

HEGA 2502 ... 6510

TECHNICAL DATA

| | | | |
|-----------------------|---|-------------|-------------------------|
| Capacity | : Max. | 638 gpm | (145) m ³ /h |
| Head | : Max. | 1279 ft | (390) m |
| Speed | : Max. | 3600 r.p.m. | |
| Temperature | : Max. | 380 °F | (194) °C |
| Casing pressure | : Max. | 580 PSI | (40) bar |
| Shaft seal | : Stuffing box or mechanical seal | | |
| Direction of rotation | : To the right (clockwise), looking at shaft end | | |



APPLICATION

Series HEG multistage centrifugal pumps are used in applications where the requirement is for trouble-free pumping of clear or slightly dirty liquids. They are used in:

- Heating plants
- Waterworks and water supply plants
- Pressure raising plants
- Circulating water and condensate plants
- Fire extinguishing plants
- Purification plants
- Irrigation plants
- Boiler feed water plants
- Pressurized water producing stations

DESCRIPTION AND DESIGN DETAILS

Horizontal multistage centrifugal pumps with sectional casing and closed impellers.

The manufacturing program covers five sizes, with 2 to maximum 13 stages, according to the size, the speed and the shaft seal. Axial thrust balancing is carried out by balancing the impellers separately. The remaining axial thrusts are taken up by adequately sized antifriction bearings.

The impellers, diffusers, as also the wear rings on size 65, are interchangeable between stages.

Arrangements combining impeller of differing diameter permit, within the application field, an optimum adaptation of the performance curve of the pump to the required performance characteristics.

On the suction side, the mounting feet are arranged on the casing of the first stage. By this means, it is possible to ensure easy adaptation to different installation conditions, even subsequent to initial installation, by pivoting the suction head casing. The driver is arranged on the suction side but discharge side driver or driver on both sides are possible on request.

All sizes can be supplied with one or more dummy stages upon request.

Maximum casing pressure [PSI (bar)]:

| Temperature range ⁽¹⁾ | Suction | Discharge |
|----------------------------------|------------|--------------|
| 14 to 248°F (-10 to 120 °C) | 232 (16) | 580 (40) |
| up to 140 °C | 232 (16) | 551 (38) |
| up to 194 °C | 188.5 (13) | 472.7 (32.6) |

(1) Limitations due to type of shaft sealing used

ATTENTION: The maximum casing pressure is equal to suction pressure plus zero flow head.

Flanges:

The suction side flange according to DIN 2533 PN16 and the discharge side to DIN 2535 PN40. The flanges can be drilled according to ANSI B16.1 class 250, on request.

Flange positions:

Suction flange arranged horizontally towards the right hand side (looking at the shaft end) and discharge flange radially upwards. On request, the suction flange can be arranged on the left and, in the **case of pumps with three or more stages, vertically upwards.**

Bearings:

One cylindrical roller bearing according to DIN 5412 and one deep-groove roller bearing to DIN 625, both lubricated by grease.

Shaft sealing:

Sealing of the shaft can be carried out either by a stuffing box or mechanical seal as required.

- **Sealing Code 001:** Un-cooled stuffing box.
Temperature range: 14 to 230°F (-10 to 110 °C.)
- **Sealing Code 022:** Externally flushed, un-cooled, lengthened stuffing box (only for sizes 40, 50 and 65).
Temperature range: to 230°F (-10 to 110 °C.).
- **Sealing Code 511:** Cooled stuffing box.
Temperature range: up to 284°F (140 °C) [refer factory for higher temperatures]
- **Mechanical Seal Code BK3/BKS/BKU:** Unbalanced single mechanical seal with rubber bellows, lubricated by pumpage.
Temperature range: 14 to 230°F (-10 to 110 °C.) – [refer factory for higher temperatures when mechanical seal is required.]

Materials of construction

| Pos. | Pump parts | Materials of construction ⁽¹⁾ | | | | | | | |
|-------|---|--|--|--------|--------|--------|--------|----|--------|
| | | 0B | 0C | 0D | 0E | 0R | 0S | 4B | |
| 10.6 | Suction casing | 0.6020 | | | | | | | 1.4410 |
| 10.7 | Discharge casing | | | | | | | | |
| 10.8 | Stage casing | | | | | | | | |
| 23.0 | Impeller | 0.6020 | 2.1060 | | 1.4410 | 0.6020 | 2.1060 | | |
| 17.1 | Diffuser | 0.6020 | | 2.1060 | 0.6020 | 0.6020 | | | |
| 21.1 | Shaft | 1.7225 | | | | 1.4021 | | | |
| 52.4 | Shaft protection sleeve (stuffing box) | 1.4301 | | | | | | | 1.4021 |
| 52.32 | Shaft protection sleeve (mechanical seal) | 1.4301 | | | | | | | |
| 46.1 | Stuffing box | Synthetic fiber with PTFE impregnation | | | | | | | |
| 43.3 | Mechanical seal | AQ1EGG | [Carbon graphite / Silicon carbide / EPDM ⁽²⁾] | | | | | | |
| | | AQ1VGG | [Carbon graphite / Silicon carbide / FKM ⁽²⁾ (Viton)] | | | | | | |
| | | Q1Q1VGG | [Silicon carbide / Silicon carbide / FKM ⁽²⁾ (Viton)] | | | | | | |

(1) Material number according to German Standard - DIN.

(2) Abbreviation according to ISO 1629

Equivalent materials

| Name | German Standard - DIN | | European Standard - EN | USA - Standard |
|-----------------------------|-----------------------|---------------------------|------------------------|-----------------------|
| | Material Nr. | Short name or Description | | |
| Gray cast iron | 0.6020 | GG-20 | EN-GJL-200 | ASTM A48 class 30 |
| Cast nickel tin bronze | 2.1060 | G-CuSn 12 Ni | EN-CC484K | UNS C91700 |
| Cast Duplex stainless steel | 1.4410 | G-X10CrNiMo 18 9 | EN-1.4410 | ASTM A351 class CF12M |
| Alloyed high-strength steel | 1.7225 | 42 CrMo 4 | EN-1.7225 | AISI 4140 |
| Martensitic stainless steel | 1.4021 | X20Cr 13 | EN-1.4021 | AISI 420 |
| Austenitic stainless steel | 1.4301 | X5CrNi 18 9 | EN-1.4301 | AISI 304 |

Speed / Number of stages

Maximum speed and maximum number of stages according to shaft seal option.

| Pump size | Maximum speed [r.p.m.] | Maximum number of stages for the shaft seal | | | | | |
|-----------|---------------------------|---|-----|-----|-----|-----|-----|
| | | 001 | 022 | 511 | BK3 | BKS | BKU |
| 2500 | 1 800 | 13 | - | 11 | 13 | 13 | 13 |
| | 3 000 | 11 | - | 9 | 13 | 13 | 13 |
| | 3 600 | 8 | - | 8 | 10 | 10 | 10 |
| 3200 | 1 800 | 12 | - | 10 | 12 | 12 | 12 |
| | 3 000 | 9 | - | 8 | 11 | 11 | 11 |
| | 3 600 | 6 | - | 6 | 7 | 7 | 7 |
| 4000 | 1 800 | 12 | 10 | 10 | 12 | 12 | 12 |
| | 3 000 | 8 | 8 | 8 | 9 | 9 | 9 |
| | 3 600 | 6 | 6 | 6 | 6 | 6 | 6 |
| 5000 | 1 800 | 11 | 9 | 9 | 11 | 11 | 11 |
| | 3 000 | 6 | 6 | 6 | 8 | 8 | 8 |
| | 3 600 | 4 | 4 | 4 | 5 | 5 | 5 |
| 6500 | 1 800 | 10 | 8 | 8 | 10 | 10 | 10 |
| | 3 000 | 5 | 5 | 5 | 6 | 6 | 6 |
| | 3 600 | 3 | 3 | 3 | 4 | 4 | 4 |