

# BETA

## HORIZONTAL, CENTRIFUGAL, VOLUTE-TYPE PUMPS



BETA

### APPLICATION

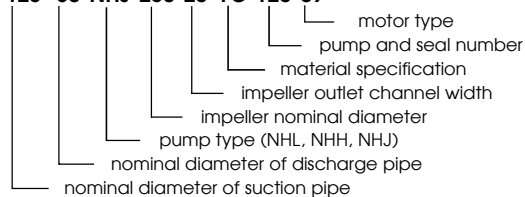
- pure or slightly polluted, active and neutral chemical liquids and combustibles
- chemical, petrochemical, pharmaceutical, food-processing and processing industries, power engineering both conventional & nuclear, water supply systems
- design:
  - A) standard for general use
  - B) explosive conditions for pumping incombustibles in dangerous explosive conditions
  - C) for combustibles- for pumping combustible liquids in zone 1 and 2
  - D) nuclear power engineering for both secondary and primary circuits

### WORKING CONDITIONS

- medium temperature range from - 40°C to +180°C (for oils and hydrocarbons up to 260°C)
- working pressure of 16 bars and 25 bars
- medium density range from 600 kg.m<sup>-3</sup> to 1900 kg.m<sup>-3</sup>
- kinematic viscosity up to 75 mm<sup>2</sup>.s<sup>-1</sup>
- pH 0 -14
- contents of solid particles up to 2% of weight
- particle size up to 0,5 mm
- rated for use in 50 and 60 Hz mains
- other values must be agreed with the manufacturer

### TYPE IDENTIFICATION

**125- 80-NHJ-250-23-YC-120-09**



### CONSTRUCTION

- dimensions and parameters acc. to EN 22858/ISO 2858/DIN 24 256 up to size 34 (200-150-NHJ-400)
- full compliance with ISO 5199
- 43 sizes of standardized, hydrodynamic, medium-pressure pumps
- horizontal, centrifugal, single-stage, volute-type construction with an axial intake and a radial outlet (upwards flow)
- single seal ring design
- closed impeller with diffuser guide vanes set on a pump shaft
- "dry shaft" no contact with pumped medium
- metal-to-metal sealing of hydraulic section
- bearing housing connected to hydraulic unit by a lantern bracket, includes jacket for cooling or heating the area around the packing and behind the impeller
- 3 assembly arrangements: light (NHL), heavy (NHH) and heavy duty (NHJ)
- rated for 60 Hz mains
- dimensions of packing area acc. to ISO 3069
- flanges PN16 acc. to EN 1092-1 and 2/ISO 7005-1/-2
- other options consult with the manufacturer

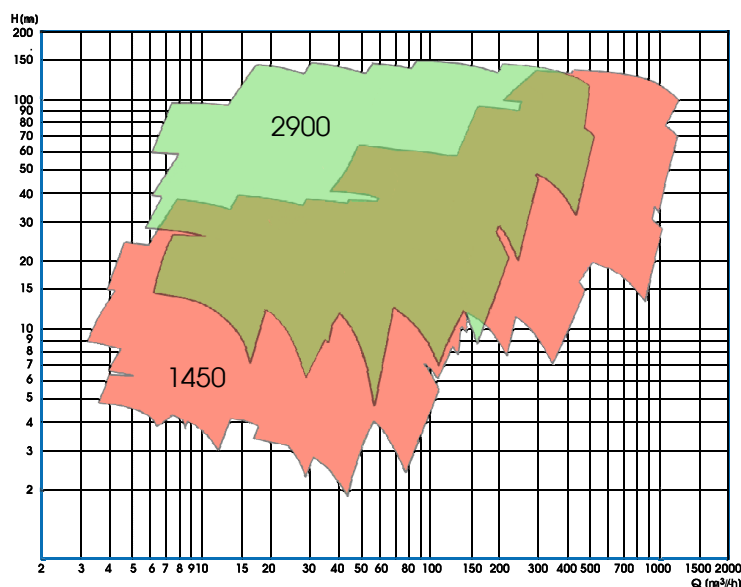
### MATERIAL SPECIFICATION

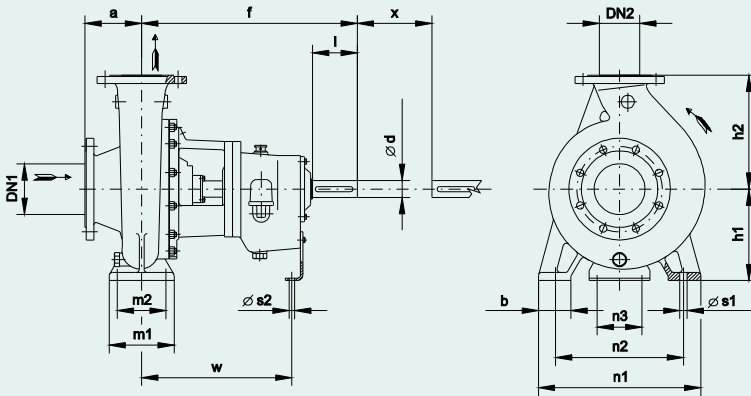
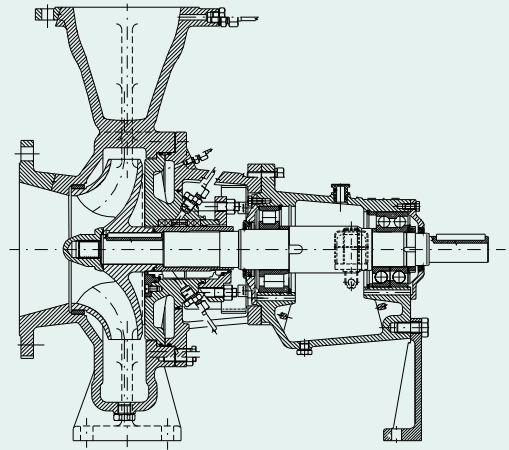
| Part name                   | OC         | ON         | OL         | YC              | YN              | ZC              | ZN              |
|-----------------------------|------------|------------|------------|-----------------|-----------------|-----------------|-----------------|
| volute                      | 1.0619     | 1.0619     | 1.0619     | 1.4308          | 1.4308          | 1.4408          | 1.4408          |
| pump casing, packing flange | 1.0619     | 1.0619     | 1.0619     | 1.4308          | 1.4308          | 1.4408          | 1.4408          |
| impeller                    | 1.0619     | 1.0619     | EN-GJL-200 | 1.4308          | 1.4308          | 1.4408          | 1.4408          |
| seal ring                   | EN-GJL-200 | CuSn10Zn2  | EN-GJL-200 | 1.4308          | CuSn10Zn2       | 1.4408          | CuSn10Zn2       |
| lantern ring / follower     | EN-GJL-200 | EN-GJL-200 | EN-GJL-200 | stainless steel | stainless steel | stainless steel | stainless steel |
| shaft sleeve                | 1.0619     | 1.0619     | 1.0619     | stainless steel | stainless steel | stainless steel | stainless steel |
| shaft                       | 1.0503     | 1.0503     | 1.0503     | stainless steel | stainless steel | stainless steel | stainless steel |
| impeller nut                | 1.0503     | 1.0503     | 1.0503     | stainless steel | stainless steel | stainless steel | stainless steel |
| lantern bracket             | EN-GJL-200 | EN-GJL-200 | EN-GJL-200 | EN-GJL-200      | EN-GJL-200      | EN-GJL-200      | EN-GJL-200      |
| bearing housing             | EN-GJL-200 | EN-GJL-200 | EN-GJL-200 | EN-GJL-200      | EN-GJL-200      | EN-GJL-200      | EN-GJL-200      |



### WORKING AREA (for 50 Hz)

| PUMP SIZE                             | SHAFT SPEED (r.p.m.) | FLOW Q (l/s)    | DELIVERY HEAD H (m) | TEMPERATURE MAX. (°C) |
|---------------------------------------|----------------------|-----------------|---------------------|-----------------------|
| from 50-32-NHJ-125 to 300-250-NHJ-630 | 1450<br>2900         | from 0,5 to 300 | from 2,5 to 160     | 180<br>(260)          |



**BASIC DIMENSIONS**

**CROSS-SECTION DRAWING**


| Pos. | DN1 | DN2 | Ø impeller | Pump |      |     |     | Feet |     |     |      |     |     |     | Shaft |      |    | kg  |     |                 |
|------|-----|-----|------------|------|------|-----|-----|------|-----|-----|------|-----|-----|-----|-------|------|----|-----|-----|-----------------|
|      |     |     |            | a    | f    | h1  | h2  | b    | m1  | m2  | n1   | n2  | n3  | w   | Ø s1  | Ø s2 | d  |     | l   | x <sup>1)</sup> |
| 1    | 50  | 32  | 125        | 80   | 385  | 112 | 140 | 50   | 100 | 70  | 190  | 140 | 110 | 285 | 14    | 14   | 24 | 50  | 100 | 46              |
| 2    | 50  | 32  | 160        | 80   | 385  | 160 | 180 | 50   | 100 | 70  | 240  | 190 | 110 | 285 | 14    | 14   | 24 | 50  | 100 | 47              |
| 3    | 50  | 32  | 200        | 80   | 385  | 160 | 180 | 50   | 100 | 70  | 240  | 190 | 110 | 285 | 14    | 14   | 24 | 50  | 100 | 54              |
| 4    | 50  | 32  | 250        | 100  | 500  | 180 | 225 | 65   | 125 | 95  | 320  | 250 | 110 | 370 | 14    | 14   | 32 | 80  | 100 | 96              |
| 5    | 65  | 50  | 125        | 80   | 385  | 112 | 140 | 50   | 100 | 70  | 210  | 160 | 110 | 285 | 14    | 14   | 24 | 50  | 100 | 47              |
| 6    | 65  | 50  | 160        | 80   | 385  | 132 | 160 | 50   | 100 | 70  | 240  | 190 | 110 | 285 | 14    | 14   | 24 | 50  | 100 | 49              |
| 7    | 65  | 40  | 200        | 100  | 385  | 160 | 180 | 50   | 100 | 70  | 265  | 212 | 110 | 285 | 14    | 14   | 24 | 50  | 100 | 64              |
| 8    | 65  | 40  | 250        | 100  | 500  | 180 | 225 | 65   | 125 | 95  | 320  | 250 | 110 | 370 | 14    | 14   | 32 | 80  | 100 | 89              |
| 9    | 65  | 40  | 315        | 125  | 500  | 200 | 250 | 65   | 125 | 95  | 345  | 280 | 110 | 370 | 14    | 14   | 32 | 80  | 100 | 112             |
| 10   | 80  | 65  | 125        | 100  | 385  | 132 | 160 | 50   | 100 | 70  | 240  | 190 | 110 | 285 | 14    | 14   | 24 | 50  | 100 | 49              |
| 11   | 80  | 65  | 160        | 100  | 385  | 160 | 180 | 50   | 100 | 70  | 265  | 212 | 110 | 285 | 14    | 14   | 24 | 50  | 100 | 55              |
| 12   | 80  | 50  | 200        | 100  | 385  | 160 | 200 | 50   | 100 | 70  | 265  | 212 | 110 | 285 | 14    | 14   | 24 | 50  | 100 | 62              |
| 13   | 80  | 50  | 250        | 125  | 500  | 180 | 225 | 65   | 125 | 95  | 320  | 250 | 110 | 370 | 14    | 14   | 32 | 80  | 100 | 92              |
| 14   | 80  | 50  | 315        | 125  | 500  | 225 | 280 | 65   | 125 | 95  | 345  | 280 | 110 | 370 | 14    | 14   | 32 | 80  | 100 | 110             |
| 15   | 100 | 80  | 125        | 100  | 385  | 160 | 180 | 65   | 125 | 95  | 280  | 212 | 110 | 285 | 14    | 14   | 24 | 50  | 100 | 52              |
| 16   | 100 | 80  | 160        | 100  | 500  | 160 | 200 | 65   | 125 | 95  | 280  | 212 | 110 | 370 | 14    | 14   | 32 | 80  | 100 | 87              |
| 17   | 100 | 65  | 200        | 100  | 500  | 180 | 225 | 65   | 125 | 95  | 320  | 250 | 110 | 370 | 14    | 14   | 32 | 80  | 140 | 84              |
| 18   | 100 | 65  | 250        | 125  | 500  | 200 | 250 | 80   | 160 | 120 | 360  | 280 | 110 | 370 | 18    | 14   | 32 | 80  | 140 | 102             |
| 19   | 100 | 65  | 315        | 125  | 530  | 225 | 280 | 80   | 160 | 120 | 400  | 315 | 110 | 370 | 18    | 14   | 42 | 110 | 140 | 168             |
| 20   | 125 | 80  | 160        | 125  | 500  | 180 | 225 | 65   | 125 | 95  | 320  | 250 | 110 | 370 | 14    | 14   | 32 | 80  | 140 | 87              |
| 21   | 125 | 80  | 200        | 125  | 500  | 180 | 250 | 65   | 125 | 95  | 345  | 280 | 110 | 370 | 14    | 14   | 32 | 80  | 140 | 91              |
| 22   | 125 | 80  | 250        | 125  | 500  | 225 | 280 | 80   | 160 | 120 | 400  | 315 | 110 | 370 | 18    | 14   | 32 | 80  | 140 | 110             |
| 23   | 125 | 80  | 315        | 125  | 530  | 250 | 315 | 80   | 160 | 120 | 400  | 315 | 110 | 370 | 18    | 14   | 42 | 110 | 140 | 157             |
| 24   | 125 | 80  | 400        | 125  | 530  | 280 | 355 | 80   | 160 | 120 | 435  | 355 | 110 | 370 | 18    | 14   | 42 | 110 | 140 | 185             |
| 25   | 125 | 100 | 200        | 125  | 500  | 200 | 280 | 80   | 160 | 120 | 360  | 280 | 110 | 370 | 18    | 14   | 32 | 80  | 140 | 105             |
| 26   | 125 | 100 | 250        | 140  | 530  | 225 | 280 | 80   | 160 | 120 | 400  | 315 | 110 | 370 | 18    | 14   | 42 | 110 | 140 | 134             |
| 27   | 125 | 100 | 315        | 140  | 530  | 250 | 315 | 80   | 160 | 120 | 400  | 315 | 110 | 370 | 18    | 14   | 42 | 110 | 140 | 160             |
| 28   | 125 | 100 | 400        | 140  | 530  | 280 | 355 | 100  | 200 | 150 | 500  | 400 | 110 | 370 | 23    | 14   | 42 | 110 | 140 | 221             |
| 29   | 150 | 125 | 250        | 140  | 530  | 250 | 355 | 80   | 160 | 120 | 400  | 315 | 110 | 370 | 18    | 14   | 42 | 110 | 140 | 153             |
| 30   | 150 | 125 | 315        | 140  | 530  | 280 | 355 | 100  | 200 | 150 | 500  | 400 | 110 | 370 | 23    | 14   | 42 | 110 | 140 | 185             |
| 31   | 150 | 125 | 400        | 140  | 530  | 315 | 400 | 100  | 200 | 150 | 500  | 400 | 110 | 370 | 23    | 14   | 42 | 110 | 140 | 221             |
| 32   | 200 | 150 | 250        | 160  | 530  | 280 | 375 | 100  | 200 | 150 | 500  | 400 | 110 | 370 | 23    | 14   | 42 | 110 | 180 | 162             |
| 33   | 200 | 150 | 315        | 160  | 670  | 315 | 400 | 100  | 200 | 150 | 550  | 450 | 140 | 500 | 23    | 18   | 48 | 110 | 180 | 216             |
| 34   | 200 | 150 | 400        | 160  | 670  | 315 | 450 | 100  | 200 | 150 | 550  | 450 | 140 | 500 | 23    | 18   | 48 | 110 | 180 | 260             |
| 35   | 200 | 150 | 500        | 180  | 670  | 375 | 500 | 100  | 200 | 150 | 550  | 450 | 140 | 500 | 23    | 18   | 48 | 110 | 180 | 364             |
| 36   | 250 | 200 | 315        | 200  | 670  | 355 | 450 | 110  | 200 | 150 | 550  | 450 | 140 | 500 | 23    | 18   | 48 | 110 | 180 | 205             |
| 37   | 250 | 200 | 400        | 180  | 670  | 355 | 500 | 100  | 200 | 150 | 550  | 450 | 140 | 500 | 23    | 18   | 48 | 110 | 180 | 256             |
| 38   | 250 | 200 | 500        | 200  | 770  | 425 | 560 | 100  | 200 | 150 | 660  | 560 | 140 | 565 | 23    | 18   | 60 | 140 | 180 | 403             |
| 39   | 250 | 200 | 630        | 300  | 1000 | 500 | 700 | 225  | 400 | 300 | 1000 | 900 | 250 | 735 | 26    | 18   | 90 | 170 | 250 | 580             |
| 40   | 300 | 250 | 315        | 250  | 770  | 400 | 500 | 130  | 260 | 190 | 690  | 560 | 140 | 565 | 26    | 18   | 60 | 110 | 180 | 240             |
| 41   | 300 | 250 | 400        | 250  | 770  | 425 | 600 | 130  | 260 | 190 | 800  | 670 | 140 | 565 | 26    | 18   | 60 | 140 | 180 | 263             |
| 42   | 300 | 250 | 500        | 250  | 770  | 475 | 670 | 130  | 260 | 190 | 800  | 670 | 140 | 565 | 26    | 18   | 60 | 140 | 180 | 416             |
| 43   | 300 | 250 | 630        | 300  | 1000 | 500 | 700 | 225  | 400 | 300 | 1000 | 900 | 250 | 735 | 26    | 18   | 95 | 170 | 250 | 630             |

**SEAL DESIGN**

- ┃ soft cord packing
- ┃ single mechanical seal
- ┃ double mechanical seal
- ┃ single mechanical seal, cartridge type
- ┃ double mechanical seal, cartridge type
- ┃ gas mechanical seal

**MOTORS**

- ┃ foot-mounted electric motor drive, diesel engine
- ┃ driving force is transmitted using a flexible coupling
  - flexible coupling without a spacer
  - flexible coupling with a spacer
- ┃ common base plate assembly, cast iron
  - common subframe assembly, welded type