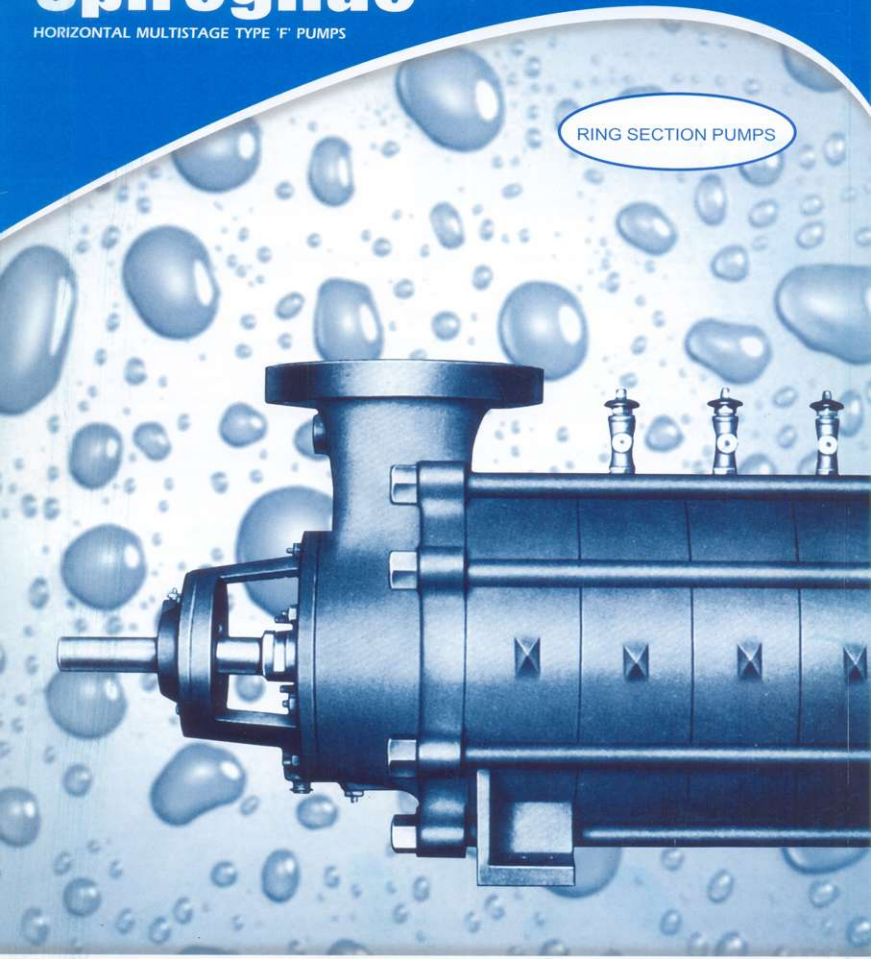
Spiroglide

HORIZONTAL MULTISTAGE TYPE 'F' PUMPS

RING SECTION PUMPS



BEACON WEIR LIMITED

Spiroglide

The **Spiroglide Multistage Type 'F' Pumps** have been specially developed in the range of the long established Weir multistage pumps for industrial applications, processings, refining and hydraulic services, boiler feed and booster duties, mine drainage, water treatment and distribution.

Description :

The pump consists basically of a composite cylindrical body clamped between two endcovers with outhang bearings to carry the rotating element.

Suction and delivery branches are incorporated in the endcovers, the suction branch at the driving end and the delivery branch at the opposite end for CCW driven pumps when viewed from drive end and vice versa for CW driven pumps. A balance valve device is fitted to control unbalanced hydraulic thrust. Gland arrangements are selected to suit individual applications.

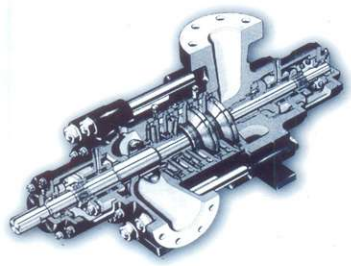
The pump body is made up of the required number of individual stages, each comprising an impeller, a guideport and a chamber. Stages are spigoted together and the whole assembly is held between endcovers by tie rods (main bolts). Joints are sealed by 'O' rings.

Selection from various materials of construction can be made to suit a particular application. Components are manufactured to very close dimensional tolerances, thereby facilitating replacement of parts. Addition of further pump stages is possible by changing the required parts. Interchangeability of spare parts is also possible.

High hydraulic efficiency with quietness and smoothness of operation is achieved by optimising the design of impellers, water passages, chamber vanes and hydraulic passages. Liquid is transferred from stage to stage with the minimum of frictional resistance turbulence or shock and the maximum conversion of kinetic energy into pressure by free annular design. This ensures higher pump efficiency and less wear and tear.

Features

ENDCOVERS - The suction and delivery endcovers are of heavy cast construction and a balance valve device is fitted in the delivery endcover to control unbalanced hydraulic thrust. As a protection against jet erosion from this balance disc, a renewable wearing ring is fitted and a balance valve wear indicator is provided for replacement of the balance disc components.



Alternative suction and delivery branch positions are available to suit connecting pipework. The suction and delivery flanges have standard drilling to BS 10 Table, J. Alternate drillings are also available for which company's technical wing will reconfirm on request.

PUMP CHAMBERS - Chambers have cast water passages of free annular design and the first and final chambers incorporate feet to support the horizontally mounted pump. The running clearance between the chamber and the impeller boss is maintained by replaceable Chamber Bushes and Neck Rings.

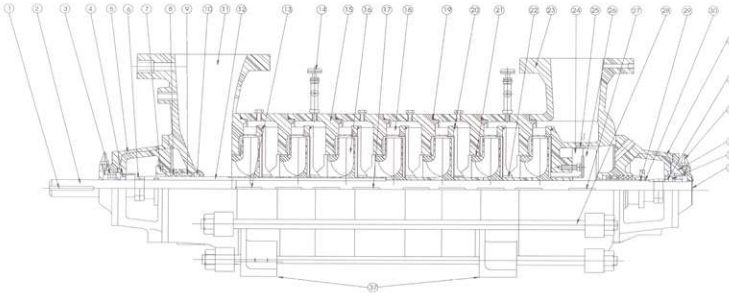
GUIDEPORTS - Guideports are machined on all external surfaces and hydraulic passages are hand-dressed. They are clamped in position and located by dowel pins which can be easily removed during dismantling.

IMPELLER The impellers are produced with high quality castings to give dimensional and hydraulic repeatability to ensure performance parameters. Each impeller is dynamically balanced to ensure that the complete rotating element is correctly balanced initially and also subsequently, if fitted with replacement impeller.

NECKRINGS - The neck rings fitted to the suction cover and chambers are made of a material compatible with the impellers. There are close running clearances between these components and neckrings can be readily renewed to maintain efficiency.

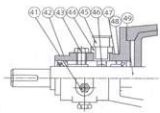
SHAFT - The shaft is fitted with renewable sleeves where it is not protected by impeller and balance disc hubs. These are individually fixed to the shaft by keys, the keyways being cut on alternating sides of the shaft to eliminate distortion and ensure a rigid rotating element. The complete assembly is locked in position by double Lock nuts at each end of the shaft.

SPIROGLIDE 'F' TYPE SECTIONAL DRAWING



Item	Description	Item	Description	Item	Description
1	Coupling Key	17	Impeller Key	33	Bearing Cap
2	Pump Shaft	18	Guide port	34	Bearing Housing
3	Roller Bearing	19	'O' Ring (Chamber)	35	Grease Nipple
4	Wear Indicator	20	'O' Ring (Guide port)	36	Bearing Endplate
5	Bearing Distance Cone	21	Neckrings	37	Chamber (With foot)
6	Shaft Nuts	22	Chamber Bush	41	Oil Level Sight Plug
7	Gland	23	Delivery Cover	42	Oil Seal
8	Gland Packing	24	Renewable Plate	43	Locating Screw
9	Lantern Ring (Split)	25	Renewable Wearing Ring	44	Brg. Housing Lid
10	Junk Ring	26	Balance Disc.	45	Filler / Inspection Cap
11	Suction Cover	27	Balance Disc Key	46	Oil Ring
12	D E Shaft Sleeve	28	Main Bolts	47	Bearing Bush
13	Suction Impeller Key	29	'O' Ring (Shaft Sleeve)	48	Bearing Housing
14	Air Cock	30	N.D.E Shaft Sleeve	49	Pump Shaft
15	Chamber (without foot)	31	Balance Chamber	50	Drain Plug
16	Impeller	32	Oil Seal	51	Bearing Endplate

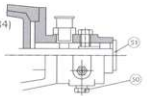
Pump is shown fitted with roller bearings. Ring oil lubricated, illustrated separately on left and right.



DRIVING END WITH OIL RING BEARING

Note:

1. In FNB, C & D, different sizes of bearing (3), Bearing cap (33) & Bearing Housing (34) are used in both D.E. & N.D.E.
2. For FNB, C & D Bearing distance cone (5) is not applicable
3. In FNB, C & D stuffing box is used instead of balance chamber (31).
4. In FRF, Renewable wear ring (25) is not used



BACK END WITH OIL RING BEARING

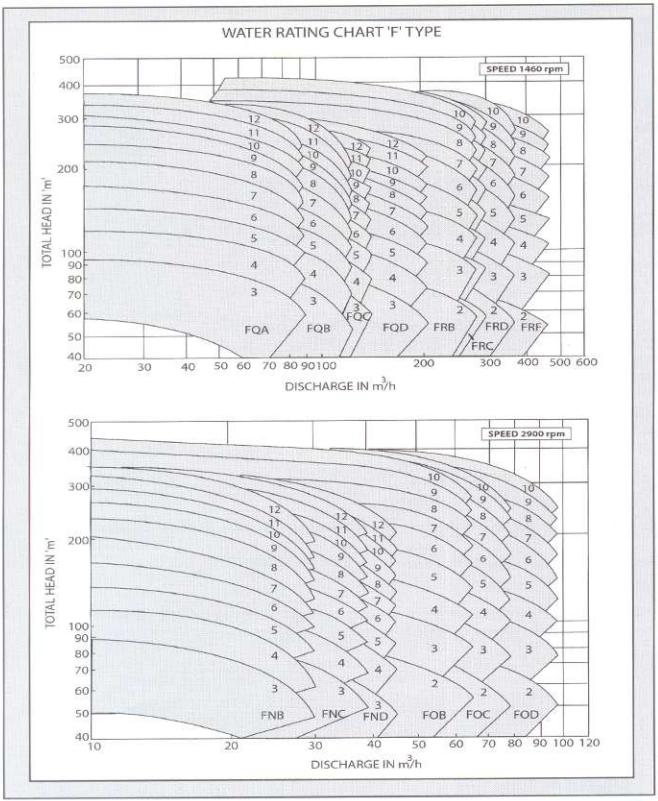
Capacity Range

Discharge - 5 m^3/h - 500 m^3/h

Total Head - 50 m - 400 m

Duties of FN and FO pumps are at 2 pole speeds (2900 rpm) & FQ and FR pumps are at 4 pole speeds (1460 rpm). For other speeds, flow is proportional to speed and head to the square of the speed.

Symbol letter indicates frame reference and figures the number of stages



High Pressure Ring Section Pumps - LM & MM Type

APPLICATION

- Public Water Supply
- Boiler Feed
- Industrial Processing
- Spraying / Washing
- Mine Dewatering
- Cooling
- Pressure Boosting
- Transfer of Light Crude Oil and Hydrocarbons

FEATURES

- Efficient Hydraulic Design
- Reliability
- Simple Robust Construction
- Stable H/Q Curve
- Low Maintenance Costs
- Fully Metric

Models of LM Range

The LM range consists of three models (LMC, LMD, LME) which are of horizontal, multistage & ring section type centrifugal pumps designed to operate at 2900 or 3500 rpm

Discharge : Upto 250 m^3/h
Head : Upto 650 m

Models of MM Range

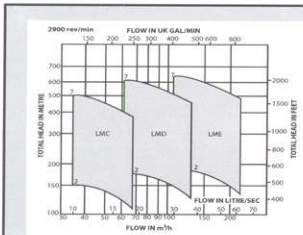
The MM range consists of six models (MMB, MMC, MMD, MME, MMF, MMG) which are of horizontal, multistage & ring section type centrifugal pumps designed to operate at 2900 or 3500 rpm

Discharge : Upto 660 m^3/h
Head : Upto 800 m

Features

1) Grease lubricated roller journal bearings
2) Packed glands for temperatures upto 95°C or balanced mechanical seals for temperatures upto 80°C.
3) Balance water piped back to pump suction
4) Axial hydraulic thrust absorbed by balance disc arrangement.

Water Rating Chart - LM Range



Water Rating Chart - MM Range