SERVICE BULLETIN

V.19

DATE: March 15, 1975 *BULLETIN NUMBER:* 80

MODEL: Westerbeke 40LB, 40LS, LB-49

SUBJECT: Westerbeke Lue-Cel

DESCRIPTION

The Westerbeke Lub-cel improves diesel engine cold starting and performance, typically allowing starts at 20° F. within 5 seconds in conjunction with hydraulic starting systems. It delivers a pre-determined quantity of lubricating oil, at a pre-determined rate, directly above the engine's intake valves during cranking and, when the engine has started, reloads itself from the engine oil gallery.

Pressure to deliver this oil is taken from the hydraulic starter return line. (Lub-cel is designed for use with American Bosch hydraulic starters.)

OPERATING PRESSURES

Delivery Pressure

Due to the high flow rate in the Bosch hydraulic system the return line builds up between 50 and 100 PSI. Close to the starter, this pressure is used to energise the Lub-cel.

Engine Oil Pressure

The Lub-cel requires 20-30 seconds to reload at 30 PSI lube oil pressure. The engine should never be run for less than a minute or two if the Lub-cel is to be kept fully charged with oil.

SERVICE

1. Engine Oil

The Lub-cel unit is not sensitive to types of oil used. With Westerbeke Four-107, Pilot 20 and LB-49, cold starting in below freezing temperatures it is imperative to use a good brand of S.A.E. 5W20 oil.

2. Hydraulic Fluid

We use 'Esso EP9' hydraulic fluid in our tests but any good grade equivalent hydraulic or telemotor oil may be used. In no case should oils be mixed.

3. Repair and Overhaul

All Lub-cel units should be overhauled every two years. A Factory exchange program is

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available to facilitate this. Spare parts are available thru our parts department.

4. Bleeding air from Lub-cel

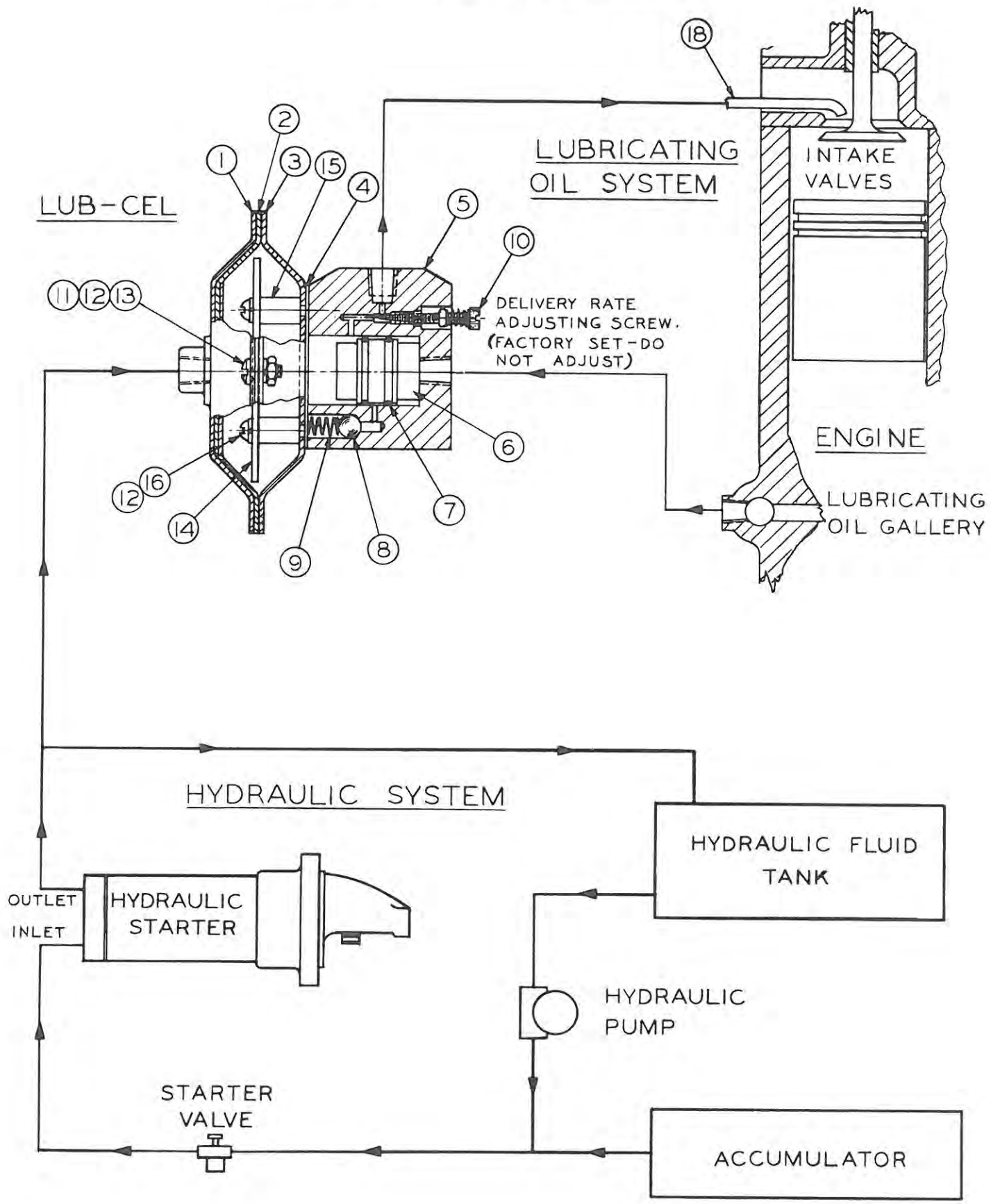
With engine running and oil pressure more than 30 PSI. Back off the two top screws in the diaphram housing to expel air. When oil is seen secure the two screws. Bring engine to idle. If the engine shows a short burst of power when idled there is more air in the diaphram housing. Repeat step 9. To flood delivery lines, start and stop engine about 4 or 5 times. Engine should be run at least 30 seconds each time.

TROUBLE SHOOTING CHART

Fault	Cause	Remedy
No oil delivery	Failure to re-load	Check engine oil pressure, must be over 30 PSI. Check piston action. Should require less than 25 PSI to house.
	Needle valve closed	Open valve (see table below)
Engine will not shut down	Piston O rings damaged	Close needle valve to stop oil flow. Check for rough or worn bore and replace O rings.
Engine speeds up briefly (1 second) when idled	Air in diaphram	Bleed air from Lub-cel (see SERVICE)
Hydraulic fluid discolored or contaminated by motor oil	Diaphram ruptured	Replace diaphram and change hydraulic and lubricating oil.
Persistant oil leaks	Hydraulic or engine oil pressure too high	Pressures should not be above 100 PSI. Refer to workshop manual for lube oil system and hydraulic starting system details.

Model	Turns counterclockwise from closed position
Pilot 20	2 1/2
4-107LB	2 1/2
4-107LS	2 1/2
LB-49	4

WESTERBEKE LUB-CEL



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WESTERBEKE LUB-CEL

ITEM	PN	NAME	REMARKS	QUAN
1	19371	HOUSING	Diaphragm (Hyd. Side)	1
2	19268	DIAPHRAGM		1
3	19274	HOUSING	Diaphragm (Piston Side)	1
4	19279	GASKET		1
5	19278	MANIFOLD		1
6	19280	PISTON		1
7	19342	O-RING		2
8	15618	BALL		1
9	19352	SPRING		1
10	19313	SCREW	Ass'y.	1
14	19428	PLATE		1
15	19429	PLATE		4
17	19305	NAMEPLATE		1
18-1	19331	LINE	Delivery Ass'y. Pilot-20LB.	1
18-2	19453	LINE	Delivery Ass'y. Four-107LB.	1
18-3	19290	LINE	Delivery Ass'y. LB-49	1
19-1	19470	KIT	Field Installation Four-107LB.	1
19-2	19471	KIT	Field Installation Four-107LS.	1