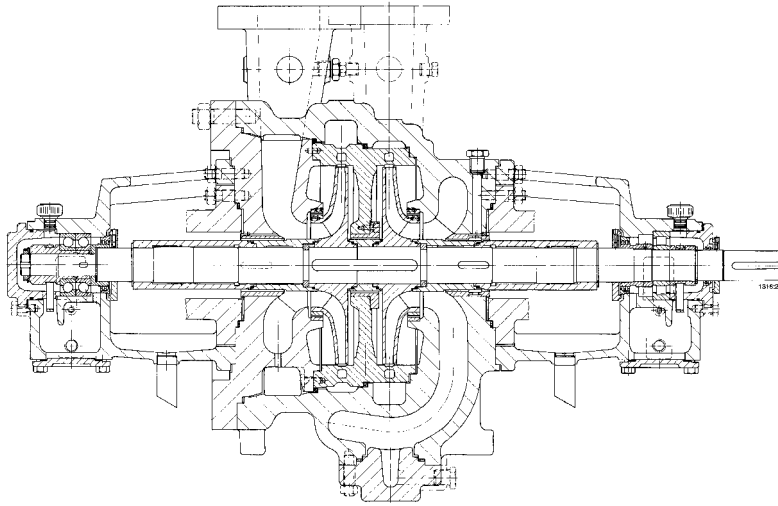


## 2 stage - Heavy Duty Process Pumps

to API 610



### Fields of Application

Handling of various petroleum products. Mainly in refineries as well as in petrochemical and chemical industries.

### Design

Horizontal, radially split volute casing pump in process type construction according to API 610, and/or VDMA 24 297, class A (heavy duty). Pump with radial flow impeller, single flow, two-stage design, back to back impeller arrangement and center-line mounted.

### Designation

RPH b 80 - 360

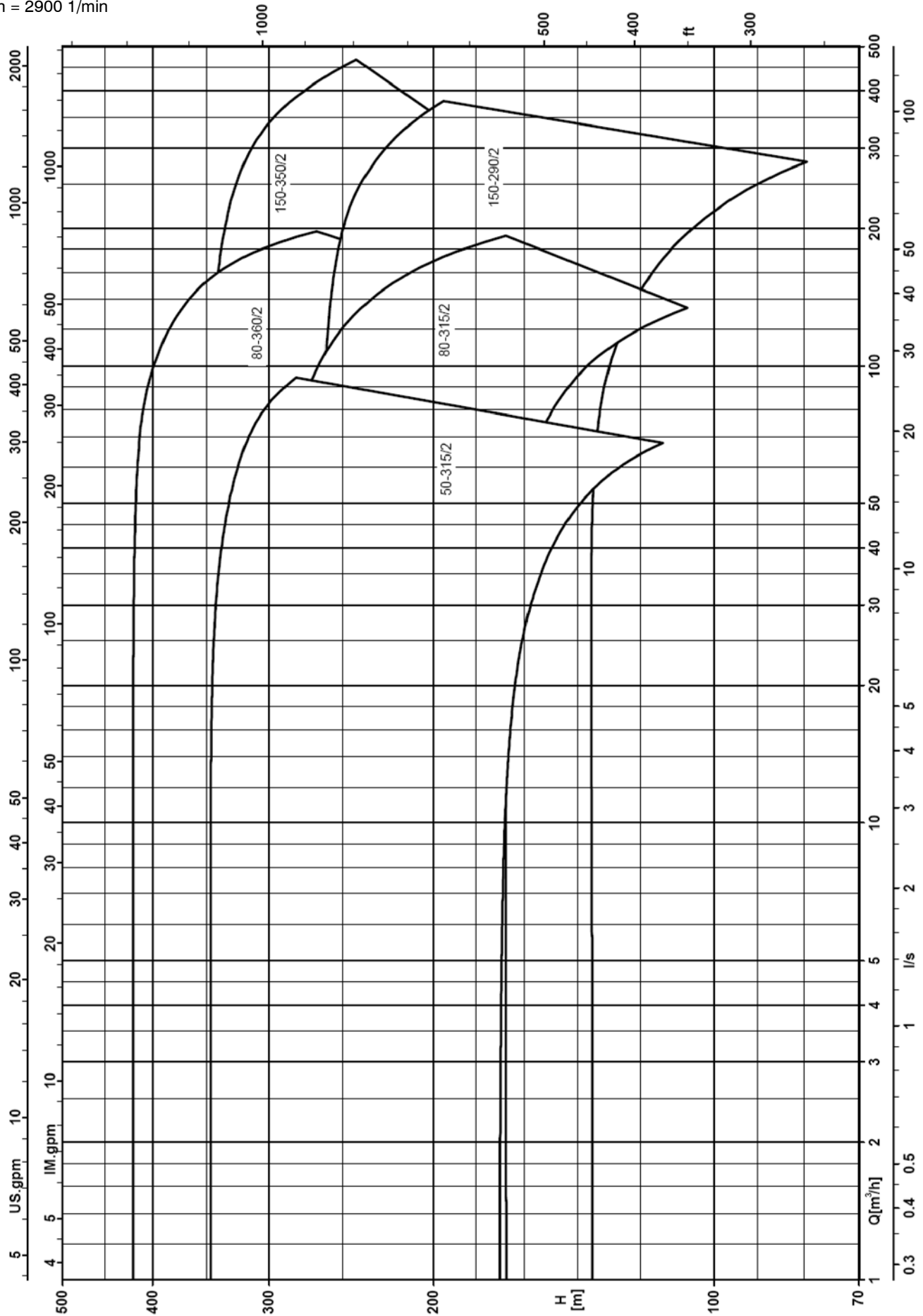
Type series \_\_\_\_\_  
 Bearings at both ends \_\_\_\_\_  
 Discharge nozzle DN in mm \_\_\_\_\_  
 Impeller diameter in mm \_\_\_\_\_

### Operating Data

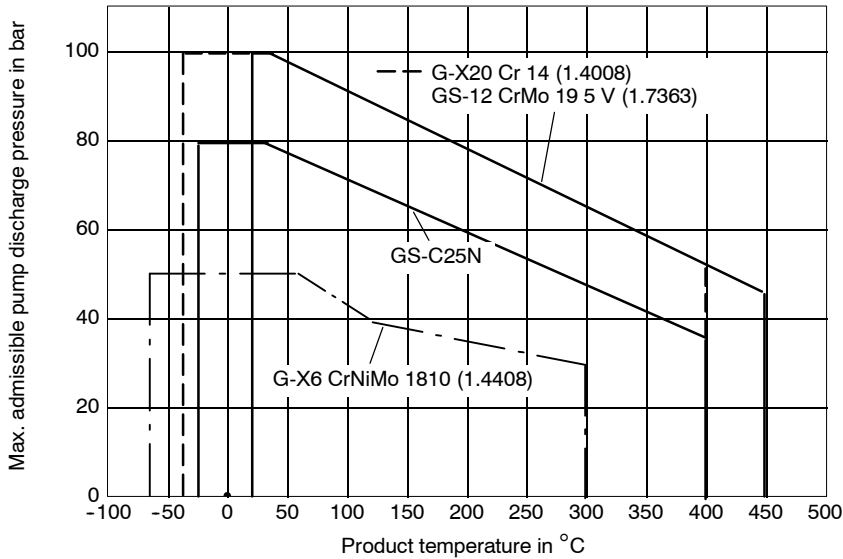
|                        |  |
|------------------------|--|
| Pump sizes             | DN 50 to 150   |
| Capacities             | Q up to 450 m <sup>3</sup> /h  |
| Heads                  | H up to 400 m  |
| Operating pressure     | p up to 80 bar<br>(ANSI B 16.5 class 900) with GS-C25<br>up to 100 bar<br>(ANSI B 16.5 class 1500) with 1.7363 |
| Operating temperatures | t -70 up to +450 °C  |

**Selection Chart**

n = 2900 1/min



## Pressure and Temperature Limits RPHb



## Materials RPHb

| Designation                             | Material class to API 610: S1,<br>GS-C 25 N | Material class to API 610: D6,<br>1.7363 |
|---|---|--|
| Volute casing                           | GS-C 25 N                                   | GS-12CrMo 19 5 V                         |
| Diffuser                                | GS-C 25 N                                   | GS-12CrMo 19 5 V                         |
| Casing cover                            | GS-C 25 N                                   | GS-12CrMo 19 5 V                         |
| Shaft                                   | X20Cr 13 VS                                 | X20Cr 13 VS                              |
| Impeller                                | GGG-40                                      | G-X5CrNi 13 4 V                          |
| Bearing bracket                         | GGG-40/GS-C25N                              | GGG-40/GS-C25N                           |
| Gland cover <sup>1)</sup>               | GS-C 25 N                                   | G-X5CrNi 13 4 V                          |
| Neck bush                               | GG-25                                       | X20Cr 13 V                               |
| Lantern ring                            | GG-25                                       | X10CrNiMoTi 18 10                        |
| Seal cover                              | 1.4408/1.4571                               | X20Cr 13 V                               |
| Impeller wear ring                      | GG-25                                       | VG 434 hardened                          |
| Casing wear ring                        | GGG-40                                      | G-X20Cr 14 V hardened                    |
| Thrower                                 | CuZn 35 Ni                                  | CuZn 35 Ni                               |
| Shaft protecting sleeve Packing         | X35CrMo 17 hardened                         | X35CrMo 17 hardened                      |
| Shaft protecting sleeve Mechanical seal | X10CrNiMoTi 18 10                           | X10CrNiMoTi 18 10                        |
| Throttling bush                         | GG-25                                       | X20Cr 13 V                               |
| Throttling bush                         | CuZn 35 Ni                                  | CuZn 35 Ni                               |

| Designation                             | Material class to API 610: A8<br>1.4408 | Material class API 610: C6<br>1.4008 |
|---|---|--------------------------------------|
| Volute casing                           | G-X6CrNiMo 1810                         | G-X12Cr 14 V                         |
| Diffuser                                | G-X6CrNiMo 1810                         | G-X12Cr 14 V                         |
| Casing cover                            | G-X6CrNiMo 1810                         | G-X12Cr 14 V                         |
| Shaft                                   | 1.4462                                  | X20Cr 13 V                           |
| Impeller                                | G-X6CrNiMo 1810                         | G-X12Cr 14 V                         |
| Bearing bracket                         | GGG-40/GS-C25N                          | GGG-40/GS-C25N                       |
| Gland cover <sup>1)</sup>               | G-X6CrNiMo 1810                         | G-X5CrNi 13 4 V                      |
| Neck bush                               | X10CrNiMoTi 1810                        | X20Cr 13 V                           |
| Lantern ring                            | X10CrNiMoTi 1810                        | X10CrNiMo 1810                       |
| Seal cover                              | X10CrNiMoTi 1810                        | X20Cr 13 V                           |
| Impeller wear ring                      | G-X6CrNiMo 1810 Colm. 6                 | VG 434 hardened                      |
| Casing wear ring                        | G-X6CrNiMo 1810 Colm. 6                 | G-X20Cr 14 V hardened                |
| Thrower                                 | CuZn35Ni                                | CuZn35Ni                             |
| Shaft protecting sleeve Packing         | G-X10CrNiMo 1810 Colm. 6                | X35CrMo 17 hardened                  |
| Shaft protecting sleeve Mechanical seal | G-X10CrNiMo 1810                        | X10CrNiMo 1810                       |
| Throttling bush                         | G-X10CrNiMo 1810                        | X20Cr 13 V                           |
| Throttling bush                         | PTFE-Carbon                             | CuZn35Ni                             |

1) Gland cover with bush made of bronze G-CuSn10/CuAlNi

### Design Features RPHb

Sealing chambers suitable for mechanical seals of extended design (back-to-back or tandem arrangement)

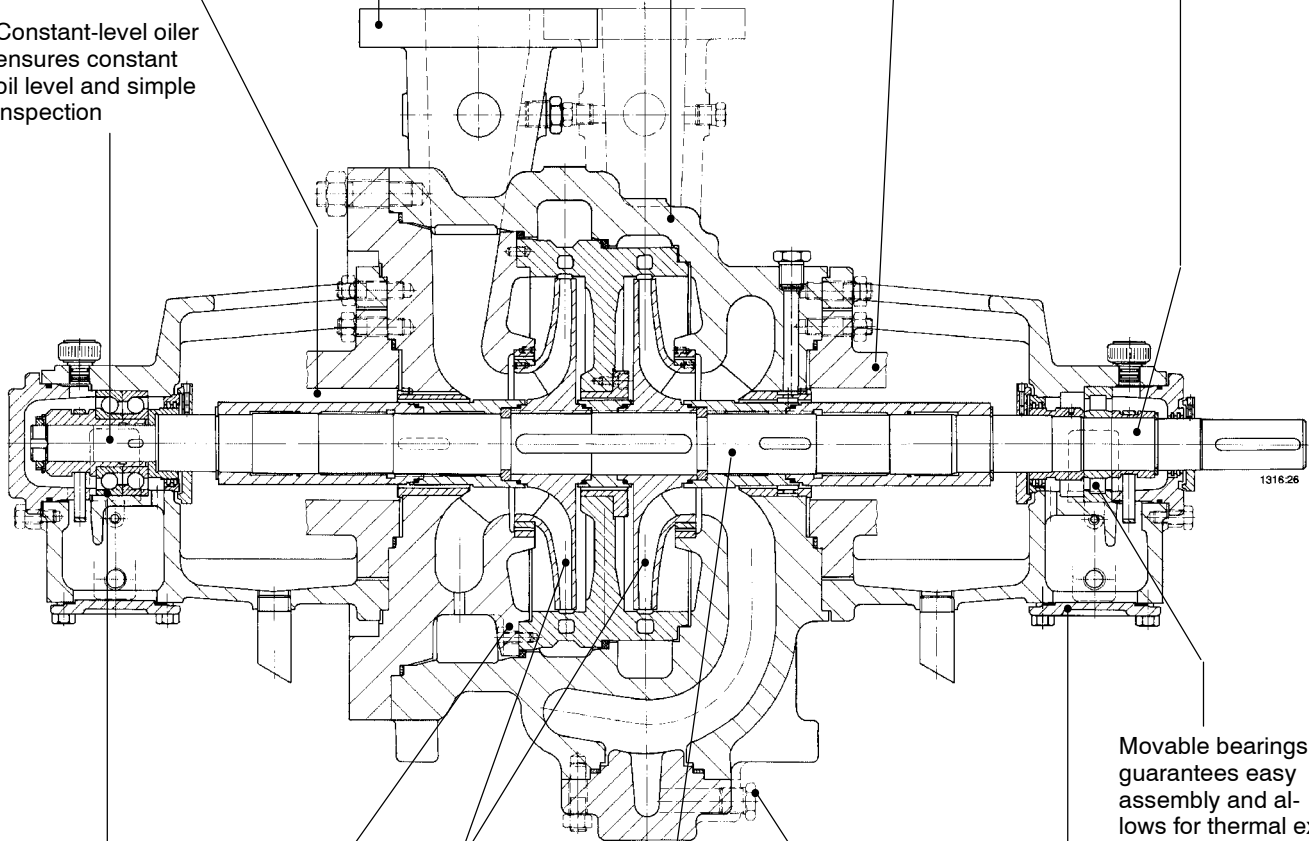
Flanges available in compliance with all standards up to PN 100

Safe dimensioning of all components under pressure by means of high-quality casting with a corrosion allowance of 3 mm

Cooling or heating of shaft seals

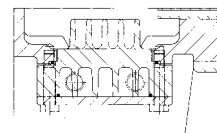
Dimensioning of shaft and bearing as well as dynamic balancing of impeller minimize shaft deflection and guarantee a long bearing life

Constant-level oiler ensures constant oil level and simple inspection



1316.26

Movable bearings guarantees easy assembly and allows for thermal expansion of the shaft



Cooling of bearing bracket possible in case of extreme operating conditions

Outer and inner bearing rings axially clamped

Radial forces reduced by diffusor

Minimized axial forces

Shaft not in contact with pumped liquid (dry shaft)

Draining possible with flange connection

Subject to technical modification without prior notice.

15.02.2012

1316.11/03-EN

