

# MMTV

Vertical Multi-Stage Pumps with Barrel



TORISHIMA PUMP

# Vertical Multi-Stage Pumps with Barrel

Using a high pressure vertical barrel centrifugal pump often presents advantages and ensures trouble-free operation, in those cases where the physical layout of the plant precludes the installation of the receiver vessel at a sufficient height to ensure adequate suction head for the pump under all operation conditions. This applies particularly in the case of condensers in power stations. The barrel of the pump serves as a pit, and by adding the required length of rising main, the pump can be installed at any depth desired.

## Applications

Pumping hot water and condensate in power stations, especially in cases where the suction head is restricted.

## Operating range

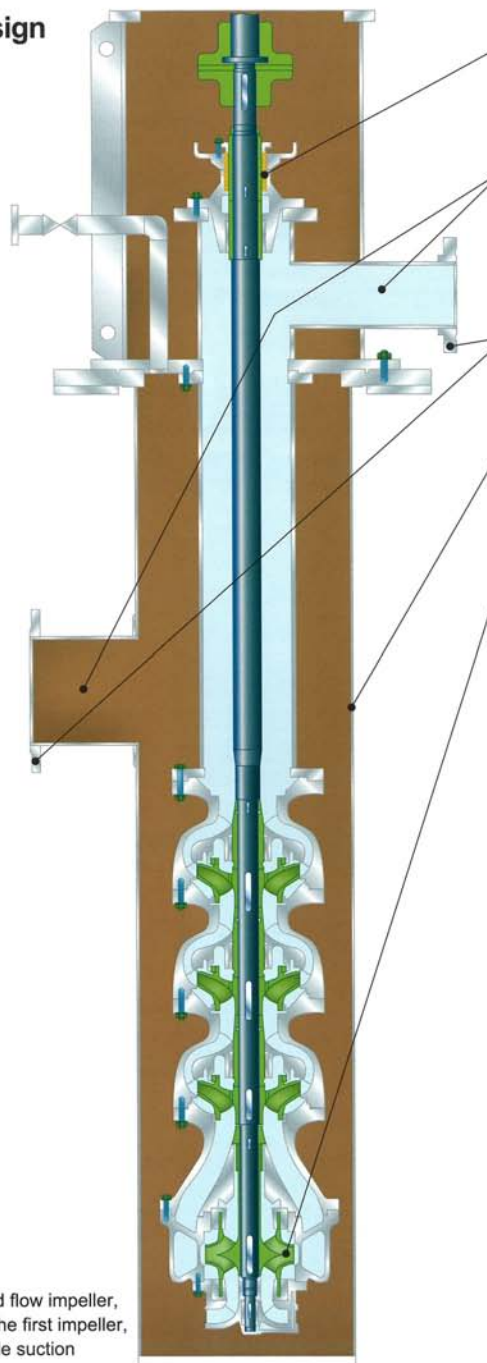
Capacities	up to 2,900m <sup>3</sup> /h (12,770U.S.gpm)
Total head	up to 490m (1600ft)
Pump suction pressure	up to 19.6bar (285psi)
Pump discharge pressure	up to 39.2bar (570psi)
Speed	up to 3,600min <sup>-1</sup>
Size	40 to 350mm (1½ to 14 in)

## Materials

Casing	Cast iron, Ductile iron, Stainless cast steel, Bronze
Impeller, the first stage	Stainless cast steel, Bronze, Cast steel
Impeller, the second stage or more	Cast iron, Ductile iron, 2%Ni cast iron
Shaft	Stainless cast steel, Bronze
	Stainless steel



## Design



### Shaft seal options

- Gland packing
- Mechanical seal

### Nozzle locations

- Suction: Can be arranged above or below floor level as required.
- Discharge: Always located on the motor stool.

### Flange options

- to JIS, ANSI, DIN and BS

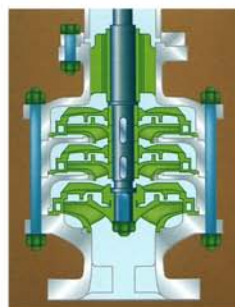
### Barrel

- Can be lengthened to meet low NPSH requirements.

### Impeller options

- Mixed flow impeller for high flow application. The first impeller: Specially designed with double suction to avoid cavitation also available.
- Radial impeller also available for high heat at low flow rate.

Mixed flow impeller,  
and the first impeller,  
double suction



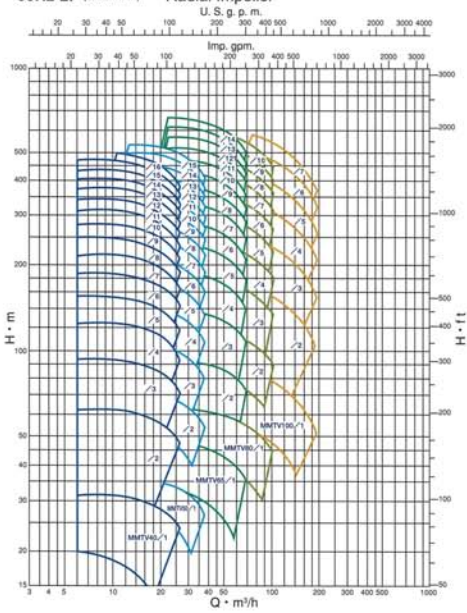
Radial impeller



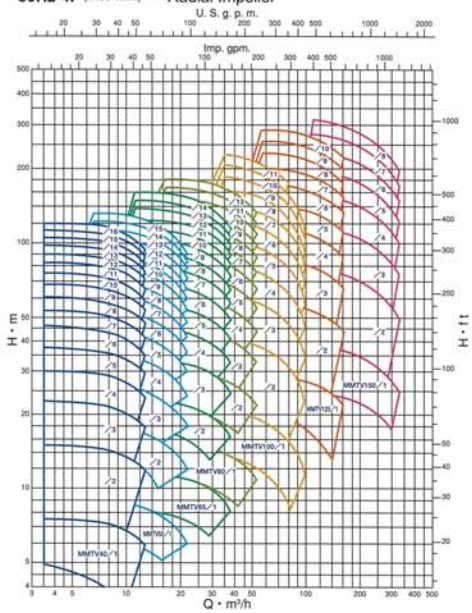
Mixed flow impeller

# Selection Charts — 50Hz Applications.

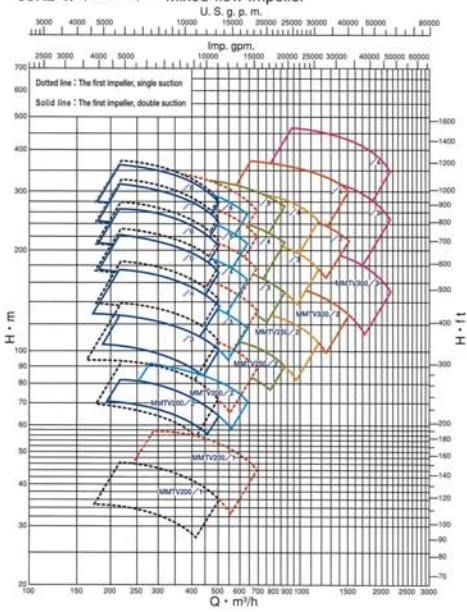
**50Hz-2P (2900 1/min) — Radial Impeller**



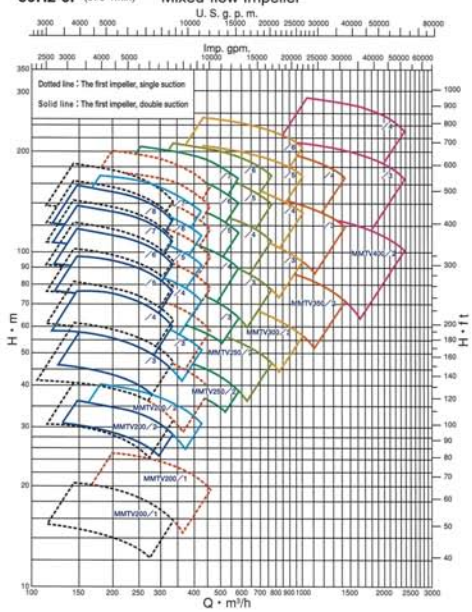
**50Hz-4P (1450 1/min) — Radial Impeller**



**50Hz-4P (1450 1/min) — Mixed-flow Impeller**

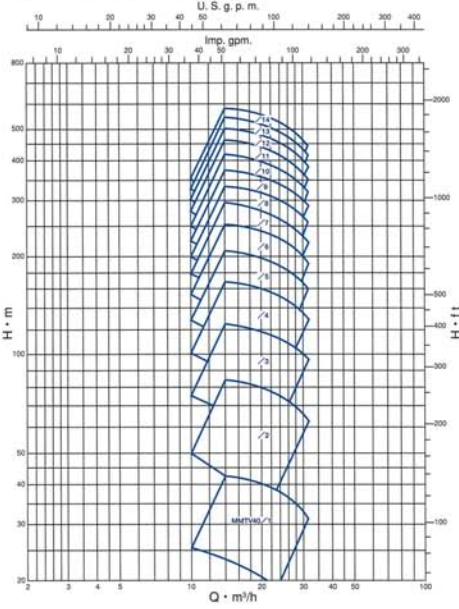


**50Hz-6P (970 1/min) — Mixed-flow Impeller**

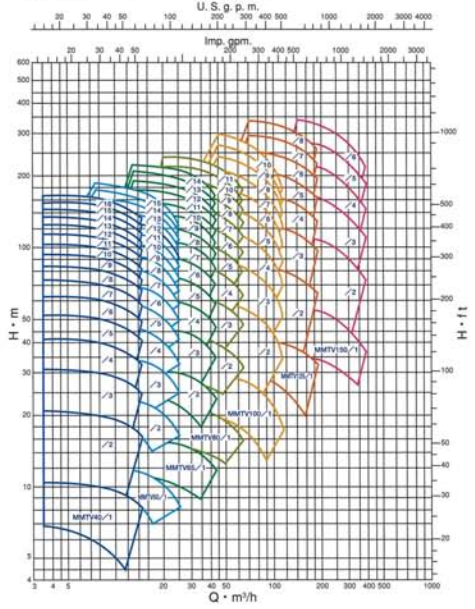


# Selection Charts – 60Hz Applications.

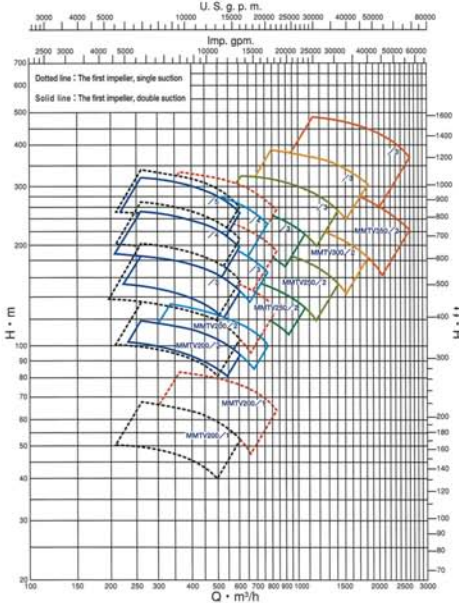
**60Hz-2P (3500 1/min) — Radial Impeller**



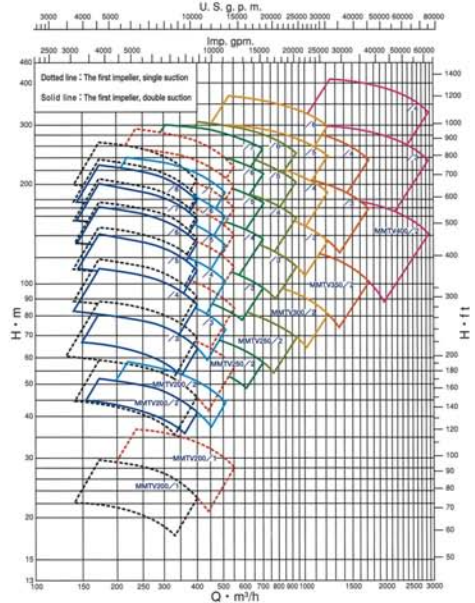
**60Hz-4P (1750 1/min) — Radial Impeller**

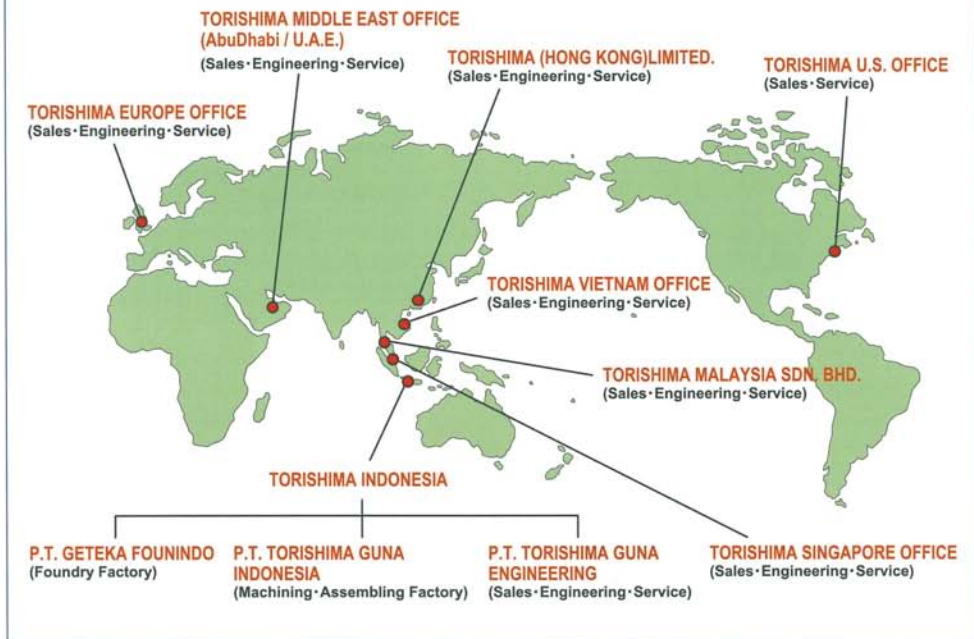


**60Hz-4P (1750 1/min) — Mixed-flow Impeller**



**60Hz-6P (1150 1/min) — Mixed-flow Impeller**





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