

# SKMV-H

## MULTISTAGE PUMPS (VERTICAL)



### Handled Liquids

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

### Technical Data

**Discharge Flange** — DN 32 up to DN 150 mm

**Capacity** — up to 400 m<sup>3</sup>/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.
- Suction nozzle flanges conform to EN 1902 - 2 / PN16 and discharge nozzle flanges conform to EN 1902 - 2 / PN 40 (PN 63)
- 8 models from DN 32 up to DN 150 discharge flange diameter.

- Axial thrust is balanced by impeller balance hole system.
- All impellers are balanced statically and dynamically according to ISO 1940 class 6.3.
- Direction of rotation is always counter clockwise viewed from driver end.
- Pump and motor shafts are connected to each other with flexible coupling.
- Bearings of SKMV-H type pumps are grease lubricated. Bottom sleeve bearing is lubricated by the pumping liquid.

### Shaft Sealing

- Depending on request or requirement, pumps with soft packing or mechanical seals can be supplied.

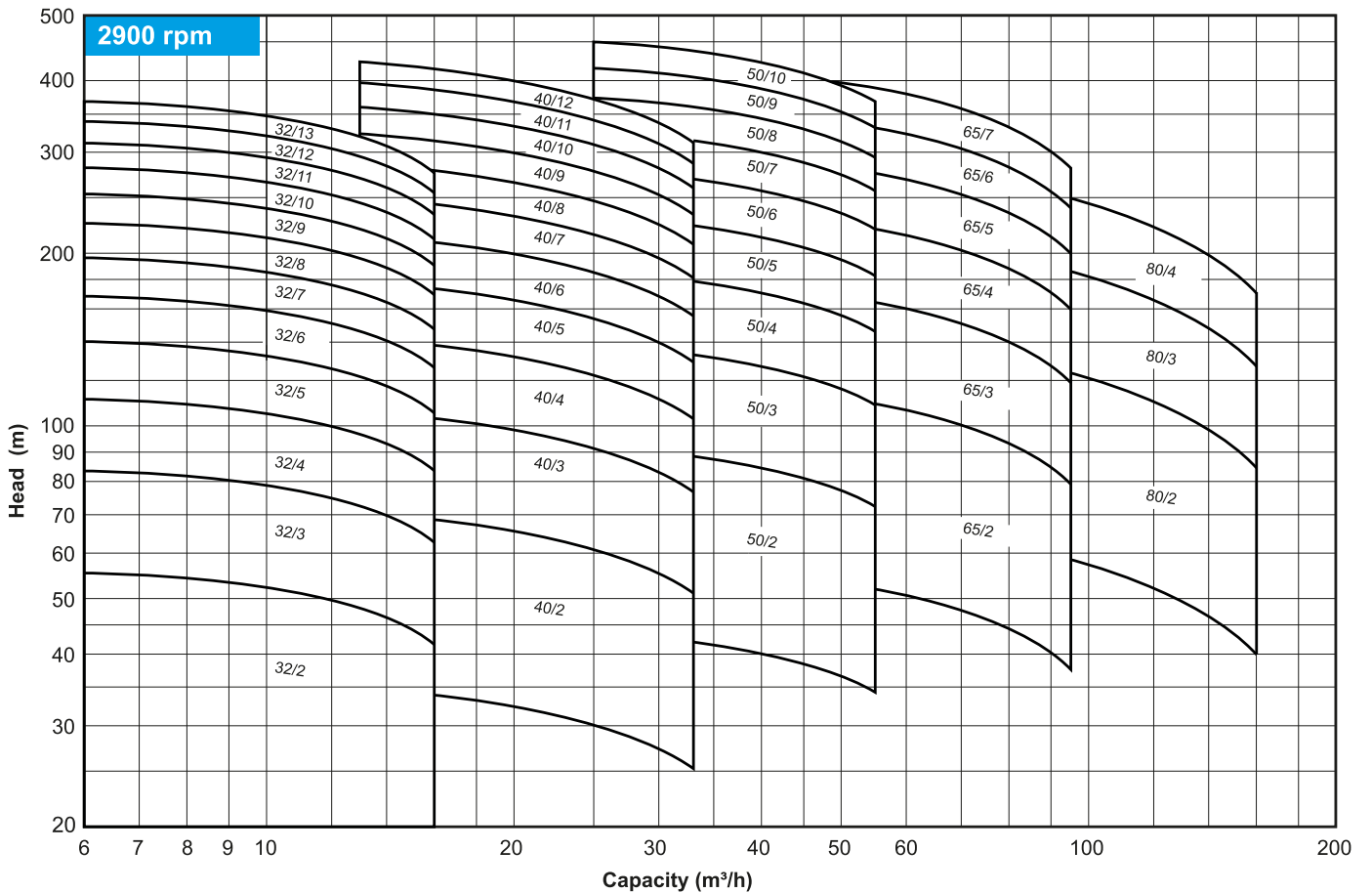
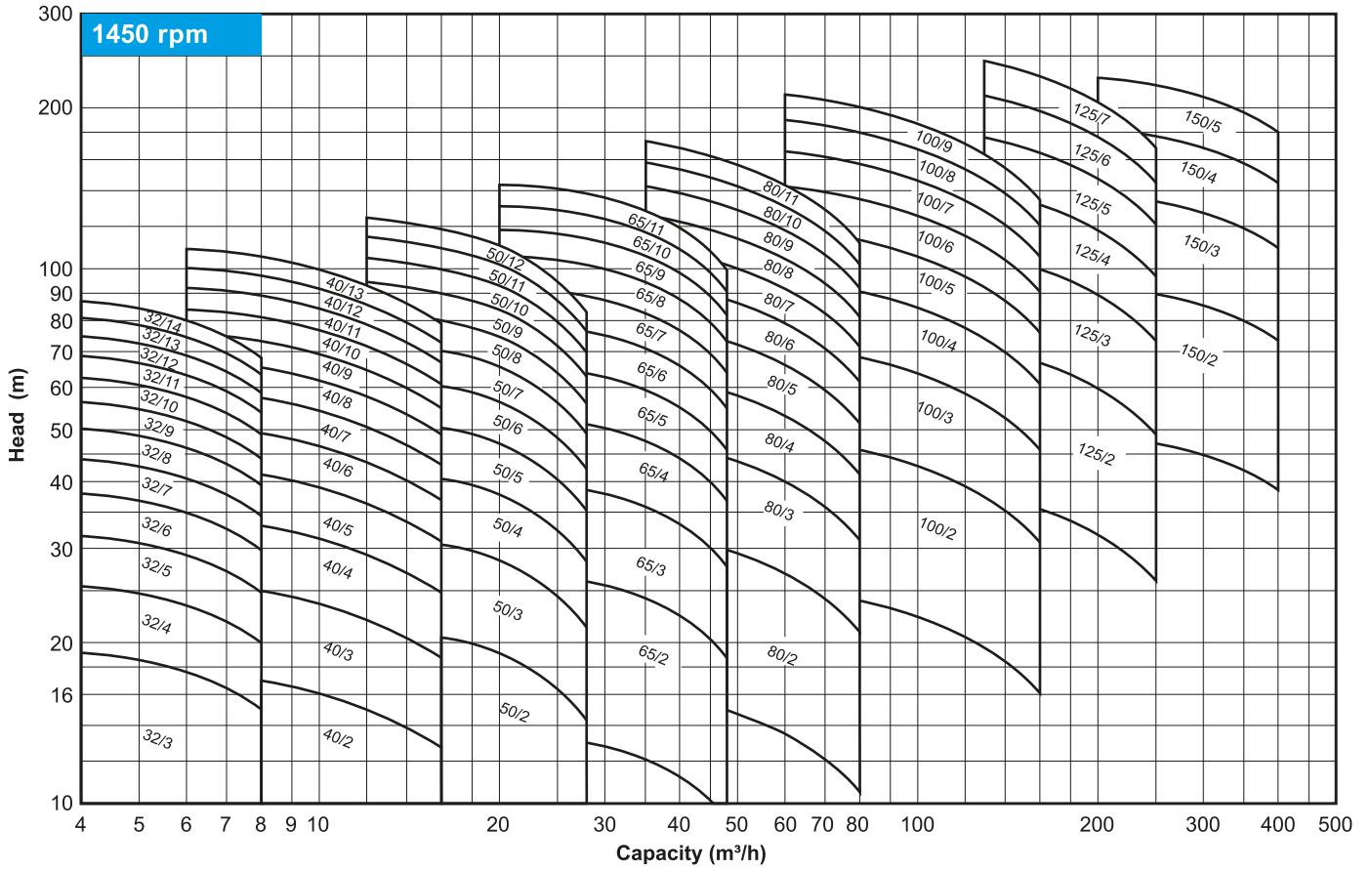
### Pump Designation

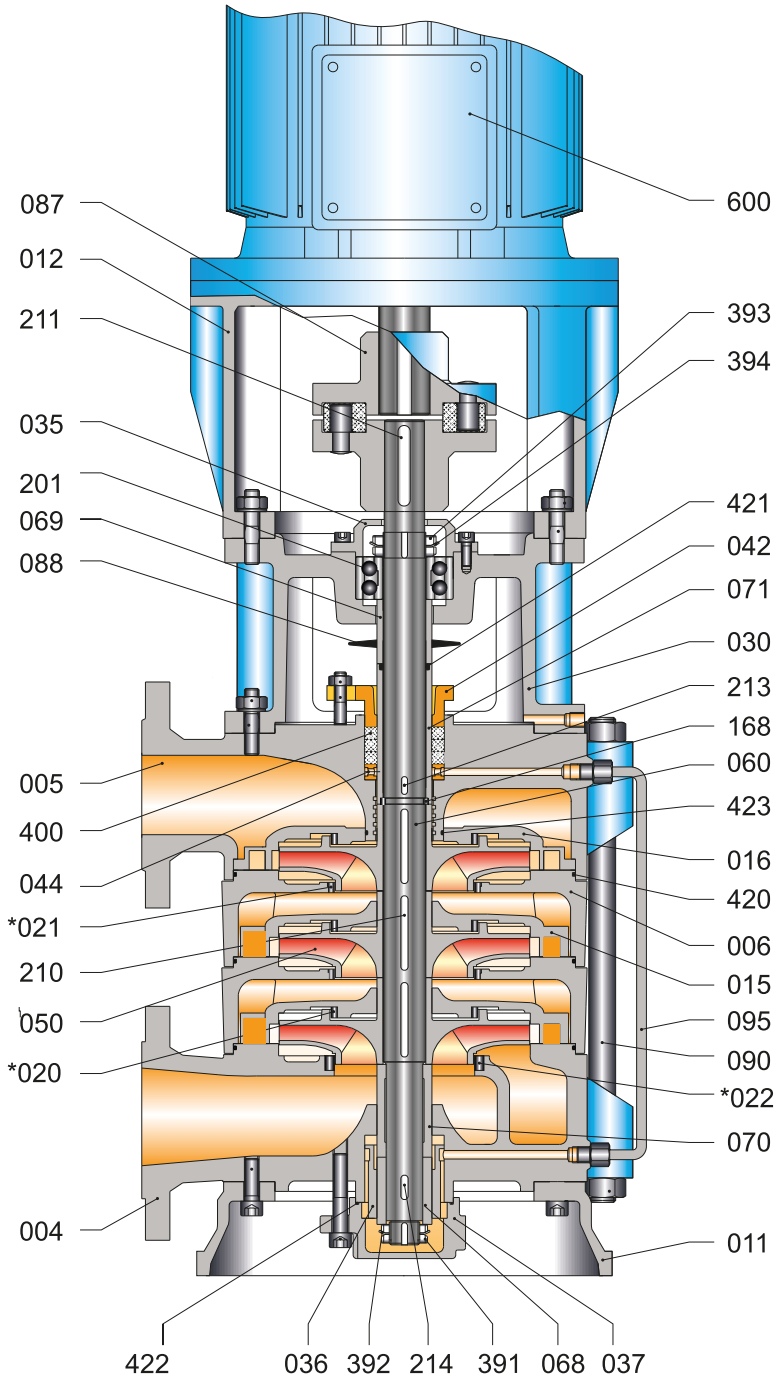
## SKMV-H 100 / 6

Pump Type

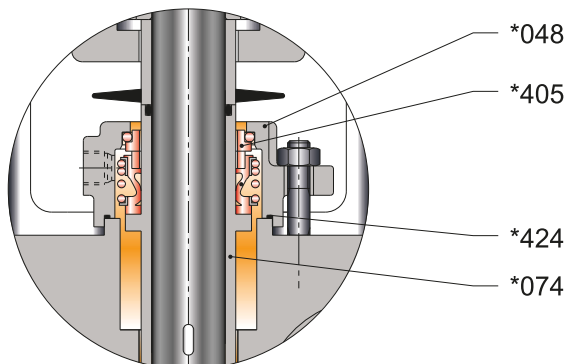
Discharge Nozzle (DN-mm)

Number of Stages





Mechanical Seal Application

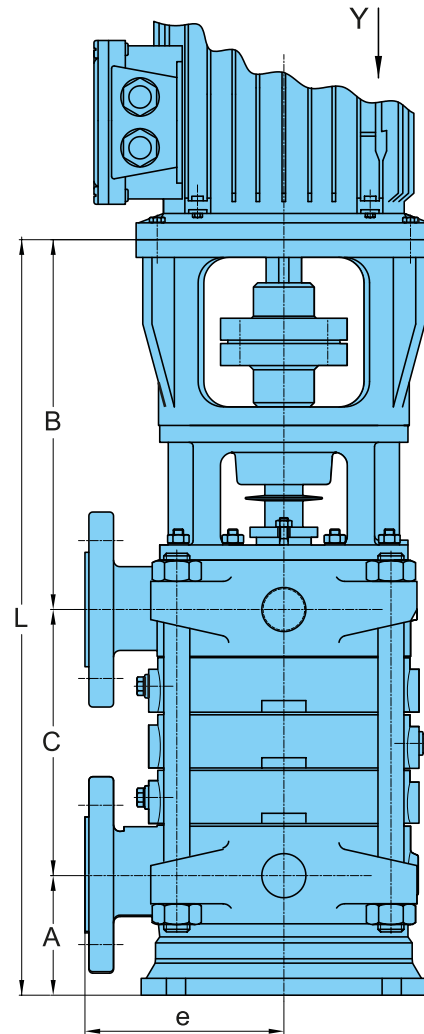
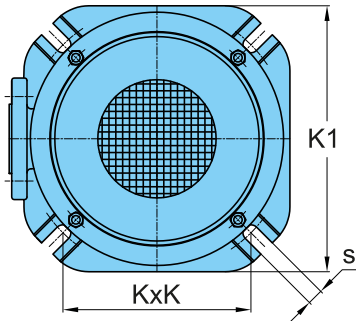


Part List

|      |                                        |
|------|----------------------------------------|
| 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                           |
| 069  | Spacer Sleeve (discharge casing)       |
| 070  | Spacer Sleeve (suction casing)         |
| 071  | Shaft Protecting Sleeve (soft packing) |
| *074 | Shaft Protecting Sleeve (mech. 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

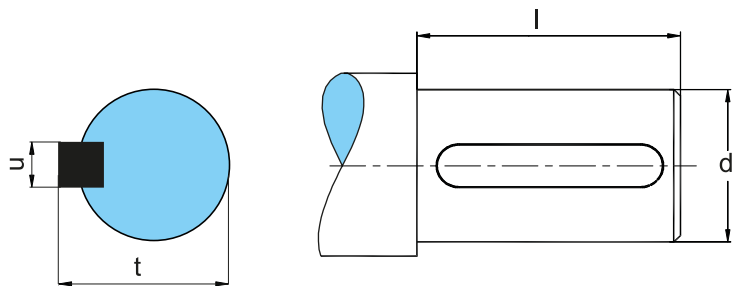


## Bearing Type

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

## Shaft End Dimensions

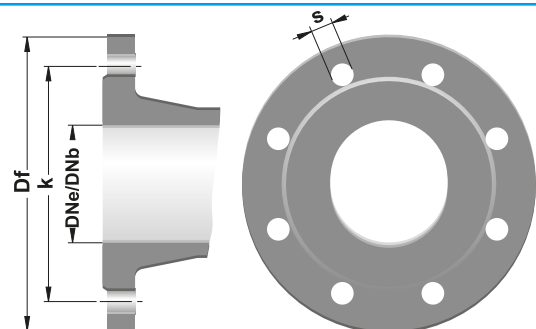
| Pump Type | d  | l   | t    | u  |
|-----------|----|-----|------|----|
| 32        | 22 | 50  | 25   | 6  |
| 40        | 22 | 50  | 25   | 6  |
| 50        | 28 | 65  | 31   | 8  |
| 65        | 32 | 65  | 35   | 10 |
| 80        | 38 | 80  | 41   | 10 |
| 100       | 42 | 110 | 45   | 12 |
| 125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



## Flange Dimensions

| DNe / DNb | Suction (PN 16) |     |    |    | 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



1450 rpm

| Pump Type | MOTOR IEC No | Dimensions (mm) |     |       |     |     |     |     |     |    | C (mm)<br>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 |
|           | 409+C        |                 |     | 308   |     |     |     |     |     |    |                            |     |     |     |     |     |     |     |     |     |     |     |     |     |
|           | 405+C        |                 |     | 302   |     |     |     |     |     |    |                            |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 40        | 90           | 50              | 40  | 415+C | 103 | 312 | 175 | 212 | 300 | 18 | 78                         | 133 | 188 | 243 | 298 | 353 | 408 | 463 | 518 | 573 | 628 | 683 | 738 | -   |
|           | 100          |                 |     | 332   |     |     |     |     |     |    |                            |     |     |     |     |     |     |     |     |     |     |     |     |     |
|           | 112          |                 |     |       |     |     |     |     |     |    |                            |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 50        | 100          | 65              | 50  | 453+C | 114 | 340 | 190 | 247 | 350 | 18 | 90                         | 152 | 214 | 276 | 338 | 400 | 462 | 524 | 586 | 648 | 710 | 772 | -   | -   |
|           | 112          |                 |     | 360   |     |     |     |     |     |    |                            |     |     |     |     |     |     |     |     |     |     |     |     |     |
|           | 132          |                 |     | 390   |     |     |     |     |     |    |                            |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 65        | 100          | 80              | 65  | 505+C | 135 | 368 | 215 | 247 | 350 | 18 | 107                        | 178 | 249 | 320 | 391 | 462 | 533 | 604 | 675 | 746 | 817 | -   | -   | -   |
|           | 112          |                 |     | 388   |     |     |     |     |     |    |                            |     |     |     |     |     |     |     |     |     |     |     |     |     |
|           | 132          |                 |     | 420   |     |     |     |     |     |    |                            |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 80        | 132          | 100             | 80  | 568+C | 145 | 423 | 265 | 247 | 350 | 23 | 112                        | 195 | 278 | 361 | 444 | 527 | 610 | 693 | 776 | 859 | 942 | -   | -   | -   |
|           | 160          |                 |     | 453   |     |     |     |     |     |    |                            |     |     |     |     |     |     |     |     |     |     |     |     |     |
|           | 180          |                 |     | 483   |     |     |     |     |     |    |                            |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 100       | 160          | 125             | 100 | 675+C | 170 | 504 | 300 | 318 | 450 | 23 | 133                        | 233 | 333 | 433 | 533 | 633 | 733 | 833 | 933 | -   | -   | -   | -   | -   |
|           | 180          |                 |     | 534   |     |     |     |     |     |    |                            |     |     |     |     |     |     |     |     |     |     |     |     |     |
|           | 200          |                 |     |       |     |     |     |     |     |    |                            |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 125       | 200          | 150             | 125 | 717+C | 178 | 538 | 375 | 424 | 600 | 27 | 165                        | 280 | 395 | 510 | 625 | 740 | 855 | -   | -   | -   | -   | -   | -   | -   |
|           | 225          |                 |     | 568   |     |     |     |     |     |    |                            |     |     |     |     |     |     |     |     |     |     |     |     |     |
|           | 250          |                 |     | 598   |     |     |     |     |     |    |                            |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 150       | 250          | 200             | 150 | 888+C | 265 | 623 | 425 | 424 | 600 | 27 | 218                        | 363 | 508 | 653 | 798 | -   | -   | -   | -   | -   | -   | -   | -   | -   |
|           | 280          |                 |     | 653   |     |     |     |     |     |    |                            |     |     |     |     |     |     |     |     |     |     |     |     |     |
|           | 315          |                 |     |       |     |     |     |     |     |    |                            |     |     |     |     |     |     |     |     |     |     |     |     |     |

2900 rpm

| Pump Type | MOTOR IEC No | Dimensions (mm) |     |       |     |     |     |     |     |    | C (mm)<br>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  |
| 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 |
|           | 132          |                 |     | 326   |     |     |     |     |     |    |                            |     |     |     |     |     |     |     |     |     |     |     |     |
|           | 160          |                 |     | 356   |     |     |     |     |     |    |                            |     |     |     |     |     |     |     |     |     |     |     |     |
| 40        | 132          | 50              | 40  | 435+C | 103 | 332 | 175 | 212 | 300 | 18 | 78                         | 133 | 188 | 243 | 298 | 353 | 408 | 463 | 518 | 573 | 628 | 683 | -   |
|           | 160          |                 |     | 362   |     |     |     |     |     |    |                            |     |     |     |     |     |     |     |     |     |     |     |     |
|           | 180          |                 |     | 392   |     |     |     |     |     |    |                            |     |     |     |     |     |     |     |     |     |     |     |     |
| 50        | 160          | 65              | 50  | 503+C | 114 | 389 | 190 | 247 | 350 | 18 | 90                         | 152 | 214 | 276 | 338 | 400 | 462 | 524 | 586 | 648 | -   | -   | -   |
|           | 180          |                 |     | 419   |     |     |     |     |     |    |                            |     |     |     |     |     |     |     |     |     |     |     |     |
|           | 200          |                 |     |       |     |     |     |     |     |    |                            |     |     |     |     |     |     |     |     |     |     |     |     |
| 65        | 160          | 80              | 65  | 555+C | 135 | 420 | 215 | 247 | 350 | 18 | 107                        | 178 | 249 | 320 | 391 | 462 | 533 | -   | -   | -   | -   | -   | -   |
|           | 180          |                 |     | 480   |     |     |     |     |     |    |                            |     |     |     |     |     |     |     |     |     |     |     |     |
|           | 200          |                 |     |       |     |     |     |     |     |    |                            |     |     |     |     |     |     |     |     |     |     |     |     |
| 80        | 200          | 100             | 80  | 598+C | 145 | 453 | 265 | 247 | 350 | 23 | 112                        | 195 | 278 | 361 | -   | -   | -   | -   | -   | -   | -   | -   | -   |
|           | 225          |                 |     | 483   |     |     |     |     |     |    |                            |     |     |     |     |     |     |     |     |     |     |     |     |
|           | 250          |                 |     |       |     |     |     |     |     |    |                            |     |     |     |     |     |     |     |     |     |     |     |     |
| 80        | 280          |                 |     | 628+C |     |     |     |     |     |    |                            |     |     |     |     |     |     |     |     |     |     |     |     |

NOTE: All rights reserved.

Technical Data

Material Option

| Part List          | 0.6025 | 0.7040 | 1.0619 | 1.4308 | 1.4309 | 1.4408 | 1.4409 | 1.4500 | 1.4517 | 1.4469 | 1.4317 | 2.1050.01 | 2.0975.01 | 1.0503 | 1.4021 | 1.4301 | 1.4306 | 1.4401 | 1.4404 | 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 / DIN 24960

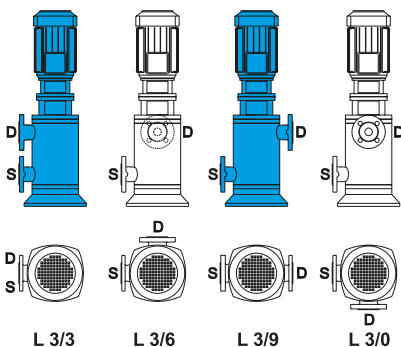
(\*) Optional : Depending on customer requirement or request different types and brands of mechanical seals are applicable.

- Standart manufacturing
- Optional

Material Equivalents

| Description                                      | DIN 17007 | EN-DIN                      | ASTM                   |
|--------------------------------------------------|-----------|-----------------------------|------------------------|
| Cast iron                                        | 0.6025    | GJL-250 (GG 25)             | A 48 Class 40-B        |
| Nodular cast iron                                | 0.7040    | GJS-400-15 (GGG 40)         | A 536 Gr. 60-40-18     |
| Cast steel                                       | 1.0619    | GP240GH (GS-C 25)           | A 216 Gr. WCB          |
| Chrome nickel cast steel                         | 1.4308    | G-X5 Cr Ni 19-10            | A 351/743/744 Gr. CF8  |
| Chrome nickel cast steel (low carbon)            | 1.4309    | G-X2 Cr Ni 19-11            | A 351/743/744 Gr. CF3  |
| Chrome nickel molybdenum cast steel              | 1.4408    | G-X5 Cr Ni Mo 19-11-2       | A 351/743/744 Gr. CF8M |
| Chrome nickel molybdenum cast steel (low carbon) | 1.4409    | G-X2 Cr Ni Mo 19-11-2       | A 351/743/744 CF3M     |
| Austenitic cast steel                            | 1.4500    | G-X7 Cr Ni Mo Cu Nb 25-20   | A 351/743/744 (CN7M)   |
| Austenitic-ferritic cast steel (duplex)          | 1.4517    | G-X2 Cr Ni Mo Cu N 25-6-3-3 | A 890 Gr. 1B (CD4MCuN) |
| Austenitic-ferritic cast steel (super duplex)    | 1.4469    | G-X2 Cr Ni Mo N 26-7-4      | A 890 Gr. 5A (CE3MN)   |
| Martenzitic Stainless Cast Steel                 | 1.4317    | G-X4 Cr Ni 13-4             | A 351/743/744 (CA6NM)  |
| Cast bronze (tin alloy)                          | 2.1050.01 | G-Cu Sn 10                  | B 584 C 90700          |
| Cast bronze (nickel alloy)                       | 2.0975.01 | G-Cu Al 10 Ni               | B 148 C 95800          |
| Carbon steel                                     | 1.0503    | C 45                        | A 29/108/576 1045      |
| Chrome steel                                     | 1.4021    | X20 Cr 13                   | A 276 Type 420         |
| Chrome nickel steel                              | 1.4301    | X5 Cr Ni 18-10              | A 276 Type 304         |
| Chrome nickel steel (low carbon)                 | 1.4306    | X2 Cr Ni 19-11              | A 276 Type 304L        |
| Chrome nickel molybdenum steel                   | 1.4401    | X5 Cr Ni Mo 17-12-2         | A 276 Type 316         |
| Chrome nickel molybdenum steel (low carbon)      | 1.4404    | X2 Cr Ni Mo 17-12-2         | A 276 Type 316 L       |
| Duplex (austenitic-ferritic) steel               | 1.4462    | X2 Cr Ni Mo N 22-5-3        | A 276 S 31803          |

Flange Positions



Explanation :

L 3 / 0

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

Direction of rotation viewed from driver 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