



# NT, NSHD, NB & DV

**END-SUCTION CENTRIFUGAL PUMPS  
TO EN733 (DIN 24255)**





RAPID ALLWEILER PUMPS HEAD OFFICE

## WE HAVE ALL THE TICKS

- ☒ DEEP APPLICATION KNOWLEDGE
- ☒ TAILOR MADE PUMPING SOLUTIONS
- ☒ STATE OF THE ART TRAINING CENTRE
- ☒ LEADING PROVIDER OF TOP QUALITY PRODUCTS
- ☒ LOCAL MANUFACTURE
- ☒ FOUNDED IN 1932
- ☒ OWN FOUNDRY
- ☒ ACCREDITED PUMP REPAIR/SERVICE WORKSHOP
- ☒ ISO 9001:2008
- ☒ BEE ACCREDITED
- ☒ AFTER MARKET SERVICE



FOUNDER A J HINDRY



OWN WORKSHOP



OWN FOUNDRY

Version 1 - NT, NSHD & NB: Rapid Allweiler Pumps

Whilst all care has been taken to ensure the accuracy of the information contained in this brochure was correct at the time of printing, please be advised we cannot be held responsible for any errors contained within and or changes that may have taken place. Dimensions contained within are for reference purpose only and should not be used for construction; certified drawings are available upon request. For confirmation of any information contained herewith please contact a member of our technical sales team.

**COLFAX**  
Fluid Handling

**ALLWEILER®**

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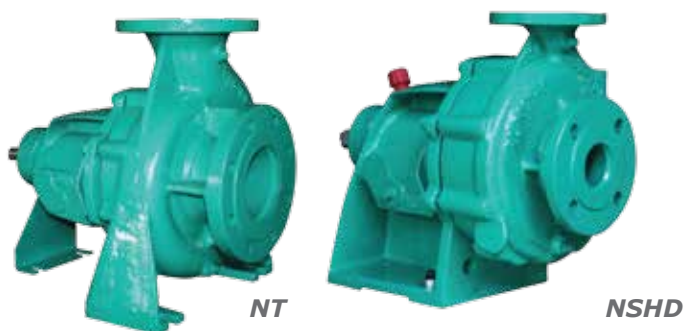
## DV



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# NT & NSHD

END-SUCTION CENTRIFUGAL PUMPS TO EN733 (DIN 24255)



## APPLICATION

- Air-Conditioning
- Water Supply
- Irrigation
- Water Treatment
- Circulating and Heating Systems
- Swimming Pools
- Chemical and Petro-Chemical Industries

| RA Pump Range | Minimum Flow (m <sup>3</sup> /h) | Maximum Flow (m <sup>3</sup> /h) | Minimum Head (m) | Maximum Head (m) | Maximum Temperature |
|---------------|----------------------------------|----------------------------------|------------------|------------------|---------------------|
| NT & NSHD     | 2                                | 1 100                            | 3                | 140              | 160°C               |

## DESIGN & CONSTRUCTION

### NT & NSHD

- Suitable for clean liquids which are not chemically aggressive.
- Single and two stage options available.
- Balance holes are drilled in the impeller to effect hydraulic balance eliminating undue forces with in the pump.
- Gland Packing or Mechanical Seal options available.
- High interchangeability of parts, allowing for minimal spares holdings.

### NT

- Back pull out design for ease of maintenance.
- Shaft is supported by deep groove ball bearings.
- Sealed for life bearings (are standard) offering a long and maintenance free life time.
- Oil lubricated bearing are available and offer a sight glass for ease of maintenance.

### NSHD

- Specifically designed for belt drive applications.
- Volute may rotated to facilitate alternate pipework configurations (see diagram on page no. 6).
- Volute is cast without feet (excluding the 530 bearing pedestal size).

- Heavy duty angular contact roller oil lubricated bearings are fitted with sight glass for ease of maintenance.

### Flanges

- SANS 1123 PN10(BS 4504 PN10) or ANSI B16.5 (optional).
- NT - Vertical Discharge and Horizontal Suction.
- NSHD - Horizontal suction and the discharge may used in various positions (see page no. 6).

### Interchangeability of Components

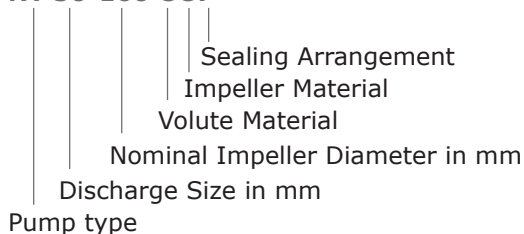
Five drive assemblies cover the entire range of 40 sizes(chart page no.3).

## MATERIALS OF CONSTRUCTION

|                           |                                      |
|---------------------------|--------------------------------------|
| Volute:                   | High grade Cast iron or Bronze       |
| Gland/Seal Plate:         | High grade Cast iron or Bronze       |
| Bearing bracket/pedestal: | High grade Cast iron                 |
| Matching Rings:           | High grade Cast iron                 |
| Lantern Ring:             | Nylon                                |
| Impeller:                 | Cast iron, Bronze or Stainless steel |
| Shaft:                    | Grade 431 or 316 Stainless steel     |

## MODEL DESCRIPTION

### NT 50-160 CCP



# NT & NSHD

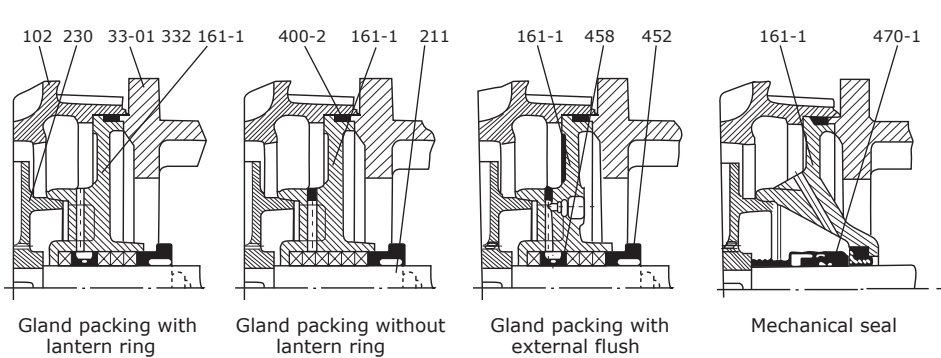
END-SUCTION CENTRIFUGAL PUMPS TO EN733 (DIN 24255)

## INTERCHANGEABILITY GUIDE

| Bearing Bracket Size | Bearing Bracket or Bearing Pedestal                                                                                                                                              | Shaft unit                                                                          | Casing Cover                                                                        |                                                                                     |                                                                                     | Volute - Nominal Impeller Diameter                                                                                                                                                                         |                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Delivery Flange                  |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
|                      |                                                                                                                                                                                  |                                                                                     | For Mechanical Seal                                                                 | For Cooled Stuffing Box                                                             | For Uncooled Stuffing Box                                                           | 400                                                                                                                                                                                                        | 315                                                                                                                                                                                                          | 250                                                                                                                                                                                                                                                                                                                                                              | 200                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 160                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ID                               |
| 228                  | NT                                                                                              |    |    |    |    |                                                                                                                                                                                                            |                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 25                               |
| 360                  | NT <br>NS      |    |    |    |    |                                                                                                                                                                                                            |                                                                                                                                                                                                              | <br>with adaptor ring<br>250                                                                                                                                                                                                                                                  | <br><br><br><br><br> | <br><br><br><br><br> | 25<br>32<br>40<br>50<br>65<br>80 |
| 470                  | NT <br>NS  |  |  |  |  | <br>with adaptor ring<br>470/400                                                                                        | <br><br>with adaptor ring<br>470/315 | <br><br><br> | <br><br>                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 65<br>80<br>100<br>125           |
| 530                  | NT <br>NS  |  |  |  |  | <br><br>with adaptor ring<br>530/400 | <br>                                 | <br><br>                                                                                          | <br><br><br>                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 80<br>100<br>125<br>150<br>200   |
| 585                  | NT                                                                                            |  |  |  |  | <br>                                 | <br>                                 |                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 200<br>250                       |

NT & NSHD

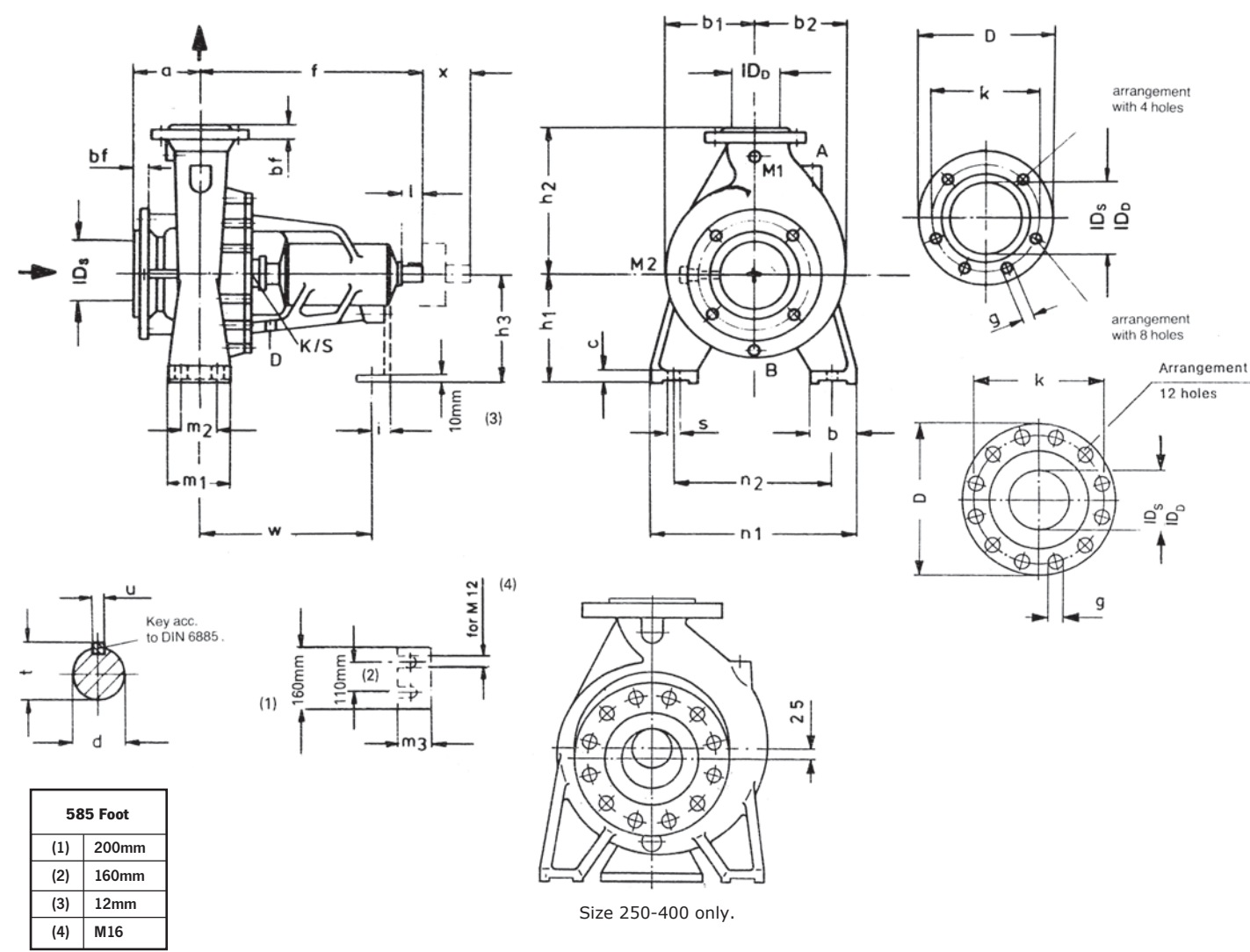
SHAFT SEALING ARRANGEMENT - SINGLE STAGE



| DESCRIPTION      | PART NO. |
|------------------|----------|
| VOLUTE CASING    | 102      |
| GLAND PLATE      | 161.1    |
| SEAL PLATE       | 161.2    |
| SHAFT            | 211      |
| IMPELLER         | 230      |
| BEARING BRACKET  | 330      |
| BEARING PEDESTAL | 332      |
| GLAND            | 452      |
| LANTERN RING     | 458      |
| MECHANICAL SEAL  | 470.1    |

PUMP DIMENSIONS

NT



# NT & NSHD

## END-SUCTION CENTRIFUGAL PUMPS TO EN733 (DIN 24255)

### PUMP DIMENSIONS

#### NT SERIES

| Size      | Discharge Flange | Suction Flange | Pump Dimensions |     |     |     |     |     |     |    | Foot Dimensions |    |     |     |    |     |     |     |     |     | Dismantling Space |     | Bolts | Shaft end acc. to DIN 42946 |       |       |       |       | Filling Hole | Drainage | Leakage water Connection | Gauge Connection | Gauge Connection | Connection for Stuffing Box Cooling | Foreign Sealing Connection |
|-----------|------------------|----------------|-----------------|-----|-----|-----|-----|-----|-----|----|-----------------|----|-----|-----|----|-----|-----|-----|-----|-----|-------------------|-----|-------|-----------------------------|-------|-------|-------|-------|--------------|----------|--------------------------|------------------|------------------|-------------------------------------|----------------------------|
|           | IDd              | IDs            | a               | f   | h1  | h2  | b1  | b2  | b   | c  | h3              | i  | m1  | m2  | m3 | n1  | n2  | w   | x   | s   | d                 | l   |       | t                           | u     | A     | B     | D     | M1           | M2       | K                        | S                |                  |                                     |                            |
| 25-160*   | 25               | 25             | 63              | 243 | 112 | 160 | 100 | 108 | 50  | 12 | 112             | -  | 100 | 70  | -  | 220 | 180 | -   | 60  | M10 | 17                | 41  | 19    | 5                           | R1/4" | R1/4" | R1/4" | R1/4" | R1/4"        | R1/8"    | R1/8"                    |                  |                  |                                     |                            |
| 25-200*   | 25               | 40             | 80              | 360 | 160 | 180 | 132 | 132 | 50  | 15 | 160             | 28 | 100 | 70  | 50 | 240 | 190 | 260 | 80  | M12 | 24                | 50  | 27    | 8                           | R1/4" | R1/4" | R1/4" | R1/4" | R1/4"        | R1/4"    | R1/8"                    |                  |                  |                                     |                            |
| 32-160    | 32               | 50             | 80              | 360 | 132 | 160 | 123 | 123 | 50  | 15 | 132             | 28 | 100 | 70  | 50 | 240 | 190 | 260 | 80  | M12 | 24                | 50  | 27    | 8                           | R1/4" | R1/4" | R3/8" | R1/4" | R1/4"        | R1/4"    | R1/8"                    |                  |                  |                                     |                            |
| 32-200    | 32               | 50             | 80              | 360 | 160 | 180 | 124 | 130 | 50  | 15 | 160             | 28 | 100 | 70  | 50 | 240 | 190 | 260 | 80  | M12 | 24                | 50  | 27    | 8                           | R1/4" | R1/4" | R3/8" | R1/4" | R1/4"        | R1/4"    | R1/8"                    |                  |                  |                                     |                            |
| 40-160    | 40               | 65             | 80              | 360 | 132 | 160 | 123 | 123 | 50  | 15 | 132             | 28 | 100 | 70  | 50 | 240 | 190 | 260 | 80  | M12 | 24                | 50  | 27    | 8                           | R1/4" | R1/4" | R3/8" | R1/4" | R1/4"        | R1/4"    | R1/8"                    |                  |                  |                                     |                            |
| 40-200    | 40               | 65             | 100             | 360 | 160 | 180 | 125 | 135 | 50  | 15 | 160             | 28 | 100 | 70  | 50 | 265 | 212 | 265 | 80  | M12 | 24                | 50  | 27    | 8                           | R1/4" | R1/4" | R3/8" | R1/4" | R1/4"        | R1/4"    | R1/8"                    |                  |                  |                                     |                            |
| 40-250    | 40               | 65             | 100             | 360 | 180 | 225 | 150 | 156 | 65  | 15 | 180             | 28 | 125 | 95  | 50 | 320 | 250 | 265 | 80  | M12 | 24                | 50  | 27    | 8                           | R1/4" | R1/4" | R3/8" | R1/4" | R1/4"        | R1/4"    | R1/8"                    |                  |                  |                                     |                            |
| 50-160    | 50               | 65             | 100             | 360 | 160 | 180 | 125 | 130 | 50  | 15 | 160             | 28 | 100 | 70  | 50 | 265 | 212 | 260 | 80  | M12 | 24                | 50  | 27    | 8                           | R1/4" | R1/4" | R3/8" | R1/4" | R1/4"        | R1/4"    | R1/8"                    |                  |                  |                                     |                            |
| 50-200    | 50               | 65             | 100             | 360 | 160 | 200 | 133 | 145 | 50  | 15 | 160             | 28 | 100 | 70  | 50 | 265 | 212 | 265 | 80  | M12 | 24                | 50  | 27    | 8                           | R1/4" | R1/4" | R3/8" | R1/4" | R1/4"        | R1/4"    | R1/8"                    |                  |                  |                                     |                            |
| 50-250    | 50               | 65             | 100             | 360 | 180 | 225 | 156 | 169 | 65  | 15 | 180             | 28 | 125 | 95  | 50 | 320 | 250 | 265 | 80  | M12 | 24                | 50  | 27    | 8                           | R1/4" | R1/4" | R3/8" | R1/4" | R1/4"        | R1/4"    | R1/8"                    |                  |                  |                                     |                            |
| 65-160    | 65               | 80             | 100             | 360 | 160 | 200 | 133 | 162 | 65  | 15 | 160             | 28 | 125 | 95  | 50 | 280 | 212 | 265 | 80  | M12 | 24                | 50  | 27    | 8                           | R1/4" | R1/4" | R3/8" | R1/4" | R1/4"        | R1/4"    | R1/8"                    |                  |                  |                                     |                            |
| 65-200    | 65               | 80             | 100             | 360 | 180 | 225 | 148 | 170 | 65  | 15 | 180             | 28 | 125 | 95  | 50 | 320 | 250 | 265 | 100 | M12 | 24                | 50  | 27    | 8                           | R1/4" | R1/4" | R3/8" | R1/4" | R1/4"        | R1/4"    | R1/8"                    |                  |                  |                                     |                            |
| 65-250    | 65               | 80             | 100             | 470 | 200 | 250 | 164 | 184 | 80  | 18 | 200             | 28 | 160 | 120 | 50 | 360 | 280 | 340 | 100 | M16 | 32                | 80  | 35    | 10                          | R3/8" | R3/8" | R3/8" | R3/8" | R1/4"        | R1/4"    | R1/8"                    |                  |                  |                                     |                            |
| 65-315    | 65               | 80             | 125             | 470 | 225 | 280 | 202 | 211 | 80  | 25 | 225             | 28 | 160 | 120 | 50 | 400 | 315 | 340 | 100 | M16 | 32                | 80  | 35    | 10                          | R3/8" | R3/8" | R3/8" | R3/8" | R1/4"        | R1/4"    | R1/8"                    |                  |                  |                                     |                            |
| 65-400    | 65               | 80             | 125             | 470 | 250 | 355 | 239 | 255 | 80  | 25 | 250             | 28 | 160 | 120 | 50 | 420 | 335 | 340 | 100 | M16 | 32                | 80  | 35    | 10                          | R3/8" | R3/8" | R3/8" | R3/8" | R1/4"        | R1/4"    | R1/8"                    |                  |                  |                                     |                            |
| 80-160    | 80               | 100            | 125             | 360 | 180 | 225 | 136 | 170 | 65  | 15 | 180             | 28 | 125 | 95  | 50 | 320 | 250 | 265 | 100 | M12 | 24                | 50  | 27    | 8                           | R1/4" | R1/4" | R3/8" | R1/4" | R1/4"        | R1/4"    | R1/8                     |                  |                  |                                     |                            |
| 80-200    | 80               | 100            | 125             | 470 | 180 | 250 | 163 | 188 | 65  | 18 | 180             | 28 | 125 | 95  | 50 | 345 | 280 | 340 | 100 | M12 | 32                | 80  | 35    | 10                          | R3/8" | R3/8" | R3/8" | R3/8" | R1/4"        | R1/4"    | R1/8"                    |                  |                  |                                     |                            |
| 80-250    | 80               | 100            | 125             | 470 | 200 | 280 | 182 | 208 | 80  | 18 | 200             | 28 | 160 | 120 | 50 | 400 | 315 | 340 | 100 | M16 | 32                | 80  | 35    | 10                          | R3/8" | R3/8" | R3/8" | R3/8" | R1/4"        | R1/4"    | R1/8"                    |                  |                  |                                     |                            |
| 80-315    | 80               | 100            | 125             | 470 | 250 | 315 | 210 | 231 | 80  | 25 | 250             | 28 | 160 | 120 | 50 | 400 | 315 | 340 | 100 | M16 | 32                | 80  | 35    | 10                          | R3/8" | R3/8" | R3/8" | R3/8" | R1/4"        | R1/4"    | R1/8"                    |                  |                  |                                     |                            |
| 80-400*   | 80               | 100            | 125             | 530 | 280 | 355 | 246 | 265 | 80  | 25 | 280             | 28 | 160 | 120 | 50 | 435 | 355 | 370 | 140 | M16 | 42                | 110 | 45    | 12                          | R3/8" | R3/8" | R3/8" | R3/8" | R1/4"        | R1/4"    | R1/4"                    |                  |                  |                                     |                            |
| 100-200   | 100              | 125            | 125             | 470 | 200 | 280 | 165 | 203 | 80  | 18 | 200             | 28 | 160 | 120 | 50 | 360 | 280 | 340 | 120 | M16 | 32                | 80  | 35    | 10                          | R3/8" | R3/8" | R3/8" | R3/8" | R1/4"        | R1/4"    | R1/8"                    |                  |                  |                                     |                            |
| 100-250   | 100              | 125            | 140             | 470 | 225 | 280 | 189 | 224 | 80  | 18 | 225             | 28 | 160 | 120 | 50 | 400 | 315 | 340 | 120 | M16 | 32                | 80  | 35    | 10                          | R3/8" | R3/8" | R3/8" | R3/8" | R1/4"        | R1/4"    | R1/8"                    |                  |                  |                                     |                            |
| 100-315   | 100              | 125            | 140             | 470 | 250 | 315 | 220 | 250 | 80  | 25 | 250             | 28 | 160 | 120 | 50 | 400 | 315 | 340 | 120 | M16 | 32                | 80  | 35    | 10                          | R3/8" | R3/8" | R3/8" | R3/8" | R1/4"        | R1/4"    | R1/8"                    |                  |                  |                                     |                            |
| 100-400   | 100              | 125            | 140             | 530 | 280 | 355 | 256 | 272 | 100 | 27 | 280             | 28 | 200 | 150 | 50 | 500 | 400 | 370 | 140 | M20 | 42                | 110 | 45    | 12                          | R3/8" | R3/8" | R3/8" | R3/8" | R1/4"        | R1/4"    | R1/4"                    |                  |                  |                                     |                            |
| 125-250   | 125              | 150            | 140             | 470 | 250 | 355 | 212 | 255 | 80  | 18 | 250             | 28 | 160 | 120 | 50 | 400 | 315 | 340 | 120 | M16 | 32                | 80  | 35    | 10                          | R3/8" | R3/8" | R3/8" | R3/8" | R1/4"        | R1/4"    | R1/8"                    |                  |                  |                                     |                            |
| 125-315   | 125              | 150            | 140             | 530 | 280 | 355 | 226 | 252 | 100 | 27 | 280             | 28 | 200 | 150 | 50 | 500 | 400 | 370 | 140 | M20 | 42                | 110 | 45    | 12                          | R3/8" | R3/8" | R3/8" | R3/8" | R1/4"        | R1/4"    | R1/4"                    |                  |                  |                                     |                            |
| 125-400   | 125              | 150            | 140             | 530 | 315 | 400 | 264 | 283 | 100 | 27 | 315             | 28 | 200 | 150 | 50 | 500 | 400 | 370 | 140 | M20 | 42                | 110 | 45    | 12                          | R3/8" | R3/8" | R3/8" | R3/8" | R1/4"        | R1/4"    | R1/4"                    |                  |                  |                                     |                            |
| 150-250   | 150              | 200            | 160             | 530 | 280 | 375 | 231 | 283 | 100 | 27 | 280             | 28 | 200 | 150 | 50 | 500 | 400 | 370 | 140 | M20 | 42                | 110 | 45    | 12                          | R3/8" | R3/8" | R3/8" | R3/8" | R1/4"        | R1/4"    | R1/4"                    |                  |                  |                                     |                            |
| 150-315   | 150              | 200            | 160             | 530 | 280 | 400 | 239 | 271 | 100 | 27 | 280             | 28 | 200 | 150 | 50 | 550 | 450 | 370 | 140 | M20 | 42                | 110 | 45    | 12                          | R3/8" | R3/8" | R3/8" | R3/8" | R1/4"        | R1/4"    | R1/4"                    |                  |                  |                                     |                            |
| 150-400/1 | 150              | 200            | 160             | 530 | 315 | 450 | 277 | 305 | 100 | 27 | 315             | 28 | 200 | 150 | 50 | 550 | 450 | 370 | 140 | M20 | 42                | 110 | 45    | 12                          | R3/8" | R3/8" | R3/8" | R3/8" | R1/4"        | R1/4"    | R1/4"                    |                  |                  |                                     |                            |
| 200-250   | 200              | 200            | 180             | 530 | 355 | 425 | 262 | 330 | 100 | 27 | 355             | 28 | 200 | 150 | 50 | 550 | 450 | 370 | 140 | M20 | 42                | 110 | 45    | 12                          | R3/8" | R3/8" | R3/8" | R3/8" | R1/4"        | R1/4"    | R1/4"                    |                  |                  |                                     |                            |
| 200-315   | 200              | 250            | 200             | 585 | 355 | 450 | 270 | 335 | 110 | 27 | 355             | 37 | 200 | 150 | 65 | 550 | 450 | 420 | 180 | M20 | 60                | 105 | 64    | 18                          | R3/8" | R3/8" | R3/8" | R3/8" | R1/4"        | R1/4"    | R1/4"                    |                  |                  |                                     |                            |
| 200-400   | 200              | 250            | 180             | 585 | 355 | 500 | 315 | 374 | 100 | 30 | 355             | 37 | 200 | 150 | 65 | 550 | 450 | 420 | 180 | M20 | 60                | 105 | 64    | 18                          | R3/8" | R3/8" | R3/8" | R3/8" | R1/4"        | R1/4"    | R1/4"                    |                  |                  |                                     |                            |
| 250-315   | 250              | 300            | 250             | 585 | 400 | 560 | 325 | 408 | 130 | 30 | 400             | 37 | 260 | 190 | 65 | 690 | 560 | 420 | 180 | M24 | 60                | 105 | 64    | 18                          | R3/8" | R3/8" | R3/8" | R3/8" | R1/4"        | R1/4"    | R1/4"                    |                  |                  |                                     |                            |
| 250-400   | 250              | 300            | 225             | 585 | 375 | 625 | 350 | 440 | 120 | 30 | 400             | 37 | 280 | 200 | 65 | 630 | 500 | 420 | 180 | M27 | 60                | 105 | 64    | 18                          | R3/8" | R3/8" | R3/8" | R3/8" | R1/4"        | R1/4"    | R1/4"                    |                  |                  |                                     |                            |

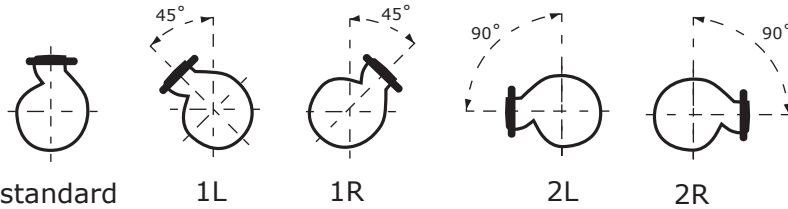
NB. The " \* " refers to additional pumps which sizes are not included in DIN 24255

| Flange up to ID 150 acc. to DIN 2533 from ID 200 onwards acc. to DIN 2532 |     |    |     |    |              |
|---------------------------------------------------------------------------|-----|----|-----|----|--------------|
| IDs                                                                       | Df  | bf | kf  | g  | No. of Holes |
| 25                                                                        | 115 | 16 | 85  | 14 | 4            |
| 32                                                                        | 140 | 18 | 100 | 18 | 4            |
| 40                                                                        | 150 | 18 | 110 | 18 | 4            |
| 50                                                                        | 165 | 20 | 125 | 18 | 4            |
| 65                                                                        | 185 | 20 | 145 | 18 | 4            |
| 80                                                                        | 200 | 22 | 160 | 18 | 8            |
| 100                                                                       | 220 | 24 | 180 | 18 | 8            |
| 125                                                                       | 250 | 26 | 210 | 18 | 8            |
| 150                                                                       | 285 | 26 | 240 | 22 | 8            |
| 200                                                                       | 340 | 26 | 295 | 22 | 12           |
| 250                                                                       | 395 | 28 | 350 | 22 | 12           |
| 300                                                                       | 445 | 28 | 400 | 22 | 12           |

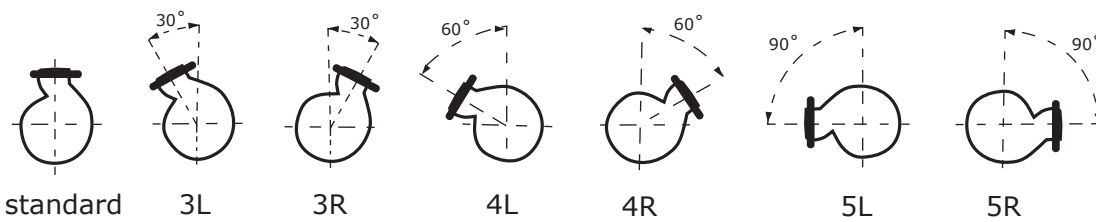
### BRANCH POSITION (Seen on suction branch)

#### NSHD SERIES

Bearing pedestal size 360



Bearing pedestal size 470

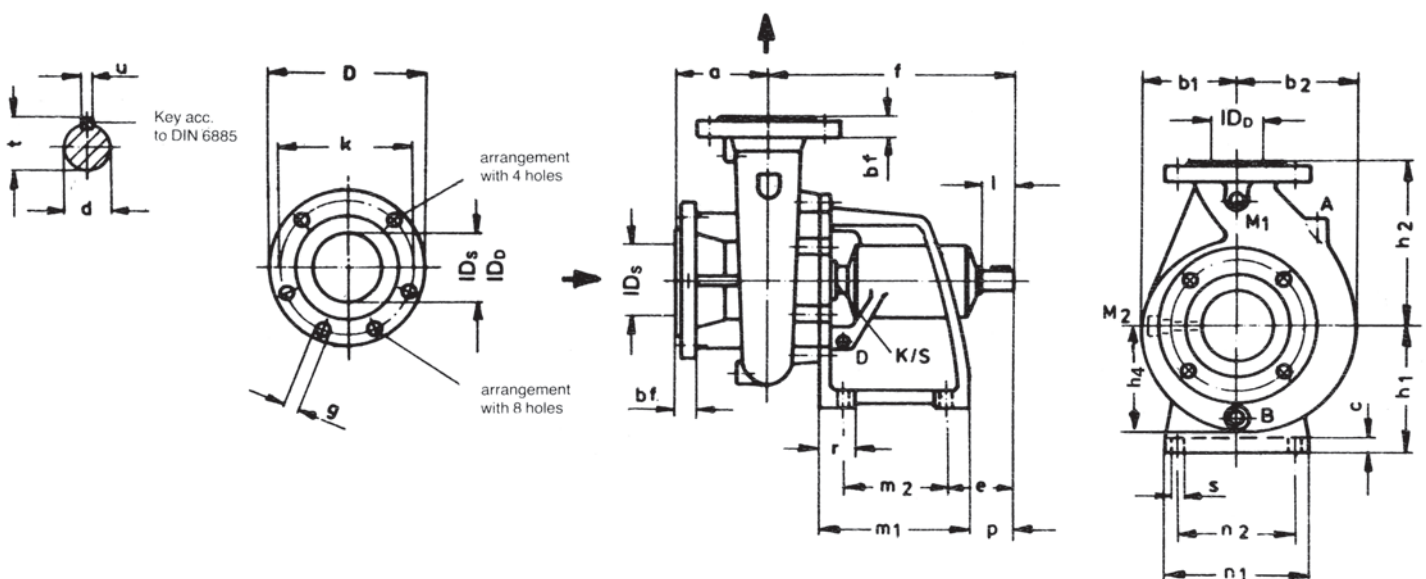


#### Note:

3L, 3R, 4L and 4R imply an alteration of the bolt hole positions on the suction flange and requires flange on pipe work to be adjusted accordingly.

### PUMP DIMENSIONS

#### NSHD SERIES - WITH BEARING PEDESTAL SIZES 360 & 470



# NT & NSHD

## END-SUCTION CENTRIFUGAL PUMPS TO EN733 (DIN 24255)

### PUMP DIMENSIONS

#### NSHD SERIES

| Size    | Discharge Flange | Suction Flange | Pump Dimensions |     |     |     |     |     | Foot Dimensions |     |     |     |     |     |     |    | Bolts | Shaft end acc. to DIN 42946 |    |    |    | Filling Hole | Drainage | Leakage Water Connection | Gauge Connection | Gauge Connection | Connection for Stuffing Box Cooling | Foreign Sealing Connection | *   |
|---------|------------------|----------------|-----------------|-----|-----|-----|-----|-----|-----------------|-----|-----|-----|-----|-----|-----|----|-------|-----------------------------|----|----|----|--------------|----------|--------------------------|------------------|------------------|-------------------------------------|----------------------------|-----|
|         |                  |                |                 |     |     |     |     |     |                 |     |     |     |     |     |     |    |       |                             |    |    |    |              |          |                          |                  |                  |                                     |                            |     |
|         | IDd              | IDs            | a               | f   | h1  | h2  | b1  | b2  | c               | m1  | m2  | n1  | n2  | e   | p   | r  | s     | d                           | l  | t  | u  | A            | B        | D                        | M1               | M2               | K                                   | s                          | h4  |
| 32-160  | 32               | 50             | 80              | 360 | 180 | 160 | 123 | 123 | 18              | 210 | 135 | 200 | 170 | 113 | 78  | 60 | M12   | 24                          | 50 | 27 | 8  | R1/4"        | R1/4"    | R3/8"                    | R1/4"            | R1/4"            | R1/4"                               | R1/8"                      |     |
| 32-200  | 32               | 50             | 80              | 360 | 180 | 180 | 124 | 130 | 18              | 210 | 135 | 200 | 170 | 113 | 78  | 60 | M12   | 24                          | 50 | 27 | 8  | R1/4"        | R1/4"    | R3/8"                    | R1/4"            | R1/4"            | R1/4"                               | R1/8"                      |     |
| 40-160  | 40               | 65             | 80              | 360 | 180 | 160 | 123 | 123 | 18              | 210 | 135 | 200 | 170 | 113 | 78  | 60 | M12   | 24                          | 50 | 27 | 8  | R1/4"        | R1/4"    | R3/8"                    | R1/4"            | R1/4"            | R1/4"                               | R1/8"                      |     |
| 40-200  | 40               | 65             | 100             | 360 | 180 | 180 | 125 | 135 | 18              | 210 | 135 | 200 | 170 | 113 | 78  | 60 | M12   | 24                          | 50 | 27 | 8  | R1/4"        | R1/4"    | R3/8"                    | R1/4"            | R1/4"            | R1/4"                               | R1/8"                      |     |
| 40-250  | 40               | 65             | 100             | 360 | 180 | 225 | 150 | 156 | 18              | 210 | 135 | 200 | 170 | 113 | 78  | 60 | M12   | 24                          | 50 | 27 | 8  | R1/4"        | R1/4"    | R3/8"                    | R1/4"            | R1/4"            | R1/4"                               | R1/8"                      |     |
| 50-160  | 50               | 65             | 100             | 360 | 180 | 180 | 125 | 130 | 18              | 210 | 135 | 200 | 170 | 113 | 78  | 60 | M12   | 24                          | 50 | 27 | 8  | R1/4"        | R1/4"    | R3/8"                    | R1/4"            | R1/4"            | R1/4"                               | R1/8"                      |     |
| 50-200  | 50               | 65             | 100             | 360 | 180 | 200 | 133 | 145 | 18              | 210 | 135 | 200 | 170 | 113 | 78  | 60 | M12   | 24                          | 50 | 27 | 8  | R1/4"        | R1/4"    | R3/8"                    | R1/4"            | R1/4"            | R1/4"                               | R1/8"                      |     |
| 50-250  | 50               | 65             | 100             | 360 | 180 | 225 | 156 | 169 | 18              | 210 | 135 | 200 | 170 | 113 | 78  | 60 | M12   | 24                          | 50 | 27 | 8  | R1/4"        | R1/4"    | R3/8"                    | R1/4"            | R1/4"            | R1/4"                               | R1/8"                      |     |
| 65-160  | 65               | 80             | 100             | 360 | 180 | 200 | 133 | 162 | 18              | 210 | 135 | 200 | 170 | 113 | 78  | 60 | M12   | 24                          | 50 | 27 | 8  | R1/4"        | R1/4"    | R3/8"                    | R1/4"            | R1/4"            | R1/4"                               | R1/8"                      |     |
| 65-200  | 65               | 80             | 100             | 360 | 180 | 225 | 148 | 170 | 18              | 210 | 135 | 200 | 170 | 113 | 78  | 60 | M12   | 24                          | 50 | 27 | 8  | R1/4"        | R1/4"    | R3/8"                    | R1/4"            | R1/4"            | R1/4"                               | R1/8"                      |     |
| 65-250  | 65               | 80             | 100             | 470 | 200 | 250 | 164 | 184 | 20              | 280 | 190 | 280 | 212 | 150 | 105 | 90 | M16   | 32                          | 80 | 35 | 10 | R3/8"        | R3/8"    | R3/8"                    | R3/8"            | R1/4"            | R1/4"                               | R1/8"                      |     |
| 65-315  | 65               | 80             | 125             | 470 | 200 | 280 | 202 | 219 | 20              | 280 | 190 | 280 | 212 | 150 | 105 | 90 | M16   | 32                          | 80 | 35 | 10 | R3/8"        | R3/8"    | R3/8"                    | R3/8"            | R1/4"            | R1/4"                               | R1/8"                      |     |
| 65-400  | 65               | 80             | 125             | 470 | 200 | 355 | 239 | 255 | 20              | 280 | 190 | 280 | 212 | 150 | 105 | 90 | M16   | 32                          | 80 | 35 | 10 | R3/8"        | R3/8"    | R3/8"                    | R3/8"            | R1/4"            | R1/4"                               | R1/8"                      | 250 |
| 80-160  | 80               | 100            | 125             | 360 | 180 | 225 | 136 | 170 | 18              | 210 | 135 | 200 | 170 | 113 | 78  | 60 | M12   | 24                          | 50 | 27 | 8  | R1/4"        | R1/4"    | R3/8"                    | R1/4"            | R1/4"            | R1/4"                               | R1/8"                      |     |
| 80-200  | 80               | 100            | 125             | 470 | 200 | 250 | 163 | 188 | 20              | 280 | 190 | 280 | 212 | 150 | 105 | 90 | M16   | 32                          | 80 | 35 | 10 | R3/8"        | R3/8"    | R3/8"                    | R3/8"            | R1/4"            | R1/4"                               | R1/8"                      |     |
| 80-250  | 80               | 100            | 125             | 470 | 200 | 280 | 182 | 208 | 20              | 280 | 190 | 280 | 212 | 150 | 105 | 90 | M16   | 32                          | 80 | 35 | 10 | R3/8"        | R3/8"    | R3/8"                    | R3/8"            | R1/4"            | R1/4"                               | R1/8"                      |     |
| 80-315  | 80               | 100            | 125             | 470 | 200 | 315 | 210 | 231 | 20              | 280 | 190 | 280 | 212 | 150 | 105 | 90 | M16   | 32                          | 80 | 35 | 10 | R3/8"        | R3/8"    | R3/8"                    | R3/8"            | R1/4"            | R1/4"                               | R1/8"                      | 225 |
| 100-200 | 100              | 125            | 125             | 470 | 200 | 280 | 165 | 203 | 20              | 280 | 190 | 280 | 212 | 150 | 105 | 90 | M16   | 32                          | 80 | 35 | 10 | R3/8"        | R3/8"    | R3/8"                    | R3/8"            | R1/4"            | R1/4"                               | R1/8"                      |     |
| 100-250 | 100              | 125            | 140             | 470 | 200 | 280 | 189 | 224 | 20              | 280 | 190 | 280 | 212 | 150 | 105 | 90 | M16   | 32                          | 80 | 35 | 10 | R3/8"        | R3/8"    | R3/8"                    | R3/8"            | R1/4"            | R1/4"                               | R1/8"                      | 210 |
| 100-315 | 100              | 125            | 140             | 470 | 200 | 315 | 220 | 250 | 20              | 280 | 190 | 280 | 212 | 150 | 105 | 90 | M16   | 32                          | 80 | 35 | 10 | R3/8"        | R3/8"    | R3/8"                    | R3/8"            | R1/4"            | R1/4"                               | R1/8"                      | 235 |
| 125-250 | 125              | 150            | 140             | 470 | 200 | 355 | 212 | 255 | 20              | 280 | 190 | 280 | 212 | 150 | 105 | 90 | M16   | 32                          | 80 | 35 | 10 | R3/8"        | R3/8"    | R3/8"                    | R3/8"            | R1/4"            | R1/4"                               | R1/8"                      | 235 |

\* Specific sizes where the lowest point of the volute casing is lower than the base of the bearing pedestal.

| Size      | Shaft end acc. to DIN 42946 |     |    |    | Filling Hole | Drainage | Leakage Water Connection | Gauge Connection | Gauge Connection | Connection for Stuffing Box Cooling | Foreign Sealing Connection |
|-----------|-----------------------------|-----|----|----|--------------|----------|--------------------------|------------------|------------------|-------------------------------------|----------------------------|
|           | d                           | l   | t  | u  | A            | B        | D                        | M1               | M2               | K                                   | S                          |
| 80 400    | 42                          | 110 | 45 | 12 | R3/8"        | R3/8"    | R3/8"                    | R3/8"            | R1/4"            | R1/4"                               | R1/4"                      |
| 100 400   | 42                          | 110 | 45 | 12 | R3/8"        | R3/8"    | R3/8"                    | R3/8"            | R1/4"            | R1/4"                               | R1/4"                      |
| 125 315   | 42                          | 110 | 45 | 12 | R3/8"        | R3/8"    | R3/8"                    | R3/8"            | R1/4"            | R1/4"                               | R1/4"                      |
| 125 400   | 42                          | 110 | 45 | 12 | R3/8"        | R3/8"    | R3/8"                    | R3/8"            | R1/4"            | R1/4"                               | R1/4"                      |
| 150 250   | 42                          | 110 | 45 | 12 | R3/8"        | R3/8"    | R3/8"                    | R3/8"            | R1/4"            | R1/4"                               | R1/4"                      |
| 150 315   | 42                          | 110 | 45 | 12 | R3/8"        | R3/8"    | R3/8"                    | R3/8"            | R1/4"            | R1/4"                               | R1/4"                      |
| 150 400/1 | 42                          | 110 | 45 | 12 | R3/8"        | R3/8"    | R3/8"                    | R3/8"            | R1/4"            | R1/4"                               | R1/4"                      |
| 200 250   | 42                          | 110 | 45 | 12 | R3/8"        | R3/8"    | R3/8"                    | R3/8"            | R1/4"            | R1/4"                               | R1/4"                      |

| Flange up to ID 150 acc. to DIN 2533 from ID 200 onwards acc. to DIN 2532 |     |    |     |    |              |
|---------------------------------------------------------------------------|-----|----|-----|----|--------------|
| IDd                                                                       | D   | bf | k   | g  | No. of Holes |
| 32                                                                        | 140 | 18 | 100 | 18 | 4            |
| 40                                                                        | 150 | 18 | 110 | 18 | 4            |
| 50                                                                        | 165 | 20 | 125 | 18 | 4            |
| 65                                                                        | 185 | 20 | 145 | 18 | 4            |
| 80                                                                        | 200 | 22 | 160 | 18 | 8            |
| 100                                                                       | 220 | 24 | 180 | 18 | 8            |
| 125                                                                       | 250 | 26 | 210 | 18 | 8            |
| 150                                                                       | 285 | 26 | 240 | 22 | 8            |

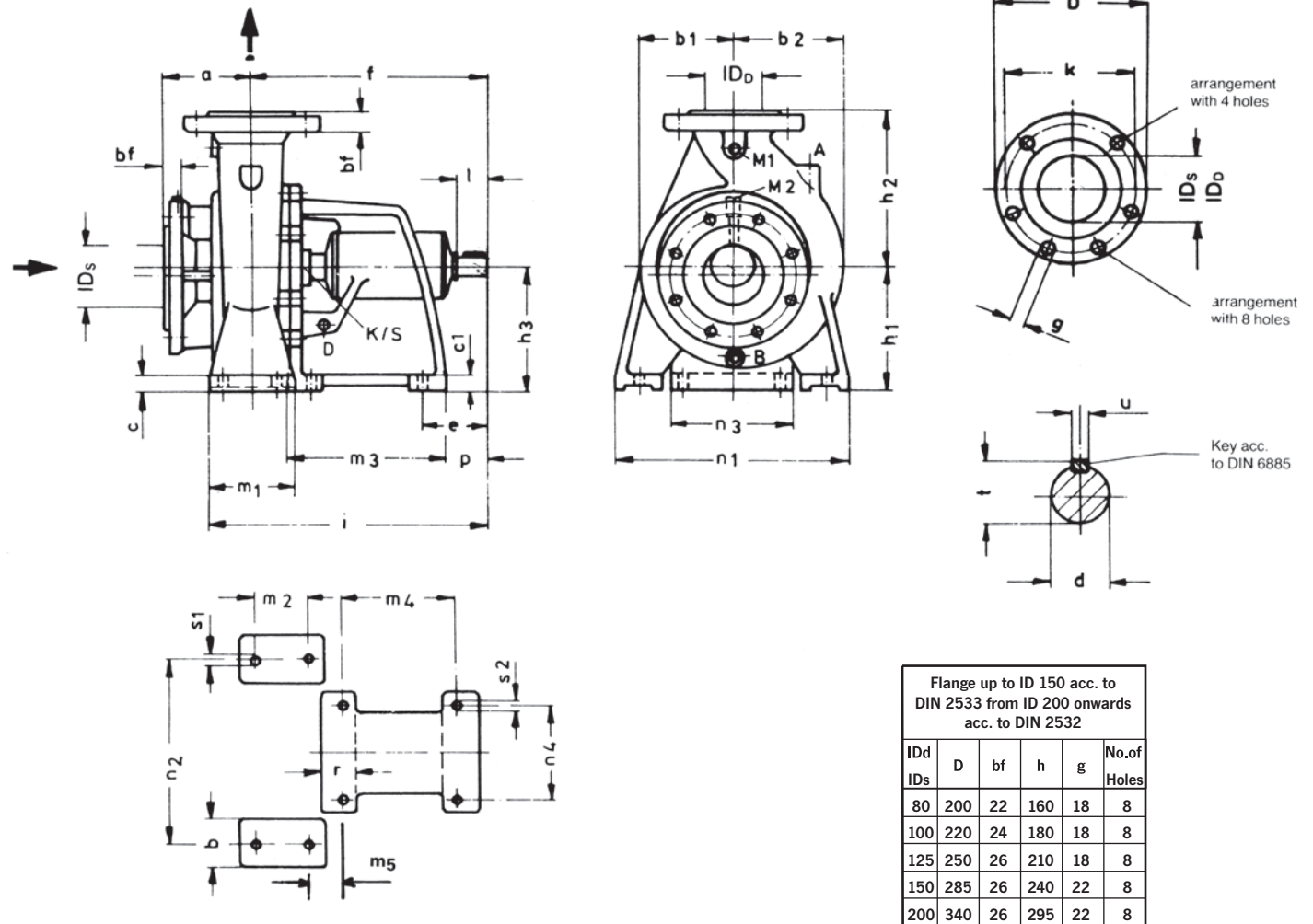
# NT & NSHD

END-SUCTION CENTRIFUGAL PUMPS TO EN733 (DIN 24255)

## PUMP DIMENSIONS

### NSHD WITH PEDESTAL SIZE 530

Please note difference in centre heights  $h_1$  and  $h_3$



| Size    | Discharge Flange |     | Suction Flange | Pump Dimensions |     |     |     |     |     | Foot Dimensions |    |     |     |     |     |     |     |     |     |     |     |     |     |    |    |     |     | Bolts |    |
|---------|------------------|-----|----------------|-----------------|-----|-----|-----|-----|-----|-----------------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|-----|-----|-------|----|
|         | IDd              | IDs |                | a               | f   | h1  | h2  | b1  | b2  | b               | c  | c1  | e   | h3  | i   | m1  | m2  | m3  | m4  | m5  | n1  | n2  | n3  | n4 | p  |     |     | r     | s1 |
| 80 400  | 80               | 100 | 125            | 530             | 280 | 355 | 246 | 265 | 80  | 25              | 22 | 110 | 250 | 610 | 160 | 120 | 325 | 250 | 110 | 435 | 355 | 250 | 200 | 85 | 90 | M16 | M16 |       |    |
| 100 400 | 100              | 125 | 140            | 530             | 280 | 355 | 256 | 272 | 100 | 27              | 22 | 110 | 250 | 630 | 200 | 150 | 325 | 250 | 95  | 500 | 400 | 250 | 200 | 85 | 90 | M20 | M16 |       |    |
| 125 315 | 125              | 150 | 140            | 530             | 280 | 355 | 226 | 252 | 100 | 27              | 22 | 110 | 250 | 630 | 200 | 150 | 325 | 250 | 95  | 500 | 400 | 250 | 200 | 85 | 90 | M20 | M16 |       |    |
| 125 400 | 125              | 150 | 140            | 530             | 315 | 400 | 264 | 283 | 100 | 27              | 22 | 110 | 250 | 630 | 200 | 150 | 325 | 250 | 95  | 500 | 400 | 250 | 200 | 85 | 90 | M20 | M16 |       |    |
| 150 250 | 150              | 200 | 160            | 530             | 280 | 375 | 230 | 280 | 100 | 27              | 22 | 110 | 250 | 630 | 200 | 150 | 325 | 250 | 95  | 500 | 400 | 250 | 200 | 85 | 90 | M20 | M16 |       |    |
| 150 315 | 150              | 200 | 160            | 530             | 280 | 400 | 329 | 271 | 100 | 27              | 22 | 110 | 250 | 630 | 200 | 150 | 325 | 250 | 95  | 550 | 450 | 250 | 200 | 85 | 90 | M20 | M16 |       |    |
| 150 400 | 150              | 200 | 160            | 530             | 315 | 450 | 277 | 305 | 100 | 27              | 22 | 110 | 250 | 630 | 200 | 150 | 325 | 250 | 95  | 550 | 450 | 250 | 200 | 85 | 90 | M20 | M16 |       |    |
| 200 250 | 200              | 200 | 180            | 530             | 355 | 425 | 288 | 330 | 100 | 27              | 22 | 110 | 250 | 630 | 200 | 150 | 325 | 250 | 95  | 550 | 450 | 250 | 200 | 85 | 90 | M20 | M16 |       |    |

### TWO-STAGE CENTRIFUGAL PUMPS

#### Benefits

The two stage pump design applications and dimensions remain the same as the single stage range. The benefits are that the pump is able to achieve much higher pressures and requires substantially lower NPSH. The two stage range is available with our 360 bearing bracket/pedestal size.

The versatility of this design allows for conversion from single stage to two, or vice versa with out the need for machining of the parts. The diagram below indicates the interchangeability of parts.

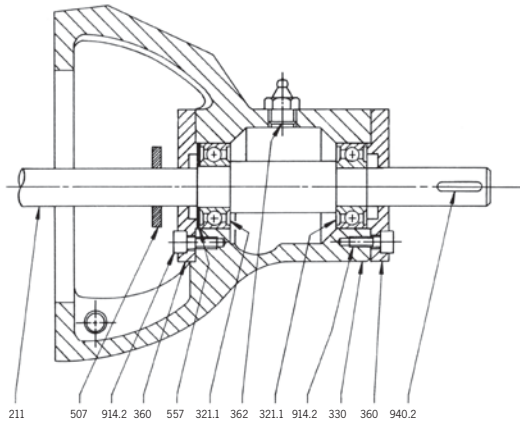
| Bearing<br>bracket                                                                        | Shaft                                                                                     | Casing<br>cover                                                                     | Stage<br>casing                                                                     | Diffuser                                                                            | Volute casing and impeller                                                          |                                                                                      |                                                                                       |                                                                                       | Delivery<br>branch<br>DN |
|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------|
|                                                                                           |                                                                                           | Mechanical<br>seal                                                                  |                                                                                     |                                                                                     | Impeller nominal diameter                                                           |                                                                                      |                                                                                       |                                                                                       |                          |
|                                                                                           |                                                                                           |                                                                                     |                                                                                     |                                                                                     | 250                                                                                 |                                                                                      | 200                                                                                   |                                                                                       |                          |
|                                                                                           |                                                                                           |                                                                                     |                                                                                     |                                                                                     | Impeller                                                                            |                                                                                      | Impeller                                                                              |                                                                                       |                          |
| Size 360                                                                                  | Size 360                                                                                  | Size<br>360-200                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                      |                                                                                       |                                                                                       |                          |
| <br>NT | <br>NS |  |  |  |                                                                                     |                                                                                      |  |  | 25                       |
|                                                                                           |                                                                                           |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                      |  |  | 32                       |
|                                                                                           |                                                                                           | Size<br>360-250                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                      |                                                                                       |                                                                                       |                          |
|                                                                                           |                                                                                           |  |  |  |  |  |                                                                                       |                                                                                       | 40                       |
|                                                                                           |                                                                                           |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |                                                                                       |                                                                                       | 50                       |



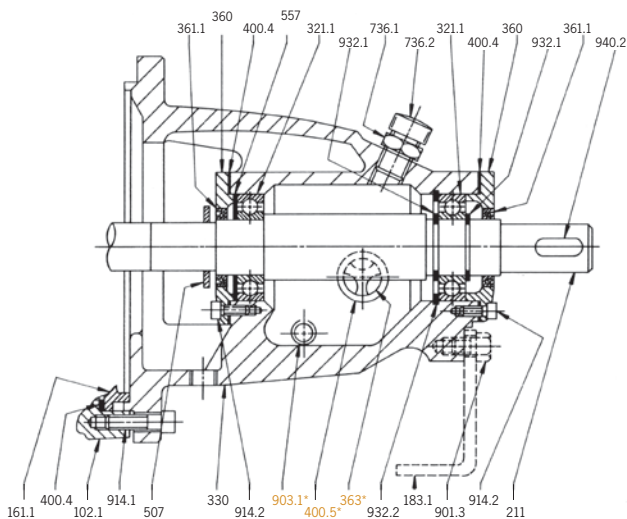
### SECTIONAL DRAWINGS & PARTS LIST

#### BEARING FRAME/POWER END

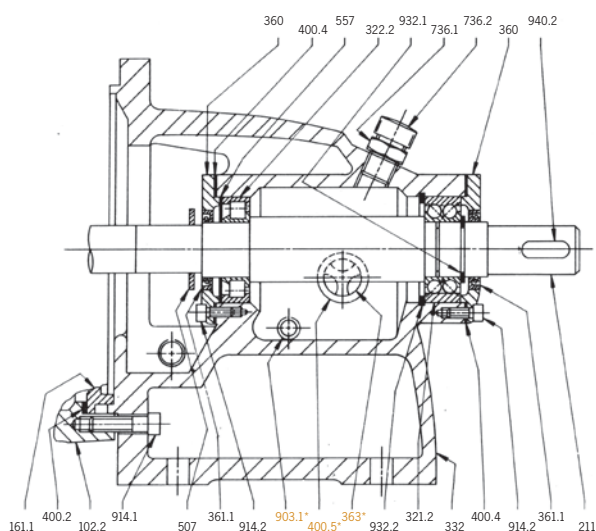
##### NT 228 BEARING BRACKET (GREASE LUBE)



##### NT 360 & 470 BEARING BRACKET (OIL LUBE/SEALED BEARINGS)



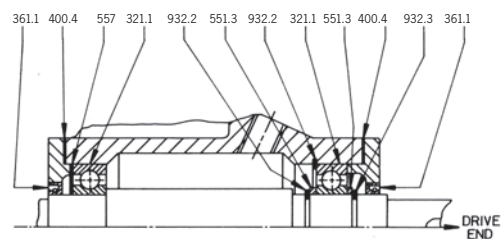
##### NSHD 360 & 470 BEARING PEDESTAL (OIL LUBE/SEALED BEARINGS)



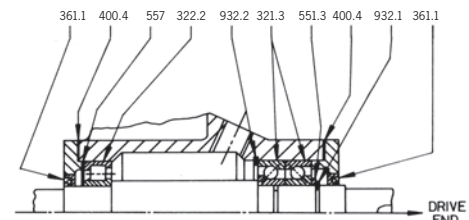
| PART NO. | DESCRIPTION        | PART NO. | DESCRIPTION      |
|----------|--------------------|----------|------------------|
| 102.1    | VOLUTE CASING      | 458      | LANTERN RING     |
| 102.2    | VOLUTE CASING      | 461      | GLAND PACKING    |
| 108      | INTERSTAGE CASING  | 470.1    | MECHANICAL SEAL  |
| 161.1    | GLAND PLATE        | 507      | FLINGER RING     |
| 161.2    | SEAL PLATE         | 509      | MATCHING RING    |
| 171      | DIFFUSER           | 514      | LOCKING RING     |
| 183.1    | SUPPORT FOOT       | 551.3    | SUPPORT DISC     |
| 211      | SHAFT              | 551.7    | SUPPORT DISC     |
| 230.1    | IMPELLER           | 557      | WAVE WASHER      |
| 230.2    | IMPELLER 1ST STAGE | 736.1    | BREATHING NIPPLE |
| 230.3    | IMPELLER 2ND STAGE | 736.2    | BREATHING CAP    |
| 321.1    | BALL BEARING       | 901.3    | SET SCREW        |
| 321.2    | A/C BALL BEARING   | 902.4    | STUD             |
| 321.3    | A/C BALL BEARING   | 903      | PLUG             |
| 322.2    | ROLLER BEARING     | 903.1    | OIL DRAIN PLUG*  |
| 330      | BEARING BRACKET    | 904      | GRUB SCREW       |
| 332      | BEARING PEDESTAL   | 914.1    | SET SCREW        |
| 360      | BEARING COVER      | 914.2    | SET SCREW        |
| 361.1    | LIP SEAL           | 914.4    | SET SCREW        |
| 362      | GREASE NIPPLE      | 920.1    | IMPELLER NUT     |
| 363      | OIL SIGHT GLASS*   | 920.2    | HEX NUT          |
| 400.2    | GASKET             | 932.1    | CIRCLIP          |
| 400.3    | GASKET             | 932.2    | CIRCLIP          |
| 400.4    | GASKET             | 933      | SPRING WASHER    |
| 400.5    | GASKET*            | 940.1    | IMPELLER KEY     |
| 452      | GLAND              | 940.2    | DRIVE KEY        |

\* OPTIONAL OIL LUBE

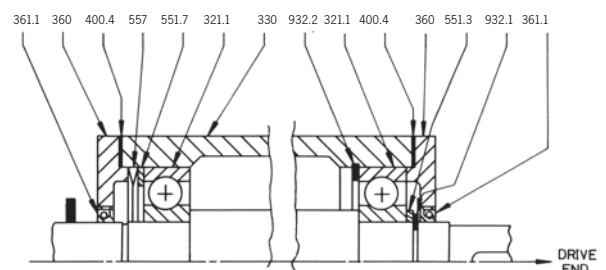
##### NT 530 BEARING ARRANGEMENT (OIL LUBE)



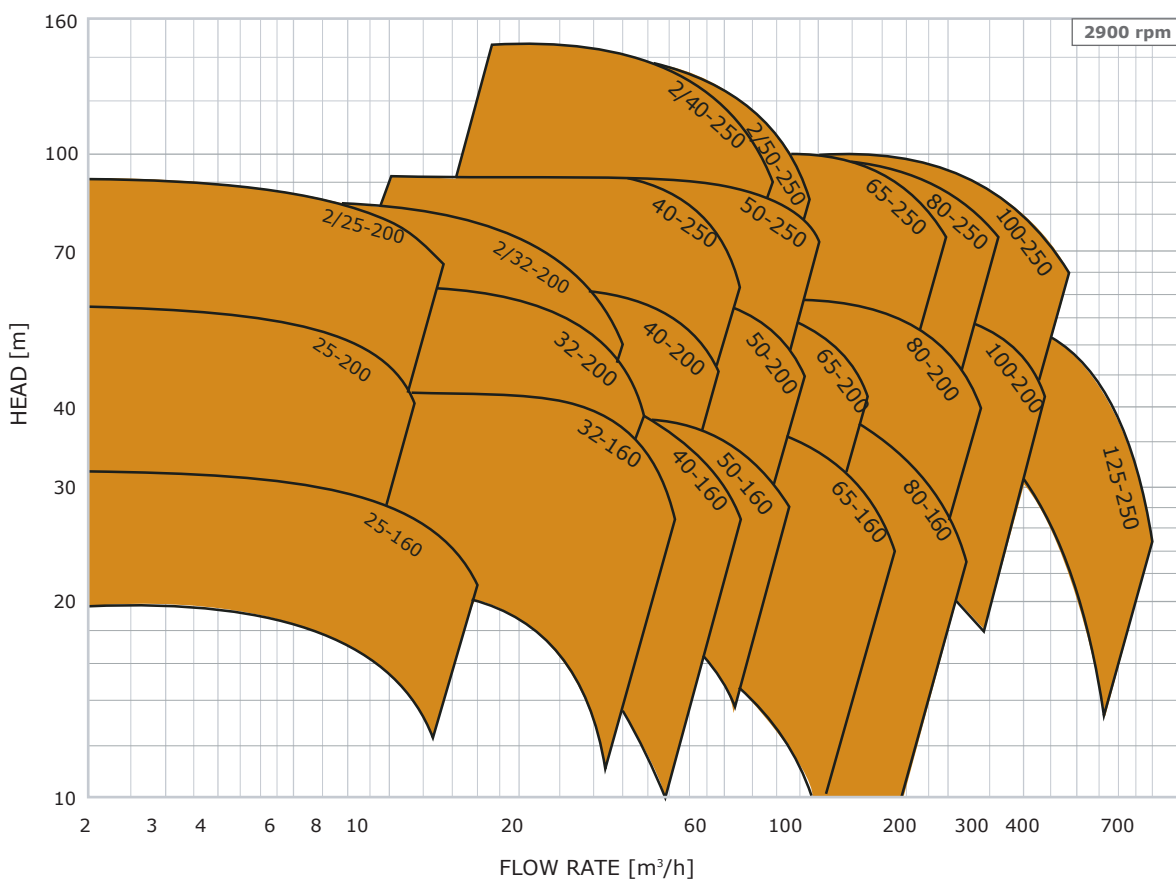
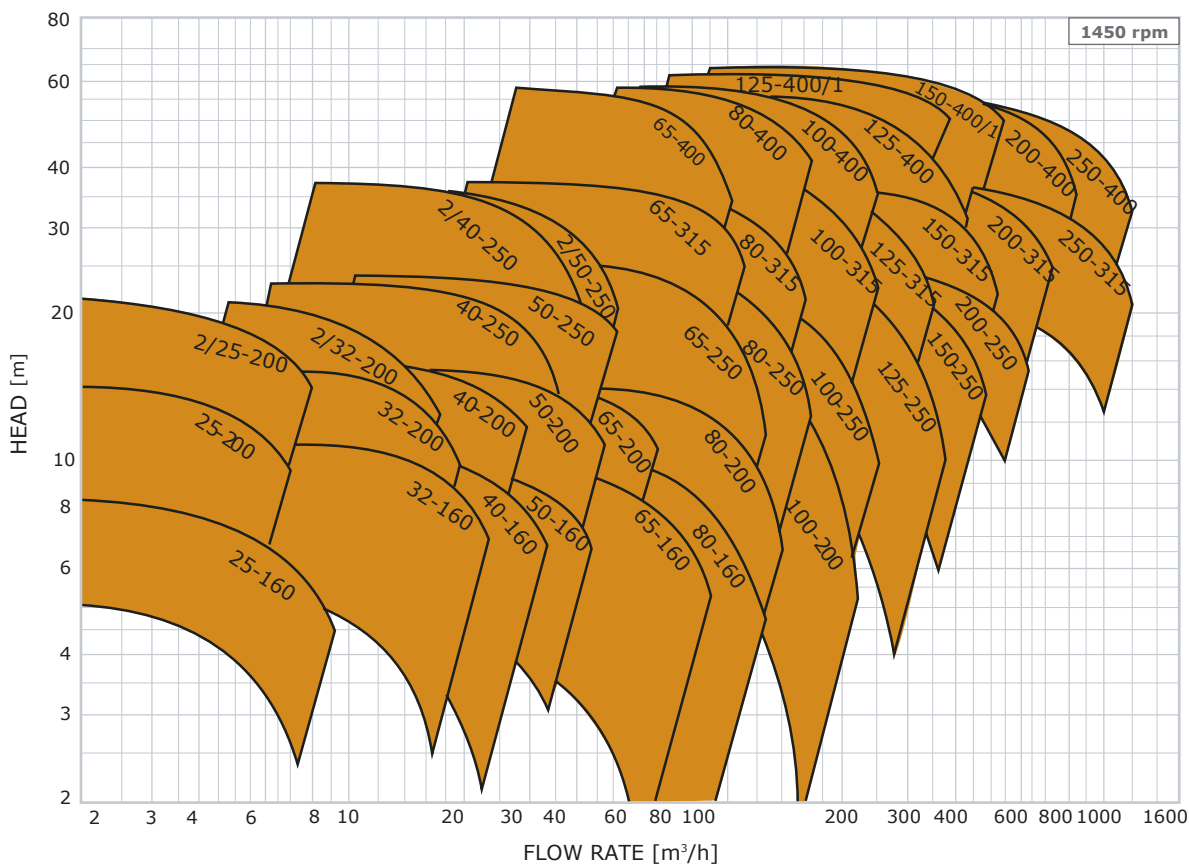
##### NSHD 530 BEARING ARRANGEMENT (OIL LUBE)



##### NT 585 BEARING ARRANGEMENT (OIL LUBE)



### TOMBSTONE CURVES



| Size*     | Pg. no. |      |
|-----------|---------|------|
|           | 1450    | 2900 |
| 25-160    | 2       | 42   |
| 25-200    | 3       | 43   |
| 2/25-200  | 4       | 44   |
| 32-160    | 5       | 45   |
| 32-200    | 6       | 46   |
| 2/32-200  | 7       | 47   |
| 40-160    | 8       | 48   |
| 40-200    | 9       | 49   |
| 40-250    | 10      | 50   |
| 2/40-250  | 11      | 51   |
| 50-160    | 12      | 52   |
| 50-200    | 13      | 53   |
| 50-250    | 14      | 54   |
| 2/50-250  | 15      | 55   |
| 65-160    | 16      | 56   |
| 65-200    | 17      | 57   |
| 65-250    | 18      | 58   |
| 65-315    | 19      |      |
| 65-400    | 20      |      |
| 80-160    | 21      | 59   |
| 80-200    | 22      | 60   |
| 80-250    | 23      | 61   |
| 80-315    | 24      |      |
| 80-400    | 25      |      |
| 100-200   | 26      | 62   |
| 100-250   | 27      | 63   |
| 100-315   | 28      |      |
| 100-400   | 29      |      |
| 125-250   | 30      | 64   |
| 125-315   | 31      |      |
| 125-400   | 32      |      |
| 125-400/1 | 33      |      |
| 150-250   | 34      |      |
| 150-315   | 35      |      |
| 150-400/1 | 36      |      |
| 200-250   | 37      |      |
| 200-315   | 38      |      |
| 200-400   | 39      |      |
| 250-315   | 40      |      |
| 250-400   | 41      |      |

\* FOR INDIVIDUAL PUMP PERFORMANCE CURVES, REFER TO OUR EN733 (DIN 24255) CURVES BOOK.



## APPLICATION

- Air-Conditioning
- Water Supply
- Irrigation
- Water Treatment
- Circulating and Heating Systems
- Swimming Pools
- Chemical and Petro-Chemical Industries

| RA Pump Range | Minimum Flow (m³/h) | Maximum Flow (m³/h) | Minimum Head (m) | Maximum Head (m) | Maximum Temperature |
|---------------|---------------------|---------------------|------------------|------------------|---------------------|
| NB            | 2                   | 530                 | 3                | 140              | 160°C               |

## DESIGN & CONSTRUCTION

- Suitable for clean liquids which are not chemically aggressive.
- Single and two stage options available.
- Balance holes are drilled in the impeller to effect hydraulic balance eliminating undue forces within the pump.
- Gland Packing or Mechanical Seal options available.
- High interchange ability of parts allowing for minimal spares holdings.
- Space saving design compared to long coupled pump sets.
- More cost economical option compared to long coupled pump sets.
- Designed for horizontal installation with vertical optional.
- Drive Coupling and Stub Shaft design which utilizes standard IEC flange mounted electric motors.
- The Stub Shaft is attached directly to the motor shaft and runs on the grease lubricated motor bearings.

## Flanges

- SANS 1123 PN10(BS 4504 PN10) or ANSI B16.5 (optional).
- Horizontal suction and the discharge may be used in various positions (per the Branch Position diagram see page no. 6)

## MATERIALS OF CONSTRUCTION

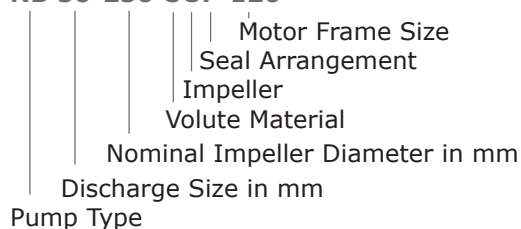
|                 |                                                                                |
|-----------------|--------------------------------------------------------------------------------|
| Pump Shaft:     | Grade 431 or 316 Stainless steel                                               |
| Volute Casing:  | High Grade Cast Iron, Bronze                                                   |
| Impeller:       | Cast Iron, Stainless Steel or Bronze                                           |
| Shaft Sealing:  | Stuffing box or Mechanical seal<br>(Cooled or Uncooled) to suit<br>application |
| Motor Bearings: | Grease lubricated ball bearings                                                |

## Motor

Standard I.E.C flange mounted or foot and flange mounted, three phase 380 or 525 volt, totally enclosed fan cooled motors are used with either cast iron or aluminum bodies. Non standard motors can be supplied upon request.

## MODEL DESCRIPTION

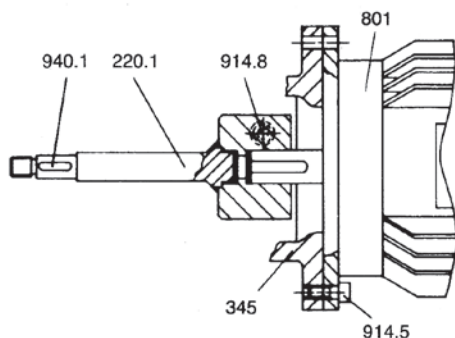
**NB 50-250 CCP 120**



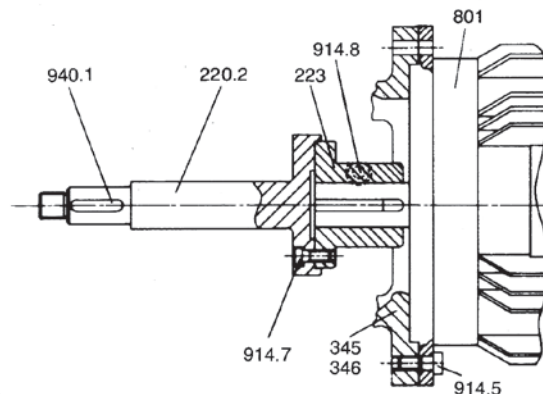
## SECTIONAL DRAWINGS &amp; PARTS LIST

## POWER/MOTOR END

SHAFT SIZE 25-160

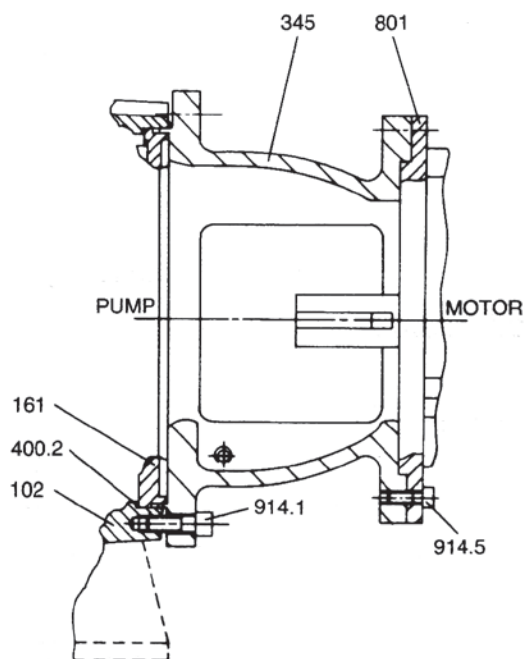


SHAFT SIZE 360 &amp; 470



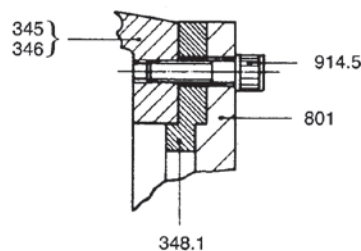
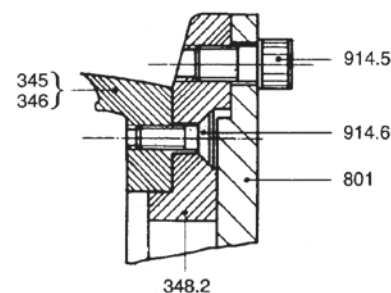
## PUMP/MOTOR BRACKET

SIZE 25-160, 360/4, 360/11 &amp; 470/22



## MOTOR ADAPTOR PLATES

FRAME 90S &amp; 90L MOTORS

FRAME 100L, 112M, 160M,  
160L, 180M - 180L MOTORS

## PARTS LIST

\*2 Stage Pumps Only

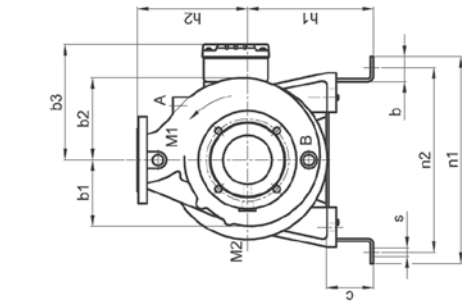
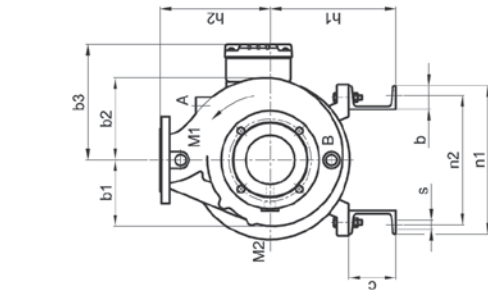
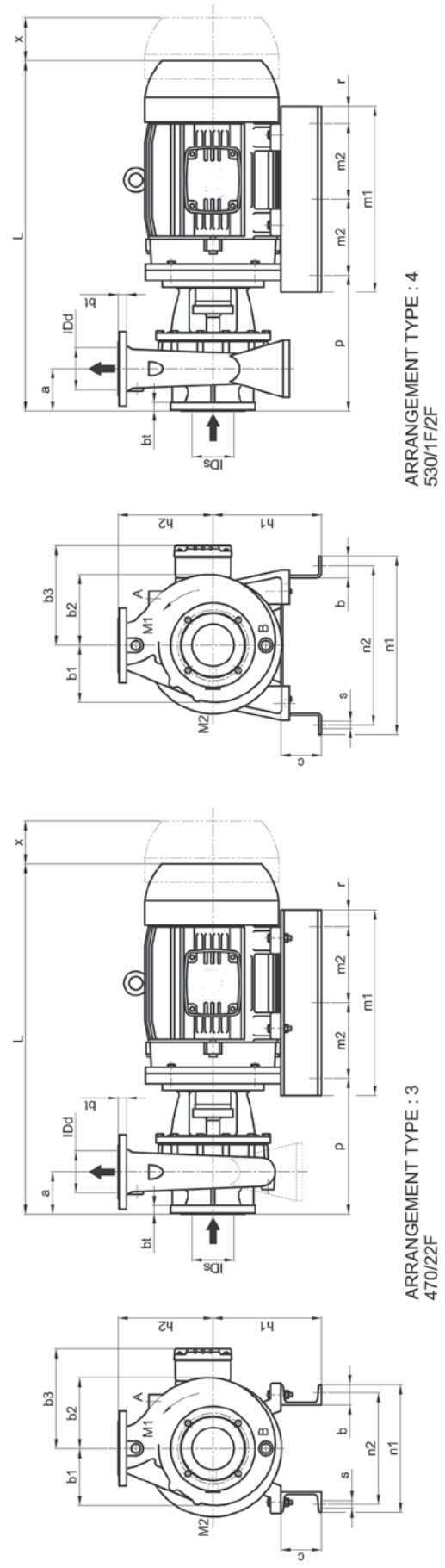
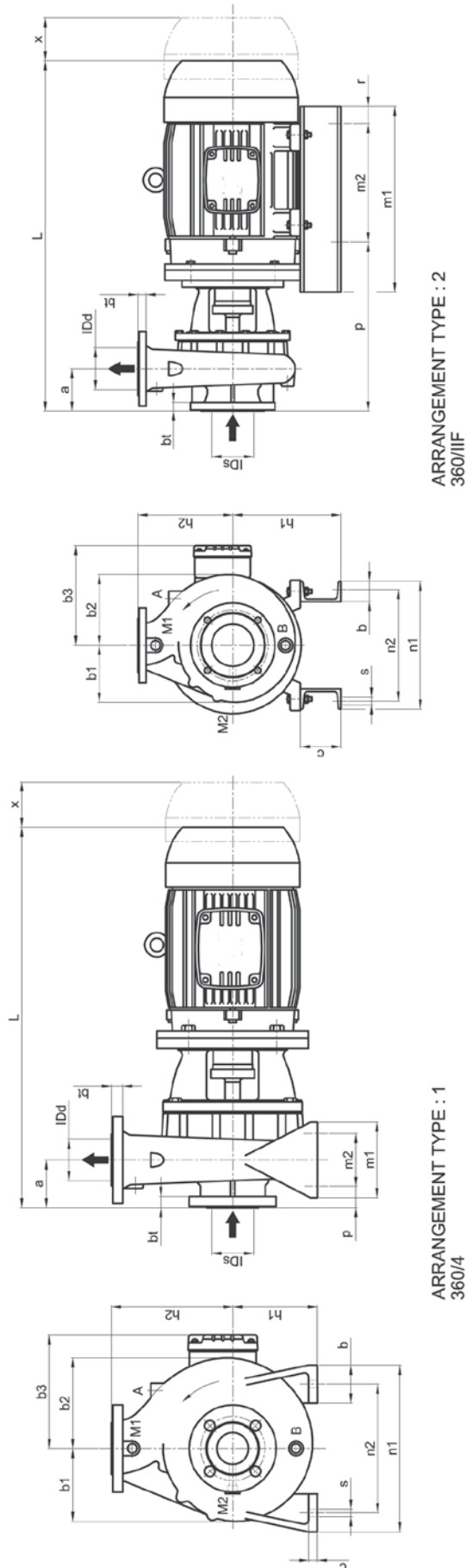
\*\*360 '250' series &amp; 470 '315' &amp; '400' series

| DESCRIPTION                         | PART NO. |
|-------------------------------------|----------|
| VOLUTE CASING NT (WITH FEET)        | 102.1    |
| VOLUTE CASING NS (WITHOUT FEET)     | 102.2    |
| INTERSTAGE CASING*                  | 108      |
| GLAND PLATE                         | 161.1    |
| SEAL PLATE                          | 161.2    |
| DIFFUSER                            | 171      |
| STUB SHAFT 25-160                   | 220.1    |
| STUB SHAFT 360 & 470                | 220.2    |
| DRIVE COUPLING                      | 223      |
| IMPELLER                            | 230.1    |
| IMPELLER - 1ST STAGE*               | 230.2    |
| IMPELLER - 2ND STAGE                | 230.3    |
| BRACKET - PUMP/MOTOR (WITHOUT FOOT) | 345      |

| DESCRIPTION                      | PART NO. |
|----------------------------------|----------|
| BRACKET - PUMP/MOTOR (WITH FOOT) | 346      |
| ADAPTOR PLATE                    | 348.1    |
| ADAPTOR PLATE                    | 348.2    |
| GASKET                           | 400.2    |
| GASKET**                         | 400.3    |
| WASHER                           | 411      |
| GLAND                            | 452      |
| LANTERN RING                     | 458      |
| GLAND PACKING RING               | 461      |
| MECHANICAL SEAL                  | 470.1    |
| MATCHING RING**                  | 509      |
| LOCKING RING <sup>1</sup>        | 514      |
| MOTOR                            | 801      |

| DESCRIPTION           | PART NO. |
|-----------------------|----------|
| STUD                  | 902      |
| PLUG                  | 903      |
| GRUB SCREW*           | 904      |
| SET SCREW             | 914.1    |
| SET SCREW             | 914.4    |
| SET SCREW             | 914.5    |
| COUNTERSUNK CAP SCREW | 914.6    |
| CAP SCREW             | 914.8    |
| CAP SCREW             | 917.7    |
| IMPELLER NUT - HEX    | 920.1    |
| NUT - HEX             | 920.2    |
| SPRING WASHER         | 933      |
| KEY - IMPELLER        | 940.1    |

### DIMENSIONS



## DIMENSIONS

| Pump     | Bracket | Arrangement | Motor                                     | Motor frame Size                             | Pole   | Suction Flange | Discharge Flange | Pump Dimensions |     |     |                                  |     |     |                                  |                |     |            | Foot Dimensions |          |            |            |                                 |          |    |   |       |                 | Bolts                                        |                            | Dismantling Space | Priming Hole | Drainage Hole | Gauge Connection | Mass kg Approx. |
|----------|---------|-------------|-------------------------------------------|----------------------------------------------|--------|----------------|------------------|-----------------|-----|-----|----------------------------------|-----|-----|----------------------------------|----------------|-----|------------|-----------------|----------|------------|------------|---------------------------------|----------|----|---|-------|-----------------|----------------------------------------------|----------------------------|-------------------|--------------|---------------|------------------|-----------------|
| NB       |         |             | kW                                        |                                              |        | IDs            | IDd              | a               | b1  | b2  | ±b3                              | h1  | h2  | ±L                               | b              | c   | m1         | m2              | r        | n1         | n2         | p                               | S        | X  | A | B     | M1/M2           | Kg                                           |                            |                   |              |               |                  |                 |
| 25-160   | 25-160  | 1           | 0.55<br>1.1<br>1.5<br>2.2                 | 80<br>90s<br>90L                             | 4<br>2 | 25             | 25               | 63              | 100 | 108 | 155                              | 112 | 160 | 437<br><br>487<br>502            | 50             | 12  | 100        | 70              | -        | 220        | 180        | 28                              | 10       | 60 |   | R1/4" | R1/4"           | R1/4"                                        | 29<br>31<br>35<br>37       |                   |              |               |                  |                 |
| 25-200   | 360/4   | 1           | 0.55<br>0.75<br>1.1<br>3<br>4             | 80<br>90S<br>100L<br>112M                    | 4<br>2 | 40             | 25               | 80              | 132 | 132 | 145<br><br>155<br>165<br>190     | 160 | 180 | 494<br><br>522<br>594<br>611     | 50             | 15  | 100        | 70              | -        | 240        | 190        | 45                              | 12       | 80 |   | R1/4" | R1/4"           | R1/4"                                        | 33<br>35<br>38<br>47<br>54 |                   |              |               |                  |                 |
| 2/25-200 | 360/4   | 1           | 0.75<br>1.1<br>1.4                        | 80<br>90S<br>112M                            | 4      | 40             | 25               | 80              | 132 | 132 | 145<br>155<br>190                | 160 | 180 | 494<br>522<br>611                | 50             | 15  | 100        | 70              | -        | 240        | 190        | 45                              | 12       | 80 |   | R1/4" | R1/4"           | R1/4"                                        | 36<br>42<br>58             |                   |              |               |                  |                 |
|          | 360/11F | 2           | 5.5<br>7.5<br>11                          | 132S<br>160M                                 | 2      |                |                  |                 |     |     | 218<br>232                       |     |     | 671                              | 50             | 100 | 330        | 145             | 40       | 248        | 220        | 404                             | 12       |    |   |       |                 | 70<br>80<br>100                              |                            |                   |              |               |                  |                 |
| 32-160   | 360/4   | 1           | 0.55<br>0.75<br>1.1<br>3<br>4             | 80<br>90S<br>100L<br>112M                    | 4<br>2 | 50             | 32               | 80              | 123 | 123 | 145<br><br>155<br>165<br>190     | 132 | 160 | 494<br><br>522<br>594<br>611     | 50             | 15  | 100        | 70              | -        | 240        | 190        | 45                              | 12       | 80 |   | R1/4" | R1/4"           | R1/4"                                        | 34<br>35<br>39<br>49<br>56 |                   |              |               |                  |                 |
|          | 360/11F | 2           | 5.5<br>7.5                                | 132S                                         | 2      |                |                  |                 |     |     | 218<br>232                       |     |     | 671                              | 50             | 100 | 330        | 145             | 40       | 248        | 220        | 404                             | 12       |    |   |       |                 | 65<br>75                                     |                            |                   |              |               |                  |                 |
| 32-200   | 360/4   | 1           | 0.75<br>1.1<br>1.5                        | 80<br>90S<br>90L                             | 4      | 50             | 32               | 80              | 124 | 130 | 145<br>155                       | 160 | 180 | 494<br>522<br>547                | 50             | 15  | 100        | 70              | -        | 240        | 190        | 45                              | 12       | 80 |   | R1/4" | R1/4"           | R1/4"                                        | 40<br>44<br>47             |                   |              |               |                  |                 |
|          | 360/11F | 2           | 5.5<br>7.5<br>11                          | 132S<br>160M                                 | 2      |                |                  |                 |     |     | 218<br>232                       |     |     | 671                              | 50             | 100 | 330        | 145             | 40       | 248        | 220        | 404                             | 12       |    |   |       |                 | 70<br>80<br>105                              |                            |                   |              |               |                  |                 |
| 2/32-200 | 360/4   | 1           | 0.75<br>1.1<br>1.5                        | 80<br>90S<br>90L                             | 4      | 50             | 32               | 80              | 124 | 130 | 145<br>155                       | 160 | 180 | 494<br>522<br>547                | 50             | 15  | 100        | 70              | -        | 240        | 190        | 45                              | 12       | 80 |   | R1/4" | R1/4"           | R1/4"                                        | 40<br>44<br>47             |                   |              |               |                  |                 |
|          | 360/11F | 2           | 5.5<br>7.5<br>11<br>15                    | 132S<br>160M                                 | 2      |                |                  |                 |     |     | 218<br>232                       |     |     | 671                              | 50             | 100 | 330        | 145             | 40       | 248        | 220        | 404                             | 12       |    |   |       |                 | 70<br>85<br>105<br>120                       |                            |                   |              |               |                  |                 |
| 40-160   | 360/4   | 1           | 0.75<br>1.1<br>1.5<br>3<br>4              | 80<br>90S<br>90L<br>100L<br>112M             | 4<br>2 | 65             | 40               | 80              | 123 | 123 | 145<br><br>155<br><br>165<br>190 | 132 | 160 | 494<br>522<br>547<br>594<br>611  | 50             | 15  | 100        | 70              | -        | 240        | 190        | 45                              | 12       | 80 |   | R1/4" | R1/4"           | R1/4"                                        | 40<br>42<br>46<br>52<br>59 |                   |              |               |                  |                 |
|          | 360/11F | 2           | 5.5<br>7.5<br>11                          | 132S<br>160M                                 | 2      |                |                  |                 |     |     | 218<br>232                       |     |     | 671                              | 50             | 100 | 330        | 145             | 248      | 220        | 404        | 12                              |          |    |   |       | 70<br>80<br>105 |                                              |                            |                   |              |               |                  |                 |
| 40-200   | 360/4   | 1           | 1.1<br>1.5<br>2.2                         | 90S<br>90L<br>100L                           | 4      | 65             | 40               | 100             | 125 | 135 | 155<br><br>165                   | 160 | 180 | 542<br>567<br>614                | 50             | 15  | 100        | 70              | -        | 265        | 212        | 65                              | 12       | 80 |   | R1/4" | R1/4"           | R1/4"                                        | 49<br>52<br>59             |                   |              |               |                  |                 |
|          | 360/11F | 2           | 5.5<br>7.5<br>11<br>15                    | 132S<br>160M                                 | 2      |                |                  |                 |     |     | 218<br>232                       |     |     | 691                              | 50             | 100 | 330        | 145             | 40       | 248        | 220        | 424                             | 12       |    |   |       |                 | 80<br>90<br>110<br>125                       |                            |                   |              |               |                  |                 |
| 40-250   | 360/4   | 1           | 1.5<br>2.2<br>3                           | 90L<br>100L                                  | 4      | 65             | 40               | 100             | 150 | 156 | 155<br>165                       | 180 | 225 | 569<br>616                       | 50             | 15  | 125        | 95              | -        | 320        | 250        | 53                              | 12       | 80 |   | R1/4" | R1/4"           | R1/4"                                        | 56<br>63<br>65             |                   |              |               |                  |                 |
|          | 360/11F | 2           | 11<br>15<br>18.5<br>22                    | 160M<br>160L<br>180M                         | 2      |                |                  |                 |     |     | 256<br>260                       |     |     | 839                              | 65             | 100 | 400        | 300             | 50       | 308        | 250        | 344                             | 16       |    |   |       |                 | 115<br>125<br>145<br>210                     |                            |                   |              |               |                  |                 |
| 2/40-250 | 360/4   | 1<br>3<br>4 | 2.2                                       | 100L<br>112M                                 | 4      | 65             | 40               | 100             | 150 | 156 | 165<br><br>190                   | 180 | 225 | 616<br><br>633                   | 65             | 15  | 125        | 95              | -        | 320        | 250        | 53                              | 12       | 80 |   | R1/4" | R1/4"           | R1/4"                                        | 67<br>69<br>74             |                   |              |               |                  |                 |
|          | 360/11F | 2           | 5.5<br>15<br>18.5<br>22<br>30<br>37<br>45 | 132S<br>160M<br>160L<br>180M<br>200L<br>225S | 4<br>2 |                |                  |                 |     |     | 256<br>260                       |     |     | 640<br>839<br>883<br>905<br>1008 |                | 100 | 400        | 300             | 50       | 308        | 250        | 300<br>344<br>388<br>340<br>372 | 12       |    |   |       |                 | 85<br>130<br>150<br>220<br>290<br>310<br>445 |                            |                   |              |               |                  |                 |
| 50-160   | 360/4   | 1           | 0.75<br>1.1<br>1.5                        | 80<br>90S<br>90L                             | 4      | 65             | 50               | 100             | 125 | 130 | 145<br>155                       | 160 | 180 | 514<br>542<br>567                | 50             | 15  | 100        | 70              | -        | 265        | 212        | 65                              | 12       | 80 |   | R1/4" | R1/4"           | R1/4"                                        | 41<br>45<br>48             |                   |              |               |                  |                 |
|          | 360/11F | 2           | 5.5<br>7.5<br>11                          | 132S<br>160M                                 | 2      |                |                  |                 |     |     | 218<br>232                       |     |     | 691                              | 50             | 100 | 330        | 145             | 40       | 248        | 220        | 424                             | 12       |    |   |       |                 | 70<br>80<br>105                              |                            |                   |              |               |                  |                 |
| 50-200   | 360/4   | 1           | 1.5<br>2.2<br>3                           | 90L<br>100L                                  | 4      | 65             | 50               | 100             | 133 | 145 | 155<br>165                       | 160 | 200 | 567<br>614                       | 50             | 15  | 100        | 70              | -        | 265        | 212        | 65                              | 12       | 80 |   | R1/4" | R1/4"           | R1/4"                                        | 59<br>67<br>49             |                   |              |               |                  |                 |
|          | 360/11F | 2           | 7.5<br>11<br>15<br>18.5                   | 132S<br>160M<br>160L                         | 2      |                |                  |                 |     |     | 218<br>232<br>256                |     |     | 691<br>837<br>881                | 50<br>65<br>65 | 100 | 330<br>400 | 145<br>300      | 40<br>50 | 248<br>308 | 220<br>250 | 424<br>342                      | 12<br>16 |    |   |       |                 | 95<br>115<br>130<br>145                      |                            |                   |              |               |                  |                 |

## DIMENSIONS

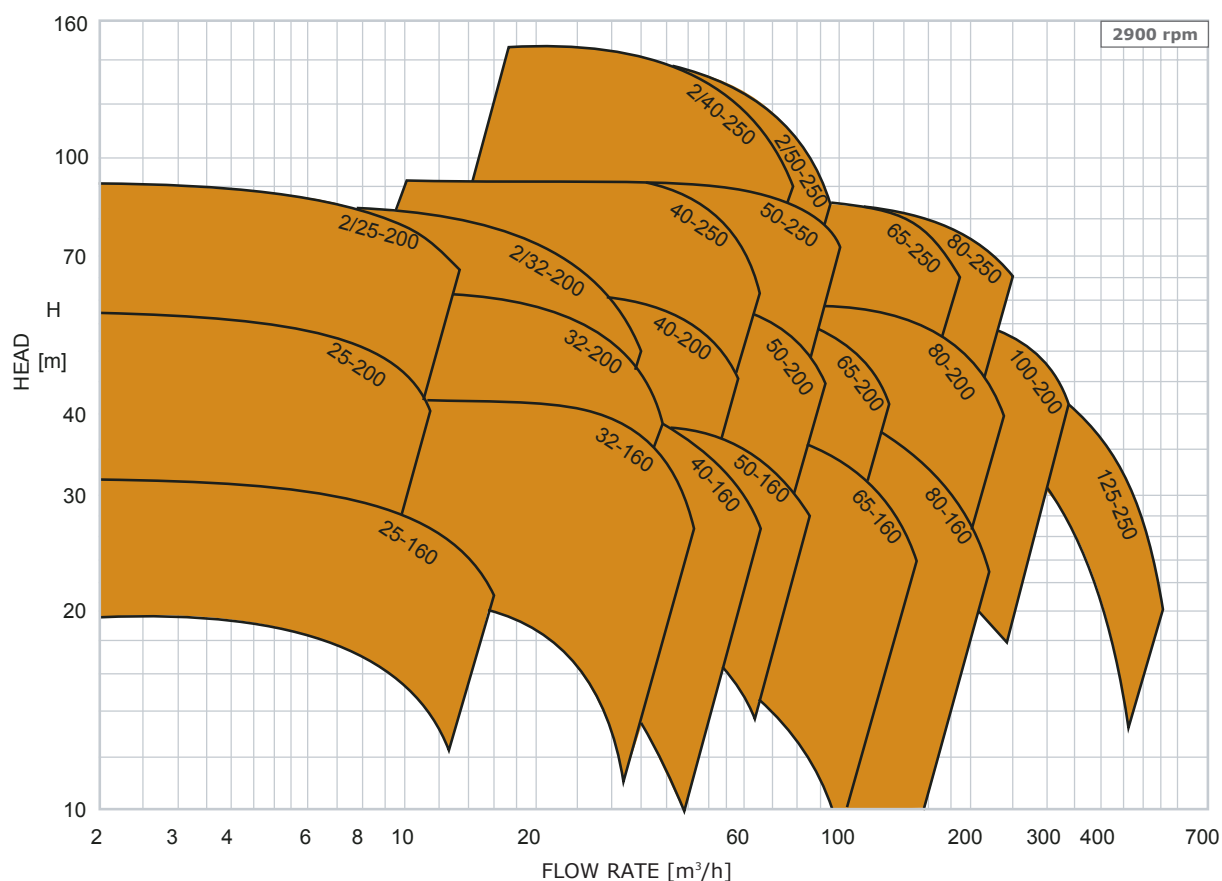
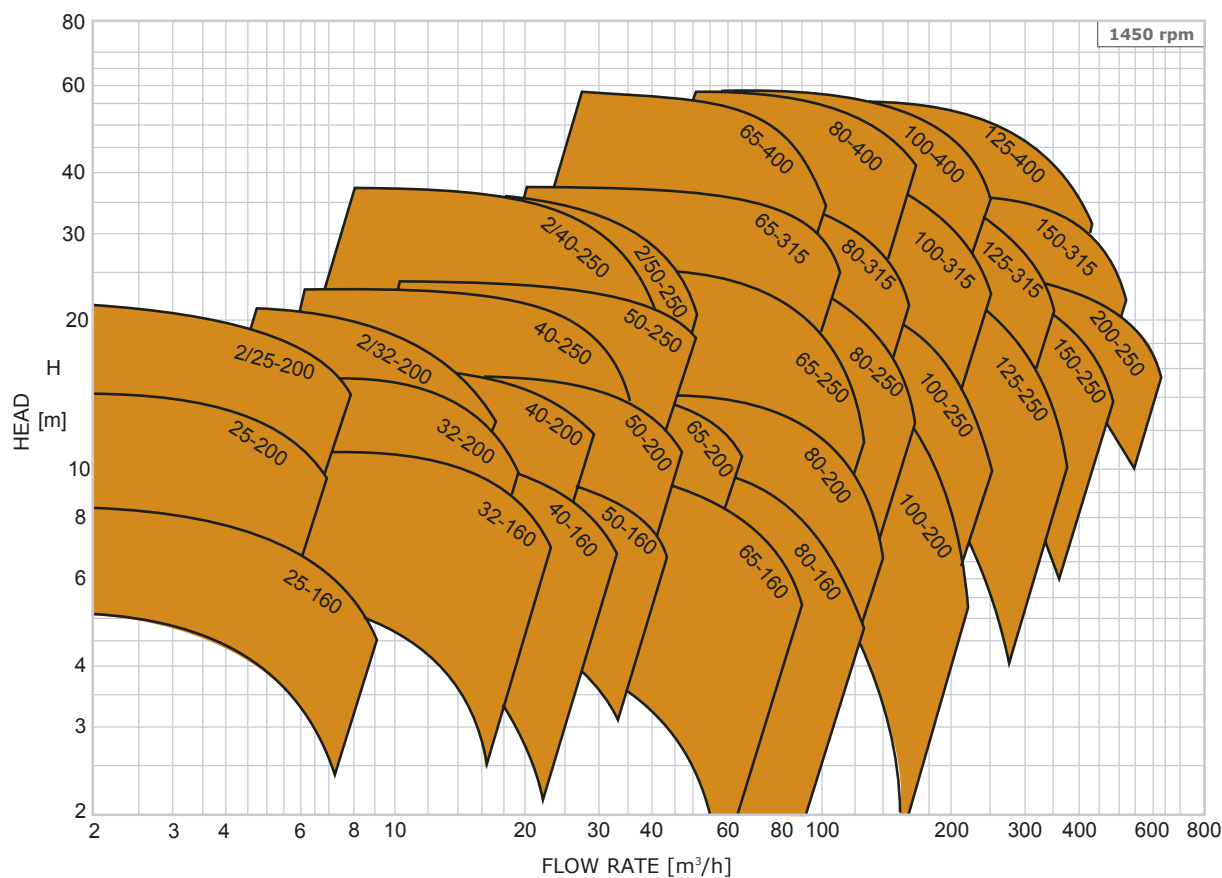
| Pump     | Bracket | Arrangement | Motor                                                  | Motor frame Size                                     | Pole          | Suction Flange | Discharge Flange | Pump Dimensions |     |     |                                 |                   |     |                                          |                      | Foot Dimensions |            |            |          |            |            |                                 |          | Bolts |       | Dismantling Space | Prining Hole                                | Drainage Hole                                               | Gauge Connection | Mass kg Approx. |
|----------|---------|-------------|--------------------------------------------------------|------------------------------------------------------|---------------|----------------|------------------|-----------------|-----|-----|---------------------------------|-------------------|-----|------------------------------------------|----------------------|-----------------|------------|------------|----------|------------|------------|---------------------------------|----------|-------|-------|-------------------|---------------------------------------------|-------------------------------------------------------------|------------------|-----------------|
| NB       |         |             | kW                                                     |                                                      |               | IDs            | IDd              | a               | b1  | b2  | ±b3                             | h1                | h2  | ±L                                       | b                    | c               | m1         | m2         | r        | n1         | n2         | p                               | S        | X     | A     | B                 | M1/M2                                       | Kg                                                          |                  |                 |
| 50-250   | 360/4   | 1           | 2.2<br>3<br>4                                          | 100L<br>100L<br>112M                                 | 4             | 65             | 50               | 100             | 156 | 169 | 165                             | 180               | 225 | 616                                      | 65                   | 15              | 125        | 95         | -        | 320        | 250        | 53                              | 12       | 80    | R1/4" | R1/4"             | R1/4"                                       | 69<br>71<br>76                                              |                  |                 |
|          | 360/11F | 2           | 15<br>18.5<br>22<br>30<br>37                           | 160M<br>160L<br>180M<br>200L                         | 2             |                |                  |                 |     |     | 190<br>218<br>276<br>292        | 260               |     | 633<br>839<br>883<br>905<br>1008<br>1008 | 65                   | 100             | 400        | 300        | 50       | 308        | 250        | 344<br>388<br>340<br>372        | 16       |       |       |                   | 130<br>150<br>215<br>285<br>305             |                                                             |                  |                 |
| 2/50-250 | 360/4   | 1           | 3<br>4                                                 | 100L<br>112M                                         | 4             | 65             | 50               | 100             | 156 | 169 | 165                             | 180               | 225 | 616                                      | 65                   | 15              | 125        | 95         | -        | 320        | 250        | 53                              | 12       | 80    | R1/4" | R1/4"             | R1/4"                                       | 74<br>79                                                    |                  |                 |
|          | 360/11F | 2           | 5.5<br>7.5<br>18.5<br>22<br>30<br>37<br>45             | 132S<br>132M<br>160L<br>180M<br>200L<br>200L<br>225S | 4<br><br>2    |                |                  |                 |     |     | 190<br>218<br>256<br>276<br>292 | 232               |     | 633<br>693<br>731<br>883<br>905<br>1008  | 50                   | 100             | 330        | 145        | 40       | 248        | 220        | 426                             | 12       |       |       |                   | 80<br>90<br>155<br>220<br>290<br>310<br>445 |                                                             |                  |                 |
| 65-160   | 360/4   | 1           | 0.75<br>1.1<br>1.5<br>2.2                              | 80<br>90S<br>90L<br>100L                             | 4             | 80             | 65               | 100             | 133 | 162 | 145<br>155                      | 160               | 200 | 514<br>542<br>567<br>614                 | 65                   | 15              | 125        | 95         | -        | 280        | 212        | 63                              | 12       | 80    | R1/4" | R1/4"             | R1/4"                                       | 48<br>52<br>55<br>62                                        |                  |                 |
|          | 360/1 F | 2           | 7.5<br>11<br>15                                        | 132S<br>160M                                         | 2             |                |                  |                 |     |     | 165<br>218<br>256               | 232<br>260<br>260 |     | 691<br>837                               | 50<br>65             | 100             | 330<br>400 | 145<br>300 | 40<br>50 | 248<br>308 | 220<br>250 | 424<br>342                      | 12<br>16 |       |       |                   | 80<br>90<br>110                             |                                                             |                  |                 |
| 65-200   | 360/4   | 1           | 1.5<br>2.2<br>3                                        | 90L<br>100L                                          | 4             | 80             | 65               | 100             | 148 | 170 | 155<br>165                      | 180               | 225 | 567<br>614                               | 65                   | 15              | 155        | 95         | -        | 320        | 250        | 53                              | 12       | 80    | R1/4" | R1/4"             | R1/4"                                       | 58<br>65<br>67                                              |                  |                 |
|          | 360/11F | 2           | 11<br>15<br>18.5<br>22                                 | 160M<br>160L<br>180M                                 | 2             |                |                  |                 |     |     | 256                             | 260               |     | 837<br>881<br>903                        | 65                   | 100             | 400        | 300        | 50       | 308        | 250        | 342<br>386<br>338               | 16       |       |       |                   | 115<br>130<br>145<br>210                    |                                                             |                  |                 |
|          |         |             |                                                        |                                                      |               |                |                  |                 |     |     |                                 |                   |     |                                          |                      |                 |            |            |          |            |            |                                 |          |       |       |                   |                                             |                                                             |                  |                 |
| 65-250   | 470/22f | 2           | 5.5<br>7.5<br>11<br>22<br>30<br>37<br>45<br>55<br>75   | 132s<br>132M<br>160M<br>180M<br>200L                 | 2/4<br>2      | 80             | 65               | 100             | 164 | 184 | 218<br>256<br>276<br>292        | 232               | 250 | 730<br>768<br>876<br>942<br>1045         | 50<br>65<br>80       | 100             | 330        | 145        | 40       | 248        | 220        | 463<br>381<br>377<br>409        | 12<br>16 | 100   | R3/8" | R3/8"             | R3/8"                                       | 125<br>135<br>160<br>240<br>310<br>300<br>465<br>628<br>725 |                  |                 |
|          |         |             |                                                        | 225S<br>250S                                         |               |                |                  |                 |     |     | 366<br>349                      |                   |     | 350                                      | 1095<br>1202         |                 |            |            |          |            |            | 110                             |          |       |       |                   |                                             | 100                                                         | 550<br>520       | 490<br>420      |
| 65-315   | 470/22F | 2           | 7.5<br>11<br>15                                        | 132M<br>160M<br>160L                                 | 4             | 80             | 65               | 125             | 202 | 219 | 218<br>256                      | 232<br>260        | 280 | 779<br>887<br>931                        | 50<br>65             | 100             | 330<br>400 | 145<br>300 | 40<br>50 | 248<br>308 | 220<br>250 | 474<br>392<br>436               | 12<br>16 | 100   | R3/8" | R3/8"             | R3/8"                                       | 150<br>170<br>185                                           |                  |                 |
| 65-400   | 470/22F | 2           | 11<br>15<br>18.5<br>22                                 | 160M<br>160L<br>180M<br>180L                         | 4             | 80             | 65               | 125             | 239 | 255 | 256<br>276                      | 60                | 355 | 887<br>931<br>953<br>991                 | 65<br>80             | 100<br>80       | 400<br>450 | 300<br>350 | 50       | 308<br>349 | 250<br>279 | 392<br>436<br>388<br>426        | 16       | 100   | R3/8" | R3/8"             | R3/8"                                       | 180<br>200<br>275<br>290                                    |                  |                 |
| 80-160   | 360/4   | 1           | 1.1<br>1.5<br>2.2<br>3                                 | 90S<br>90L<br>100L                                   | 4             | 100            | 80               | 125             | 136 | 170 | 155<br>165                      | 180               | 225 | 567<br>592<br>639<br>639                 | 65                   | 15              | 125        | 95         | -        | 320        | 250        | 78                              | 12       | 80    | R3/8" | R3/8"             | R3/8"                                       | 54<br>57<br>64<br>67                                        |                  |                 |
|          | 360/11F | 2           | 7.5<br>11<br>15<br>18.5<br>22                          | 132S<br>160M<br>160L<br>180M                         | 2             |                |                  |                 |     |     | 218<br>256                      | 232<br>260        |     | 716<br>862                               | 50<br>65             | 100             | 330<br>400 | 145<br>300 | 40<br>20 | 248<br>308 | 220<br>250 | 449<br>367                      | 12<br>16 |       |       |                   | 90<br>115<br>125<br>145<br>210              |                                                             |                  |                 |
| 80-200   | 470/22F | 2           | 5.5<br>11/15<br>18.5<br>22<br>30<br>37                 | 132S<br>160L<br>160L<br>180M<br>200L                 | 4<br>2<br>2   | 100            | 80               | 125             | 163 | 188 | 218<br>256<br>256<br>276<br>292 | 232               | 250 | 755<br>945<br>945<br>967<br>1070         | 50<br>65<br>65<br>80 | 100             | 330        | 145        | 40       | 248        | 220        | 488<br>450<br>450<br>402<br>434 | 12       | 100   | R3/8" | R3/8"             | R3/8"                                       | 125                                                         |                  |                 |
|          |         |             |                                                        |                                                      |               |                |                  |                 |     |     | 276<br>292                      |                   |     | 928<br>945<br>945<br>967<br>1070         | 80<br>65<br>65<br>80 |                 |            |            |          |            |            | 349<br>386<br>320               |          |       |       |                   |                                             | 210<br>245<br>315                                           |                  |                 |
| 80-250   | 470/22F | 2           | 5.5<br>7.5<br>11<br>15<br>18.5<br>22<br>30<br>37<br>45 | 132S<br>132M<br>160M<br>160L<br>180M<br>200L<br>225S | 4<br>2/4<br>2 | 100            | 80               | 125             | 182 | 208 | 218<br>256                      | 232               | 280 | 755<br>793<br>901                        | 50<br>65             | 100             | 330        | 145        | 40       | 248        | 220        | 488<br>406                      | 12<br>16 | 100   | R3/8" | R3/8"             | R3/8"                                       | 135<br>145<br>165<br>180<br>200<br>235<br>305<br>325<br>465 |                  |                 |
|          |         |             |                                                        |                                                      |               |                |                  |                 |     |     | 276<br>292                      |                   |     | 945<br>967<br>1070                       | 80                   |                 |            |            |          |            |            | 450<br>402<br>434               |          |       |       |                   |                                             | 180<br>200<br>235<br>305<br>325<br>465                      |                  |                 |
|          |         | 3           | 55<br>75                                               | 250S                                                 |               |                |                  |                 |     |     | 349<br>350                      |                   |     | 1227                                     | 110                  | 100             | 520        | 210        | 50       | 506        | 420        | 576                             | 24       |       |       |                   |                                             |                                                             | 630<br>730       |                 |
| 80-315   | 470/22F | 2           | 11<br>15<br>18.5                                       | 160M<br>160L<br>180M                                 | 4             | 100            | 80               | 125             | 210 | 231 | 256<br>276                      | 260               | 315 | 887<br>931<br>953                        | 80                   | 80              | 400        | 300        | 50       | 308        | 250        | 392<br>436<br>388               | 16       | 100   | R3/8" | R3/8"             | R3/8"                                       | 180<br>190<br>270                                           |                  |                 |
| 80-400   | 530/1F  | 4           | 11<br>15<br>18.5<br>22<br>30                           | 160M<br>160L<br>180M<br>180L<br>200L                 | 4             | 125            | 100              | 140             | 256 | 272 | 256<br>276<br>292               | 360               |     | 919<br>958<br>1023<br>1110               | 78                   | 200             | 520        | 210        | 50       | 490        | 420        | 373                             | 16       |       |       |                   |                                             | 185<br>205<br>225<br>257<br>325                             |                  |                 |
|          |         |             |                                                        |                                                      |               |                |                  |                 |     |     |                                 |                   |     |                                          | 180                  | 600             | 570        | 235        |          | 520        | 450        | 361                             |          |       |       |                   |                                             |                                                             |                  |                 |

## DIMENSIONS

| Pump      | Bracket | Arrangement | Motor                              | Motor frame Size                     | Pole   | Suction Flange | Discharge Flange | Pump Dimensions |     |     |                   |            |                                        |          |            | Foot Dimensions   |                   |          |            |            |                          |          |     | Bolts |       | Dismantling Space |                                                                    | Priming Hole | Drainage Hole | Gauge Connection | Mass kg Approx. |
|-----------|---------|-------------|------------------------------------|--------------------------------------|--------|----------------|------------------|-----------------|-----|-----|-------------------|------------|----------------------------------------|----------|------------|-------------------|-------------------|----------|------------|------------|--------------------------|----------|-----|-------|-------|-------------------|--------------------------------------------------------------------|--------------|---------------|------------------|-----------------|
| NB        |         |             | kW                                 |                                      |        | IDs            | IDd              | a               | b1  | b2  | ±b3               | h1         | h2                                     | ±L       | b          | c                 | m1                | m2       | r          | n1         | n2                       | p        | S   | X     | A     | B                 | M1/M2                                                              | Kg           |               |                  |                 |
| 100-200   | 470/22F | 2           | 5.5<br>7.5<br>11<br>15             | 132S<br>132M<br>160M<br>160L         | 4      | 125            | 100              | 125             | 165 | 203 | 218<br>256        | 201<br>250 | 280<br>755<br>793<br>931<br>901<br>945 | 50<br>65 | 100        | 330<br>400        | 145<br>300        | 50       | 248<br>308 | 220<br>250 | 488<br>406               | 12<br>16 | 120 | R3/8" | R3/8" | R3/8"             | 140<br>150<br>185<br>200<br>220<br>250<br>320<br>340<br>475<br>632 |              |               |                  |                 |
|           |         |             | 18.5<br>22<br>30<br>37<br>45<br>55 | 180M<br>200L<br>225S<br>250S         | 2      |                |                  |                 |     |     | 276<br>292        | 280<br>300 | 967<br>1070                            | 80       | 80         | 450<br>500        | 350<br>400        |          | 349<br>386 | 279<br>320 | 450<br>402<br>434        |          |     |       |       |                   |                                                                    |              |               |                  |                 |
| 100-250   | 470/22F | 2           | 7.5<br>11<br>15                    | 132M<br>160M<br>160M                 | 4      | 125            | 100              | 140             | 189 | 224 | 218<br>256        | 232<br>260 | 280<br>808<br>946<br>916               | 50<br>65 | 100        | 330<br>400        | 145<br>300        | 50       | 248<br>308 | 220<br>250 | 503<br>421               | 12<br>16 | 120 | R3/8" | R3/8" | R3/8"             | 155<br>175<br>190<br>475<br>640<br>735                             |              |               |                  |                 |
|           |         |             | 45<br>55<br>75                     | 225S<br>250S<br>250S                 | 2      |                |                  |                 |     |     | 366<br>349        | 370<br>350 | 1120<br>1227                           | 110      | 100        | 550<br>520        | 490<br>210        | 30<br>50 | 436<br>506 | 360<br>460 | 360<br>576               | 24       |     |       |       |                   |                                                                    |              |               |                  |                 |
| 100-315   | 470/22F | 2           | 15<br>18.5<br>22<br>30             | 160L<br>180M<br>180L<br>200L         | 4      | 125            | 100              | 140             | 220 | 250 | 256<br>276        | 260<br>276 | 315<br>808<br>968<br>1006<br>1071      | 65<br>80 | 100<br>80  | 400<br>450        | 300<br>350        | 50       | 308<br>349 | 250<br>279 | 451<br>390<br>441        | 16       | 120 | R3/8" | R3/8" | R3/8"             | 205<br>280<br>295<br>365                                           |              |               |                  |                 |
|           |         |             |                                    |                                      |        |                |                  |                 |     |     | 292               | 280        | 1006<br>1071                           |          |            | 500<br>400        |                   | 386      | 320        | 435        |                          |          |     |       |       |                   |                                                                    |              |               |                  |                 |
| 100-400   | 530/1F  | 4           | 22<br>30                           | 180L<br>200L                         | 4      | 125            | 100              | 140             | 256 | 272 | 276<br>292        | 360<br>360 | 355<br>1049<br>1136                    | 78       | 180<br>160 | 570<br>600        | 235<br>250        | 50       | 520<br>560 | 450<br>490 | 387<br>417               | 16<br>24 | 120 | R3/8" | R3/8" | R3/8"             | 290<br>350                                                         |              |               |                  |                 |
|           | 530/2F  | 4           | 37<br>45                           | 225M                                 | 4      |                |                  |                 |     |     | 366               | 360        | 1224                                   | 78       | 135        | 470               | 185               | 50       | 620        | 550        | 577                      | 24       |     |       |       |                   | 355<br>480                                                         |              |               |                  |                 |
| 125-250   | 470/22F | 2           | 11<br>15<br>18.5<br>22<br>45       | 160M<br>160L<br>180M<br>180L<br>225S | 4<br>4 | 150            | 125              | 140             | 212 | 255 | 256<br>276        | 260<br>260 | 355<br>916<br>960<br>982<br>1020       | 65<br>80 | 100<br>80  | 400<br>450        | 300<br>350        | 50       | 386<br>349 | 320<br>279 | 421<br>465<br>417<br>455 | 16       | 120 | R3/8" | R3/8" | R3/8"             | 190<br>205<br>280<br>295<br>525<br>652<br>820                      |              |               |                  |                 |
|           |         |             | 55<br>75                           | 250S                                 | 2      |                |                  |                 |     |     | 366<br>349        | 305<br>350 | 1135<br>1242                           | 110      | 100        | 550<br>520        | 490<br>210        | 30<br>50 | 436<br>506 | 360<br>420 | 421<br>591               | 24       |     |       |       |                   |                                                                    |              |               |                  |                 |
| 125-315   | 530/1F  | 4           | 18.5<br>22<br>30                   | 180M<br>180L<br>200L                 | 4      | 150            | 125              | 140             | 226 | 252 | 276<br>292        | 360<br>360 | 355<br>1011<br>1049<br>1136            | 78       | 180<br>160 | 570<br>600        | 235<br>250        | 50       | 520<br>260 | 450<br>490 | 387<br>417               | 16<br>24 | 120 | R3/8" | R3/8" | R3/8"             | 290<br>300<br>375                                                  |              |               |                  |                 |
|           | 530/2F  | 37          |                                    | 225M                                 | 4      |                |                  |                 |     |     | 366               | 360        | 1224                                   | 78       | 135        | 470               | 185               | 50       | 620        | 550        | 577                      | 24       |     |       |       |                   | 362                                                                |              |               |                  |                 |
| 125-400   | 530/1F  | 4           | 30<br>37<br>45                     | 200L<br>225M                         | 4<br>4 | 150            | 125              | 140             | 264 | 283 | 292<br>366        | 360<br>360 | 400<br>1136<br>1194                    | 78       | 160<br>135 | 600<br>470        | 250<br>185        | 50       | 560<br>620 | 490<br>550 | 417<br>577               | 16<br>24 | 120 | R3/8" | R3/8" | R3/8"             | 365<br>368<br>586<br>680                                           |              |               |                  |                 |
|           | 530/2F  | 4           | 55                                 | 250M                                 |        |                |                  |                 |     |     | 349               |            | 1383                                   | 80       | 110        | 520               | 210               |          | 690        | 620        | 584                      |          |     |       |       |                   |                                                                    |              |               |                  |                 |
| 150-250   | 530/1F  | 4           | 15<br>18.5<br>22<br>30             | 160L<br>180M<br>180L<br>200L         | 4      | 200            | 150              | 160             | 231 | 283 | 256<br>276        | 360<br>360 | 375<br>1009<br>1031<br>1069<br>1156    | 78       | 200<br>180 | 520<br>570        | 210<br>235        | 50       | 490<br>520 | 420<br>419 | 407<br>407               | 16       | 120 | R3/8" | R3/8" | R3/8"             | 220<br>295<br>320<br>385                                           |              |               |                  |                 |
|           |         |             | 37<br>45                           | 225M                                 | 4      |                |                  |                 |     |     | 292<br>366        | 360        | 400<br>1069<br>1156                    | 78       | 180<br>135 | 570<br>470        | 235<br>185        | 50       | 520<br>620 | 450<br>550 | 407<br>597               | 16<br>24 | 120 | R3/8" | R3/8" | R3/8"             | 320<br>373                                                         |              |               |                  |                 |
| 150-315   | 530/1F  | 4           | 22<br>30                           | 180L<br>200L                         | 4      | 200            | 150              | 160             | 239 | 271 | 276<br>292        | 360<br>360 | 400<br>1069<br>1156                    | 78       | 180<br>160 | 570<br>600        | 235<br>250        | 50       | 520<br>560 | 450<br>490 | 407<br>437               | 16       | 120 | R3/8" | R3/8" | R3/8"             | 320<br>373                                                         |              |               |                  |                 |
|           | 530/2F  | 4           | 37<br>45                           | 225M                                 | 4      |                |                  |                 |     |     | 366               | 360        | 1244                                   | 78       | 135        | 470               | 185               | 50       | 620        | 550        | 597                      | 24       |     |       |       |                   | 375<br>592                                                         |              |               |                  |                 |
| 150-400/1 | 530/2F  | 4           | 37<br>45<br>55<br>75<br>90<br>110  | 225M<br>250M<br>280M                 | 4      | 200            | 150              | 160             | 277 | 305 | 366<br>349<br>488 | 360<br>360 | 450<br>1403<br>1435                    | 78       | 135<br>110 | 470<br>520<br>600 | 185<br>210<br>250 | 50       | 620<br>690 | 550<br>620 | 597<br>604               | 24       | 120 | R3/8" | R3/8" | R3/8"             | 395<br>600<br>694<br>865<br>1200<br>1160                           |              |               |                  |                 |
|           |         |             |                                    |                                      |        |                |                  |                 |     |     |                   |            |                                        |          |            |                   |                   |          |            |            |                          |          |     |       |       |                   |                                                                    |              |               |                  |                 |
| 200-250   | 530/1F  | 4           | 22<br>30                           | 180L<br>200L                         | 4      | 200            | 200              | 180             | 262 | 330 | 276<br>292        | 360<br>360 | 245<br>1089<br>1176                    | 78       | 180<br>160 | 570<br>600        | 235<br>250        | 50       | 520<br>560 | 450<br>490 | 427<br>457               | 16       | 120 | R3/8" | R3/8" | R3/8"             | 340<br>392                                                         |              |               |                  |                 |
|           | 530/2F  | 4           | 37                                 | 225M                                 | 4      |                |                  |                 |     |     | 366               | 360        | 1264                                   | 78       | 135        | 470               | 185               | 50       | 620        | 550        | 617                      | 24       |     |       |       |                   | 384                                                                |              |               |                  |                 |

| Flange up to ID 150 acc. to<br>DIN 2533 from ID 200 onwards<br>acc. to DIN 2532 |     |    |     |    |                 |
|---------------------------------------------------------------------------------|-----|----|-----|----|-----------------|
| IDs<br>IDd                                                                      | Df  | bf | kf  | g  | No. of<br>Holes |
| 25                                                                              | 115 | 16 | 85  | 14 | 4               |
| 32                                                                              | 140 | 18 | 100 | 18 | 4               |
| 40                                                                              | 150 | 18 | 110 | 18 | 4               |
| 50                                                                              | 165 | 20 | 125 | 18 | 4               |
| 65                                                                              | 185 | 20 | 145 | 18 | 4               |
| 80                                                                              | 200 | 22 | 160 | 18 | 8               |
| 100                                                                             | 220 | 24 | 180 | 18 | 8               |
| 125                                                                             | 250 | 26 | 210 | 18 | 8               |
| 150                                                                             | 285 | 26 | 240 | 22 | 8               |
| 200                                                                             | 340 | 26 | 295 | 22 | 12              |
| 250                                                                             | 395 | 28 | 350 | 22 | 12              |
| 300                                                                             | 445 | 28 | 400 | 22 | 12              |

# TOMBSTONE CURVES



| Size*     | Pg. no |      |
|-----------|--------|------|
|           | 1450   | 2900 |
| 25-160    | 2      | 42   |
| 25-200    | 3      | 43   |
| 2/25-200  | 4      | 44   |
| 32-160    | 5      | 45   |
| 32-200    | 6      | 46   |
| 2/32-200  | 7      | 47   |
| 40-160    | 8      | 48   |
| 40-200    | 9      | 49   |
| 40-250    | 10     | 50   |
| 2/40-250  | 11     | 51   |
| 50-160    | 12     | 52   |
| 50-200    | 13     | 53   |
| 50-250    | 14     | 54   |
| 2/50-250  | 15     | 55   |
| 65-160    | 16     | 56   |
| 65-200    | 17     | 57   |
| 65-250    | 18     | 58   |
| 65-315    | 19     |      |
| 65-400    | 20     |      |
| 80-160    | 21     | 59   |
| 80-200    | 22     | 60   |
| 80-250    | 23     | 61   |
| 80-315    | 24     |      |
| 80-400    | 25     |      |
| 100-200   | 26     | 62   |
| 100-250   | 27     | 63   |
| 100-315   | 28     |      |
| 100-400   | 29     |      |
| 125-250   | 30     | 64   |
| 125-315   | 31     |      |
| 125-400   | 32     |      |
| 125-400/1 | 33     |      |
| 150-250   | 34     |      |
| 150-315   | 35     |      |
| 150-400/1 | 36     |      |
| 200-250   | 37     |      |



## APPLICATION

- Industrial
- Agricultural
- Refinery
- Mining Industries
- Lubrication System

| RA Pump Range | Minimum Flow (m <sup>3</sup> /h) | Maximum Flow (m <sup>3</sup> /h) | Minimum Head (m) | Maximum Head (m) | Maximum Temperature |
|---------------|----------------------------------|----------------------------------|------------------|------------------|---------------------|
| DV            | 4                                | 400                              | 3                | 90               | 120°C               |

## DESIGN & CONSTRUCTION

- Vertical spindle design with electric motor on top and liquid end below.
- Suitable for pumping a variety of liquids and can handle solids in suspension and also run dry for short periods.
- Balance holes are drilled in the impeller to effect hydraulic balance eliminating undue forces with in the pump.
- Double Mechanical Seal that run in an oil bath.
- High interchangeability of parts, allowing for minimal spares holdings.
- Suitable for wet and dry pit installations.
- Replaceable shaft sleeves are fitted as standard.
- Heavy duty shaft supported by bearings in the column.
- Parts are easily removed for inspection, service and maintenance.
- Column lengths available from 400mm to 2400mm.

### Flanges

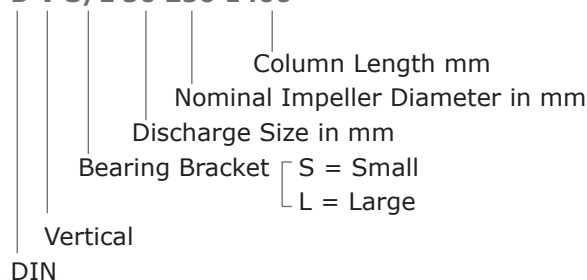
- SANS 1123 PN10(BS 4504 PN10) or ANSI B16.5.

## MATERIALS OF CONSTRUCTION

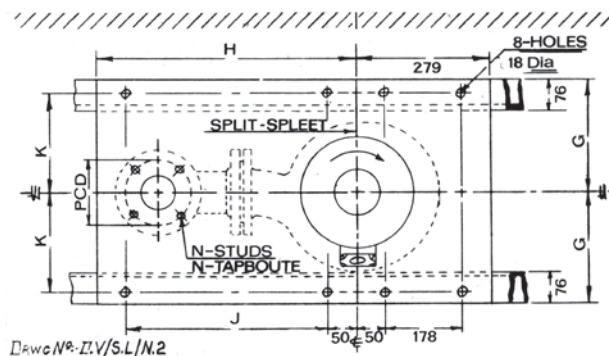
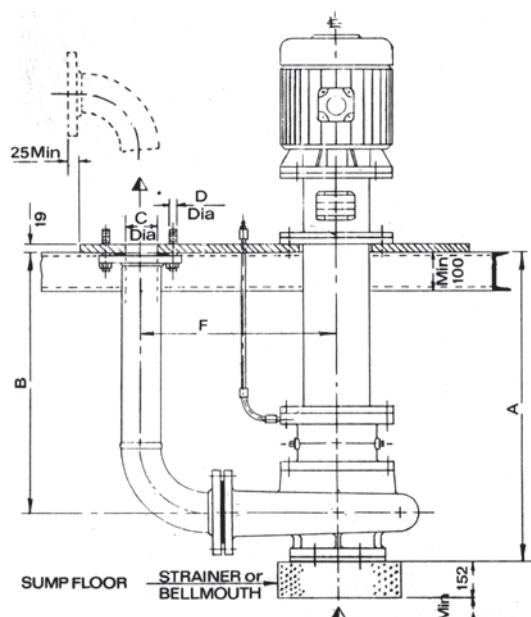
|                     |                                                 |
|---------------------|-------------------------------------------------|
| Volute Casing:      | High Grade Cast Iron, Bronze or Stainless Steel |
| Impeller:           | Cast Iron or Bronze                             |
| Column:             | Mild Steel/Stainless Steel                      |
| Mounting Flange:    | Mild Steel/Stainless Steel                      |
| Motor:              | Standard IEC                                    |
| Motor Stool:        | Mild Steel/Stainless Steel                      |
| Ball Bearings:      | Grease Lubrication                              |
| Lower shaft sleeve: | Stainless Steel                                 |
| Upper shaft sleeve: | Mild Steel                                      |
| Discharge pipe:     | Mild Steel                                      |
| Mechanical seal:    | Double arrangement                              |
| Shaft:              | EN8/316                                         |

## MODEL DESCRIPTION

**D V S/L 50 250 1400**



## DIMENSIONS

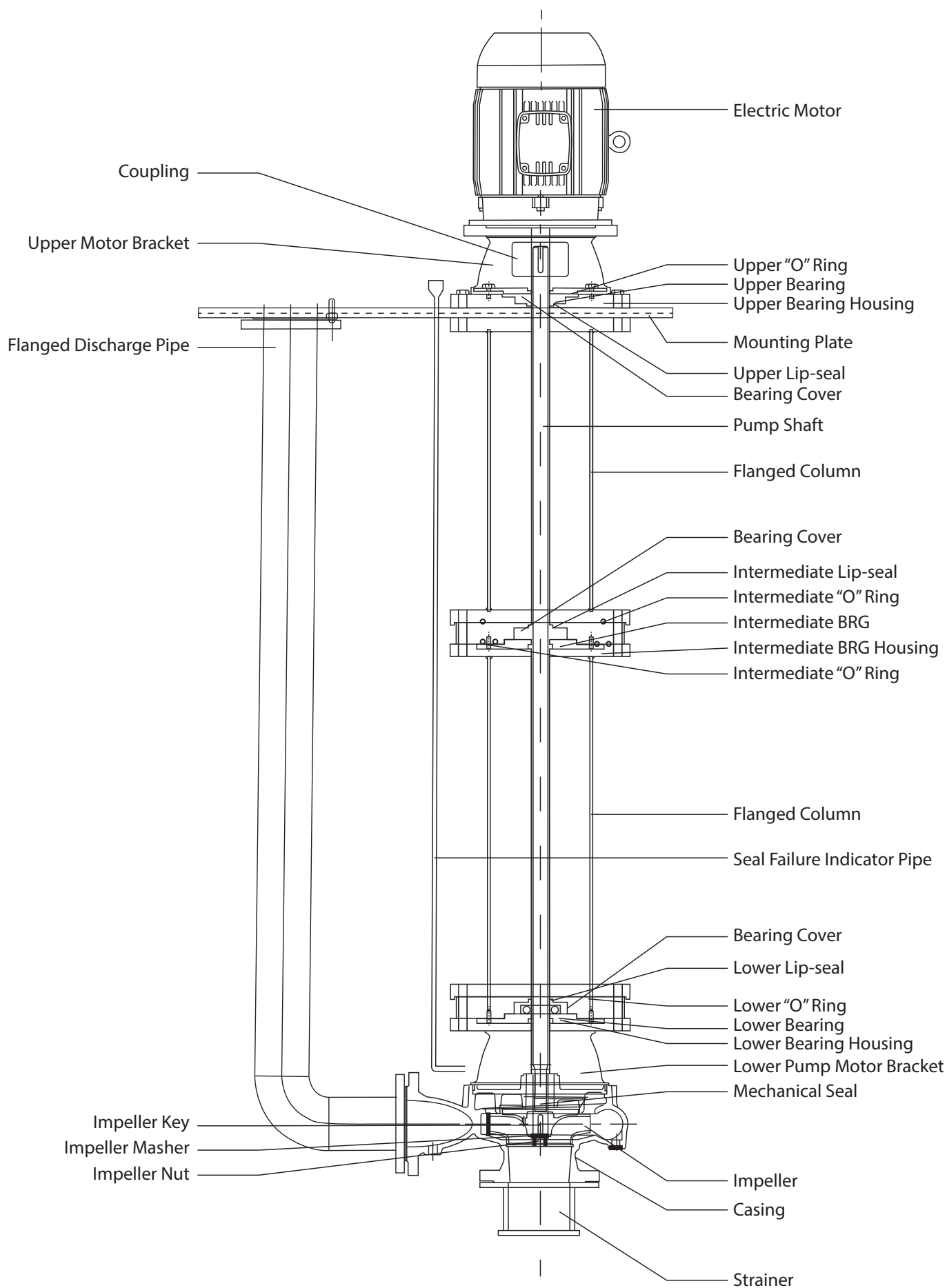


| Pump Model |        | Column Length |      |      |      |      |      |      |      |      |      | Discharge Flange<br>DIN 2532 PN10* |      |      |   | Mounting Plate |     |     |     |     |
|------------|--------|---------------|------|------|------|------|------|------|------|------|------|------------------------------------|------|------|---|----------------|-----|-----|-----|-----|
|            |        |               |      |      |      |      |      |      |      |      |      |                                    |      |      |   |                |     |     |     |     |
|            |        | A             | B    | A    | B    | A    | B    | A    | B    | A    | B    | C                                  | D    | PCD  | N | F              | G   | H   | J   | K   |
| DVS        | 32-160 | 506           | 426  | 1006 | 926  | 1506 | 1426 | 2506 | 1926 | 2526 | 2426 | 32                                 | 16   | 100  | 4 | 356            | 279 | 483 | 381 | 247 |
|            | 32-200 |               |      |      |      |      |      |      |      |      |      | 40                                 |      | 110  |   |                |     |     |     |     |
|            | 40-160 |               |      |      |      |      |      |      |      |      |      |                                    | 50   |      |   |                |     |     |     |     |
|            | 40-200 |               |      |      |      |      |      |      |      |      |      | 65                                 |      | 145  |   |                |     |     |     |     |
|            | 40-250 | 80            |      | 160  |      |      |      |      |      |      |      |                                    |      |      |   |                |     |     |     |     |
|            | 50-160 |               |      |      |      | 526  |      | 1026 |      | 1526 |      | 2026                               | 2526 |      |   |                |     |     |     |     |
|            | 50-200 | 65-200        |      | 551  |      |      |      |      |      |      |      |                                    |      | 1051 |   |                |     |     |     |     |
|            | 50-250 |               |      |      |      | 65   |      | 80   |      |      |      |                                    |      |      |   |                |     |     |     |     |
|            | 65-160 | 16            |      | 145  |      |      |      |      |      |      |      |                                    |      |      |   |                |     |     |     |     |
|            | 65-200 |               |      |      |      | 160  |      |      |      |      |      |                                    |      |      |   |                |     |     |     |     |
| 80-160     | 551    | 1051          | 1551 | 2051 | 2551 |      |      |      |      |      |      |                                    |      |      |   |                |     |     |     |     |
|            |        |               |      |      |      |      |      |      |      |      |      |                                    |      |      |   |                |     |     |     |     |

|     |         |         |     |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|-----|---------|---------|-----|---------|-----|---------|------|---------|------|------|------|-----|----|-----|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| DVL | 65-250  | 538     | 438 | 1038    | 938 | 1538    | 1438 | 2038    | 1938 | 2538 | 2438 | 65  | 16 | 145 | 4 | 527 | 356 | 660 | 559 | 324 |     |     |     |     |
|     | 65-315  | 563     |     | 1063    |     | 1563    |      | 2063    |      | 2563 |      | 80  |    | 160 |   |     |     |     |     |     |     |     |     |     |
|     | 65-400  |         |     |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     | 100 | 180 |     |     |
|     | 80-200  |         |     |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     | 125 | 210 |
|     | 80-250  |         |     |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 80-315  | 100-200 |     | 100-250 |     | 100-315 |      | 125-250 |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 100-200 |         |     |         |     |         |      |         |      | 125  |      | 210 |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 100-250 |         |     |         |     |         |      |         |      |      |      |     |    | 125 |   |     |     |     |     |     | 210 |     |     |     |
|     | 100-315 |         |     |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     | 125 | 210 |     |
|     | 125-250 | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 210     |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         |     |         | 125  | 210     |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         | 125     |     | 210     |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     | 125     |         | 210 |         |     |         |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |
|     |         |         |     |         | 125 | 2       |      |         |      |      |      |     |    |     |   |     |     |     |     |     |     |     |     |     |

All dimensions in mm

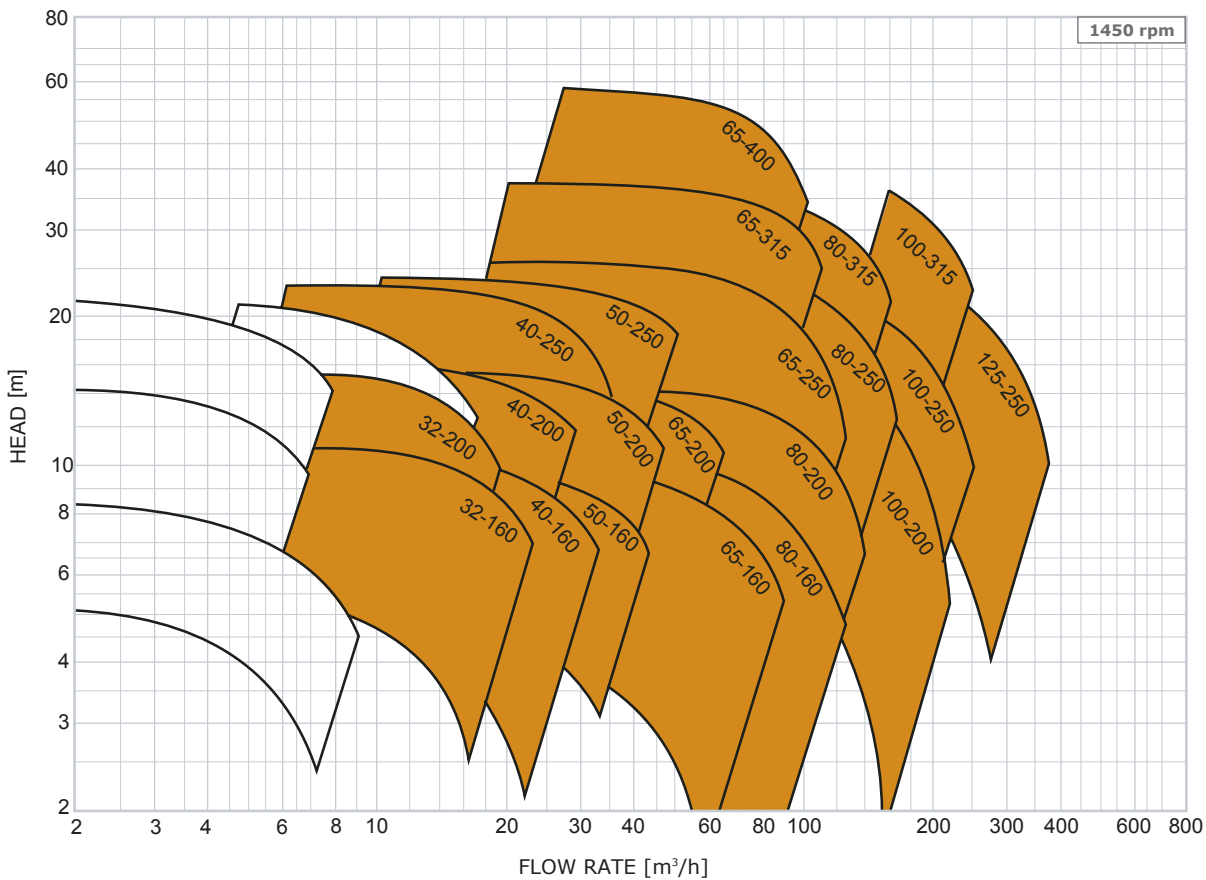
### SECTIONAL DRAWING



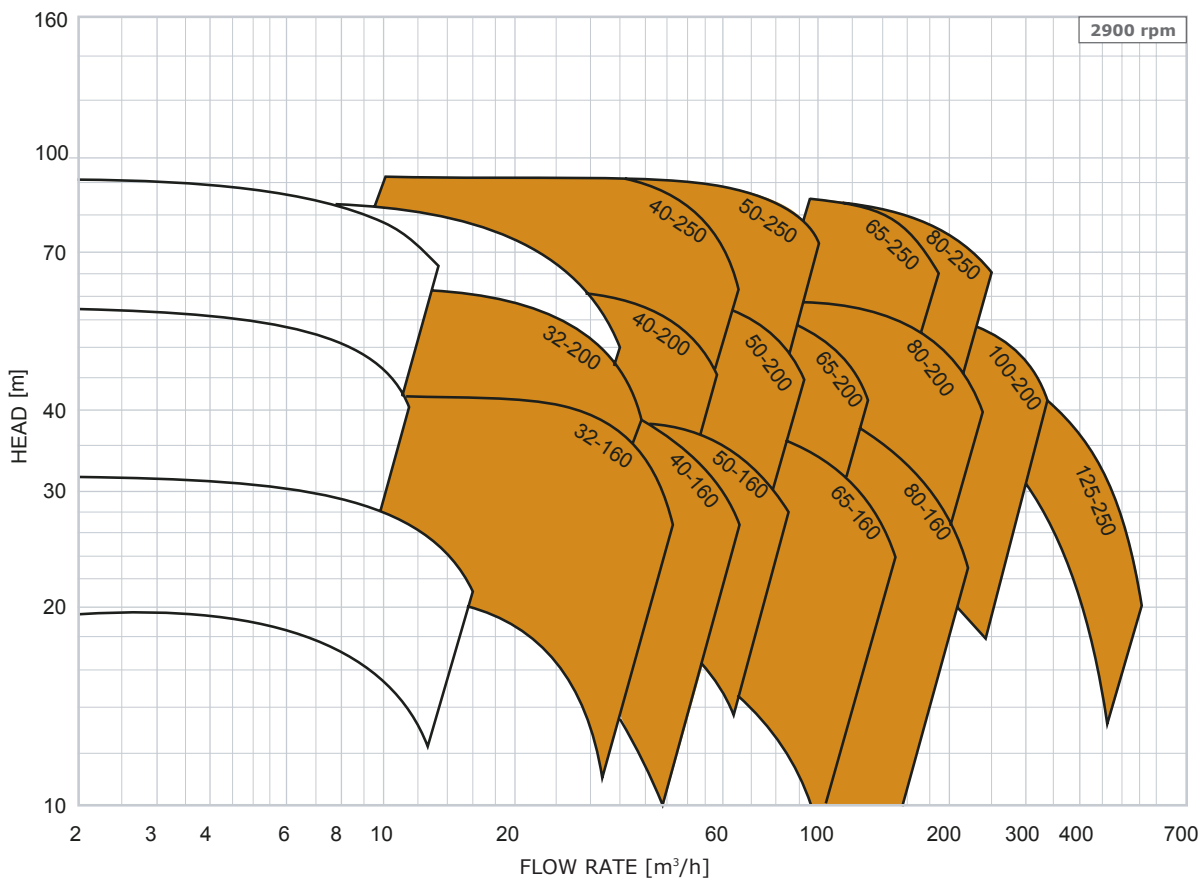
## PARTS LIST

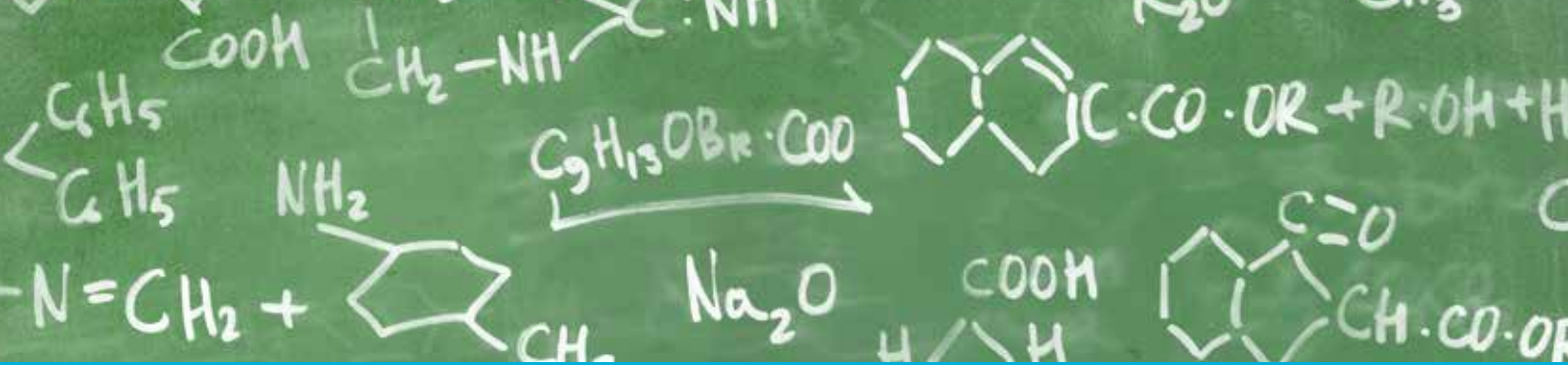
| Part  | Description                                 |
|-------|---------------------------------------------|
| 223   | Coupling                                    |
| 346.2 | Upper Motor Bracket                         |
| 211   | Flanged Discharge Pipe                      |
| 230   | Impeller                                    |
| 940.1 | Impeller Key                                |
| 933   | Impeller Masher                             |
| 920.1 | Impeller Nut                                |
| 801   | Electric Motor                              |
| 496   | Upper, Intermediate & Lower "O" Ring        |
| 321.1 | Upper, Intermediate & Lower Bearing         |
| 134.B | Upper, Intermediate & Lower Bearing Housing |
| 203   | Mounting Plate                              |
| 361.1 | Upper, Intermediate & Lower Lip-Seal        |
| 360   | Bearing Cover                               |
| 211   | Pump Shaft                                  |
| 200.1 | Flanged Column                              |
| 202.1 | Seal Failure Indicator Pipe                 |
| 470.1 | Mechanical Seal                             |
| 102.3 | Casing                                      |
| 202.2 | Strainer                                    |

## TOMBSTONE CUVES



| Size*   | Pg. no. |      |
|---------|---------|------|
|         | 1450    | 2900 |
| 32-160  | 5       | 45   |
| 32-200  | 6       | 46   |
| 40-160  | 8       | 48   |
| 40-200  | 9       | 49   |
| 40-250  | 10      | 50   |
| 50-160  | 12      | 52   |
| 50-200  | 13      | 53   |
| 50-250  | 14      | 54   |
| 65-160  | 16      | 56   |
| 65-200  | 17      | 57   |
| 65-250  | 18      | 58   |
| 65-315  | 19      |      |
| 65-400  | 20      |      |
| 80-160  | 21      | 59   |
| 80-200  | 22      | 60   |
| 80-250  | 23      | 61   |
| 80-315  | 24      |      |
| 100-200 | 26      | 62   |
| 100-250 | 27      | 63   |
| 100-315 | 28      |      |
| 125-250 | 30      | 64   |





# BASIC FORMULAS

H= Head(m)

Q = Flow(m<sup>3</sup>/h)

## Capacity

$$l/sec \times 3.6 = m^3/h$$

$$m^3/h \div 3.6 = l/sec$$

$$Imp \text{ gpm} \times 0.2271 = m^3/h \quad m^3/h \times 4.403 = Imp \text{ gpm}$$

$$US \text{ gpm} \div 0.246 = l/min \quad l/min \times 0.246 = US \text{ gpm}$$

$$10000 \text{ kg/hr} = \frac{10m^3h}{Density(SG)}$$

## Head/Pressure

$$Ft \div 3.28 = m$$

$$m \times 3.28048 = Ft$$

$$Bar \times 100 = kpa$$

$$m \times 9.805 = kpa$$

$$kpa \times 0.102 = m$$

$$m \times 0.098 = Bar$$

$$Bar \times 10.19 = m$$

$$m \times 1.45 = psi$$

$$psi \times 6.895 = kpa$$

## Power

$$hp \times 0.746 = kw$$

$$kw \times 1.340483 = hp$$

$$kw \text{ abs} = \frac{Q \times H \times SG}{367 \times Eff(\%)}$$

$$kw = \frac{Amps \times Volts \times Power \text{ Factor} \times 1.732}{1000}$$

$$RPM = \frac{Hz \times 120}{No \text{ of Poles}}$$

$$Hz = \frac{RPM \times No \text{ Of Poles}}{120}$$

$$Velocity \text{ m/sec} = \frac{Q \times 353.63}{(Pipe \text{ Dia})^2}$$

## Efficiency

$$EFF(\%) = \frac{Q \times H \times SG}{367 \times kw(abs)}$$

Eff = Pump Eff%

Density = SG

## Temperature

$$Deg.C = (deg.F-32) \times 0.556$$

$$Deg.F = (1.8 \times deg.C) + 32$$

## Peripheral Speed

$$Peripheral \text{ Speed(Impeller)} = \frac{imp.dia.(mm) \times \pi \times N(Rpm)}{60 \text{ } 000}$$

## Viscosity

vis Viscous Liquid

w Water

Given: Qvis in m<sup>3</sup>/h kinematic viscosity v in mm<sup>2</sup>/s

Hvis in m pvis in kg/dm<sup>3</sup>

$$Qw = \frac{Qvis}{CQ}$$

$$Hw = \frac{Hvis}{CH}$$

$$Qw = C\% \times \%w$$

$$Pvis = \frac{Qvis \times Hvis \times Pvis}{367 \times Eff(\%) \text{ vis}}$$

## Centrifugal and Axial Flow Pump Affinity Laws:

Speed changes & impeller diameter remains the same:

$$Q1/Q2 = N1/N2$$

$$H1/H2 = (N1/N2)^2$$

$$P1/P2 = (N1/N2)^3$$

Impeller diameter changes and speed remains the same:

$$Q1/Q2 = D1/D2$$

$$H1/H2 = (D1/D2)^2$$

$$P1/P2 = (D1/D2)^3$$



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