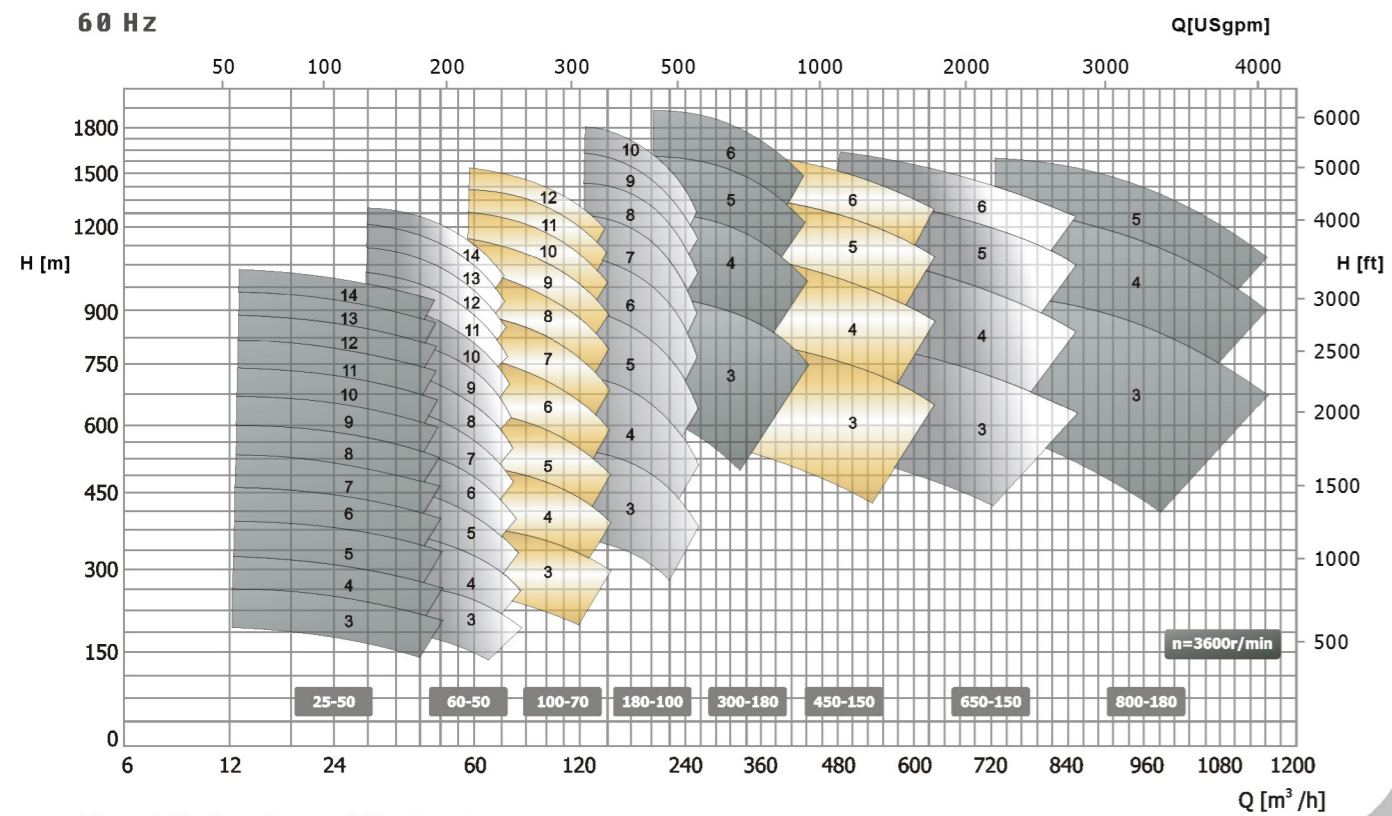
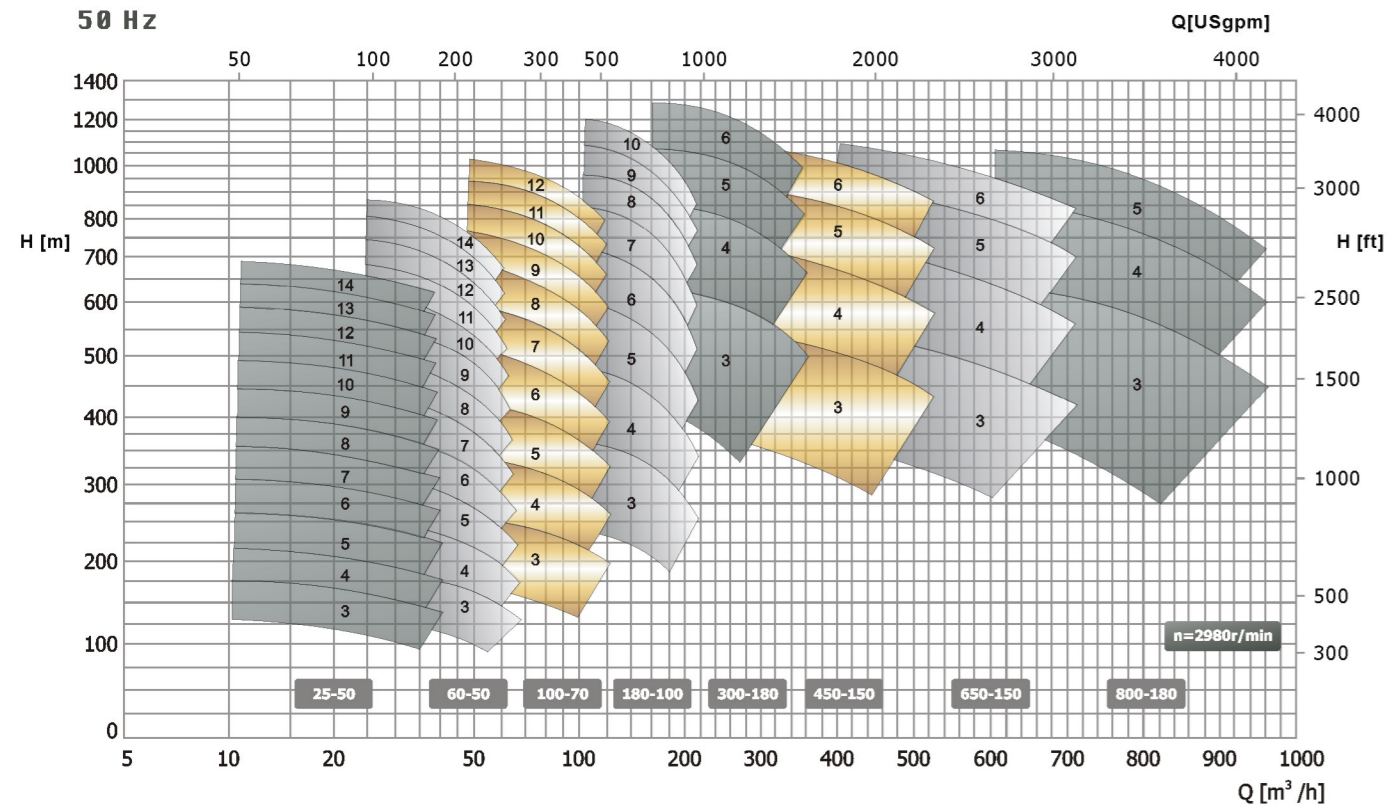
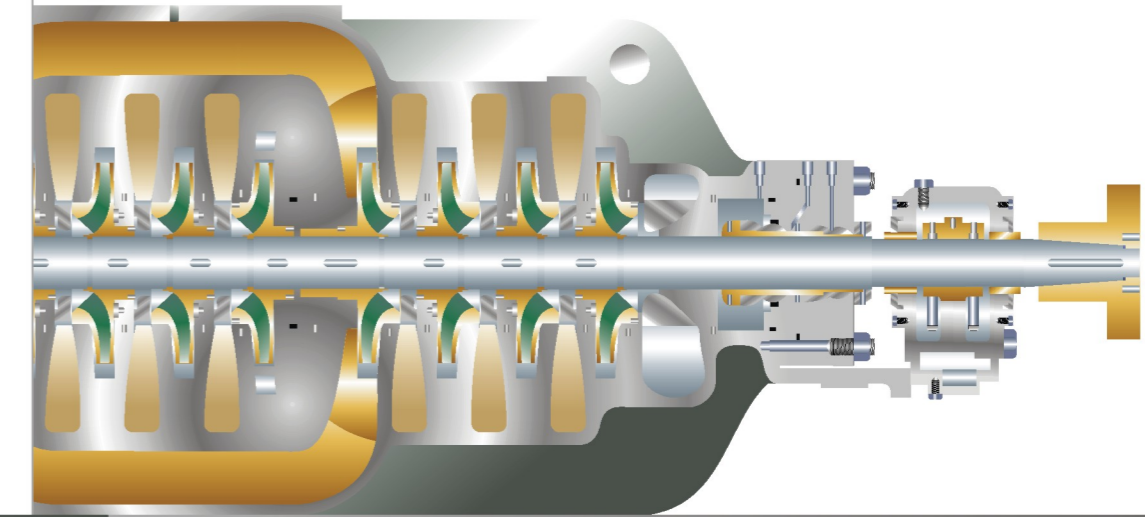
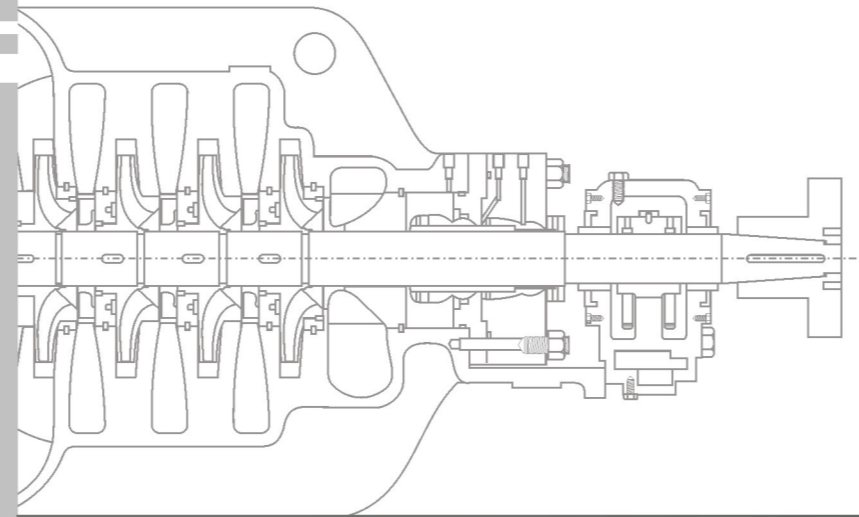


SELECTION CHART



*Also available other performance at different speed.



PT TORISHIMA GUNA ENGINEERING

HEAD OFFICE : Jl. Rawa Sumur Timur No. 1 Pulugadung Industrial Estate,
 Jakarta 13930 - Indonesia. Phone: +62 21 460 3963, Fax: +62 21 460 3937
 Email : tge-info@torishima-guna.co.id

TURBOMACHINERY WORKSHOP : Jl. Selayar II Blok H-12, Kawasan Industri MM2100
 Telajung, Cikarang Barat Bekasi 17845, West Java - Indonesia.
 Phone: +62 21 2957 6955, Fax: +62 21 2957 6956



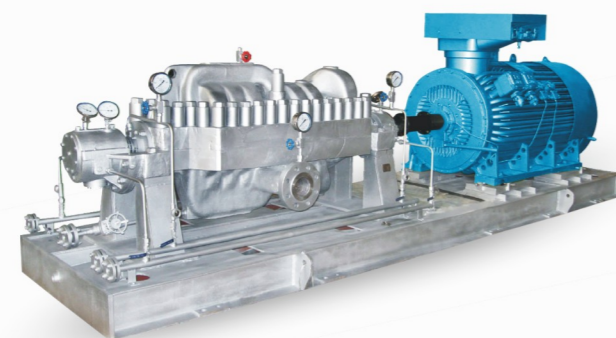
Axially Split Multistage
 Between Bearing Pump
 API 610 10th Ed
 BB3 Type

GENERAL

TG MHSK series pump is multistage, axially split case and centerline mounted, designed according to API 610 10th Ed (BB3 Type).

OPERATING RANGE

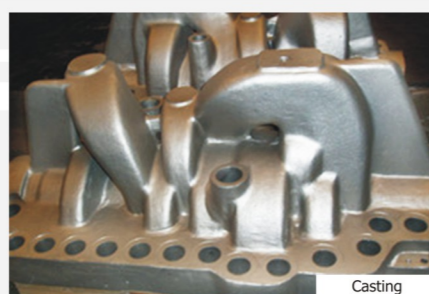
Capacity	Q	Up to 1,500 m ³ /hr (6,600 usgpm)
Total head	H	Up to 3,000 m (9,800 feet)
Temperature	T	- 40 to + 200 °C (- 40 to 390 °F)
Pressure	P	10 to 35 MPa (1450 to 5070 psi)
Nozzle Size, Discharge	DN	50 to 250 mm (2 to 10 inch)
Speed	N	Up to 6,000 rpm



NOMENCLATURE

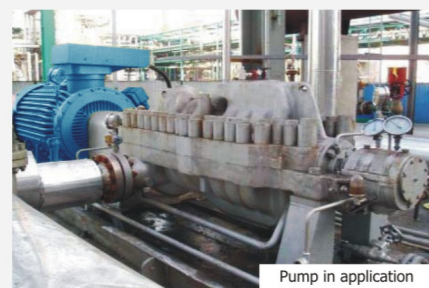
Ex. TG MHSK 180 - 100 x 4

TG MHSK	:	Multistage, axially split case pump
180	:	Capacity at design point, m ³ /hr
100	:	Head at design point, single stage, m
4	:	No. of stage

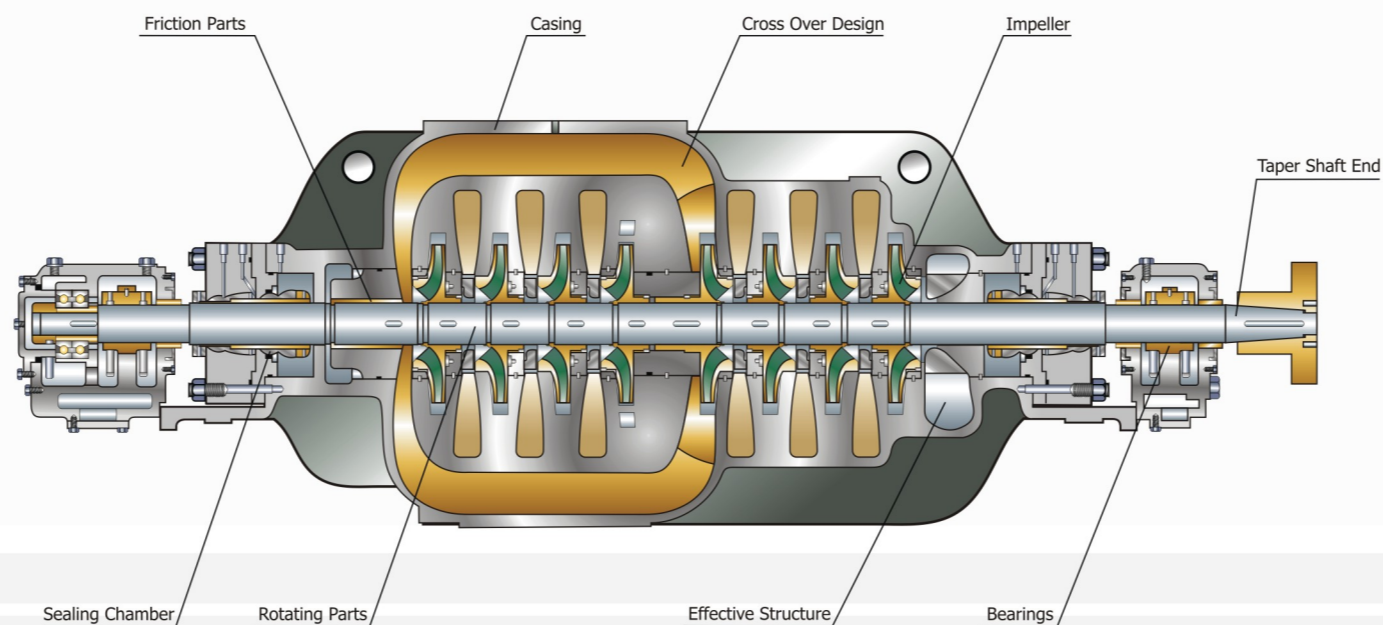


FEATURES

- Casing : Axial split type for easy maintenance.
- Impeller : Each impeller is individually balanced for smooth operation. Opposed impeller arrangement give axial hydraulic balance. Optional double suction for first stage is available for low NPSHA requirement.
- Sealing Chamber : Designed to conform API 682, wide range of options packing, cartridges and standard mechanical seals.
- Bearings : Sleeve type radial bearings are available in self lubricating or forced lubricating systems. Ball thrust bearing at non drive end side.



SECTIONAL DRAWING



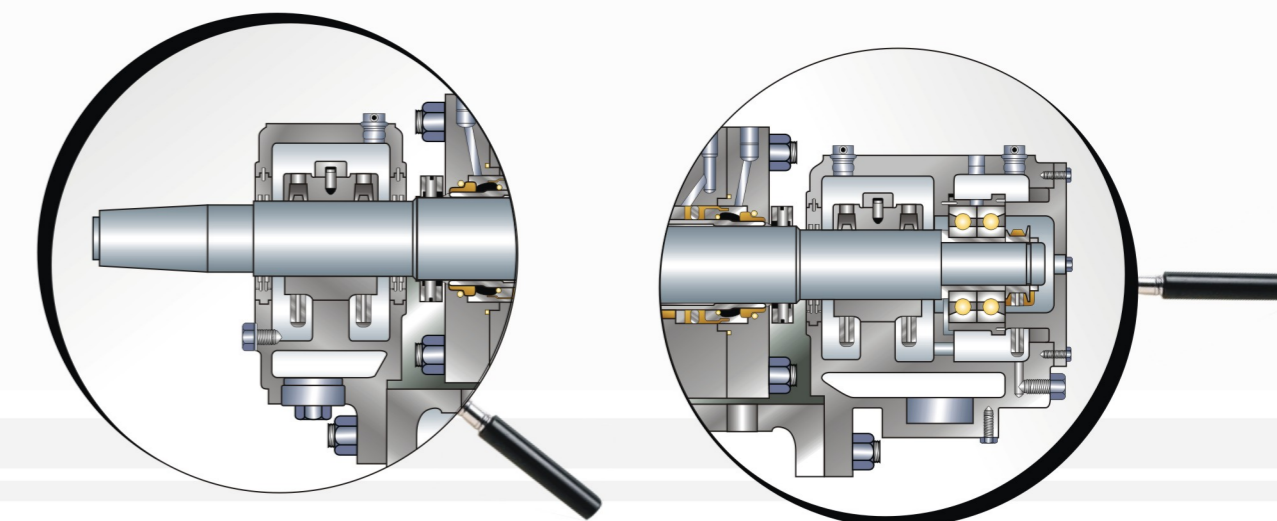
* Typical drawing only

- Friction Parts : All friction parts are made of high hardness, wear-resistant and anti occlusion material. The design reduce particle abrasion and give long pump life and high reliability.
- Casing : Casing are made by dual volute design to ensure radial balance and minimum shaft deflection.
- Crossover Design : Crossover design gives minimum friction loss & maximum efficiency.
- Impeller : First stage impeller design ensure good suction performance. Impeller are back to back arrangement which automatically balances the axial thrust. No need extra device to absorb the axial thrust.
- Taper Shaft End : Tapered-extended shaft for easy assembling & maintenance.
- Sealing Chamber : Sealing chamber is fully accordance to API 682 specification, can be configured for various structures of seal and finishing plans.
- Rotating Parts : Big shaft design and high overall rigidity of rotor ensure small deflection and high first critical rotating speed for safe and reliable operation.
- Effective Structure : Inlet & Outlet nozzles are in the pump casing, therefore it reduces the maintenance time by only removing the pump cover without having to remove casing & piping.
- Bearings : Depends on the shaft power and speed, there are two options for bearings ; self lubricated and forced lubricated sliding bearings with the dust proof labyrinth structure, which effectively prevents oil leakage, in addition of preventing dust and other debris from entering the bearing chamber.

BEARING ARRANGEMENT

Self Lubricated Sliding Bearing

Rotor parts are supported by radial sliding bearing at both ends. At the non drive side, thrust bearing prevents axial movement of rotor.



Force Lubricated sliding Bearing

Consists of a radial sliding bearing which is lubricated by external oil supply and thrust bearing. Radial bearing is a four oil wedge sliding bearing structure. Tilting pad thrust bearing is force lubricated, bi-fuel injection and equipment with temperature monitoring and protection instrument.

