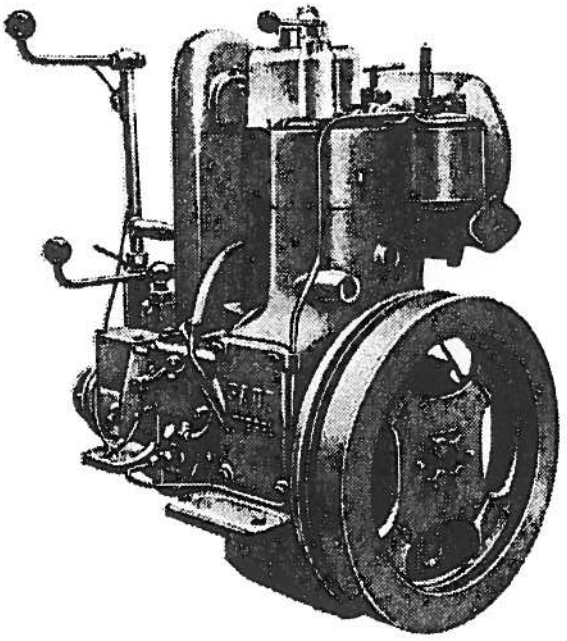
977.666.

SABB DIESEL

MODEL H – HG

ADDITIONAL INSTRUCTION AND PARTS LISTS



SABB MOTOR A·S

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SUPPLEMENTARY INSTRUCTION AND PARTS LISTS FOR 8 HP SABB DIESEL MODEL H/HG

Models G 10 HP and H 8 HP are principally identical as to construction and parts. This manual contains the special for model H. The remaining instructions and parts lists are commom for G and H.

Model H/HG. SPECIFICATIONS:

Continuous rating at 1500 r.p.m.:	6 HP
Continuous rating at 2000 r.p.m.:	8 HP
Cylinder bore/stroke	90×90, 3.543/3.543
Piston top clearance incl. gasket:	0,5–1 mm/.019–.039 in.
Brake mean effective pressure, ab:	6,25 kg/cm², 87,5 p.s.i.
Fuel consumption	2 litres/h, 3,5 pints/h
Lubrication oil consumption	2 g/hp-hour, .004 lb./hp-hour
Lubrication oil pressure, ab	2,5–3,5 kg/cm², 35–50 p.s.i.
Lubrication system	Force feed by vane type pump
Full flow oil filter	

Lubrication oil Capacities:

Sump capacity	2 litres, 3,5 pints
Clutch housing, model H	0,5 litres, .9 pint
Reverse gear, model HG	0,5 litres, .9 pint

When ordering parts always give part number, part name and engine serial number.

ENGINE SERIAL NO.: .....

OPERATION:

Run engine carefully when new and increase load gradually during the first 25 operating hours. When setting the max. propeller pitch stop screw (see Instruction Book for Model G, page 4, pos. 25) choose the full speed r.p.m. between 1500 and 2000 where the boat gets good speed and the vibrations are light. See also page 21.

It is recommended to change lubrication oil after the running-in period. Also clean the magnet in oil sump and put it back.

After each starting and during operation check lub.oil pressure and cooling water temperature regularly. The lub.oil pressure gauge is fitted on lub.oil filter as standard. At normal speed the gauge shall register between 2,5 and 3,5 kg/cm² (35—50 p.s.i.).
When the engine is hot after long running the pressure may fall some. That is quite normal. At idling speed the pressure should not fall below 0,5 kg/cm² (7 p.s.i.).

The lub.oil pressure is determined by the pressure relief valve (in this book, pos. 16, page 7) which is fitted close to the vane pump. If unstable oil pressure, remove the relief valve and clean it. If oil pressure is low at start (when oil is viscous), clean sump filter.

LUBRICATION AND MAINTENANCE SCHEDULE

EVERY 5 OPERATING HOURS (Daily).

1. Check sump oil level with dipstick. Never let oil level sink below lowest mark.
2. Fill up oil cup on cylinder head cover with engine oil. Oil runs through wick tubes and drops on rocker arms and valve springs. If engine installation angle is steep the rear tube ends should be plugged or squeezed to permit oil reaching the front tube ends.
3. Give propeller greaser and stuffing box greaser one turn each.

EVERY 25 OPERATING HOURS (Weekly).

1. Grease all nipples with grease gun. Use Multi Purpose grease.
2. Sliding bolts (see H sectional drawing, nipple no. 22) 5 shots.
3. Reversing bearing (nipple 19) 5 shots, and rear oil seals (nipple 20) 5 shots.

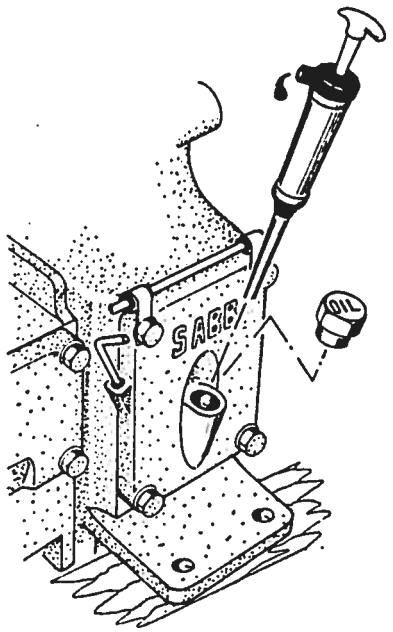
EVERY 50 OPERATING HOURS. Greasing of:

1. Governor control handle and starting shaft.
   Clutch shaft and pitch control shaft bearings in reversing bracket.
2. Check lub.oil in clutch housing (H) or reverse gearbox (HG, dipstick).

EVERY 150 OPERATING HOURS: Lub.oil change.

Engines with sump drain hand pump (delivered after H.72.1).

1. Unscrew "OIL" plug in crankcase cover.
2. Insert hand pump into sump and pump out. Use a tin or bottle under pump outlet.
3. Pour 1,5 litres new oil into sump through plug hole (2 litres including filter).



LUBRICATING OIL

Use lubricating oil of good brand, "Service DG or DM".

VISCOSITY:

Below 0° C temperature (+ 32° F) . . . . . SAE 10
Between 0° C (32° F) and 30° C (86° F) . . . . . SAE 20
Above 30° C (86° F) . . . . . SAE 30
A multi-grade oil (SAE 10—20—30) can be used with advantage.

EVERY 300. OPERATING HOURS (At least once yearly).

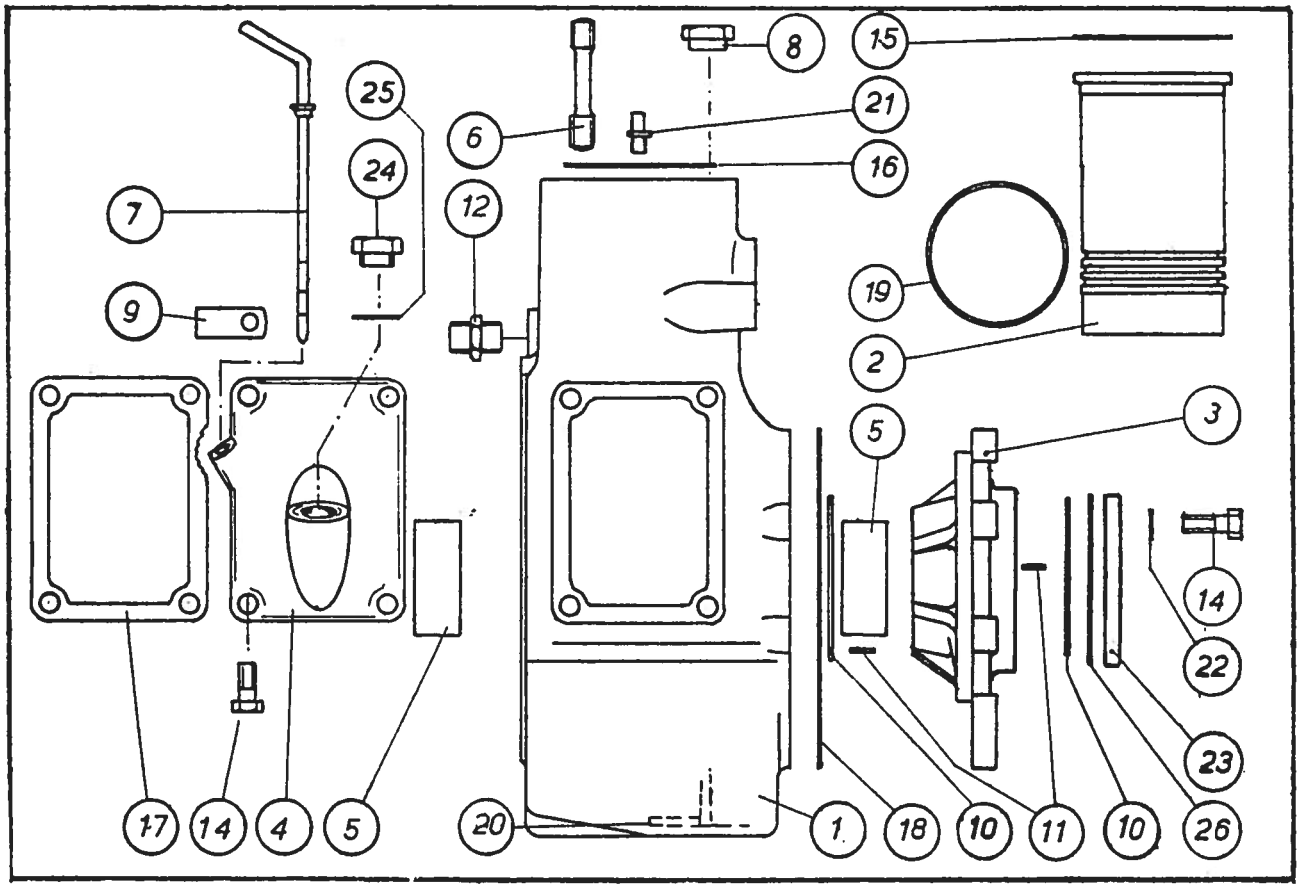
1. Change lubricating oil filter in connection with oil change. Unscrew filter with the adjustable spanner. The filter can not be cleaned, but has to be replaced by a new. Type: Ram PH9A. Apply film of engine oil to the gasket and hand turn filter until the gasket contacts its plate. Then tighten half a turn only. Pour 2 litres new oil into sump through plug hole. Start the engine and check for leaks. Check sump oil level with dipstick.

2. Replace fuel filter element (Bosch Fj/Sj 2751 — 1 457 431 324). Element can not be cleaned . . . . . Page 14
3. Check injector nozzle, clean if necessary Injectors pressure (opening): 100 kg/cm², 1422 p.s.i. . . » 45
4. Change lubricating oil in clutch housing or reverse gearbox, 1/2 litre engine oil. Clean the magnet in drain plug in reverse gearbox . . . . . » 13
5. Grease rocker arm ball bearings . . . . . » 33
6. Adjust valve stem clearance 0,3 mm (0.12") . . . . . » 33
7. If the clutch is slipping, tighten clutch clamp nuts 1/6 turn, through clutch housing cover . . . . . » 61
8. Tighten all screws, nuts and gland. Wash engine and restore paint wounds.

EVERY 1200 OPERATING HOURS (or more often if required).

1. Remove crankcase cover.
2. Clean sump oil filter and crankcase interior.
3. Remove and clean the sump magnet (Group H-20, pos 20).
4. Wash interior with fuel oil and use rags to dry. Replace crankcase cover.
5. Change lub.oil filter and fuel filter element.
6. Pour 2 litres new oil into sump through plug hole.

The Dynastarter V-belts should be tightened after the first 10-15 operating hours; later as required.



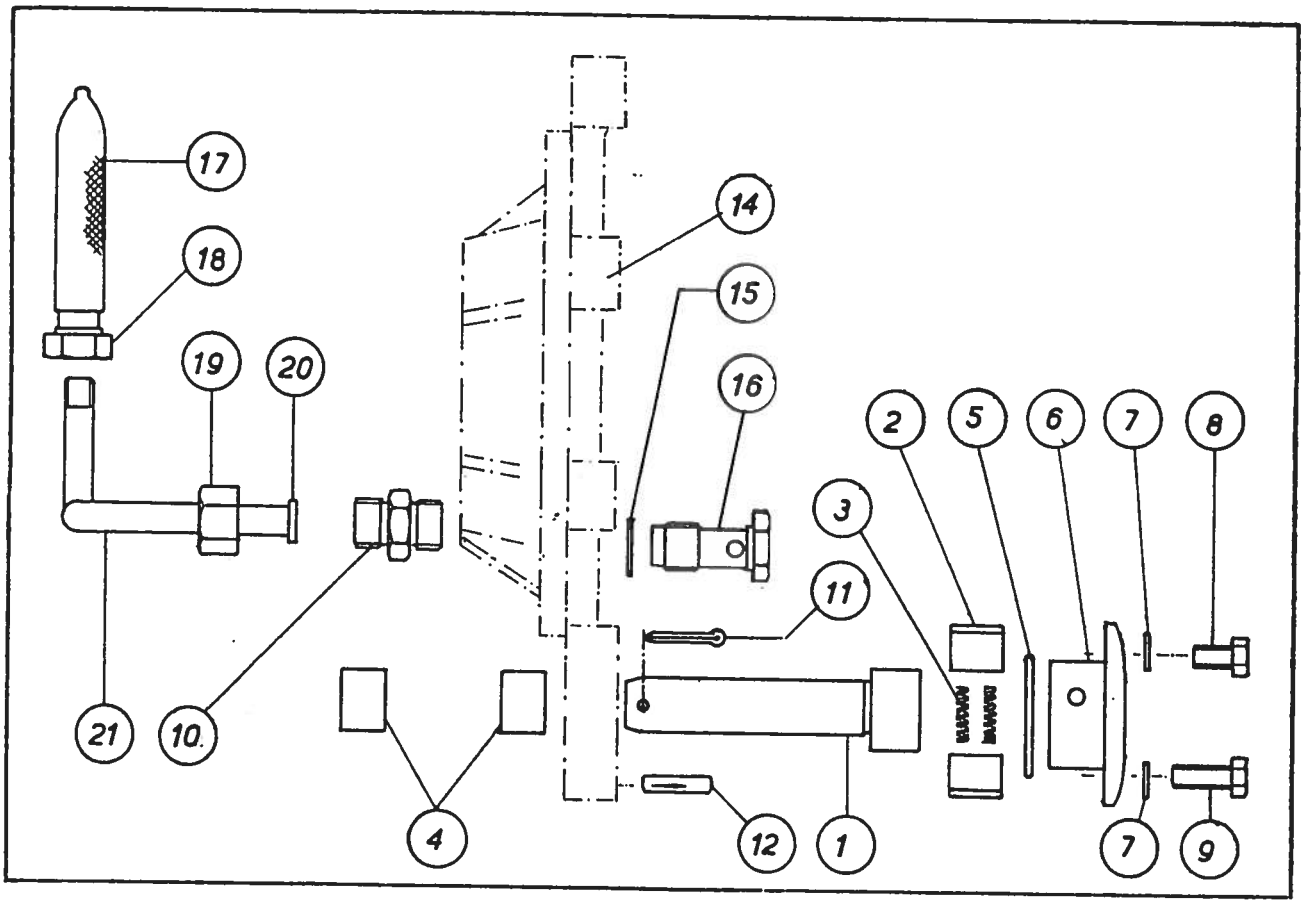
Group H-20. CYLINDER BLOCK

No.	Part Name	Part No.
1	Cylinder block	H23A
2	Cylinder liner	H21N
3	Front bearing flange .	H23LC
4	Crankcase cover . ..	H22DC
5	Main bearing	622h 62/0/6
6	Cylinder head stud ..	423a
7	Dipstick	G23c-2
8	Filter bracket nut . ..	435L
9	Fuel hose clip	723jb
10	Thrust washer	723cc
11	Grooved stud, ⅛"×10	723f
12	Water inlet nipple, ½"	511a
14	Bolt (⅜"×1¼") . ..	484c
15	Cylinder head gasket	821r

No.	Part Name	Part No.
16	Liner flange ring . ..	823a
17	Crankcase cover gasket	822hb
18	Bearing flange gasket (1/64")	823q
19	Cyl. liner rubber ring (3×94,5)	821p
20	Magnet	923a
21	Water temp. nozzle ..	652bg
22	Washer, ⅜"	723f
23	Front oil seal (100-120-13)	937bb
24	OIL-propp, ¾"	522dc
25	Fibre gasket	882d
26	Shield plate	723e

NOTE! Cylinder head for model H has a special swirl chamber insert H11jb, air intake tube H11k (175 mm) and valve push rods H34h (317 mm). The crankshaft end play is adjusted by means of the shims (Pos. 24, page 8). Correct end play 0,15—0,20 mm (.006—.008 in.) measured on cold motor.

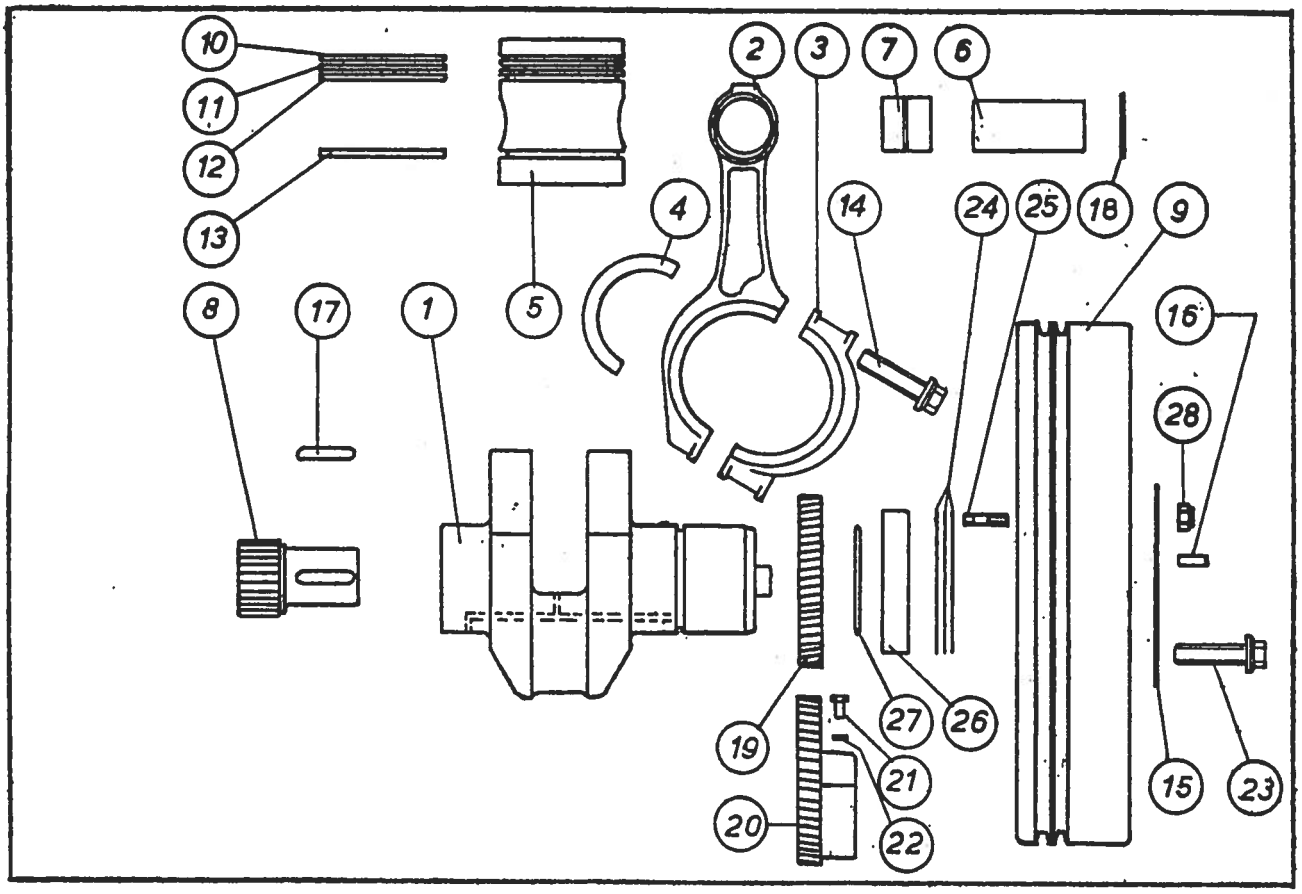
SPARES: Cylinder head (with swirl chamber insert, valves with small parts, oil seal). Code: S1-G11A-H.



Group H-23. LUBRICATING OIL PUMP

No.	Part Name	Part No.
1	Lub.oil pump shaft ..	H23mc
2	Lub.oil pump vane ..	H23p
3	Spring	723c
4	Needle bearing (Torrington B1112) ..	923b
5	O-Ring (Gaco SOR 16)	823s
6	Lub.oil pump housing .	H23s
7	Lock washer, ¼" JZ .	745d
8	Bolt, ¼" UNC×15 .	445c
9	Bolt, ¼" UNC×1¼"	423s
10	Nipple, ⅜"	521b

No.	Part Name	Part No.
11	Cotter pin, 5/32"×1¼"	723m
12	Dowel, 3/16"×1" . ..	442c
14	Front bearing flange .	H23LC
15	Copper washer (NMR 49/7X)	854g
16	Lub.oil pressure valve .	S1-H54g
17	Sump strainer	H67j
18	Sump filter nipple . ..	H67m
19	Pipe nut	553c
20	Solder ring	565c
21	Sump suction pipe . ..	667j

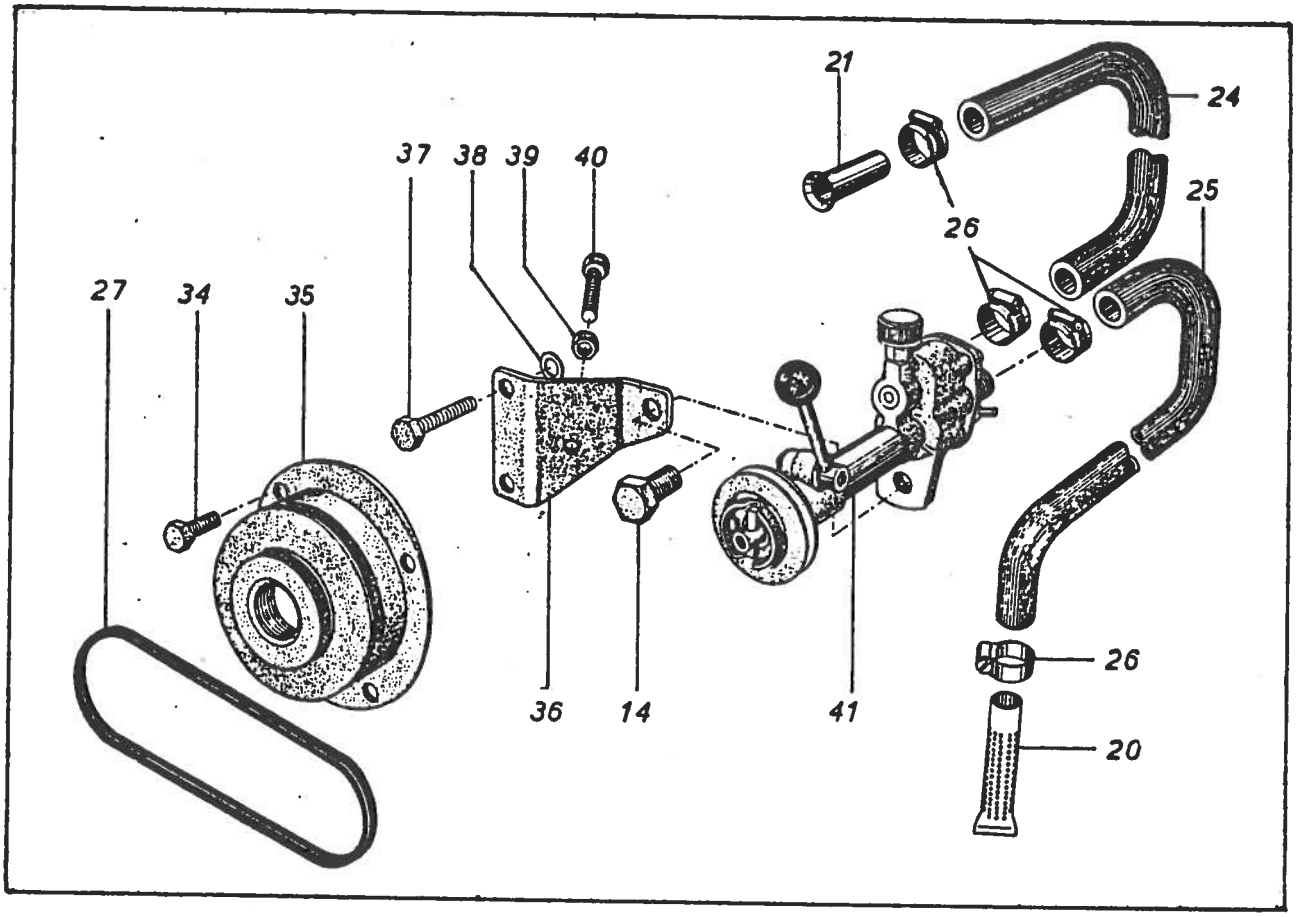


Group H-31. CRANKSHAFT

No.	Part Name	Part No.
1	Crankshaft	H31Ad
2	Connecting rod	2H32EC
3	Big end bearing cap ..	
*) 4	Big end half-bearing ..	2H32F 70.00 mm
5	Piston	2H32A
6	Gudgeon pin	H32d
7	Small end bush	632e
8	Crankshaft pinion	G31p
9	Flywheel	H33AB
10	Top compression ring (Chromium pl.)	G32b
11	Compression ring	G32bb
12	Compr./scraper ring ..	G32bd
13	Oil control ring	G32bc
14	Connecting rod bolt, M12	432. 003
15	Lock plate	733ab
16	Flywheel lock pin ..	433f

No.	Part Name	Part No.
17	Crankshaft pinion key	434e
18	Circlip (35i)	732a
19	Vibration damper drive gear	H32qb
20	Vibration damper wheel	H23NB
21	Bolt (¼"× 15 B80) ..	445c
22	Lock washer, ¼" JZ .	745d
23	Bolt, M14×50	432g
24	Shim, crankshaft, 0,2 mm	733k
	Shim, crankshaft, 0,08 mm	733kb
25	Stud, ¼"×28	433k
26	Flywheel ring	H33k
27	O-Ring, SOR 64 74,5×80,5×3	833k
28	Nut, ¼" Nyloc	443b

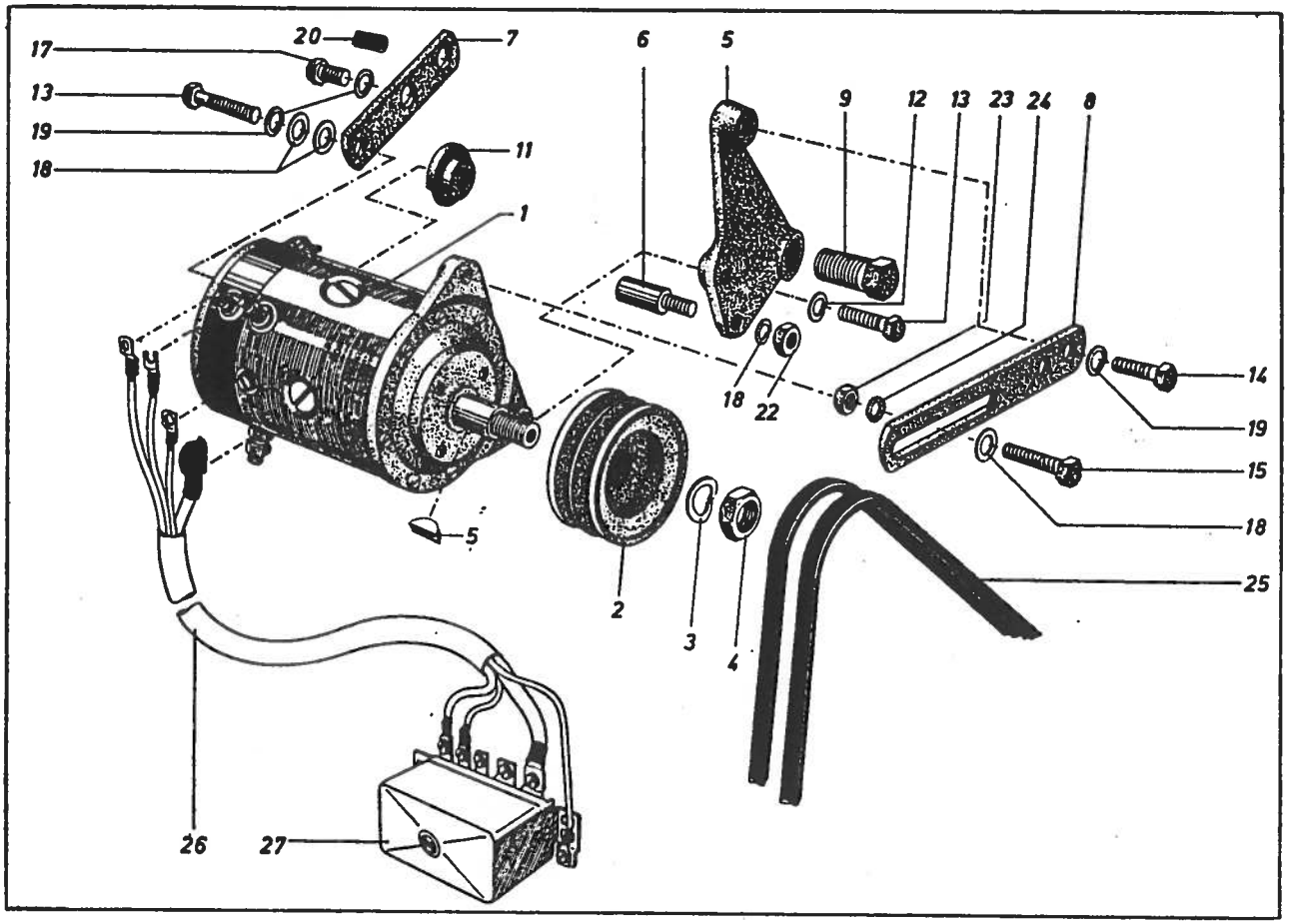
*) undersize 69.75 2H32Fb



Group H-47. GEAR TYPE BILGE PUMP ASSEMBLY

No.	Part Name	Part No.
27	V-belt, S-25	947u
34	Bolt, ⅜" UNC×¾"	431b
35	Flywheel pulley	G33DL
36	Bilge pump bracket ..	H47p
37	Bolt, ⅜" UNC×1¼" . ..	484c
38	Fibre gasket	847c
39	Nut, 5/16"	415e
40	Support screw, 5/16"×1" (against the crankcase)	421k
41	Gear type bilge pump complete (with bolt, pos. 14, green book) ..	S1-G47Q
41b	Gear type bilge pump complete with all pos.	S2-G47Q-H

(See group G-47 (Gear type bilge pump) in green Instruction Book and Parts List.



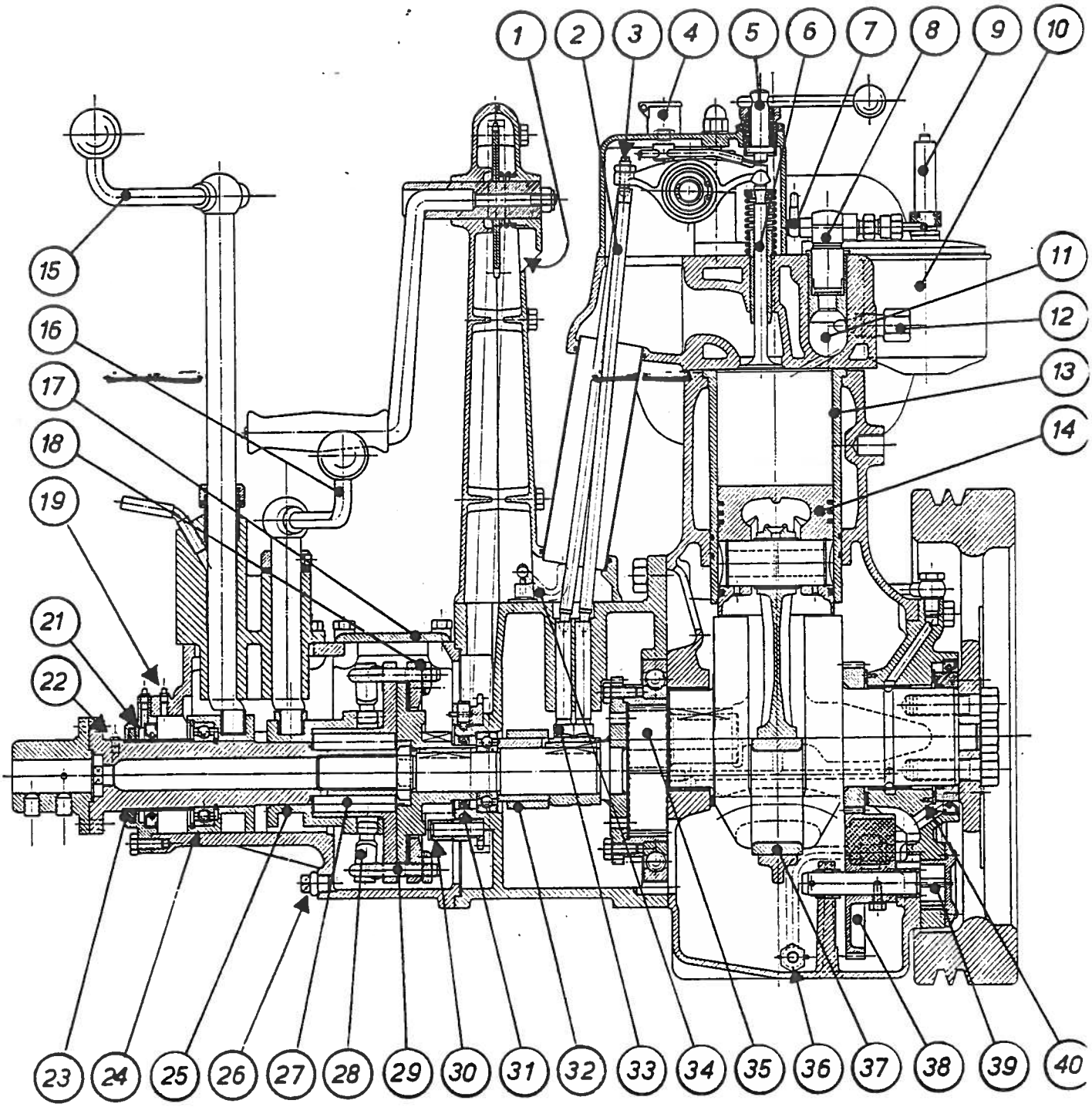
Group H-68–1. DYNASTART

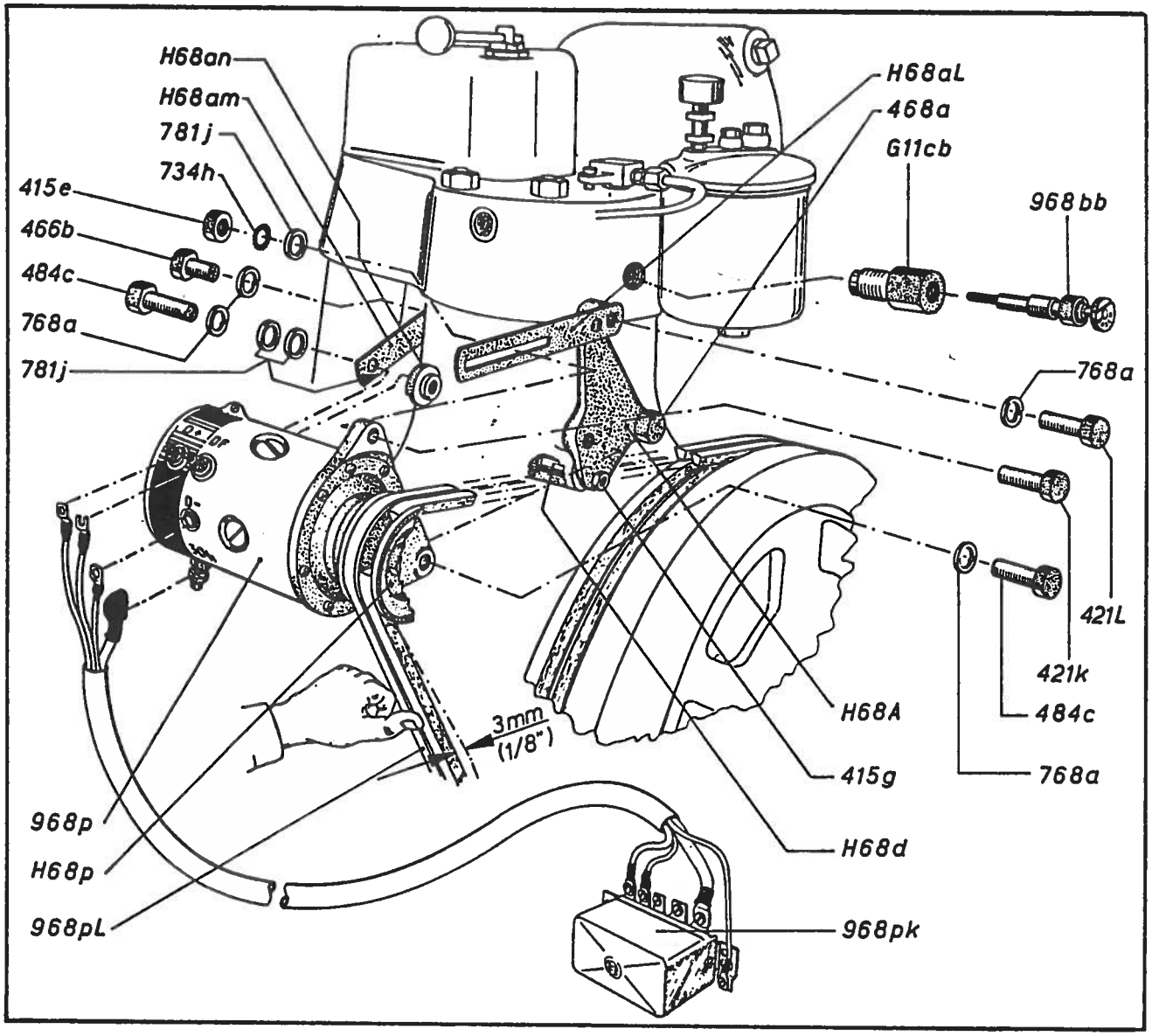
No.	Part Name	Part No.
1	Dynastart, Bosch 12V 1 HK/14V 11A 0. 010. 350. 004	968p
2	Kileremskive (SAV 75 A-2)	H68p
3	Spring washer	
4	Nut	
5	Dynastarter bracket . .	H68A
6	Support bolt	H68D
7	Support iron	H68am
8	Bolt tightener	H68aL
9	Bolt, ⅜" BSP	468a
11	Nut, ⅜"	H68an
12	Spring washer, ⅜" . .	768a
13	Bolt, ⅜" UNC×1¼"	484c

No.	Part Name	Part No.
14	Bolt, ⅜" UNC×1" .	421L
15	Bolt, 5/16" UNC×1" .	421K
17	Bolt, ⅜" UNC×¾"	466b
18	Washer, ⅜"	781j
19	Spring washer, ⅜" . .	768a
20	Elastic pin, 8Ø×24 . .	734d
22	Nut, ⅜"	415g
23	Nut, 5/16"	415e
24	Lock washer, 5/16" . .	734h
25	V-belt (A53)	968pL
26	Relay cable	S1-968pp
27	Relay (ZAD 14V 11A Bosch 0. 190. 219. 001) with relay cable	S2-968pp

LONGITUDINAL SECTION OF SABB DIESEL – MODEL H

1. Air intake
2. Push rod
3. Rocker arm adj. screw
4. Valve lub.cup
5. Decompression bolt
6. Valve (inlet)
7. Fuel leak-off pipe
8. Bosch injector
9. Lub.oil pressure gauge
10. Lub.oil filter
11. Precombustion chamber
12. Torch paper holder
13. Wet type cylinder liner
14. Piston
15. Pitch control lever
16. Clutch crank
17. Clutch housing cover
18. Clutch clamp nut
19. Reversing bearing grease nipple
20. Rear oil seal grease nipple
21. Rear oil seal (double)
22. Sliding bolt grease nipple
23. Felt ring
24. Reversing ball bearing
25. Clutch sleeve
26. Clutch housing drain plug
27. Sliding bolt
28. Clutch arm
29. Clutch clamp
30. Starting pawl
31. Pump housing oil seal
32. Water pump eccentric
33. Valve lifter (exhaust)
34. Lub.oil drain handle
35. Reduction gear
36. Sump oil filter
37. Big end bearing
38. Vibration damper
39. Lub.oil vane pump
40. Front oil seal





Group H-68–2. DYNASTART

The dynastarter is a combined dynamo (12V—90W) and starter (1 hp) connected to engine flywheel by two V-belts.

Fitting: Attatch Support Iron H68am to rear side of engine block. The Tap H68d is inserted in front and the Bracket H68A securely tightened. Then Dynastarter is mounted.

The Nut H68an has to be fitted correct way, locking against starter. Fasten Tightener H68aL. Fit V-belts and tighten Bolt 421k lightly.

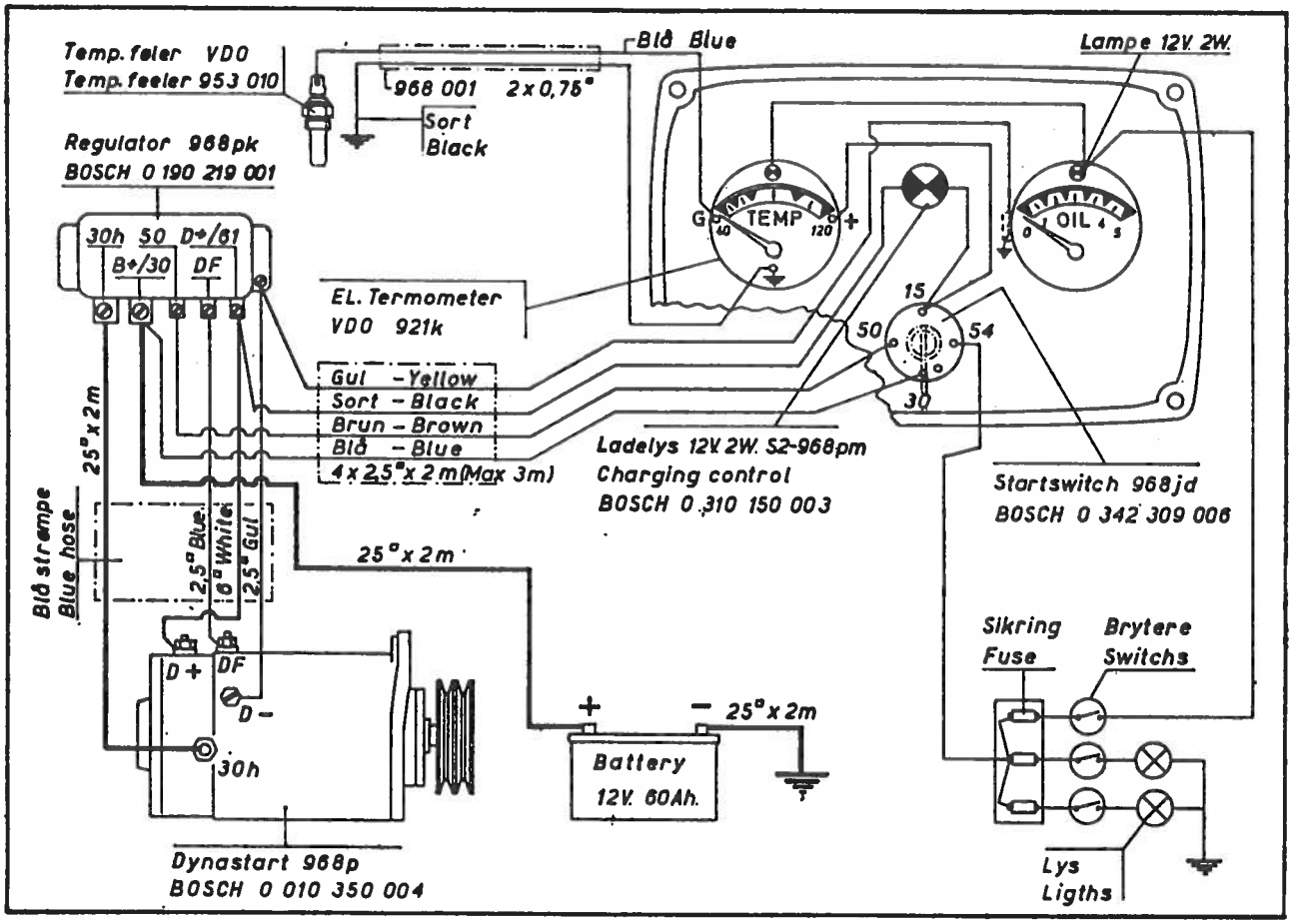
Use a heavy screw driver or spanner under the starter, bend up to tighten the belts and hold the lever until the bolts are securely fastened. Test tension by pressing belts midway between starter and flywheel. They should sag under tumb pressure about 1/8 inch. Tighten bolts again after some days of operation.

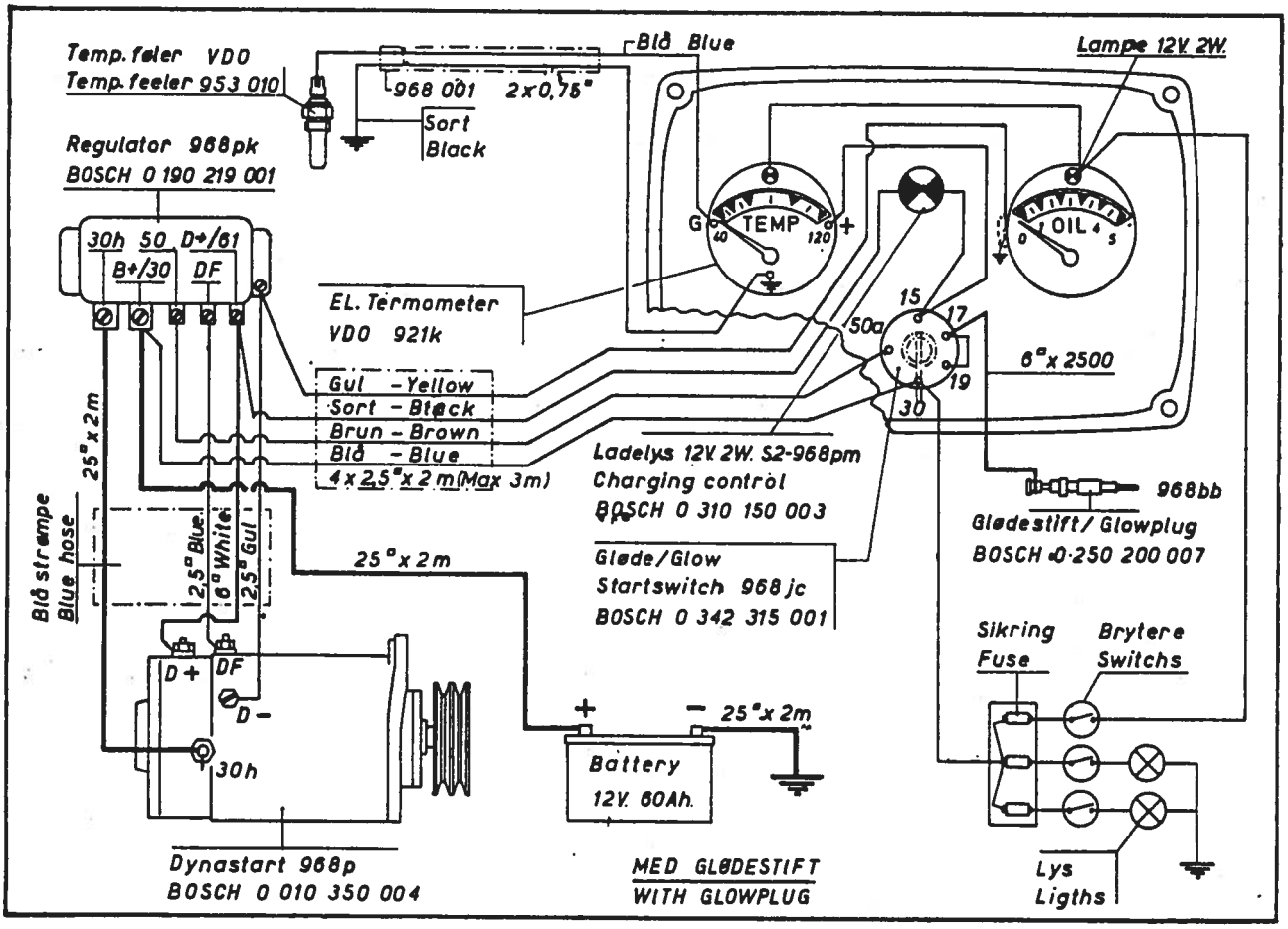
See that all wires are connected exactly as shown in diagram. The Regulator 968pk should be fitted conveniently near the engine, but rather not to the engine itself, protected against water and excess heat. All wires should be fitted neatly and away from the heat of the exhaust system and fastened with clips.

Cont. page 17.

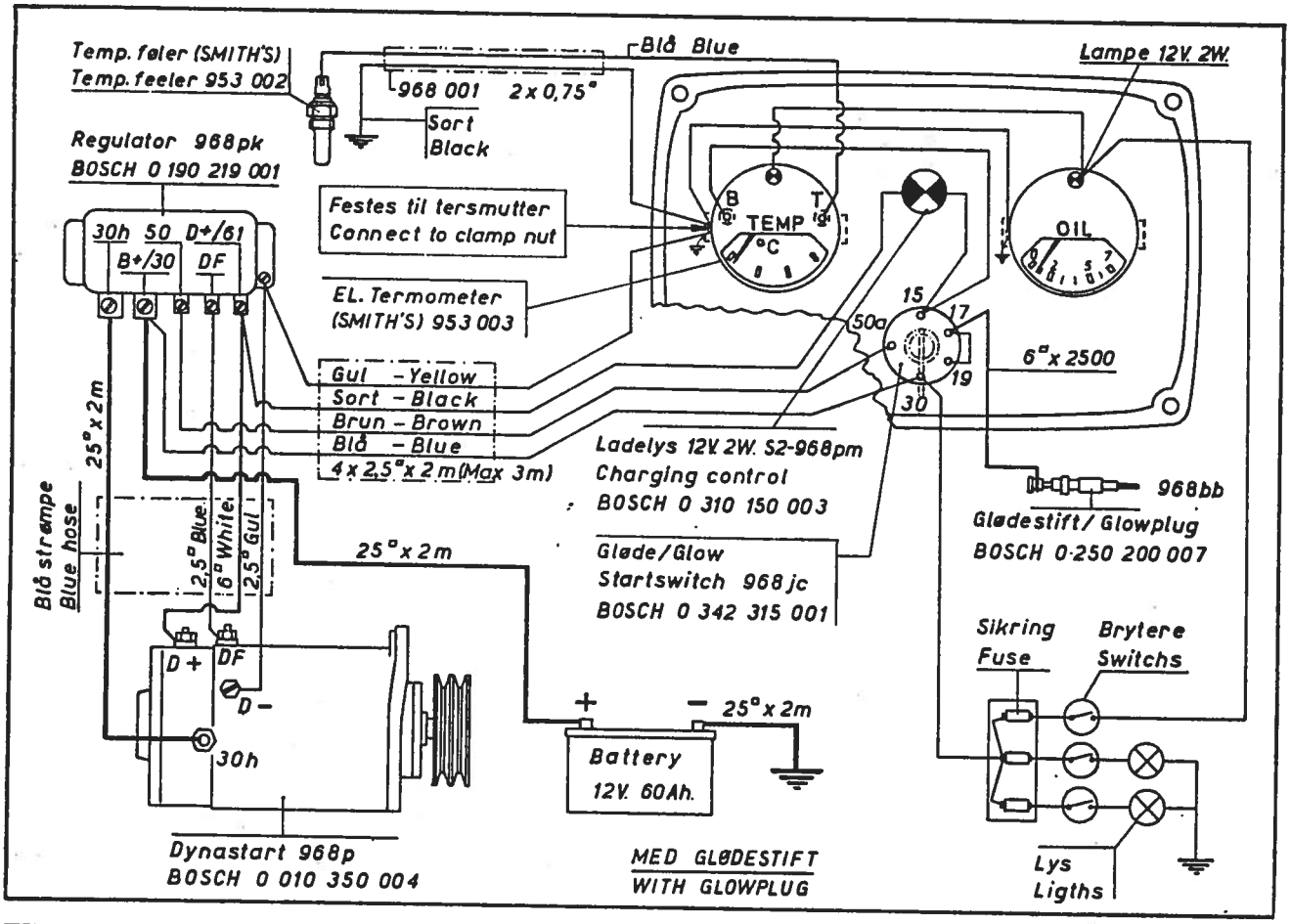
START

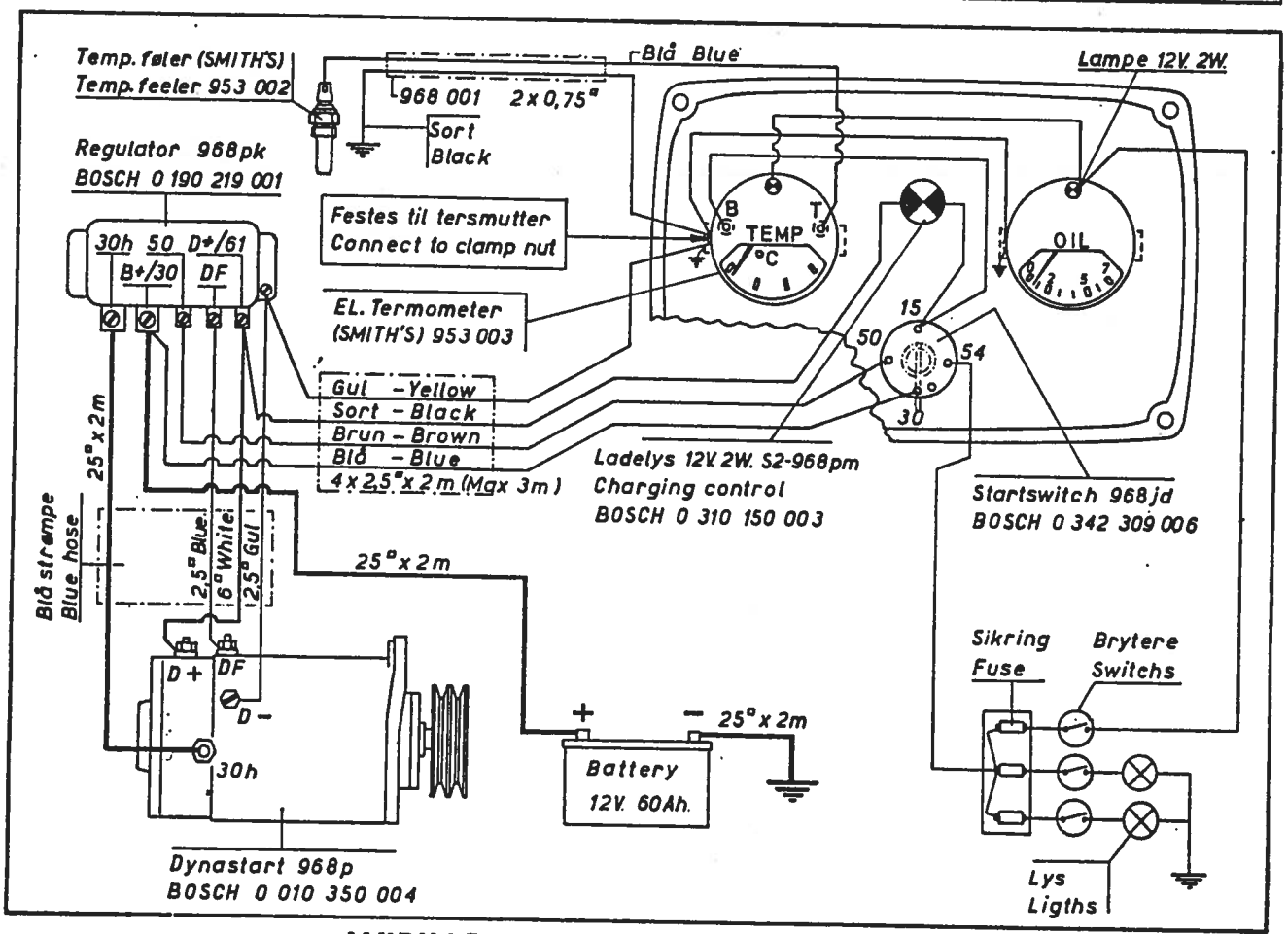
Open decompressor. Push starter switch in and turn clockwise. Close decompressor.



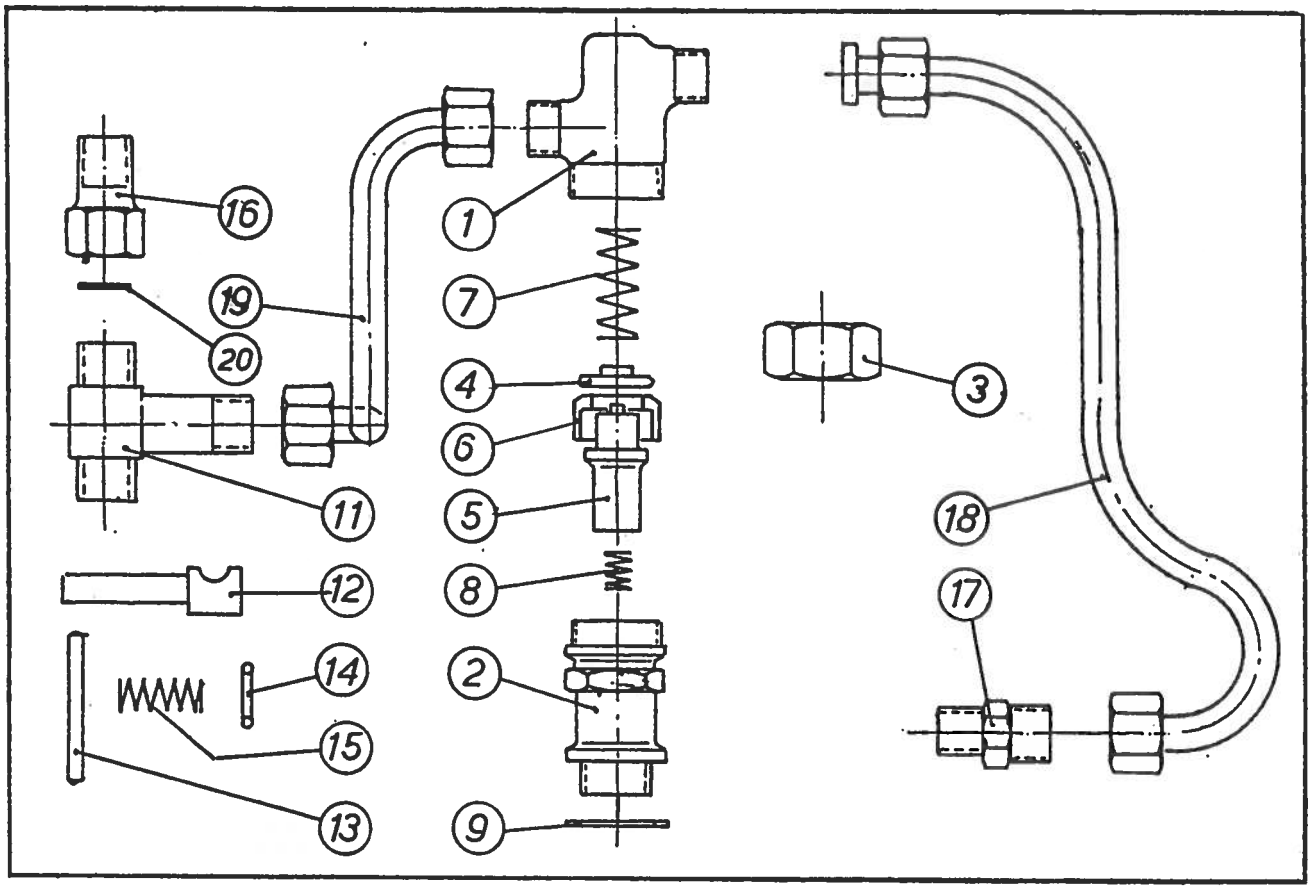


WIRING DIAGRAM WITH V.D.O.
EL. THERMOMETER AND TEMP. FEELER



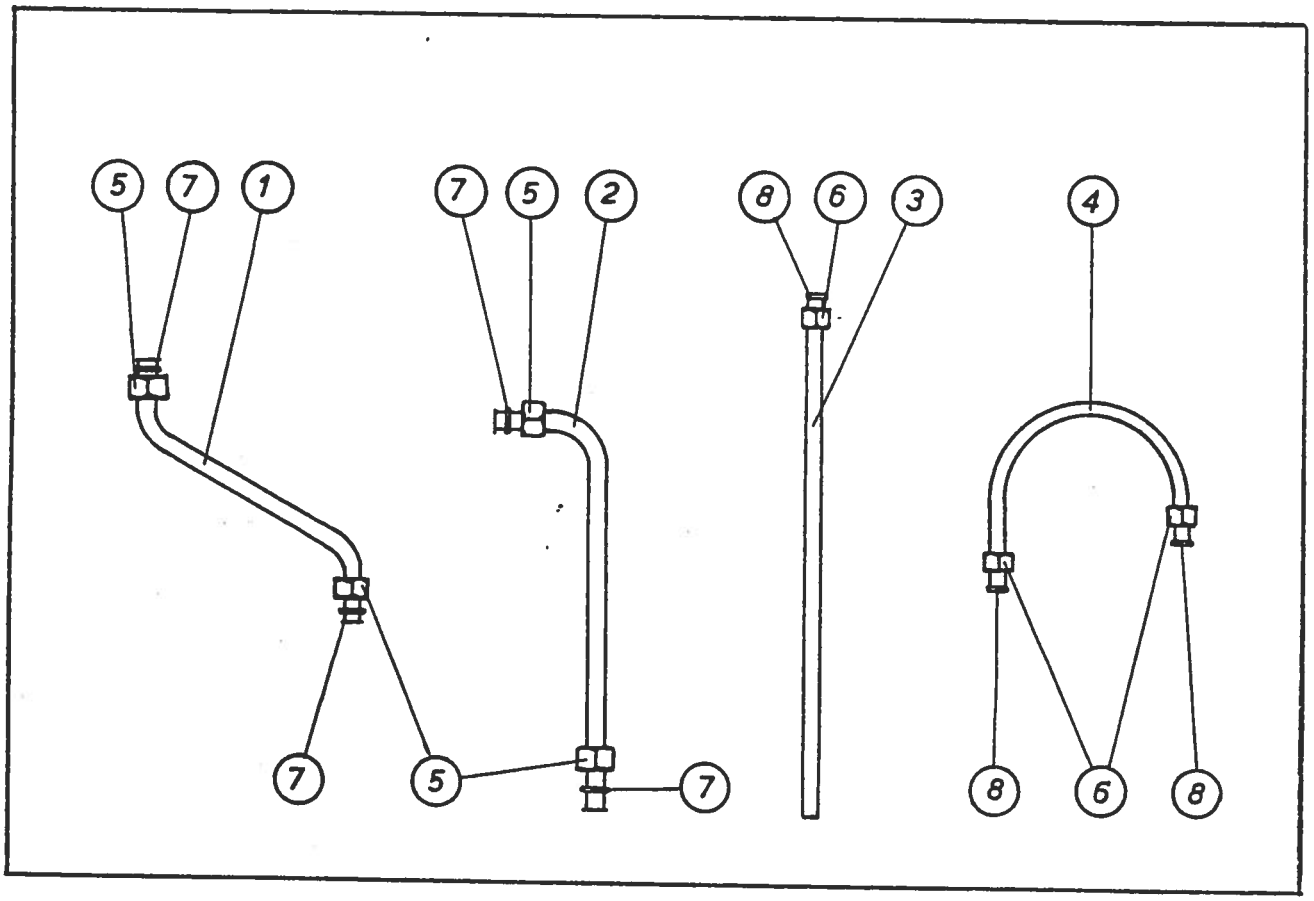


WIRING DIAGRAM WITH SMITHS
EL. THERMOMETER AND TEMP. FEELER



Group H-69–2. THERMOSTAT OPERATED SEAWATER COOLING.

No.	Part Name	Part No.
1	Thermostat housing ..	G69D
2	Thermostat nipple . ..	G69dk
3	Thermostat nut	G69dm
4	Thermostat valve . ..	G69dL
5	Thermostat (Behr-Thomsen X1.024.55.299)	969dL
6	Thermostat valve seat	G69dn
7	Thermostat spring ..	769f
8	Therm. release spring	769e
9	Fibre gasket	844b
11	Two way cock body .	G52k
12	Two way cock	G52m
13	Two way cock pin ..	553i
14	O-ring (7,66×1,78) .	823c
15	Spring	744b
16	Nipple muff	569d
17	Pipe nipple (⅜" BSP)	521bb
18	By-pass pipe	669dn
19	Two way cock pipe .	669dm



Group H-600–1. WATER PIPES

No.	Part Name	Part No.
1	Water pressure pipe .	623ac
2	Water suction pipe ..	662b
3	Water discharge pipe .	662e
4	Wet exhaust pipe . ..	621c

No.	Part Name	Part No.
5	Pipe nut	511b
6	Pipe nut	553c
7	Pipe collar	711c
8	Solder ring	565c

Cont. from page 13.

GLOW/STARTER SWITCH – GLOW PLUG

The glow plug facilitates starting at low temperature (instead of starting cigarette). A special switch is used. Turn key clockwise to heat and keep for 10—20 sec. Then push in and turn clockwise again to start.

BATTERY

Check regularly. The electrolyte level should not fall below the top of the plates and only destilled water used for topping-up. Clean battery top properly and keep the terminals and leads clean and tight. Coat the terminals with vaseline to prevent oxidization. Keep battery securely fastened.

Elecrical equipment is not covered by the engine's guarantee.