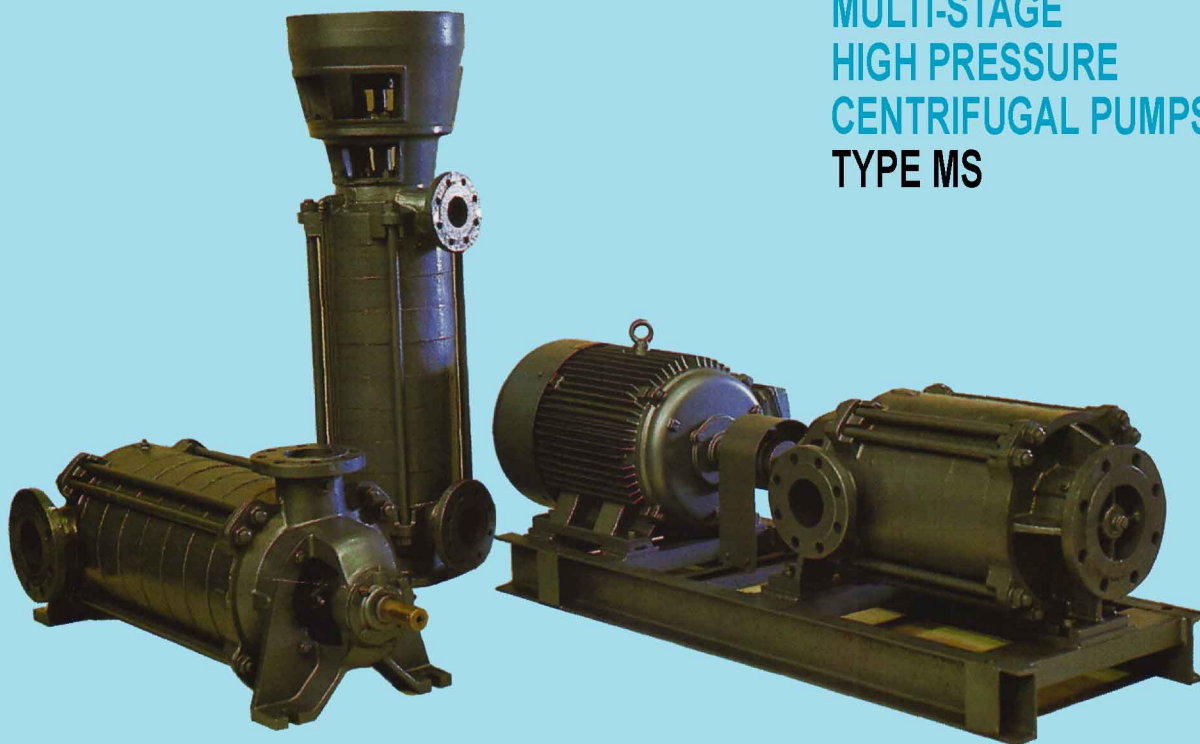


MULTI-STAGE HIGH PRESSURE CENTRIFUGAL PUMPS TYPE MS



Applications

In waterworks, irrigation and sprinkler installations. As a recirculating pump for cooling and heating water and also as a fire-fighting, boiler feed or pressure boosting pump.

The MS type pumps are used for handling clean or only lightly contaminated media, for oils up to 150 mm²/sec (cst) and for non-aggressive liquids.

Hydraulic Data

- Capacity up to 550 m³/h.
- Total head up to 300 m.
- Temperature -20° C to 140° C.
- Max casing pressure 30 bar (suction pressure + shut-off head).

Max. permissible no. of stages

| Pump models | 1450 RPM | 2900 RPM |
|--------------------|----------|----------|
| MS 80 L - H, V, AS | 9 (6) | 2 |
| MS 80 H - H, AS | 13 (9) | 4 |
| MS 100 H, AS | 10 (6) | 3 |
| MS 100 V | 8 | 1 |
| MS 125 H, AS | 8 (5) | |
| MS 125 V | 6 | |
| MS 150 H, AS | 5 (3) | |
| MS 150 V | 3 | |

The values in the brackets are valid for 60 Hz, 1750 RPM

Design

The pump casing consists of a number of sectional stages, held together by large - diameter tie bolts. All impellers are balanced. Axial thrust is compensated for by balance holes in each impeller.

The pump shaft is protected against wear by sleeves through the stuffing box.

The pump features bronze wearing rings on both sides of the impellers.

All wear parts such as impellers and shaft sleeves are easily replaceable and the glands are readily accessible.

The by-pass arrangement relieves the pressure on the delivery side stuffing box and provides a perfect water seal in the suction stuffing box, even at maximum suction lift.

Sealing with gland packing or mechanical seal.

Branches: PN 16 DIN 2533

PN 40 DIN 2535

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FLAT F, 22/F., LUK HOP INDUSTRIAL BUILDING,

8 LUK HOP STREET, SAN PO KONG, KOWLOON, H.K.

Tel : 2325 6892, 2325 7196

Fax No.: (852) 2322 1768

E-mail : info@newway.com.hk

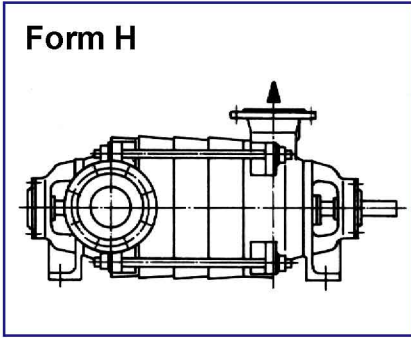


DRAKOS - POLEMIS S.A.
PUMP MANUFACTURERS

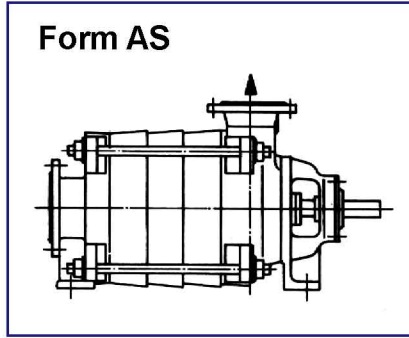
Kryoneri - Athens - Greece

TECHNICAL DATA

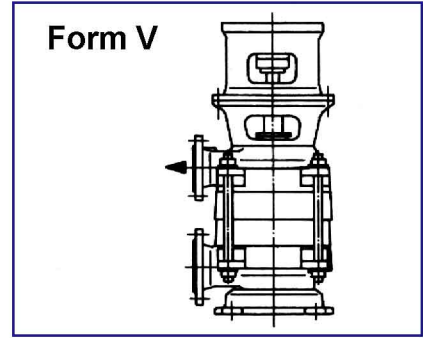
Available configurations



Horizontal with radial branches. Shaft supported on suction and delivery side in roller bearings. Bearing lubrication with grease. Drive end on delivery side standard. Suction side drive end optional. Shaft sealing on both sides.



Horizontal with axial suction branch and radial delivery branch. Shaft supported in bronze bearing on suction side and in ball bearings on delivery side. Bearing lubrication with grease. Delivery side drive end and shaft sealing only.



Vertical with radial branches. Shaft supported in bronze bearing on suction side and in ball bearing on delivery side. Bronze bearing lubrication with pumped liquid. Ball bearing lubrication with grease. Delivery side drive end and shaft sealing only. Pump and motor shaft connected by means of a flexible coupling.

Maximum transmissible power

$P \text{ (KW)} = a \times N \text{ (RPM)}$

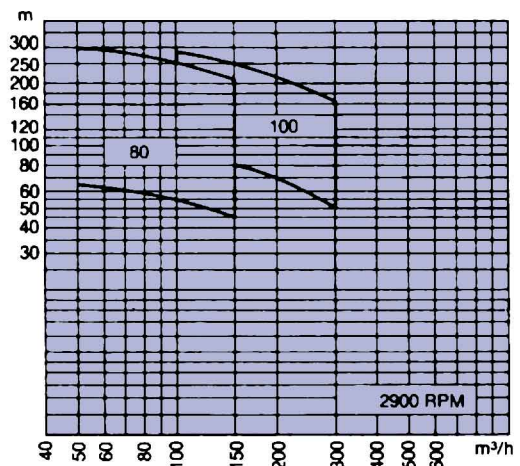
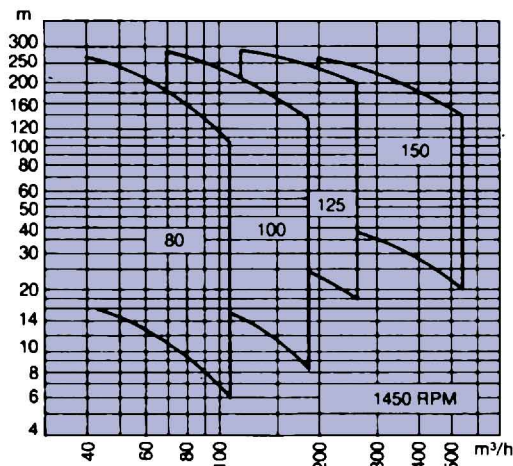
| Shaft-end diameter | Coefficient a | | |
|--------------------|---------------|--------|--------|
| | 1.0632 | 1.4021 | 1.4401 |
| 32 | | 0,044 | 0,024 |
| 35 | | 0,060 | 0,033 |
| 40 | 0,066 | 0,095 | 0,053 |
| 42 | 0,080 | 0,116 | 0,064 |
| 45 | 0,094 | 0,136 | 0,075 |
| 50 | 0,133 | 0,190 | 0,107 |
| 60 | 0,206 | 0,294 | 0,165 |

For diesel engine driver reduce above coefficients by 20%

Bearing type

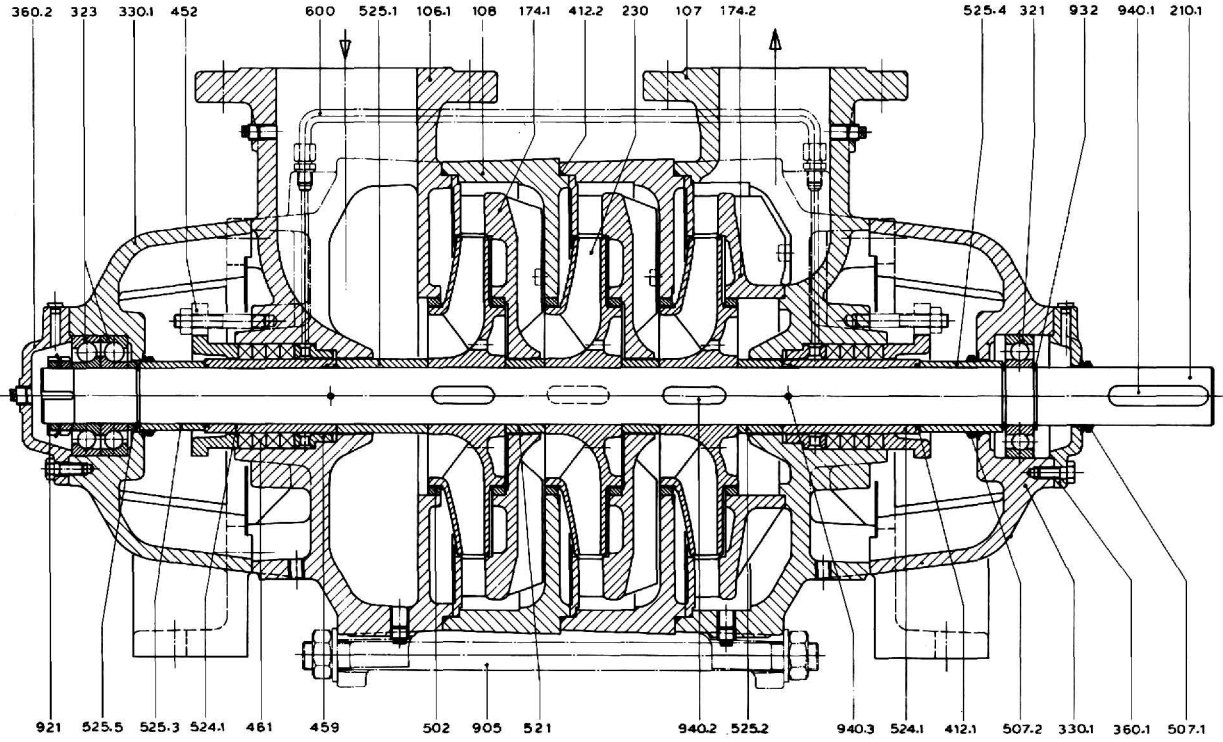
| Pump model | Suction side | Delivery side |
|--------------|--------------|---------------|
| MS 80 L-H | 6407 C3 | 6407 C3 |
| MS 80 L-AS | | 6407 C3 |
| MS 80 L-V | 2x7308 B.UA | 6310 C3 |
| MS 80 H-H | | 6308 C3 |
| MS 80 H-AS | 2x7309 B.UA | 2x7308 B. UA |
| MS 100 H | | 6309 C3 |
| MS 100 AS, V | 2x7311 B.UA | 2x7309 B. UA |
| MS 125 H | | 6311 C3 |
| MS 125 AS, V | 2x7313 B.UA | 2x7311 B. UA |
| MS 150 H | | 6313 C3 |
| MS 150 AS, V | | 2x7313 B. UA |

Performance range

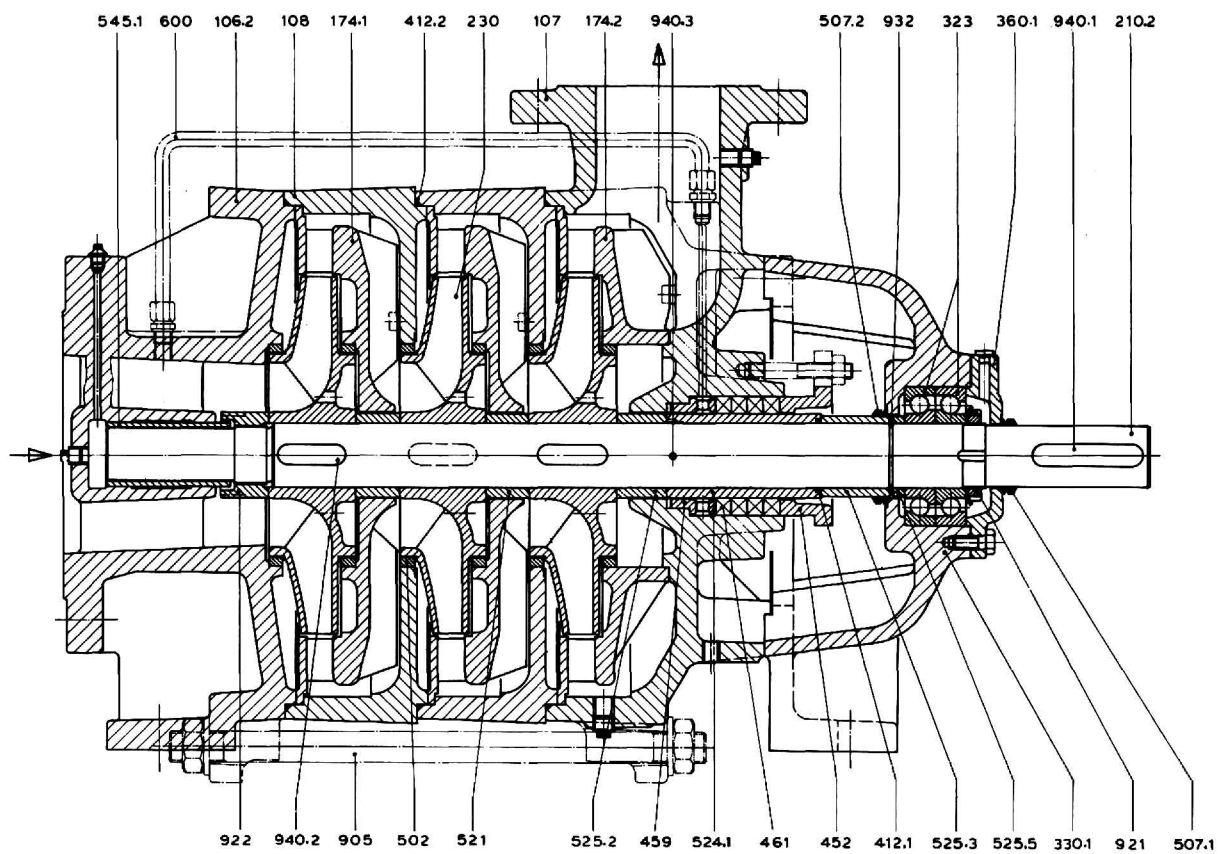


SECTIONAL VIEWS

Form H

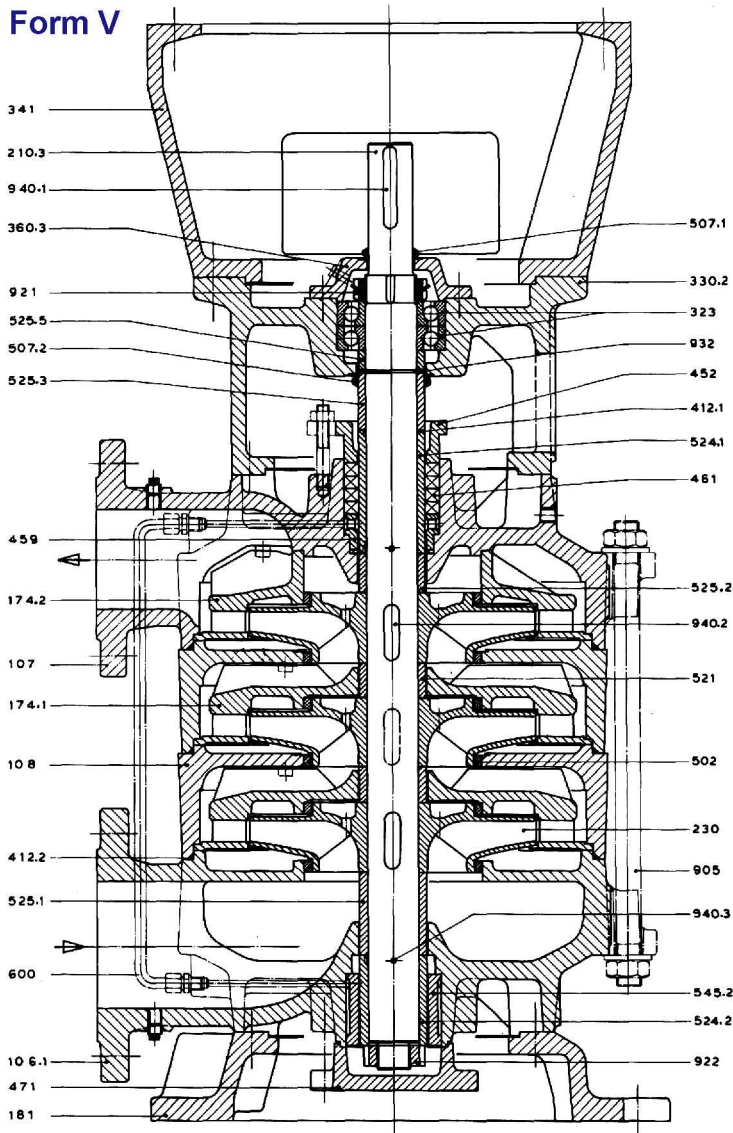


Form AS

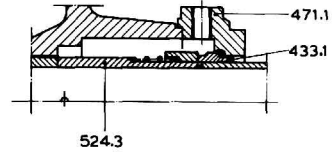


SECTIONAL VIEWS

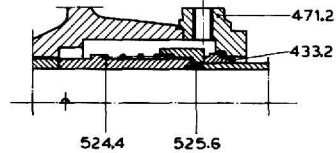
Form V



Mchanical seal ● Unbalanced



● Balanced



● MS 80

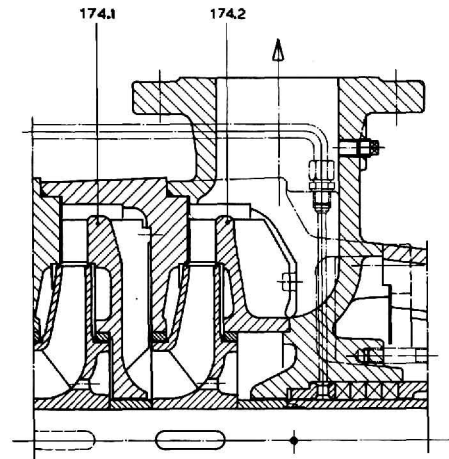


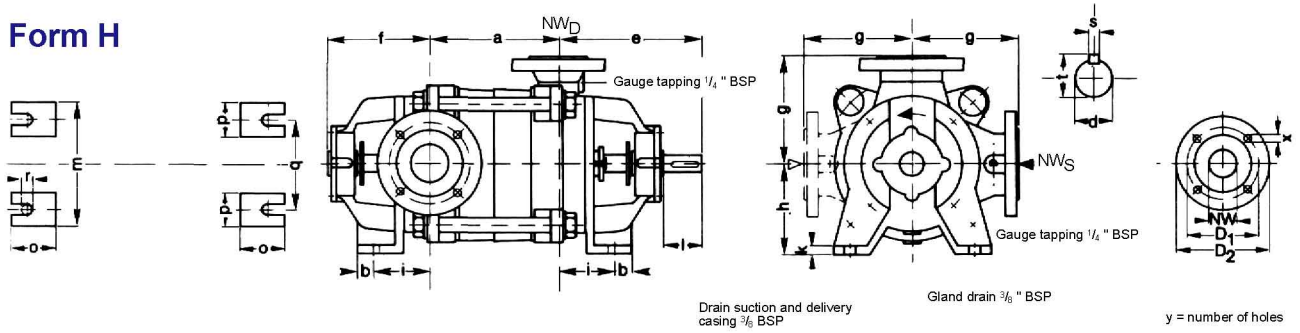
Table of materials for all forms

| Part No | Part name | Construction Materials | | Part No | Part name | Construction Materials | |
|---------|---------------------------|------------------------|-----------|--|--------------------|------------------------|------------|
| | | Standard | Special | | | Standard | Special |
| 106.1 | Suction casing | Cl | G-CuSn 10 | 525.5 | Distance ring | 1.4021 | |
| 106.2 | Suction casing | Cl | G-CuSn 10 | 545.1 | Bearing bush | G-CuSn 12 | |
| 107 | Delivery casing | G-CuSn 10 | | 542.2 | Bearing bush | G-CuSn 10 | |
| 108 | Interstage casing | G-CuSn 10 | | 600 | Axial balance pipe | St | 1.4301 |
| 174.1 | Diffuser | G-CuSn 10 | | 905 | Tie bolt | St | |
| 174.2 | Diffuser discharge casing | G-CuSn 10 | | 921 | Shaft locking nut | St | |
| 181 | Pump base | Cl | | 922 | Impeller nut | CuSn 10 | |
| 210.1 | Shaft | 1.0632 | 1.4401 | 932 | Circlip | CuSn 10 | |
| 210.2 | Shaft | 1.0632 | 1.4401 | 940.1 | Key | St | |
| 210.3 | Shaft | 1.0632 | 1.4401 | 940.2 | Key | St | 1.4571 |
| 230 | Impeller | Cl | G-CuSn 10 | 940.3 | Pin | 1.4571 | |
| 321 | Grooved ball bearing | St | | Only for stuffing box with packing | | | |
| 323 | Thrust ball bearing | St | | 452 | Gland | Cl | G-CuSn 10 |
| 330.1 | Bearing housing | Cl | | 459 | Lantern ring | Cl | G-CuSn 10 |
| 330.2 | Bearing housing | Cl | | 461 | Gland packing | TEFLON | |
| 341 | Motor stool | Cl/St | | 524.1 | Shaft sleeve | 1.4021 | 1.4401 |
| 360.1 | Bearing cover | Cl | | Only for mechanical seal unbalanced | | | |
| 360.2 | Bearing cover | Cl | | 433.1 | Mechanical seal | Cr/Carbon | SiC/Carbon |
| 360.3 | Bearing cover | Cl | | 471.1 | Seal cover | Cl | G-CuSn 10 |
| 412.1 | O-ring | Rubber | | 524.3 | Shaft sleeve | 1.4021 | 1.4401 |
| 412.2 | O-ring | Rubber | | Only for mechanical seal balanced | | | |
| 471 | Seal cover | Cl | G-CuSn 10 | 433.2 | Mechanical seal | SiC/Carbon | SiC/SiC |
| 502 | Wearing ring | G-CuSn 12 | | 471.2 | Seal cover | Cl | G-CuSn 10 |
| 507.1 | Thrower ring | Rubber | | 524.4 | Shaft sleeve | 1.4021 | 1.4401 |
| 507.2 | Thrower ring | Rubber | | 525.6 | Distance sleeve | G-CuSn 12 | |
| 521 | Shaft bush | G-CuSn 12 | | Only for mechanical seal balanced | | | |
| 524.2 | Shaft sleeve | 1.4021 | 1.4401 | 433.2 | Mechanical seal | SiC/Carbon | SiC/SiC |
| 525.1 | Distance sleeve | G-CuSn 12 | | 471.2 | Seal cover | Cl | G-CuSn 10 |
| 525.2 | Distance sleeve | G-CuSn 12 | | 524.4 | Shaft sleeve | 1.4021 | 1.4401 |
| 525.3 | Distance sleeve | G-CuSn 12 | | 525.6 | Distance sleeve | G-CuSn 12 | |
| 525.4 | Distance sleeve | G-CuSn 12 | | | | | |

Other materials such as 316 SS also available on request.

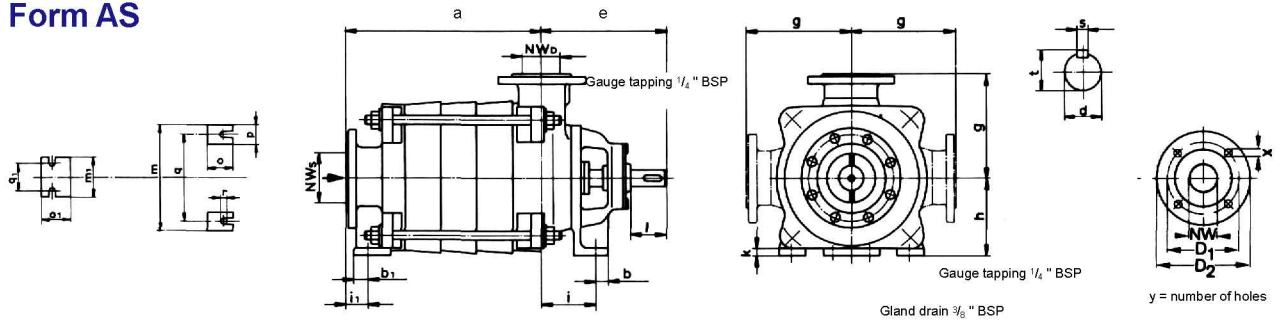
DIMENSIONS

Form H



| Typ | 1 st stage | | | a for each add'l stage | | | | | | | | | | | | | | | | |
|---------|------------|-----|-----|------------------------|-----|-----|-----|-----|-----|----|----|-----|-----|-----|-----|----|-----|----|------|----|
| | NWs | NWb | a | e | f | g | h | i | b | k | m | q | o | p | r | l | d | t | s | |
| MS 80 L | 100 | 80 | 140 | 83 | 290 | 205 | 240 | 180 | 123 | 30 | 16 | 330 | 270 | 80 | 60 | 18 | 85 | 35 | 38 | 10 |
| MS 80 H | 100 | 80 | 140 | 83 | 337 | 250 | 240 | 180 | 123 | 30 | 16 | 330 | 270 | 80 | 60 | 18 | 100 | 40 | 43 | 12 |
| MS 100 | 125 | 100 | 175 | 104 | 397 | 305 | 280 | 225 | 155 | 35 | 20 | 420 | 340 | 100 | 80 | 20 | 110 | 45 | 48,5 | 14 |
| MS 125 | 150 | 125 | 205 | 130 | 470 | 345 | 340 | 280 | 75 | 40 | 22 | 540 | 420 | 120 | 120 | 25 | 110 | 50 | 53,5 | 14 |
| MS 150 | 200 | 150 | 235 | 150 | 510 | 395 | 380 | 350 | 85 | 45 | 25 | 640 | 500 | 140 | 140 | 27 | 110 | 60 | 64 | 8 |

Form AS

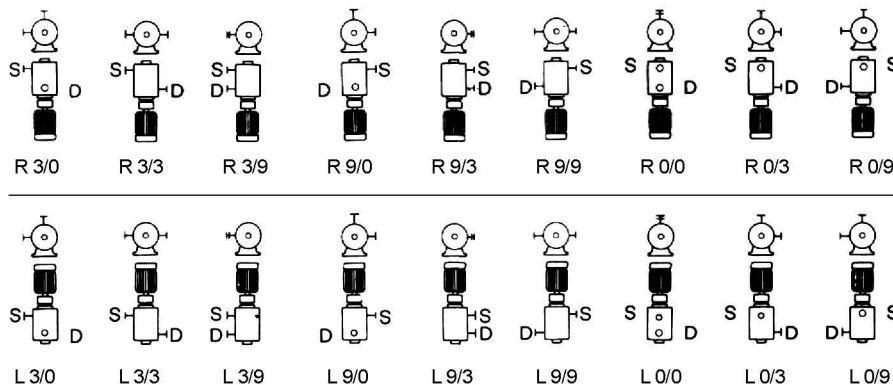


| Model | 1 st stage | | | a for each add'l stage | | | | | | | | | | | | | | | | | | | | | |
|---------|------------|-----|-----|------------------------|-----|-----|-----|-----|-----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|----|-----|----|------|----|
| | NWs | NWb | a | e | g | h | h | i | b | i1 | b1 | k | m | q | m1 | q1 | o | o1 | p | r | l | d | t | s | |
| MS 80 L | 125 | 80 | 210 | 83 | 290 | 240 | 180 | 180 | 123 | 30 | 50 | 35 | 16 | 330 | 270 | 125 | 85 | 80 | 85 | 60 | 18 | 85 | 35 | 38 | 10 |
| MS 80 H | 125 | 80 | 210 | 83 | 337 | 240 | 180 | 180 | 123 | 30 | 50 | 35 | 16 | 330 | 270 | 125 | 85 | 80 | 85 | 60 | 18 | 100 | 40 | 43 | 12 |
| MS 100 | 150 | 100 | 266 | 104 | 397 | 280 | 225 | 225 | 155 | 35 | 75 | 40 | 20 | 420 | 340 | 160 | 120 | 100 | 100 | 80 | 20 | 110 | 42 | 45 | 12 |
| MS 125 | 200 | 125 | 265 | 130 | 470 | 340 | 280 | 280 | 75 | 40 | 82 | 35 | 22 | 540 | 420 | 160 | 110 | 120 | 100 | 120 | 25 | 110 | 50 | 53,5 | 14 |
| MS 150 | 200 | 150 | 300 | 150 | 510 | 380 | 350 | 350 | 85 | 45 | 75 | 45 | 25 | 640 | 500 | 200 | 140 | 140 | 120 | 140 | 27 | 110 | 60 | 64 | 18 |

Installation

Form H

Pump for clockwise rotation as seen from driver side.



Counter-clockwise rotation as seen from driver side.

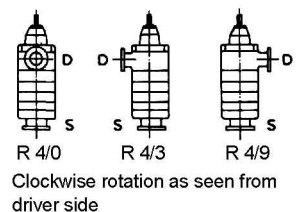
Branch arrangement

Unless otherwise specified, branch arrangement R 3/0 will be supplied.

Branches in parallel on the same side only possible with 2 or more stages.

Form AS

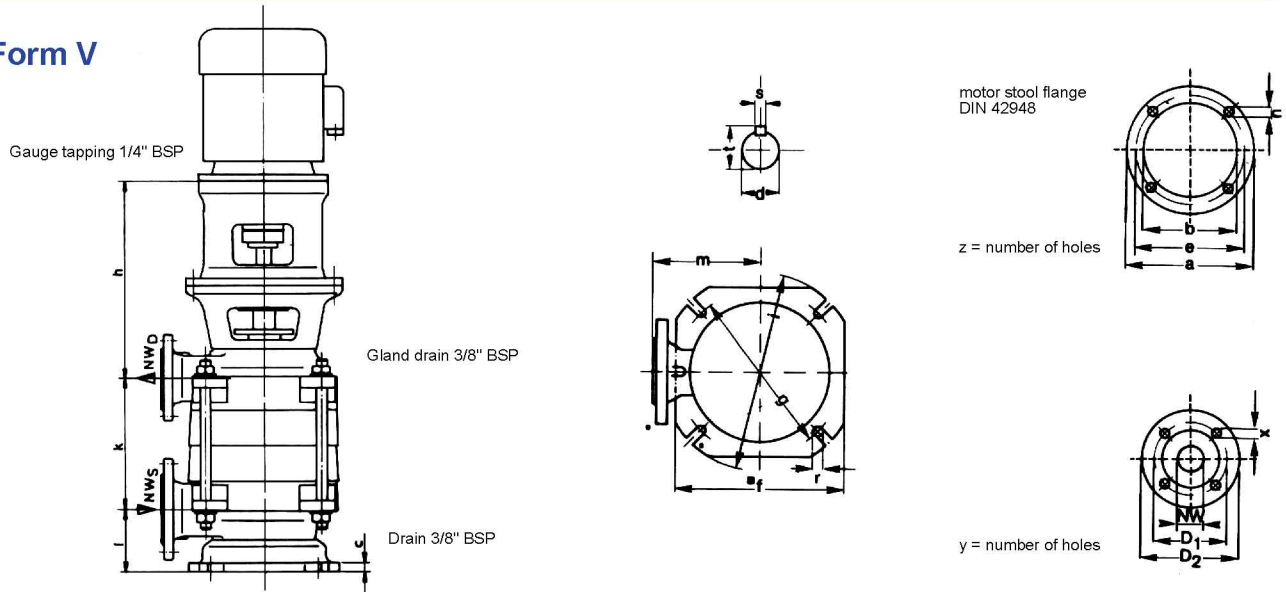
Branch arrangement Standard construction R4/0



Clockwise rotation as seen from driver side

DIMENSIONS

Form V

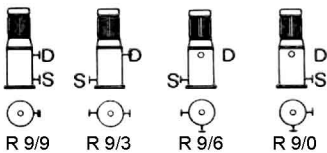


| Model | 1 st stage | | | k for each add'l stage | | | | | | | | | | | | | | | | |
|--------|-----------------|-----------------|-----|------------------------|-----|-----|----|-----|-----|-----|----|----|------|----|-----|-----|-----|-----|----|---|
| | NW _s | NW _D | k | f | i | c | l | m | g | r | d | t | s | a | b | e | h | n | z | |
| MS 80 | 100 | 80 | 140 | 83 | 350 | 400 | 23 | 145 | 240 | 350 | 18 | 32 | 35 | 10 | 350 | 250 | 300 | 465 | 19 | 4 |
| | | | | | | | | | | | | | | | 400 | 300 | 350 | 465 | 19 | 4 |
| | | | | | | | | | | | | | | | 450 | 350 | 400 | 495 | 19 | 8 |
| | | | | | | | | | | | | | | | 550 | 450 | 500 | 495 | 19 | 8 |
| MS 100 | 125 | 100 | 175 | 104 | 450 | 510 | 25 | 170 | 280 | 450 | 23 | 42 | 45 | 12 | 350 | 250 | 300 | 465 | 19 | 4 |
| | | | | | | | | | | | | | | | 400 | 300 | 350 | 465 | 19 | 4 |
| | | | | | | | | | | | | | | | 450 | 350 | 400 | 495 | 19 | 8 |
| | | | | | | | | | | | | | | | 550 | 450 | 500 | 495 | 19 | 8 |
| | | | | | | | | | | | | | | | 660 | 550 | 600 | 495 | 22 | 8 |
| 660 | 550 | 600 | 525 | 22 | 8 | | | | | | | | | | | | | | | |
| MS 125 | 150 | 125 | 205 | 130 | 600 | 680 | 28 | 205 | 340 | 600 | 27 | 50 | 53,5 | 14 | 450 | 350 | 400 | 615 | 19 | 8 |
| | | | | | | | | | | | | | | | 550 | 450 | 500 | 615 | 19 | 8 |
| | | | | | | | | | | | | | | | 660 | 550 | 600 | 645 | 22 | 8 |
| MS 150 | 200 | 150 | 235 | 150 | 600 | 680 | 28 | 230 | 380 | 600 | 27 | 60 | 64 | 18 | 550 | 450 | 500 | 655 | 19 | 8 |
| | | | | | | | | | | | | | | | 660 | 550 | 600 | 685 | 22 | 8 |

Installation

Form V

Branch arrangement



In the absence of specific instructions pumps are supplied with the following branch arrangements:
 1 stage: R 9/3
 2 or more stages: R 9/9

Flange Dimensions

PN 16 DIN 2533

| NW | 80 | 100 | 125 | 150 | 200 |
|----|-----|-----|-----|-----|-----|
| D1 | 160 | 180 | 210 | 240 | 295 |
| D2 | 200 | 235 | 270 | 300 | 375 |
| x | 18 | 18 | 18 | 23 | 23 |
| y | 8 | 8 | 8 | 8 | 12 |

PN 40 DIN 2535

| NW | 80 | 100 | 125 | 150 | 200 |
|----|-----|-----|-----|-----|-----|
| D1 | 160 | 190 | 220 | 250 | 320 |
| D2 | 200 | 235 | 270 | 300 | 375 |
| x | 18 | 23 | 27 | 27 | 30 |
| y | 8 | 8 | 8 | 8 | 12 |

The technical data in this brochure are subject to change without prior notice and should not be used for construction without the consent of the manufacturer.

8M.02.6/2.000