



- Applications
Lubricating oil pump

■ Principal Particulars

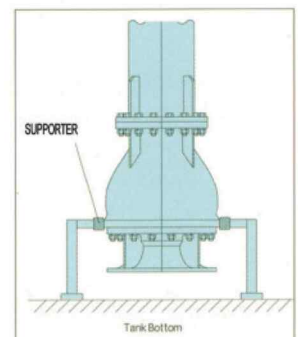
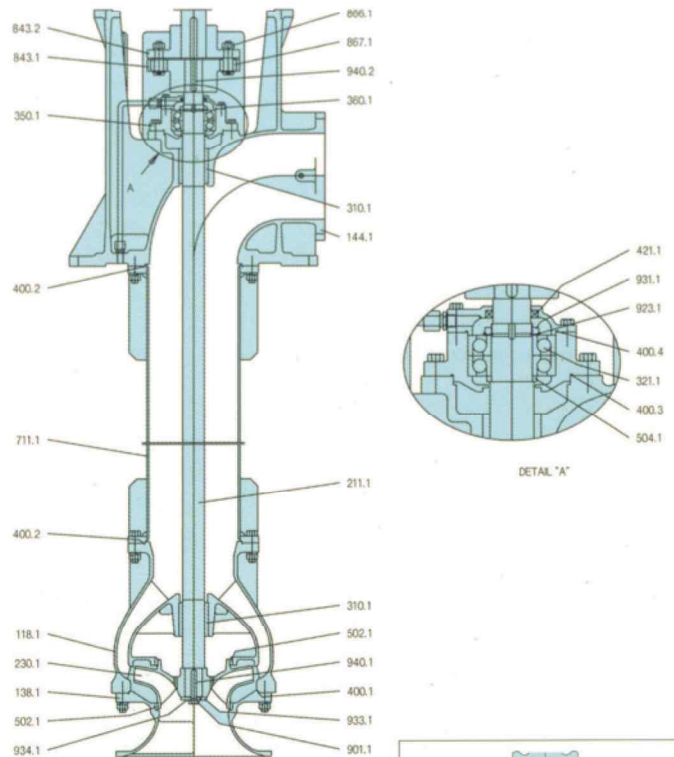
Item	Model	MLO200A1	MLO200B1	MLO250A1	MLO250B1	MLO300A1	MLO350A1	MLO400A1
Rotation		Clockwise viewed from driver end						
Discharge bore (mm)		200	200	250	250	300	350	400
Ball bearing		7312BDF				7314BDF		7316BDF
Service life (Hr)		Abv.60,000hr						
Lubrication		Self lubrication by handling Oil						
Required min.LO level (mm)		350	350	450	450	500	570	700
Stuffing box seal		Special seal(oil seal)						

■ Standard Materials

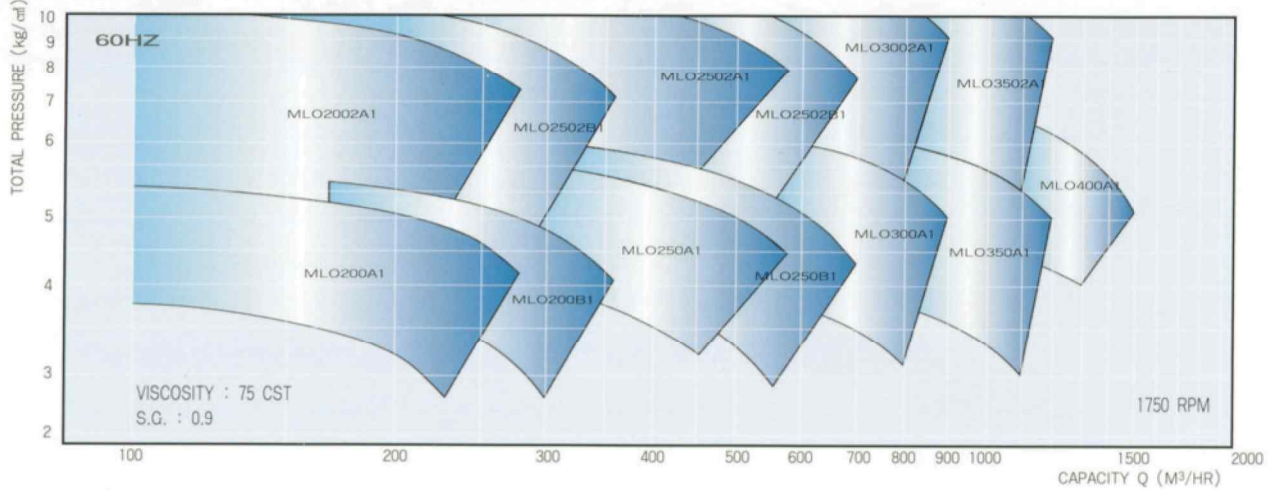
Part No.	Name Of Part	REQ. NO. FOR 1PUMP	MATERIAL	
			Name	KS
118.1	GUIDE CASING	1	CAST IRON	GC200
138.1	SUCTION BELL	1	CAST IRON	GC200
144.1	DISCHARGE ELBOW	1	CAST IRON	GC200
211.1	LOWER SHAFT	1	CARBON STEEL	SM45C
230.1	IMPELLER	1	BRONZE	BC6
310.1	SLEEVE BEARING	2	LEADED TIN BRONZE	LBC4
321.1	BALL BEARING	1st	BEARING STEEL	STB2
350.1	BEARING HOUSING	1	CAST IRON	GC200
360.1	BEARING COVER	1	CAST IRON	GC200
1400.1	O-RING	1	NBR	
400.2	O-RING	2	NBR	
400.3	O-RING	1	NBR	
400.4	O-RING	1	NBR	
421.1	OIL SEAL	1	NBR	
502.1	CASING WEAR RING	2	BRONZE	BC6
504.1	SPACER RING	1	CARBON STEEL	SM45C
711.1	COLUMN PIPE	1	STEEL	SPP+SS400
843.1	COUPLING HALF (PUMP)	1	CAST IRON	GC200
843.2	COUPLING HALF (MOTOR)	1	CAST IRON	GC200
866.1	COUPLING BOLT & WASHER	1st	STEEL	SS400
867.1	COUPLING BUSH	1st	RUBBER	
901.1	IMPELLER RETAINING BOLT	1	STAINLESS STEEL	STS304
923.1	BEARING LOCK NUT	1	STEEL	SS400
931.1	BEARING LOCK WASHER	1	STEEL	SS400
933.1	IMPELLER RETAINING WASHER	1	STAINLESS STEEL	STS304
934.1	LOCK WASHER	1	STAINLESS STEEL	STS304
940.1	IMPELLER KEY	1	CARBON STEEL	SM45C
940.2	COUPLING KEY	1	CARBON STEEL	SM45C

■ Supporter

The long shaft pump experiences abnormal movement due to the shaking of the LO caused by the ship's rolling and pitching. In order to prevent this, the flange for fastening the casing must be provided with a supporter from the tank.



■ Selection of Pump Model



■ Output of Motor

Because of high LO viscosity at cold startup, capacity decreases and shaft horse power increases as shown in the chart at right.

Accordingly, motor output is determined by multiplying required shaft horse power by correction factor so that motor is not overloaded at cold startup.

Max. shaft horse power

at cold startup.....Required BHP × C

Motor output.....Max. BHP × 1.03~1.05

But required shaft horse power is shown in selection chart or calculated by following method of computation

Required shaft horse power

$$0.00272WQ \times \left(\frac{10P}{W} + H \right) \times \frac{1}{\eta} \text{ (kW)}$$

Where : C..... Correction factor(Chart at right)

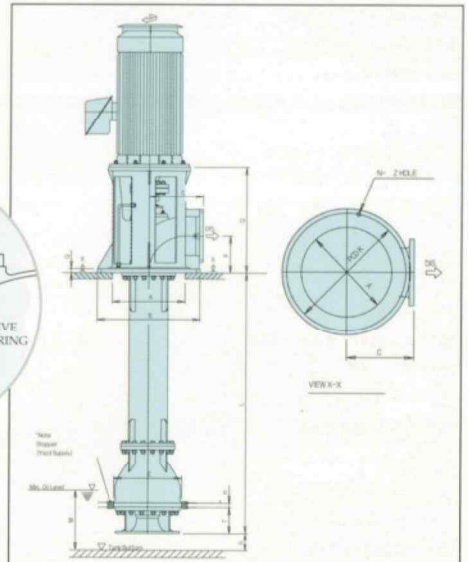
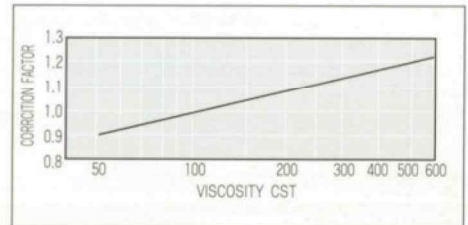
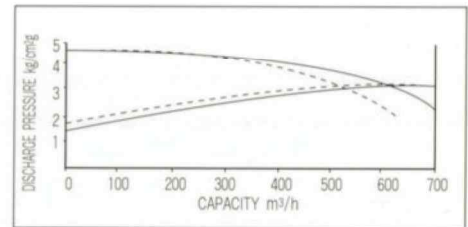
Q..... Pump capacity(m³/h)

P..... Discharge pressure(kg/cm²)

W..... Specific gravity of L.O

H..... Height from discharge flange to minimum oil level(m)

η Pump efficiency in normal operation



■ BEARING & STUFFING BOX SEAL

For upper bearing, heavy duty angular contact type ball bearing(73-type) is adopted to support axial thrust and for lower bearing, line bearing is provided to support radial load only.

All bearings are of the self-lubrication type and a throttle piece is provided to reduce LO pressure through a small clearance between sleeve bearing and shaft and LO is returned to the tank through the upper return hole after lubricating the ball bearing.

Where the shaft passes through the bearing cover O/L seal(oil resisting synthetic rubber) are provided to prevent LO leakage and air invasion.

■ Standard Accessories

- Discharge pressure gauge..... 1
- Gauge board..... 1
- Gauge root valve..... 1

■ Standard Spare Parts

- 1 pump set of the following spare is supplied for 1 ship.
- Ball bearing Coupling bolt, nut & washer, rubber ring
- Bearing bush Oil seal
- Complete set of rotating element(if required)

Dimensions: mm

Model	A	B	C	E	F	G	H	K	M	Q	S	T	N	Z
MLO 200 A1	530	700	350	460	265	745	30	650	350	30	100	140	16	27
MLO 200 B1	530	700	350	460	265	745	30	650	350	30	100	140	16	27
MLO 250 A1	580	800	400	510	300	820	35	740	450	30	120	180	16	27
MLO 250 B1	580	800	400	510	300	820	35	740	450	30	120	180	16	27
MLO 300 A1	600	850	450	560	310	890	35	790	500	35	140	220	16	27
MLO 350 A1	630	900	480	580	350	945	40	840	570	35	170	235	16	27
MLO 400 A1	730	950	500	650	400	1070	40	890	700	35	220	250	24	27