

C.R.I. VERTICAL TURBINE PUMPS

VT - SERIES







C.R.I. PUMPS

Pumping trust. Worldwide.

T H E B E G I N N I N G

of C.R.I., way back in 1961, was a resolute attempt to produce a few irrigation equipments using the limited facilities of an in-house foundry. Eventually the founder's dream was coming true as the small production unit he started kept growing rapidly. Now, after more than five eventful decades, it is an enormous, widely reputed organization, which produces more than 2300 varieties of perfectly engineered pumps and motors and sells its products in numerous countries spread across 6 continents.

C . R . I . I S O N E A M O N G

the few pioneers in the world to produce 100% stainless steel submersible pumps. Having achieved a record production capacity of over 2 million pumps per annum, today C.R.I. is rubbing its shoulders with the best brands in the world, with advanced technology and safety standards as its hallmarks.

T H E I N F R A S T R U C T U R E

of C.R.I. is pretty comprehensive with state-of-the-art machineries and high potential in-house R&D recognised by the ministry of science and technology, Govt. of India - all within its own covered area of 300,000 square metres. The production environment is accredited with ISO 9001, ISO 14001 & OHSAS 18001 certifications and the products are CE, UR/UL, IEC, TSE & ISI certified. The R&D team always stays in tune with the changing scenario and seldom fails in coming up with outstanding solutions every time.

N E E D L E S S T O S A Y ,

behind this legendary growth lies the untiring, innovative, enthusiastic and dedicated team work. and, of course, a flawlessly maintained value system too. The name C.R.I. itself encapsulates the company's ethos: "Commitment, Reliability, Innovation".





Vision, Mission and Values

To be the industry leader providing best - in - class fluid management solutions to individual and institutional customers and societies in our chosen markets.

We will achieve this through our dedicated efforts to enhance the welfare of all our stakeholders and by living by our values of **commitment, reliability** and **innovation**.



A close-up photograph of a vertical turbine pump assembly, showing several stacked, dark-colored, conical or cylindrical components. The components are bolted together, and the image is set against a light blue background.

VERTICAL TURBINE PUMPS

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C.R.I. Vertical Turbine Pumps are engineered to perfection with innovative design and stringent quality control for trouble free operation. These pumps are robust in construction and tested to a high standard of excellence. High grade materials are used to make these pumps durable, efficient & easy to maintain and all the rotating parts are statically & dynamically balanced. The shaft is made of high quality steel, precision ground of ample size for transmitting the rated horse power.

The Vertical Turbine Pumps offered are well designed, vibration free, silent in operation, energy efficient and provide long, trouble-free service in actual operation.

Design Code

VTP - VERTICAL TURBINE PUMP

Impeller Type
 1 = Closed Impeller
 2 = Semi open impeller

Casing Dia. in Inch

TYPE OF SEALING
 M - Mechanical Seal
 G - Gland Packing

Material of Construction
 C = CI Casing, CI Impeller
 B = CI Casing, Bronze Impeller
 S = SS Casing, SS Impeller

No. of stages



Applications & Features

APPLICATIONS

- General Water Supply
- Lift Irrigation
- Flood Control
- Water Treatment Plant
- Pressure Boosting
- Dewatering
- Cooling Water Supply
- Process Water supply
- Transfer & Recirculation
- Power Generation
- Oil & Gas
- Mining
- Fire Fighting

FEATURES

- Precisely made Parts
- Better Efficiency
- Durable Sealing
- Smooth & Noiseless Operation
- Suitable for Deep Sump Depth
- Easy to install & maintain
- Less overall cost



Technical Details

RANGE

- Capacity : Upto 12000 m³/h
(Upto 40,000 m³/h on request)
- Head : Upto 200 mtrs

MATERIALS

- Casing : CI / NiCl / CS / SS / Duplex
- Impeller : CI / NiCl / CS / Bronze / SS / Duplex
- Shaft : CS / SS / Duplex
- Column Pipe : MS / CI / NiCL / SS

DESCRIPTION

- Pumps : Single and Multistage
- Casing : Volute Type with integrally cast vanes
- Impeller : Enclosed or semi open,
axial flow or mixed flow
- Shaft : Precision ground
- Column Pipe : Cast or Fabricated
- Bearings : Cutless bearings of natural /
synthetic rubber (with optional outer
shell of suitable metal)
lubricated by self / external water
(or)
Bronze bearing with oil lubrication.
- Drive : Electric motor with vertical hollow /
solid shaft.
Diesel engine with right angle gear unit.





Constructional Details

CASINGS

Casing assemblies are made up of close grained cast iron as standard constructions & can also supply in other material like NiCl / CS / SS / Duplex against the type of applications. They are hydraulically designed to minimize the friction loss of the water flowing upward and to convert high velocity of water into pressure head. The inner surface is coated with anti corrosive paint. The Casing houses the impeller and bearing. Successive Casings are connected each other by flanged joints.

IMPELLERS

The vane angles of the impellers are carefully selected to achieve a higher efficiency and the vanes are made extra smooth to minimize hydraulic losses. The impellers are statically and dynamically balanced to the nearest working speed for a vibration free operation and also to ensure durability. The impellers are machined accurately to match the contours of the Casing.

The runner clearance of the impellers can be easily varied to change the capacity. C.R.I. Pumps can give different combination of head and capacity by varying the type of impeller and number of stages. The pump can be fitted with closed impellers to draw clean, general purpose water and semi-open impellers for sandy water.

Normally alloy of cast iron impellers are supplied by default and Bronze / NiCl / CS / SS / Duplex impellers can also be supplied against the customer requirement. The special materials are preferred for aggressive water and for potable water applications. The impellers are engineered for the usage of pumping water from tube wells, bore wells, open wells, lakes and rivers.

SUCTION BELL

Suction Bell is also made up of cast iron or other materials like NiCl / CS / SS / Duplex and is hydraulically contoured to guide a uniform flow to the impeller. It is fitted with long bronze bearing (for the impellers shaft), sand collar and sealing plug for sand free running. The strainer at the bottom prevents from large foreign solid particles entering into Suction Bell.



VT SERIES

SHAFT ENCLOSING TUBES / CASTING

The shaft enclosing tubes, from which oil passes downwards to lubricate the line shaft that prevent the oil mixing with pumped water, protect the line shaft and also hold the line of bearing in alignments. Naturally the casting pipes are eliminated in water lubricated pumps that is available in 1.5 mtr standard length. They are coupled with bronze, spiral-grooved, threaded bush bearing. The chemically treated rubber guide spiders, provided at suitable intervals, stabilize vibrations.

LINE SHAFT

The solid line shaft, rotated from the top by the prime mover is made up of high carbon steel and is designed for 25% over load capacity at maximum power consumption. In water lubricated pumps the line shaft rotate in rubber bearing with the stainless steel sleeves which have internal threads. The sleeves are locked by the line shaft steel coupling, at the same time couples the two lines shaft in oil lubricated pumps.

DISCHARGE CASE AND TOP CASING

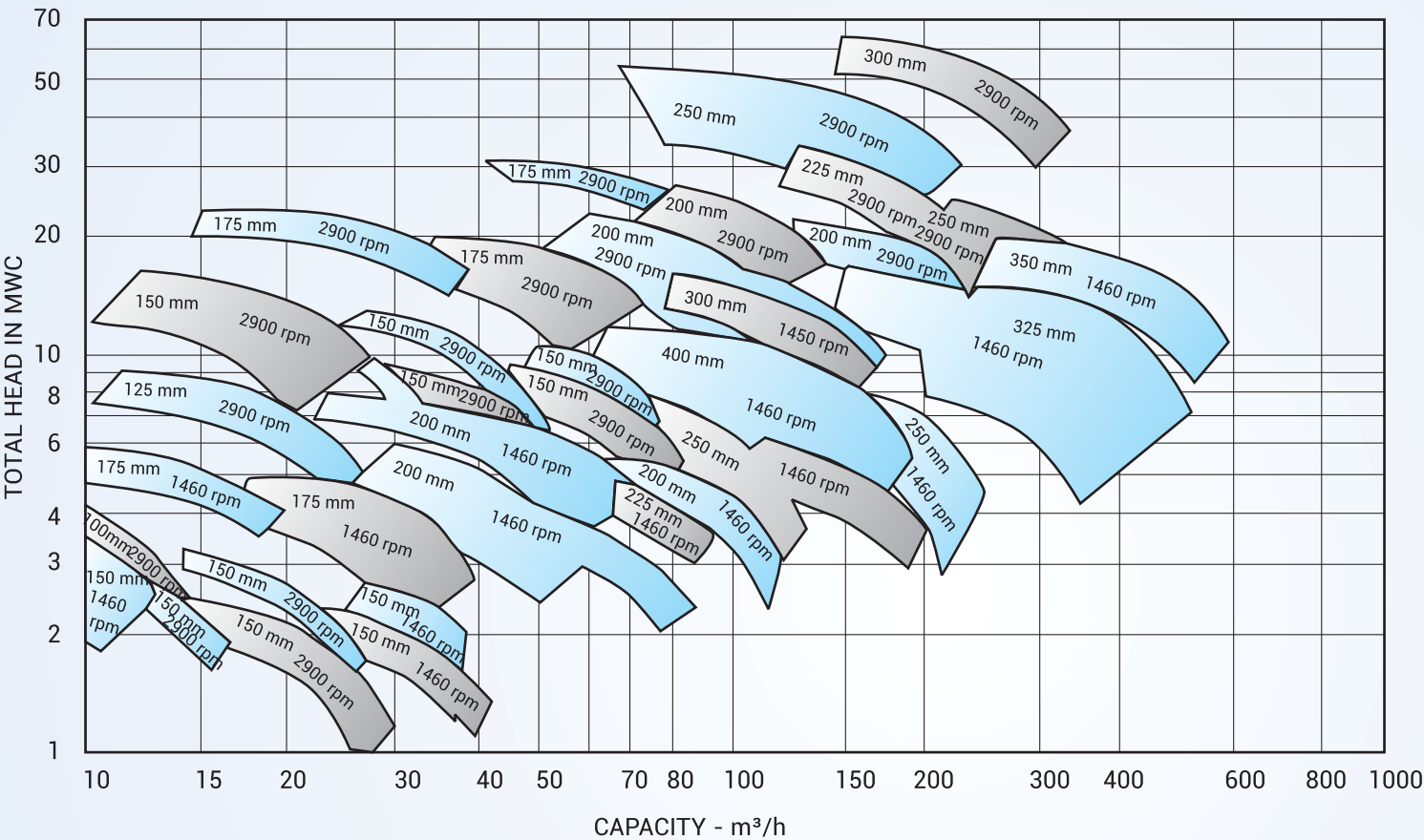
These parts are also made up of close-grained cast iron or other materials like NiCl / CS / SS / Duplex against the specific requirement. It is provided with outlet and long bearing, strong enough to guide the pump shaft for vibration free operation. The bearing is protected by sand collar. The stuffing box of the oil lubricated pump is provided with a bronze lantern ring and graphite asbestos gland packing to achieve perfect oil-water separation and to ensure smooth oil lubrication system.





Performance Curves

Vertical Turbine Pump Size : 100 mm - 350 mm

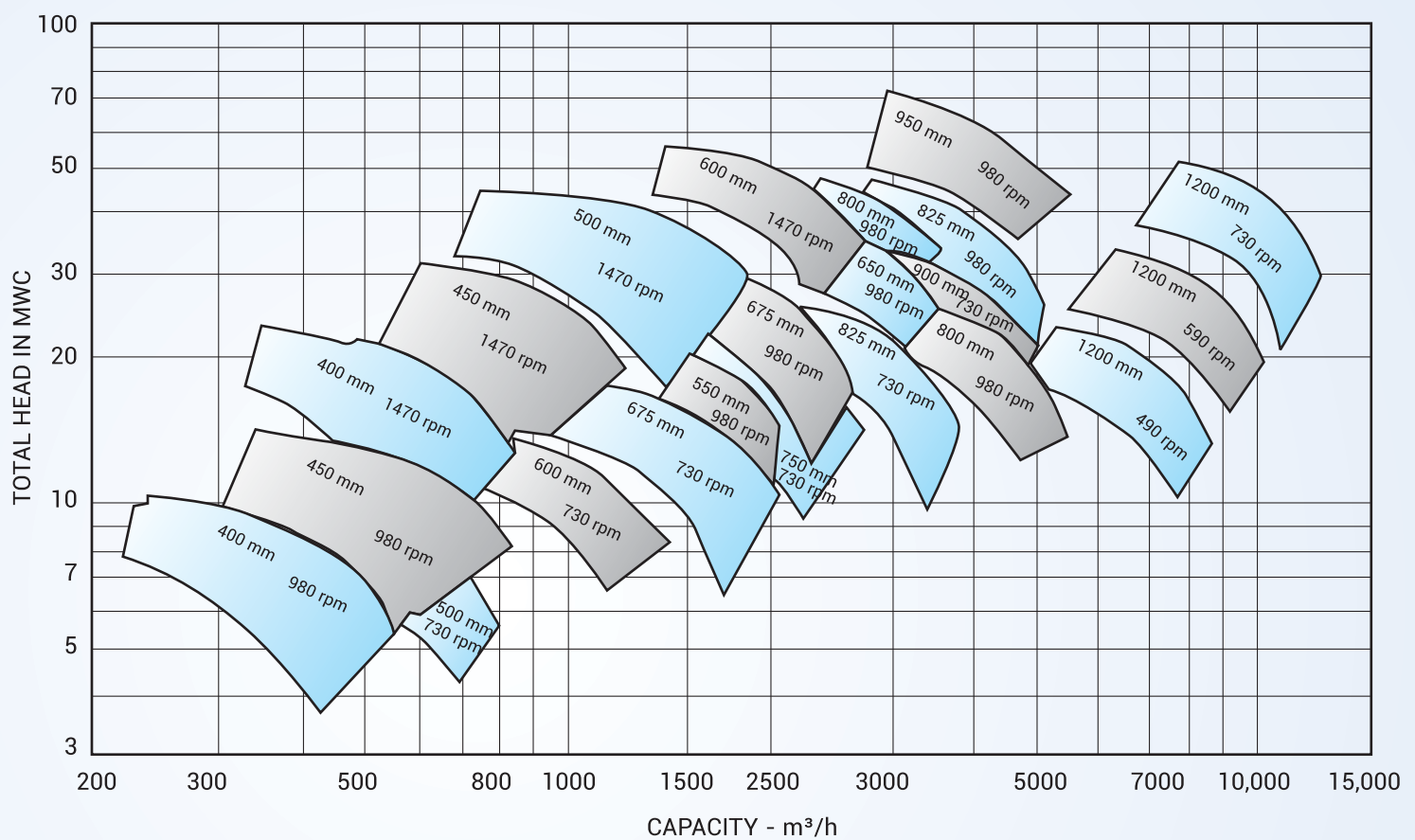


Note : Charts given above are meant for tentative selections only. For details individual pump family curves must be referred to. We reserve the right to change the above without notice due to continuous design improvements being implemented.



VT SERIES

Vertical Turbine Pump Size : 400 mm - 1200 mm



Note : Charts given above are meant for tentative selections only. For details individual pump family curves must be referred to.
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Performance Table

Model	Flow Range (m ³ /h)	Head (M)	Speed (rpm)	Max. kW	Max. HP
VTP - 1106	5 - 13	4	1460	0.14	0.19
VTP - 1107	7 - 19	6	1460	0.34	0.46
VTP - 3107	16 - 38	5.5	1460	0.44	0.59
VTP - 9112	20 - 45	11	1475	10	13.7
VTP - 1108	25 - 56	8.5	1460	1.11	1.50
VTP - 3108	40 - 70	8	1460	1.12	1.52
VTP - 7109	60 - 120	12	1460	2.66	3.60
VTP - 1110	40 - 100	12.5	1460	2.37	3.20
VTP - 5110	40 - 110	15	1460	3.55	4.80
VTP - 3110	75 - 140	11.5	1460	2.96	4.00
VTP - 6110	65 - 180	13.5	1460	4.59	6.20
VTP - 4110	105 - 175	11	1460	3.85	5.20
VTP - 5112	80 - 200	20	1470	9.25	12.50
VTP - 3112	125 - 275	17	1470	7.77	10.50
VTP - 6112	150 - 290	19.5	1470	11.10	15.00
VTP - 4112	180 - 320	16.5	1470	8.88	12.00
VTP - 7112	100 - 360	17	1470	8.88	12.00
VTP - 7112	113 - 430	16	1470	11.10	15.00
VTP - 1114	125 - 275	26	1470	14.06	19.00
VTP - 4114	300 - 550	24	1470	24.42	33.00
VTP - 3114	250 - 450	25	1470	19.24	26.00
VTP - 3116	320 - 600	29.5	1470	29.60	40.00
VTP - 4116	310 - 700	29.5	1470	35.52	48.00
VTP - 6116	320 - 650	35	1470	44.40	60.00
VTP - 4118	600 - 1100	40	1470	74.00	100.00
VTP - 3120	720 - 1400	53	1475	122.10	165.00
VTP - 4120	800 - 1600	54	1475	140.60	190.00
VTP - 6120	860 - 1800	53	1475	199.80	270.00
VTP - 7124	1200 - 2000	40	1475	155.40	210.00
VTP - 3124	1300 - 2250	74	1480	281.20	380.00
VTP - 4124	1400 - 2600	76	1480	340.40	460.00
VTP - 5124	1500 - 2750	74	1480	370.00	500.00

Note : The above details are applicable per stage & will vary according to the no. of stages.

W I N N I N G W A Y S

When you have a good thing going it is quite
in the fitting of things that recognitions come
our way. Several prestigious awards, which
decorate our shelf, say it all. These rewards
not only acknowledge our position as a leader
in the water pump industry but also serve as
reminders about what the customer expects
from a winner. And we, as ever, have our ears
perfectly tuned to customer expectations.



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