



IMO AB Stockholm, Sweden 2008-03-17
Service & Maintenance department

Dear valued customer

As a user of the IMO pump you have most probably already discovered its superiority and outstanding reliability when handling oils.

As all mechanical products we do however recommend that the pump are opened up for inspection and maintenance at regular intervals.

A fact is that a relatively small service of your pump in most of the cases will guarantee a faultless and reliable pump operation for a long time.

The service intervals of the IMO pump varies greatly depending on the running duty, a pump that is used in a booster unit with HFO for example will need a shorter turn around time between overhauls in order to perform as intended.

A pump that is used together with clean lubricating oil will on the other hand work without any disturbances for a long time.

A change of a ball bearing and a shaft seal for example will in many cases put the pump in a brand new condition and hence guarantee a faultless operation for a great period of time.

The intention of a pump service on an IMO pump must always be to prevent unplanned breakdowns and failures and instead aim for a planned maintenance which in the end will give a faultless pump as well as an undisturbed operation of the pump.

It is also recommended NOT to alternate the pumps when having one pump in standby in order to have an even number of running hours.

The reason here fore is that cold and sticky oil causes a lot of stress on the mechanical seal and can make it fail prematurely.

A suggestion from IMO is to run the pumps for at least 6 months prior to shifting to the standby pump.

Please bear in mind that we always recommends the users of our pumps the spare part kits on page 2 for planned and unplanned maintenance.

These kits that are referred to as "minor kits" contains all the major part needed for maintenance of the pump such as the ball bearing, mechanical seal & joints etc.

The service and maintenance intervals mentioned in our manuals are very often referred to as: ***The intervals for inspection and replacement of wear parts vary greatly with the properties of the pumped liquid and can only be determined by experience.***

There are however a few hints and common recommendations that we recommend you to follow, these are presented in this document as per pump type and area of usage.



LOW PRESSURE PUMPS

LPD type pumps

Pump designation	Pump duty	To be changed	Interval
IVBP	Lubricating oil & Diesel	Joints, gaskets & mechanical seal (1)	32000 h
	Heavy fuel oil	Joints, gaskets & mechanical seal (1)	16000 h

(1) Spare part kit containing these parts is referred to as "Minor kit" in our part lists

ACD type pumps

Pump designation	Pump duty	To be changed	Interval
IVBP	Lubricating oil, Diesel Veg oil	Joints, gaskets & mechanical seal (1)	32000 h
NTBP	Heavy fuel oil	Joints, gaskets & mechanical seal (1)	16000 h

(1) Spare part kit containing these parts is referred to as "Minor kit" in our part lists

ACE type pumps

Pump designation	Pump duty	To be changed	Interval
NVBP	Lubricating oil, Diesel Veg oil	Joints, gaskets, mechanical seal & ball bearing (1)	32000 h
NTBP & NQBP	Heavy fuel oil, glycols Polymers & emulsions	Joints, gaskets, mechanical seal & ball bearing (1)	16000 h

(1) Spare part kit containing these parts is referred to as "Minor kit" in our part lists



ACG type pumps

Pump designation	Pump duty	To be changed	Interval
NVBP	Lubricating oil, Diesel Veg oil	Joints, gaskets, mechanical seal & ball bearing (1)	32000 h
NTBP	Heavy fuel oil, glycols Polymers & emulsions	Joints, gaskets, mechanical seal & ball bearing (1)	16000 h

(1) Spare part kit containing these parts is referred to as "Minor kit" in our part lists

Lubricating intervals in working hours

Temp max °C	Grease type	Pump sizes 045 and 052						Pump sizes 060 and 070					
		Speed, r/min						Speed, r/min					
		3500*	2900	1750	1450	1150	950	3500*	2900	1750	1450	1150	950
70	A	8500	10000	10000	10000	10000	10000	7500	8500	10000	10000	10000	10000
90	A	3350	3950	5350	5950	6350	7500	2950	3350	4750	5150	5950	6750
110	B	2650	3150	4250	4700	5000	5950	2350	2650	3750	4100	4700	5350
130	B	1050	1250	1650	1850	2000	2350	900	1050	1500	1600	1850	2100
155	C	650	750	1050	1150	1250	1500	600	650	950	1000	1150	1300

*) at rotation speed > 3 500 r/min special instructions are given by IMO AB.

Recommended greases (the availability of the greases can differ locally):

Type A: BP Energrease LS 3, Esso Beacon 2, Mobilgrease HP 222, Shell Alvania G3, Texaco Multifak EP2, SKF LGMT2, Q8 REMBRANDT EP2, CASTROL APS2, ELF ROLEXA 3, TOTAL MULTIS TIR EP3, FINA MARSON L3.

Type B: BP Energrease LC2, CHEVRON SRI GREASE 2, Esso Unirex N3, Mobilith SHC220, SHELL RETINAX LX, SHELL Albida LX, VAL-PLEX EP GREASE, Texaco Hytex EP2, SKF LGHQ 3, Q8 RUBENS, CASTROL LMX, INDUSTRIAL GREASE HEAVY, TOTAL MULTIS THT2, FINA PLUTON L2.

Type C: Mobilith SHC 460

ACF type pumps

Pump designation	Pump duty	To be changed	Interval
IVBP & IRBP	Lubricating oil, Diesel Veg oil	Joints, gaskets, mechanical seal & ball bearing (1)	32000 h
NVBP	Heavy fuel oil, glycols Polymers & emulsions	Joints, gaskets, mechanical seal & ball bearing (1)	16000 h

(1) Spare part kit containing these parts is referred to as "Minor kit" in our part lists



Lubricating intervals in working hours

Pump size	Grease amount gram	Temp max °C	Grease type	Speed, rpm				greases:
				1750	1450	1150	950	
080 and 090	15	70	A	10 000	10 000	10 000	10 000	Type A
		90	A	3 900	4 700	5 300	5 900	BP Energrease LS3
		90	B	7 900	9 500	10 000	10 000	Esso Beacon 3
		110	B	3 100	3 700	4 200	4 700	Mobil Mobilux 2
		130	B	1 200	1 500	1 600	1 800	Shell Alvania C3
		155	C	450	600	650	650	Texaco Multifak EP 2
100, 110 and 125	23	70	A	9 000	10 000	10 000	10 000	Type B
		90	A	3 500	3 900	4 700	5 300	BP Energrease, HTG2
		90	B	7 100	7 900	9 500	10 000	Chevron Industrial Grease Heavy
		110	B	2 800	3 100	3 700	4 200	Esso Unirex N3
		130	B	1 100	1 200	1 500	1 600	Mobil Mobiltemp, SHC 100
		155	C	300	450	600	600	Shell Darina 2, Texaco Hytex EP 2, Type C, Mobilith SHC 460

LPQ type pumps

Pump designation	Pump duty	To be changed	Interval
IRYP	Lubricating oil, Diesel Veg oil	Joints, gaskets, mechanical seal & ball bearing (1)	32000 h
ITYP	Heavy fuel oil, glycols Polymers & emulsions	Joints, gaskets, mechanical seal & ball bearing (1)	24000 h

(1) Spare part kit containing these parts is referred to as "Minor kit" in our part lists

ABQ type pumps

Pump designation	Pump duty	To be changed	Interval
IRYP	Lubricating oil, Diesel Veg oil	Joints, gaskets, mechanical seal & ball bearing (1)	32000 h
IRYP	Heavy fuel oil, glycols Polymers & emulsions	Joints, gaskets, mechanical seal & ball bearing (1)	24000 h

(1) Spare part kit containing these parts is referred to as "Minor kit" in our part lists

MAGNETIC COUPLED PUMPS ACE & ACG

Our magnetic coupled pumps are developed to last for long periods prior to necessary maintenance; the only "normal" wear details to be found in these pumps are the ball bearings located in the pump and in the electrical motor. The electrical motor ball bearings are as all

ball bearings recommended to be monitored as a normal part of the weekly/monthly maintenance by means of SPM measurement or similar.
 The joints and the gaskets in the pump are always to be changed when the pump is opened up. The magnetic couplings are designed to last for +20 years without malfunctioning or losing its magnetic force.

Pump designation	Pump duty	To be changed	Interval
NLBP, NKBP & NMBP	All fluids	Joints, gaskets & ball bearing for pump (1)	40000 h
NLBP, NKBP & NMBP	All fluids	Motor ball bearings are to be changed on a condition based measurement	

(1) Spare part kit containing these parts is referred to as "Joint kit" in our part lists
 Ball bearings for pump and electrical motor is to be ordered separately

Common guidelines for maintenance of low pressure pumps LPD, ACD, ACE, ACG, ACF, LPQ, ABQ

Inspection of rotors

If an indication of a worn pump is noticed a brief inspection of the idler rotors is recommended. A quick inspection of the idler rotors can be made simply by removing the rear cover (Not on LPQ/ABQ). Note that the driver must be de energized and the pump hydraulically isolated before the rear cover is removed. Internal clearances in the pump, which are vital for its proper function, may have been affected by wear. Acceptable wear can be determined only by experience of the actual application. As a rule of thumb the following max clearance values may apply:

Between rotor and bores or bushings: 0.2 mm

Between rotor flanks: 0.4 mm

For light duties (low pressure, medium viscosity) even bigger clearances may be acceptable but for low visc/high pressure duties the limit will be lower. Also check if there are major scratches on these parts.

Inspection of shaft seal

Although that we always recommend that the shaft seal are to be changed when the pump is dismantled there are occasions when this not is necessary.

As the seal faces of a mechanical shaft seal are lubricated by the fluid a certain leakage will always be present. Ten drops per hour can be considered as acceptable. An external visual inspection of the pump is advisable at least every two days to assure that the shaft seal is not leaking too much. Excessively leaking shaft seals should be replaced without delay, as the

leakage normally will grow worse and cause additional damage. Follow the instructions in the dismantling/reassembly session in our manuals. When working with a shaft seal, cleanliness



is of utmost importance. Avoid touching the seal faces. If necessary, the seal faces should be cleaned immediately prior to assembly, using a dust free cloth and clean solvent. Never use grease on the seal faces.

HIGH & MEDIUM PRESSURE PUMPS

E4 pump types

Pump designation	Pump duty	To be changed	Interval
ALL models	Lubricating oil, Diesel Veg oil	Joints, gaskets & ball bearing for pump (1)	32000 h
ALL models	Heavy fuel oil	Joints, gaskets & ball bearing for pump (1)	24000 h

(1) Spare part kit containing these parts is referred to as "Joint kit" in our part lists
Ball bearing are to be ordered separately