



KIRLOSKAR BROTHERS LIMITED

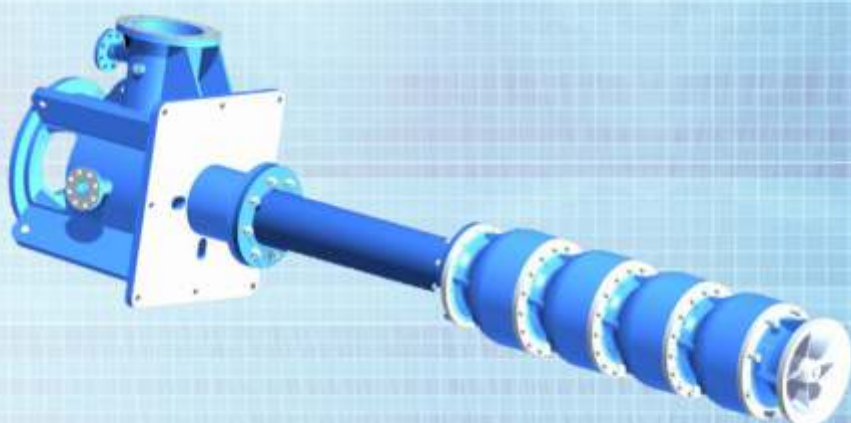
A Kirloskar Group Company

Enriching Lives

LOWEST LIFE CYCLE COST SERIES (LLC)TM VERTICAL TURBINE PUMPS

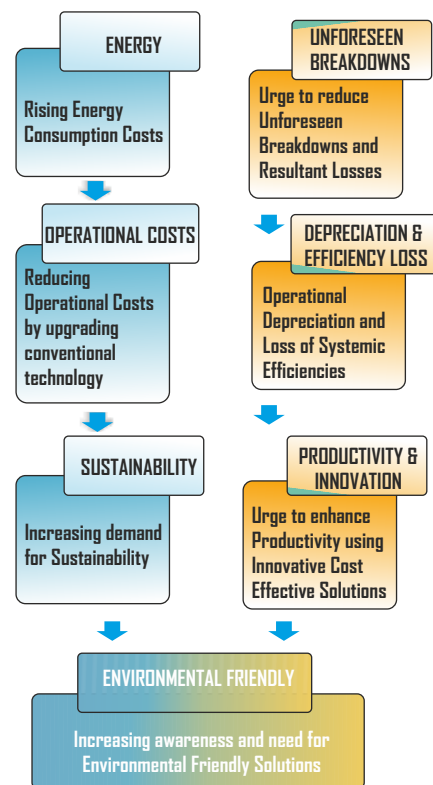
Technology...

Enriched!!!



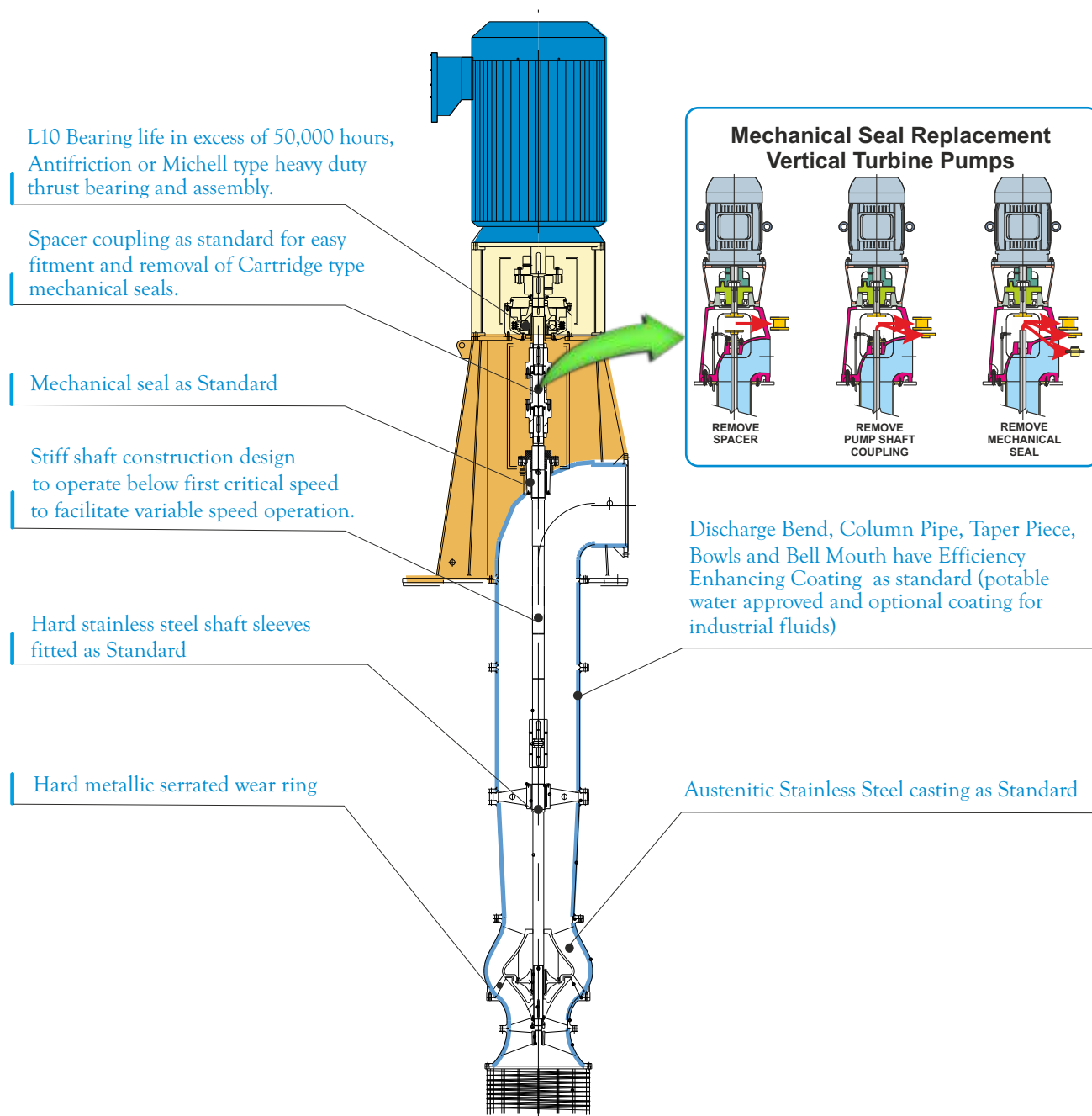
Lowest Life Cycle Cost (LLC)TM: A Concept

- The Life Cycle Cost (LCC) of any equipment is the total “Lifetime Cost” incurred to purchase, install, operate, maintain and dispose it. Typically out of the total cost of running the equipment, the energy cost works out to 80-85% vis-à-vis capital cost of 1%.
- It is in the fundamental interest of the user to evaluate the Life Cycle Cost of different pumping systems before installing a new pumping station and/or carrying out a major overhaul.
- Capital expenditure should be thoroughly evaluated vis-à-vis total Life Cycle Cost over a period of 20 to 25 years.



... Life cycle cost redefined

Evolution of Lowest Life Cycle Cost (LLC)TM



Typical Cross – sectional view of KBL-LLC VT Pump

Applications :

- Water Supply
- Drainage & Irrigation
- Water and Effluent Treatment Plant
- Booster Pumping Stations
- Industrial Utility Services
- Cooling Tower Circulation
- Hot / Cold Water Circulation
- Sea Water Handling
- Reclaim Water Pumping Stations
- Desalination Plants

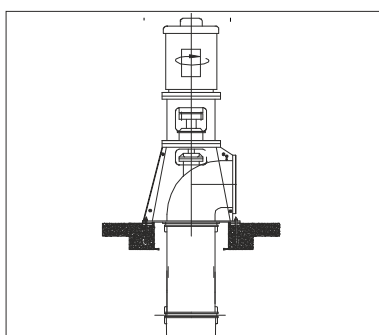
Benefits :

- Enhanced product life
- Sustained Efficiency – Saving Energy
- Accelerated capital cost recovery
- Reduced maintenance - Reducing down time
- Reduced carbon foot print
- Cost effective solution

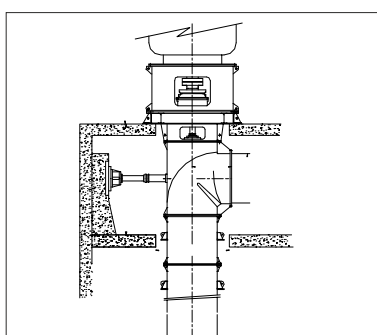
STANDARDISED MATERIAL OF CONSTRUCTION

Strainer	Stainless Steel	ST ST ASTM A 276-316 ANLD
Bell Mouth / Bowl / Impeller Guide Piece	Cast Iron with Corrocoat	ASTM A48 CL 40 + CORROCOAT FLUEGLIDE E
Impeller	Stainless Steel	ST ST ASTM A 351/351M - CF8M
Wear Rings (Csg)	Zinc Free Bronze	BR BSEN 1982-CC480K (BS1400-CT1)
Impeller Shaft / Intermediate Shaft / Head Shaft	Stainless Steel	ST ST ASTM A 276-410(H&T)-11000PSI
Shaft Sleeves	Stainless Steel	ST ST ASTM A 276 - 410(270-280 BHN) ANLD
Transmission Bearings	Orkot - Self Lub. Polymer Brg	Gr. TLM
Taper / Column Pipe	MS with Sigma-guard Coat	MS IS2062- Fe410WA+SIGMAGUARD CSF85
Discharge Head	MS Fabricated with Coating (Inner Bend)	MS IS2062- Fe410WA+SIGMAGUARD CSF85 (INNER BEND ONLY)
Thrust Bearing Type	Antifriction	SKF
Mechanical Seal Type	Cartridge Type	C / SiC
Fasteners	Stainless Steel	ST ST ASTM A 276-316 ANLD

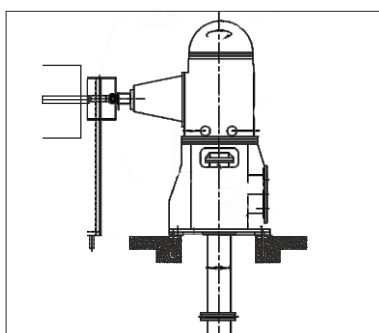
CONFIGURATIONS



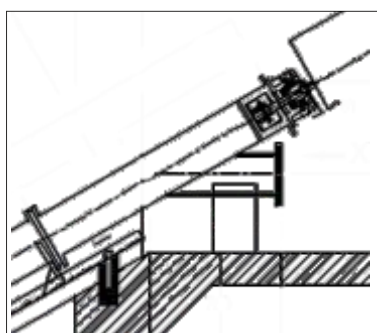
Above floor / ground



Below floor / ground



Pump with Right Angle Gear Box for Horizontal Motor / Diesel Engine installation

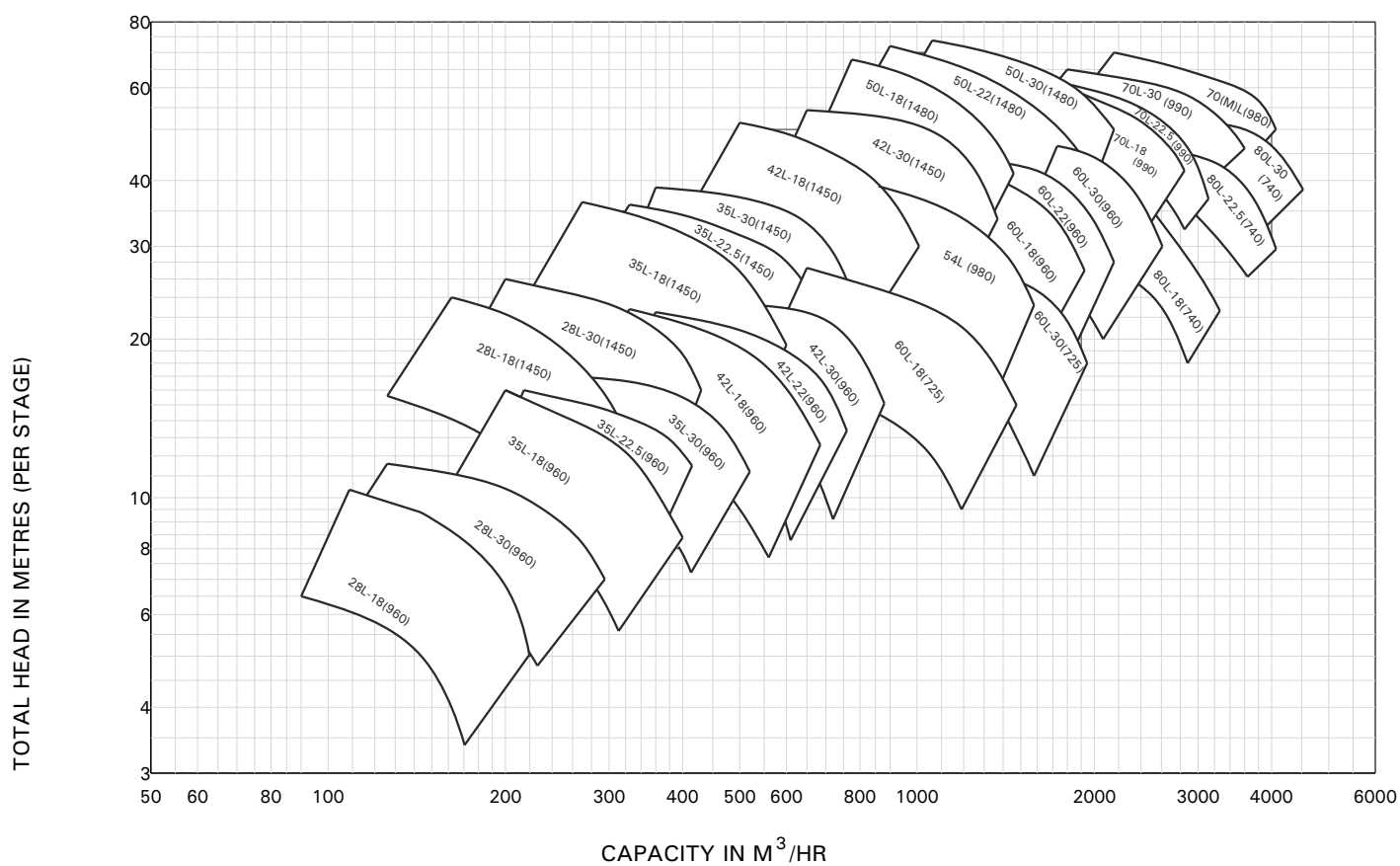


Pump with Inclined installation

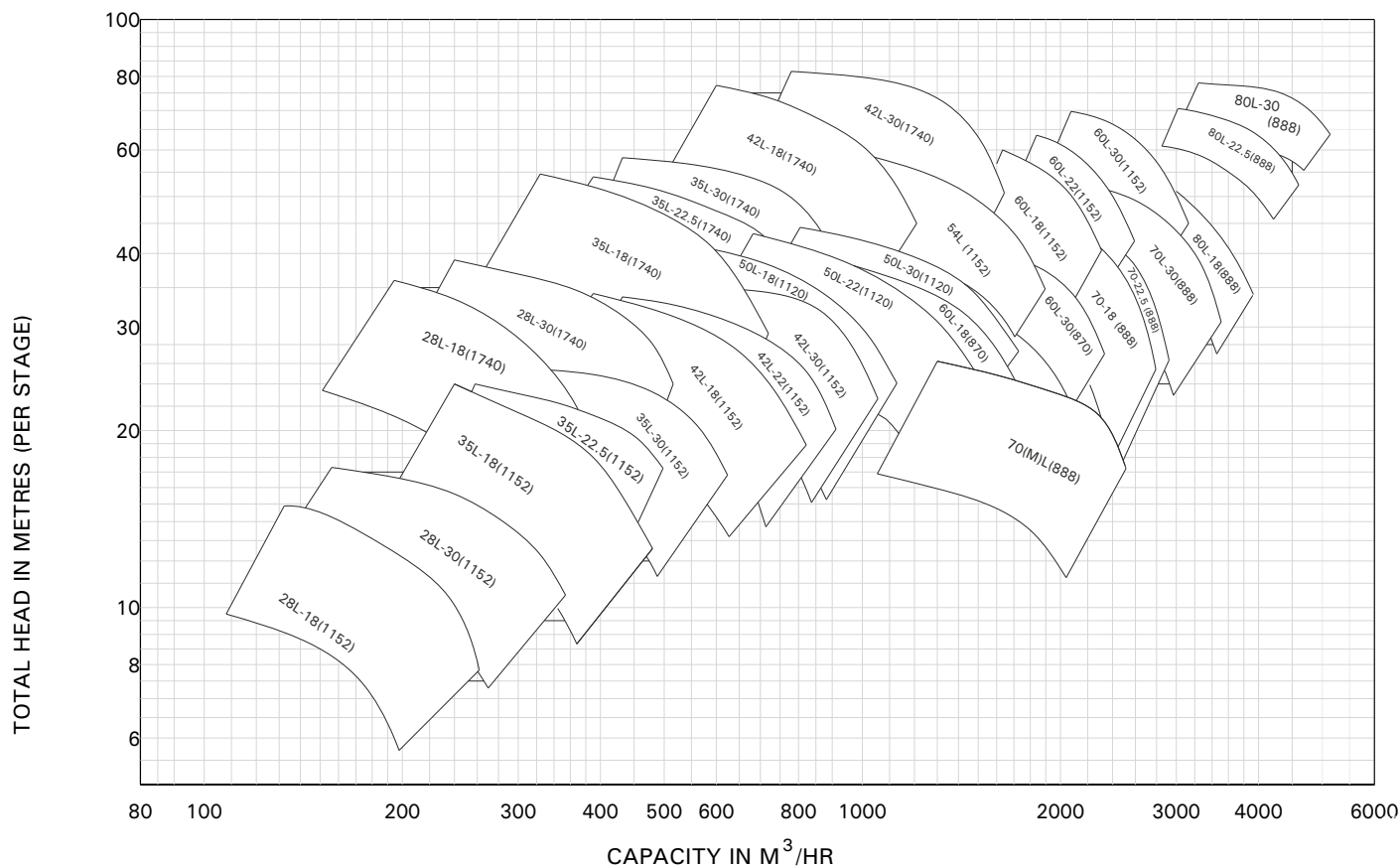
OTHER CONFIGURATIONS

- Solid shaft pump for solid shaft motor
- Hollow shaft pump for hollow shaft motor
- Pump design having thrust bearing in motor
- Pump with Elliptical / Parallel / Helical gear box for vertical motor installation

BHR PUMP 50 Hz

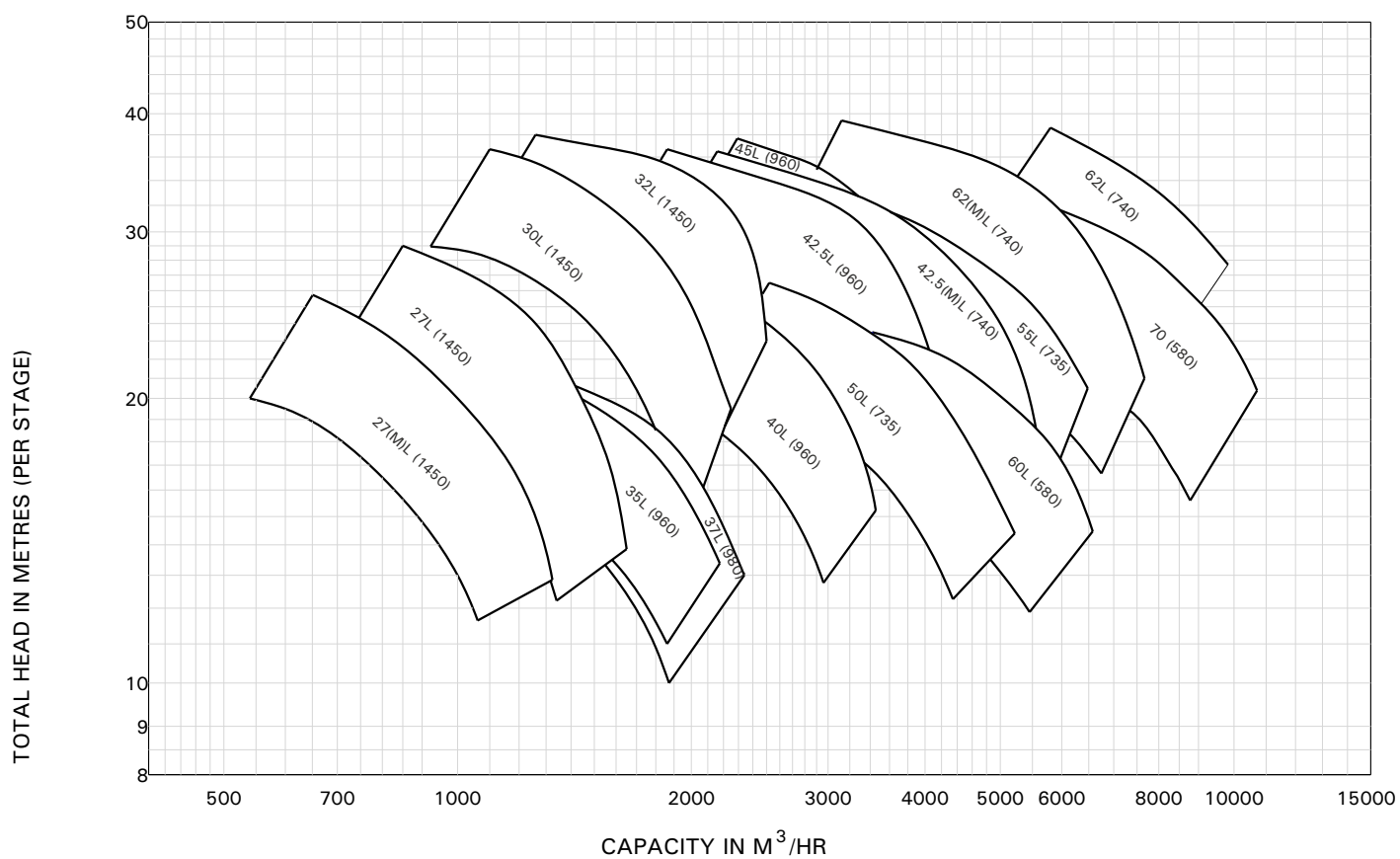


BHR PUMP 60 Hz

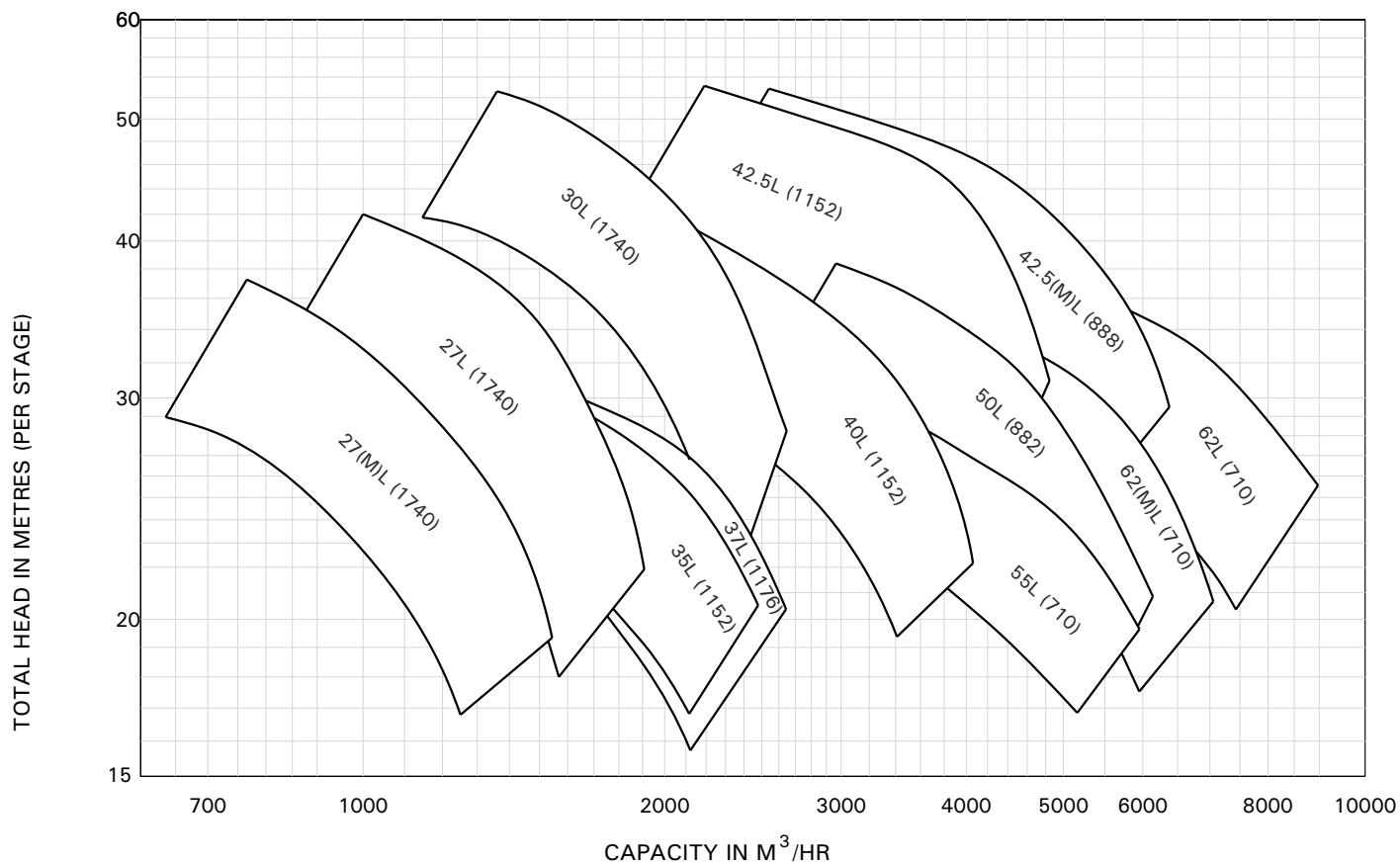


NOTE: FIGURES IN BRACKET INDICATE SPEED IN RPM

BHQ PUMP 50 Hz

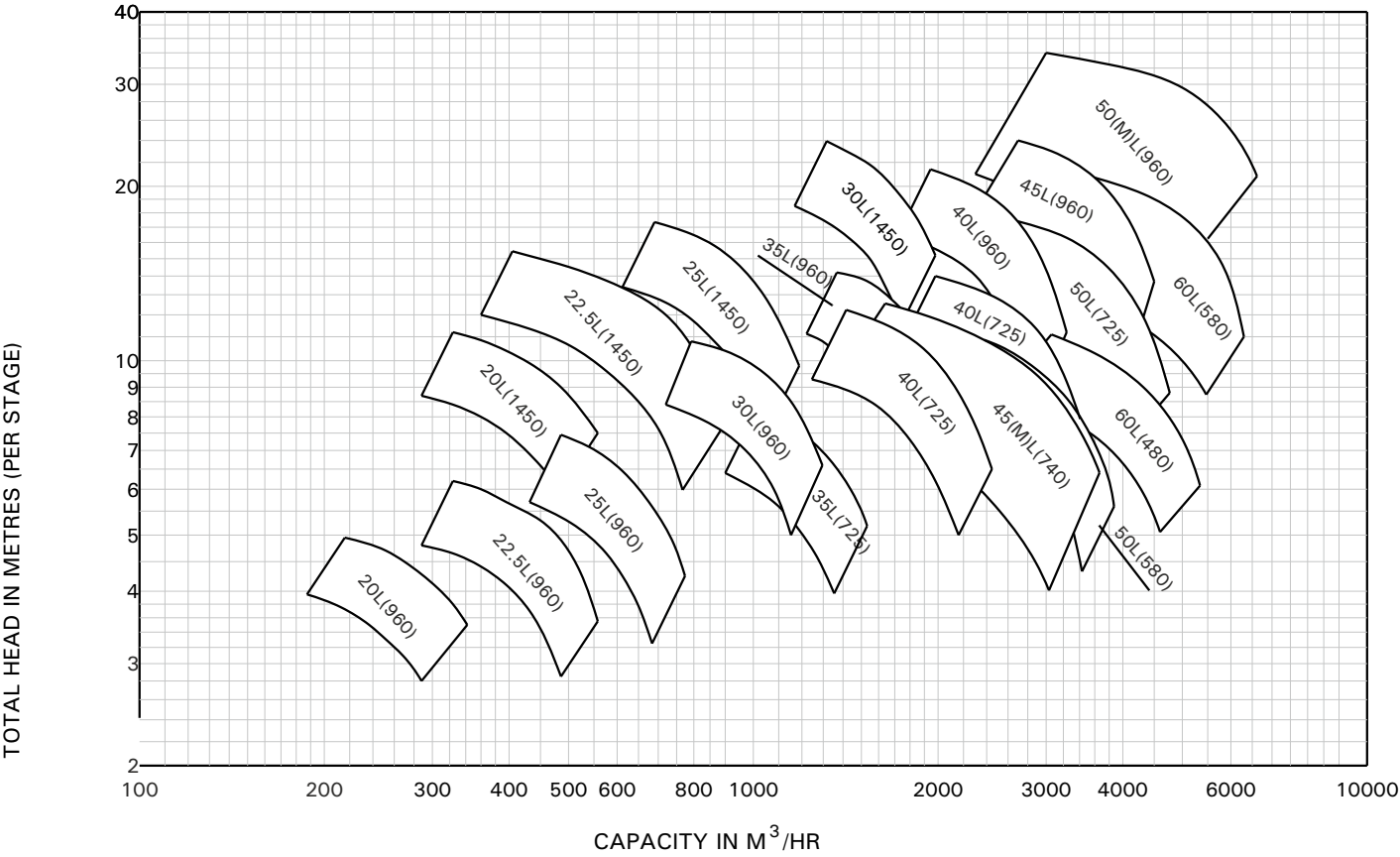


BHQ PUMP 60 Hz

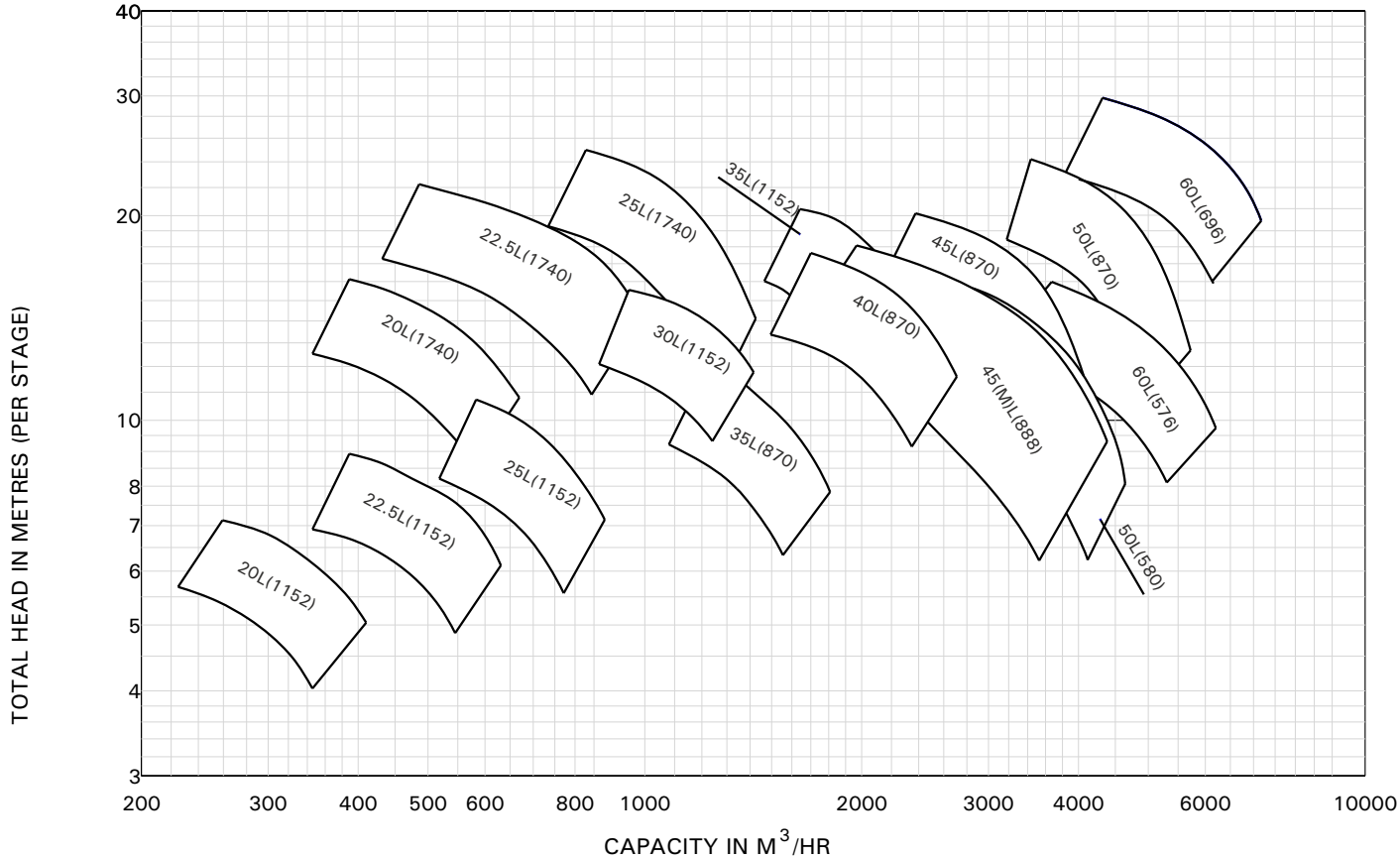


NOTE: FIGURES IN BRACKET INDICATE SPEED IN RPM

BHM PUMP 50 Hz

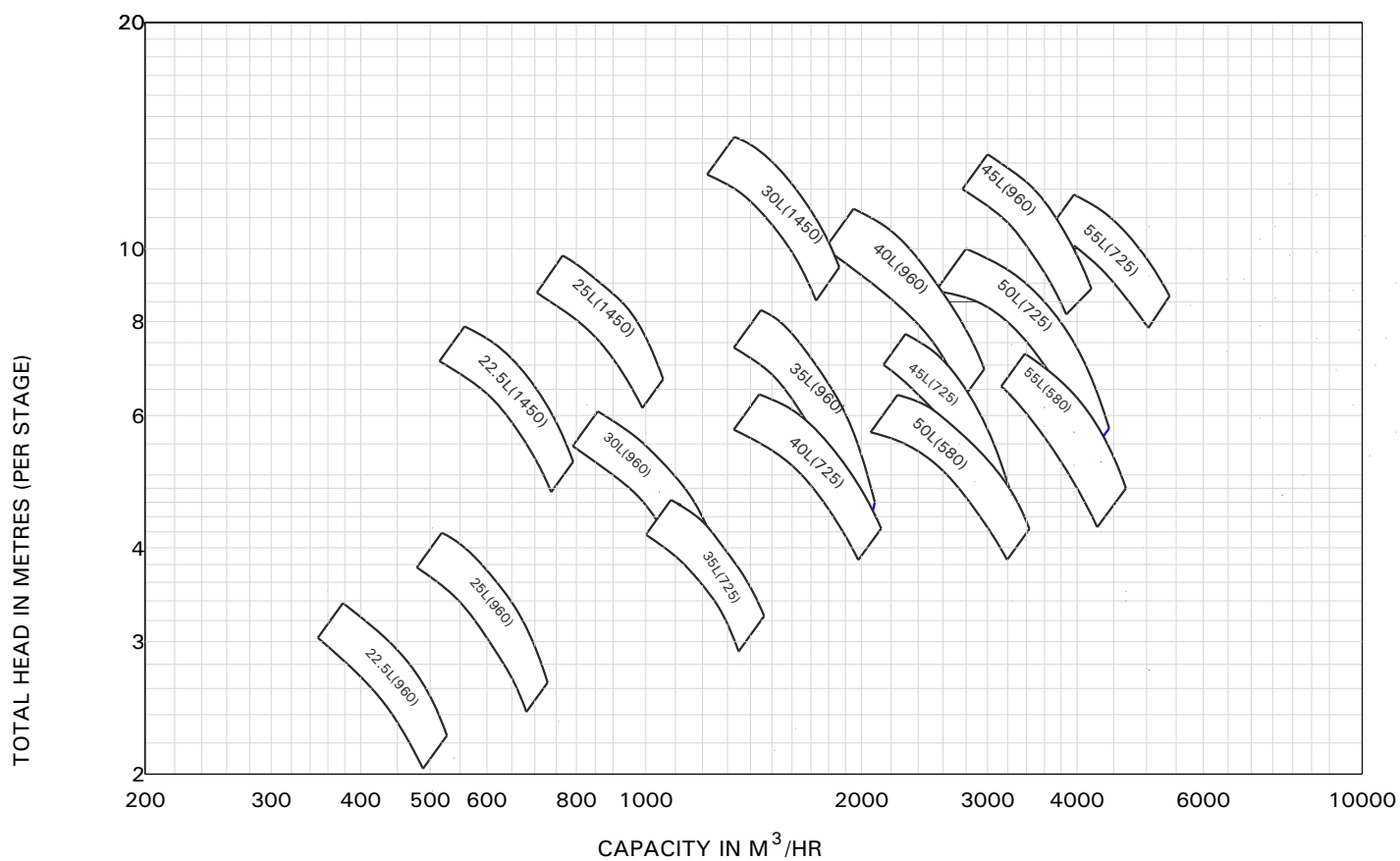


BHM PUMP 60 Hz

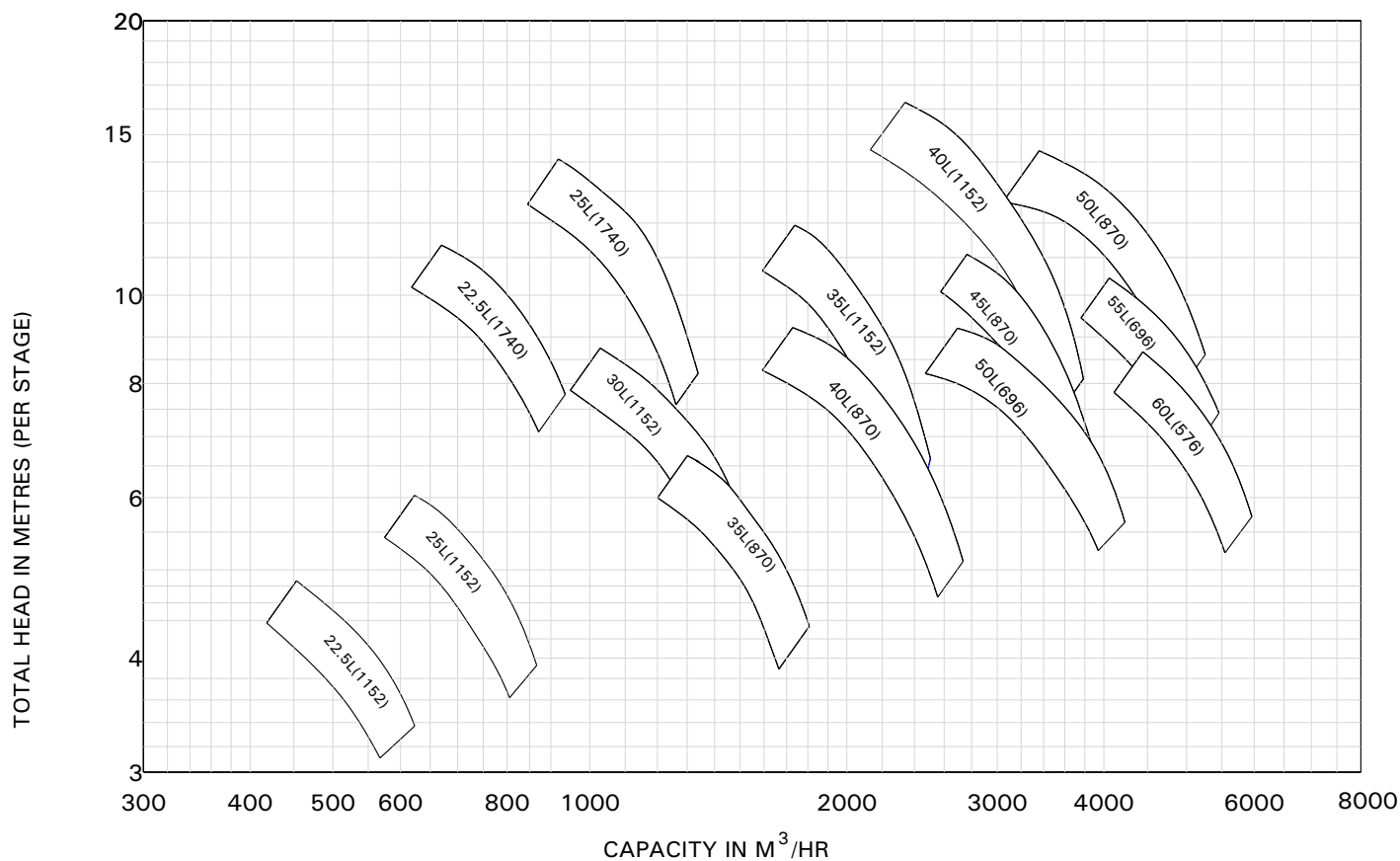


NOTE: FIGURES IN BRACKET INDICATE SPEED IN RPM

BHMa PUMP 50 Hz



BHMa PUMP 60 Hz



NOTE: FIGURES IN BRACKET INDICATE SPEED IN RPM

	BHR		BHQ		BHM		BHMa	
	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz
Capacity	Up to 4300 M ³ /Hr	Up to 4700 M ³ /Hr	Up to 9500 M ³ /Hr	Up to 8000 M ³ /Hr	Up to 6000 M ³ /Hr	Up to 6670 M ³ /Hr	Up to 5000 M ³ /Hr	Up to 5500 M ³ /Hr
Head	Up to 70 M	Up to 80 M	Up to 38 M	Up to 50 M	Up to 32 M	Up to 28 M	Up to 13 M	Up to 15 M
Liquid Temperature	-10 to 120°C	-10 to 120°C	-10 to 120°C	-10 to 120°C	-10 to 120°C	-10 to 120°C	-10 to 120°C	-10 to 120°C
Turbidity (TDS)	Up to 3000 ppm	Up to 3000 ppm	Up to 3000 ppm	Up to 3000 ppm	Up to 3000 ppm	Up to 3000 ppm	Up to 3000 ppm	Up to 3000 ppm



KBL has adopted this concept effectively in its product offerings and has benefited a large cross section of customers in more than 30 countries globally.

Even though the initial cost of the pump appears to be relatively high, customer saves on energy cost. Our aim is “Minimum cost for Maximum Benefits”-when evaluated over 20-25 years.

... Life cycle cost redefined

As we are constantly endeavouring to improve the performance of our products / equipment, we reserve the right to make alterations from time to time and as such our products / equipments may differ from that detailed in this publication. For latest information you may get in touch with our Regional Sales Offices.

KIRLOSKAR BROTHERS LIMITED

A Kirloskar Group Company

Established 1888

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