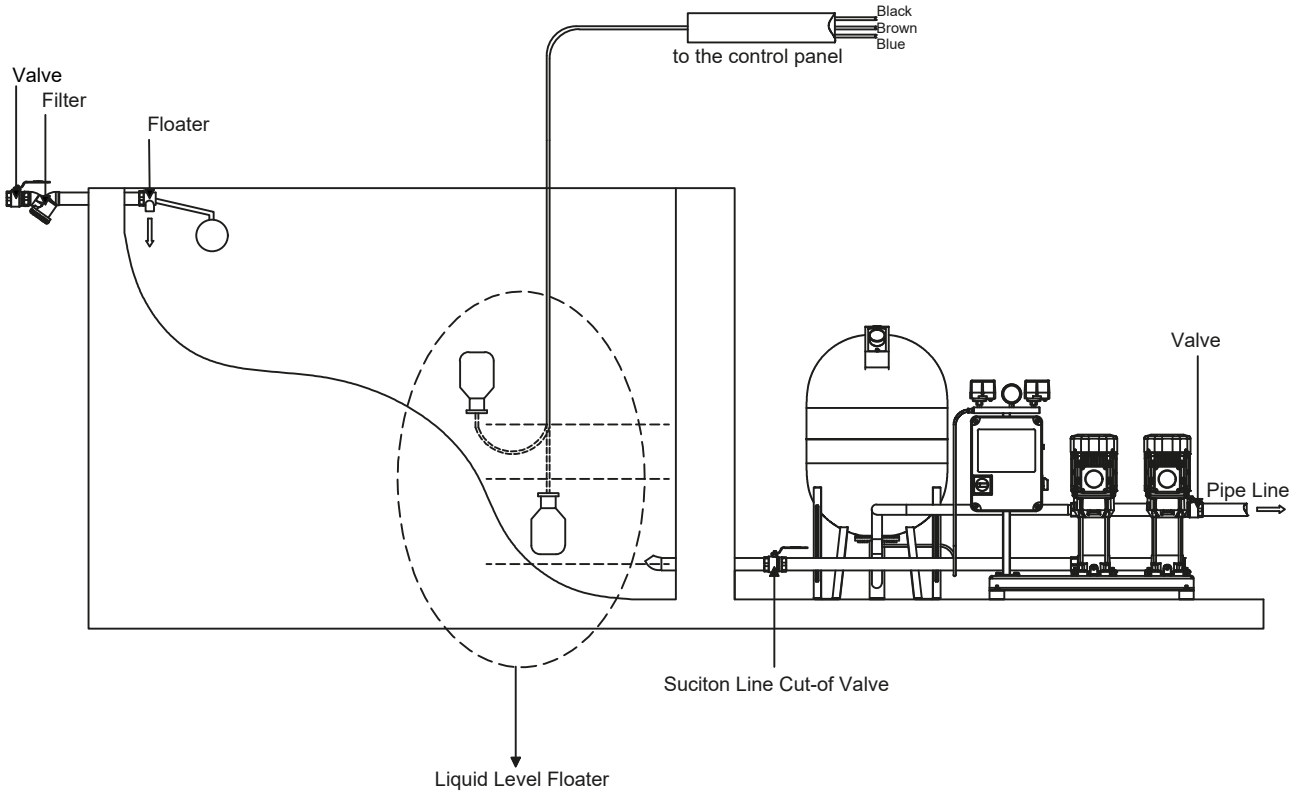

**Figure 3**

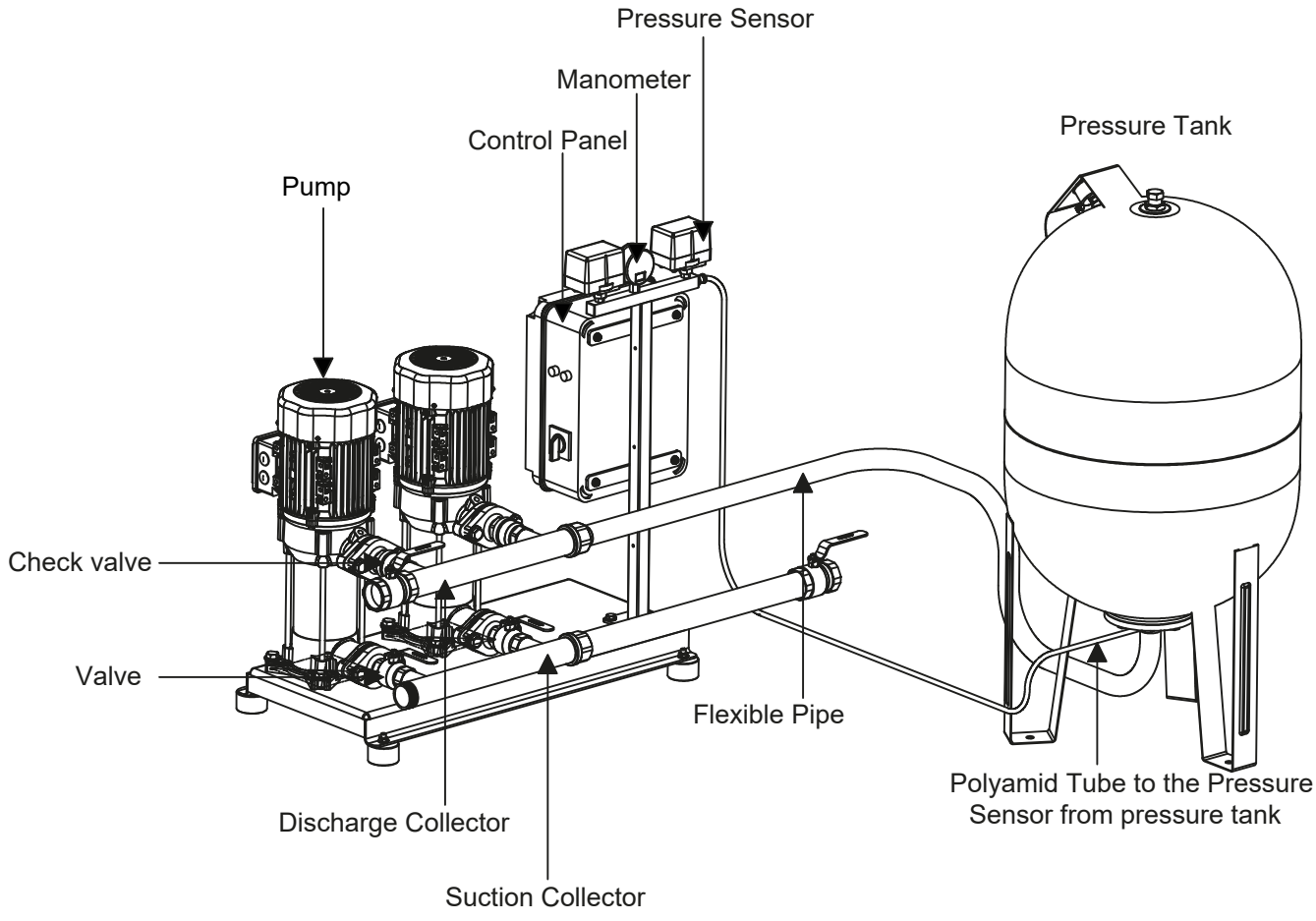
In a booster system that operates by taking water from a tank, the water must be able to flow towards the pump by its own weight and a pre-pressure of about 0.2 bar must be generated at the suction port of the pump.

Operation of the booster by suction is actually not correct. However, when this is forced to, the installation should be designed using a pipe whose internal diameter is at least one diameter wider than the suction mouth of the pump. From the shortest possible path, the installation should be determined using the least amount of elbow and fittings. Valve diameter should be kept as large as possible. It is mandatory that each pump has a separate suction line.

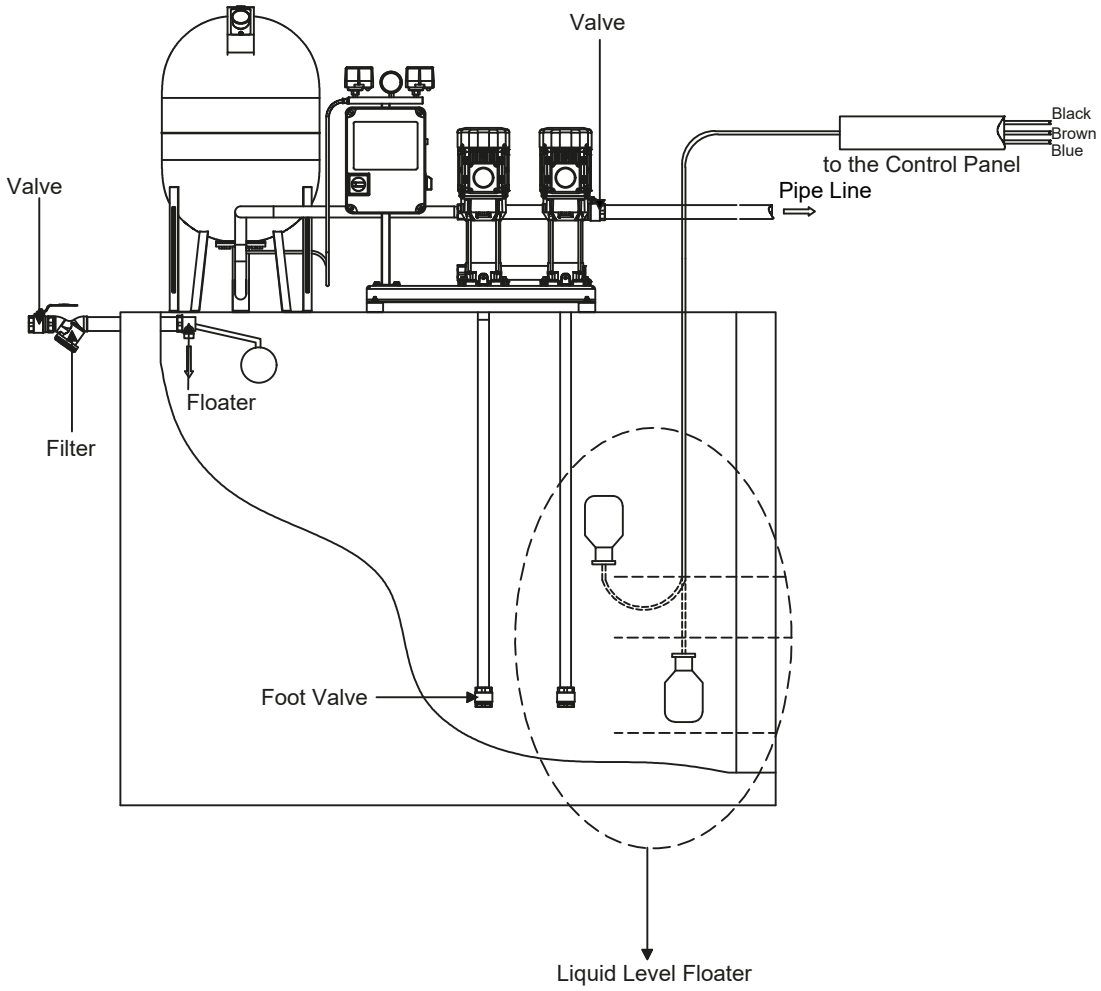
## Installation Types

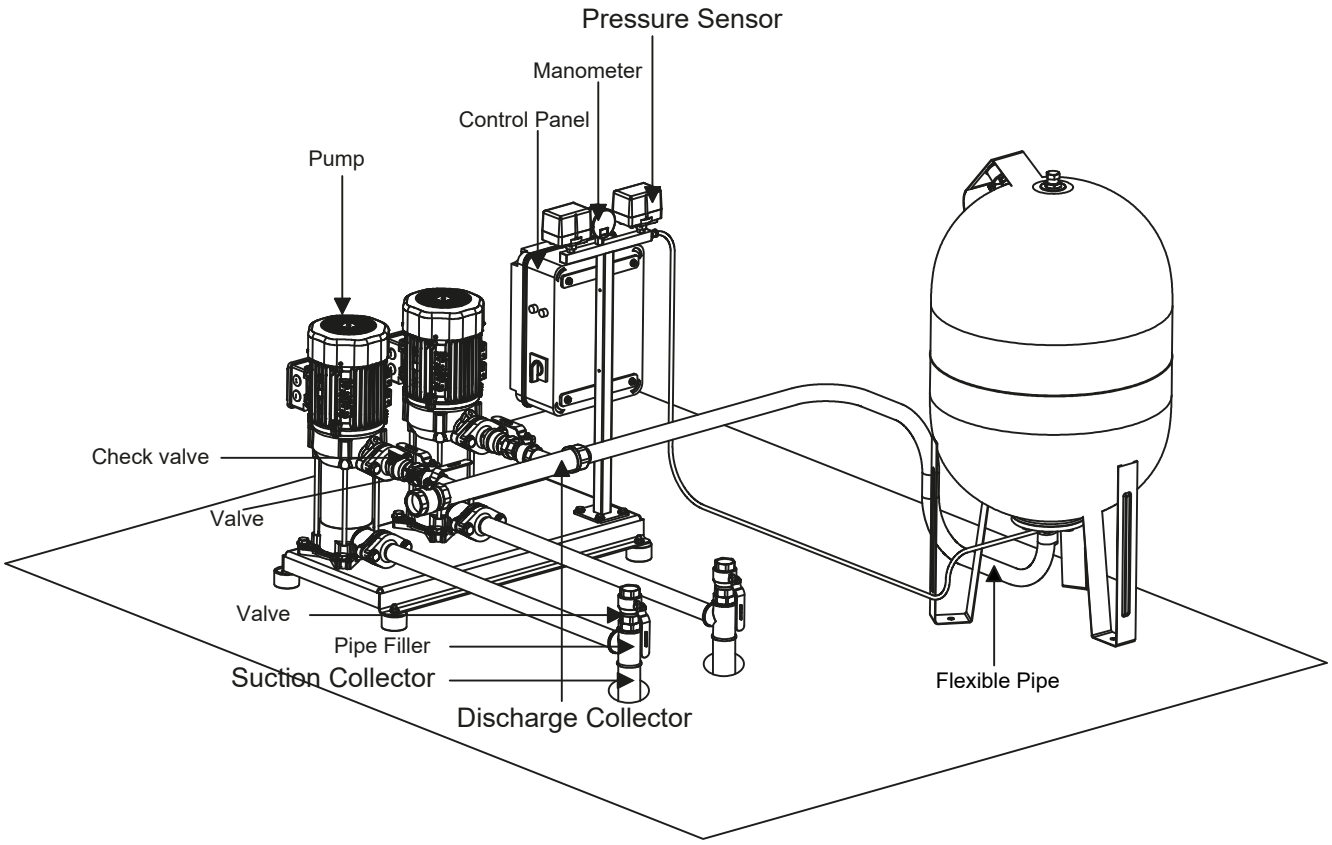
## Sample Installation with Suction Height



## Sample Installation with Suction Depth



## Control Panel Options

Two types of panels are used as standard in boosters.
•The first is pressure switch controlled electrical panels. These panels are run/stopped according to pressure signal received from each pump's separated pressure switches. In this type panel boosters, sufficient volume of expansion tank is used for minimizing number of switches.
•The second is frequency controlled electrical panels. Comfort is important in regarding facilities using these panels. Pressure information received from Transmitter is run on the frequency inverter's PFC macro or PLC and keeps the line pressure constant by reducing the pump's rate according to system flow rate. In this type of panel booster, an expansion tank with a lower volume than the first type is used.

## Pressure Switch Controlled Panel Properties

•Works with 380-460 V AC 50 Hz / 60 Hz mains voltage.
•Panel frame is made of thermoplastic material with IP 54 protection class or manufactured from DKP sheet and painted with RAL 7032 electrostatic paint.
•Panels have Manuel – 0 – Automatic selector switch.
•Panels in Automatic position;
-Protection with floater against waterless operation
-Protection against phase interruption and imbalance
-There is co-aging execution by changing turns on each operation.
•During panel's protection relay failure, it works via pressure switches on Manuel position against waterless operation.


**Figure 7: Front view of pressure switch controlled panel with triple pump**

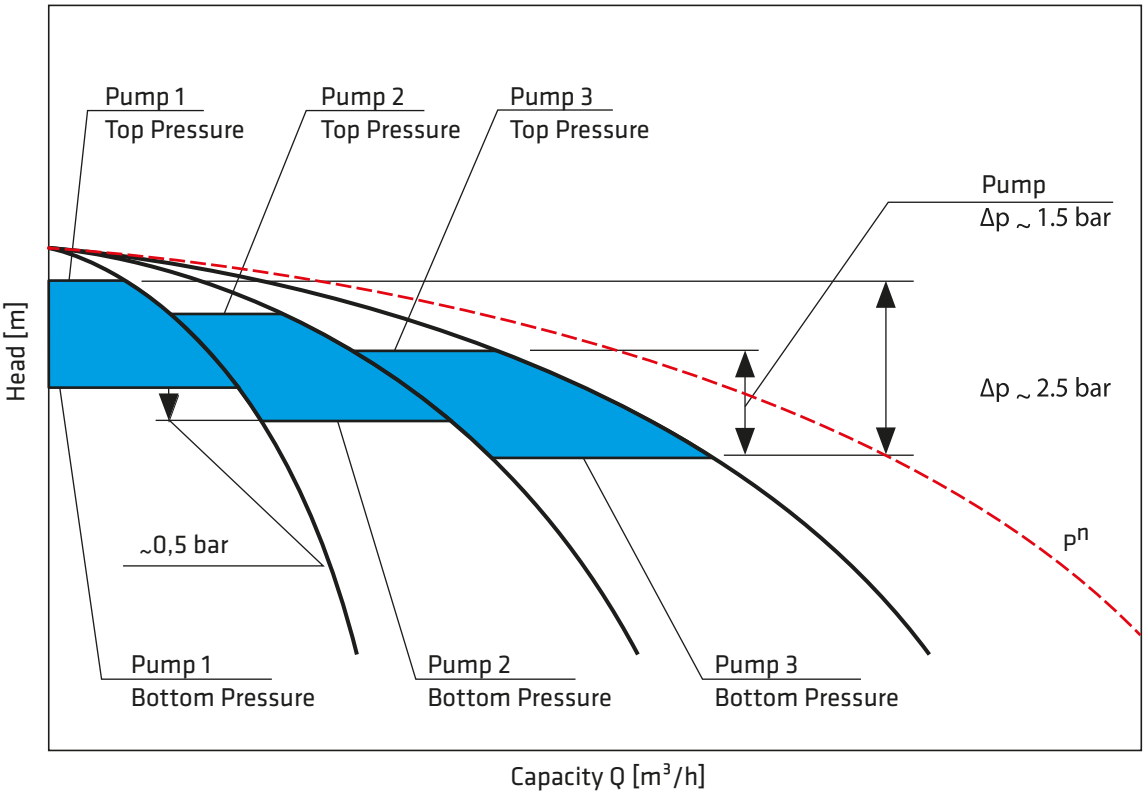



**Figure 8.** Control Panel With Pressure Sensors

## Frequency controlled panel properties

•Works with 380-460 V AC 50 Hz / 60 Hz mains voltage.
•Panel frame is painted with IP 54 protection classed RAL 7032 electrostatic paint
•Panels have ventilation and filter.
•Panel switch can be controlled from front panel.
•Frequency converter device has overheat, motor overheat, motor overcurrent, short circuit, earth leakage, non-overload fault, motor phase loss, over and undervoltage protection and as standard internal EMC and entry shock coil.
•Panel is protected against mains phase loss imbalance and phase reversal.
•During phase fault, user is warned by signal lamps.
•For motors and frequency convertor, there are separate thermal motor protection switches and fuses.
•Up to 4 pump applications in the PFC Macro system, system automation is controlled through PFC macro software and advanced LCD panel by an electronic card on the converter.
•When the number of pumps are 5 or more in PLCOPRT system, PLC and touch panel are used. Via software in the PLC, system automation is controlled by touch panel.
•Upon request, optionally, PLC operator system can be provided in all multi pumps.
•Up to 7,5 kW pumps are operated on direct start, 11 kW and above are operated on star-delta start. Optionally, instead of star-delta start soft start can be used.
•For each motor there are separate ON/OFF keys. Moreover, system can be operated as Automatic or Manuel by separate switch.
•In AUTO position, in the PFC MACRO system, the pressure information from the 1 pressure sensor at the pumps collector output is input to the converter in 4-20mA as analogue. The control software adjusts the pump speed as to provide outlet pressure to the set pressure value from operator panel. When the required pump capacity is exceeded, a second pump is switched on from the network and the pump running on the converter adapts itself according to the new situation and provides regulation. In each additional pump the situation continues in the same way. When the need for water decreases, the pump goes to standby. It steps in again if needed and continues to work in the same way. When there is a problem with any pump, the pump is switched on automatically. After each standby state, the pump entering the circuit runs in sequence.

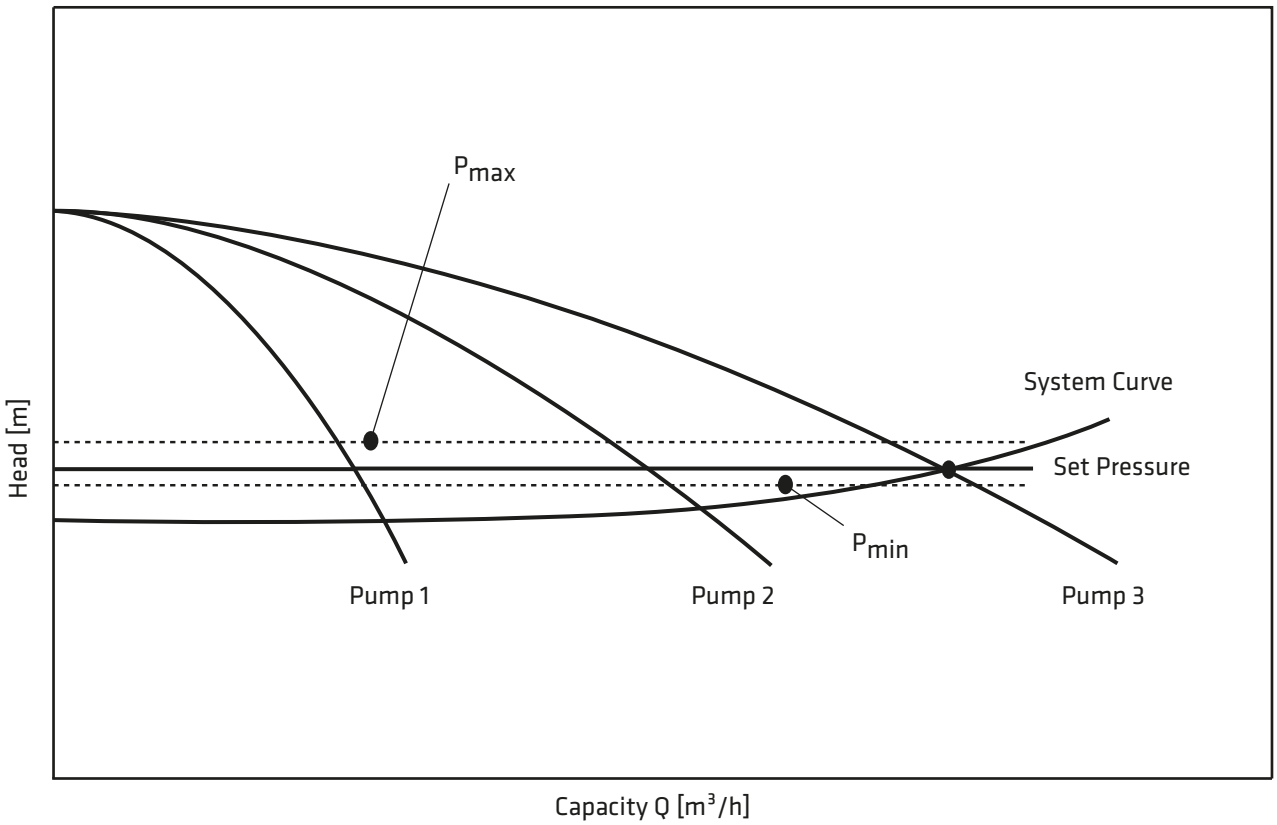



**Figure 9.** Frequecy Controlled Booster

•The operation in PLC OPRT system in AUTO mode is same as above. The pressure sensor is connected to the PLC and the pumps are controlled via the software in the PLC. System information entries are made via the operator touch panel located on the panel.

•In case of a malfunction on the electronic system or on the converter in MANUEL position, the pumps that are switched on are operated directly or star-delta via the contactors on the panel. In this case, the pressure is adjusted by the pressure switches at the outlet of the collector.

•Separate operating and fault lamp for each motor.
•Lamp for converter failure.
•Lamp for phase protection.
•Dry contact output for general failure.
•Panel is delivered as ready to commissioning.
•The input shock coil is available as STANDARD to reduce the harmonic distortion in the mains supplied by the panel.

**Figure 10: Front view of frequency controlled panel with double pump**

| Minimum Pipe and Valve Diameters for Suction Boosters | | | | | |
|---|---|---|---|---|---|
| | **Suction Pipe** | **Flap** | | **Suction Pipe** | **Flap** |
| **SB M/T 80** | 1¼" | 1½" | **CDLF 4** | 1½" | 2" |
| **SB M/T 90** | 1½" | 2" | **CDLF 8** | 2" | 2½" |
| **SB M/T 100** | 2" | 2½" | **CDLF 12** | 2" | 2½" |
| **SB T 130** | 2½" | 3" | **CDLF 15** | 2" | 2½" |
| **GRV VD** | 2" | 2½" | **CDLF 20** | 2½" | 3" |
| **GRV VB** | 2" | 2½" | **CDLF 32** | 2½" | 3" |
| **SKMV 32** | 2" | 2½" | **CDLF 42** | 3" | 4" |
| **SKMV 40** | 2½" | 3" | **CDLF 65** | 4" | 5" |
| **SKMV 50** | 3" | 4" | **CDLF 85** | 4" | 5" |
| **SKMV 65** | 4" | 5" | | | |

NOTE: Recommendation for suction pipe diameter is given for steel pipe, if plastic pipe is used diameter of pipe should be increased.

**Table 4**

Standart

Pump • Fire Fighting Units • Booster Set

# TH CDLF

## STAINLESS BOOSTERS

TH CDLF Rev.11 09.2021

## General Information

High pressure, quiet running, compact and low power consumption.
All surfaces that contact with the liquid are stainless steel, In-line (straight pipe attachable) type pumps.
CDLF pumps are suitable for pumping non-abrasive, clean or slightly contaminated, low-viscosity liquids without solid & fibrous particles.
Bearing is provided by tungsten carbide sliding bearings.
Vertical structure saves space.

## Technical Data

| | |
|---|---|
| Capacity | up to 110 $m^3/h$ |
| Head | up to 160 m |
| Design Temperature | -10 °C to 120 °C |
| Casing Pressure | 10 - 16 - 25 bar |

•Electric motors of high efficiency class conforming to IEC 60034-30 standard are used.
•Booster pumps can be manufactured with valve, check-valve, stainless steel base plate, depending on request.
•The booster pumps can be manufactured as a variable-speed frequency control for convenience.
•At 11 kW and above, the booster pump base plate is NPU iron construction.

## Design Features

•TH CDLF booster pumps are manufactured as vertical pump.
•The booster pumps are produced as single, double and triple pumps as a standard according to the desired flow rate. Upon request, up to 6 pumps can be set.
•For Single-pump booster pumps have a water level float (electric floater).
•Phase control system (PCS) is available in single pump, three-phase motorized booster pumps.
•Sequencing, phase control and liquid level control are standard features for multiple pumped booster pumps.
•Booster pumps can operate in two different modes; automatically and manually.
•Electrical materials used in the booster pump panels are selected from reliable and quality brands.

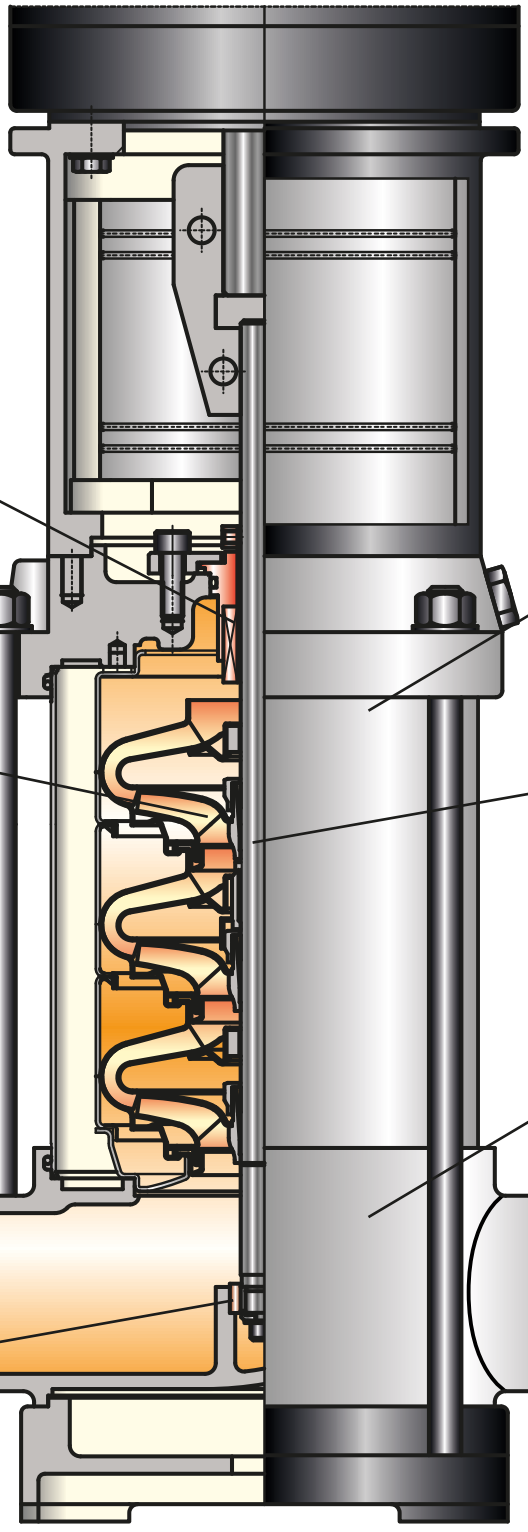
## Booster Designation

TH -1 x CDLF 4 / 10

- **Booster Type**
- **Number of Pumps**
- **Pump Type**
- **Model**
- **Number of Stage**

## Material Information

| Part Name | Material | |
|---|---|---|
| | Standard | Optional |
| **Pump** | | |
| Base Plate | GG 25 | - |
| Stage Casing | AISI 304 | - |
| Intermadiate Stage | AISI 304 | - |
| Impeller | AISI 304 | - |
| Shaft | AISI 304 | - |
| Tube | AISI 304 | - |
| **Panel** | Pressure Switch Controlled | Frequency Controlled |
| **Collector** | AISI 304 | AISI 316 L / Galvanized Steel |
| **Frame** | Steel | AISI 316 L |
| **Accessories** | | |
| Valve | Brass | AISI 304 |
| Check Valve | Brass | AISI 316 |



**Shaft Sealing:**
Mechanical seal is provided. The pump can be changed without separating the installation/facility.

**Stainless Steel Impeller:**
Highly productive design produced by Sheet Forming Technology

**Rotary Connection Flanges:**
Hole axis adjustment is easier by means of the rotating structure.

**Pump Bearings:**
It has a long life and silent structure by means of tungsten carbide bearings.

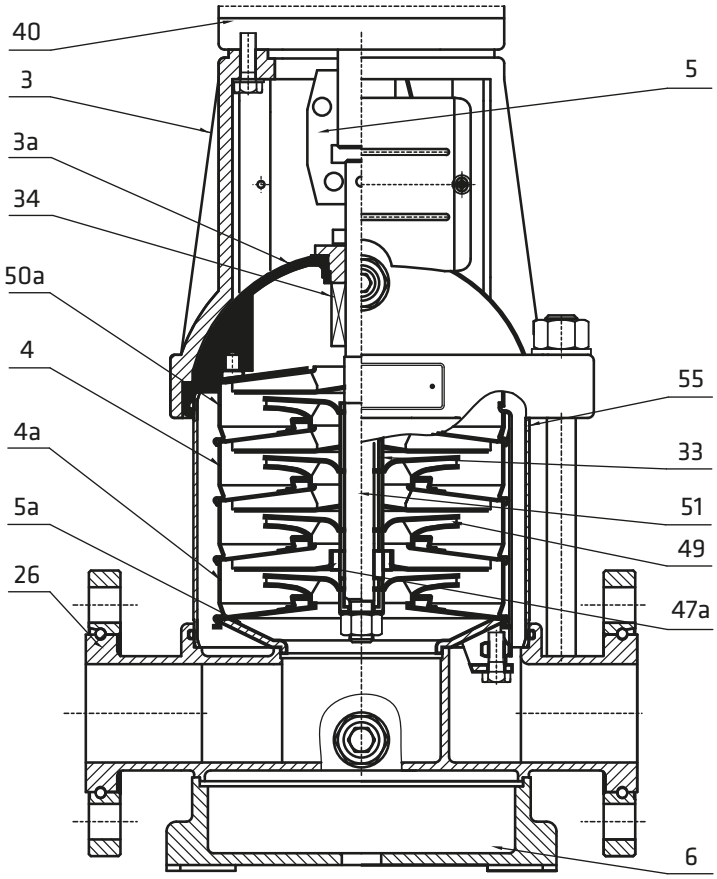
**Modular Structure:**
Ensures to reduce costs of spare parts and stock.

Connection without key technology makes it easy to remove the impellers during maintenance.

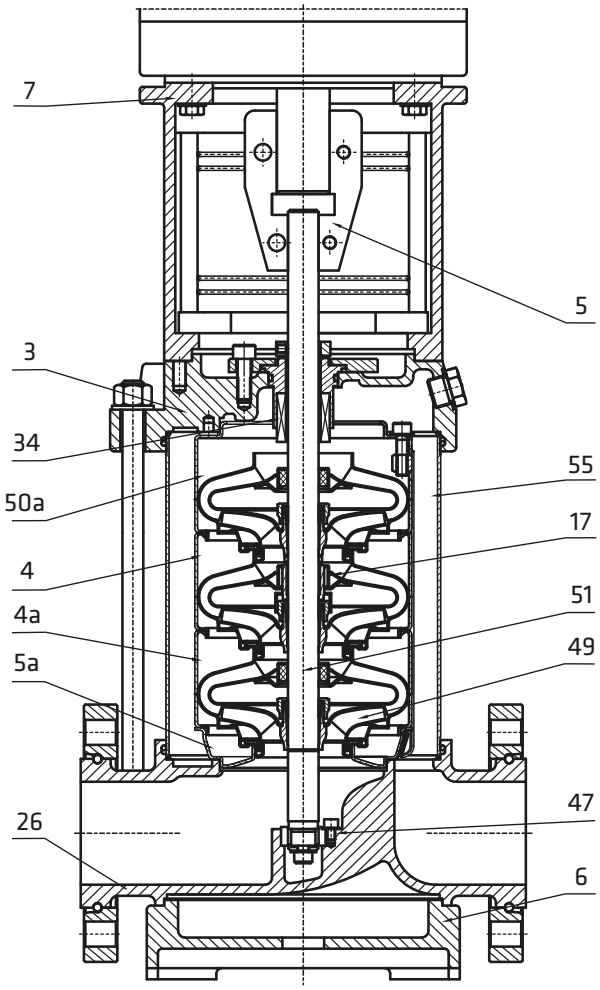
**Suction and Discharge Casing:**
Stainless steel body in-line design makes it easy for installation.

## Sectional Drawings

**CDLF 4,8,12,16,20**




**CDLF 32,42,65,85**



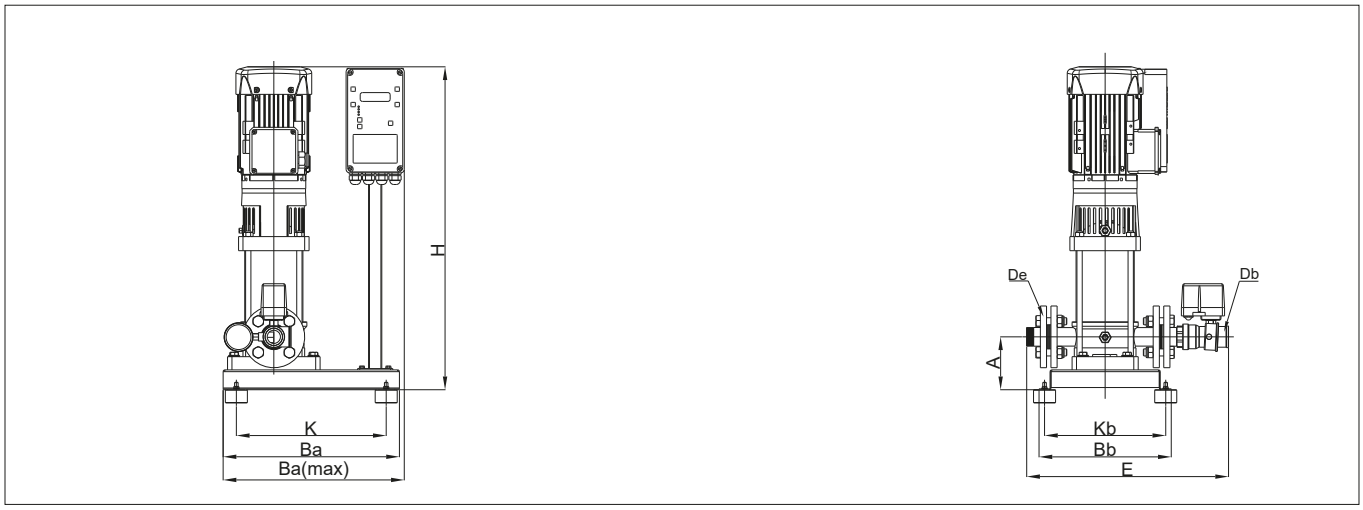

## Part List

| | | |
|---|---|---|
| 3 | Upper Body | Cast Iron (GG 25) |
| 3a | Liner | Stainless Steel (AISI 304) |
| 4 | Diffuser | Stainless Steel (AISI 304) |
| 4a | Lower Diffuser | Stainless Steel (AISI 304) |
| 5 | Coupling | Carbon Steel |
| 5a | Inducer | Stainless Steel (AISI 304) |
| 6 | Baseplate | Cast Iron (GG 25) |
| 26 | Suction and Discharge Casing | Stainless Steel (AISI 304) |
| 33 | Sleeve | Stainless Steel (AISI 304) |
| 34 | Mechanical Seal | - |
| 40 | Electric Motor | - |
| 47a | Bearing | Tungsten carbide |
| 49 | Impeller | Stainless Steel (AISI 304) |
| 50a | Upper Diffuser | Stainless Steel (AISI 304) |
| 51 | Pump Shaft | Stainless Steel (AISI 304) |
| 55 | Cover Plate | Stainless Steel (AISI 304) |

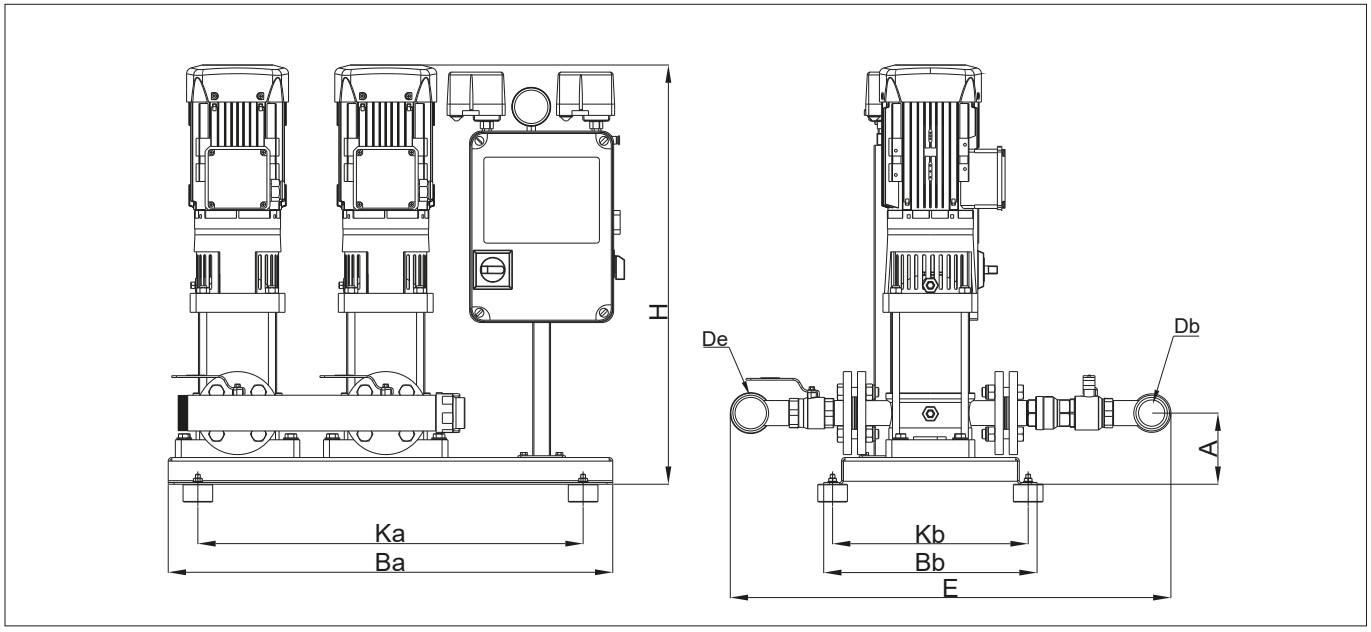
| | | |
|---|---|---|
| 3 | Upper Body | Stainless steel (AISI 304) |
| 4 | Diffuser | Stainless steel (AISI 304) |
| 4a | Lower Diffuser | Stainless steel (AISI 304) |
| 5 | Coupling | Carbon Steel |
| 5a | Inducer | Stainless steel (AISI 304) |
| 6 | Baseplate | Cast Iron (GG 25) |
| 7 | Motor Pedestal | Cast Iron (GG 25) |
| 17 | Bearing | Tungsten carbide |
| 26 | Suction and Discharge Casing | Stainless steel (AISI 304) |
| 34 | Mechanical Seal | - |
| 47 | Lower Bearing | Tungsten Carbide |
| 49 | Impeller | Stainless steel (AISI 304) |
| 50a | Upper Diffuser | Stainless steel (AISI 304) |
| 51 | Pump shaft | Stainless steel (AISI 304) |
| 55 | Cover Plate | Stainless steel (AISI 304) |

**Booster set with one pump**

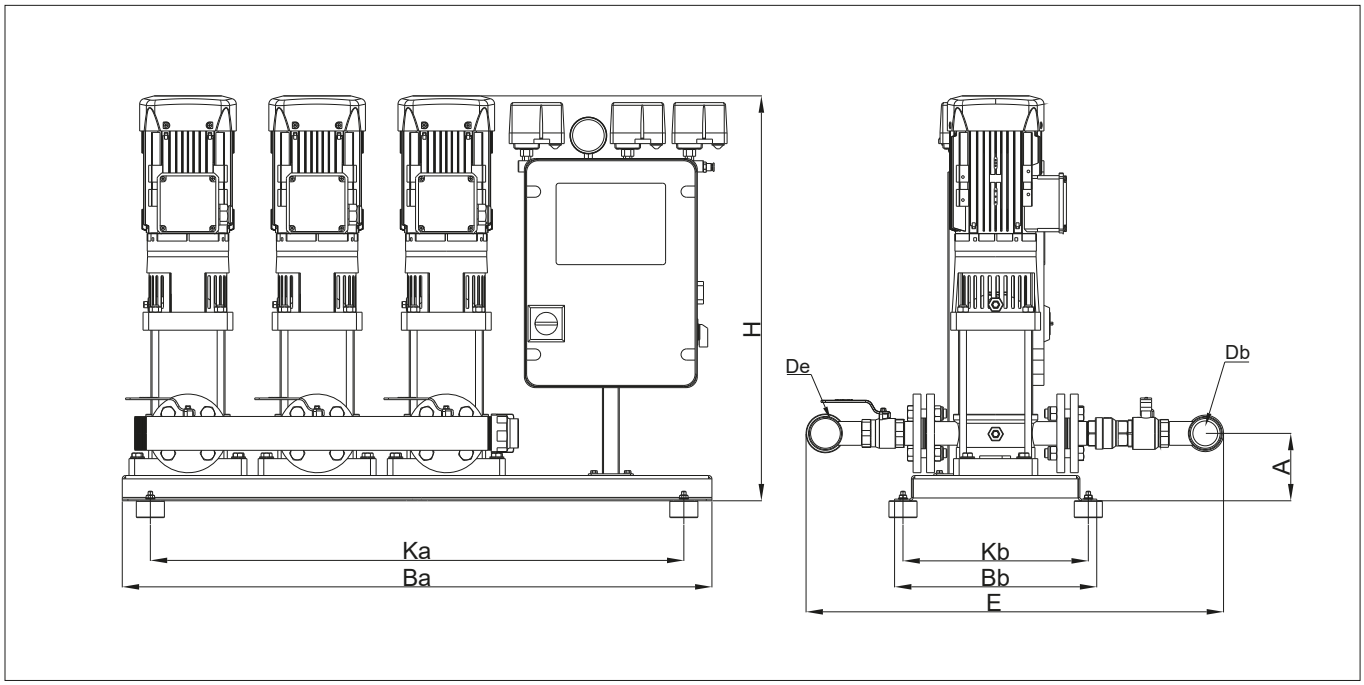
**NPU Base Plate Design**

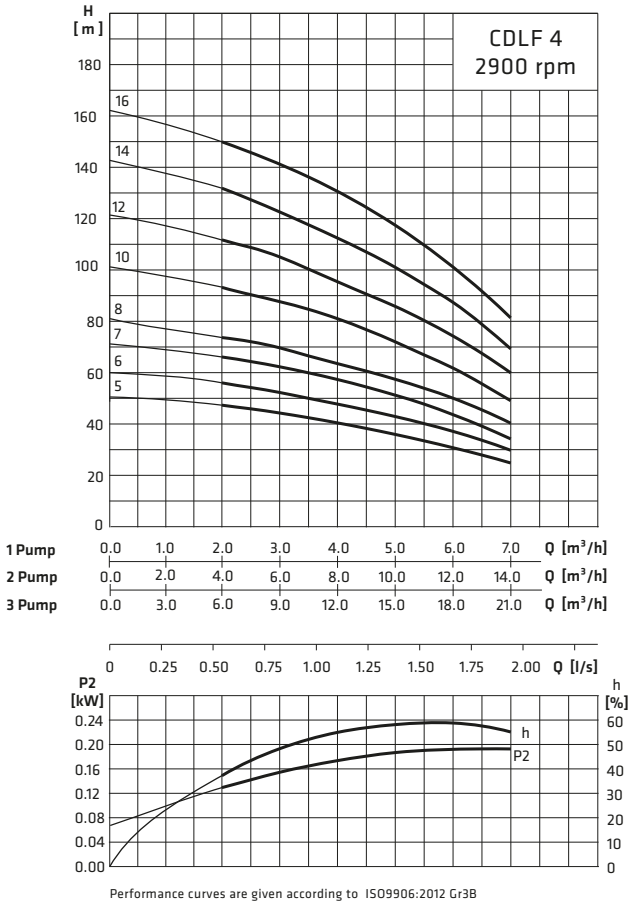



**Booster set with two pump**




**Booster set with three pump**



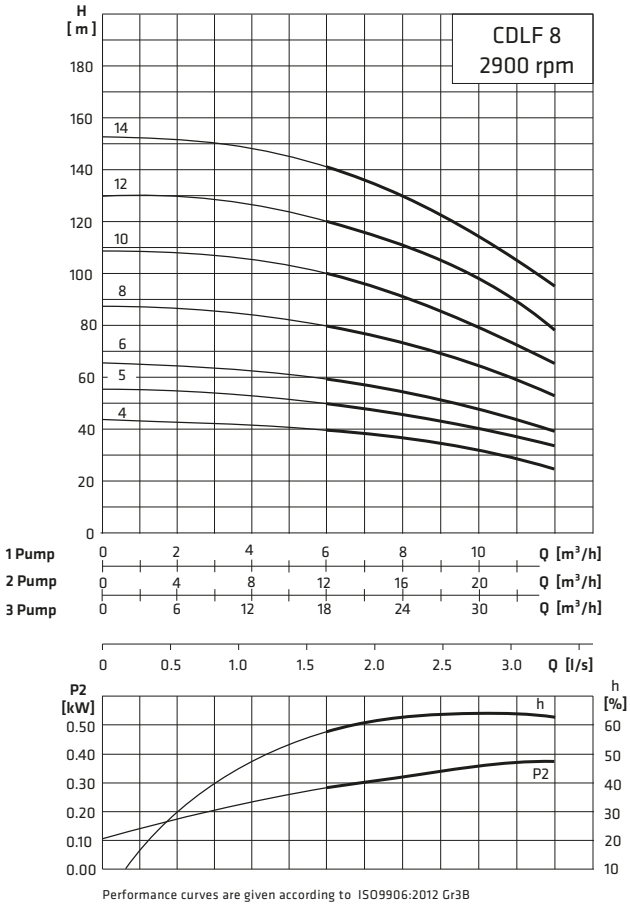



Performance curves are given according to ISO9906:2012 Gr3B

| Pump Type | kW | De | Db | Ba | Bb | Ba(max) | H | Ka | Kb | E | A | kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TH-1xCDLF 4-5 | 1,1 | 1¼" | 1¼" | 400 | 300 | 415 | 660 | 340 | 275 | 430 | 120 | 39 |
| TH-1xCDLF 4-6 | | | | | | | 685 | | | | | 39 |
| TH-1xCDLF 4-7 | 1,5 | | | | | | 765 | | | | | 45 |
| TH-1xCDLF 4-8 | | | | | | | 795 | | | | | 45 |
| TH-1xCDLF 4-10 | 2,2 | | | | | | 835 | | | | | 49 |
| TH-1xCDLF 4-12 | | | | | | | 900 | | | | | 50 |
| TH-1xCDLF 4-14 | 3 | | | | | | 990 | | | | | 58 |
| TH-1xCDLF 4-16 | | | | | | | 1045 | | | | | 60 |

| Pump Type | kW | De | Db | Ba | Bb | H | Ka | Kb | E | A | kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TH-2xCDLF 4-5 | 1,1 | 2" | 2" | 750 | 360 | 660 | 650 | 330 | 750 | 120 | 115 |
| TH-2xCDLF 4-6 | | | | | | 685 | | | | | 115 |
| TH-2xCDLF 4-7 | 1,5 | | | | | 765 | | | | | 127 |
| TH-2xCDLF 4-8 | | | | | | 795 | | | | | 127 |
| TH-2xCDLF 4-10 | 2,2 | | | | | 835 | | | | | 135 |
| TH-2xCDLF 4-12 | | | | | | 900 | | | | | 137 |
| TH-2xCDLF 4-14 | 3 | | | | | 990 | | | | | 153 |
| TH-2xCDLF 4-16 | | | | | | 1045 | | | | | 157 |

| Pump Type | kW | De | Db | Ba | Bb | H | Ka | Kb | E | A | kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TH-3xCDLF 4-5 | 1,1 | 2" | 2" | 1050 | 360 | 660 | 950 | 330 | 750 | 120 | 161 |
| TH-3xCDLF 4-6 | | | | | | 685 | | | | | 161 |
| TH-3xCDLF 4-7 | 1,5 | | | | | 765 | | | | | 179 |
| TH-3xCDLF 4-8 | | | | | | 795 | | | | | 179 |
| TH-3xCDLF 4-10 | 2,2 | | | | | 835 | | | | | 191 |
| TH-3xCDLF 4-12 | | | | | | 900 | | | | | 194 |
| TH-3xCDLF 4-14 | 3 | | | | | 990 | | | | | 218 |
| TH-3xCDLF 4-16 | | | | | | 1045 | | | | | 224 |

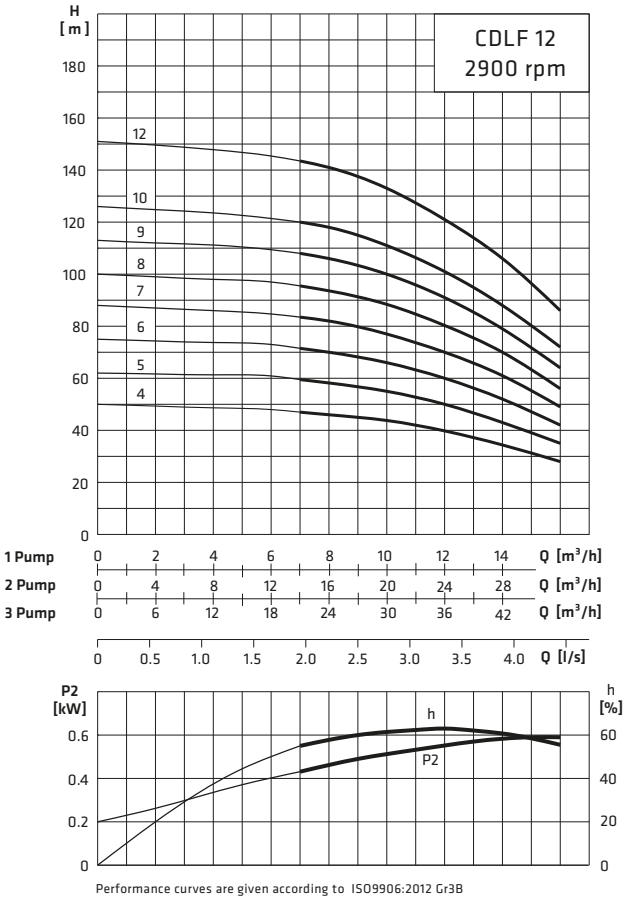



Performance curves are given according to ISO9906:2012 Gr3B

| Pump Type | kW | De | Db | Ba | Bb | Ba(max) | H | Ka | Kb | E | A | kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TH-1xCDLF 8-4 | 1,5 | 1½" | 1½" | 400 | 300 | 415 | 755 | 240 | 410 | 510 | 130 | 54 |
| TH-1xCDLF 8-5 | 2,2 | | | | | | 785 | | | | | 58 |
| TH-1xCDLF 8-6 | | | | | | | 815 | | | | | 59 |
| TH-1xCDLF 8-8 | 3 | | | | | | 907 | | | | | 67 |
| TH-1xCDLF 8-10 | 4 | | | | | | 987 | | | | | 78 |
| TH-1xCDLF 8-12 | | | | | | | 1047 | | | | | 80 |
| TH-1xCDLF 8-14 | 5,5 | | | | | | 1222 | | | | | 95 |

| Pump Type | kW | De | Db | Ba | Bb | H | Ka | Kb | E | A | kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TH-2xCDLF 8-4 | 1,5 | 2" | 2" | 850 | 360 | 755 | 750 | 330 | 850 | 125 | 145 |
| TH-2xCDLF 8-5 | 2,2 | | | | | 785 | | | | | 153 |
| TH-2xCDLF 8-6 | | | | | | 815 | | | | | 155 |
| TH-2xCDLF 8-8 | 3 | | | | | 907 | | | | | 171 |
| TH-2xCDLF 8-10 | 4 | | | | | 987 | | | | | 193 |
| TH-2xCDLF 8-12 | | | | | | 1047 | | | | | 197 |
| TH-2xCDLF 8-14 | 5,5 | | | | | 1222 | | | | | 227 |

| Pump Type | kW | De | Db | Ba | Bb | H | Ka | Kb | E | A | kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TH-3xCDLF 8-4 | 1,5 | 2½" | 2½" | 1350 | 360 | 755 | 1250 | 330 | 900 | 125 | 204 |
| TH-3xCDLF 8-5 | 2,2 | | | | | 785 | | | | | 216 |
| TH-3xCDLF 8-6 | | | | | | 815 | | | | | 219 |
| TH-3xCDLF 8-8 | 3 | | | | | 907 | | | | | 243 |
| TH-3xCDLF 8-10 | 4 | | | | | 987 | | | | | 276 |
| TH-3xCDLF 8-12 | | | | | | 1047 | | | | | 282 |
| TH-3xCDLF 8-14 | 5,5 | | | | | 1222 | | | | | 327 |

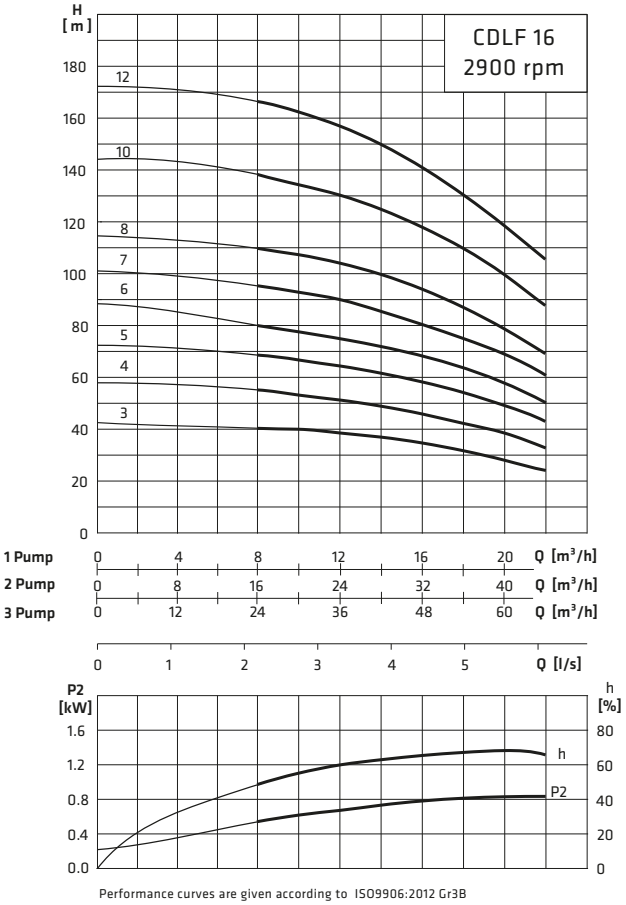



Performance curves are given according to ISO9906:2012 Gr3B

| Pump Type | kW | De | Db | Ba | Bb | Ba(max) | H | Ka | Kb | E | A | kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TH-1xCDLF 12-4 | 3 | 2" | 2" | 400 | 300 | 415 | 800 | 340 | 275 | 540 | 135 | 65 |
| TH-1xCDLF 12-5 | | | | | | | 830 | | | | | 67 |
| TH-1xCDLF 12-6 | 4 | | | | | | 880 | | | | | 75 |
| TH-1xCDLF 12-7 | 5,5 | | | | | | 1025 | | | | | 87 |
| TH-1xCDLF 12-8 | | | | | | | 1055 | | | | | 88 |
| TH-1xCDLF 12-9 | | | | | | | 1085 | | | | | 90 |
| TH-1xCDLF 12-10 | 7,5 | | | | | | 1115 | | | | | 110 |
| TH-1xCDLF 12-12 | | | | | | | 1175 | | | | | 114 |

| Pump Type | kW | De | Db | Ba | Bb | H | Ka | Kb | E | A | kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TH-2xCDLF 12-4 | 3 | 2 1/2" | 2 1/2" | 900 | 360 | 800 | 800 | 330 | 950 | 135 | 167 |
| TH-2xCDLF 12-5 | | | | | | 830 | | | | | 171 |
| TH-2xCDLF 12-6 | 4 | | | | | 880 | | | | | 187 |
| TH-2xCDLF 12-7 | 5,5 | | | | | 1025 | | | | | 211 |
| TH-2xCDLF 12-8 | | | | | | 1055 | | | | | 213 |
| TH-2xCDLF 12-9 | | | | | | 1085 | | | | | 217 |
| TH-2xCDLF 12-10 | 7,5 | | | | | 1115 | | | | | 246 |
| TH-2xCDLF 12-12 | | | | | | 1175 | | | | | 254 |

| Pump Type | kW | De | Db | Ba | Bb | H | Ka | Kb | E | A | kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TH-3xCDLF 12-4 | 3 | 3" | 3" | 1250 | 360 | 800 | 1150 | 330 | 980 | 135 | 237 |
| TH-3xCDLF 12-5 | | | | | | 830 | | | | | 243 |
| TH-3xCDLF 12-6 | 4 | | | | | 880 | | | | | 267 |
| TH-3xCDLF 12-7 | 5,5 | | | | | 1025 | | | | | 303 |
| TH-3xCDLF 12-8 | | | | | | 1055 | | | | | 306 |
| TH-3xCDLF 12-9 | | | | | | 1085 | | | | | 312 |
| TH-3xCDLF 12-10 | 7,5 | | | | | 1115 | | | | | 419 |
| TH-3xCDLF 12-12 | | | | | | 1175 | | | | | 432 |



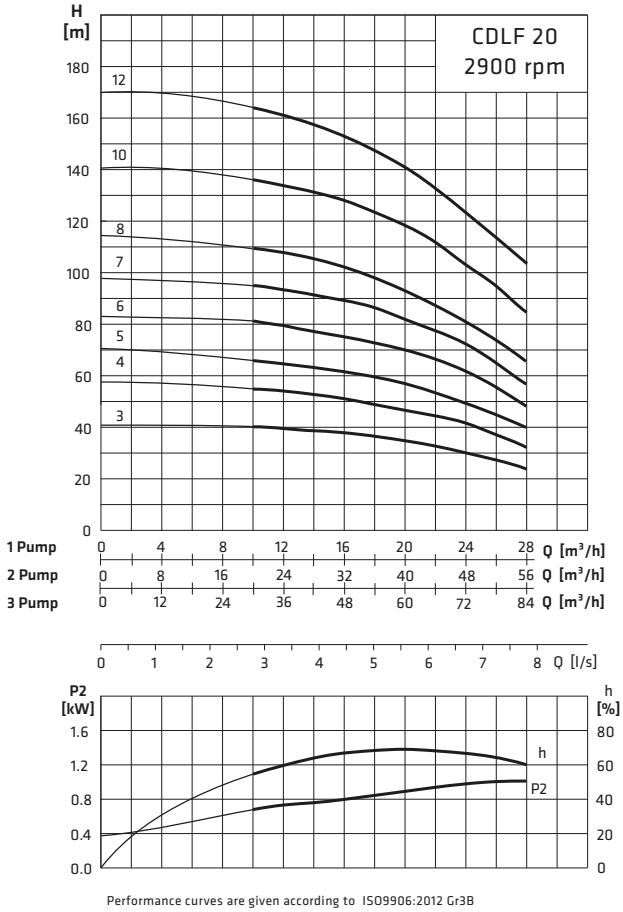

Performance curves are given according to ISO9906:2012 Gr3B

| Pump Type | kW | De | Db | Ba | Bb | Ba(max) | H | Ka | Kb | E | A | kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TH-1xCDLF 16-3 | 3 | 2" | 2" | 400 | 300 | 415 | 815 | 340 | 275 | 540 | 135 | 64 |
| TH-1xCDLF 16-4 | 4 | | | | | | 880 | | | | | 73 |
| TH-1xCDLF 16-5 | 5,5 | | | | | | 1040 | | | | | 90 |
| TH-1xCDLF 16-6 | | | | | | | 1085 | | | | | 91 |
| TH-1xCDLF 16-7 | 7,5 | | | | | | 1130 | | | | | 98 |
| TH-1xCDLF 16-8 | | | | | | | 1175 | | | | | 100 |
| TH-1xCDLF 16-10 | 11 | | | | | | 1410 | | | | | 182 |
| TH-1xCDLF 16-12 | | | | | | | 1500 | | | | | 185 |

| Pump Type | kW | De | Db | Ba | Bb | H | Ka | Kb | E | A | kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TH-2xCDLF 16-3 | 3 | 2 1/2" | 2 1/2" | 850 | 360 | 815 | 750 | 330 | 860 | 135 | 165 |
| TH-2xCDLF 16-4 | 4 | | | | | 880 | | | | | 183 |
| TH-2xCDLF 16-5 | 5,5 | | | | | 1040 | | | | | 217 |
| TH-2xCDLF 16-6 | | | | | | 1085 | | | | | 219 |
| TH-2xCDLF 16-7 | 7,5 | | | | | 1130 | | | | | 233 |
| TH-2xCDLF 16-8 | | | | | | 1175 | | | | | 237 |
| TH-2xCDLF 16-10 | 11 | | | 1450 | | 1410 | 1350 | | | | 396 |
| TH-2xCDLF 16-12 | | | | | | 1500 | | | | | 402 |

| Pump Type | kW | De | Db | Ba | Bb | H | Ka | Kb | E | A | kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TH-3xCDLF 16-3 | 3 | 3" | 3" | 1250 | 360 | 815 | 1150 | 330 | 870 | 135 | 234 |
| TH-3xCDLF 16-4 | 4 | | | | | 880 | | | | | 261 |
| TH-3xCDLF 16-5 | 5,5 | | | | | 1040 | | | | | 312 |
| TH-3xCDLF 16-6 | | | | | | 1085 | | | | | 315 |
| TH-3xCDLF 16-7 | 7,5 | | | | | 1130 | | | | | 336 |
| TH-3xCDLF 16-8 | | | | | | 1175 | | | | | 342 |
| TH-3xCDLF 16-10 | 11 | | | 1800 | | 1410 | 1600 | | | | 591 |
| TH-3xCDLF 16-12 | | | | | | 1500 | | | | | 599 |

## Performance Curves and Dimensions




Performance curves are given according to ISO9906:2012 Gr3B

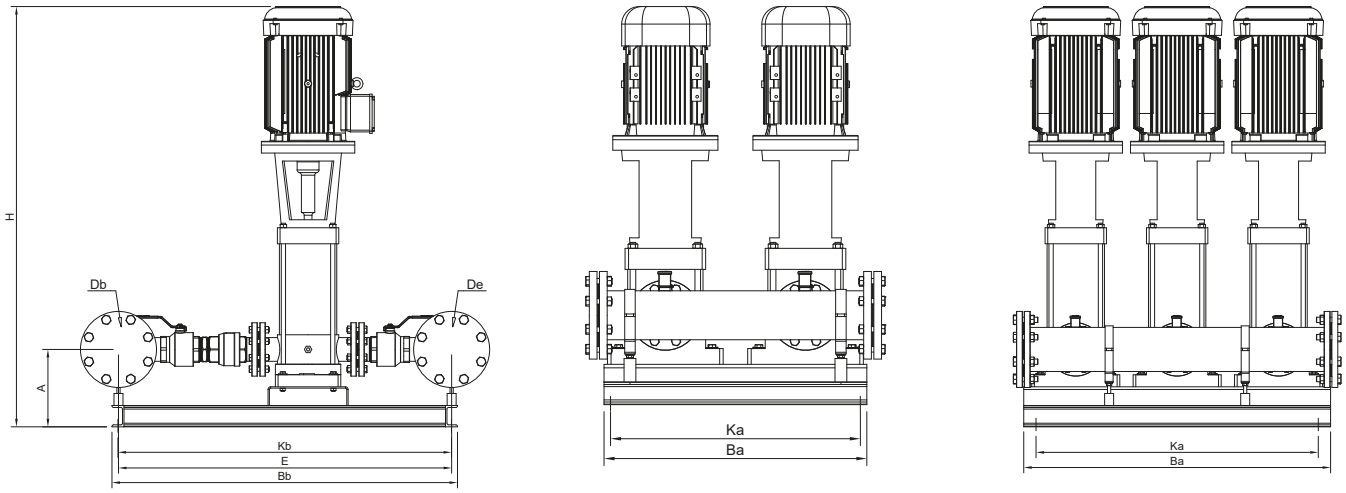
| Pump Type | kW | De | Db | Ba | Bb | Ba(max) | H | Ka | Kb | E | A | kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TH-1xCDLF 20-3 | 4 | 2" | 2" | 400 | 300 | 415 | 835 | 410 | 240 | 540 | 135 | 72 |
| TH-1xCDLF 20-4 | 5,5 | | | | | | 995 | | | | | 88 |
| TH-1xCDLF 20-5 | | | | | | | 1040 | | | | | 90 |
| TH-1xCDLF 20-6 | 7,5 | | | | | | 1085 | | | | | 96 |
| TH-1xCDLF 20-7 | | | | | | | 1130 | | | | | 98 |
| TH-1xCDLF 20-8 | 11 | | | | | | 1320 | | | | | 179 |
| TH-1xCDLF 20-10 | | | | | | | 1410 | | | | | 183 |
| TH-1xCDLF 20-12 | 15 | | | | | | 1500 | | | | | 196 |

| Pump Type | kW | De | Db | Ba | Bb | H | Ka | Kb | E | A | kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TH-2xCDLF 20-3 | 4 | 2 1/2" | 2 1/2" | 850 | 360 | 835 | 750 | 330 | 920 | 135 | 181 |
| TH-2xCDLF 20-4 | 5,5 | | | | | 995 | | | | | 213 |
| TH-2xCDLF 20-5 | | | | | | 1040 | | | | | 217 |
| TH-2xCDLF 20-6 | 7,5 | | | | | 1085 | | | | | 229 |
| TH-2xCDLF 20-7 | | | | | | 1130 | | | | | 233 |
| TH-2xCDLF 20-8 | 11 | | | 1450 | | 1320 | 1350 | | | | 413 |
| TH-2xCDLF 20-10 | | | | | | 1410 | | | | | 421 |
| TH-2xCDLF 20-12 | 15 | | | | | 1500 | | | | | 452 |

| Pump Type | kW | De | Db | Ba | Bb | H | Ka | Kb | E | A | kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TH-3xCDLF 20-3 | 4 | 3" | 3" | 1250 | 360 | 835 | 1150 | 330 | 935 | 135 | 306 |
| TH-3xCDLF 20-4 | 5,5 | | | | | 995 | | | | | 354 |
| TH-3xCDLF 20-5 | | | | | | 1040 | | | | | 360 |
| TH-3xCDLF 20-6 | 7,5 | | | | | 1085 | | | | | 378 |
| TH-3xCDLF 20-7 | | | | | | 1130 | | | | | 384 |
| TH-3xCDLF 20-8 | 11 | | | 1800 | | 1320 | 1600 | | | | 611 |
| TH-3xCDLF 20-10 | | | | | | 1410 | | | | | 623 |
| TH-3xCDLF 20-12 | 15 | | | | | 1500 | | | | | 667 |

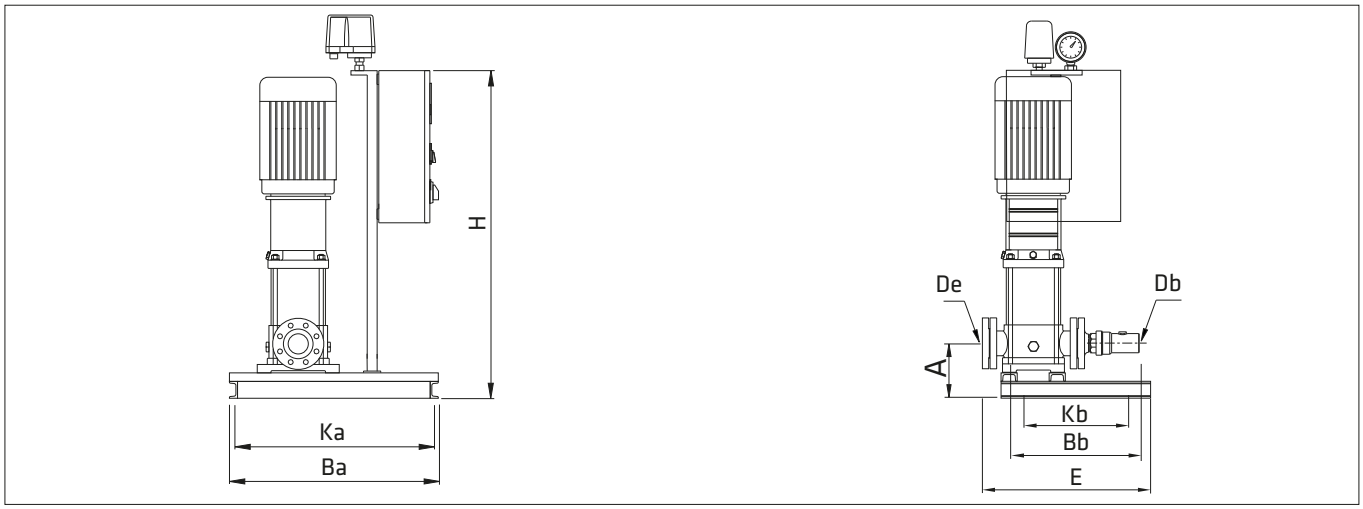
## Dimensions CLDF (32,42,65 ve 85)

The drawings which are given below illustrates the booster sets which are CDLF 32, 42, 65 and 85 series with 18.5 kW and above motor power. Control panel of those booster set are supplied seperately from base plate.

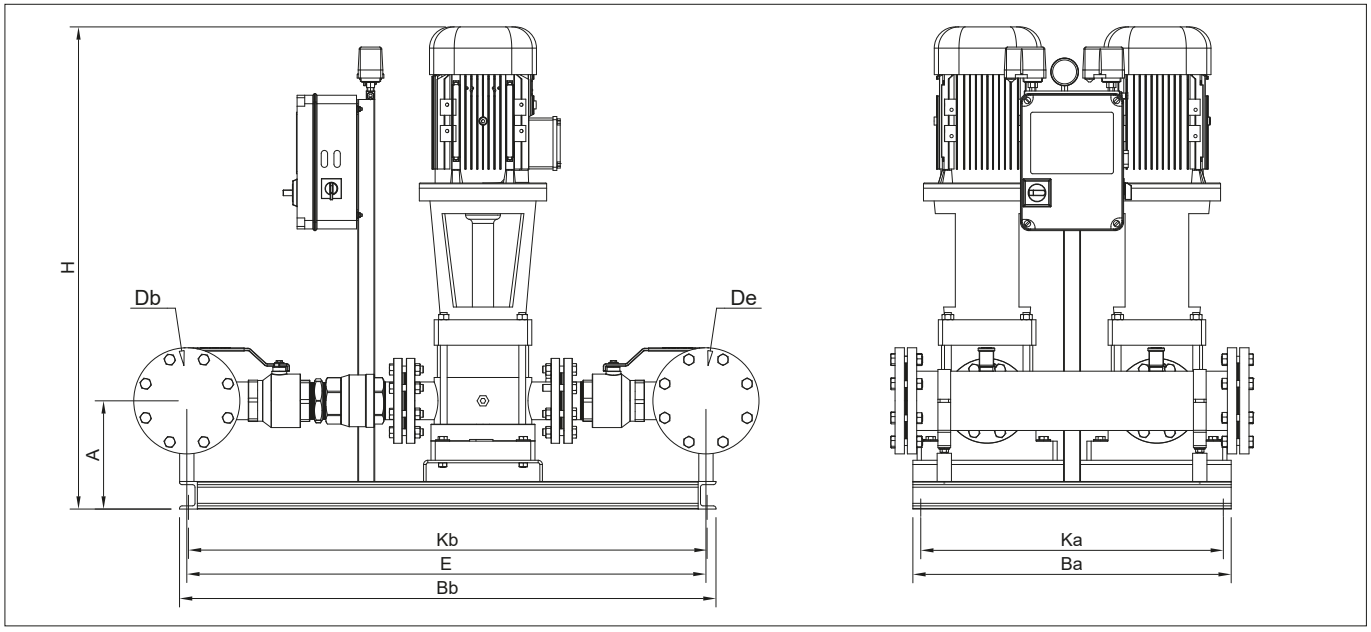


**Booster set with one pump**

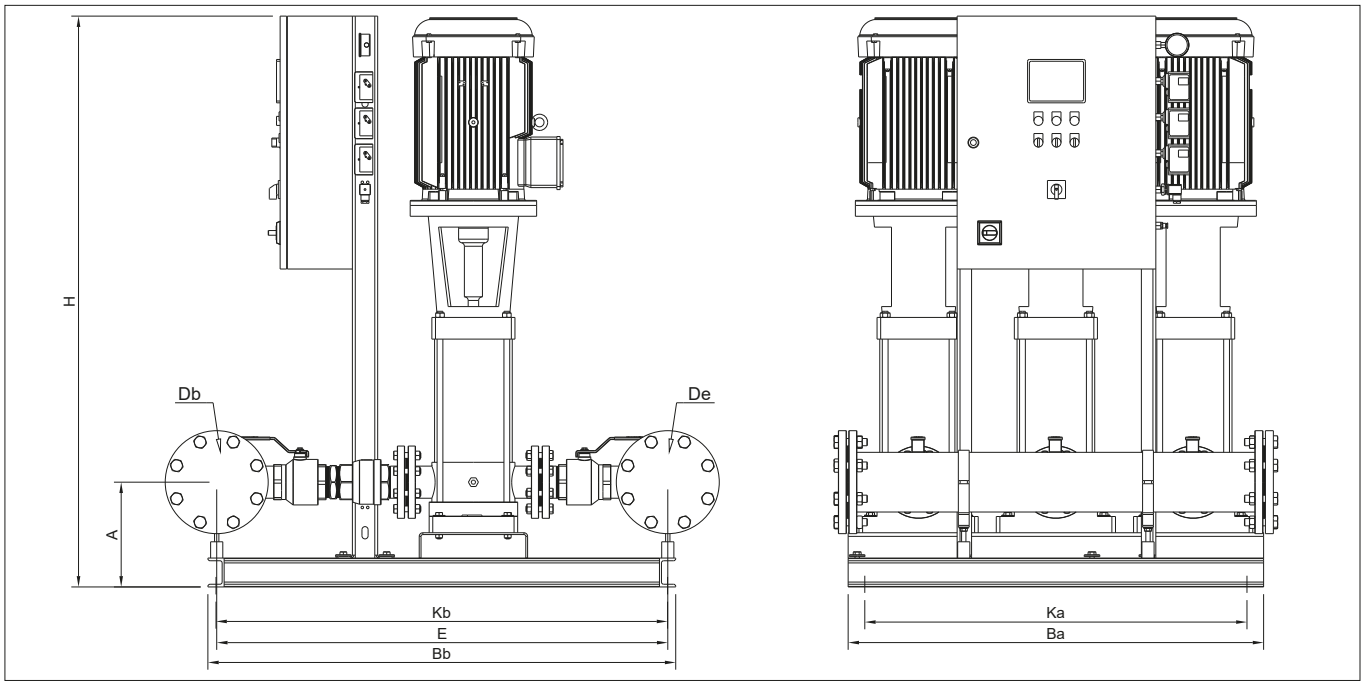
**NPU Baseplate Design**

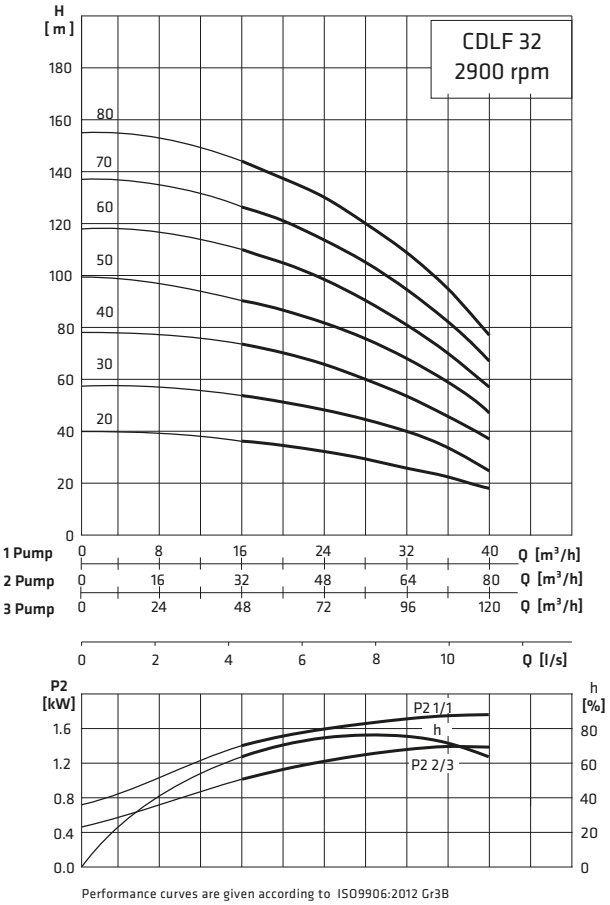



**Booster set with two pump**




**Booster set with three pump**



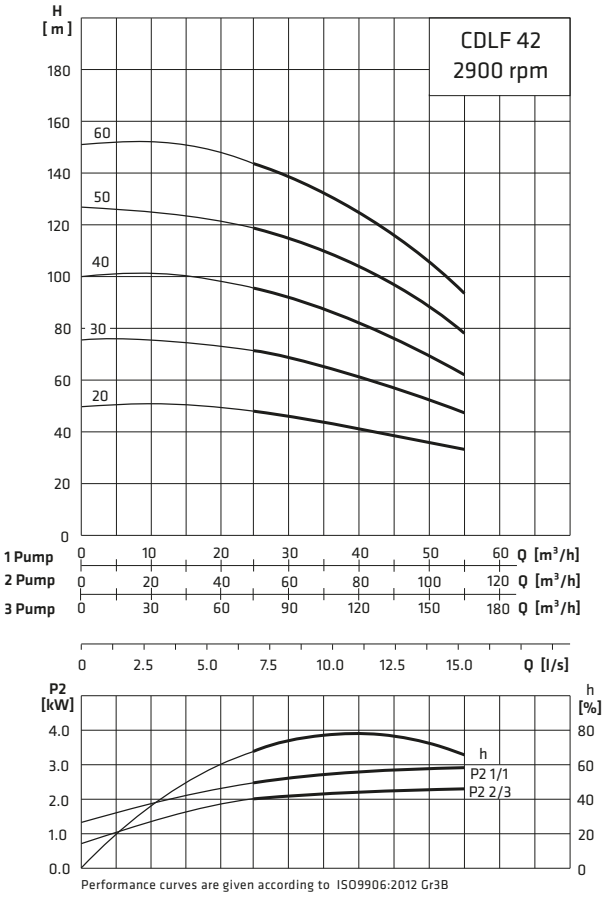



Performance curves are given according to ISO9906:2012 Gr3B

| Pump Type | kW | De | Db | Ba | Bb | H | Ka | Kb | E | A | Tas. | kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TH-1xCDLF 32-20 | 4 | | | | | 1000 | | | | | | 116 |
| TH-1xCDLF 32-30 | 5,5 | | | | | 1150 | | | | | | 131 |
| TH-1xCDLF 32-40 | 7,5 | | | | | 1200 | | | | | | 140 |
| TH-1xCDLF 32-50 | 11 | 2 1/2" | 2 1/2" | 570 | 610 | 1550 | 530 | 470 | 590 | 235 | B | 241 |
| TH-1xCDLF 32-60 | | | | | | 1600 | | | | | | 245 |
| TH-1xCDLF 32-70 | 15 | | | | | 1650 | | | | | | 264 |
| TH-1xCDLF 32-80 | | | | | | 1750 | | | | | | 268 |

| Pump Type | kW | De | Db | Ba | Bb | H | Ka | Kb | E | A | Tas. | kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TH-2xCDLF 32-20 | 4 | | | | | 1000 | | | | | | 273 |
| TH-2xCDLF 32-30 | 5,5 | | | | | 1150 | | | | | | 303 |
| TH-2xCDLF 32-40 | 7,5 | | | | | 1250 | | | | | | 321 |
| TH-2xCDLF 32-50 | 11 | 4" | 4" | 850 | 930 | 1550 | 810 | 790 | 890 | 235 | B | 482 |
| TH-2xCDLF 32-60 | | | | | | 1650 | | | | | | 490 |
| TH-2xCDLF 32-70 | 15 | | | | | 1700 | | | | | | 518 |
| TH-2xCDLF 32-80 | | | | | | 1800 | | | | | | 526 |

| Pump Type | kW | De | Db | Ba | Bb | H | Ka | Kb | E | A | Tas. | kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TH-3xCDLF 32-20 | 4 | | | | | 1000 | | | | | | 413 |
| TH-3xCDLF 32-30 | 5,5 | | | | | 1150 | | | | | | 458 |
| TH-3xCDLF 32-40 | 7,5 | | | | | 1250 | | | | | | 485 |
| TH-3xCDLF 32-50 | 11 | 5" | 5" | 1300 | 950 | 1550 | 1260 | 810 | 915 | 235 | B | 721 |
| TH-3xCDLF 32-60 | | | | | | 1650 | | | | | | 733 |
| TH-3xCDLF 32-70 | 15 | | | | | 1700 | | | | | | 780 |
| TH-3xCDLF 32-80 | | | | | | 1800 | | | | | | 792 |



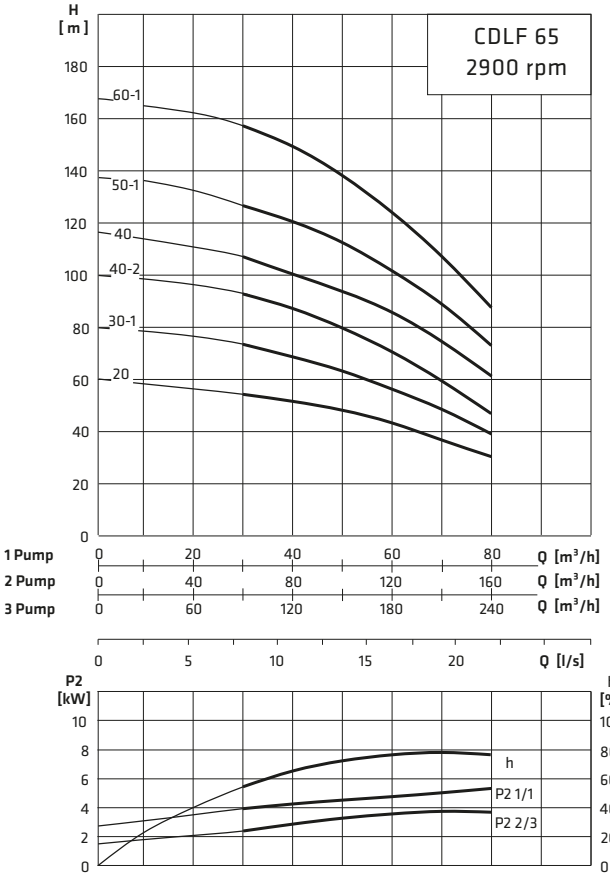

Performance curves are given according to ISO9906:2012 Gr3B

| Pump Type | kW | De | Db | Ba | Bb | H | Ka | Kb | E | A | Tas. | kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TH-1xCDLF 42-20 | 7,5 | | | | | 1250 | | | | | | 149 |
| TH-1xCDLF 42-30 | 11 | | | | | 1450 | | | | | | 222 |
| TH-1xCDLF 42-40 | 15 | 3" | 3" | 570 | 570 | 1550 | 530 | 430 | 550 | 285 | B | 236 |
| TH-1xCDLF 42-50 | 18,5 | | | | | 1700 | | | | | | 260 |
| TH-1xCDLF 42-60 | 22 | | | | | 1800 | | | | | | 300 |

| Pump Type | kW | De | Db | Ba | Bb | H | Ka | Kb | E | A | Tas. | kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TH-2xCDLF 42-20 | 7,5 | | | | | 1250 | | | | | | 332 |
| TH-2xCDLF 42-30 | 11 | | | | | 1500 | | | | | | 493 |
| TH-2xCDLF 42-40 | 15 | 5" | 5" | 850 | 1075 | 1600 | 810 | 935 | 1035 | 285 | B | 521 |
| TH-2xCDLF 42-50 | 18,5 | | | | | 1750 | | | | | | 569 |
| TH-2xCDLF 42-60 | 22 | | | | | 1850 | | | | | | 649 |

| Pump Type | kW | De | Db | Ba | Bb | H | Ka | Kb | E | A | Tas. | kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TH-3xCDLF 42-20 | 7,5 | | | | | 1250 | | | | | | 500 |
| TH-3xCDLF 42-30 | 11 | | | | | 1500 | | | | | | 739 |
| TH-3xCDLF 42-40 | 15 | 6" | 6" | 1300 | 1100 | 1600 | 1260 | 960 | 1060 | 285 | B | 786 |
| TH-3xCDLF 42-50 | 18,5 | | | | | 1750 | | | | | | 858 |
| TH-3xCDLF 42-60 | 22 | | | | | 1850 | | | | | | 978 |

The specifield dimensions and weights are approximate. Dimensions might be changed.

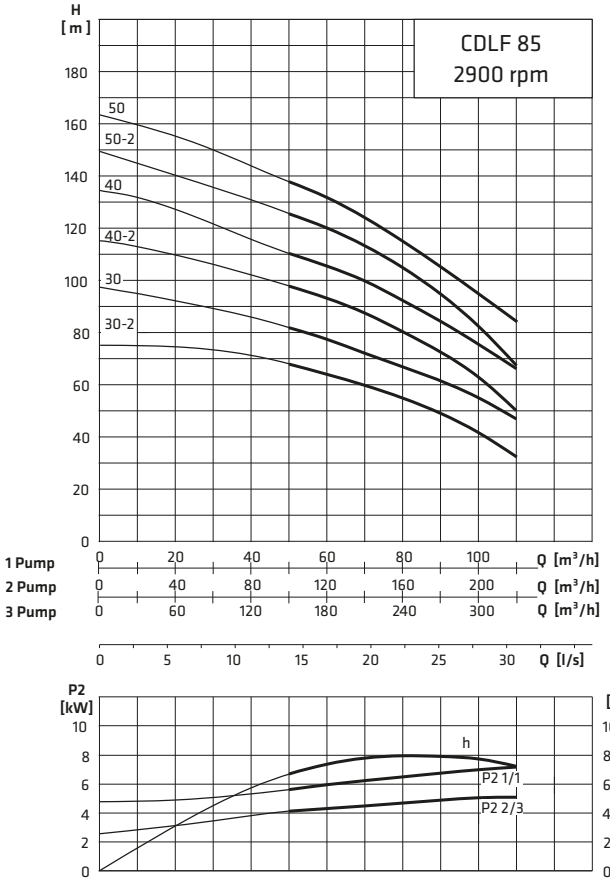



Performance curves are given according to ISO9906:2012 Gr3B

| Pump Type | kW | De | Db | Ba | Bb | H | Ka | Kb | E | A | Tas. | kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TH-1xCDLF 65-20 | 11 | 4" | 4" | 570 | 600 | 1450 | 530 | 460 | 585 | 320 | B | 221 |
| TH-1xCDLF 65-30-1 | 15 | | | | | 1550 | | | | | | 236 |
| TH-1xCDLF 65-40-2 | 18,5 | | | | | 1650 | | | | | | 264 |
| TH-1xCDLF 65-40 | 22 | | | | | 1700 | | | | | | 297 |
| TH-1xCDLF 65-50-1 | 30 | | | | | 1850 | | | | | | 358 |
| TH-1xCDLF 65-60-1 | 37 | | | | | 1950 | | | | | | 388 |

| Pump Type | kW | De | Db | Ba | Bb | H | Ka | Kb | E | A | Tas. | kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TH-2xCDLF 65-20 | 11 | 6" | 6" | 850 | 1150 | 1500 | 810 | 1010 | 1085 | 320 | B | 486 |
| TH-2xCDLF 65-30-1 | 15 | | | | | 1550 | | | | | | 531 |
| TH-2xCDLF 65-40-2 | 18,5 | | | | | 1700 | | | | | | 592 |
| TH-2xCDLF 65-40 | 22 | | | | | 1750 | | | | | | 663 |
| TH-2xCDLF 65-50-1 | 30 | | | | | 1900 | | | | | | 785 |
| TH-2xCDLF 65-60-1 | 37 | | | | | 2000 | | | | | | 850 |

| Pump Type | kW | De | Db | Ba | Bb | H | Ka | Kb | E | A | Tas. | kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TH-3xCDLF 65-20 | 11 | 8" | 8" | 1300 | 1150 | 1500 | 1260 | 1010 | 1110 | 320 | B | 731 |
| TH-3xCDLF 65-30-1 | 15 | | | | | 1550 | | | | | | 796 |
| TH-3xCDLF 65-40-2 | 18,5 | | | | | 1700 | | | | | | 885 |
| TH-3xCDLF 65-40 | 22 | | | | | 1750 | | | | | | 984 |
| TH-3xCDLF 65-50-1 | 30 | | | | | 1900 | | | | | | 1167 |
| TH-3xCDLF 65-60-1 | 37 | | | | | 2000 | | | | | | 1262 |




Performance curves are given according to ISO9906:2012 Gr3B

| Pump Type | kW | De | Db | Ba | Bb | H | Ka | Kb | E | A | Tas. | kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TH-1xCDLF 85-30-2 | 18,5 | 4" | 4" | 570 | 600 | 1650 | 530 | 460 | 600 | 340 | B | 254 |
| TH-1xCDLF 85-30 | 22 | | | | | 1700 | | | | | | 291 |
| TH-1xCDLF 85-40-2 | 30 | | | | | 1850 | | | | | | 351 |
| TH-1xCDLF 85-40 | | | | | | 1850 | | | | | | 351 |
| TH-1xCDLF 85-50-2 | 37 | | | | | 1950 | | | | | | 375 |
| TH-1xCDLF 85-50 | | | | | | 1950 | | | | | | 375 |

| Pump Type | kW | De | Db | Ba | Bb | H | Ka | Kb | E | A | Tas. | kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TH-2xCDLF 85-30-2 | 18,5 | 6" | 6" | 850 | 1150 | 1700 | 810 | 1010 | 1125 | 340 | B | 562 |
| TH-2xCDLF 85-30 | 22 | | | | | 1700 | | | | | | 651 |
| TH-2xCDLF 85-40-2 | 30 | | | | | 1900 | | | | | | 776 |
| TH-2xCDLF 85-40 | | | | | | 1900 | | | | | | 781 |
| TH-2xCDLF 85-50-2 | 37 | | | | | 2000 | | | | | | 829 |
| TH-2xCDLF 85-50 | | | | | | 2000 | | | | | | 834 |

| Pump Type | kW | De | Db | Ba | Bb | H | Ka | Kb | E | A | Tas. | kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TH-3xCDLF 85-30-2 | 18,5 | 8" | 8" | 1300 | 1250 | 1700 | 1260 | 1110 | 1180 | 340 | B | 860 |
| TH-3xCDLF 85-30 | 22 | | | | | 1700 | | | | | | 991 |
| TH-3xCDLF 85-40-2 | 30 | | | | | 1900 | | | | | | 1176 |
| TH-3xCDLF 85-40 | | | | | | 1900 | | | | | | 1176 |
| TH-3xCDLF 85-50-2 | 37 | | | | | 2000 | | | | | | 1248 |
| TH-3xCDLF 85-50 | | | | | | 2000 | | | | | | 1253 |

The specifield dimensions and weights are approximate. Dimensions might be changed.

Standart

Pump • Fire Fighting Units • Booster Set

# TH SB

## BOOSTERS

TH SB Rev.11 09.2021

## General Information

It is high pressure, quiet running, compact and low power consumption.
SB pumps are suitable for pumping non-abrasive, clean or slighty contaminated, low viscosity liquids without solid & fibrous particles.
Vertical structure saves space.

## Technical Data

**Flow** — up to 25 $m^3/h$
**Head** — up to 150 m
**Design Temperature** — 0 °C to 50 °C
**Casing Pressure** — 10 - 16 bar

## Design Features

•TH SB booster is manufactured with horizontal or vertical pump.
•The boosters are produced as single, double and triple pumps as a standard according to the desired flow. Upon request, up to 6 pumps can be set.
•Single-pump boosters have a water level float (electric floater).
•Phase control system (PCS) is available in single pump, three-phase motorized boosters.
•Sequencing, phase control and liquid level control are standard features for multiple pumped booster pumps.
•Booster pumps can operate in two different modes; automatically and manually.
•Electrical materials used in the booster pump panels are selected from reliable and quality brands.
•The booster pumps can be manufactured as a variable-speed frequency control for convenience.

## Material Equivalents

| Part Name | Material | |
|---|---|---|
| | Standard | Optional |
| **Pump** | | |
| Base Plate | GG 25 | - |
| Stage Casing | NORYL | - |
| Intermadiate Stage | NORYL | - |
| Impeller | NORYL | - |
| Shaft | AISI 420 | - |
| Cover Plate | AISI 304 | - |
| **Panel** | Pressure Switch Controlled | Frequency Controlled |
| **Collector** | Steel | AISI 304 |
| **Frame** | Steel | - |
| **Accessories** | | |
| Valve | Brass | - |
| Check Valve | Brass | - |

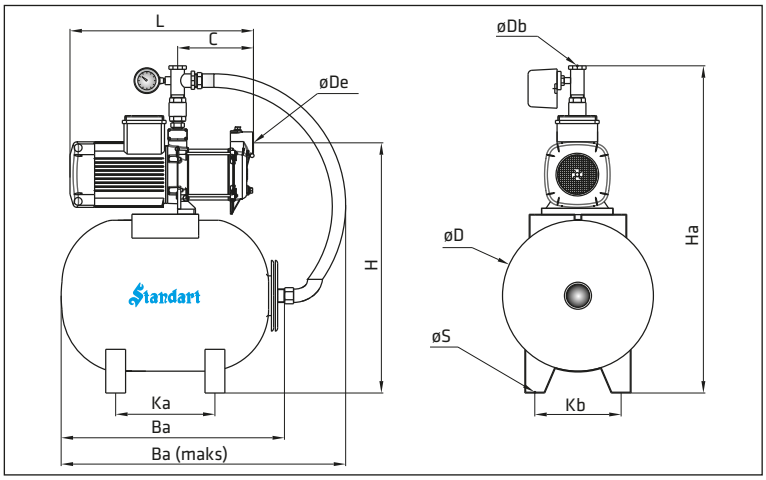
## Booster Designation

**TH 1x SB T-V 80 /10**

**Booster Type**
**Number of Pumps**
**Pump Type**
**T : Three-phase M : Mono-Phase**
**Vertical Installation**
**Motor Building Size**
**Number of Stages**

# Performance Curves and Dimensions

## Horizontal boosters with tanks




| 24 Liter Tank | De | Db | Ba | Ba(maks) | H | Ha | Ka | Kb | L | C | øD | øS | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SBM 80/5-24 | 1 1/4" | 1" | 480 | 587 | 465 | 669 | 190 | 158 | 455 | 200 | 265 | 10 | 25,8 |
| SBM 80/6-24 | | | | | | | | | 475 | 230 | | | 26,3 |
| SBM 80/7-24 | | | | | | | | | 500 | 250 | | | 26,9 |
| SBM 80/8-24 | | | | | | | | | 520 | 270 | | | 28,1 |
| SBM 80/9-24 | | | | | | | | | 540 | 295 | | | 28,8 |

| 24 Liter Tank | De | Db | Ba | Ba(maks) | H | Ha | Ka | Kb | L | C | øD | øS | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SBT 80/5-24 | 1 1/4" | 1" | 480 | 587 | 465 | 669 | 190 | 158 | 453 | 206 | 265 | 10 | 24,3 |
| SBT 80/6-24 | | | | | | | | | 475 | 228 | | | 24,8 |
| SBT 80/7-24 | | | | | | | | | 497 | 250 | | | 26,1 |
| SBT 80/8-24 | | | | | | | | | 519 | 272 | | | 26,3 |
| SBT 80/9-24 | | | | | | | | | 541 | 294 | | | 26,8 |
| SBT 80/10-24 | | | | | | | | | 563 | 316 | | | 28,3 |
| SBT 80/11-24 | | | | | | | | | 585 | 338 | | | 29 |

| 50 Liter Tank | De | Db | Ba | Ba(maks) | H | Ha | Ka | Kb | L | C | øD | øS | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SBM 80/5-50 | 1 1/4" | 1" | 600 | 696 | 565 | 779 | 220 | 232 | 453 | 206 | 280 | 10 | 31,7 |
| SBM 80/6-50 | | | | | | | | | 475 | 228 | | | 32,2 |
| SBM 80/7-50 | | | | | | | | | 497 | 250 | | | 32,8 |
| SBM 80/8-50 | | | | | | | | | 519 | 272 | | | 34 |
| SBM 80/9-50 | | | | | | | | | 541 | 294 | | | 34,7 |

| 50 Liter Tank | De | Db | Ba | Ba(maks) | H | Ha | Ka | Kb | L | C | øD | øS | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SBT 80/5-50 | 1 1/4" | 1" | 600 | 696 | 565 | 779 | 220 | 232 | 453 | 206 | 380 | 10 | 30,2 |
| SBT 80/6-50 | | | | | | | | | 475 | 228 | | | 30,7 |
| SBT 80/7-50 | | | | | | | | | 497 | 250 | | | 32 |
| SBT 80/8-50 | | | | | | | | | 519 | 272 | | | 32,2 |
| SBT 80/9-50 | | | | | | | | | 541 | 294 | | | 32,7 |
| SBT 80/10-50 | | | | | | | | | 563 | 316 | | | 34,7 |
| SBT 80/11-50 | | | | | | | | | 585 | 338 | | | 35 |

| 50 Liter Tank | De | Db | Ba | Ba(maks) | H | Ha | Ka | Kb | L | C | øD | øS | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SBM 90/4-50 | 1 1/4" | 1 1/4" | 600 | 696 | 603 | 796 | 220 | 232 | 489 | 218 | 380 | 10 | 39,3 |
| SBM 90/5-50 | | | | | | | | | 517 | 246 | | | 41,3 |
| SBM 90/6-50 | | | | | | | | | 545 | 274 | | | 41,8 |

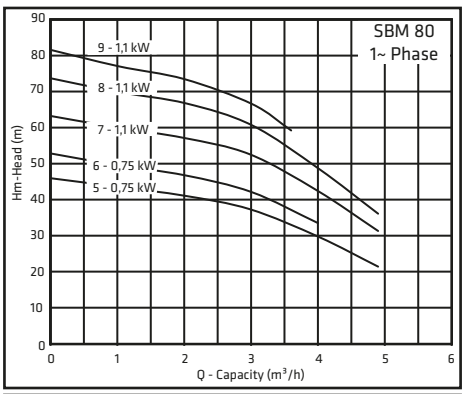
| 50 Liter Tank | De | Db | Ba | Ba(maks) | H | Ha | Ka | Kb | L | C | øD | øS | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SBT 90/4-50 | 1 1/4" | 1 1/4" | 600 | 696 | 603 | 796 | 220 | 232 | 489 | 218 | 380 | 10 | 37,3 |
| SBT 90/5-50 | | | | | | | | | 517 | 246 | | | 39,3 |
| SBT 90/6-50 | | | | | | | | | 545 | 274 | | | 40,3 |
| SBT 90/7-50 | | | | | | | | | 573 | 302 | | | 42,3 |

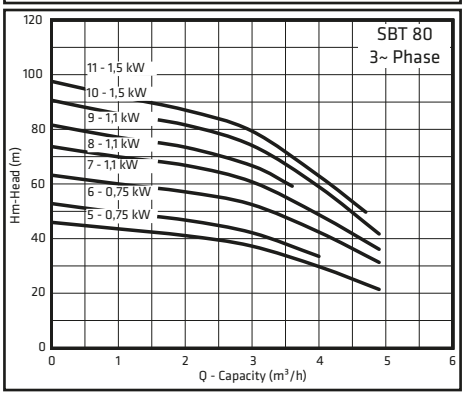
| 80 Liter Tank | De | Db | Ba | Ba(maks) | H | Ha | Ka | Kb | L | C | øD | øS | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SBM 90/4-80 | 1 1/4" | 1 1/4" | 635 | 828 | 708 | 901 | 330 | 276 | 489 | 218 | 460 | 10 | 44,1 |
| SBM 90/5-80 | | | | | | | | | 517 | 246 | | | 46,1 |
| SBM 90/6-80 | | | | | | | | | 545 | 274 | | | 46,6 |

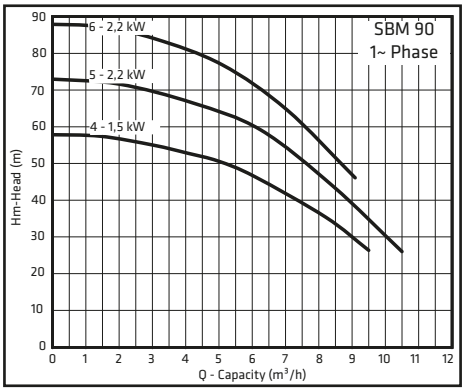
| 80 Liter Tank | De | Db | Ba | Ba(maks) | H | Ha | Ka | Kb | L | C | øD | øS | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SBT 90/4-80 | 1 1/4" | 1 1/4" | 635 | 828 | 708 | 901 | 330 | 276 | 489 | 218 | 460 | 10 | 42,1 |
| SBT 90/5-80 | | | | | | | | | 517 | 246 | | | 44,1 |
| SBT 90/6-80 | | | | | | | | | 545 | 274 | | | 45,1 |
| SBT 90/7-80 | | | | | | | | | 573 | 302 | | | 47,1 |

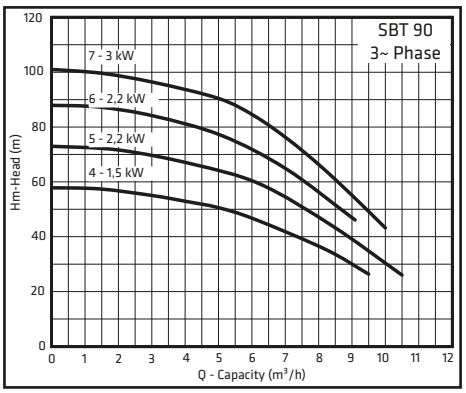
| 80 Liter Tank | De | Db | Ba | Ba(maks) | H | Ha | Ka | Kb | L | C | øD | øS | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SBT 100/3-80 | 1 1/2" | 1 1/2" | 635 | 880 | 746 | 1007 | 330 | 276 | 530 | 219 | 460 | 10 | 51,3 |
| SBT 100/4-80 | | | | | | | | | 563 | 252 | | | 52,8 |
| SBT 100/5-80 | | | | | | | | | 596 | 285 | | | 58 |

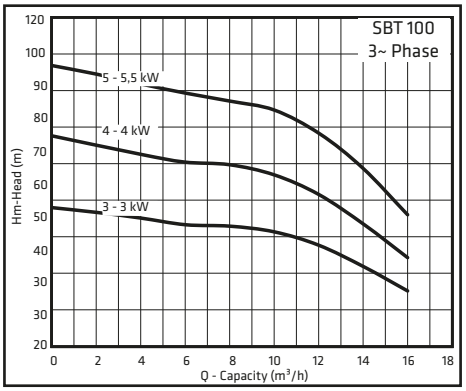
| 100 Liter Tank | De | Db | Ba | Ba(maks) | H | Ha | Ka | Kb | L | C | øD | øS | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SBT 100/3-100 | 1 1/2" | 1 1/2" | 820 | 940 | 746 | 1007 | 330 | 276 | 530 | 219 | 460 | 10 | 52,6 |
| SBT 100/4-100 | | | | | | | | | 563 | 252 | | | 54,1 |
| SBT 100/5-100 | | | | | | | | | 596 | 285 | | | 59,3 |



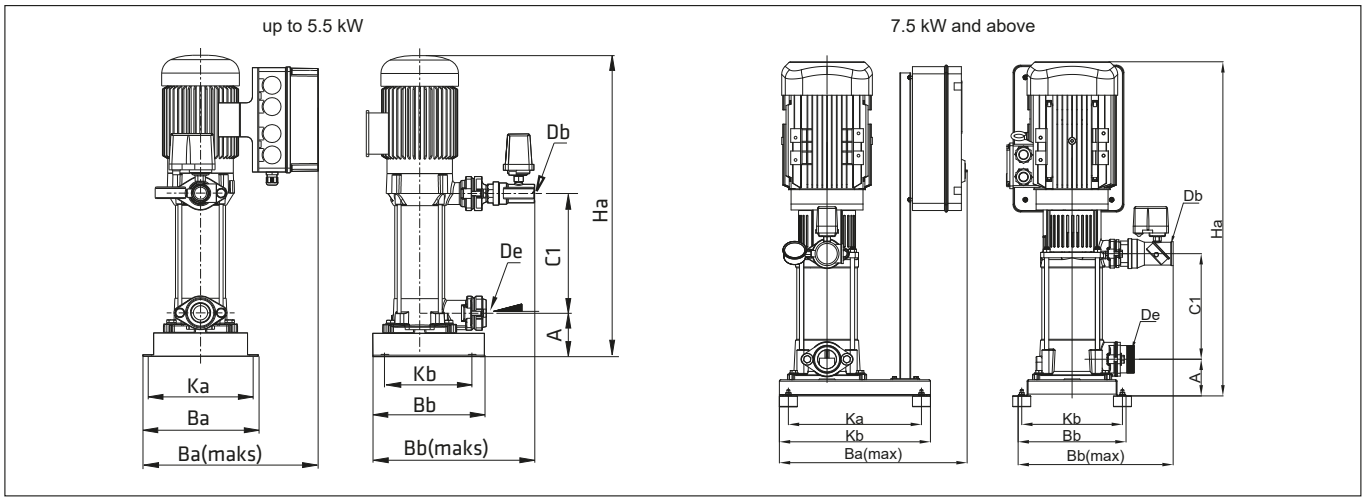



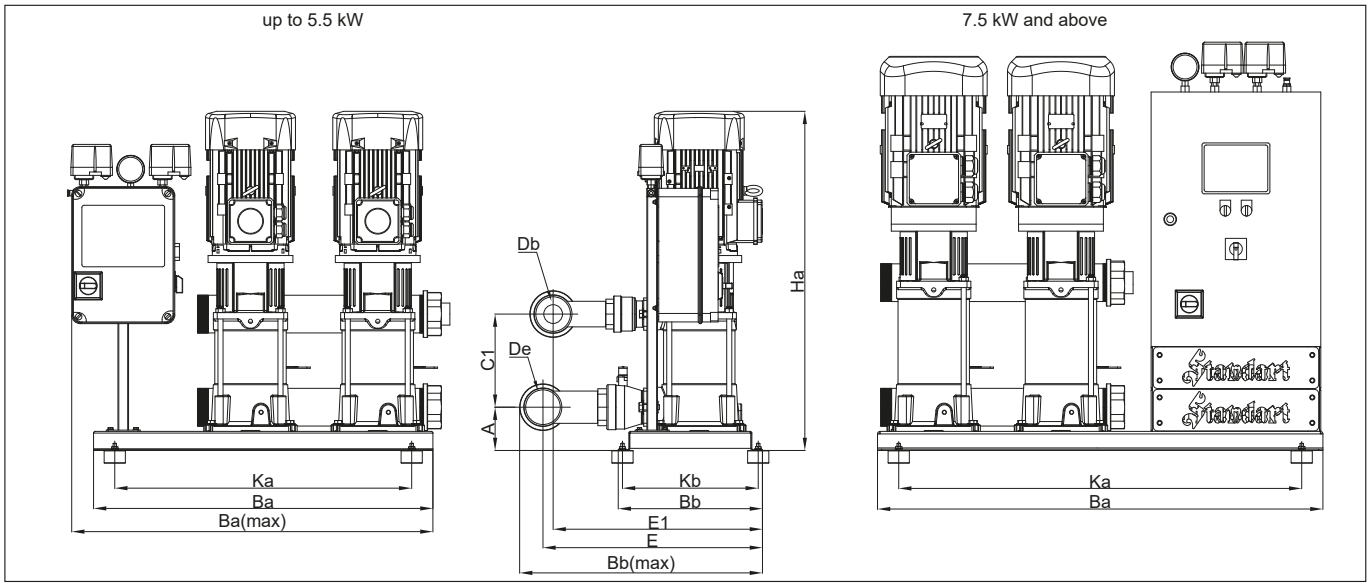



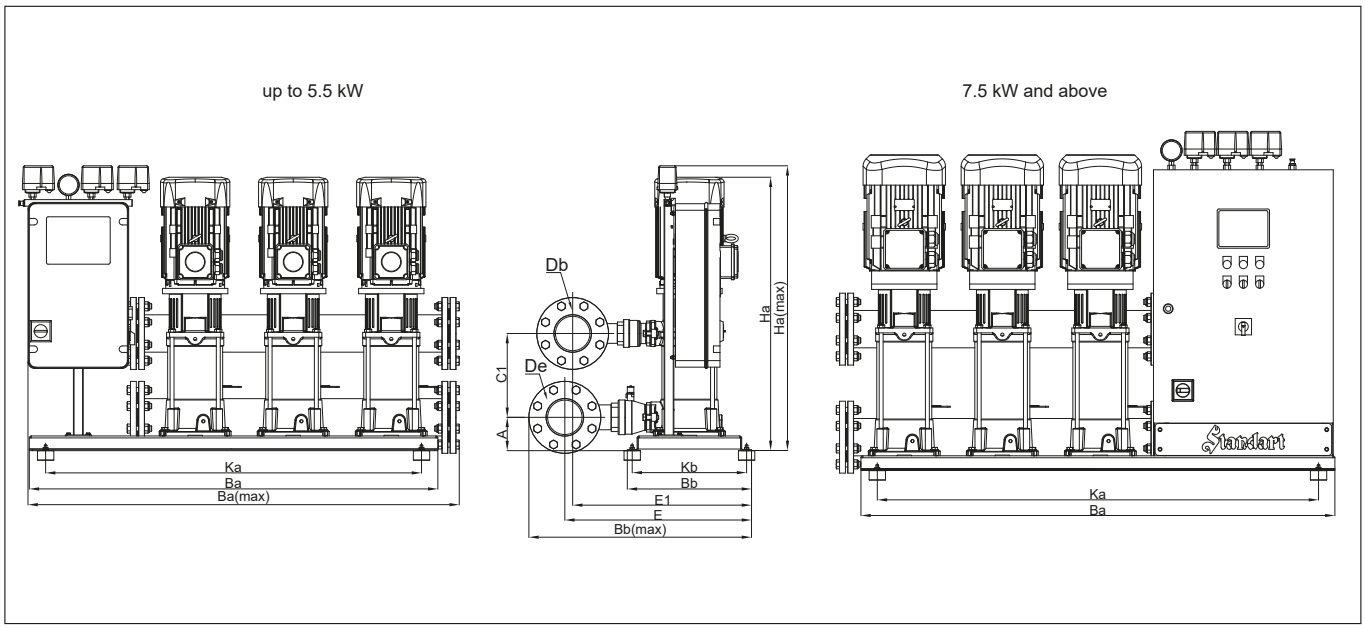
### Booster set with one pump




### Booster set with two pump




### Booster set with three pump



## Performance Curves and Dimensions

| | De | Db | Ba | Bb | Ba(maks) | Bb(maks) | Ha | Ka | Kb | E | E1 | A | C1 | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1xSBM-V 80/5 | 1 1/4" | 1 1/4" | 240 | 230 | 360 | 335 | 517 | 220 | 180 | - | - | 85 | 184 | 26,5 |
| 1xSBM-V 80/6 | | | | | | | 539 | | | | | | 206 | 27 |
| 1xSBM-V 80/7 | | | | | | | 561 | | | | | | 228 | 27,6 |
| 1xSBM-V 80/8 | | | | | | | 583 | | | | | | 250 | 28,8 |
| 1xSBM-V 80/9 | | | | | | | 605 | | | | | | 272 | 29,5 |

| | De | Db | Ba | Bb | Ba(maks) | Bb(maks) | Ha | Ka | Kb | E | E1 | A | C1 | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1xSBT-V 80/5 | 1 1/4" | 1" | 230 | 210 | 335 | 315 | 560 | 210 | 160 | - | - | 85 | 185 | 25 |
| 1xSBT-V 80/6 | | | | | | | 580 | | | | | | 205 | 25,5 |
| 1xSBT-V 80/7 | | | | | | | 600 | | | | | | 225 | 26,8 |
| 1xSBT-V 80/8 | | | | | | | 620 | | | | | | 245 | 27 |
| 1xSBT-V 80/9 | | | | | | | 670 | | | | | | 275 | 27,5 |
| 1xSBT-V 80/10 | | | | | | | 690 | | | | | | 295 | 29 |
| 1xSBT-V 80/11 | | | | | | | 730 | | | | | | 315 | 30 |
| 1xSBT-V 80/12 | | | | | | | 770 | | | | | | 335 | 30,5 |

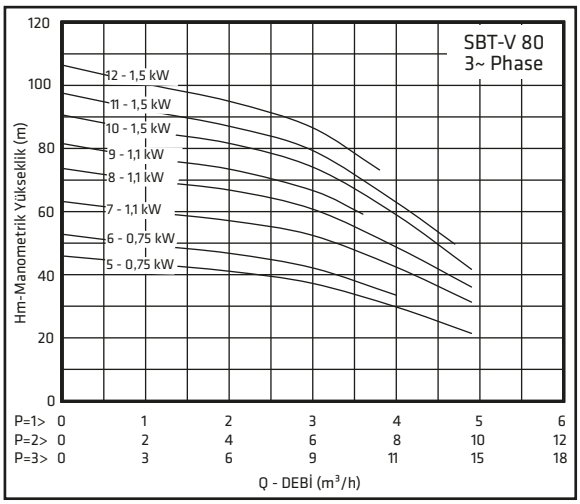
| | De | Db | Ba | Bb | Ba(maks) | Bb(maks) | Ha | Ha(maks) | Ka | Kb | E | E1 | A | C1 | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2xSBM-V 80/5 | 1 1/4" | 1 1/4" | 700 | 350 | 825 | 445 | 522 | 753 | 630 | 320 | 420 | 390 | 90 | 185 | 66 |
| 2xSBM-V 80/6 | | | | | | | 544 | | | | | | | 205 | 67 |
| 2xSBM-V 80/7 | | | | | | | 566 | | | | | | | 228 | 69 |
| 2xSBM-V 80/8 | | | | | | | 588 | | | | | | | 250 | 71 |
| 2xSBM-V 80/9 | | | | | | | 610 | | | | | | | 272 | 72,5 |

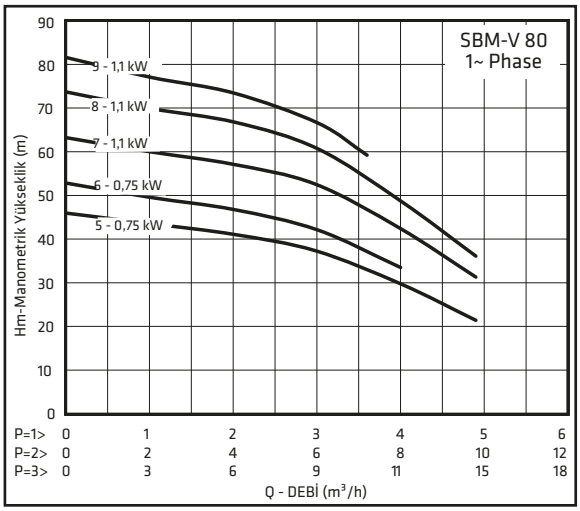
| | De | Db | Ba | Bb | Ba(maks) | Bb(maks) | Ha | Ha(maks) | Ka | Kb | E | E1 | A | C1 | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2xSBT-V 80/5 | 1 1/4" | 1 1/4" | 650 | 300 | 725 | 405 | 515 | 725 | 550 | 280 | 375 | 370 | 85 | 185 | 63 |
| 2xSBT-V 80/6 | | | | | | | 535 | | | | | | | 205 | 64 |
| 2xSBT-V 80/7 | | | | | | | 560 | | | | | | | 225 | 66,5 |
| 2xSBT-V 80/8 | | | | | | | 575 | | | | | | | 245 | 67 |
| 2xSBT-V 80/9 | | | | | | | 605 | | | | | | | 275 | 68 |
| 2xSBT-V 80/10 | | | | | | | 625 | | | | | | | 295 | 71 |
| 2xSBT-V 80/11 | | | | | | | 645 | | | | | | | 315 | 72,5 |
| 2xSBT-V 80/12 | | | | | | | 665 | | | | | | | 335 | 73,5 |

| | De | Db | Ba | Bb | Ba(maks) | Bb(maks) | Ha | Ha(maks) | Ka | Kb | E | E1 | A | C1 | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3xSBM-V 80/5 | 1 1/4" | 1 1/4" | 950 | 350 | 1085 | 460 | 522 | 810 | 880 | 320 | 430 | 400 | 90 | 184 | 97,5 |
| 3xSBM-V 80/6 | | | | | | | 543 | | | | | | | 206 | 99 |
| 3xSBM-V 80/7 | | | | | | | 566 | | | | | | | 228 | 101 |
| 3xSBM-V 80/8 | | | | | | | 588 | | | | | | | 250 | 104 |
| 3xSBM-V 80/9 | | | | | | | 610 | | | | | | | 272 | 106 |

| | De | Db | Ba | Bb | Ba(maks) | Bb(maks) | Ha | Ha(maks) | Ka | Kb | E | E1 | A | C1 | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3xSBT-V 80/5 | 1 1/2" | 1 1/2" | 900 | 300 | 1005 | 420 | 515 | 775 | 800 | 280 | 385 | 380 | 85 | 185 | 93 |
| 3xSBT-V 80/6 | | | | | | | 535 | | | | | | | 205 | 94 |
| 3xSBT-V 80/7 | | | | | | | 560 | | | | | | | 225 | 98 |
| 3xSBT-V 80/8 | | | | | | | 575 | | | | | | | 245 | 99 |
| 3xSBT-V 80/9 | | | | | | | 605 | | | | | | | 275 | 100 |
| 3xSBT-V 80/10 | | | | | | | 625 | | | | | | | 295 | 105 |
| 3xSBT-V 80/11 | | | | | | | 645 | | | | | | | 315 | 107 |
| 3xSBT-V 80/12 | | | | | | | 665 | | | | | | | 335 | 109 |

The specifield dimensions and weights are approximate. Dimensions might be changed.



## Performance Curves and Dimensions

| | De | Db | Ba | Bb | Ba(maks) | Bb(maks) | Ha | Ha(maks) | Ka | Kb | E | E1 | A | C1 | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1xSBM-V 90/4 | 1 1/4" | 1 1/4" | 245 | 230 | 360 | 354 | 544 | 544 | 225 | 180 | - | - | 85 | 188 | 34,5 |
| 1xSBM-V 90/5 | | | | | | | 572 | 572 | | | | | | 216 | 36,5 |
| 1xSBM-V 90/6 | | | | | | | 600 | 600 | | | | | | 244 | 37 |

| | De | Db | Ba | Bb | Ba(maks) | Bb(maks) | Ha | Ka | Kb | E | E1 | A | C1 | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1xSBT-V 90/4 | 1 1/4" | 1 1/4" | 250 | 230 | 360 | 350 | 545 | 230 | 180 | - | - | 85 | 190 | 32,5 |
| 1xSBT-V 90/5 | | | | | | | 570 | | | | | | 215 | 34,5 |
| 1xSBT-V 90/6 | | | | | | | 600 | | | | | | 245 | 35,5 |
| 1xSBT-V 90/7 | | | | | | | 625 | | | | | | 270 | 37,5 |
| 1xSBT-V 90/8 | | | | | | | 655 | | | | | | 300 | 38 |
| 1xSBT-V 90/9 | | | | | | | 680 | | | | | | 325 | 39 |

| | De | Db | Ba | Bb | Ba(maks) | Bb(maks) | Ha | Ha(maks) | Ka | Kb | E | E1 | A | C1 | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2xSBM-V 90/4 | 1 1/2" | 1 1/2" | 700 | 350 | 822 | 460 | 550 | 753 | 630 | 320 | 400 | 432 | 90 | 188 | 80 |
| 2xSBM-V 90/5 | | | | | | | 578 | | | | | | | 216 | 84 |
| 2xSBM-V 90/6 | | | | | | | 606 | | | | | | | 244 | 85 |

| | De | Db | Ba | Bb | Ba(maks) | Bb(maks) | Ha | Ha(maks) | Ka | Kb | E | E1 | A | C1 | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2xSBT-V 90/4 | 1 1/2" | 1 1/2" | 700 | 340 | 770 | 390 | 545 | 725 | 600 | 320 | 360 | 350 | 85 | 190 | 76 |
| 2xSBT-V 90/5 | | | | | | | 570 | | | | | | | 215 | 80 |
| 2xSBT-V 90/6 | | | | | | | 600 | | | | | | | 245 | 82 |
| 2xSBT-V 90/7 | | | | | | | 625 | | | | | | | 270 | 86 |
| 2xSBT-V 90/8 | | | | | | | 655 | | | | | | | 300 | 87 |
| 2xSBT-V 90/9 | | | | | | | 680 | | | | | | | 325 | 88 |

| | De | Db | Ba | Bb | Ba(maks) | Bb(maks) | Ha | Ha(maks) | Ka | Kb | E | E1 | A | C1 | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3xSBM-V 90/4 | 2" | 2" | 950 | 350 | 1085 | 485 | 550 | 810 | 880 | 320 | 430 | 386 | 90 | 188 | 105 |
| 3xSBM-V 90/5 | | | | | | | 578 | | | | | | | 216 | 111 |
| 3xSBM-V 90/6 | | | | | | | 606 | | | | | | | 244 | 113 |

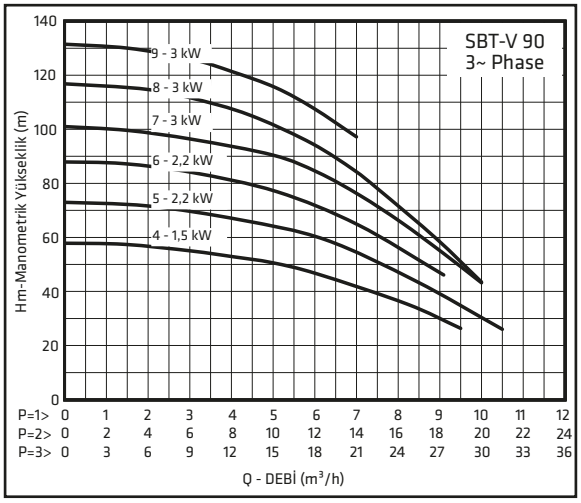
| | De | Db | Ba | Bb | Ba(maks) | Bb(maks) | Ha | Ha(maks) | Ka | Kb | E | E1 | A | C1 | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3xSBT-V 90/4 | 2" | 2" | 950 | 340 | 1085 | 420 | 545 | 810 | 850 | 320 | 375 | 365 | 85 | 190 | 100 |
| 3xSBT-V 90/5 | | | | | | | 570 | | | | | | | 215 | 106 |
| 3xSBT-V 90/6 | | | | | | | 600 | | | | | | | 245 | 109 |
| 3xSBT-V 90/7 | | | | | | | 625 | | | | | | | 270 | 104 |
| 3xSBT-V 90/8 | | | | | | | 655 | | | | | | | 300 | 106 |
| 3xSBT-V 90/9 | | | | | | | 680 | | | | | | | 325 | 118 |

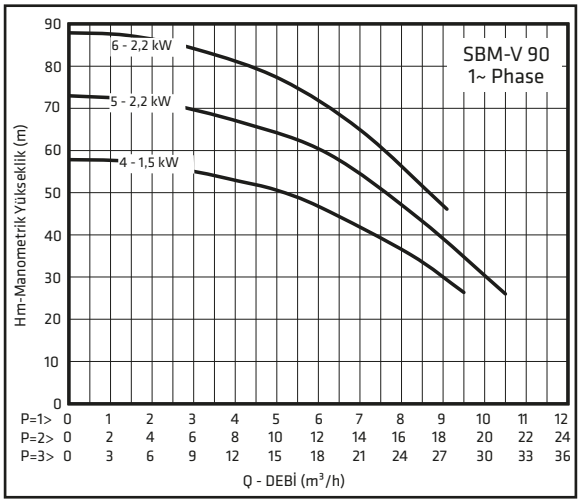
| | De | Db | Ba | Bb | Ba(maks) | Bb(maks) | Ha | Ka | Kb | E | E1 | A | C1 | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1xSBT-V 100/3 | 2" | 1 1/2" | 300 | 260 | 400 | 400 | 585 | 280 | 210 | - | - | 95 | 185 | 44 |
| 1xSBT-V 100/4 | | | | | | | 615 | | | | | | 215 | 45 |
| 1xSBT-V 100/5 | | | | | | | 650 | | | | | | 250 | 50 |
| 1xSBT-V 100/6 | | | | | | | 685 | | | | | | 285 | 51 |
| 1xSBT-V 100/7 | | | | | | | 715 | | | | | | 315 | 52 |

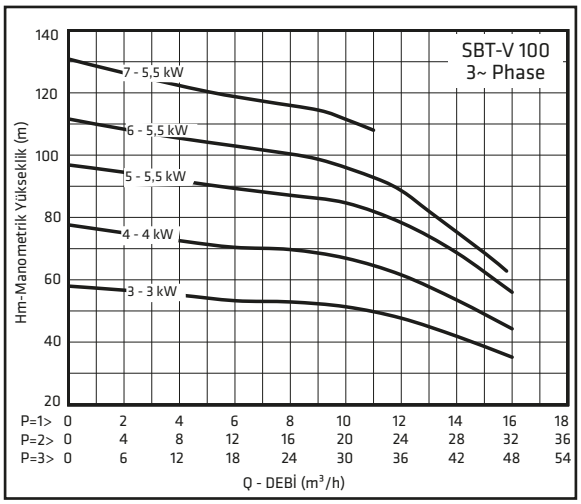
| | De | Db | Ba | Bb | Ba(maks) | Bb(maks) | Ha | Ha(maks) | Ka | Kb | E | E1 | A | C1 | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2xSBT-V 100/3 | 2" | 2" | 700 | 340 | 785 | 470 | 585 | 725 | 600 | 320 | 430 | 425 | 95 | 185 | 96 |
| 2xSBT-V 100/4 | | | | | | | 615 | | | | | | | 215 | 99 |
| 2xSBT-V 100/5 | | | | | | | 650 | | | | | | | 250 | 110 |
| 2xSBT-V 100/6 | | | | | | | 685 | | | | | | | 285 | 111 |
| 2xSBT-V 100/7 | | | | | | | 715 | | | | | | | 315 | 112 |

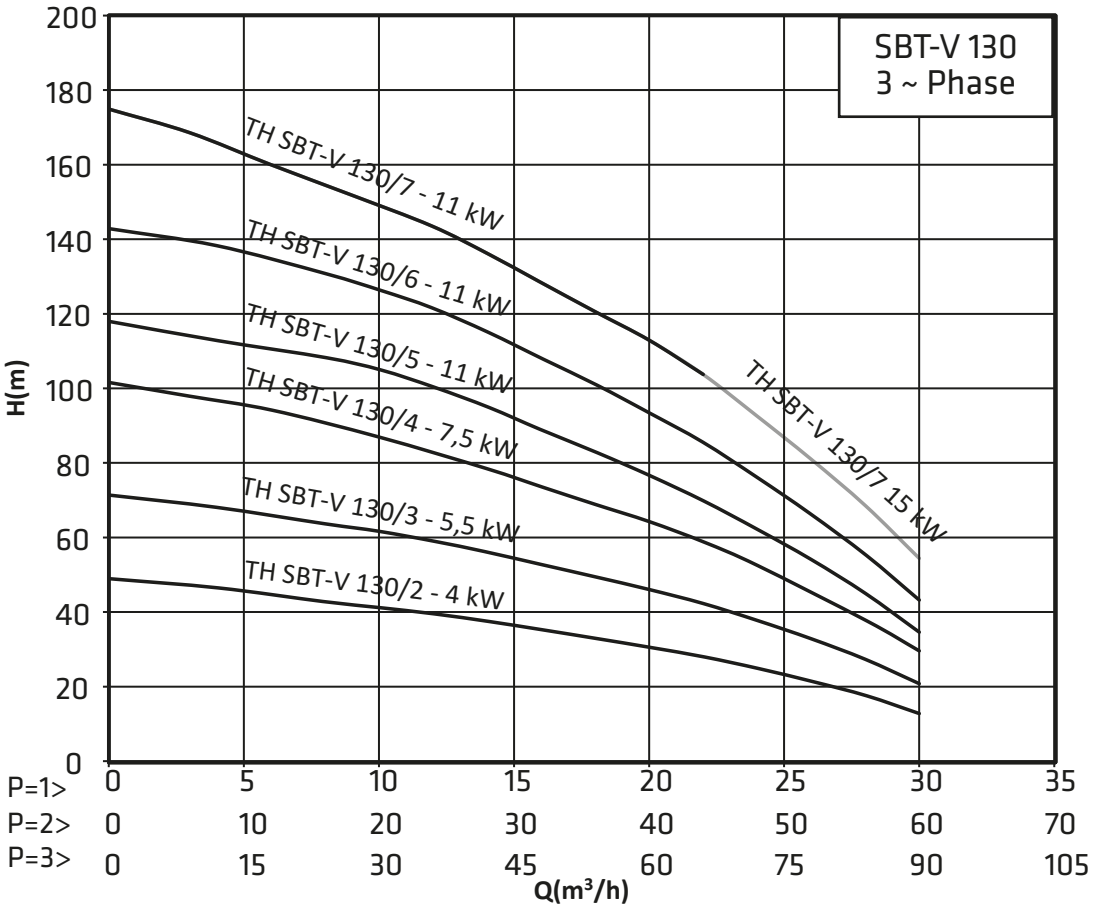
| | De | Db | Ba | Bb | Ba(maks) | Bb(maks) | Ha | Ha(maks) | Ka | Kb | E | E1 | A | C1 | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3xSBT-V 100/3 | 2 1/2" | 2 1/2" | 950 | 340 | 1060 | 500 | 585 | 780 | 850 | 320 | 435 | 430 | 95 | 185 | 143 |
| 3xSBT-V 100/4 | | | | | | | 615 | | | | | | | 215 | 148 |
| 3xSBT-V 100/5 | | | | | | | 650 | | | | | | | 250 | 163 |
| 3xSBT-V 100/6 | | | | | | | 685 | | | | | | | 285 | 165 |
| 3xSBT-V 100/7 | | | | | | | 715 | | | | | | | 315 | 166 |

The specifield dimensions and weights are approximate. Dimensions might be changed.






| | De | Db | Ba | Bb | Ba(maks) | Bb(maks) | Ha | Ka | Kb | E | E1 | A | C1 | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1xSBT-V 130/2 | 2 1/2" | 2" | 420 | 300 | 420 | 455 | 763 | 370 | 280 | - | - | 102 | 183 | 62 |
| 1xSBT-V 130/3 | | | | | | | 800 | | | | | | 220 | 65 |
| 1xSBT-V 130/4 | | | | | | | 837 | | | | | | 257 | 70 |
| 1xSBT-V 130/5 | | | | | 522 | | 929 | | | | | | 294 | 140 |
| 1xSBT-V 130/6 | | | | | | | 966 | | | | | | 331 | 145 |
| 1xSBT-V 130/7 | | | | | | | 1005 | | | | | | 368 | 152 |

| | De | Db | Ba | Bb | Ba(maks) | Bb(maks) | Ha | Ha(maks) | Ka | Kb | E | E1 | A | C1 | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2xSBT-V 130/2 | 3" | 3" | 800 | 340 | 855 | 615 | 763 | 720 | 700 | 320 | 560 | 535 | 102 | 183 | 180 |
| 2xSBT-V 130/3 | | | | | | | 800 | | | | | | | 220 | 200 |
| 2xSBT-V 130/4 | | | | | | | 837 | | | | | | | 257 | 210 |
| 2xSBT-V 130/5 | | | 1050 | 380 | 1050 | | 929 | 865 | 950 | 350 | 590 | 565 | | 294 | 300 |
| 2xSBT-V 130/6 | | | | | | | 966 | | | | | | | 331 | 310 |
| 2xSBT-V 130/7 | | | | | | | 1005 | | | | | | | 368 | 315 |

| | De | Db | Ba | Bb | Ba(maks) | Bb(maks) | Ha | Ha(maks) | Ka | Kb | E | E1 | A | C1 | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3xSBT-V 130/2 | 4" | 4" | 1150 | 380 | 1350 | 685 | 763 | 825 | 1150 | 350 | 560 | 575 | 102 | 183 | 255 |
| 3xSBT-V 130/3 | | | | | | | 800 | | | | | | | 220 | 260 |
| 3xSBT-V 130/4 | | | | | | | 837 | | | | | | | 257 | 285 |
| 3xSBT-V 130/5 | | | 1450 | 380 | 1450 | | 929 | 965 | 1350 | 350 | | | | 294 | 460 |
| 3xSBT-V 130/6 | | | | | | | 966 | | | | | | | 331 | 470 |
| 3xSBT-V 130/7 | | | | | | | 1005 | | | | | | | 368 | 485 |

The specifield dimensions and weights are approximate. Dimensions might be changed.

Standart

Pump • Fire Fighting Units • Booster Set

# TH SKMV

## BOOSTERS

TH SKMV Rev.11 09.2021


## General Information

High pressure, quiet running, compact and low power consumption.

SKMV pumps are suitable for pumping non-abrasive, clean or slightly contaminated, low viscosity without solid & fibrous particles liquids.

Vertical structure saves space.

## Technical Data

| | |
|---|---|
| Capacity | up to 500 $m^3/h$ |
| Head | up to 180 m |
| Design Temperature | up to 70 °C |
| Casing Pressure | 10 - 16 - 25 bar |

## Design Features

•TH SKMV boosters are manufactured with vertical pump.

•The boosters are produced as single, double and triple pumps as a standard according to the desired flow. Upon request, up to 6 pumps can be set.

•Single-pump boosters have a water level float (electric floater).

•Phase control system (PCS) is available in single pump, three-phase motorized boosters.

•Sequencing, phase control and liquid level control are standard features for multiple pumped booster pumps.

•Booster pumps can operate in two different modes; automatically and manually.

•Electrical materials used in the booster pump panels are selected from reliable and quality brands.

## Booster Designation

**TH 2 x SKMV 50/3**

**Booster Type**

**Number of Pumps**

**Pump Type**

**Pump Outlet Flange (DN-mm)**

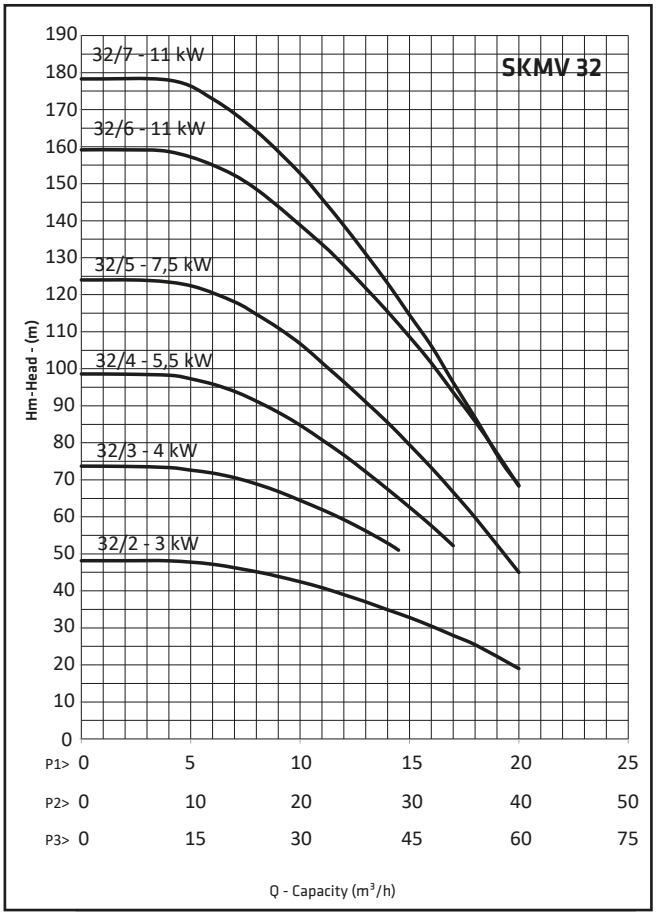
**Number of Stage**

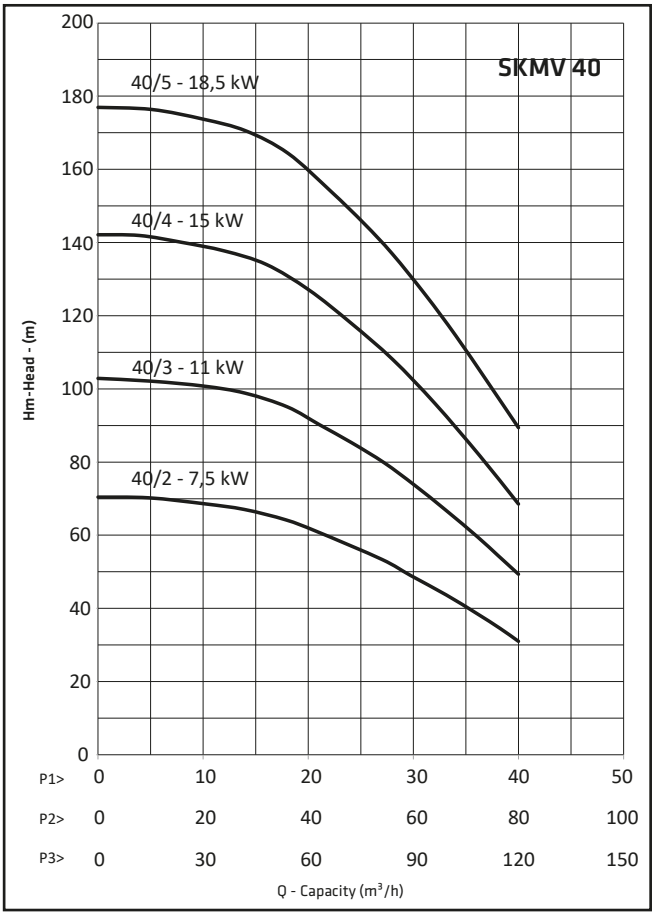
•Electric motors of high efficiency class conforming to IEC 60034-30 standard are used.

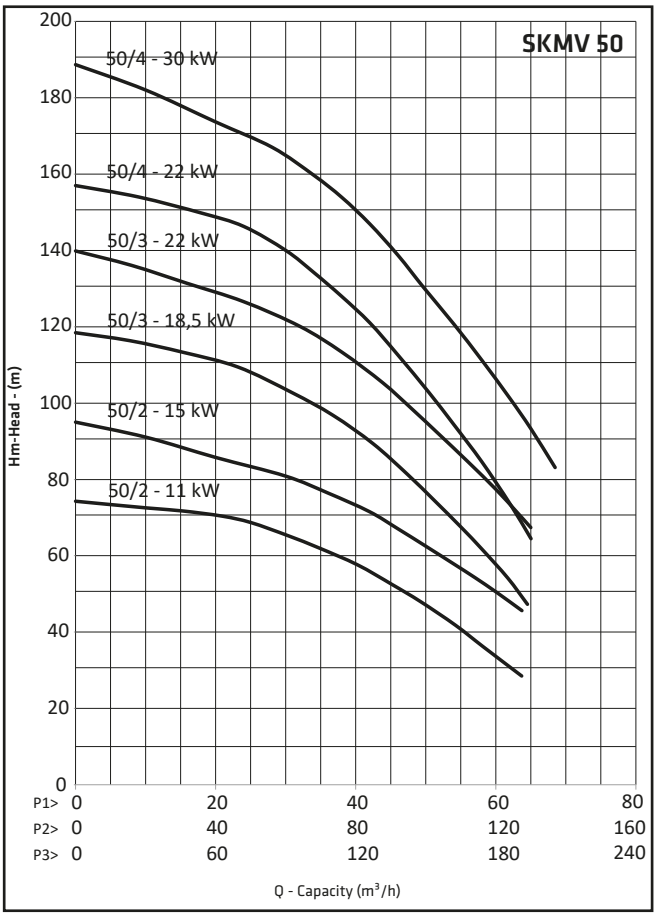
•The booster pumps can be manufactured as a variable-speed frequency control for convenience. (upon request)

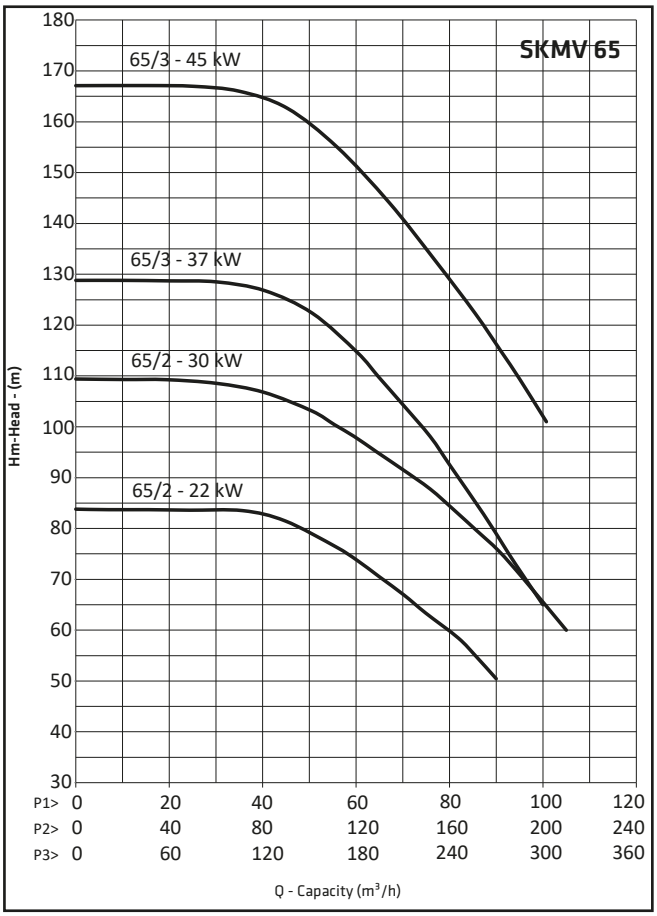
## Material Information

| Part Name | Material | |
|---|---|---|
| | Standard | Optional |
| **Pump** | | |
| Base Plate | GG 25 | Bronze / AISI 304 |
| Stage Casing | GG 25 | Bronze / AISI 304 |
| Intermediate Stage | GG 25 | Bronze / AISI 304 |
| Impeller | Brass | Bronze / AISI 304 |
| Shaft | AISI 420 | AISI 304 |
| **Panel** | Pressure Switch Controlled | Frequency Controlled |
| **Collector** | Steel | AISI 304 |
| **Frame** | Steel | - |
| **Accessories** | | |
| Valve | Brass | AISI 304 |
| Check Valve | Brass | AISI 316 |


SKMV 32
32/7 - 11 kW
32/6 - 11 kW
32/5 - 7,5 kW
32/4 - 5,5 kW
32/3 - 4 kW
32/2 - 3 kW
Hm-Head - (m)
P1> 0 5 10 15 20 25
P2> 0 10 20 30 40 50
P3> 0 15 30 45 60 75
Q - Capacity (m³/h)


SKMV 40
40/5 - 18,5 kW
40/4 - 15 kW
40/3 - 11 kW
40/2 - 7,5 kW
Hm-Head - (m)
P1> 0 10 20 30 40 50
P2> 0 20 40 60 80 100
P3> 0 30 60 90 120 150
Q - Capacity (m³/h)


SKMV 50
50/4 - 30 kW
50/4 - 22 kW
50/3 - 22 kW
50/3 - 18,5 kW
50/2 - 15 kW
50/2 - 11 kW
Hm-Head - (m)
P1> 0 20 40 60 80
P2> 0 40 80 120 160
P3> 0 60 120 180 240
Q - Capacity (m³/h)


SKMV 65
65/3 - 45 kW
65/3 - 37 kW
65/2 - 30 kW
65/2 - 22 kW
Hm-Head - (m)
P1> 0 20 40 60 80 100 120
P2> 0 40 80 120 160 200 240
P3> 0 60 120 180 240 300 360
Q - Capacity (m³/h)

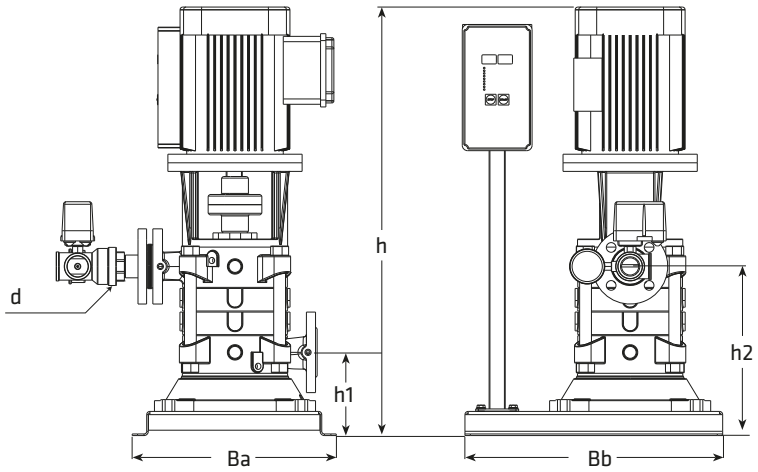
## Dimensions

| Pump Type | kW | IEC | Ba | Bb | Ka | Kb | Ba(max) | E | h | d | h1 | h2 | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1x SKMV 32/2 | 3 | 100L | 480 | 385 | 420 | 360 | - | 550 | 850 | 1 ½" | 150 | 115 | 115 |
| 1x SKMV 32/3 | 4 | 112M | | | | | | | 880 | | | 157 | 180 |
| 1x SKMV 32/4 | 5,5 | 132S | | | | | | | 920 | | | 200 | 215 |
| 1x SKMV 32/5 | 7,5 | 132S | | | | | | | | | | 243 | 225 |
| 1x SKMV 32/6 | 11 | 160M | | | | | 680 | | | | | 286 | 280 |
| 2x SKMV 32/2 | 3 | 100L | 900 | 380 | 800 | 350 | - | 795 | 850 | 2 ½" | 150 | 115 | 235 |
| 2x SKMV 32/3 | 4 | 112M | | | | | | | 880 | | | 157 | 365 |
| 2x SKMV 32/4 | 5,5 | 132S | | | | | | | 920 | | | 200 | 435 |
| 2x SKMV 32/5 | 7,5 | 132S | | | | | | | 1020 | | | 243 | 455 |
| 2x SKMV 32/6 | 11 | 160M | 1050 | | 950 | | | | 1040 | | | 286 | 570 |
| 3x SKMV 32/2 | 3 | 100L | 1300 | 380 | 1200 | 350 | - | 755 | 850 | 3" | 150 | 115 | 340 |
| 3x SKMV 32/3 | 4 | 112M | | | | | | | 880 | | | 157 | 540 |
| 3x SKMV 32/4 | 5,5 | 132S | | | | | | | 920 | | | 200 | 640 |
| 3x SKMV 32/5 | 7,5 | 132S | | | | | | | 1020 | | | 243 | 675 |
| 3x SKMV 32/6 | 11 | 160M | 1400 | | 1300 | | | | 1040 | | | 286 | 845 |

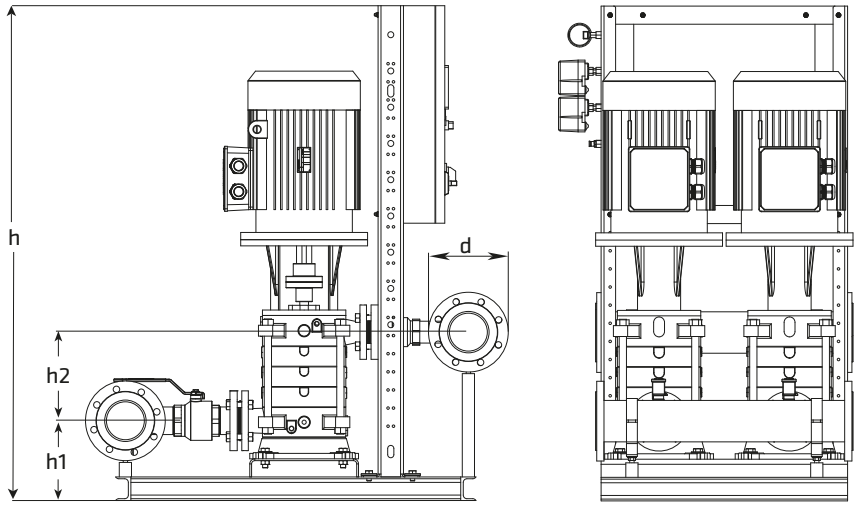
| Pump Type | kW | IEC | Ba | Bb | Ka | Kb | Ba(max) | E | h | d | h1 | h2 | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1x SKMV 40/2 | 7,5 | 132S | 480 | 385 | 420 | 360 | - | 590 | 850 | 1 ½" | 150 | 131 | 115 |
| 1x SKMV 40/3 | 11 | 160M | | | | | 680 | | 980 | | | 186 | 180 |
| 1x SKMV 40/4 | 15 | 160M | | | | | | | 1165 | | | 245 | 215 |
| 1x SKMV 40/5 | 18,5 | 160L | | | | | | | 1200 | | | 301 | 225 |
| 2x SKMV 40/2 | 7,5 | 132S | 950 | 380 | 850 | 350 | - | 795 | 850 | 4" | 150 | 131 | 280 |
| 2x SKMV 40/3 | 11 | 160M | 1100 | 380 | 1000 | 350 | - | 950 | 980 | | | 186 | 235 |
| 2x SKMV 40/4 | 15 | 160M | | | | | | | 1165 | | | 245 | 365 |
| 2x SKMV 40/5 | 18,5 | 160L | | | | | | | 1200 | | | 301 | 435 |
| 3x SKMV 40/2 | 7,5 | 132S | 1400 | 380 | 1300 | 350 | - | 955 | 850 | 5" | 150 | 131 | 455 |
| 3x SKMV 40/3 | 11 | 160M | 1620 | 380 | 1480 | 350 | - | 955 | 1165 | | | 186 | 570 |
| 3x SKMV 40/4 | 15 | 160M | | | | | | | 1165 | | | 245 | 340 |
| 3x SKMV 40/5 | 18,5 | 160L | | | | | | | 1200 | | | 301 | 540 |

| Pump Type | kW | IEC | Ba | Bb | Ba(max) | h | d | h1 | h2 | KG |
|---|---|---|---|---|---|---|---|---|---|---|
| 1x SKMV 50/2 | 11 | 160M | 525 | 420 | | 1060 | 2" | 155 | 155 | 235 |
| | 15 | 160M | | | | | | | | 245 |
| 1x SKMV 50/3 | 18,5 | 160L | | | | 1125 | | | 220 | 275 |
| | 22 | 180M | | | | | | | | 300 |
| 1x SKMV 50/4 | 22 | 180M | | | | 1185 | | | 285 | 325 |
| | 30 | 200L | | | | 1300 | | | | 390 |
| | 37 | 200L | | | | | | | | 390 |
| 2x SKMV 50/2 | 11 | 160M | 800 | 1125 | - | 1365 | 5" | 225 | 155 | 540 |
| | 15 | 160M | | | | | | | | 550 |
| 2x SKMV 50/3 | 18,5 | 160L | | | | | | | 220 | 615 |
| | 22 | 180M | | | | | | | | 665 |
| 2x SKMV 50/4 | 22 | 180M | | | | 1565 | | | 285 | 715 |
| | 30 | 200L | | | | | | | | 830 |
| | 37 | 200L | | | | | | | | 830 |
| 3x SKMV 50/2 | 11 | 160M | 1200 | 1150 | - | 1380 | 6" | 235 | 155 | 800 |
| | 15 | 160M | | | | | | | | 815 |
| 3x SKMV 50/3 | 18,5 | 160L | | | | | | | 220 | 915 |
| | 22 | 180M | | | | | | | | 985 |
| 3x SKMV 50/4 | 22 | 180M | | | | 1580 | | | 285 | 1060 |
| | 30 | 200L | | | | | | | | 1220 |
| | 37 | 200L | | | | | | | | 1220 |

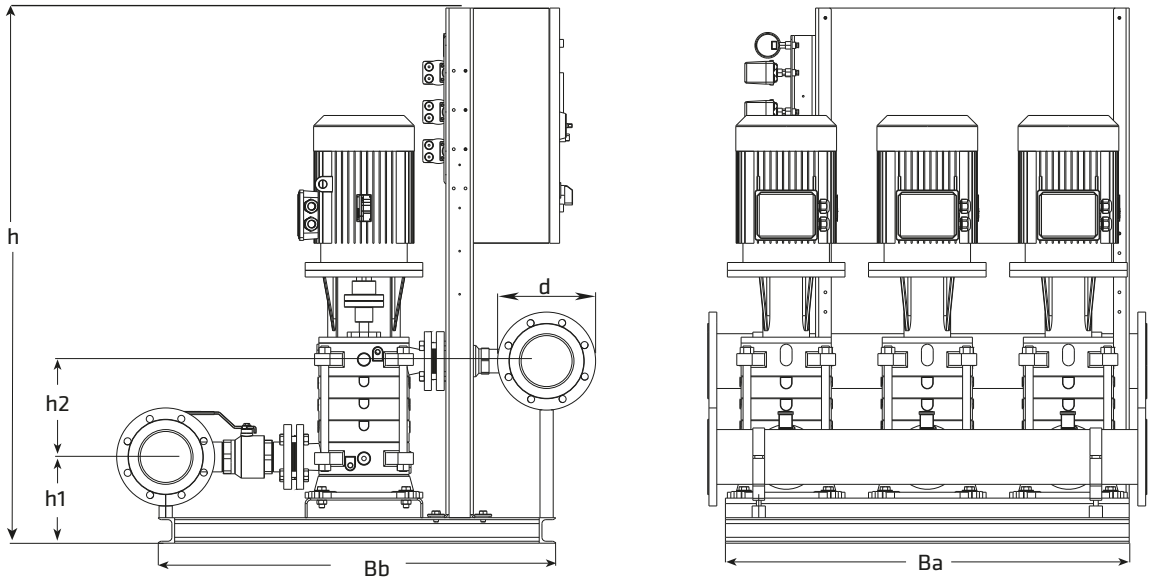
| Pump Type | kW | IEC | Ba | Bb | Ba(max) | h | d | h1 | h2 | KG |
|---|---|---|---|---|---|---|---|---|---|---|
| 1x SKMV 65/2 | 22 | 180M | 600 | 880 | 800 | 1300 | 5" | 180 | 200 | 330 |
| | 30 | 200L | | | | | | | | 385 |
| 1x SKMV 65/3 | 37 | 200M | | | | | | | 255 | 420 |
| | 45 | 225L | | | | | | | | 515 |
| 2x SKMV 65/2 | 22 | 180M | 900 | 1380 | - | 1400 | 6" | 255 | 200 | 705 |
| | 30 | 200L | | | | | | | | 810 |
| 2x SKMV 65/3 | 37 | 200M | | | | 1900 | | | 255 | 880 |
| | 45 | 225L | | | | | | | | 1030 |
| 3x SKMV 65/2 | 22 | 180M | 1200 | 1450 | - | 1600 | 8" | 255 | 200 | 1055 |
| | 30 | 200L | | | | | | | | 1215 |
| 3x SKMV 65/3 | 37 | 200M | | | | 1900 | | | 255 | 1320 |
| | 45 | 225L | | | | | | | | 1545 |




for TH SKM-V 50

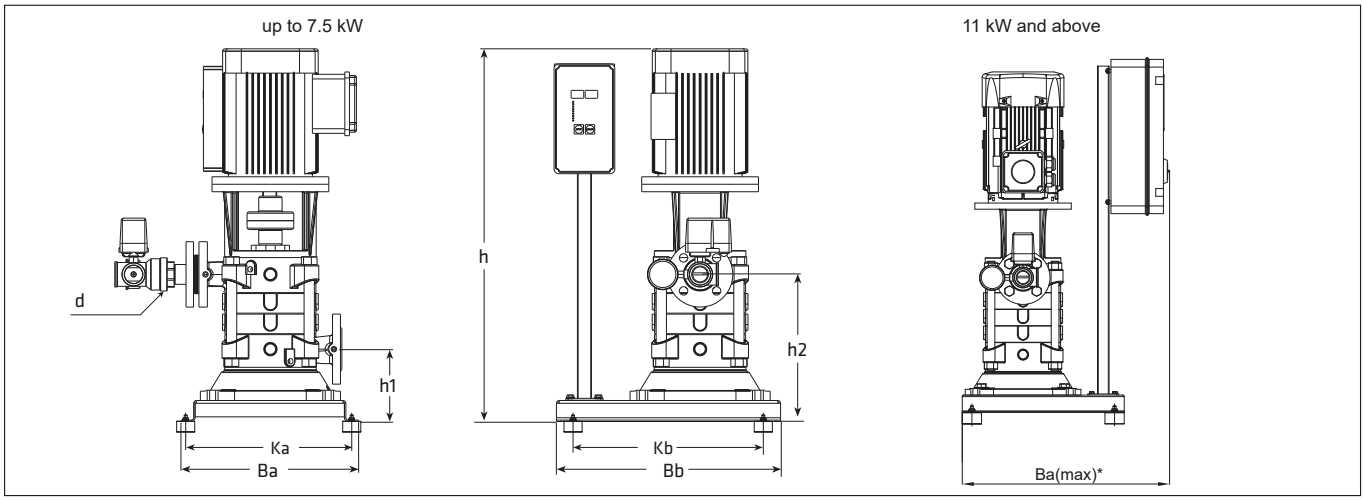



for TH SKM-V 50 and 65 series pump.



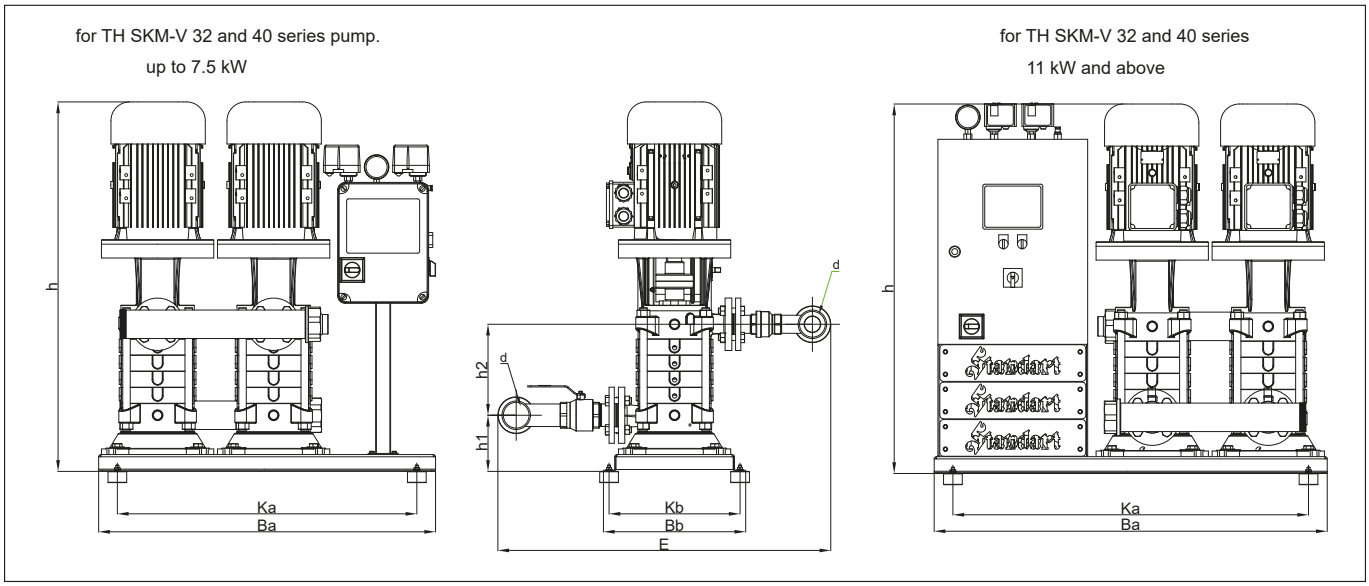

for TH SKM-V 50 and 65 series pump.

## Booster set with one pump

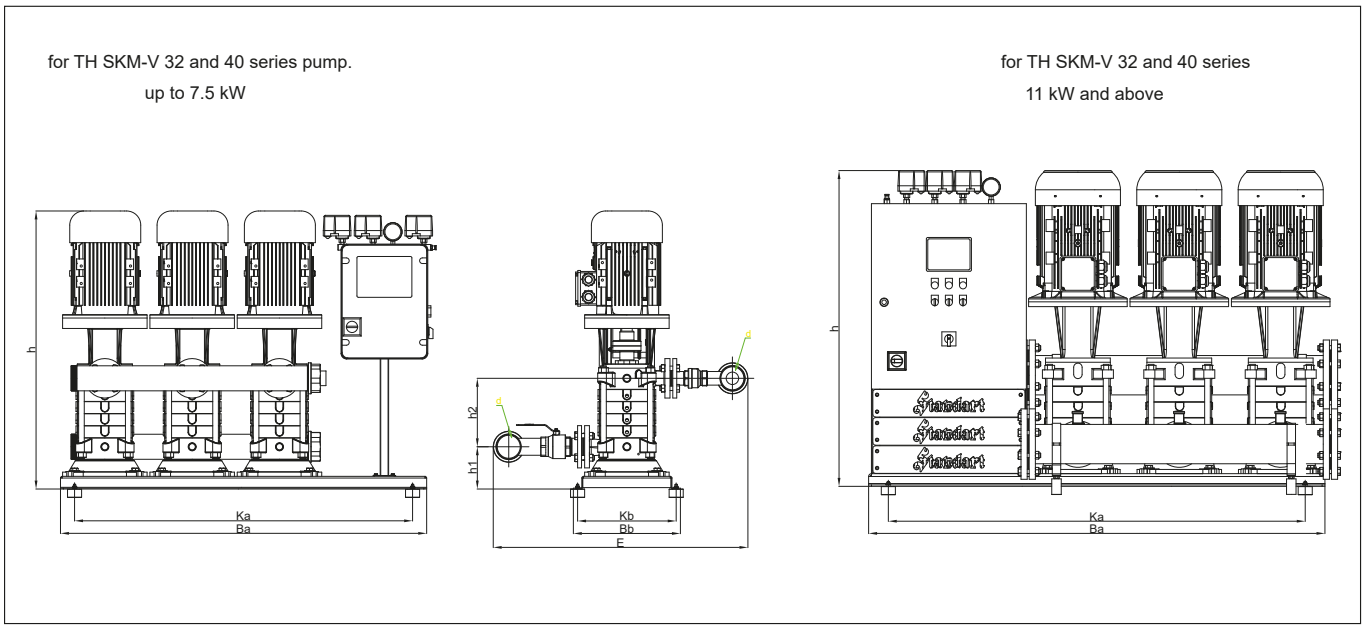



(*) Ba(max) dimensions are different according to control panels. Contact for detailed information.

## Booster set with two pump




## Booster set with three pump



Standart

Pump • Fire Fighting Units • Booster Set

# TH GRV-VD / VB

## BOOSTERS

TH GRV-VD / VB Rev.11 09.2021

## General Information

High pressure, quiet running, compact and low power consumption.

GRV-VD / VB pumps are suitable for pumping non-abrasive, clean or slightly contaminated, low viscosity without solid & fibrous particles liquids.

Vertical structure saves space.

## Technical Data

**Capacity** ——— up to 60 $m^3/h$

**Head** ——— up to 170 m

**Casing Pressure** ——— 10-16-25 bar

**Design Temperature** ——— up to 50 °C

## Design Features

•TH GRV-VD / VB boosters are manufactured with vertical pump.

•The boosters are produced as single, double and triple pumps as a standard according to the desired flow. Upon request, up to 6 pumps can be set.

•Single-pump boosters have a water level float (electric floater).

•Phase control system (PCS) is available in single pump, three-phase motorized boosters.

•Sequencing, phase control and liquid level control are standard features for multiple pumped booster pumps.

•Booster pumps can operate in two different modes; automatically and manually.

## Booster Designation

**TH 1 x GRV-VD 5**

**Bosster Type**

**Number of Pumps**

**Pump Type**

**Number of Stage**

•Electric motors of high efficiency class conforming to IEC 60034-30 standard are used.

•The booster pumps can be manufactured as a variable-speed frequency control for convenience. (upon request)

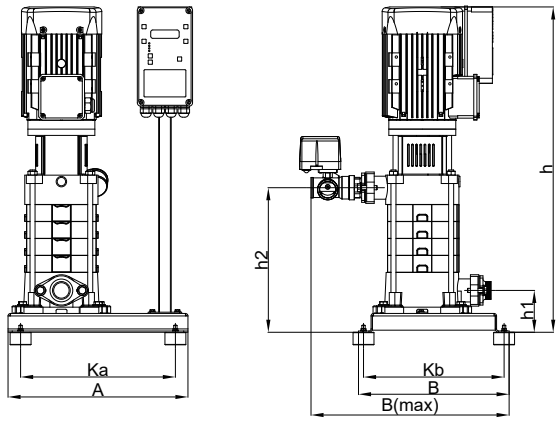
## Material Information

| Part Name | Material | |
|---|---|---|
| | Standard | Optional |
| **Pump** | | |
| Base Plate | GG 25 | Bronz / AISI 304 |
| Stage Casing | NORYL | Bronz / AISI 304 |
| Intermediate Stage | NORYL | Bronz / AISI 304 |
| Impeller | NORYL | Bronz / AISI 304 |
| Shaft | AISI 420 | AISI 304 |
| Cover Plate | AISI 304 | - |
| **Panel** | Pressure Switch Controlled | Frequency Controlled |
| **Collector** | Steel | AISI 304 |
| **Frame** | Steel | Galvanized Steel |
| **Accsessories** | | |
| Valve | Brass | AISI 304 |
| Check Valve | Brass | AISI 316 |

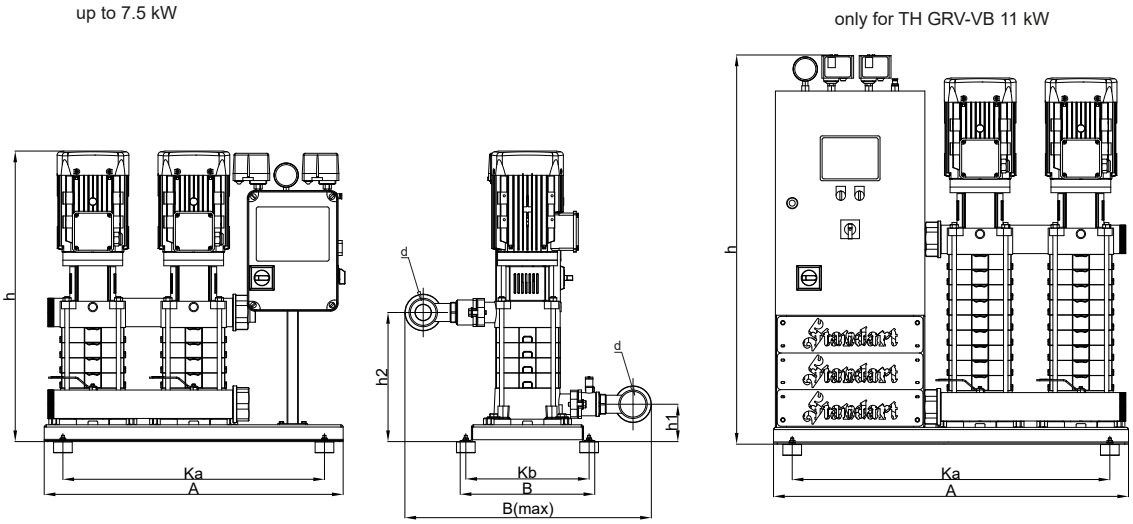
| Pump Type | kW | IEC | A | B | B(max.) | Ka | Kb | h | d | h1 | h2 | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1x GRV-VD 3 | 1,5 | 90S | 430 | 360 | 480 | 370 | 340 | 700 | 1 1/4" | 100 | 265 | 70 |
| 1x GRV-VD 4 | 2,2 | 90L | | | | | | 740 | | | 305 | 75 |
| 1x GRV-VD 5 | 3 | 100L | | | | | | 780 | | | 345 | 85 |
| 1x GRV-VD 6 | 4 | 112M | | | | | | 820 | | | 385 | 100 |
| 1x GRV-VD 7 | 4 | | | | | | | 860 | | | 427 | 105 |
| 1x GRV-VD 8 | 5,5 | 132S | | | | | | 900 | | | 467 | 125 |
| 1x GRV-VD 9 | 5,5 | | | | | | | 940 | | | 507 | 130 |
| 1x GRV-VD 10 | 7,5 | | | | | | | 980 | | | 547 | 135 |
| 2x GRV-VD 3 | 1,5 | 90S | 800 | 360 | 660 | 700 | 330 | 700 | 2 1/2" | 100 | 265 | 160 |
| 2x GRV-VD 4 | 2,2 | 90L | | | | | | 740 | | | 305 | 165 |
| 2x GRV-VD 5 | 3 | 100L | | | | | | 780 | | | 345 | 185 |
| 2x GRV-VD 6 | 4 | 112M | | | | | | 820 | | | 385 | 210 |
| 2x GRV-VD 7 | 4 | | | | | | | 860 | | | 427 | 215 |
| 2x GRV-VD 8 | 5,5 | 132S | | | | | | 900 | | | 467 | 260 |
| 2x GRV-VD 9 | 5,5 | | | | | | | 940 | | | 507 | 270 |
| 2x GRV-VD 10 | 7,5 | | | | | | | 980 | | | 547 | 275 |
| 3x GRV-VD 3 | 1,5 | 90S | 1150 | 360 | 720 | 1050 | 330 | 700 | 3" | 100 | 265 | 230 |
| 3x GRV-VD 4 | 2,2 | 90L | | | | | | 740 | | | 305 | 240 |
| 3x GRV-VD 5 | 3 | 100L | | | | | | 780 | | | 345 | 270 |
| 3x GRV-VD 6 | 4 | 112M | | | | | | 820 | | | 385 | 305 |
| 3x GRV-VD 7 | 4 | | | | | | | 860 | | | 427 | 315 |
| 3x GRV-VD 8 | 5,5 | 132S | | | | | | 900 | | | 467 | 390 |
| 3x GRV-VD 9 | 5,5 | | | | | | | 940 | | | 507 | 395 |
| 3x GRV-VD 10 | 7,5 | | | | | | | 980 | | | 547 | 405 |

| Pump Type | kW | IEC | A | B | B(max.) | Ka | Kb | h | d | h1 | h2 | KG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1x GRV-VB 3 | 2,2 | 90L | 435 | 300 | 465 | 410 | 240 | 700 | 2" | 100 | 265 | 70 |
| 1x GRV-VB 4 | 3 | 100L | | | | | | 740 | | | 305 | 75 |
| 1x GRV-VB 5 | 4 | 112M | | | | | | 780 | | | 345 | 85 |
| 1x GRV-VB 6 | 5,5 | 132S | | | | | | 820 | | | 386 | 100 |
| 1x GRV-VB 7 | 5,5 | | | | | | | 860 | | | 427 | 105 |
| 1x GRV-VB 8 | 7,5 | | | | | | | 900 | | | 467 | 125 |
| 1x GRV-VB 9 | 7,5 | | | | | | | 940 | | | 507 | 130 |
| 1x GRV-VB 10 | 11 | 160M | | | | | | 980 | | | 547 | 135 |
| 2x GRV-VB 3 | 2,2 | 90L | 800 | 360 | 760 | 700 | 330 | 700 | 2 1/2" | 100 | 300 | 160 |
| 2x GRV-VB 4 | 3 | 100L | | | | | | 740 | | | 340 | 165 |
| 2x GRV-VB 5 | 4 | 112M | | | | | | 780 | | | 380 | 185 |
| 2x GRV-VB 6 | 5,5 | 132S | | | | | | 820 | | | 420 | 210 |
| 2x GRV-VB 7 | 5,5 | | | | | | | 860 | | | 460 | 215 |
| 2x GRV-VB 8 | 7,5 | | | | | | | 900 | | | 500 | 260 |
| 2x GRV-VB 9 | 7,5 | | | | | | | 940 | | | 545 | 270 |
| 2x GRV-VB 10 | 11 | 160M | 950 | 360 | | 850 | 330 | 1050 | | | 600 | 275 |
| 3x GRV-VB 3 | 2,2 | 90L | 1150 | 360 | 780 | 1050 | 330 | 700 | 3" | 100 | 300 | 230 |
| 3x GRV-VB 4 | 3 | 100L | | | | | | 740 | | | 340 | 240 |
| 3x GRV-VB 5 | 4 | 112M | | | | | | 780 | | | 380 | 270 |
| 3x GRV-VB 6 | 5,5 | 132S | | | | | | 820 | | | 420 | 305 |
| 3x GRV-VB 7 | 5,5 | | | | | | | 860 | | | 460 | 315 |
| 3x GRV-VB 8 | 7,5 | | | | | | | 900 | | | 500 | 390 |
| 3x GRV-VB 9 | 7,5 | | | | | | | 940 | | | 545 | 395 |
| 3x GRV-VB 10 | 11 | 160M | 1450 | 360 | | 1350 | 330 | 1050 | | | 600 | 405 |

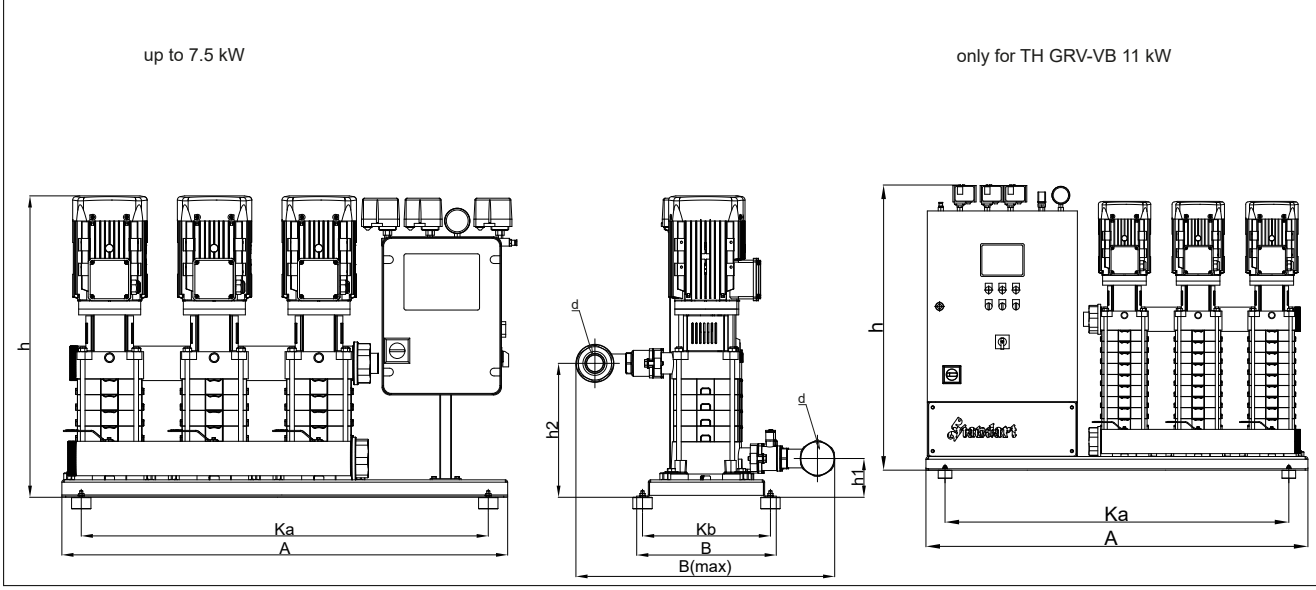
**Booster set with one pump**



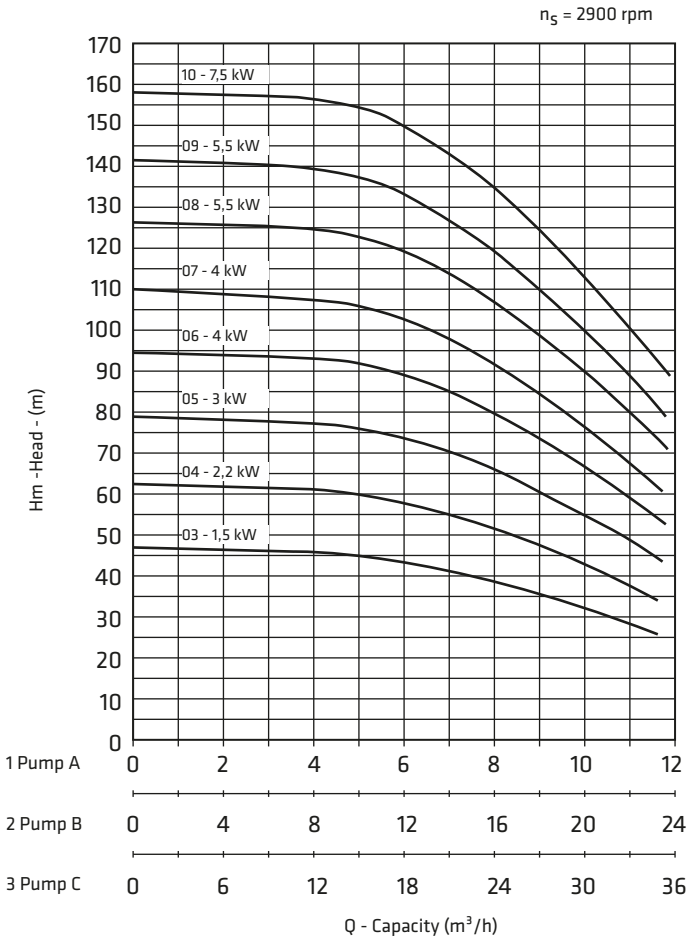

**Booster set with two pump**



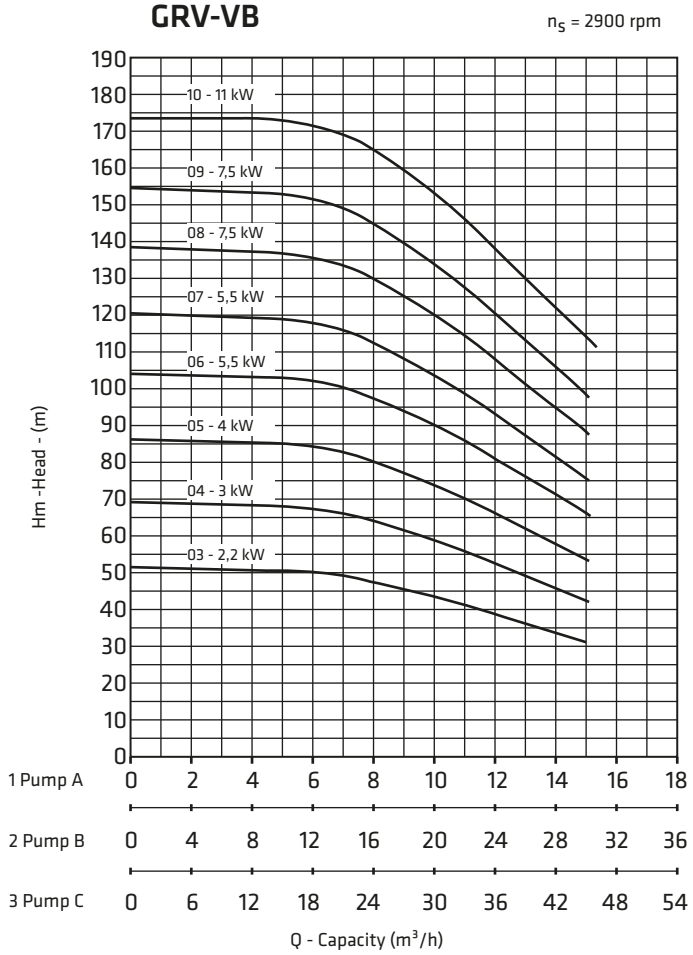

**Booster set with three pump**



## GRV-VD


$n_S$ = 2900 rpm
10 - 7,5 kW
09 - 5,5 kW
08 - 5,5 kW
07 - 4 kW
06 - 4 kW
05 - 3 kW
04 - 2,2 kW
03 - 1,5 kW
Hm -Head - (m)
1 Pump A
2 Pump B
3 Pump C
Q - Capacity (m³/h)

## GRV-VB


$n_S$ = 2900 rpm
10 - 11 kW
09 - 7,5 kW
08 - 7,5 kW
07 - 5,5 kW
06 - 5,5 kW
05 - 4 kW
04 - 3 kW
03 - 2,2 kW
Hm -Head - (m)
1 Pump A
2 Pump B
3 Pump C
Q - Capacity (m³/h)

NFPA®
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2197916

# FIRE PUMPS

Standart

Pump • Fire Fighting Units • Booster Set

# FIRE PUMPS

## CONFORM TO NFPA 20

NFPA
MEMBER
2197916

NFPA 20 Rev.11 09.2021

NFPA 20 standard defines the installation requirements of the fixed pumps for fire protection. This standard is the most common and the most detailed standard in the world used for fire protection services.

The scope of NFPA 20 document include the selection of fire pumps, installation, acceptance tests and operation.

Standart Pompa, being a member of NFPA, follows all studies and publications related within the fire protection area.

Most of the consultant companies related with fire protection system design are making their designes according to NFPA standards. Besides, insurance companies are not taking risk and reducing the policy costs, if the fire system is not designed according to NFPA standards and the fire pumps are not selected according to NFPA 20.

## STANDART Fire Fighting Pump Features

STANDART fire pumps are used to pressurize and keep the pressure of fire fighting systems such as;
•Sprinkler •Fire Cabinets •Hydrants

Different type of pumps may be used in fire fighting systems;

•End suction pumps
•Vertical in-line pumps
•Double suction split-case pumps
•Multistage pumps •Multistage multioutlet

## STANDART Fire pumps and groups conform the requirements of NFPA 20

•Seperate controller for each pump.
•Max. flow velocity in suction pipe is below 3 m/s at rated capacity
•Pressure at zero flow is less than 1.4 times rated pressure
•Pressure at 1.5 x rated capacity is not less than 0.65 x rated pressure
•Service factor shall not exceed 1.15
•Materials;

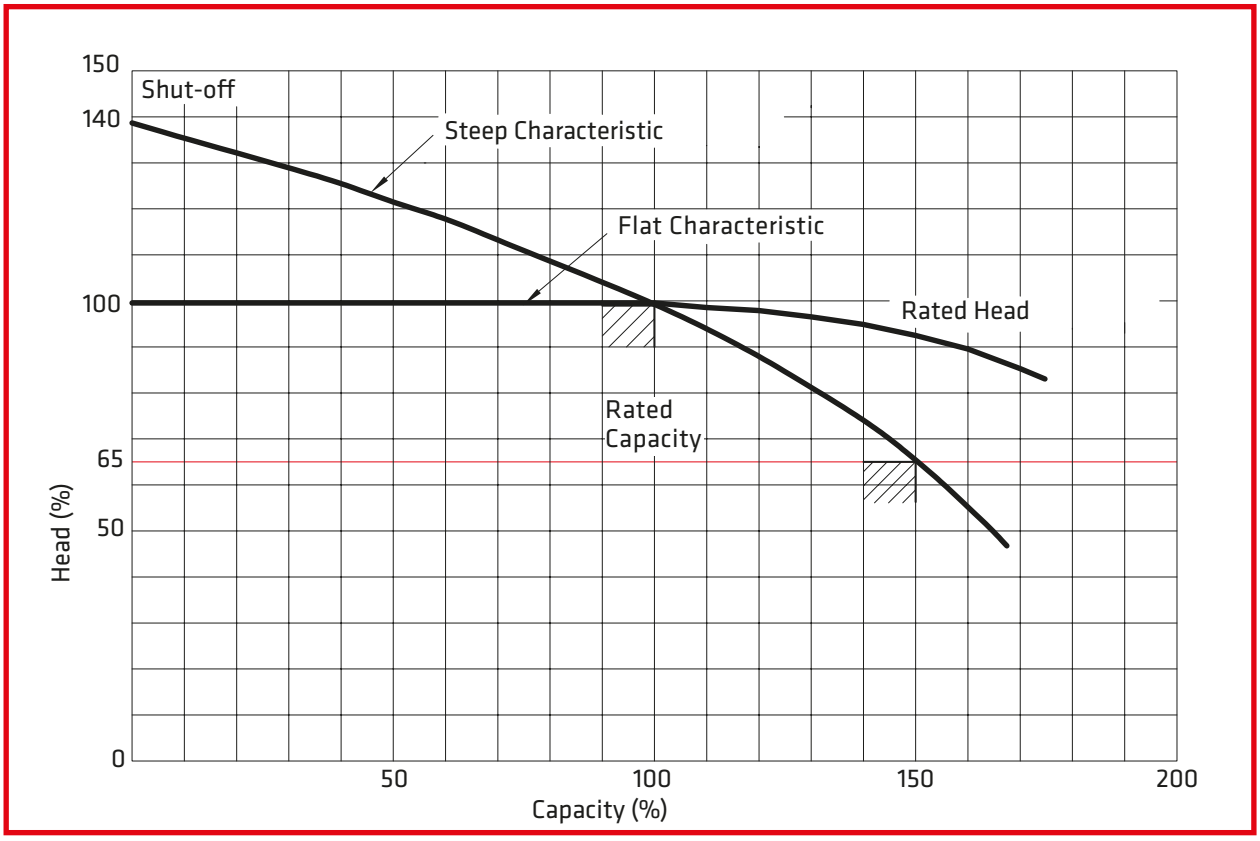
| | |
|---|---|
| Casing | : Cast iron |
| Impeller | : Bronze |
| Shaft | : Stainless steel |

•Shaft sealing: Soft packing or mechanical seal
•Bearings: L-10 rating of not less than 5000 hours at maximum load.
•Flanges according to EN 1092-2 PN 16.

## Suggested accesories on the pump

•Automatic air release valve
•Circulation relief valve
•Increaser and reducer piping elements
•Pressure gauges at suction and discharge
•Flexible coupling

## Fire Pump Performance Characteristics Conform to NFPA 20




## Fire Pump Capacities Conform to NFPA 20

Rated capacities as per NFPA 20 [2016]

| (GPM) | (l/min) | ($m^3$/h) |
|---|---|---|
| 25 | 95 | 5,7 |
| 50 | 189 | 11,4 |
| 100 | 379 | 22,7 |
| 150 | 568 | 34,1 |
| 200 | 757 | 45,4 |
| 250 | 946 | 56,8 |
| 300 | 1136 | 68,1 |
| 400 | 1514 | 91 |
| 450 | 1703 | 102 |
| 500 | 1892 | 114 |
| 750 | 2893 | 170 |
| 1000 | 3785 | 227 |
| 1250 | 4731 | 284 |
| 1500 | 5677 | 341 |
| 2000 | 7570 | 454 |
| 2500 | 9462 | 568 |
| 3000 | 11355 | 681 |
| 3500 | 13247 | 795 |
| 4000 | 15140 | 908 |
| 4500 | 17032 | 1022 |
| 5000 | 18925 | 1136 |

# STANDART Fire Pump Types

## ECO SNT End Suction

Horizontal, radially split volute casing type , single stage, end suction centrifugal pump with closed impeller.

| rated capacities (GPM) | | | rated pressures (m) |
|---|---|---|---|
| 25 | 400 | 2000 | 40 |
| 50 | 450 | 2500 | 50 |
| 100 | 500 | 3000 | 60 |
| 150 | 750 | 3500 | 70 |
| 200 | 1000 | 4000 | 80 |
| 250 | 1250 | 4500 | 90 |
| 300 | 1500 | 5000 | 100 |

## SDS Double Suction

Horizontal, single stage, axially split volute casing pumps with double suction radial impellers.

| rated capacities (GPM) | | rated pressures (m) |
|---|---|---|
| 400 | 2000 | 50 |
| 450 | 2500 | 60 |
| 500 | 3000 | 70 |
| 750 | 3500 | 80 |
| 1000 | 4000 | 90 |
| 1250 | 4500 | 100 |
| 1500 | 5000 | 110 |
| | | 120 |
| | | 140 |

## SKM Multistage

Horizontal ring section multistage centrifugal pumps with closed impellers and diffusers.

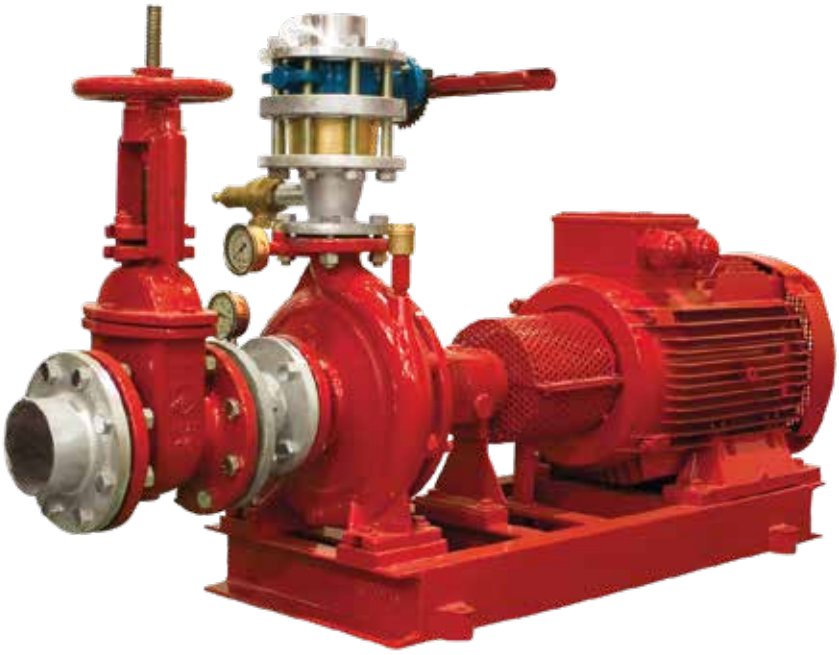
| rated capacities (GPM) | | | rated pressures (m) | |
|---|---|---|---|---|
| 25 | 300 | 1000 | 60 | 120 |
| 50 | 400 | 1250 | 70 | 130 |
| 100 | 450 | 1500 | 80 | 140 |
| 150 | 500 | 2000 | 90 | 150 |
| 200 | 750 | 2500 | 100 | 160 |
| 250 | | | 110 | 170 |

## SKM Multistage - Multioutlet

Multioutlet design horizontal ring section multistage centrifugal pumps with closed impellers and diffusers.

| rated capacities (GPM) | | | rated pressures (m) | |
|---|---|---|---|---|
| 25 | 300 | 1000 | 60 | 120 |
| 50 | 400 | 1250 | 70 | 130 |
| 100 | 450 | 1500 | 80 | 140 |
| 150 | 500 | 2000 | 90 | 150 |
| 200 | 750 | 2500 | 100 | 160 |
| 250 | | | 110 | 170 |

## Fire Pump with Electric Motor



## Fire Pump with Diesel Engine

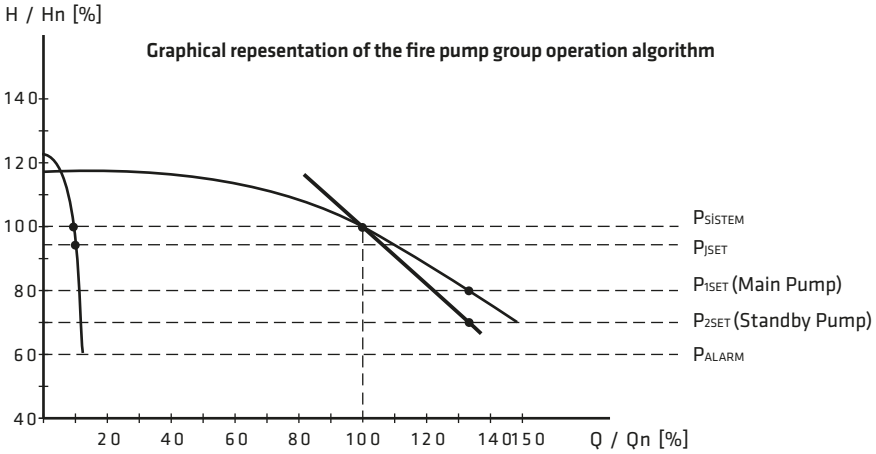
Generally 100 % redundancy is obtained by diesel engine-driven pumps. The requirements of diesel engine-driven pumps are defined in NFPA 20.

## Jockey Pump

Jockey pumps should be selected at a capacity at which to increase the system pressure to the required value in 10 minutes after sensing the leakage in fire fighting system.

Generally a pump with % 3 of rated capacity (min 1 GPM), % 110 of rated pressure.

# Fire Pump Group Operation Algorithm




## Manual Electric Control

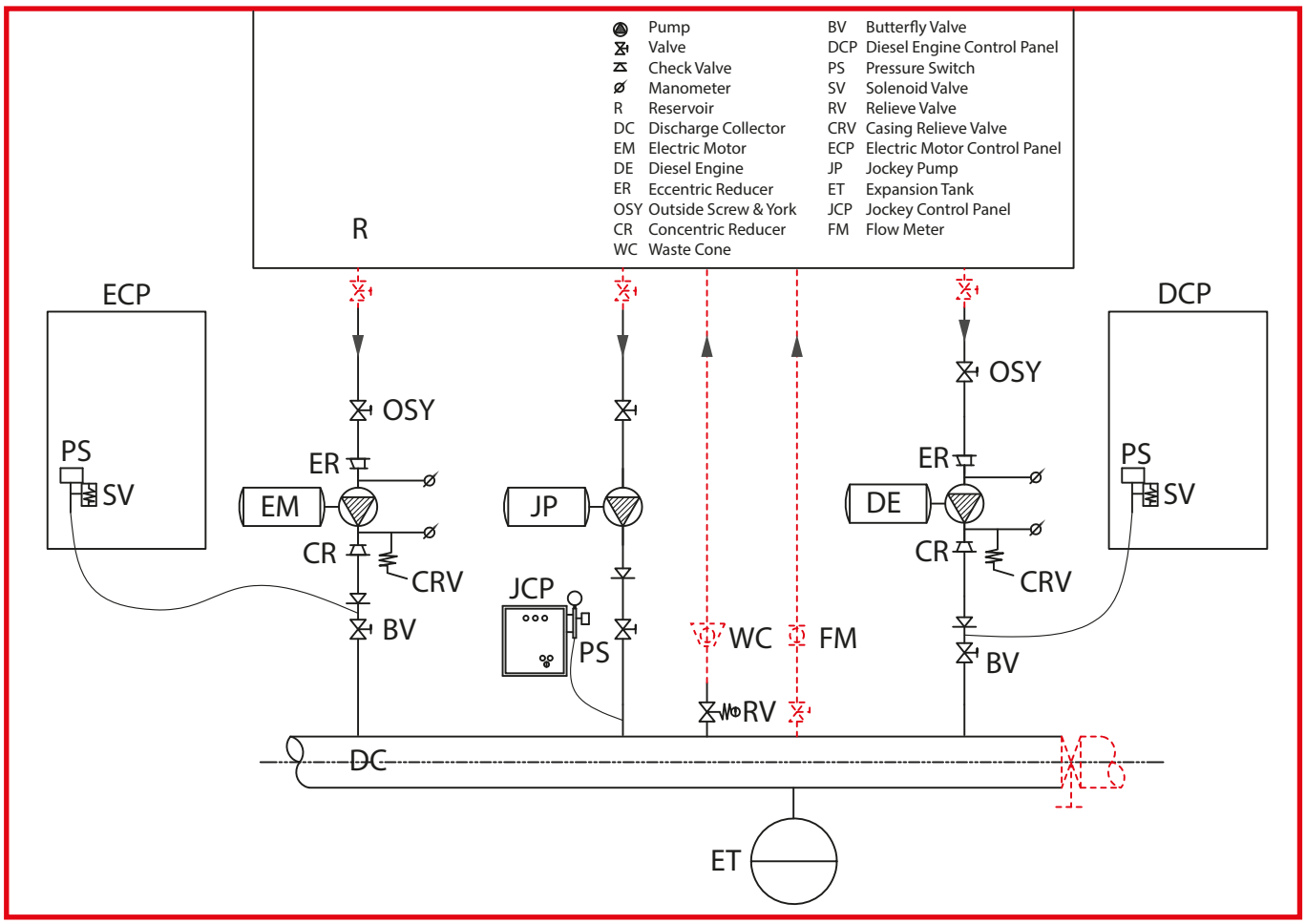
The manually operated switch (push button) can be used to run the motor manually. In this case operation can not be affected by the pressure-actuated switch.

## Mechanical Control

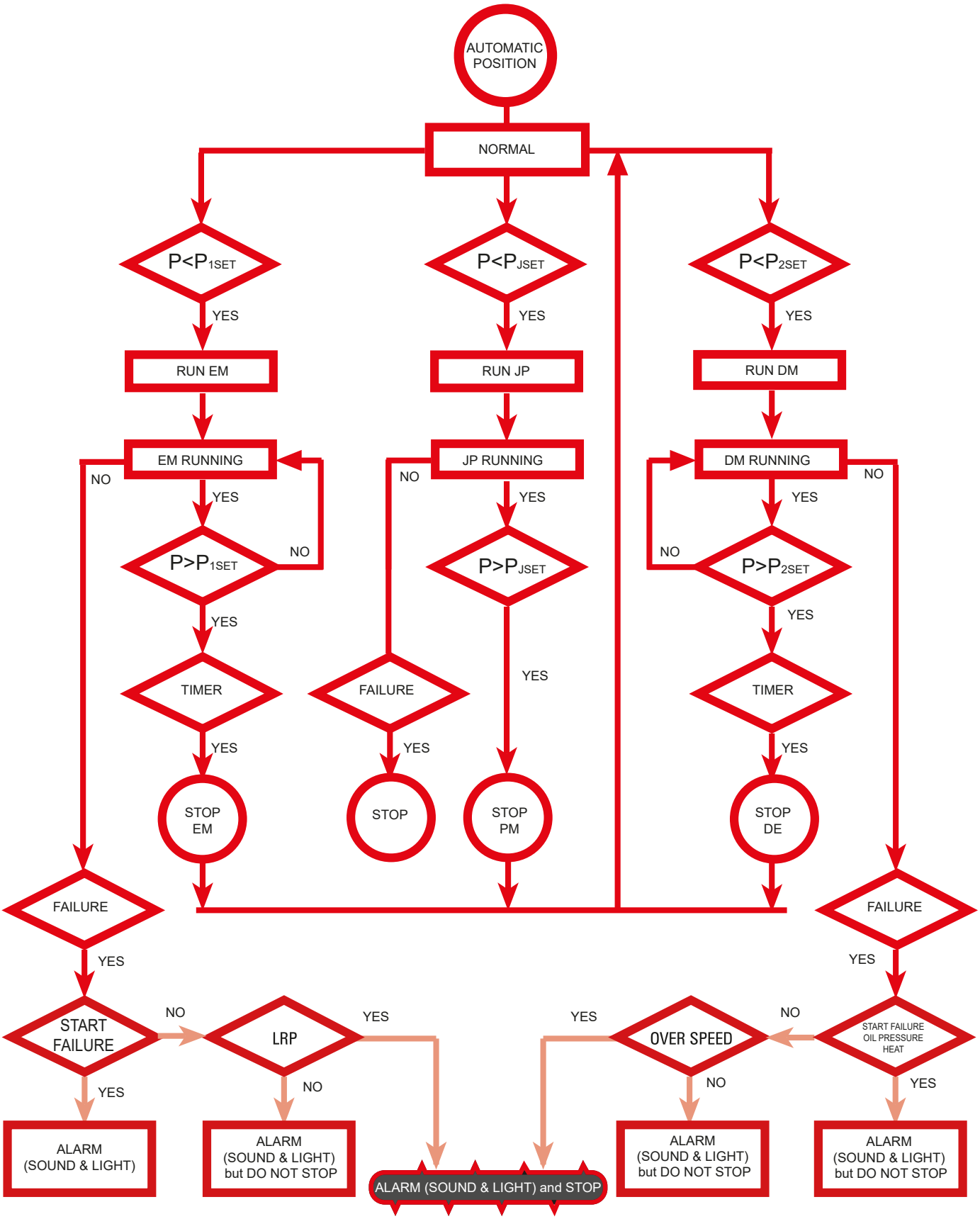
Emergency run handle on the controller can be used to operate pumps by mechanically closing the motor-circuit switching mechanism.

If the pressure drops below the set value (PJSET), jockey pump starts running with the signal coming from the pressure switch and continues to run for 10 minutes until the system pressure reaches the set value (PSYSTEM). If the pressure continues to drop, (P1SET) first the main pump starts to run. If the system pressure (PSYSTEM) can not supplied and pressure continues the drop

# P&I Diagram for Fire Fighting Groups Conform to NFPA20



# Automatic Operation Algorithm In Case Of Fire




NOTE: Pressure adjustments must be like

$P_{SYSTEM} > P_{JSET} > P_{1SET} > P_{2SET}$

## Control Panels

•Individual control panels are used for electric pump, diesel pump and jockey pump
•Lock mechanism are used on panels
•Continuous grounding
•Pumps can run by manual control and emergency-run mechanical control on controller
•No thermic protection on controller (except jockey pump controller)
•One batteries for diesel engine
•Two batteries for diesel engine (if required)
•Battery charger

### For Electric Motor (Type B)


### For Diesel Engine (Type B)


The pictures are representative.

•Alarm signals on electric pump controller
1. pump running
2. pump failure
3. phase reversal (if required)
4. loss of phase (if required)
5. power suitable (if required)
6. lamp test (if required)
7. audible and visible (can not be switched off) alarms

•Additive alarm signals for diesel driven pumps

1. high motor temperature (if available in diesel engine)
2. low oil pressure
3. over speed
4. control is in automatic mode
5. failure of 1st battery
6. failure of 2nd battery (if required)
7. starting failure
8. engine running
9. audible and visible(can not be switched off) alarms

•DRY contacts on electric pump controller
1. general alarm
2. weekly test started
3. pump runing

•DRY contacts on diesel engine controller
1. control is in automatic mode
2. pump runing
3. general alarm

STANDART fire pump groups can communicate with building automation systems. But to operate and stop fire pump groups from the control room is not suggested because of safety reasons.
Pressure switches are very important, because they generate "run command". There shall be at least one pressure switch for each pump and at least two for the system.
After the adjustments pressure switches should be locked at the factory. They should be in control panel and not effected from vibrations. Min and max set levels sould be adjusted individually.
Fire pumps should operate automatically by pressure switches and also should operate manually by pressing an electric push button or pressing a mechanical handle.

## Control Panels According to NFPA 20

The control panels has many requirements that are required in NFPA 20. Like a voltage surge arrester, isolation switch emergency run mechanical control, overspeed...

•Individual control panels are used for electric pump, diesel pump and jockey pump
•Lock mechanism are used on panels
•Continuous grounding
•Pumps can run by manual control and emergency-run mechanical control on controller
•In the electric motor pumps, by the help of Locked Rotor Protection (LRP), in case of locking rotor main switch is automatically shut down.
•In the diesel engine pumps, the diesel is stopped in case of overspeed
•No thermic protection on controller (except jockey pump controller)
•Two batteries for diesel engine
•Battery chargers

### For Electric Motor (Type C)

### For Diesel Engine (Type C)

The pictures are representative.

•Alarm signals on electric pump controller (except jockey pump)
1. pump running
2. pump failure
3. minimum water level(if required)
4. phase reversal
5. loss of phase
6. power suitable
7. Lamp test (if required)
8. audible(can be switched off) and visible(can not be switched off) alarms
9. LRP

•DRY contacts on electric pump controller
1. general alarm
2. start failer
3. weekly test started
4. pump status
5. phase loss
6. phase opposite
7. power suitable

•Additive alarm signals for diesel driven pumps

1. high motor temperature
2. low oil pressure
3. over speed
4. control is in automatic mode
5. charger lamp
6. failure of 1st battery
7. failure of 2nd battery
8. starting failure
9. failure of battery charger
10. engine running
11. lamp test button (optional)
12. audible(can be switched off) and visible(can not be switched off) alarms

•DRY contacts on diesel engine controller
1. selector switch is at wrong position
2. pump runing
3. general alarm

## Periodic Tests During Operation

## Weekly Automatic Test

The timer which is preset at a certain time of the week, opens the selonoid valve. System pressure decreases due to discharge water and selonoid valve is closed after motor starts running. Pump runs for a period which is already programmed and then stops.

During weekly tests the fire security person is supposed to be at the test area (It is not easy to recognise mechanical failures during automatic test).

Minimum run time is 10 minutes for electric motor driven pumps and 30 minutes for diesel engine driven pumps. Diesel engine controller should generate an alarm signal in case of failure which is 15 seconds of cranking and 15 seconds of rest, in six consecutive cycles.

## Weekly Manual Test

After completion of automatic weekly tests, manual-electrical (by pressing a button on controller) and manual-mechanical (by pressing a handle on controller) tests are done for a short period of time.

## Mountly and Annual Test

These tests are for the purpose of protective maintanence and defined in NFPA -25

Standart Pompa technical team is ready to help on this matter if required.

## Factory Test

Each fire pump is hydrostatically tested 1.5 times of shut off pressure (not less than 17 bars) for a minimum 5 minutes period.

Each fire pump is factory tested as per NFPA-20 requirement.

Fire pump groups and fire booster sets are functionally tested at factory.

## Optional Accessories of Fire Pump Group (*)

Standart fire pump groups include all the required elements per NFPA-20.

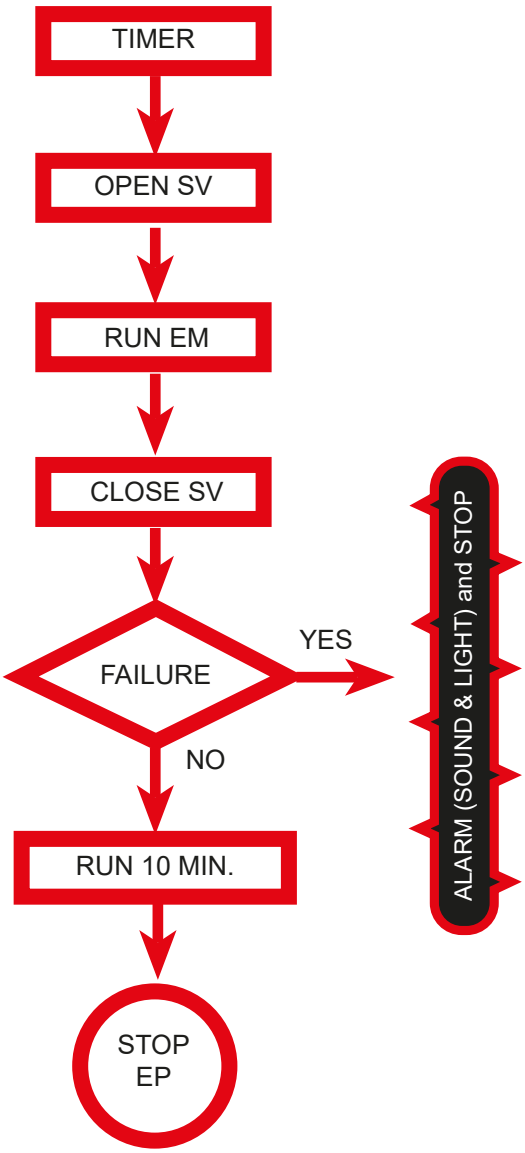
Optional elements are shown below :

- suction valve position monitoring switch
- suction valve lock
- waste cone
- discharge valve position monitoring switch
- discharge valve lock
- flowmeter at the flow rate 1.75 times of rated flow

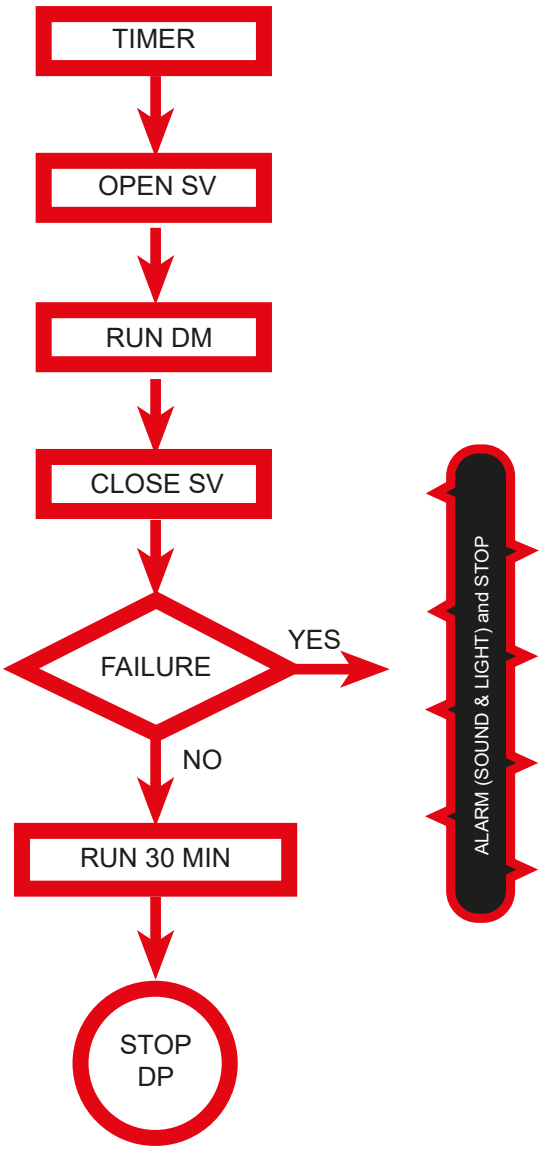
**(*) Fire Pump Group** : Main pump, stand-by pump, jockey pump, electric control panels, collectors, valves etc. all on common base plate.

# Automatic Weekly Test Algorithm

## For Electric Pump




## For Diesel Pump



Standart

Pump • Fire Fighting Units • Booster Set

# SDS / SNK

## FIRE PUMPS

UL LISTED  FM APPROVED

## Who UL is and What UL Does

•UL (Underwriters Laboratories Inc.) is a global independent safety science company offering expertise across five key strategic businesses: Product Safety, Environment, Life & Health, University and Verification Services. Since the year UL founded in 1894, nearly 70,000 manufacturers in 100 countries have produced 100.000 different types of totally 22 billion UL Marked products.

•UL engineers scientifically investigate and test thousands of types of products, materials, constructions and systems to evaluate the electrical, fire and injury risks; the burglary or fire resistance; or the ability to detect, control or limit fires.

•UL has developed 1,600 Standards for Safety, which serve as the bedrock of compliance in over 200 industries.

•There is an "Online Certifications Directory" in UL's website and all the products listed by UL can be found here.

## UL Safety Standard: UL 448

•The requirements of this standard cover design and test features of centrifugal fire pumps intended for use in water-supply systems for fire-protection service.

•The pumps covered by these requirements are intended for installation and use in accordance with the Standard for the Installation of Stationary Pumps for Fire Protection, NFPA 20.

## Who FM is and What FM Does

•FM (Factory Mutual) Global is one of the world's largest business property insurers who also serves engineering solutions to be protected against basicly fire, natural disaster or other types of property risk.

•FM Approvals is a unit of FM Global who certifies industrial and commercial products and services for companies. When a product or service meets the standards of FM Approvals, it is issued the "FM APPROVED" mark to signify it will perform as expected.

•Currently there are 60.000 certified products and services and these are listed in "FM Approval Guide" which can be found in FM website.

## FM Approvals Standard: 1311 / 1319

•FM Class 1311 states approval criteria for horizontal or vertical split case centrifugal fire pumps while FM Class 1319 states about horizontal end suction centrifugal fire pumps that supply water to fire protection systems.

•The requirements in these standards are mainly based on ANSI Hydraulics Institute (HI) and NFPA 20 standards.

# General Information

## Design Features According to UL & FM

•Only the specified capacities in the below table are allowed for rated capacity. For capacities higher than 5000 GPM, 500 GPM increments are allowed.

| GPM | m³/h | GPM | m³/h | GPM | m³/h |
|---|---|---|---|---|---|
| 25 | 5.68 | 400 | 90.8 | 2000 | 454 |
| 50 | 11.3 | 450 | 102.2 | 2500 | 568 |
| 100 | 22.7 | 500 | 113.5 | 3000 | 681 |
| 150 | 34.0 | 750 | 170 | 3500 | 795 |
| 200 | 45.4 | 1000 | 227 | 4000 | 909 |
| 250 | 56.8 | 1250 | 284 | 4500 | 1022 |
| 300 | 68.1 | 1500 | 341 | 5000 | 1136 |

•All interior bolt or screw that are exposed to pumped liquid shall be of rolled bronze or corrosion resistant material

•The pump shall be provided with automatic air-release valve, circulation relief valve and pressure gauges

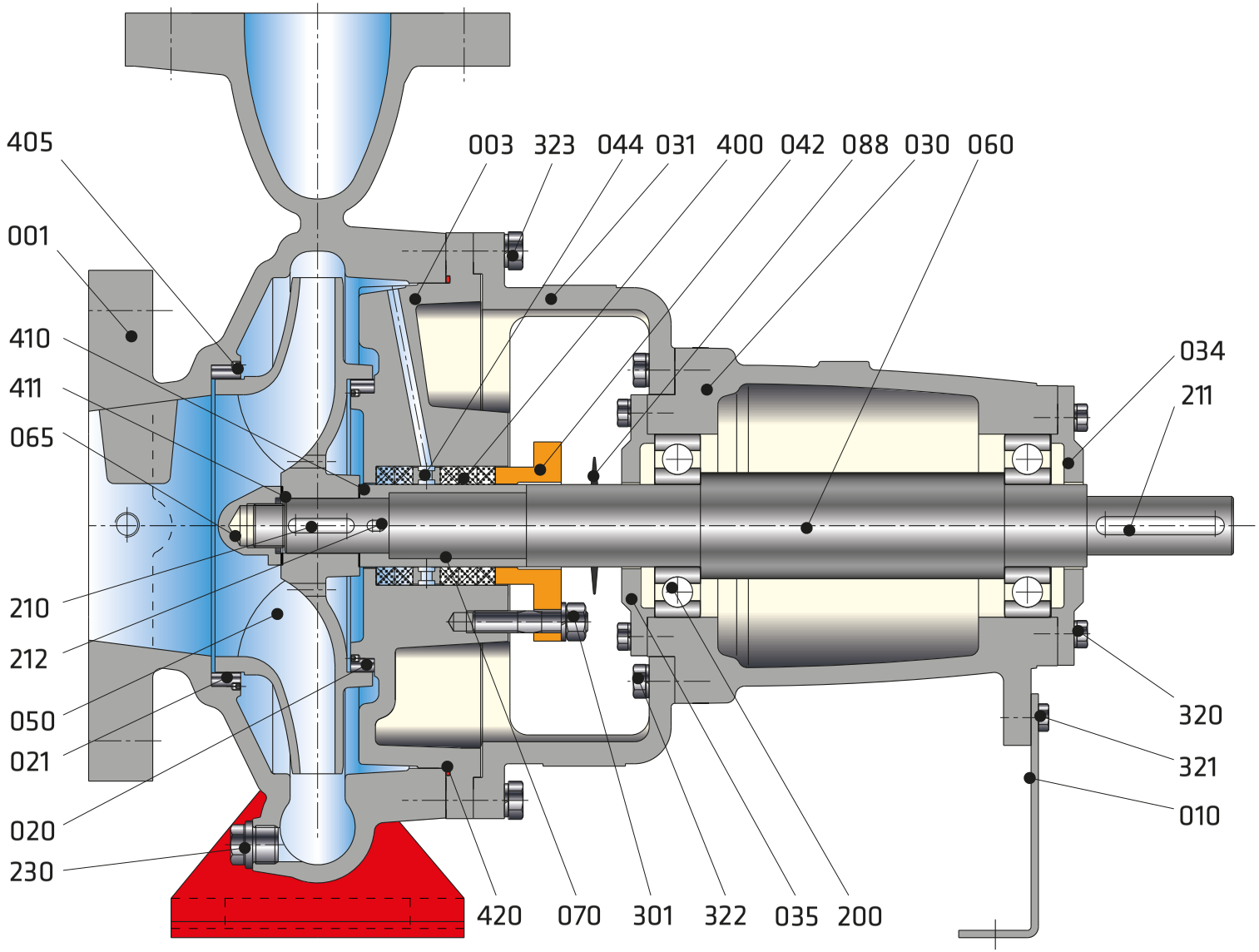
•Bearings shall have an L-10 rating of not less than 5000 hours at maximum load.

•The pumps shall be provided with at least four packing rings plus a lantern ring. The lantern ring may be permitted to replace one ring of packing.

•Impellers, wear rings, shafts, lantern rings, glands shall be made of corrosion resistant material.

•Following material specifications are applied to STANDART UL/FM fire pumps:

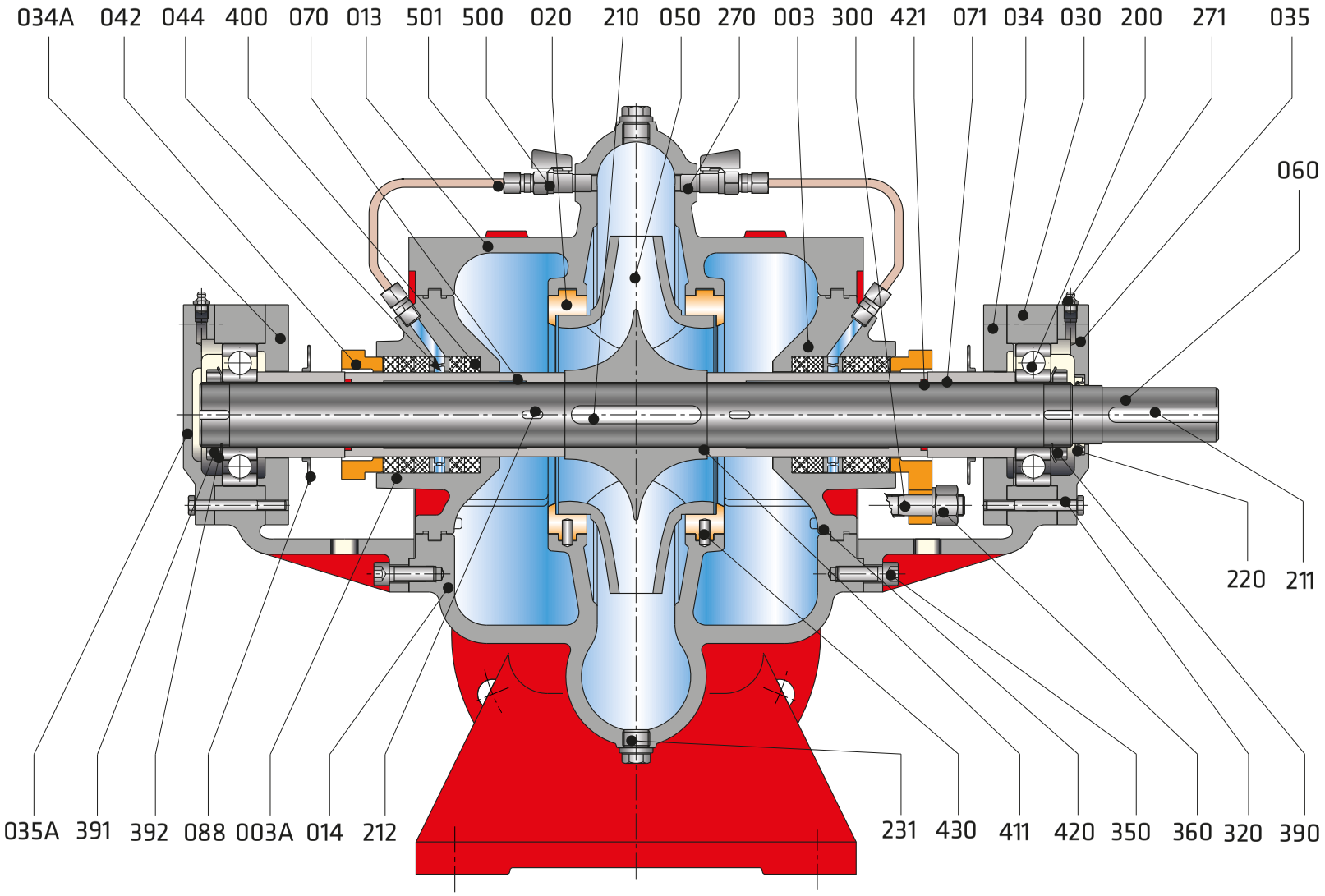
| Part List | Definition | DIN / EN | | AISI / SAE / ASTM |
|---|---|---|---|---|
| Casing | Nodular Cast Iron | 0.7040 | EN-GJS-400-15 (GGG40) | A 536 60-40-18 |
| Impeller | Cast Bronze | 2.1050.01 | G-CuSn 10 | B427 C90700 |
| Shaft | Stainless Steel | 1.4021 | X20 Cr 13 | A 276 Type 420+QT |
| Shaft Seal | Stainless Steel | 1.4404 | X2 Cr Ni Mo 17-12-2 | A 276 Type 316L |
| Wear Ring | Cast Bronze | 2.1050.01 | G-CuSn 10 | B 427 C90700 |
| Bolt & Screw | Stainless Steel | 1.4301 | X5 Cr Ni 18-10 | A276 Type 304 |




## Part List

| | |
|---|---|
| 001 | Volute Casing |
| 003 | Stuffing Box |
| 010 | Support Foot |
| 020 | Wear Ring (back) |
| 021 | Wear Ring (front) |
| 030 | Bearing Housing |
| 031 | Bearing Bracket Lantern |
| 034 | Bearing Cover (outboard) |
| 035 | Bearing Cover (inboard) |
| 042 | Stuffing Box Gland |
| 044 | Lantern Ring |
| 050 | Impeller |
| 060 | Shaft |
| 065 | Impeller Nut |
| 070 | Shaft Protecting Sleeve |
| 088 | Thrower |
| 200 | Ball Bearing |
| 210 | Impeller Key |
| 211 | Coupling Key |
| 212 | Sleeve Key |
| 230 | Drain Plug |
| 301 | Stud+Nut+Washer |
| 320 | Hex. Head Bolt |
| 321 | Hex. Head Bolt |
| 322 | Hex. Head Bolt |
| 323 | Hex. Head Bolt |
| 400 | Stuffing Box Packing |
| 405 | Set Screw |
| 410 | Gasket |
| 411 | Gasket |
| 420 | O-Ring |

## SDS




## Part List

| | |
|---|---|
| 003 | Stuffing Box (right side) |
| 003A | Stuffing Box (left side) |
| 013 | Volute Casing (top) |
| 014 | Volute Casing (bottom) |
| 020 | Wear Ring |
| 030 | Bearing Housing |
| 034 | Bearing Cover (inboard) |
| 034A | Bearing Cover (inboard) |
| 035 | Bearing Cover (outboard) |
| 035A | Bearing Cover (outboard) |
| 042 | Stuffing Box Gland |
| 044 | Lantern Ring |
| 050 | Impeller |
| 060 | Shaft |
| 070 | Shaft Protecting Sleeve |
| 071 | Sleeve (spacer) |
| 088 | Thrower |
| 200 | Ball Bearing |
| 210 | Impeller Key |
| 211 | Coupling Key |
| 212 | Key |
| 220 | Oil Seal |
| 231 | Drain Plug |
| 270 | Nipple |
| 271 | Grease Nipple |
| 300 | Stud |
| 320 | Hex.Head Bolt |
| 350 | Allen Screw |
| 360 | Nut |
| 390 | Locknut (non drive end) |
| 391 | Locknut (drive end) |
| 392 | Lock Washer |
| 400 | Stuffing Box Packing |
| 411 | Gasket |
| 420 | O-Ring |
| 421 | O-Ring |
| 430 | Pin |
| 500 | Valve |
| 501 | Flushing Pipe |

## Selection Table

| UL Listed & FM Approved Fire Pumps | | | |
|---|---|---|---|
| Pump Type | Capacity (GPM) | Pressure Range (PSI) | Speed (RPM) |
| SDS 65-250 | 100 | 102-171 | 3000 |
| | 150 | 100-171 | 3000 |
| | 200 | 100-171 | 3000 |
| | 250 | 99-171 | 3000 |
| | 300 | 98-171 | 3000 |
| SDS 80-250 | 400 | 103-162 | 3000 |
| | 450 | 102-162 | 3000 |
| | 500 | 102-161 | 3000 |
| SDS 80-315 | 500 | 173-208 | 3000 |
| | 750 | 167-204 | 3000 |
| SDS 100-250 | 750 | 89-172 | 3000 |
| | 1000 | 85-171 | 3000 |
| SDS 125-315 | 1250 | 117-199 | 3000 |
| | 1500 | 112-198 | 3000 |
| | 2000 | 130-192 | 3000 |
| SDS 150-315 | 2000 | 92-125 | 2100 |
| | 2000 | 116-156 | 2350 |
| | 2500 | 87-123 | 2100 |
| | 2500 | 113-156 | 2350 |

| UL Listed & FM Approved Fire Pumps | | | |
|---|---|---|---|
| Pump Type | Capacity (GPM) | Pressure Range (PSI) | Speed (RPM) |
| SNK 50-250 | 200 | 93-150 | 3000 |
| | 250 | 91-150 | 3000 |
| | 300 | 88-148 | 3000 |
| SNK 65-250 | 300 | 92-142 | 3000 |
| | 400 | 88-142 | 3000 |
| | 450 | 84-141 | 3000 |
| SNK 80-250 | 450 | 87-148 | 3000 |
| | 500 | 84-148 | 3000 |

(*) NOTE :

• Engines are rated at standard SAE conditions of 29.61 inches (752 mm) Hg barometer and 77°F (25°C) inlet air temperature [approximates 300 ft. (91.4 m) above sea level] by the testing laboratory (see SAE Standard J 1349).

• A deduction of 3 percent from engine horsepower rating at standard SAE conditions shall be made for diesel engines for each 1000 ft. (305 m) altitude above 300 ft. (91.4 m)

NOTE

**STANDART POMPA VE MAKİNA SANAYİ TİC. A.Ş.**

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T: +90 444 14 77 F: +90 216 415 88 60
www.standartpompa.com
info@standartpompa.com

# STATE-OF THE-ART PUMP TECHNOLOGIES

Standart

Pump • Fire Fighting Systems • Booster


TECHNOLOGIES
THAT ADD VALUE TO
TODAY AND PROTECT
TOMORROW

Our goal since our establishment in 1957, has always been to produce better. This is why we have never swayed from quality, durability and environmentally conscious principles. In this journey we set out on as Turkey's first 100% domestic pump producer, we have become an international brand whose technologies are used in many countries.

Today we are here as Standart Pompa to bring safety and comfort to your lives with our **state-of-the-art** added value pumps.

# WE ARE WITH YOU EVERYWHERE
# **IN THE WORLD IN EVERY SECTOR**


CONSTANT DEVELOPMENT
AND EXPERTISE SINCE
1957
Company
Foundation
1976
4,500 m²
Production
Facility
1982
First Export:
12,000 Pumps in a
Single Order
1984
EN 733
Norm Pump
Design
1997
ISO 9001
Certification
2001
20,000 m²
Production
Facility
2006
ISO 2858
Chemical
Pump
Design


THE VERY FIRST DAY
2009
ATEX Explosive Atmosphere Certification
2011
1 MW R&D Test Lab
2012
Brine Pump Design for Geothermal Power Plants
2016
API 610 11th Ed. Petrochemical Pumps
2017
Hydropower (Pump as Turbine)
2018
Piston Mud Pump Design for Oil Drilling Sites
2019
API Q1 Quality Management System & API 7K-0523 Piston Mud Pump Components Certification (Standart Petrochemical)
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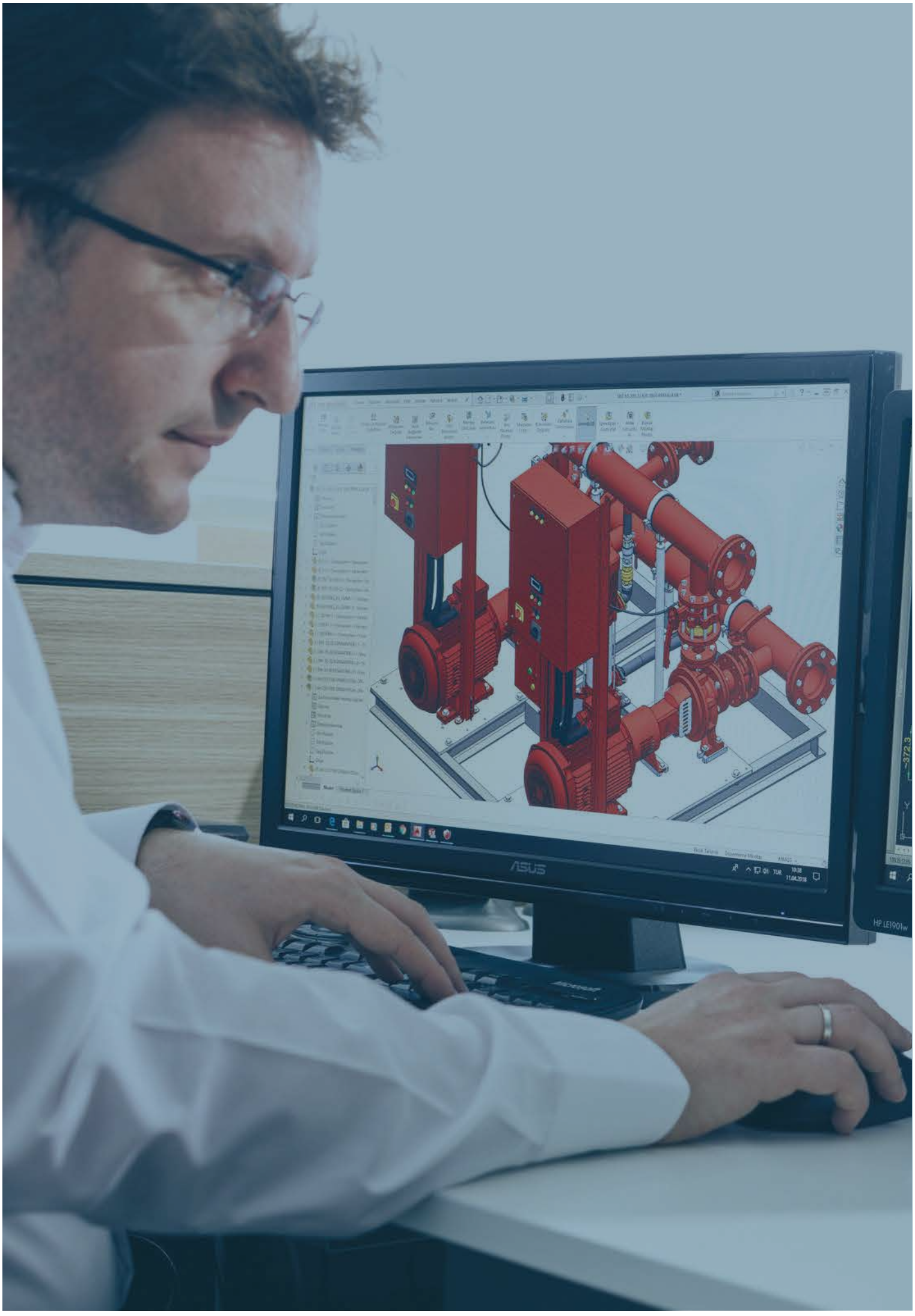
Pump • Fire Fighting Systems • Booster



## AN ENGINEERING HUB THAT PRODUCES

# ADVANCED TECHNOLOGIES

In our facility with a total indoor area of 29,500 $m^2$ we work nonstop with a crew of experts dedicated to excellence. With a staff of 285 and 50 CNC work stations we produce value added innovative pumps and boosters in over 50 product series and 4000 product types. We imagine the future in the management, production and application fields and update our services according to the future.

We always follow technology closely to serve as a leader to the sector and to develop new technologies with our R&D Center and top level engineering.

We produce special solutions suitable for all types of structures and situations with our range of products including building systems, water supply systems, industrial pumps and fire fighting systems.

# MAKING EVERY SECTOR TRUSTABLE

## BUILDING SYSTEMS

Comfortable, safe and efficient systems with heating-cooling-ventilation, pressure boosting units, fire fighting systems and waste water pumps.

## WATER MANAGEMENT AND INFRASTRUCTURE SYSTEMS

Solutions for a wide range from the private sector to general administrations and public agencies with pumps for everything from supplying water to waste water treatment, pumping to collection stations and power conversion in systems using pressure breakers.

## INDUSTRIAL BUILDING TECHNOLOGIES AND ASSISTING APPLICATION PUMPS

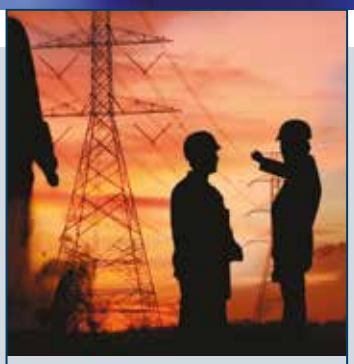
Reliable professional technologies in heating-cooling-ventilation, pressurizing, fire fighting, waste water and purification systems.

## MARITIME

Simple to adapt modular design solutions like freshwater cooling systems, saltwater systems, ballast and bilge pumps, fire fighting and booster systems that are applicable to a wide range of fields.

## IRON-STEEL

Products that capitalize on durability and energy efficiency while cooling iron-steel or handling water with scales and clinker.



## ENERGY

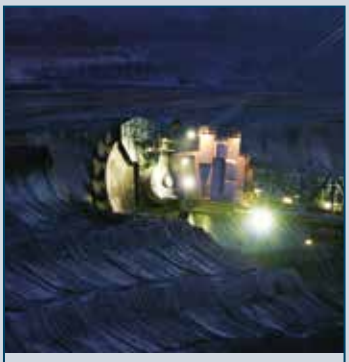
Smooth operation and excellent reliability with new generation high efficiency pumps for condensation applications in electricity production and against corrosive factors like lye.

## GEOTHERMAL

"Well head", "Re-injection" and supportive facility pumps to ensure sustainable use of geothermal energy and provide effective and innovative solutions.

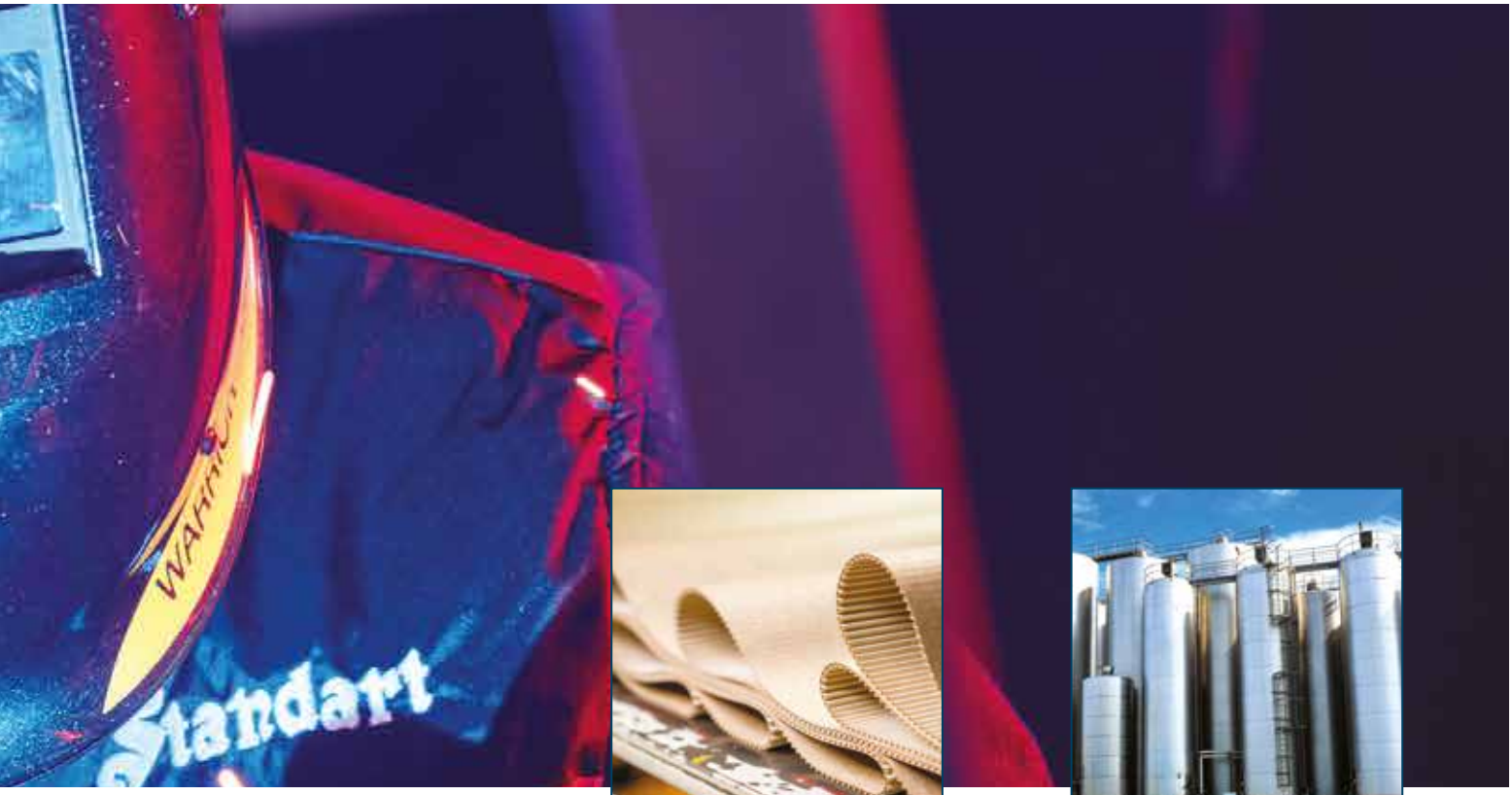
## FOOD-BEVERAGE

Efficient, long life solutions suitable for the oil and beverage sector to prevent water from getting on bearings while ensuring facility hygiene.



## MINING

Heavy duty pumps used safely in every stage of mining from removing underground water to crushing and machining minerals, refining and supplying crystallization water.




## PAPER AND PULP

Customized solutions for the paper and pulp sector including all system pumps used in transforming pulp.

## CHEMICALS

Transfer pumps, caustic pumps and sodium hydroxide pumps that provide problem-free service in the transfer of corrosive, aggressive, toxic or abrasive chemicals.

## PETROL

Tailor-made solutions for transferring petrol products, petrochemical fluids, chemicals, high temperature fluids and condensate fluids in the heavy duty processes of the petrol, petrochemical and gas sectors.

## SUGAR

Products suitable for the sugar sector to be used in everything from washing sugar beets to transferring the syrup.

## OEM

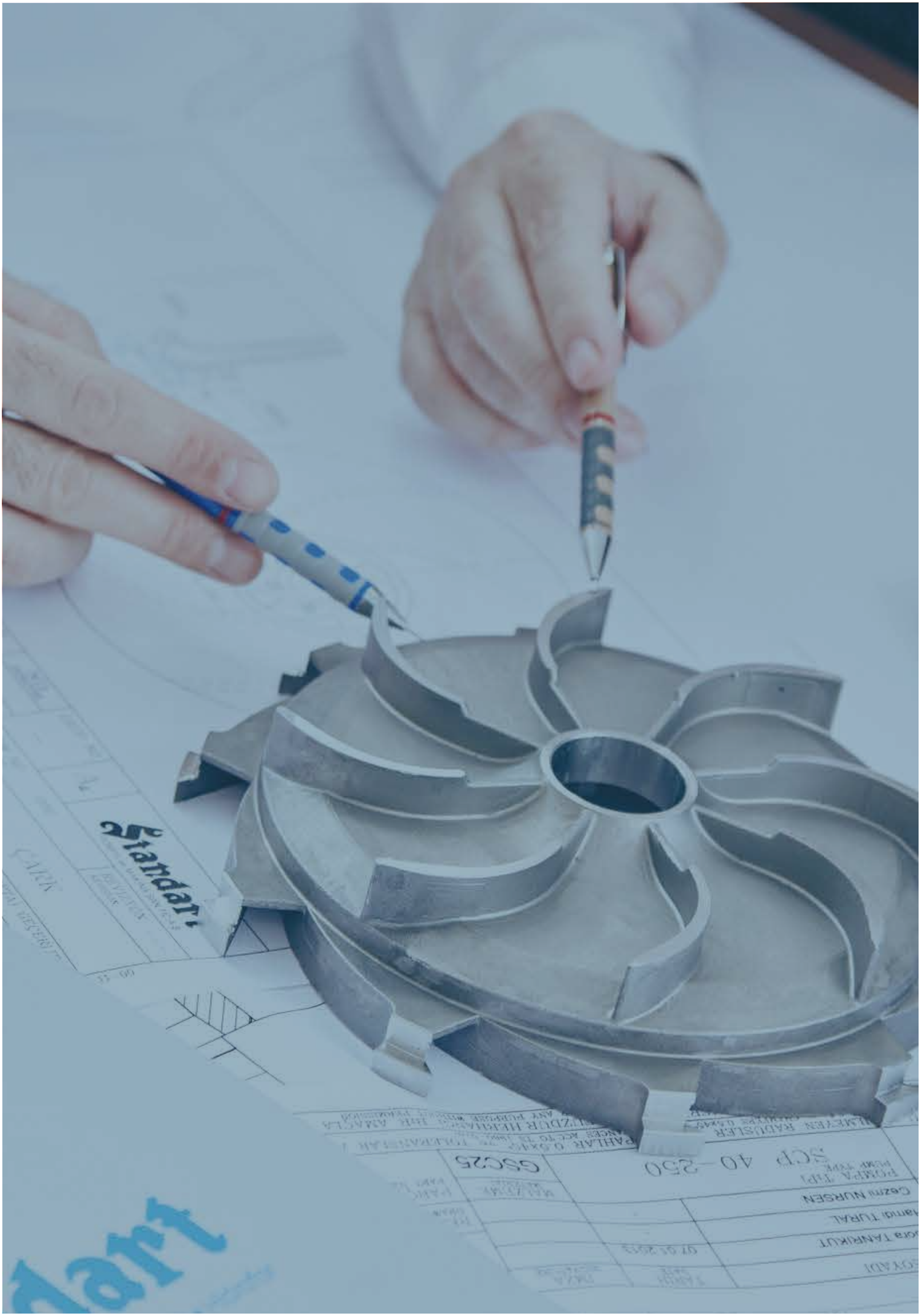
OEM solutions for industrial processes covering paint shops, boiler systems, washing systems and HVAC systems.

# R&D FOR CONSTANT INNOVATION

In our opinion innovation refers to both a process (renewing / being renewed) and a result (renewal). The most important way to achieve "innovation" in a constantly changing and developing global setting is through conducting intense R&D (research and development) activities.

This is why we, Standart Pompa, work to develop tailor-made solutions with our 18-member team of engineers and technicians, our 1 Megawatt test stand and online traceability infrastructure at our Republic of Turkey, Ministry of Industry and Technology accredited R&D center. We also cooperate with universities on a regular basis, increase our scientific publications and make sure our employees receive continuous training.

We reserve 3% of our annual turnover for R&D and we add value to your life and your sector with innovative products.



# THOUSANDS OF PROJECTS IN 90 COUNTRIES!

We provide services anyplace in the world as Standart Pompa through our foreign representatives. This enables our products to be in thousands of projects in many different countries like **Germany, Australia, Algeria, Morocco, Iraq, Sweden, Sri Lanka, Tunisia and Argentina.** Standart Pompa products are used with confidence in many fields including industrial processes, the petrochemical industry, the defense industry, agricultural irrigation, utility water supply, waste water transfer, treatment plants and many other fields where fluids need to be pressurized.

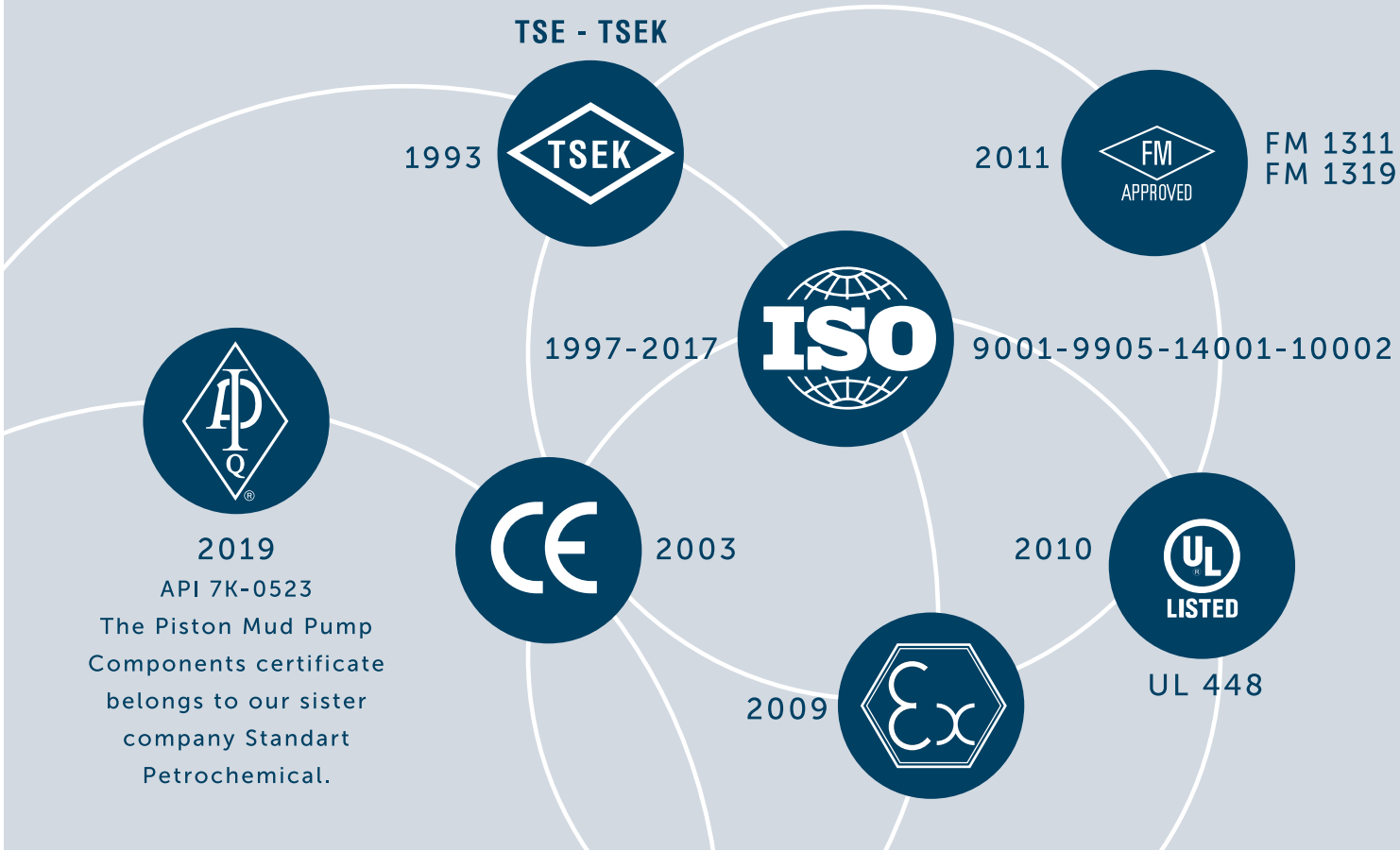

Proteggere la vita
Chránit životy
Yaşamı Koru
Protéger la vie
Save Life!

# WORLD CLASS QUALITY

## FOR SUCCESS ON A WORLDWIDE SCALE!

We produce fire fighting systems, boosters and pump groups that optimize system efficiency, at internationally accepted standards. Our products are subjected to intense testing both at the factory and in the field and, we only present them to the world after they have passed all the stages of quality control.

- √ R&D tests
- √ ISO 9906 performance
- √ NPSH cavitation
- √ Lifecycle tests
- √ Vibration & noise tests
- √ Quality control
- √ On-site supplier audit
- √ 100% input control
- √ In-process controls
- √ Finished product performance tests
- √ Field tests



# NATURE DESERVES BETTER

Our responsibilities to the sector, nature, people and future generations always motivates us to do better and newer things. We embrace the importance of protecting and improving all the elements that directly impact quality of life like human health, water, air, soil, climate, environment, flora and fauna.

This is why we operate with the principle of **"sustainability"** at every stage and develop higher energy efficiency products in accordance with the Eco Design directives in our R&D center.  We contribute to protecting the environment and reducing energy costs with our products that use up to 60% less energy and provide up to 50% in lifetime cost savings.

EU547:2012

# WE ARE YOUR CLOSE AND RELIABLE **BUSINESS PARTNER.**

The compact organizational structure we have created with our over 60 years of experience enables us to be close to you no matter where you are. Our wide network of distributors and service providers and our foreign representatives serving worldwide enable us to be close to you. We are your reliable business partner with fast spare part delivery and our rapid service principle.


SERVICE AND SPARE PARTS SUPPORT
UNDER ANY CONDITIONS

EXPERT, EFFICIENT

# AND INNOVATIVE SOLUTIONS


Standart

STATE-OF THE-ART PUMP TECHNOLOGIES


Standart
Pump • Fire Fighting Systems • Booster

www.standartpompa.com
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+90 444 1 477

# ENERGY EFFICIENCY TODAY
# FOR A BETTER WORLD TOMORROW

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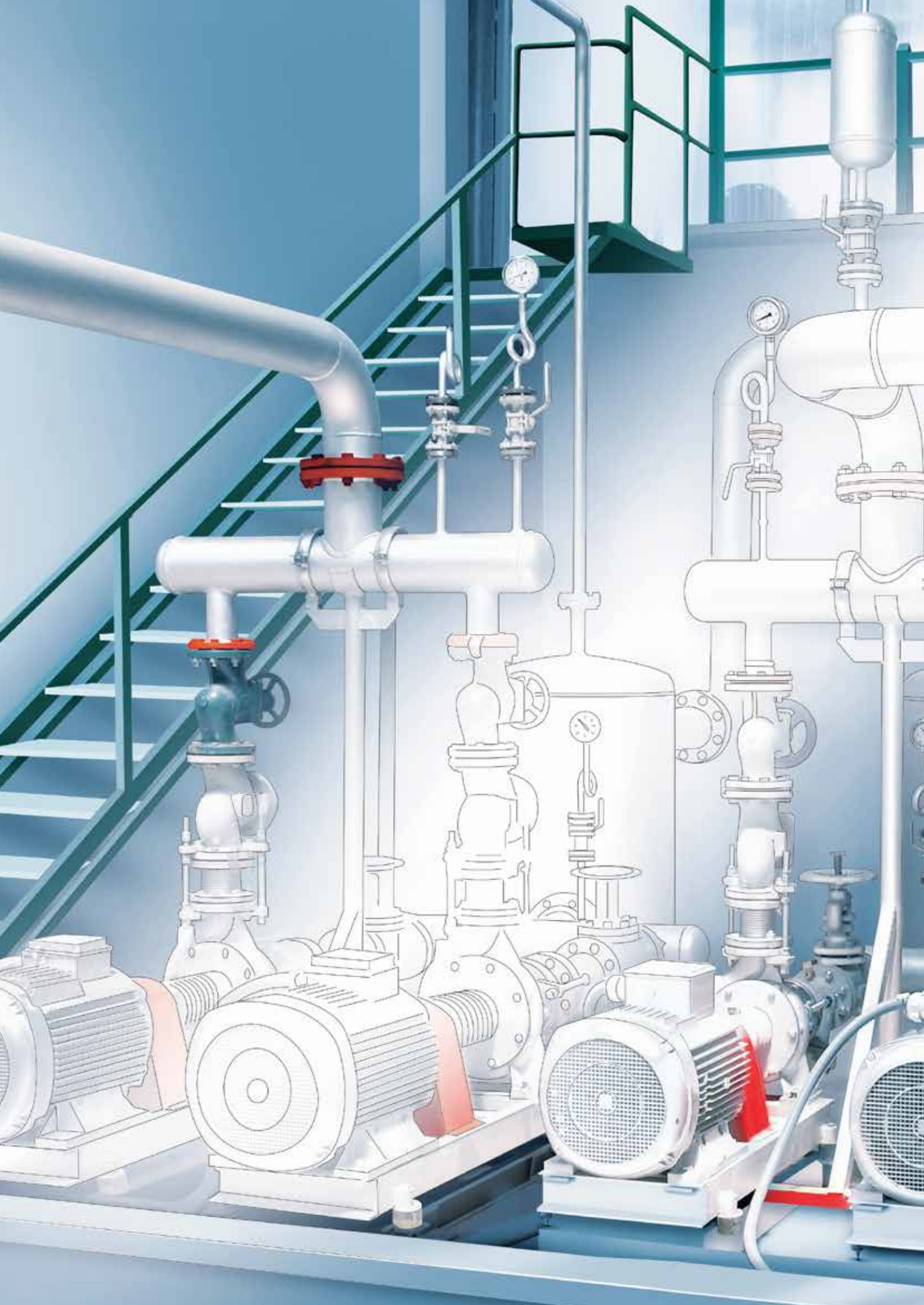
Yaşamı Koru! Save Life!



# CONTENTS

# 01

Standart
Yaşamı Koru! Save Life!

# ENERGY SOURCES, CONSUMPTION AND PUMPS

# Energy Consumption in Turkey and Around the World

**The world's energy sources are not unlimited!**
If we do not fundamentally change the way we use energy, we will be unable to meet the energy needs, not only of future generations, but of people alive today.

Let's take a brief look at how energy consumption in Turkey has developed during the recent past.

- In 2010, Turkey consumed 28.7 million tons of petroleum, an increase of 1.7% over 2009 consumption. Based on these numbers, Turkey accounted for 0.7% of worldwide petroleum consumption.
- In 2010, Turkey consumed 39 billion cubic meters of natural gas. On this basis, natural gas consumption in Turkey increased by 9.2% over the previous year. In 2010, Turkey accounted for 1.2% of total global consumption of natural gas.

In parallel with ongoing rise in global temperatures,
our ecosystem is losing its defenses against external effects.
The negative impacts of global energy usage on the environment
demand immediate action.
**Our resources are running out, and the only solution is "efficiency"!**

- Accounting for 0.5% of global coal production, in 2010, Turkey's coal output was unchanged. But coal consumption increased by 7.4%.

- Turkey accounted for 1.5% of worldwide consumption of hydroelectric energy, with consumption of hydroelectric energy in Turkey growing by 44.3%.

- Globally, in 2010, there was a 15.5% increase in consumption of renewable energy. With an increase of 88.1% Turkey accounted for 0.6% of global renewable energy consumption.

# The Role of Pumps in Modern Life

> We need pumps in virtually every aspect of modern life. We use pumps in the transfer of numerous liquids, including water, chemical fluids and petroleum. Pumps perform a variety of functions in businesses, buildings, homes and industry.

Pumps are responsible for transporting drinking water from water treatment plants to urban areas and for the discharge of waste water. They have an important role in ensuring the comfort of building residents.

Pumps play a crucial role in the combi boilers in our homes, the transfer of drinking water and waste water in our apartment buildings and housing complexes, our workplaces' fire-safety systems and numerous other everyday places.

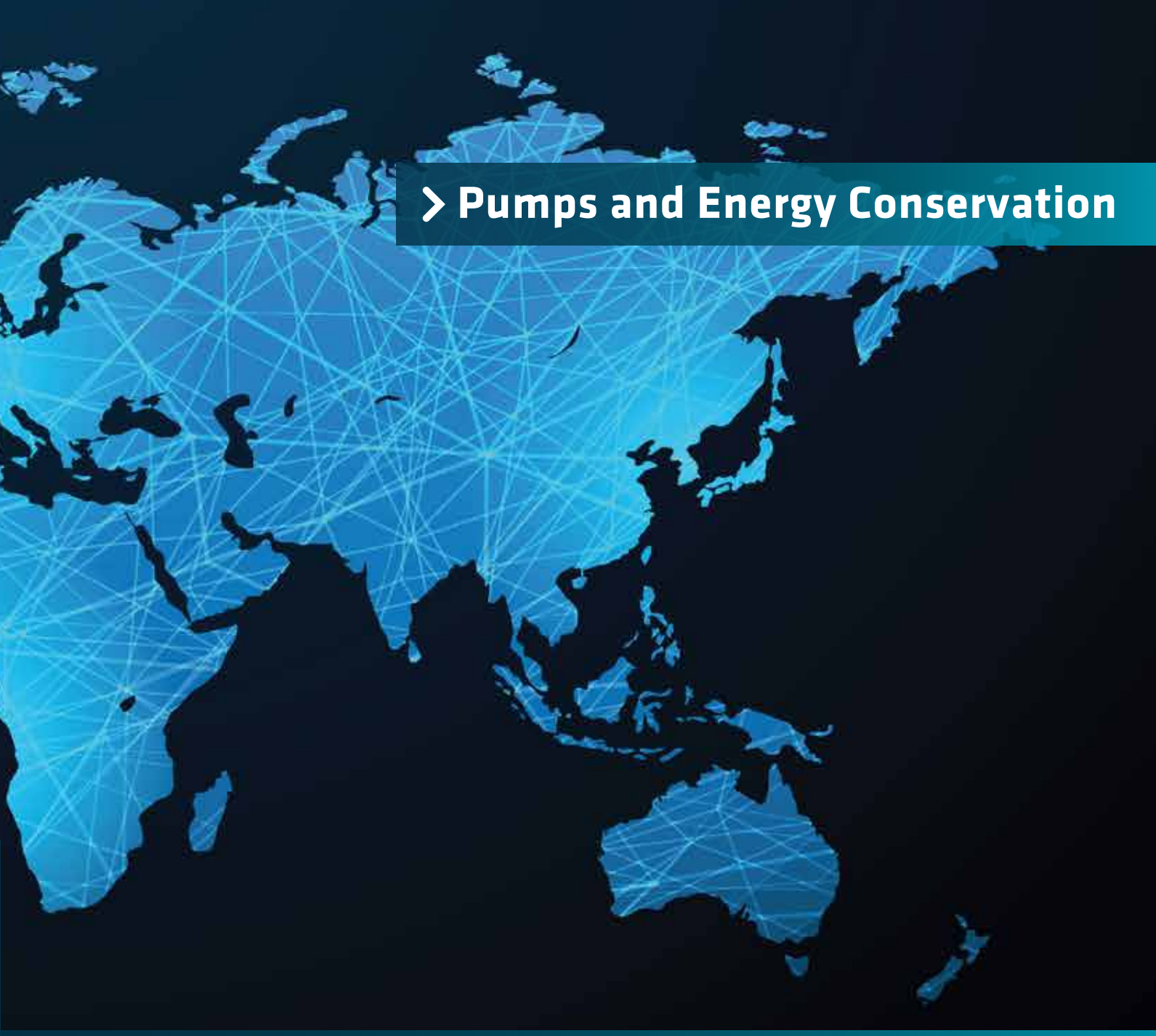
> Even though most of us never notice them, pumps are part of every minute of our lives. We need pumps to keep our homes and offices at the ideal temperature, to take a shower, even to drink a cup of tea.

# Pumps and Energy Consumption

Did you know that pumps account for roughly 20% of worldwide energy consumption? There are numerous systems that require pumps, and these systems consume large quantities of electricity in order to operate.


In short, the efficiency of pumping systems is a good indicator of what kind of world we will leave behind for future generations.

In other words, pumps represent one of the most important opportunities for energy conservation.



# > Pumps and Energy Conservation

> According to estimates, two-third of the pumps in use today consume 40% more energy than necessary. If we think about the number of pumps everywhere around us, it is reasonable to say that the potential energy savings are of an extremely large order of magnitude.

If pumps that consume more electricity than necessary were replaced with a more energy efficient solution, savings equivalent to 3% - 5% of world electricity consumption could be achieved. And that amount is roughly equivalent to the amount of energy consumed by one billion people in a year! Pump and motor technologies optimized for energy efficiency can recover the electricity consumed by pumps and reduce energy waste.

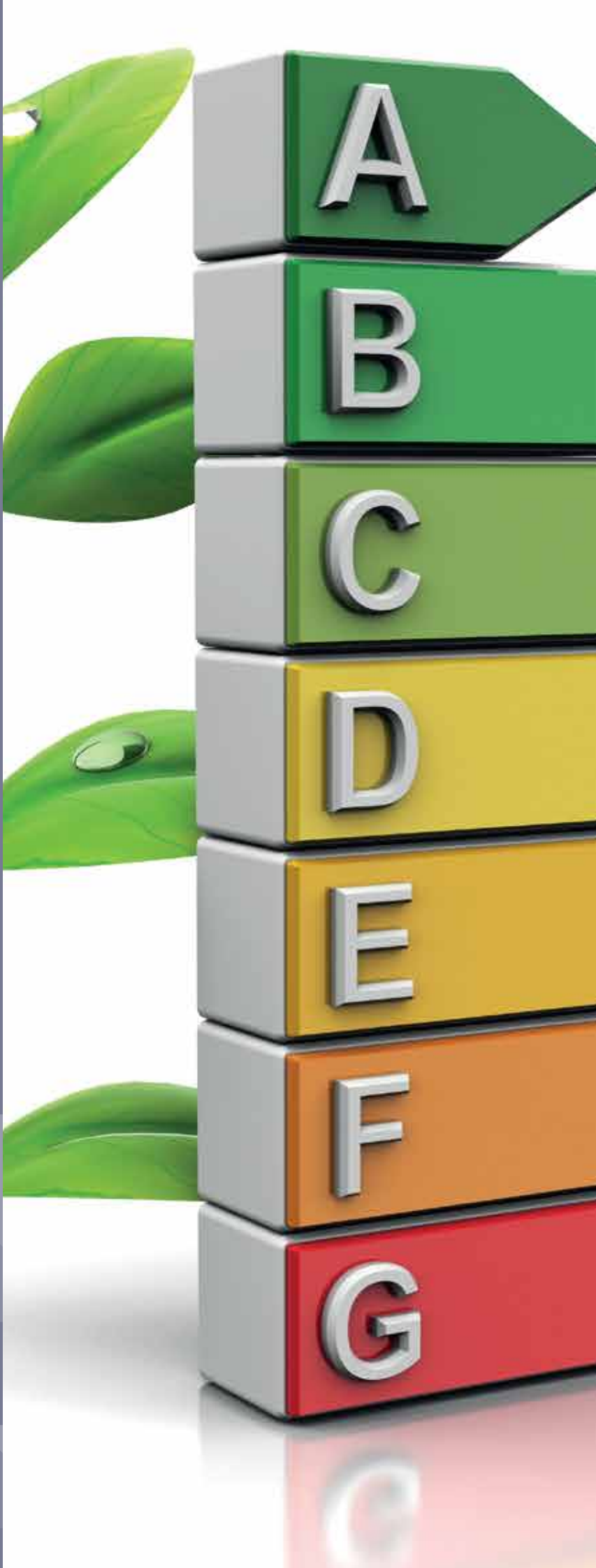
# > Time to Take Action for Energy Conservation

**If we don't act now, it could be too late.**

In keeping with our philosophy, "Save Life," we continuously work to reduce our carbon footprint and develop energy efficient pumps and technologies. Among our objectives are increasing the efficiency of our pumps and reducing their $CO_2$ emissions.

To be responsible, to consider the future and to act on the basis of an innovative perspective... Guided by these values, the creative solutions and ideas that we develop make us one of the world's most trusted pump producers.

# 02




Standart
Yaşamı Koru! Save Life!

# ERP DIRECTIVE & 2010 REGULATIONS


# > Energy 2020

> Legal frameworks and regulations are being put into place in Europe and around the world to make energy systems more reliable and sustainable.

We can outline the energy and climate change targets for the year 2020 established by European Council as follows:

Reduce the emission of greenhouse gases by **20%**

Increase the share of renewable energy sources to **20%** of total energy production

Reduce energy consumption by **20%** through increased energy efficiency

Within the framework of the Eco-design regulation, the EU is targeting 2020 energy savings of 40 TWh from water pumps and 24 TWh from circulators (European Commission, Directorate-General for Energy, 2010). In this fashion, it is estimated that, by 2020, Europe's carbon emissions will have been reduced by 29 million tons. Within this scope, the Eco-design regulation contains legal provisions regarding products' energy consumption and potential for conservation.

The ErP - Energy Related Products Directive, which is included within the framework of EU regulations, specifies environmentally friendly design standards and requires that producers increase the energy efficiency of their products and reduce their negative environmental impact.

When making decisions, Standart Pompa in particular follows the targets of these regulations and energy policies and, as a company, places great importance on them.

# > Eco-design

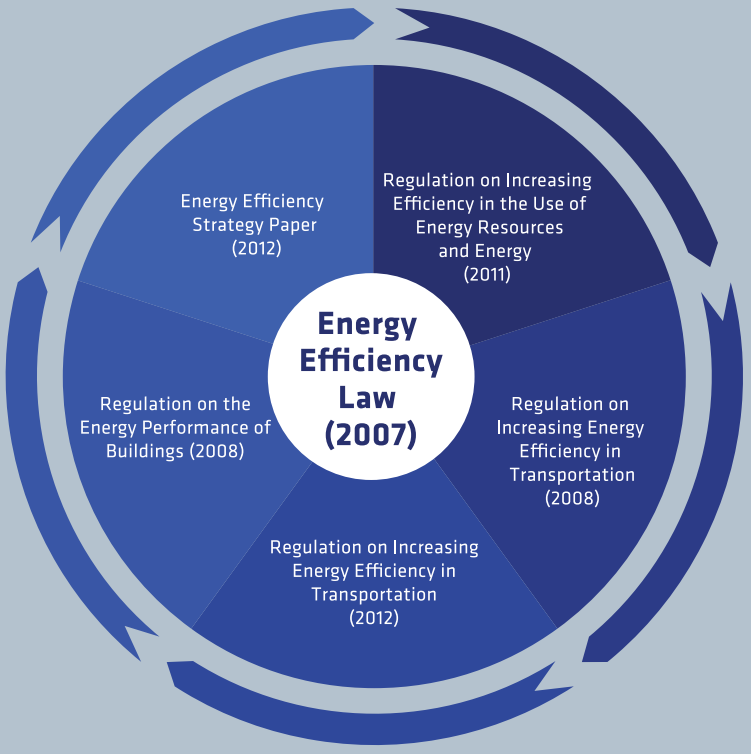
The basis of **Eco-design** is generating maximum benefit using the minimum amount of energy. Eco-design criteria have been established via European Union directives and standards.
The 2009/125/EC regulation issued by the European Union has been incorporated into domestic law in Turkey by an ordinance of the Ministry of Science, Industry and Technology.

**Standart Pompa** continuously monitors the latest developments and ensures their implementation through our internal audits. We seek to further raise this awareness through on-going training. We apply Eco-design criteria both in our products and in our production environment.

By using the right technology, we manufacture in an environmentally friendly manner, designing and delivering products to our customers in the same fashion. Within the framework of Eco-design we offer effective solutions for all the processes from a product's design, through to its use and eventual recycling.

# Legal Frameworks and Regulations

These regulations set out the minimum efficiency categories that products must achieve.




Relevant Institutions

- Republic of Turkey Ministry of Energy and Natural Resources
- EÜAŞ – Electricity Generation Company
- TP – Türkiye Petrolleri Anonim Ortaklığı / Turkish Petroleum Corporation
- MTA – General Directorate of Mineral Research and Exploration
- EPDK – Republic of Turkey Energy Market Regulatory

## Current Regulations

### » Water Pumps - Regulation EU 547 / 2012

Required minimum energy efficiency categories for circulators: EEI (Energy Efficiency Index)
EEI_ 0,27 as of January 1, 2013
EEI_ 0,23 as of January 1, 2015

### » Circulators - Regulation EU 622 / 2012 (Previously EU 641 / 2009)

Required minimum energy efficiency categories for circulators: EEI (Energy Efficiency Index)
EEI_ 0,27 as of January 1, 2013
EEI_ 0,23 as of January 1, 2015

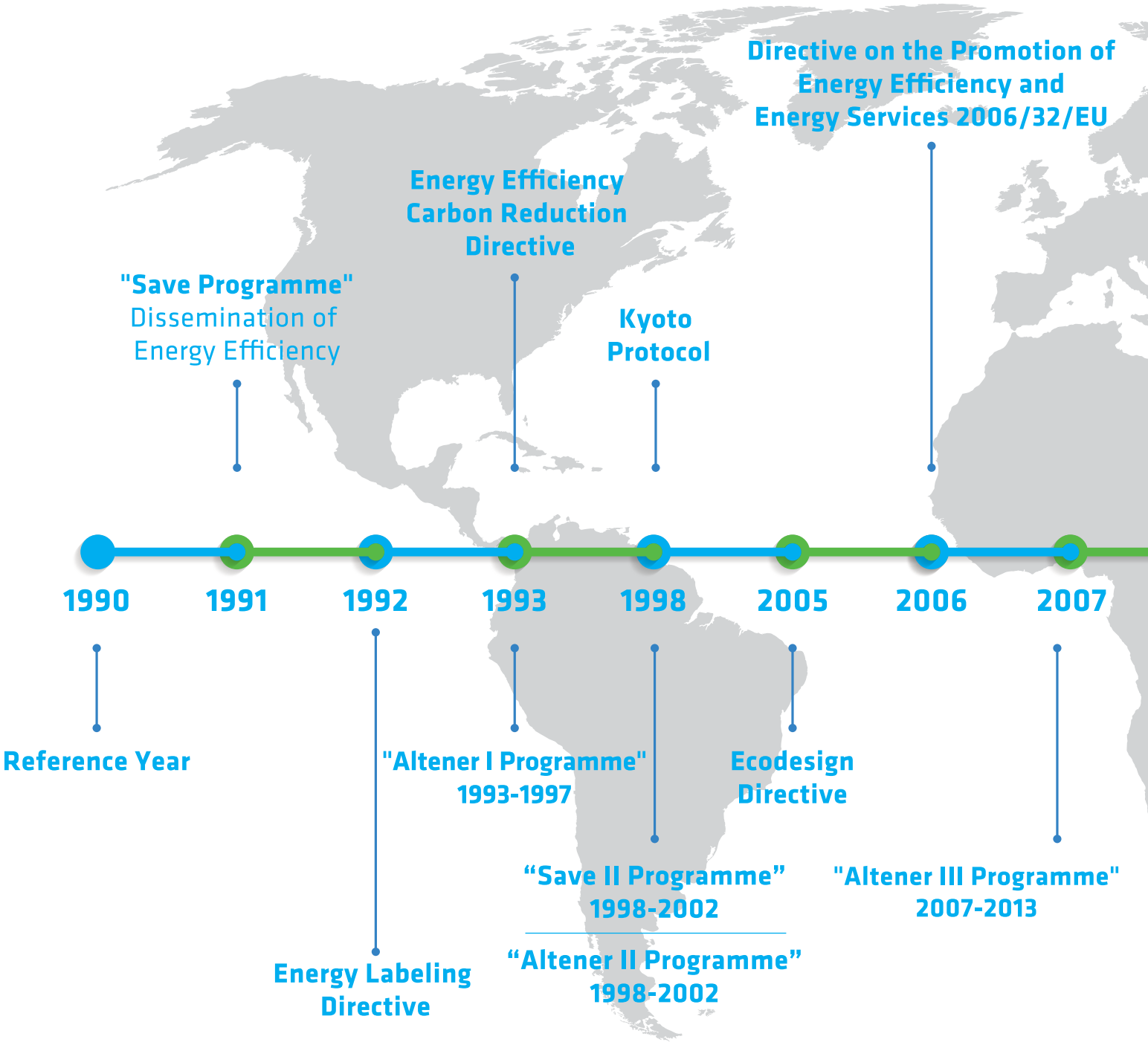
### » Electric Motors - Regulation EU 640 / 2009

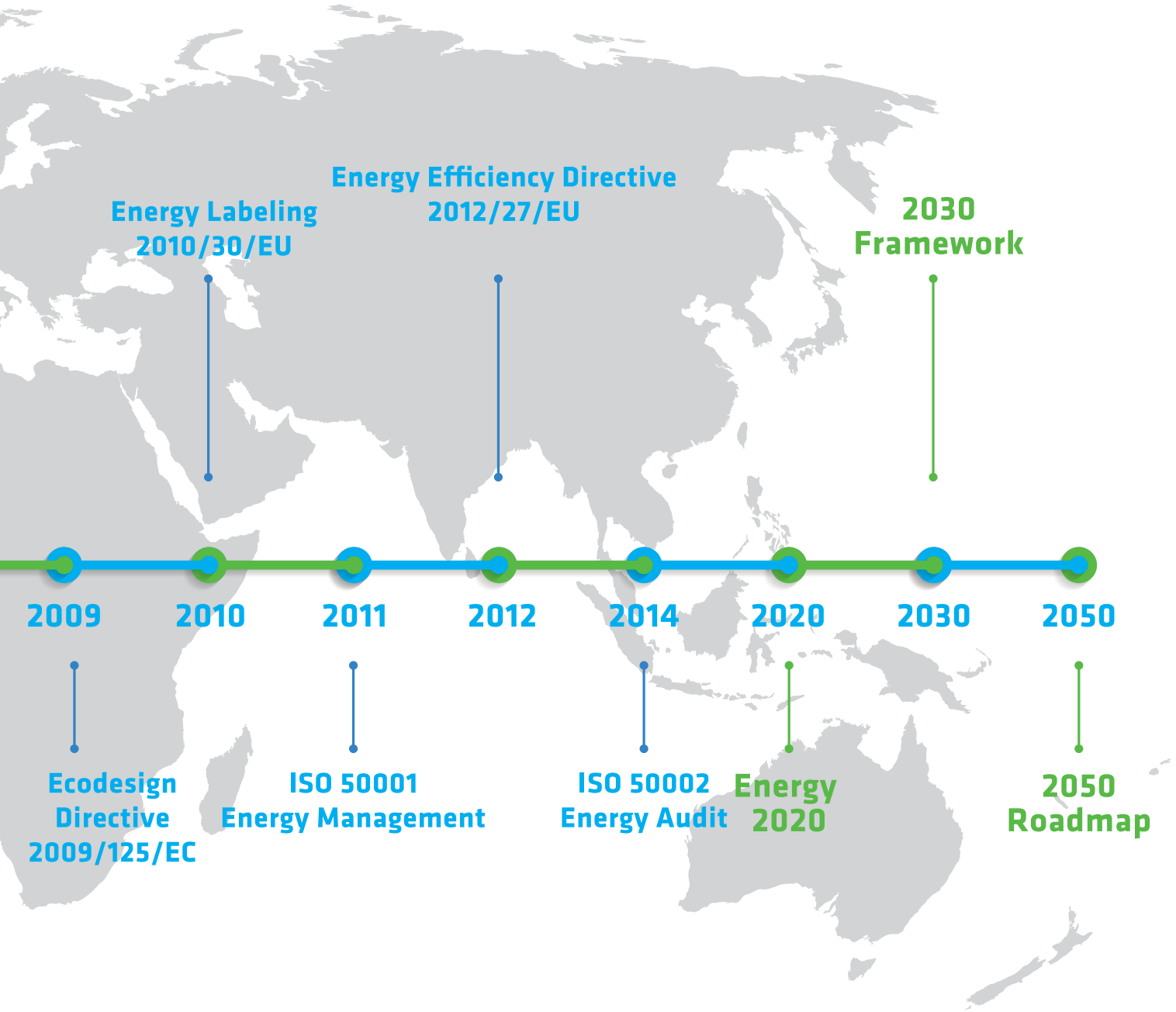
Applicable efficiency indexes for electric motors:
IE4 = Super Premium Efficiency
IE3 = Premium Efficiency
IE2 = High Efficiency
IE4 = Standard Efficiency
As of January 1, 2015, IE3 or IE2 for Units with Frequency Inverters IE2 P = 7.5 kW – 375 kW
As of January 1, 2017, IE3 or IE2 for Units with Frequency Inverters IE2 P = 7.5 kW – 375 kW

### » Regulations currently being drafted:

Waste water pumps - ENER Lot 28
Large water pumps - ENER Lot 29

# > ENERGY MANAGEMENT & THE ENVIRONMENT




Energy Labeling
2010/30/EU
Energy Efficiency Directive
2012/27/EU
2030
Framework
2009
2010
2011
2012
2014
2020
2030
2050
Ecodesign
Directive
2009/125/EC
ISO 50001
Energy Management
ISO 50002
Energy Audit
Energy
2020
2050
Roadmap

# 03

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# ENERGY MANAGEMENT SYSTEM

# > Energy Management System

> An Energy Management System systematizes the effective use of energy and natural resources.

# > ISO 50001

In today's competitive marketplace, companies face serious barriers to increasing their profitability. Organizations that develop energy conservation projects and use the energy they need in the most efficient fashion possible, in addition to protecting the environment, also secure important cost savings.

ISO 50001 is based on reducing costs and greenhouse gas emissions and, by defining the systems and procedures required for effective energy management, assists in the establishment of a system.

ISO 50001 is the latest iteration of international standards and procedures and represents the newest and best practices. The standard defines the requirements of an Energy Management System (EnMS).

It assists organizations in developing and implementing energy policies. It defines the most important areas of energy consumption and identifies energy management tools, targets and programs.In order to establish a strong energy management policy,

Standart Pompa recommends pump system studies conducted within the framework of an ISO 50001 Energy Management Program.

# Carbon Footprint

**Carbon Footprint** is the name given to the measurement, in terms of carbon dioxide, of the amount of greenhouse gases emitted by a person, organization or product.

Greenhouse gases, as defined by the Kyoto Protocol are listed below:

| Symbol | Name | $CO_2$ Equivalent |
|---|---|---|
| $CO_2$ | Carbon dioxide | 1 |
| $CH_4$ | Methane | 21 |
| $N_2O$ | Nitroxide | 310 |
| HFCs | Hydrofluorocarbons | 140 ~11700 |
| PFCs | Polyfluorocarbons | 6500 ~9200 |
| $SF_6$ | Sulphur Hexafluoride | 23900 |

* **Chart 1 :** Greenhouse gases as outlined in the Kyoto Protocol

> The increase in the amounts of carbon dioxide and methane gas in the atmosphere is causing a rise in the earth's surface temperature. For this reason, our carbon footprint is considered the primary cause of global warming. Global warming, simultaneously, is responsible for the melting of the polar ice caps and leads to climate change.

Reduction of our carbon footprint requires that we develop a new energy usage culture. Every individual, product and company has a different carbon footprint and each is responsible for analyzing the impacts of this.

The factors that influence the greenhouse gases a product emits into the atmosphere during its life cycle can be listed as follows:

**•Raw material •Energy Use •Product/Service •Land Use •Transportation •Storage •Use/Operation •Disposal**

In order to fulfill their responsibilities to the environment, help create a more livable world and ensure that future generations inherit a cleaner world, both individuals and corporations should be aware of their carbon footprints. In order to achieve this, companies should calculate and monitor their carbon footprints.

In the near future, the carbon footprint calculation as set forth in the Kyoto Protocol will start to be audited.

National policies and legal regulations will require that every company calculate its carbon footprint or hire consultants to do so.

**The international standards used to calculate carbon footprint are as follows:**
**•GHG Protocol •PAS 2060 •ISO 14064**

In Europe, 80% of greenhouse gas emissions are the result of energy usage. For this reason, intelligent energy use is essential for sustainability. In addition to generating significant financial savings, concepts like carbon footprints, energy conservation, renewable energy, energy efficiency and sustainability promote a cleaner, healthier world.

# 04

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# STANDART POMPA & ENERGY EFFICIENCY

# Standart Pompa Eco Series
# ERP Compliant Technology

## Integrated Eco-design Offers High Levels of Energy Efficiency

**ECO**SNM

**ECO**SNL

**ECO**SNT

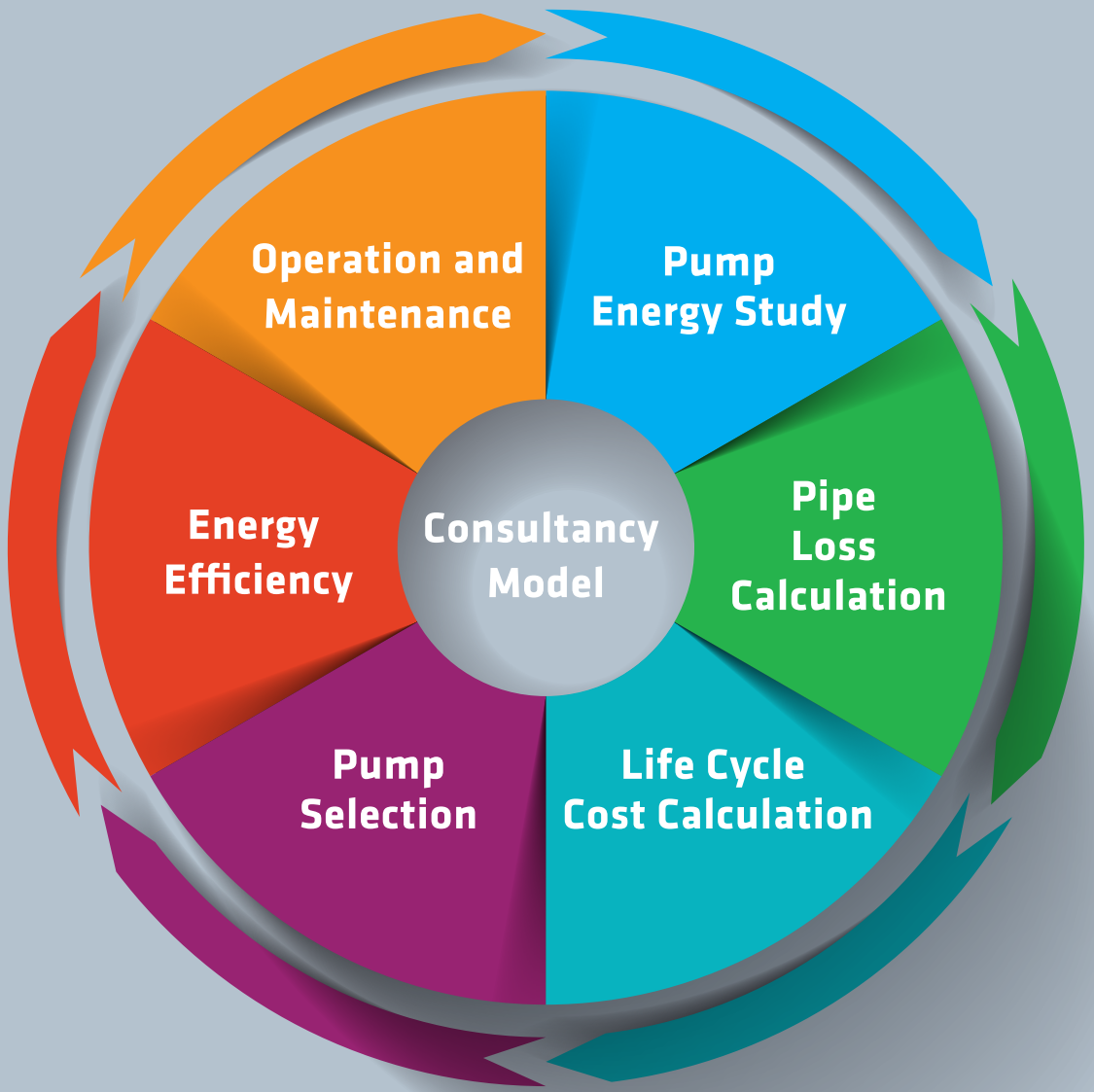
**Every aspect of the Standart Pompa Eco Series has been optimized to minimize energy consumption, provide reliable operation and ensure high performance.**

Our products and production are designed with an emphasis on energy efficiency.

> Energy consumption generally accounts for 85% of the lifetime cost of a pump. The Standart Pompa Eco Series delivers energy efficiency that can reduce lifetime cost by up to 40%.

# > Energy Efficiency Services

A pump with a high energy efficiency rating provides important opportunities to generate power savings. **Standart Pompa** also provides consulting on a range of topics to help promote efficient energy use and ensure the reliability of your processes.



# > Pump Energy Study

Energy studies are carried out in two phases: A Preliminary Study and a Detailed Study

## Preliminary Study

- Evaluation of the pump's working environment
- Site inspection
- Process evaluation
- Identification of energy efficiency focal points
- Preparation of the preliminary evaluation report

## Detailed Study

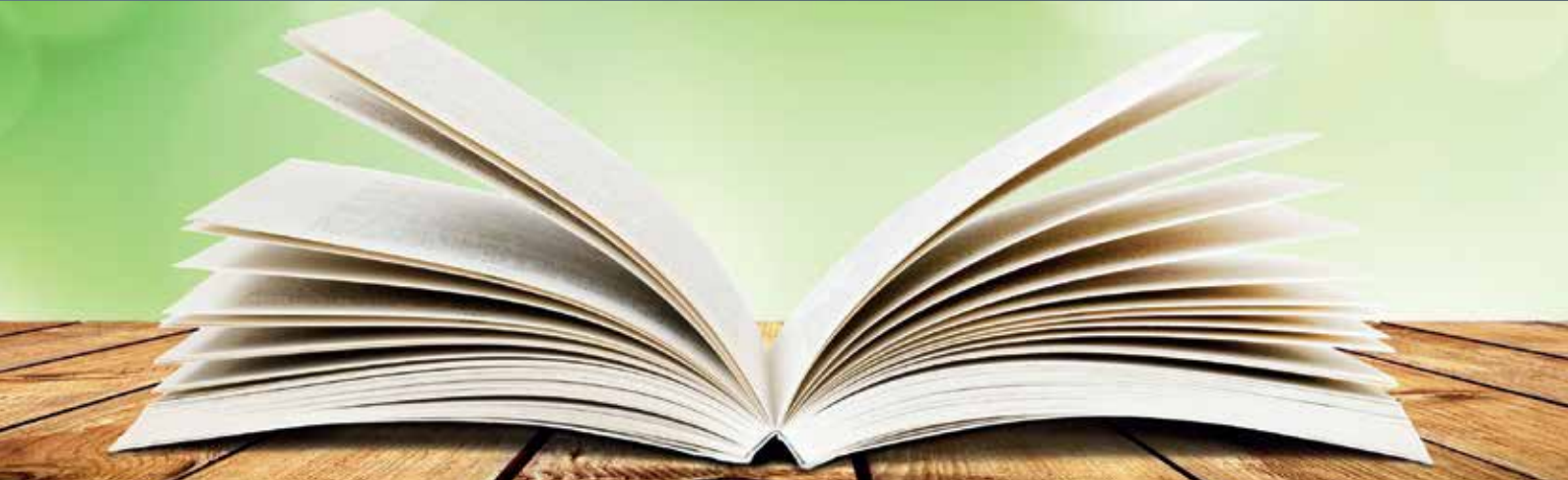
- Identification of system characteristics
- On-site pump test
- Evaluation of the pump-process relationship
- Development of a recommendation based on measurement results.
- System and pump improvement recommendations
- Lifetime cost analysis
- Pay-back period calculation
- Determination of annual energy savings
- Preparation of the detailed evaluation report

# > Training Programs

By complementing these studies with training, awareness is raised and significant gains are achieved in terms of effective energy usage and efficient pump operation. The content of these training programs can be tailored to the needs of your personnel and conducted on site by subject matter expert trainers.

- **Fundamental Pump Concepts**
- **Operation and Maintenance of Pumps**
- **Energy Efficiency in Pumps**
- **Facility Design**
- **Pump Study**
- **Regulations and Ordinances Concerning Pumps**

Energy efficient pump solutions that use just the right amount of energy to get the job done give you the chance not only to save money but also to leave a better world for our children. **Standart Pompa's** experts would be pleased to conduct a free inspection and advise you on the optimal solution for your needs. Just call **+90 (216) 466 8900**.



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