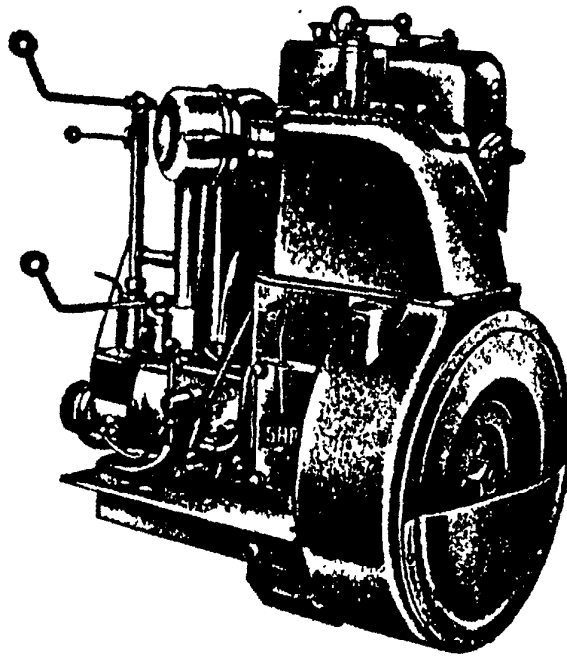


# **SABB DIESEL**

## **MODEL GA/GAG**

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**Instruction book and parts list  
for aircooled lifeboat engine**



**Instruksjonsbok og stykkelister  
for luftkjølt livbåtmotor**

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**SABB MOTOR A.S**

Telephone (05) 34 3510. Telegram: "Sabbmotor"—Telex: 42559 sabb n  
BOX 2728 — 5010 BERGEN, NORWAY

**TYPE GA:** Med frikobling – omstyring  
2-bladet, vriar propell  
With clutch and 2-blade,  
controllable pitch propeller

**TYPE GAG:** Med reversgear og 3-bladet,  
fast propeller  
With reverse gearbox and  
3-blade solid propeller

**MOTOR NUMMER:**  
**ENGINE SERIAL NO.:** \_\_\_\_\_

**NB.!** For øket sylinderboring (fra 95 mm<sup>Ø</sup>) til 100 mm<sup>Ø</sup>  
og øket ytelse til 14 hk v./2000 omdr./min.:  
**Se bakre omslagssidel**

**NOTE!** Increased cylinder bore from 95 to 100 mm dia.  
and increased performance to 14 hp at 2000 rpm.:  
**See the rear cover of this book!**

**SABB MOTOR A.S.**

Forbehold om rett til endringer av spesifikasjoner og utstyr.  
Dimensions and specifications subject to alteration without notice.

**Overgang til millimetergjenger fra 1975.**

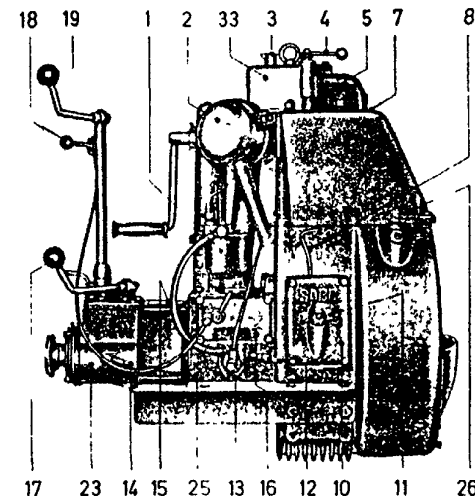
1975 er et overgangsår fra tommegjenger til millimetergjenger for nye motordeler  
og utstyr. – For reservedelsbestilling, se side 18.

**Metric threads from 1975.**

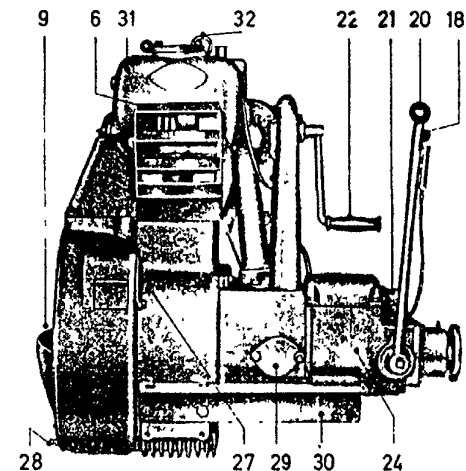
Metric threads will replace inch-measured threads for new engine parts and  
components, starting from 1975. – Ordering spare parts, see page 18.

**TYPE GA. STYRBORD/STARBOARD SIDE – TYPE GAG. BABORD/PORT SIDE**

1. Brennløsefilter/  
Fuel filter housing
2. Luftfilter/Air intake filter
3. Oljekopp for ventilsmøring/  
Valve lub. cup
4. Dekompresjonshendel/  
Decompressor lever
5. Oljekopp for kaldstart/  
Cold starting lub. cup
6. Kjøleluft utløp/  
Cooling air outlet
7. Deksel for innsprøytingsdyse/  
Injector cover
8. Peilepinn/Dipstick
9. Kjøleluftinntak/  
Cooling air inlet
10. Veivhusluke/Crankcase cover
11. Propp for oljefylling/tømming  
Oil filler plug/drain
12. Kaldstart-knapp/  
Excess fuel knob
13. Brennløsepumpe/  
Injection pump
14. Justerskrue for propellstign /  
Propeller pitch adjusting screw
15. Koblingshusluke/  
Clutch housing cover
16. Tomgangsstillingskrue/  
Idling adjusting screw
17. Koblingshendel/Clutch handle
18. Reguleringshendel/  
Governor control handle
19. Omstyringshendel/  
Propeller control handle
20. Gearhendel/  
Gear operating lever
21. Peilepinn oljefyll./tømming  
(styrbord side av gearhus)  
Dipstick, oil filler/drain plug  
(starboard side of gearbox)
22. Startveiv/Starting handle
23. Koblingshus/Clutch housing
24. Reversgear/Reverse gearbox
25. Regulatorluke/Governor cover
26. Dynamofeste/  
Alternator support
27. Selvstarterfeste/  
Self starter support
28. Avtappingskran/Drain cock
29. Blindflens (brennløseløftep.)/  
Blank flange (fuel lift pump)
30. Fundamentjern/Frame
31. Lyddemper/Silencer
32. Løftemutter/Lifter eye nut
33. Toppchette/Cyl.head cover



**Fig. 1. GA – Styrbord/Starboard**



**Fig. 2. GAG – Babord/Port**

# SABB DIESEL

## LIVBÅTMOTOR, LUFTKJØLT, TYPE GA-GAG

### S P E S I F I K A S J O N E R :

En-sylindret, 4-takts,  
luftkjølt dieselmotor

Normal ytelse:  
12 hk ved 1800 omdr./min.

Sylinderboring/slaglengde:  
95×120 mm

Slagvolum:  
850 cm<sup>3</sup>

Kompresjonstrykk:  
(ved sveiving) 25 kp/cm<sup>2</sup>  
Effektivt middeltrykk: 7 kp/cm<sup>2</sup>

Kompresjonsforhold: 1:17

Direkte innsprøyting:  
4-hulls dyse, 150 kg/cm<sup>2</sup>

Brennoljeforbruk:  
190 g/hk-time, 2,75 liter/time

Smøreoljeforbruk:  
2 g/hkh.

Smøreoljemengder:  
Veivhus oljesump . . . . . 2,5 liter  
Koblingshus, GA . . . . . 0,5 liter  
Reversgear, GAG . . . . . 0,5 liter

Reduksjon: 2:1

Gangretning: Venstre

Propellmoment:  
Ved 1600 omdr./min : 10 kpm.

Propell GAG: 16"×14"

Propell GA: 2-bladet vribar,  
diam 450 mm

Propellaksel diam. 25 mm

Vekt av motor uten propellutstyr:  
220 kg

Toppklaring (uten pakning):  
1,5-1,7 mm

Ventilklaring:  
Eksos- og luftventil, kald, 0,3 mm

Forinnsprøytingsvinkel  
(mot atm. trykk): f.ø.d. 31°

Tiltrekkingmomenter:  
Topplokkmutre . . . . . 10 kpm.  
Veivlagerbolter (M14) . . 18 kpm.  
Veivlagerbolter,  
gammel type (3/8" BSP): 14 kpm.  
Pumpekassebolter  
(side 23, pos. 26) . . . . . 8,5 kpm.

## LIFEBOAT ENGINE, AIR-COOLED, MODEL GA-GAG

### S P E C I F I C A T I O N S :

One-cylinder, four stroke  
aircooled diesel engine

Normal output:  
12 hp at 1800 r.p.m.

Cylinder bore/stroke:  
95×120 mm, 3.740/4.720 in

Cylinder displacement:  
850 cm<sup>3</sup>, 51.87 cu in.

Compression pressure:  
(cranking by hand) 355 p.s.i.  
Brake mean effective pressure: 100 p.s.i.

Compression ratio: 1:17

Direct injection, 4-holes nozzle,  
150 kg/cm<sup>2</sup>, 2135 p.s.i.

Fuel consumption: 190 g/hp-hour,  
41 lb./hph., 2,75 litres (4.8 pints) per hour

Lub. oil consumption:  
2 g/hph, 0.04 lb./hph.

Lubricating oil capacities:  
Sump . . . . . 2.5 litres, 4.4 pints  
Clutch housing, GA: 0.5 litres, .88 pints  
Reverse gear, GAG: 0.5 litres, .88 pints

Reduction gear ratio: 2:1

Direction of rotation: Left

Propeller torque, cont. rating  
at 1600 r.p.m., 10 kpm, 73 ft./lbs.

Propeller GAG: 16"×14"

Propeller GA: 2-blade controllable  
pitch, dia 450 mm, 17.73 in.

Propeller shaft, diam. 25 mm, 0.97 in

Weight of engine without propeller  
equipment: 220 kilos, 485 lbs

Piston top clearance (without gasket):  
1,5-1,7 mm, 0.059-0.067 in.

Valve clearance:  
Intake and exhaust, cold 0.3 mm, .012"  
Injection starts: 31° before TDC

Torque loads of nuts and bolts:  
Cyl. head nuts . . . . . 72 ft. lbs.  
Big end bearing bolts (M14): 130 ft. lbs.  
Big end bearing bolts,  
previous type (3/8" BSP) . . . 100 ft. lbs.  
Gear housing bolts  
(page 23, pos. 26) . . . . . 60 ft. lbs.

## ENGLISH:

Starting — Operating and Maintenance ..

Page 3 to 11

## NORSK:

Start — Kjøring — Stell og vedlikehold ..

Side 11 til 17

## ENGLISH/NORSK:

Irregular Engine Operation.

Fault Location Chart/

Motorklass — Feilsøking . . . . . Page/Side 41 to/til 43

## STARTING :

1. Propeller (clutch) disengaged.
2. Governor handle (18) in full speed position, pointing down (fig. 3).  
Fill valve lubrication cup (fig. 1, pos. 3) with lubricating oil.

*In cold weather:*

Pull out the excess fuel knob (fig. 4, pos. 12) and fill cold starting oil cup (fig. 6, pos. 5) with lubricating oil.

3. Open decompressor. Handle (4) pointing forward.
4. Stand on starboard side of engine (fig. 5) with your right hand on decompressor handle and operate starting handle with your left hand.  
Crank rapidly and close decompressor by turning handle to starboard.
5. Use governor handle to control engine speed.

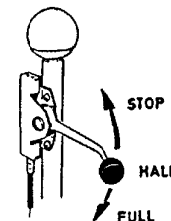


Fig. 3

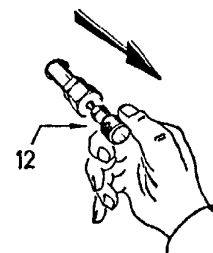


Fig. 4

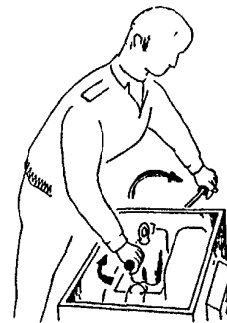


Fig. 5

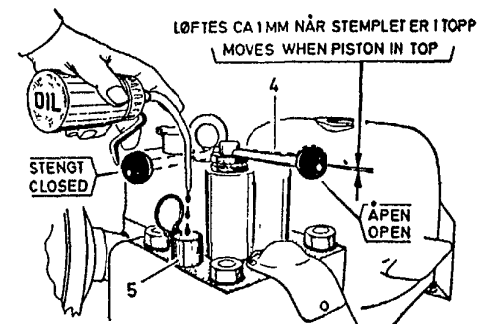


Fig. 6

## OPERATION :

### Model GA—controllable pitch propeller

Engage clutch by pressing clutch handle (17) firmly forward. See that the clutch handle clears the engine casing. Adjust propeller pitch with propeller control handle (19).

### Model GAG—reverse gearbox

Engage gearbox by pressing control lever (20) forward for ahead drive, and backward for astern drive.

**GENERAL:** Never manipulate propeller or clutch control at full engine speed, but slow down first.

## MAINTENANCE :

### WEEKLY (AND AFTER LIFEBOAT DRILL)

1. Drain water condensate from fuel tanks. Top up tanks with clean fuel (gas oil, light diesel).  
Note: Do *not* close fuel tank tube cock in tank.
2. Drain water from flywheel water shield (fig. 2, pos. 28). (fig. 19, pos. 4).
3. Check sump oil level in engine (dipstick 8), and oil level in reverse gearbox (dipstick 21). Top up with clean lubricating oil if required.
4. Fill oil cup (fig. 6, pos. 5) on cylinder head *two times with lubricating oil* to preserve cylinder and ease next starting.  
Turn engine by hand a few times and leave piston in top dead center (TDC noticed by piston touching the decompressor valve fig. 6).  
Close decompressor.
5. Give greasers for propeller and stuffing box one turn each. Propeller with external nipple is greased with grease gun, boat in davits.

## EVERY 50 OPERATING HOURS WHEN IN REGULAR USE (OR AT LEAST ONCE A YEAR):

### Change lubricating oil in engine sump:

**Engines with separate sump drain hand pump (delivered after GA 71-219).**

Run the engine until normal operating temperature is reached.

Unscrew "OIL" plug in crankcase cover. Insert hand pump (fig. 7) into sump and pump out. Use a tin or bottle under pump outlet.

Fill 2,5 litres new lub. oil into sump through plug hole.

### IMPORTANT:

If the engine has been immersed in water, the oil in crankcase and clutch housing (or reverse gearbox) should be changed without delay.

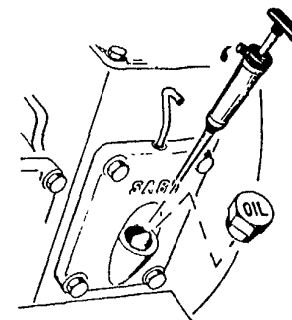


Fig 7

## LUBRICATING OIL

### API-SERVICE CC OR CD (Previous description DM or DS):

VISCOSITY: Below 0° temperature (+ 32° F) . . . . . SAE 10  
Between 0° (32° F) and 30° C (86° F) . . . . . SAE 20  
Above 30° C (86° F) . . . . . SAE 30

A multi-grade oil (SAE 10W—40) can be used with advantage.

### Recommended lubricating oils:

BP Energol IC-MB	Gulflube Motor HD
Castrol 210MX	Mobiloil Special
Chevron Golden Motor Oil	Ocean Diesoline
Esso Motor Oil	Reginol Motorolje
Fina Solna HD-S.3	Shell Melina Oil
	Texaco Havoline Motor Oil

## GREASE:

Grease all nipples with grease gun. Use water proof, MULTI PURPOSE GREASE, to all greasing points (engine and propeller).

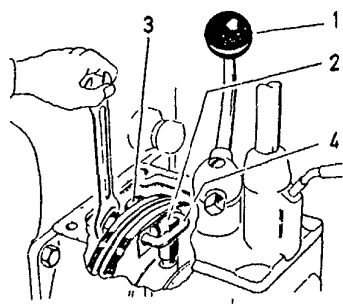


Fig 8

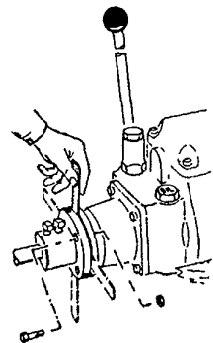


Fig. 9

## Change Fuel Oil Filter (fig. 10):

Water coming in with fuel will accumulate in the fuel filter bowl. Foreign particles will settle in the filter element.

The element should be changed every year or whenever fuel supply becomes irregular. The element is of the "throw-away" type, can not be cleaned.

(Bosch FJ/SJ 2751 — 1 457 431 324 or H filter EK2.)

## YEARLY:

1. Change lubricating oil in clutch housing or reverse gearbox,  $\frac{1}{2}$  litre engine oil (SAE 20). Also clean the magnet in gearbox drain plug.

2. If the clutch is slipping, tighten clutch clamp nuts (3)  $\frac{1}{6}$  turn, through cover (fig. 8). If the reverse gearbox is slipping, check alignment of engine (fig. 9). See also page 43.

3. Replace fuel filter element. Page 7, fig. 10.

4. Check injector nozzle, clean if necessary. (Multihole 150 kg/cm<sup>2</sup>, 2135 p.s.i.). Page 8, fig 12.

5. See that the fuel system is not leaking.

6. Remove the air intake filter. Clean in fuel oil: Apply some lub. oil to the filter to make it adhesive.

Close fuel tank cock.

Unscrew the filter central bolt (1) and pull down the filter bowl (4). Clean the filter bowl and fit a new element (3). See that the rubber seal (2) in filter cover is in its groove before tightening the bolt.

Remember to open cock. Bleed the fuel system before starting.

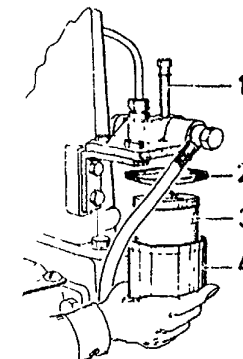


Fig. 10

## Bleeding the Fuel System (fig 11):

1. Fuel filter and fuel tank tube are bled by loosening the fuel leak-off pipe nut on filter (B) or the small bleeder screw (A). Keep open until fuel flows freely without bubbles. Tighten securely.

2. To bleed the fuel suction hose between filter and injection pump loosen the banjo nipple (C) screw on fuel pump 3 turns (see fig. 11).

Shake the hose and keep screw open until fuel flows freely.

Tighten the banjo nipple screw.

The suction hose end should point upwards from the banjo nipple to avoid air lock (fig. 11):

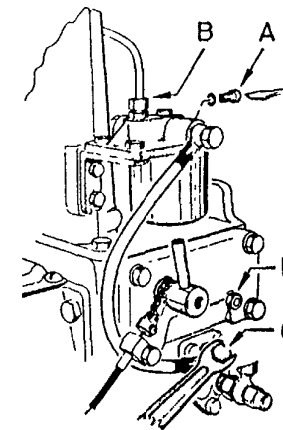


Fig. 11

Note: The pressure valve on the injection pump should not be unscrewed for bleeding of the pump.

3. To bleed injection pipe crank engine with governor handle in full speed position, until noticeable "jerks" in the pipe tell that the fuel has arrived to the injector and that the injector functions.

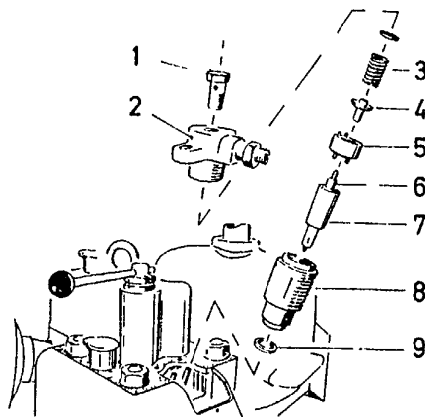


Fig 12

Dismantle injector holder as shown in fig. 12. Rinse all parts in clean fuel oil and remove dirt with a wooden stick and wipe with clean rag.

Injection pressure: 150 kg/cm<sup>2</sup> (2135 p.s.i.).

#### Adjusting Idling Speed (fig. 11, pos. D):

Lowest idling speed should be about 350 r.p.m. and is constant for about 5—10 degrees movement of speed control handle.

The idling speed is only controlled by an idling spring (Gr. 43—2, pos. 15) inside the governor cover (fig 11).

Tension of idling spring is adjusted by loosening nut (outside the cover) and turning screw (D).

Tighter spring gives higher idling speed.

**NOTE:** *If governor cover has been off:*

Make sure that the arm link (Gr. 43—2, pos. 5) engages the ball at the fuel pump when fitting the governor cover again.

The cover must be off before removing the fuel injection pump.

#### Checking Injector (fig. 12):

Dirty nozzle is noticeable on the metallic sound of injection. The engine will knock or smoke and is liable to have starting troubles. Cleaning or changing of nozzle can be necessary.

Remove injector cover and fuel pipes from injector and remove holder from cylinder head.

Dismantle injector holder as shown in fig. 12. Rinse all

#### Adjust valve stem clearance 0,3 mm (.012"), inlet and exhaust (fig. 13). Engine cold.

Remove the cylinder head cover.

The valve clearance should be checked when noisy tappet operation is noticed.

The clearance is measured between valve stem and its rocker arm with valve in closed position.

A special valve feeler gauge is supplied in tool box.

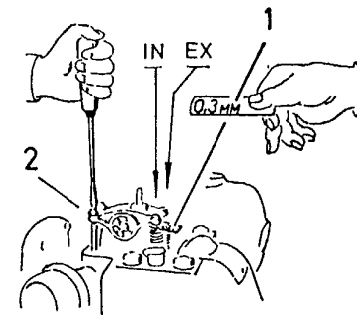


Fig 13

#### Grease (GA – fig. 14 and 15, GAG – fig. 15 and 16):

1. Sliding bolts.
2. Rear oil seals.
3. Clutch control ball bearing.
- 4-5. Control bracket.
6. Starting shaft.
7. Rocker arm ball bearing.
8. Rear oil seals.

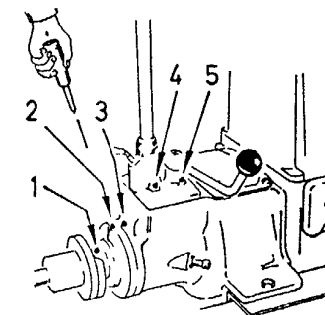


Fig. 14

Tighten all screws, nuts and gland. Wash engine and restore paint wounds.

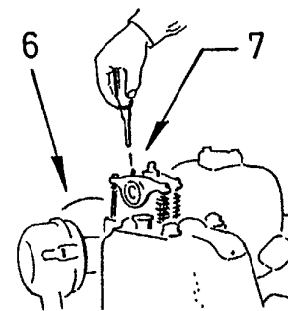


Fig. 15

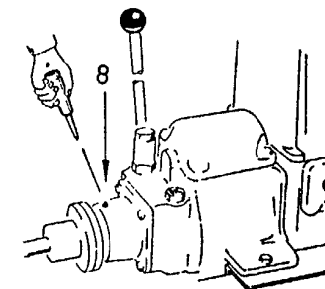


Fig 16

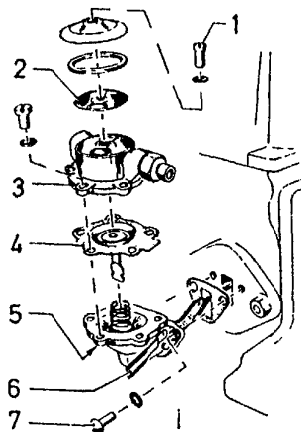


Fig. 17

### Fuel Lift Pump (extra equipment) with Hand Priming Device (pos. 6):

Close fuel tank cock.

Unscrew the centre bolt (1) and remove the cover.

Withdraw the screen (2) and clean in fuel oil.

If necessary, inspect valves and diaphragm (4) and see that the bleeding hole (5) is open.

### EVERY 2ND YEAR

Wash out crankcase with fuel oil and clean the centrifugal filter (Gr. GA 30—1, pos. 8).

Remove the magnet from crankcase (Gr. GA 21—23, pos. 6), clean and replace.

### Centrifugal Lubricating Oil Filter

The centrifugal oil filter is fitted to the rear crankshaft web. It contains a paper strip on to which the sediment is clogged. The strip is used to easen the cleaning. Remove the strip, rinse in fuel oil and wipe off the dirt inside the steel ring. If undamaged, the paper strip can be used again. New strip is made from carton or kraftpaper. Measure: 520×32 mm (20<sup>1</sup>/<sub>2</sub>" × 1<sup>1</sup>/<sub>4</sub>").

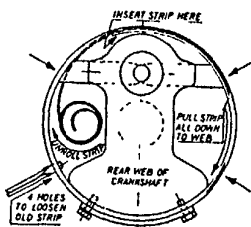


Fig. 18

Fill new lubricating oil.

### IMPORTANT :

**Cooling air inlet and outlet must not be covered or restricted.**

It is of utmost importance that the engine receives ample supply of cooling air and that the hot air may leave the engine case freely.

The engine case or engine room must have at total effective air inlet area of at least 25×25 cm (10×10 in.). Front of engine case must clear the flywheel by at least 8 cm (3<sup>1</sup>/<sub>4</sub> in.) to assure free flow to the fan. Main cooling air inlet through the case is placed just in front of the flywheel centre (1) and should be protected against sea water spray by a guard. If the guard reduces the inlet area a compensating air gap of 5 cm (2 in.) around the starting bracket at the rear of the case would be required.

Port hand air outlet guide (3) must penetrate fully the case wall, and the hot air (2) must be guided completely out of the case or engine room. Clearance between guide and case as small as possible, approx. 1 cm (<sup>9</sup>/<sub>8</sub> in.). The outlet guide (3) can be turned 180 degrees or extended with a flue, which should be as short as possible and any bend must have at least 15 cm (6 in.) radius.

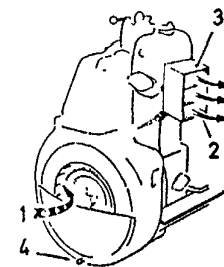


Fig. 19

### VIKTIG :

**Inntak og utløp for kjøleluft må ikke tildekkes**

Det er meget viktig å sørge for rikelig tilgang på frisk luft til motoren og korrekt bortledning av den varme kjøleluften. I motsatt fall blir motoren for varm (stemplet henger).

Frisklufttilgangen må være ordnet gjennom en eller flere åpninger som til sammen utgjør en flate på minst 25×25 cm. For at luften kan strømme fritt til viften i svinghjulet, må det være en klaring på minst 8 cm mellom motorkassen og svinghjulet. Kaldluftåpningen i kassen bør helst være rett ut fra midten av svinghjulet (1), og må skjermes mot sjøskvett. Hvis skjermingen reduserer den effektive åpningen, bør der være en ca. 5 cm bred spalte rundt startstativet i kassens bakvegg. Klaringen rundt utløpstuten (3) på babord side må være minst mulig, ca. 1 cm, og varmluften (2) må ledes helt ut av motorkassen eller styrehuset. Om nødvendig kan utblåsingstuten (3) snues 180° eller forlenges med en kanal for bortledning av varmluften, men kanalen må ikke være lengre enn høyst nødvendig, og eventuelt bend må ha minst 15 cm radius.

## NORSK TEKST

(Tilhørende figurer side 3–6)

### START :

1. Propellen frakoblet (gear eller kobling i fri).
2. Sett reguleringshendelen (18) i fullfartsstilling (nedover). (fig. 3.)  
Fyll ventilsmørekoppen (fig. 1, pos. 3) med smøreolje.  
I kaldt vær:  
Trekk ut kaldstartknappen (fig. 4, pos. 12) for ekstra brennoljetilførsel og fyll smøreoljekoppen (fig. 6, pos 5).
3. Åpne dekompresjonsventilen. Hendel (4) forover.
4. Stå på motorens *styrbord side*, og sveiv med *venstre* hånd (fig. 5).  
Høyre hånd betjener dekompresjonsventilen. Sveiv hurtig og steng dekompresjonen ved å vri hendelen på tvers.
5. Når motoren har startet, innstilles reguleringshendelen for ønsket turtall.

### KJØRING :

#### Type GA – vribar propell

Propellen innkobles ved å presse koblingshendelen (17) *helt fram*.  
Pass på at hendelen ikke bunner mot motorkassen. Manøvreringen foregår med omstyringshendelen (19).

#### Type GAG – med gear

Gearet kobles inn ved å presse gearhendelen (20) forover for foroverdrift og akterover for akteroverdrift.

OBS.! Manøvrer alltid med redusert motorturtall!

## STELL OG VEDLIKEHOLD :

### UKENTLIG (OG ETTER LIVBÅTMANØVER)

1. Tapp vann og bunnfall fra brennoljetanken.  
Fyll tanken med ren brennolje (gas-oil, auto-diesel).  
OBS.! Påse at brennoljekranen er åpen.
2. Tapp vann fra svinghjulsskjermen (fig. 2, pos. 28).
3. Kontroller smøreoljenivået i motor (peilepinn 8) og i reversgear (peilepinn 21). Etterfyll om nødvendig.
4. Fyll oljekopp (fig. 6, pos. 5) *to ganger* med smøreolje for å lette neste start.  
Sveiv motoren noen ganger og sett stemplet i topp. (Merkes ved at stemplet tar borti og løfter dekompresjonsventilen — fig. 6.)  
Steng dekompresjonen.
5. Fettkoppene for propell- og hylsepakkboks gis 1 omdreining.  
Stevnflens med utvendig fettnippel smøres med fettpressen.

### HVER 50. DRIFTSTIME VED REGELMESSIG BRUK (ELLER MINST EN GANG ÅRLIG):

#### Oljeskift i motor, fig. 7:

#### Motorer med sump-tømmepumpe (levert etter GA 71–219):

Kjør motoren varm og stopp den. Skru ut «OIL»-proppen i veivhusluken. Sett sumptømmepumpen ned i veivhus-sumpen. Pump oljen ut og over i en boks. Fyll 2,5 liter ren olje gjennom pluggullet.

VIKTIG: Hvis motoren har vært helt eller delvis under vann, må all oljen i veivhus og koblingshus (eller gear) skiftes straks.

#### SMØREOLJE:

#### API-SERVICE CC ELLER CD (Tidligere betegnelse DM eller DS):

VISKOSITET: Under 0° C temperatur . . . . . SAE 10  
Mellom 0° og + 30° C . . . . . SAE 20  
Over + 30° C . . . . . SAE 30



En multigradsolje (helårsolje) som dekker ovenstående viskositeter (SAE 10W—40) kan med fordel brukes.

*Fabrikken anbefaler følgende smøreoljer:*

BP Energol IC-MB	Mobiloil Special
Castrol 200 MX	Ocean Diesoline
Chevron Golden Motor Oil	Reginol Motorolje
Esso Motor Oil	Shell Melina Oil
Fina Solna HD-S.3	Texaco Havoline Motor Oil
Gulflube Motor HD	

## FETT

Alle fettniplene smøres med fettpressen.

Bruk universalfett — MULTI PURPOSE (motor og propell).

## ÅRLIG:

1. Oljeskift i koblingshus eller reversgear, 1/2 liter motorolje (SAE 20). Rens samtidig magneten i bakkant av gearhuset.
2. Hvis koblingen slurer, etterstram koblingsklemmemutrene 1/6 tørn, gjennom luken (fig. 8). Hvis reversgearet slurer, kontroller motoropprettingen (fig. 9). For øvrig side 43.
3. Skift innsats i brennoljefilteret. Side 7, fig 10.
4. Kontroller innsprøytingsdysen — rens om nødvendig (4-hulls dyse, 150 kg/cm<sup>2</sup>). Side 8, fig. 12.
5. Undersøk om lekkasje i brennoljesystemet.
6. Skru av luftfilteret og skyll det i brennolje. Innsattes med litt tykk smøreolje.

## Skifting av brennoljefilterinnsats (side 7, fig. 10):

Kommer det vann i brennoljefilteret, vil dette samle seg i bunnen av beholderen. Det svarer seg å rense filterbeholderen av og til, da vil filterinnsatsen få lengre levetid. Filterinnsatsen skiftes årlig, eller hvis en merker at oljen renner tregt gjennom filteret. Innsatsen kan ikke renses. Steng kranen på brennoljetanken. Løs sentralbolten (1)

i filterhuset og trekk filterbeholderen (4) nedover (se fig 10). Rens beholderen og sett i ny innsats (3) (Bosch Fj/Sj 2751-1 457 431 324 eller H-Filter E2K). Pass på at pakningen (2) i lokket kommer riktig på plass. — Husk å åpne brennoljekranen. Utluft brennoljesystemet.

## Utlufting av brennoljesystemet (side 7, fig. 11):

1. Filteret og tankrøret utluftes ved å løse den lille vannrette luftskruen (A) i filterlokket eller mutteren (B) for lekkoljerøret. Hold skruen åpen til oljen renner uten bobler. Trekk til skruer og mutter.
2. Sugelangens utluftes ved å løse hulskruen (C) for banjonippelen på brennoljepumpen 3 tørn (se fig 11). Ryst i slangen og hold skruen åpen til oljen renner fritt og uten bobler. (*Trykkventilen på oljepumpen skal ikke løses.*) Hulskruen trekkes til slik at sugeslangen faller naturlig mot pumpen (fra akterkant) uten å danne «lås».
3. Innsprøytingsrøret utluftes ved å sette reguleringshendelen i fullfartsstilling og sveive motoren til det kan kjennes et tydelig «støt» i røret for hver innsprøyting. Støtet forteller at dysen virker.

## Rengjøring av innsprøytingsdysen (side 8, fig. 12):

Urenheter i brennoljen kan sette seg fast i dysen og bevirke dårlig forstøving, skjev stråle osv. Lyden i dysen vil da forandres, motoren banker eller ryker og den blir gjerne vanskelig å starte. Dysen må da rengjøres eller skiftes.

Løs dekslet over dyseholderen.

Løs rørene fra dyseholderen og ta holderen ut fra topplokket.

Demonter dyseholderen som vist i fig 12.

Vask alle delene i ren brennolje. Faste partikler nederst i dysen eller på nålen fjernes med en trepinn eller fyrstikk.

VIKTIG: Når dyseholderen settes sammen igjen, må en passe på at den korteste enden av stykket (4) mellom dysenålen og fjæren peker mot fjæren.

4-hulls dyse, 150 kg/cm<sup>2</sup>.

### **Justering av tomgang (side 7, fig. 11, pos. D):**

Laveste tomgangsturtall skal ligge på ca. 350 omdr./min. og er konstant for 5—10 graders bevegelse av regulatorhendelen.

Tomgangsturtallet er bestemt av tomgangsfjæren (Gr. 43—2, pos. 15) på innsiden av regulatorluken (fig. 11), og kan reguleres utenfra ved å løse mutteren og justere strammeskruen D.

Strammere fjær gir høyere tomgangsturtall.

### **Vær varsom når regulatorluken skal løses.**

NB.! Når luken monteres igjen må en passe nøye på at hullet i armløddet (Gr. 43—2, pos. 5) faller ned på kuletappen på brennoljepumpens reguleringsstang.

Hvis en skal ta ut brennoljepumpen, må først regulatorluken fjernes.

### **Justering av luft- og eksosventilklaringen (0,3 mm målt på kald motor) (side 9, fig. 13):**

Løs toppheten.

Ventilklaringen bør justeres hvis det oppstår en klirrende eller støyende lyd fra ventilutstyret. Klaringen måles mellom ventilstammen og vippearmen når ventilen er lukket (fig. 13). Et spesielt føleblad til dette bruk følger med i verktøykassen.

### **Fettsmøring**

(GA – side 9, fig. 14 og 15):

(GAG – side 9, fig. 15 og 16):

- |                         |                       |
|-------------------------|-----------------------|
| 1. Glidebolter.         | 6. Startsviv.         |
| 2. Tettingsringer.      | 7. Vippearmkulelager. |
| 3. Omstyringskulelager. | 8. Tettingsringer.    |
| 4-5. Omstyringsbrakket. |                       |

Etterstram alle skruer og mutre samt pakkboksene.

Vask motoren og flikk sår i malingen.

### **Brennolje-fødepumpe (ekstra utstyr) med håndmateranordning (side 10, fig. 17):**

Steng brennoljekranen.

Skru ut sentrumsbolten (1). Ta lokket av. Løs silen (2) og rens den for skitt.

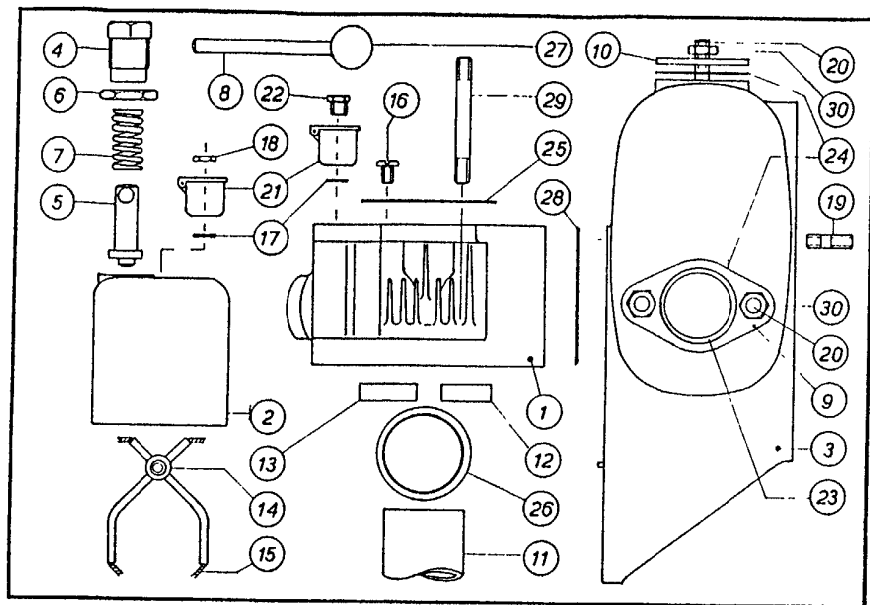
Hvis nødvendig, skru av overdelen (3), inspiser ventilene og membranet (4). Kontroller at luftehullet (5) er åpent.

### **HVERT ANNET AR**

Vask ut veivhussumpen med brennolje og rengjør sentrifugalfilterpapiret (Gr. GA 30—1, pos. 8) på veivaksel akterpart (fig. 18). Ta også ut magnet i bunnen av veivhuset (Gr. GA 21—23, pos. 6). Rengjør og legg den inn igjen.

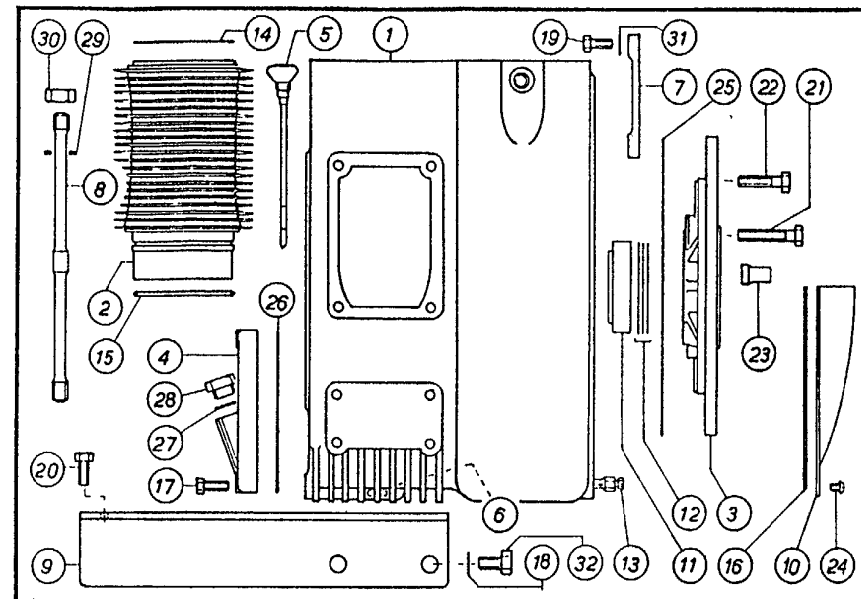
### **Smøreolje-sentrifugalfilteret (side 10, fig. 18):**

Adkomst til filteret gjennom veivhusluken. Vipp pappstrimmelen opp av filteret med en lommekniv og trekk strimmelen ut. Urenheter i smøreoljen ligger som en kittaktig masse på strimmelen. Skrap og tørk filterringen innvendig. Hvis en får ut filterstrimmelen uten å skade den, kan den brukes om igjen etter rengjøring. Pappstrimler kan ellers klippes ut av tynn tegnekartong eller tykt kraftpapir, målene er 520×32 mm. Den nye (eller rengjorte) pappstrimmelen smøres inn med litt grease på den ene siden og settes på plass.



### Group GA 10-20. CYLINDER HEAD AND SILENCER

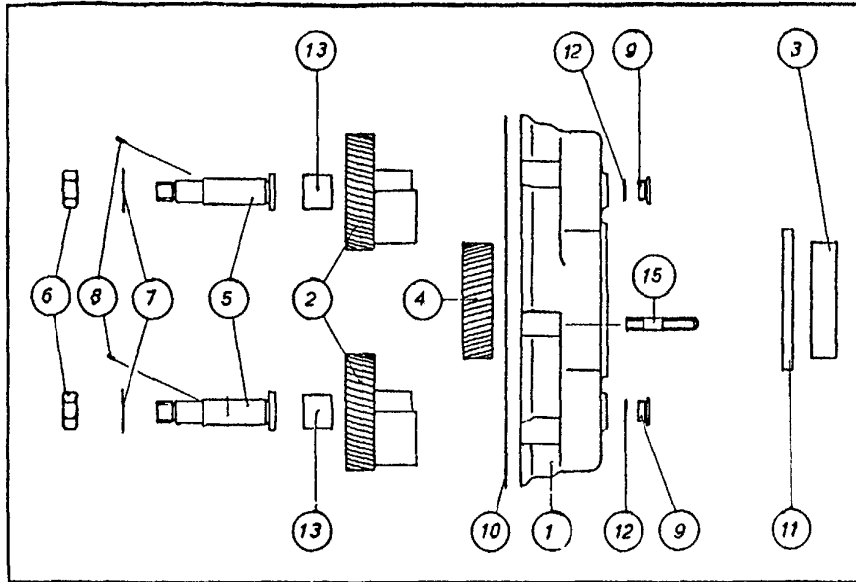
No.	Part Name	Part No.	No.	Part Name	Part No.
1	Cylinder head . . . . .	GA11Ab	17	Oil cup gasket . . . . .	811n
2	Cylinder head cover . . . . .	G11F	18	Nut, 1/8" BSP . . . . .	443m
3	Silencer . . . . .	GA21C	19	Stud, 3/8"×23 . . . . .	421q
4	Decompr. sleeve . . . . .	G11g	20	Stud, stainless, 3/8"×25 . . . . .	411mb
5	Decompr. bolt . . . . .	G11h	21	Oil cup . . . . .	911f
6	Decompr. nut . . . . .	411k	22	Oil cup screw . . . . .	411n
7	Decompr. spring . . . . .	711h	23	Exhaust pipe, 1 1/2"×1200 . . . . .	G21f
8	Decompr. handle . . . . .	411hc	24	Exh. flange gasket . . . . .	821v
9	Exhaust flange . . . . .	G21E	25	Cyl. head cover gasket . . . . .	811fb
10	Blank flange . . . . .	G21M	26	Oil seal 5065 . . . . .	984t
11	Push rod tube, 260 mm . . . . .	GA11k	27	Handle knob . . . . .	911i
12	Valve seat, exhaust . . . . .	911db	28	Silencer gasket . . . . .	821vd
13	Valve seat, intake . . . . .	911dc	29	Injector stud . . . . .	453c
14	Wick tube, compl. . . . .	S1-G11fm	30	Nut, 3/8" . . . . .	415g
15	Wick . . . . .	811fl			
16	Cap screw, 1/4"×5/16" . . . . .	455c			



### Group GA 21-23. CRANKCASE-CYLINDER

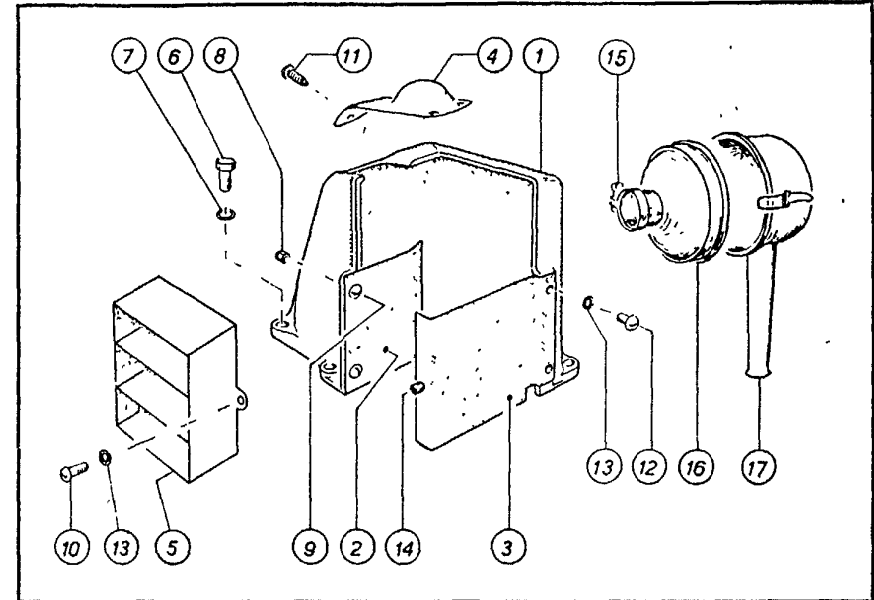
No.	Part Name	Part No.	No.	Part Name	Part No.
1	Crankcase . . . . .	GA22A	15	Ribbed cyl. O-ring, 94,5×3, silicon . . . . .	821pc
2	Ribbed cylinder, 95 mm . . . . .	GA21N	16	Rubber cord, 3×635 . . . . .	833a
3	Bearing flange . . . . .	G23LD	17	Bolt, 3/8"×1 1/4" . . . . .	484c
4	Crankcase cover . . . . .	G22DD	18	Lock washer, 1/2" . . . . .	735b
5	Dipstick (threads M12) . . . . .	S1-G23cb*)	19	Bolt, 3/8"×1" . . . . .	421L
6	Magnet . . . . .	923a	20	Bolt, 1/2"×1 1/4" . . . . .	482b
7	Blank flange . . . . .	C21M	21	Bolt, 3/8"×90, B 80 . . . . .	423r
8	Tension bolt . . . . .	423d	22	Bolt, 3/8"×2,5" B 80 . . . . .	423i
9	Frame . . . . .	GA22eh-ev	23	Pressure collar . . . . .	623L
10	Flywheel water shield . . . . .	GA33g	24	Screw, 1/4"×10, brass . . . . .	433d
11	Tapered roller bearing, SKF 32211 . . . . .	931a	25	Bearing flange gasket . . . . .	823m
12	Main bearing shim, 0,2 and .05 mm . . . . .	723L/Lb	26	Crankcase cover gasket . . . . .	822hb
13	Drain cock, 1/8" BSP complete . . . . .	S1-52jb	27	Fibre gasket . . . . .	882d
14	Cylinder head gasket . . . . .	821rc	28	Oil filler plug (3/4") . . . . .	522dc
			29	Washer, 30 <sup>ø</sup> ×17 <sup>ø</sup> ×3 . . . . .	723d
			30	Nut, 3/8" W . . . . .	415L
			31	Washer (9,5×17×2) . . . . .	781j
			32	Bolt, 1/2"×1" B80 . . . . .	421n

\*) Engine delivered before (approx.) may 1975, dipstick S1-GA23c with threads 1/2" W.



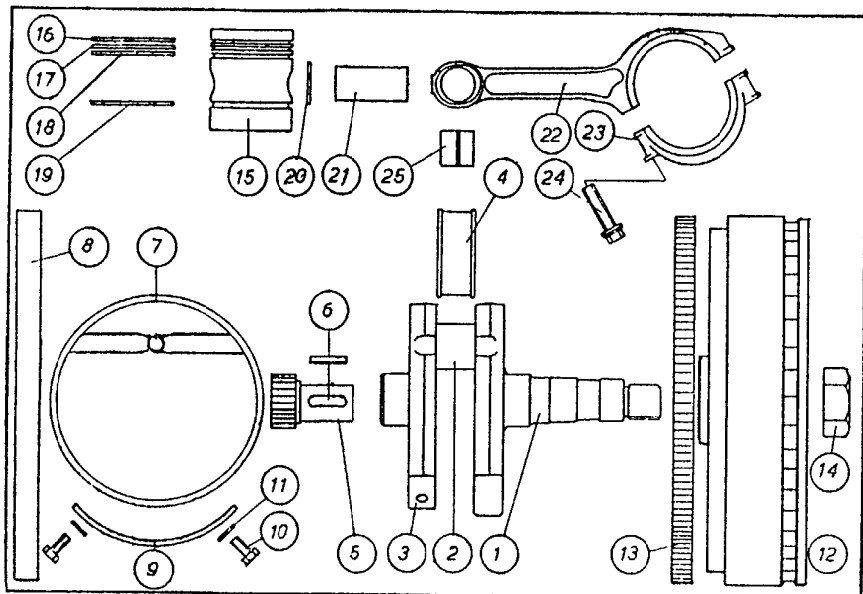
### Group GA 23. VIBRATION DAMPER

No.	Part Name	Part No.	No.	Part Name	Part No.
1	Vibration damper housing . . . . .	G23KL	8	Lock pin . . . . .	743a
2	Vibration damper wheel with lead . . . .	G23NG	9	Inspection plug . . . .	523k
3	Flywheel brass ring . . . . .	633a	10	Housing gasket . . . .	823p
4	Flywheel gear ring . . . . .	G33Am	11	Oil seal, silicon, 120×100×13 . . . . .	937bb
5	Vibration damper shaft . . . . .	G33me	12	O-ring, 14,3×2,4 . . . .	842q
6	Nut, 3/4" UNF . . . . .	415p	13	Needle bearing, SKF RHNA 22 28 20 . . . . .	913.002
7	Lock washer . . . . .	725 002	15	Stud, 3/8"×45 . . . . .	411b



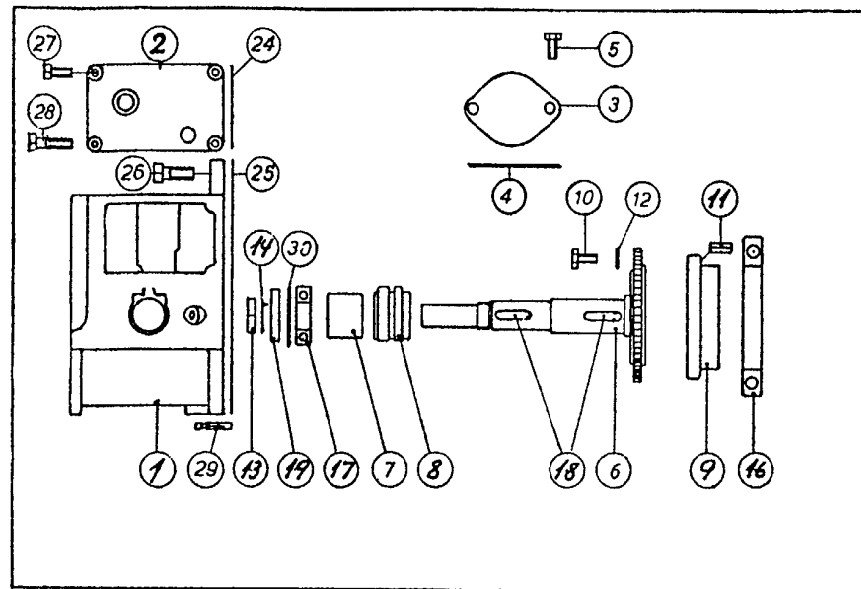
### Group GA 24. AIR GUARD

No.	Part Name	Part No.	No.	Part Name	Part No.
1	Cooling air guard . . . . .	GA24Ab	11	Screw (B12×19) . . . .	469c
2	Deflector plate . . . . .	GA24b	12	Screw, 1/4"×19 . . . .	446fb
3	Air guard rear plate . . . . .	GA24c	13	Lock washer, 1/4" . . . .	745d
4	Air guard front plate . . . . .	GA24Ak	14	Elastic pin, 8Ø×24 (connected to silencer) . . . . .	734d
5	Air outlet guide . . . . .	GA24ck	15	Clamp screw/nut . . . .	967st
6	Bolt, 5/16"×1" UNC . . . . .	421k	16	Air filter, Mann 41.021.87.153 . . . . .	967n
7	Washer, 5/16" . . . . .	781j	17	Air filter cover . . . . .	967m
8	Nut, 1/4" Nyloc . . . . .	443b			
9	Screw, 1/4"×3/8" . . . . .	424b			
10	Screw, 1/4"×10, brass . . . . .	433d			



### Group GA 30-1. CRANKSHAFT

No.	Part Name	Part No.	No.	Part Name	Part No.
1	Crankshaft, fore part .	G31A	16	Top compr.ring,	
2	Crankpin (49 mm) ..	G31qc		chromium plated . . .	GA32b
3	Crankshaft rear part .	G31B	17	Compression ring . . .	GA32bb
4	Big-end roller bearing		18	Compr./scraper ring ..	GA32bd
	(31 53 93) . . . . .	932fb	19	Oil control ring . . . .	GA32bc
5	Crankshaft pinion . . .	G31p	20	Circlip, 35i . . . . .	732a
6	Key . . . . .	434e	21	Gudgeon pin . . . . .	GA32d
7	Centrif. filter ring ..	G31ak-2	22	Connecting rod compl.	S2-G32EB
8	Centrif. filter paper .	942.010	23	Big end bearing cap ..	G32G
9	Centrif. filter clamp .	G31aL	24	Connecting rod bolt,	
10	Bolt, 5/16"×20 B 80 ..	434c		Verbus Tensilock	
11	Lock washer, 5/16" ..	734h		M14×2 . . . . .	432g
12	Flywheel . . . . .	GA33A	25	Small end bush,	
13	Starter ring (not std.)	G33AL		35 dia.×39 dia. . . . .	632e
14	Flywheel nut . . . . .	433b		Piston ring set . . . .	S1-GA32b
15	Piston . . . . .	GA32A			

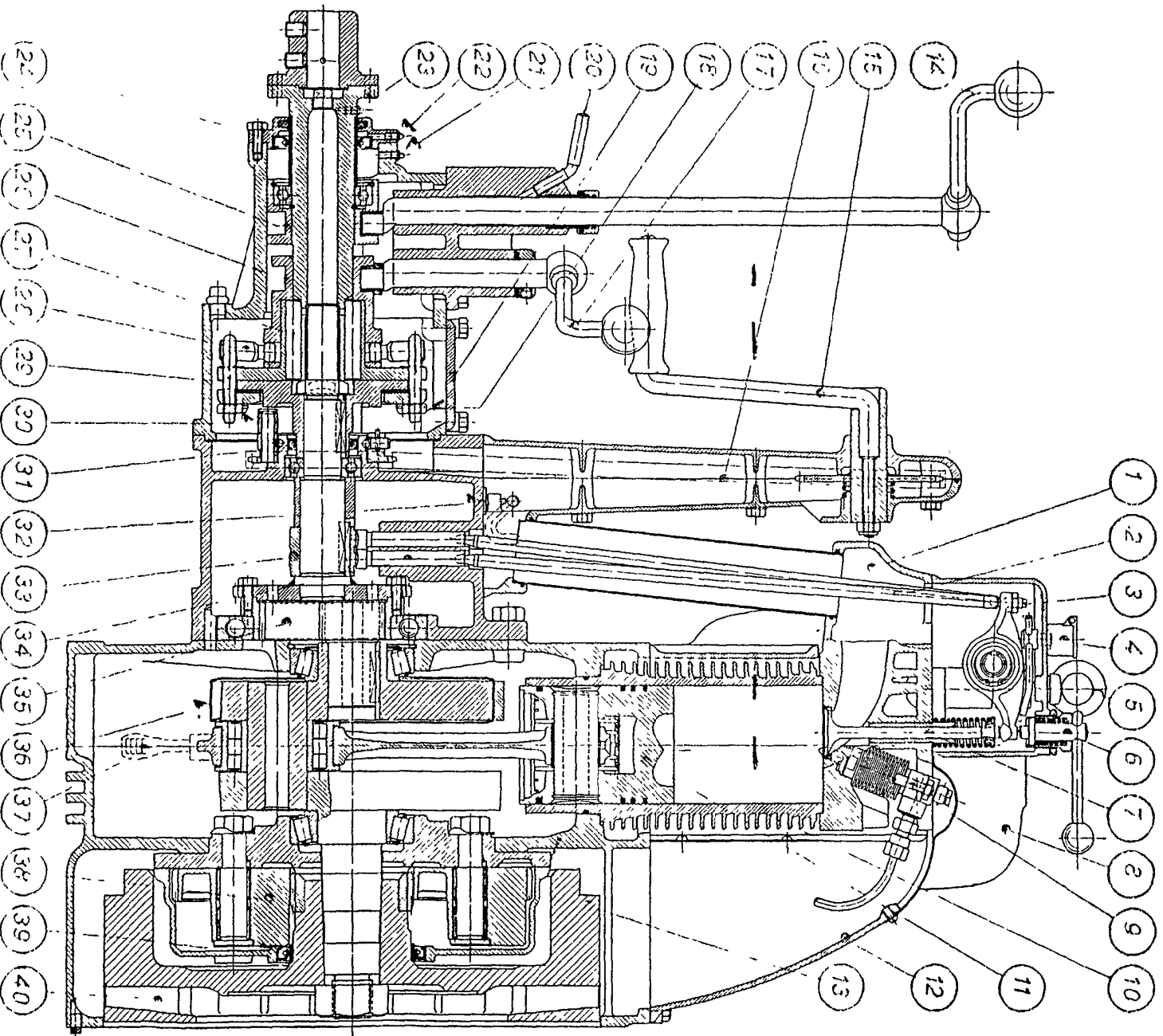


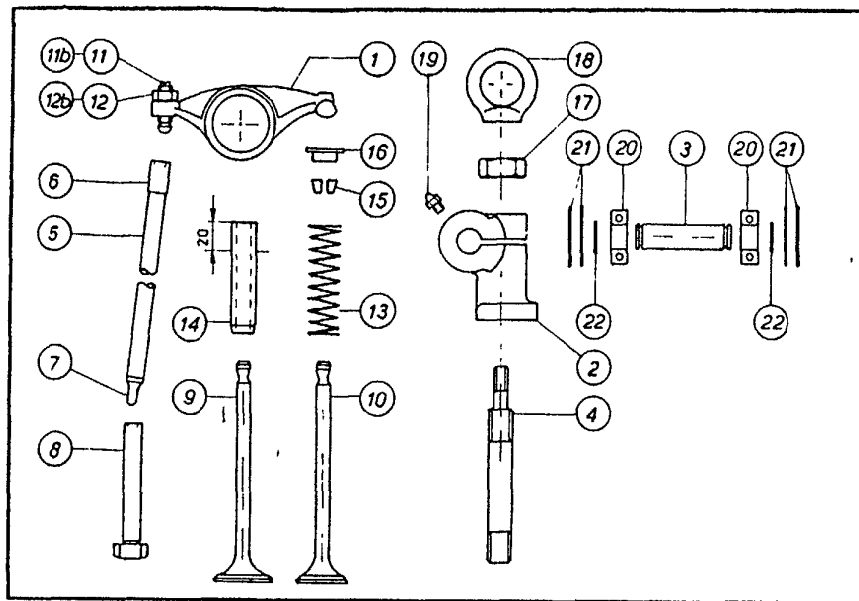
### Group GA 30-2. GEAR HOUSING

No.	Part Name	Part No.	No.	Part Name	Part No.
1	Pump housing . . . . .	G34A	17	Ball bearing,	
2	Governor cover . . . .	G34B		SKF 6206 . . . . .	934c
3	Blank flange . . . . .	2G42M	18	Shaft key, 7×8×40 . . .	434e
4	Blank flange gasket ..	842c	18b	Shaft key, 7×8×30 . . .	434eb
5	Bolt, 1/8"×3/4" . . . .	466b	19	Oil seal, 4256-822S . . .	934eb
6	Camshaft . . . . .	G34c	24	Governor cover gasket	834b
7	Eccentric pulley . . . .	G31c	25	Pump housing gasket . .	834a
8	Cam . . . . .	GA34e	26	Bolt, 1/2"×1 1/4" . . . .	482b
9	Internal gear wheel ..	G34f	27	Bolt, 5/16"×1 1/8" . . . .	453d
10	Bolt, 5/16"×20, B 80 ..	434c	28	Bolt, 5/16"×50 . . . . .	422n
11	Elastic pin, 8×24 . . .	734d	29	Dowel . . . . .	483g
12	Lock washer,		30	Shim PS 62×50×0,2 . . .	734e
	Nomel 5/16" . . . . .	734h		Shim PS 62×50×1 . . . .	734eb
13	Camshaft nut . . . . .	484t		Shim PS 62×50×0,3 . . .	734ec
14	Lock washer . . . . .	784b		Shim PS 62×50×0,5 . . .	734ed
16	Gear wheel ball			Stud, 5/16" UNC×18 . . .	421h
	bearing, SKF 16022 . . .	934f		Nut, 5/16" UNC . . . . .	415e
				(for Injection pump)	

LONGITUDINAL SECTION/SNITTEGNING SABB DIESEL - TYPE GA

- |   |  |  |   |
|---|--|--|---|
| 1. Air intake/Luftinntak                        | 13. Flywheel/Svinghjul   | 22. Oil seal grease nipple/<br>Fettpipel for tefningring     | 33. Cam/Nokke                                     |
| 2. Push rod/Ventilløftestang                    | 14. Propeller pitch control handle/<br>Omstyringshendel          | 23. Sliding bolt grease nipple/<br>Fettpipel for glidebolter | 34. Valve lifter (inlet)/<br>Ventilløfter (luft)  |
| 3. Rocker arm adj. screw/<br>Vippearmstillskrue | 15. Starting crank/Startsveiv                                    | 24. Oil seal (double)/<br>Tefningsring (dobbel)              | 35. Red gear/<br>Reduksjonsgjærhjul               |
| 4. Valve lub.cup/Ventilmørekopp                 | 16. Starting chain/Startskiede                                   | 25. Reversing sleeve/Omstyringshylse                         | 36. Centrifugal oil filter/<br>Sentrifugalfilter  |
| 5. Eye bolt/Løftebøyle                          | 17. Clutch handle/Koblingshendel                                 | 26. Clutch sleeve/Koblingshylse                              | 37. Oil splasher/Oleplasker                       |
| 6. Decompressor/<br>Dekompressorbolt            | 18. Clutch clamp nut/<br>Koblingsmutter                          | 27. Sliding bolts/Glidebolter                                | 38. Vibration damper/<br>Vibrasjonsdemper         |
| 7. Valve (inlet)/Ventil (luft)                  | 19. Clutch housing cover/<br>Koblingshuslokk                     | 28. Clutch arm/Koblingsarm                                   | 39. Flywheel oil seal/<br>Svinghjuls-tefningsring |
| 8. Silencer/Lydedemper                          | 20. Hand screw/<br>Omstyringsstilleskrue                         | 29. Clutch clamp/Koblingsklemme                              | 40. Cooling air intake/<br>Kjøleluftinntak        |
| 9. Injector/Dysehoder                           | 21. Reversing bearing grease nipple/<br>Fettpipel for omst.lager | 30. Starting pawl/Startpal                                   |   |
| 10. Cylinder/Ribbesylinder                      |  | 31. Oil seal/Tefningsring                                    |   |
| 11. Piston/Stempel                              |  | 32. Crankcase breather valve/<br>Veivhus pustevennli         |   |
| 12. Air Guard/Luftkapsel                        |  |  |   |

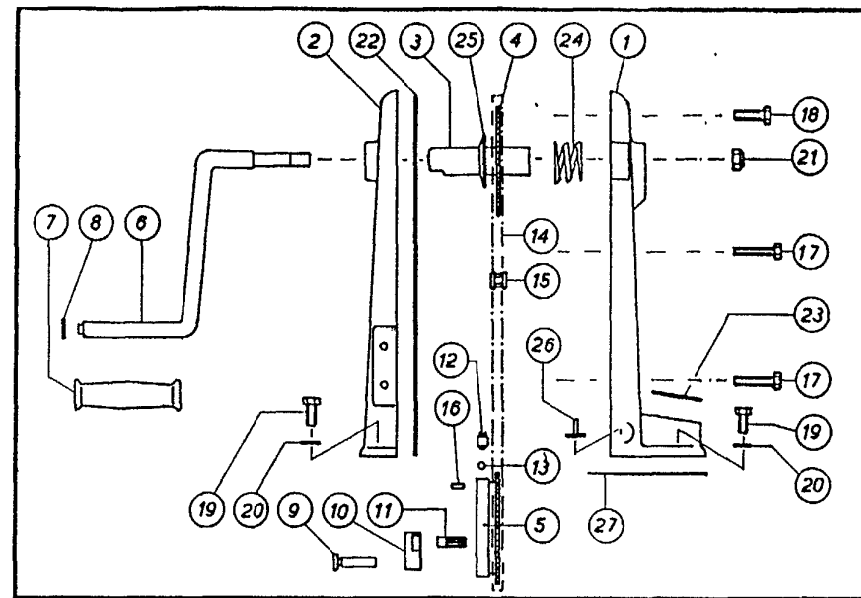




### Group GA 34. VALVE GEAR

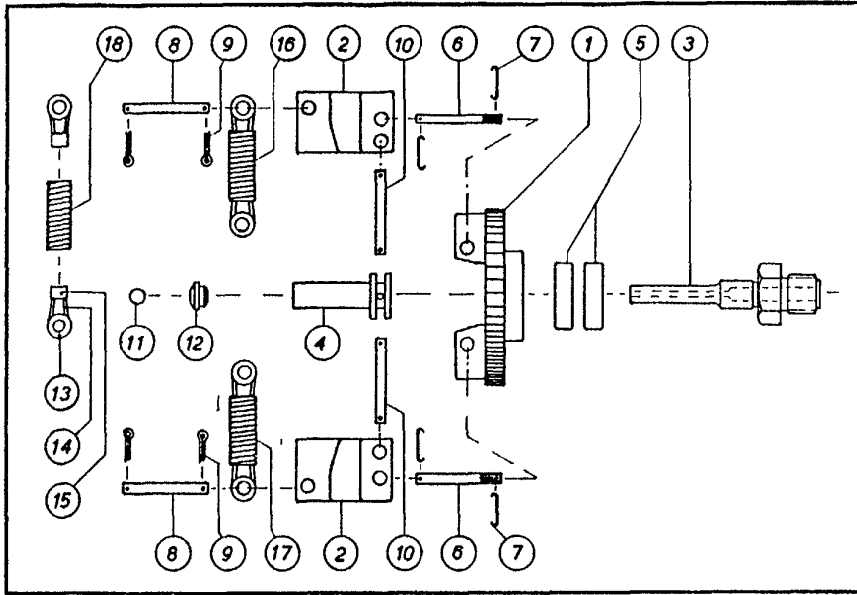
No	Part Name	Part No.	No.	Part Name	Part No.
1	Rocker arm (M10) ..	G34Qb	12	Nut	
2	Rocker arm bracket .	G34R		(M10×1, NV-14Ø) ..	441 054
3	Rocker arm bolt . . .	G34j	12b	Nut	
4	Bracket bolt (M12) ..	2J34tb		(5/16", to G34s *) ..	415e
5	Push rod, compl.,		13	Valve spring .. . . .	734k
	409 mm .. . . .	S1-GA34h	14	Valve guide .. . . .	2G34mb
6	Push rod top .. . . .	G34hk	15	Valve spring collar .	G34p
7	Push rod foot .. . . .	G34hL	16	Valve spring cone . . .	G34n
8	Valve lifter .. . . .	G34g	17	Rocker arm bracket	
9	Valve, inlet .. . . .	GA34k		nut (5/8" UNC) .. . .	415L
10	Valve, exhaust .. . . .	G34K	18	Eye nut (M12) .. . .	934tb
11	Rocker arm adj. screw		19	Grease nipple . . . . .	934r
	(M10×1) .. . . .	G34.001	20	Ball bearing, 6202 . . .	934q
11b	Rocker arm adj screw		21	Circlip, 35i (4 pcs) . .	732A
	(5/16"), old type *) ..	G34s	22	Circlip, 15a (2 pcs) . .	734j

\*) After servicing: Engines delivered before GA 75.



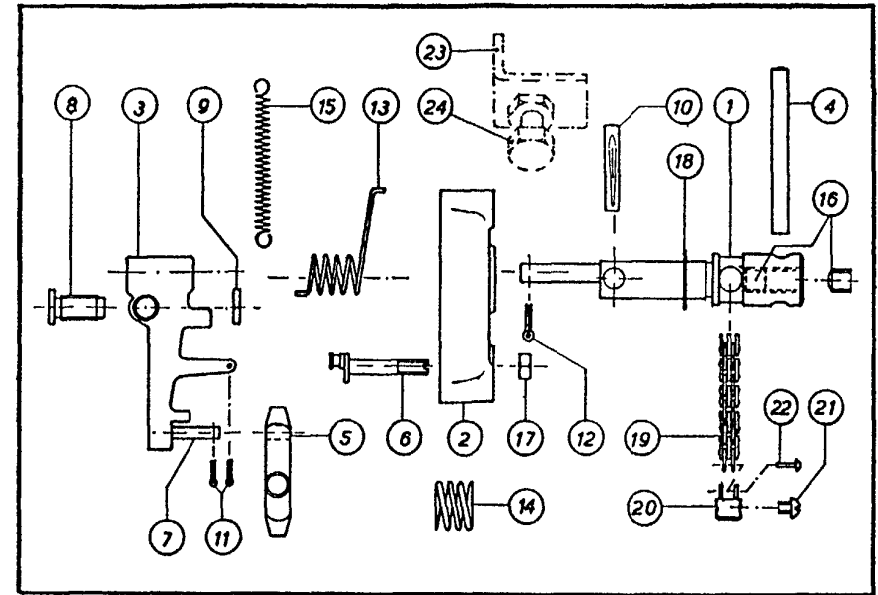
### Group G 35. HAND STARTING GEAR

No	Part Name	Part No.	No.	Part Name	Part No.
1	Starting bracket,		15	Starting chain lock ..	931.016
	front part .. . . .	H35Lc	16	Grooved pin .. . . .	746e
2	Starting bracket,		17	Bolt (4 pcs)	
	rear part .. . . .	H35K		(3/8" UNC×1 1/2") ..	435b
3	Starting shaft .. . . .	H35m	18	Bolt (2 pcs)	
4	Upper sprocket .. . .	H35n		(3/8" UNC×1 1/4") ..	482q
5	Lower sprocket .. . .	G35H	19	Bolt (3/8" UNC×1") ..	421Lb
6	Starting handle		20	Washer (9,5×17×2) . .	781j
	(R-180) .. . . .	H35p	21	Nut (nylock), 3/8" ..	415i
	Starting handle compl.	S1-H35p	22	Starter bracket rubber	
7	Hand grip .. . . .	G35pk		cord (3/8"×880) .. . .	835m
8	Washer .. . . .	742f	23	Air tube O-ring	
9	Starting pawl bolt .. .	G35j		(OR-49,5×3) .. . . .	811k
10	Starting pawl .. . . .	G35i	24	Starting shaft spring .	735L
11	Starting pawl pin .. . .	435h	25	Rubber washer .. . . .	835n
12	Steel ball plug .. . . .	G35hk	26	Dice valve .. . . .	52e
13	Steel ball (1/4"Ø) .. .	953c	27	Starting bracket	
14	Starting chain			gasket .. . . .	835kg
	(1/2"×3/16" Mofa) .. .	935hg	28	Grease nipple .. . . .	934r



### Group G 43-1. CENTRIFUGAL GOVERNOR

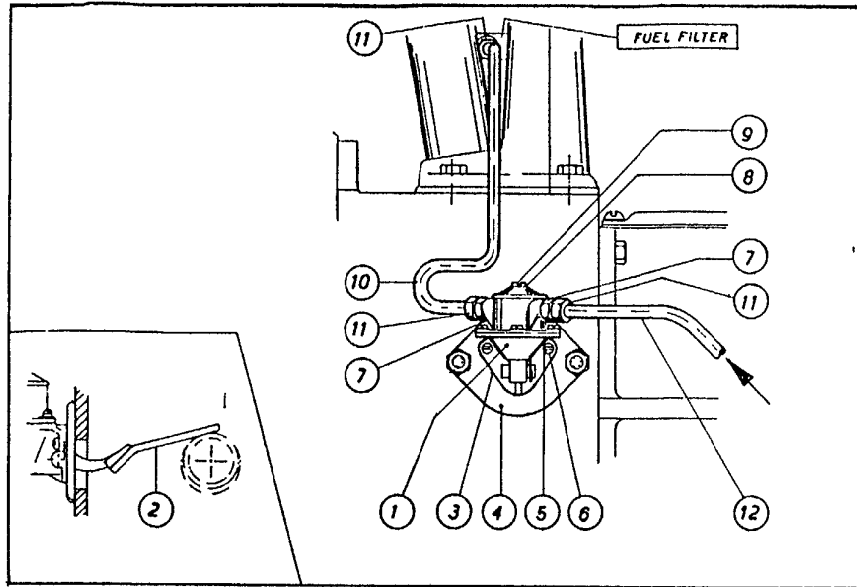
No.	Part Name	Part No.	No.	Part Name	Part No.
1	Governor gear wheel .	G43K	13	Spring eye washer .	743tb
2	Governor weight . . .	G43Lb	14	Spring eye . . . . .	743r
3	Governor spindle . . .	G43n	15	Spring eye holder . . .	G43t
4	Governor sleeve . . . .	G43p	16	Governor spring No. 1	} complete . . . . . S1-743m
5	Ball bearing (6001x) .	943k	17	Governor spring No. 2	
6	Governor weight pin	} (36 mm) . . . . . G43sb	18	Governor spring	} (stationary) complete . S1-743L
7	Lock wire (1,5Ø×28) .				
8	Spring pin (36 mm) . .	G43s			
9	Split pin (1/16"×3/8")	743w			
10	Sleeve pin (36 mm) . .	G43sc			
11	Ball . . . . .	953b			
12	Governor sleeve pin .	S1-G43q			



### Group G 43-2. GOVERNOR PARTS

No.	Part Name	Part No.	No.	Part Name	Part No.
1	Governor shaft . . . . .	G34ub	13	Governor shaft spring	743db
2	Governor cover . . . .	G34B	15	Idling spring . . . . .	743v
2	Governor cover,	} complete . . . . . S1-G34B	16	Socket set screw (3/8")	453b
3	Governor arm . . . . .		S1-G43Mb	17	Nut (1/4" UNC) . . . .
4	Handle . . . . .	411hd	18	Rubber washer,	} governor shaft . . . . . 811p
5	Arm link . . . . .	G43v	19	Chain (c-c 63 mm) . .	
6	Idling adjusting screw	G43h	20	Chain fork . . . . .	S1-G71s
7	Governor arm bolt . . .	G43wb	21	Set screw (5/16"×3/8")	472a
8	Adjusting screw . . . .	G43mL	22	Lock pin (2Ø) . . . . .	
9	Lock nut . . . . .	443m	23	Handle stopper GS . .	G43x
10	Grooved pin	} (1/4"×1 1/4") . . . . . 421a	24	Handle stop screw GS	} (5/16"×UNC×1 3/8") . . 453d
11	Split pin (1/16"×3/8") .		743w		
12	Split pin (1/8"×3/4") .	731c			



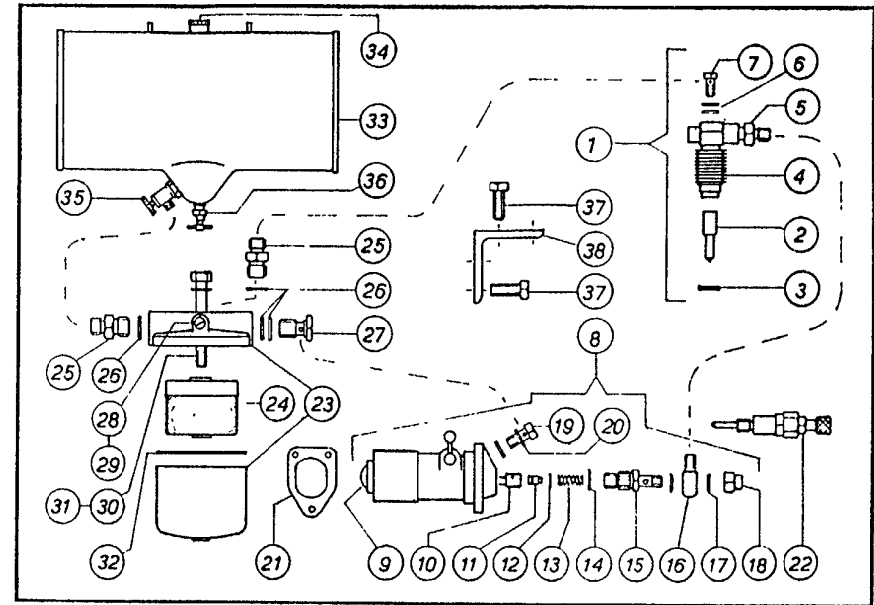


**Group GA 44-2. FUEL LIFT PUMP (Extra Equipment)**

No.	Part Name	Part No.	No.	Part Name	Part No.
1	Fuel lift pump (AC-795067) compl. with fuel pump arm	S1-944K-GA	6	Lock washer, 1/16" AZ	734h
2	Fuel pump arm GA44g		7	Connection, lift pump body, 1/4" R - 1/2" UNF	563a
3	Gasket, lift pump flange	844g	8	Gasket	
4	Lift pump flange	2G42MB	9	Screw, lift pump cover	944Lk
5	Screw, 1/16" UNC x 1/2"	423L	10	Lift pump, filter pipe	644g
			11	Pipe nut, 1/4" BSP	553b
			12	Fuel tank pipe	S-663b
			13	Nut, 3/8" UNC	415g

Lift pump maintenance kit — AC 7950298 — 944ka

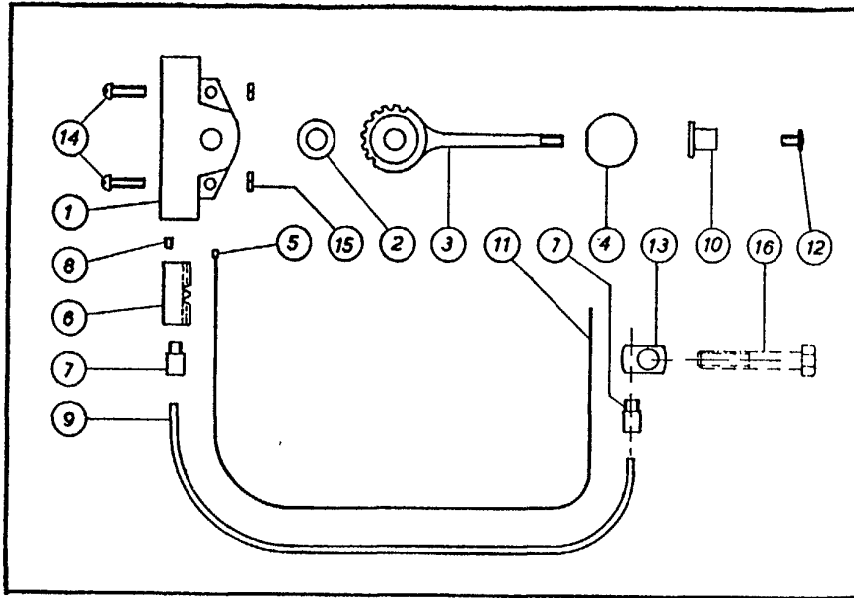
Lift pump repair kit . . . — AC 7950293 — 944kb



**Group GA 50-60. FUEL INJECTION EQUIPMENT**

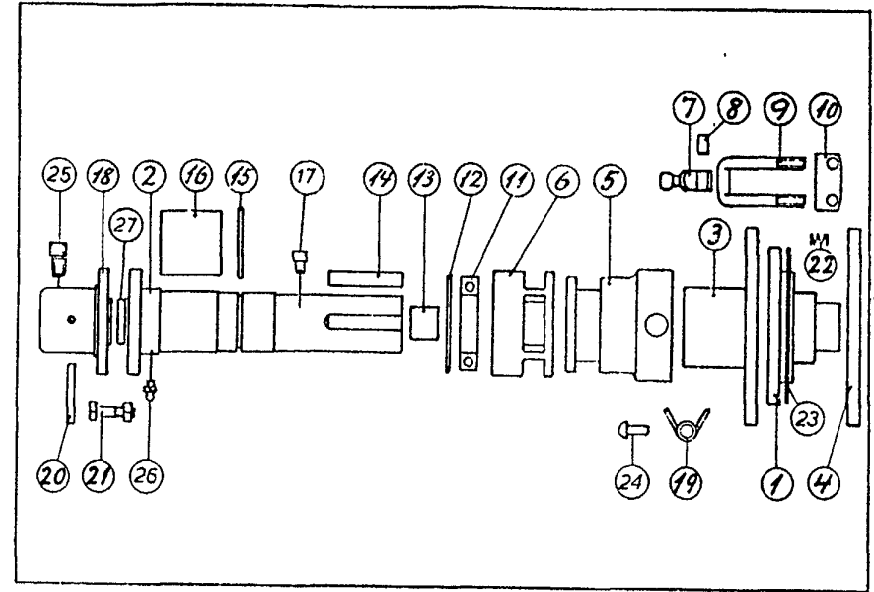
No.	Part Name	Part No.	No.	Part Name	Part No.
1	Injector holder KBAL 55 S 1/4 Bosch 0 431 212 019	S-GA53d	10	Inj. pump element 0 418 305 004	G44am
2	Nozzle, BDLL 160 S 6173	GA53i	11	Delivery valve	G44ap
3	Nozzle joint washer	853j	12	Copper washer, Bosch 1 410 502 001	831.029
4	Nozzle nut (433 314 118)		13	Pressure spring	719.001
5	Inj. nipple with filter	G53dk	14	O-ring, Bosch 1 900 210 112	821.020
6	Banjo nipple washer leak-off, 8 mm	853e	15	Delivery valve hous.	2G44at
7	Banjo nipple plug leak-off, NW 2/3 NSR 5299/1x (M8)	953h	16	Banjo w. threads M12	944g
8	Injection pump, Bosch 0 414 171 038	S-2G44a	17	Washer	944i
9	Cam roller complete	G44an	18	Nut	944h
			19	Banjo nipple plug pump, NW6 NSR 5301/1x (M12)	944b
			20	Banjo nipple washer pump, 12 mm	844d

Cont. page 35



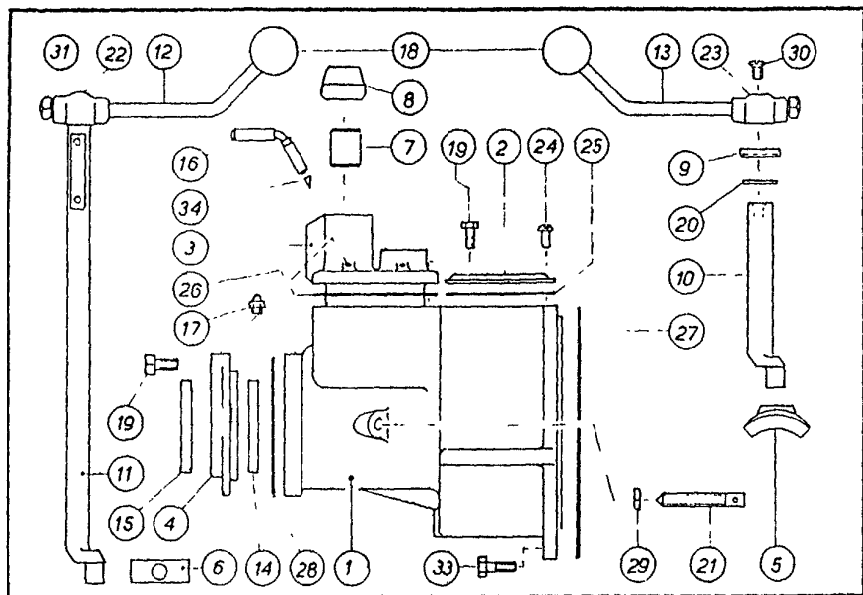
### Group G 72-1. GOVERNOR CONTROL

No.	Part Name	Part No.	No.	Part Name	Part No.
1	Governor control handle . . . . .	S1-72v	9	Bowden cable (GA and GAG, 640 mm) .	G72g
1	Governor control handle with wire, bowden cable and block . . . . .	S2-72v-G	10	Handle bolt . . . . .	72yb
1	Governor handle bracket . . . . .	72v	11	Wire, stainl. steel (GA and GAG, 1,8Ø, 810 mm) . . . . .	772f
2	Spring washer (A 10 DIN 137) . . . . .	772h	12	Handle screw . . . . .	472i
3	Handle . . . . .	72ø	13	Block . . . . .	571dc
4	Handle knob . . . . .	911i	14	Head screw (M5×25) (or 3/16"×1" 471a) . .	431.004
5	Wire lock . . . . .	G72e	15	Nut M5 (or 3/16") . . .	441 010
6	Rack . . . . .	72x	16	Bolt (5/16" UNC×50) .	422n
7	Bowden cable sleeve .	571dd		Socket Screw Hex. Vrench (for rack screw), 2,5 . . . . .	976 001
8	Rack screw . . . . .	G72ib			



### Group G 80-1. CLUTCH AND PROPELLER CONTROL

No.	Part Name	Part No.	No.	Part Name	Part No.
1	Front clutch member .	G82A	17	Dowel . . . . .	22ck
2	Rear clutch member ..	G82B	18	Coupling flange (25 mm) . . . . .	2H84R
3	Friction flange . . . . .	B82C	19	Lock spring . . . . .	782d
4	Clamp ring . . . . .	S1-B82D	20	Lock pin (6Ø×60) . .	784v
5	Clutch sleeve . . . . .	B82E	21	Flange coupling bolt (5/16" UNC×1") . . . .	421k
6	Propeller contr. sleeve	G83D	22	Spring . . . . .	782c
7	Clutch arm . . . . .	B82hc	23	Friction disc . . . . .	G85e
8	Roller . . . . .	82mb	24	Grooved stud, Kerpin N4 6Ø×12 . .	454.003
9	Clutch clamp . . . . .	B82i	25	Squarehead set screw .	482i
10	Wear shim . . . . .	82j	26	Grease nipple . . . . .	934r
11	Ball bearing (6010) . .	983d	27	Plug (1") . . . . .	711p
12	Circlip (80i) . . . . .	783d	28	Nut (for clutch clamp) 3/8" 17°K . . . . .	415g
13	Bush . . . . .	682d			
14	Sliding bolt . . . . .	82Ld			
15	Circlip . . . . .	782b			
16	Sleeve . . . . .	682r			



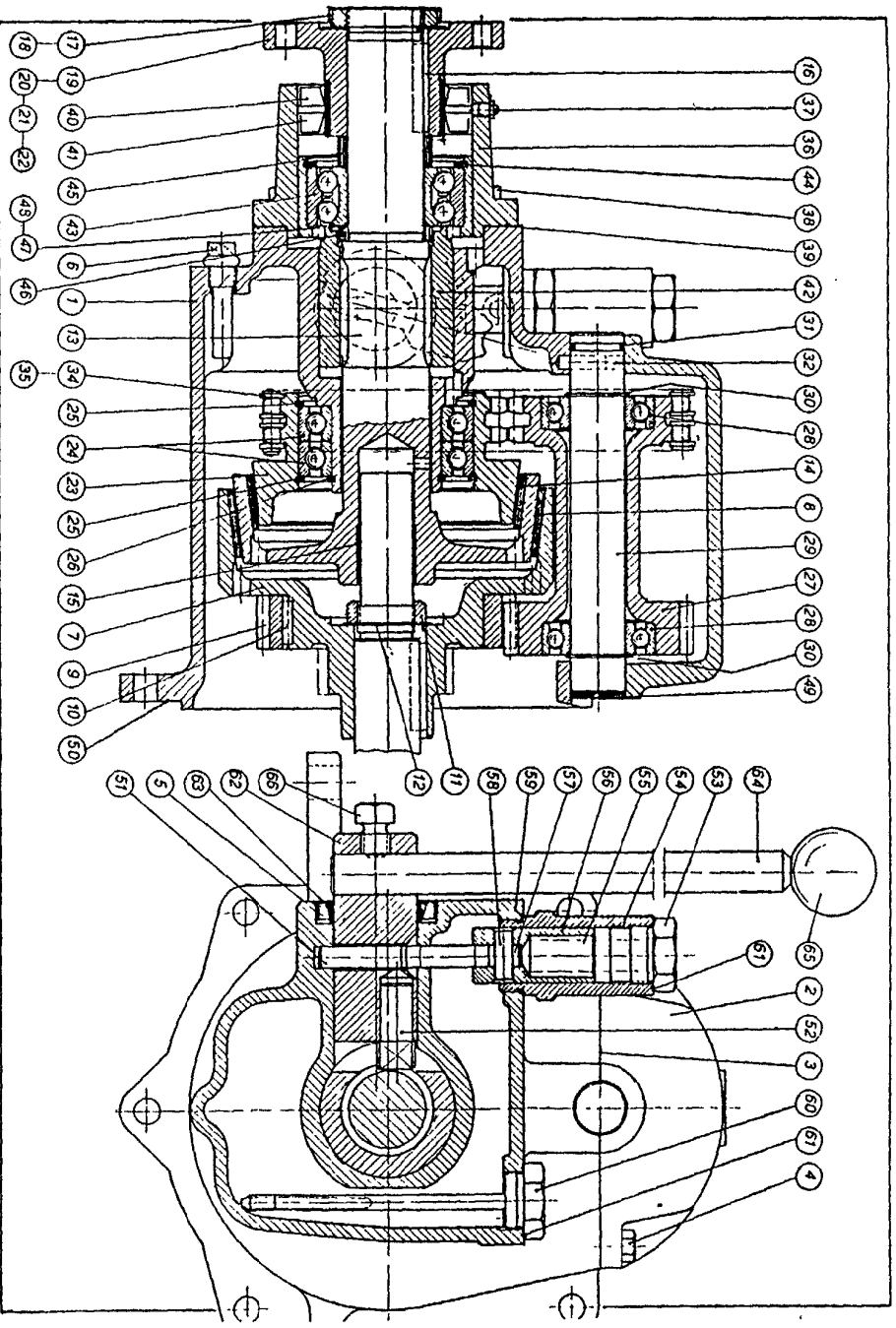
(Cont. from page 31.)

### Group GA 50-60. FUEL INJECTION EQUIPMENT

No.	Part Name	Part No.	No.	Part Name	Part No.
21	Injection pump shim, a/0,3, ab/0,2, ac/0,5 ..	744a/ab/ac	28	Bleeder screw, fuel f., Bosch 1 413 453 020 ..	967j
22	Excess fuel knob, complete ..	S1-GA41g	29	Fibre joint ..	867j
23	Fuel filter housing, compl. 0 450 015 003 ..	S-G67a	30	Fuel filter bolt, Bosch 2 911 165 261 ..	967i
24	Fuel filter element, Bosch 1 457 431 324 ..	G67i	31	Gasket, filter bolt ..	867i
25	Filter nipple, ¼" BSP-M14 ..	545db	32	Gasket, f. filter bowl ..	867a
26	Banjo nipple washer, filter, 14 mm ..	867d	33	Fuel tank, 42 litres, stainless steel ..	S1-B63bb
27	Banjo nipple plug, filter, NW 8 NSR 5202/1 (M14) ..	967a		Fuel tank, 50 litres ..	S1-GA63b
			34	Fuel tank cap ..	63hk
			35	Fuel tank cock (needle valve) compl.	946 001
			36	Fuel drain cock, complete ..	S-52ib

### Group G 80-2. CLUTCH HOUSING

No.	Part Name	Part No.	No.	Part Name	Part No.
1	Clutch housing ..	G82Q	17	Grease nipple ..	934r
2	Housing cover ..	G82qL	18	Knob ..	971b
3	Control bracket ..	2H83A	19	Head screw ( <sup>5</sup> / <sub>16</sub> " UNC×1") ..	421k
4	Flange ..	G82R	20	Rubber washer ..	881f
5	Clutch control shoe ..	G82F	21	Max. pitch stop screw ..	G41f
6	Pitch control shoe ..	G83e	22	Handle head ..	71mL
7	Bushing ..	683a	23	Handle head (Lens head screw) ..	71mq
8	Rubber cuff ..	883c	24	Head screw ( <sup>5</sup> / <sub>16</sub> " UNC×½") ..	423L
9	Washer ..	783f	25	Cover gasket ..	882t
10	Clutch shaft ..	2H81fb	26	Contr. bracket gasket ..	883a
11	Pitch control shaft ..	G83f	27	Clutch housing gasket ..	882q
12	Handle for pitch control with knob ..	S1-71nc	28	Flange gasket ..	882s
13	Handle for clutch control with knob ..	S1-71nf	31	Set screw (½") ..	471mL
14	Oil seal (5580) ..	982r	33	Bolt (⅜" UNC×1") ..	421L
15	Oil seal with dust lip (5580) ..	982rb	34	Friction taper ..	G83ak
16	Hand screw ..	471c			



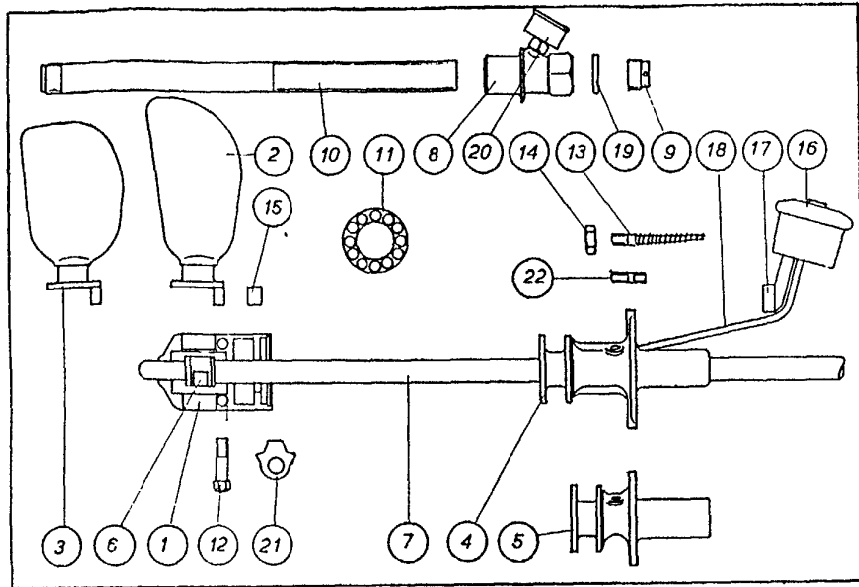
REVERSE GEAR - Model H-1971

**Group GG 84, REVERSE GEARBOX (Model H-1971)**

No. Part Name	Part No	No. Part Name	Part No	No. Part Name	Part No.
1 Gearbox . . . . .	S1-H84Qb	24 Ball bearing (SKF 6010Z) . . . . .	983db	45 Spacer . . . . .	684b
2 Gearbox cover . . . . .	H84qL	25 Circlip (80) . . . . .	783d	46 Spacer . . . . .	684c
3 Gasket, gearbox cover . . . . .	884n	26 Circlip (50A) . . . . .	782b	47 Shim (Seeger PS 35×45×0.1) . . . . .	741 006
4 Bolt (9/16"×1") . . . . .	421k	27 Intermediate gear . . . . .	S1-H84ub	48 Shim (Seeger PS 35×45×0.3) . . . . .	741 007
5 Oil seal (4256) . . . . .	934eb	28 Ball bearing (SKF 6205Z) . . . . .	935mb	49 Rubber washer . . . . .	884a
6 Magnet plug . . . . .	S-584b	29 Intermediate shaft . . . . .	H84L	50 Gasket, gearbox front . . . . .	882q
7 Ahead clutch cone . . . . .	S1-H84m	30 Circlip (25A) . . . . .	784L	51 Lock bolt . . . . .	H84nc
8 Ahead clutch lining . . . . .	H84mk	31 O-ring (Sor 10) . . . . .	884L	52 Operating shaft dowel . . . . .	H84rL
9 Driving gear . . . . .	H84sb	32 Grooved pin (1/4"×3/4") . . . . .	422f	53 Plug . . . . .	522de
10 Key (7×8×20) . . . . .	436a	34 Chain, 19 links (114046), 483 mm . . . . .	984c	54 Lock sleeve retainer . . . . .	H84z
11 Key (7×8×20) . . . . .	436a	35 Chain lock . . . . .	984n	55 Spring . . . . .	784i
12 Lock nut (3/4" BSP) . . . . .	484t	36*) Rear support flange . . . . .	S1-H84w	56 Lock sleeve . . . . .	S1-H84pc
13 Lock washer . . . . .	784b	37*) Grease nipple . . . . .	934r	57 Lock sleeve roller . . . . .	H84y
14 Gear shaft . . . . .	S1-H84db	38 Bolt (3/8" UNC×1" K80) . . . . .	421L	58 Lock sleeve pin . . . . .	484h
15 Astern clutch cone lining . . . . .	H84dk	39 Rear support flange gasket . . . . .	884w	59 Gasket . . . . .	836j
16 Bush . . . . .	682d	40) Oil seal (5580) with dust lip . . . . .	982rb	60 Dipstick . . . . .	S1-H84x
17 Key (7×8×40) . . . . .	434e	41*) Oil seal (5580) . . . . .	982r	61 Gasket . . . . .	882d
18 Ring nut . . . . .	486c	42 Operating sleeve . . . . .	S1-H84ec	62 Operating shaft . . . . .	S1-H84fb
19 Lock washer . . . . .	786c	43 Angular-contact bearing . . . . .	984h	63 Operat shaft sleeve . . . . .	684r
19 Coupling flange, front part . . . . .	S1-H84wb	44 Circlip (72 D) . . . . .	784r	64 Gear operating lever . . . . .	H71m
19b Coupling flange, rear part (25 mm) . . . . .	S1-2H84RG			65 Knob . . . . .	971b
20 Bolt (3/8" UNC×1 1/4" k80) . . . . .	484c			66 Set screw, 1/2" . . . . .	471mL
21 Nut (3/8" UNC) . . . . .	415g			67**) Shim, 42×30×0.5 . . . . .	784m
22 Sleeve . . . . .	682re			Shim, 42×30×0.3 . . . . .	784mb
23 Lower chain wheel . . . . .	S1-H84T			Shim, 42×30×0.1 . . . . .	784mc

\*) S1-H84w consists of pos 36-37 40-41.

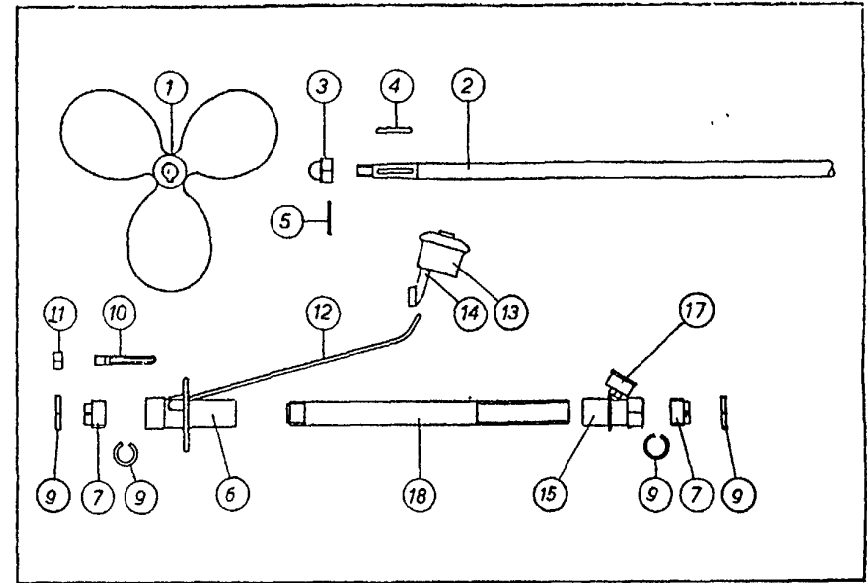
\*\*) Not shown in drawing. Used in front of pos. 7.)



### Group G 91. CONTROLLABLE PITCH PROPELLER

No.	Part Name	Part No.	No.	Part Name	Part No.
1	Propeller boss (with boss screws)	S1-2H91AC	14	Nut, 1/2" . . . . .	491c
2	Propeller blade, normal 450 mm dia	B91B	15	Wing tap block . . . .	2H91m
3	Propeller blade, short 394 mm dia.	B91BB	16	Propeller greaser . . .	64Ab
4	Stern bearing, normal	2H91C	17	Prop greaser bracket .	64Bb
5	Stern bearing w/grease nipple for lifeboat	2H91CB		With reducing nipple .	581n
6	Stern bearing, short . .	2H91CC	18	Greaser tube, 3/8"×750 . . . . .	664a
7	Driving block . . . . .	2H91d		Greaser tube, 3/8"×1500 . . . . .	664b
8	Propeller shaft, 25 mmØ×1750 mm stainless steel	2H91eb	19	Stuffing box packing .	841e
	Propeller shaft with driving block . .	S1-2H91eb	20	Stuffing box grease cup No. 4 . . . . .	982b
9	Stuffing box . . . . .	2H91FB	21	Lock washer . . . . .	722.003
10	Stuffing box gland . .	B91g	22	Stern stud. (for steel boats) . . .	91Lb
11	Stern tube, 450 mm . . .	B91h		Socket screw, Hex. wrench . . . . .	982h
12	Thrust ring . . . . .	B91i			
13	Boss screw (M10) . . . .	433.003			
14	Stern wood screw . . . .	91L			

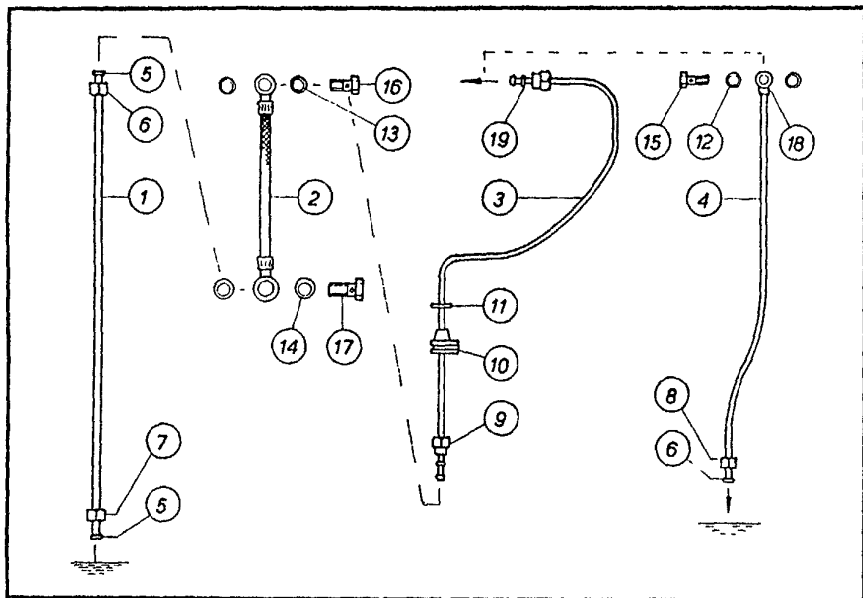
\*) After servicing: Engines delivered before GA 74—82:  
Boss screw (1/2") . . . . B91k  
Lock washer . . . . . 791e



### Group G 92. SOLID PROPELLER

No.	Part Name	Part No.	No.	Part Name	Part No.
1	3-blade propeller (16"×14"×25V) . . . .	2H92B	13	Greaser . . . . .	64Ab
2	Propeller shaft, 25 mmØ×1750 mm stainless steel . . . . .	2H92eb	14	Greaser bracket . . . .	64Bb
3	Shaft nut . . . . .	2H92d		with reducing nipple .	581n
4	Key . . . . .	492bb	15	Stuffing box . . . . .	2H91FB
5	Nut lock pin . . . . .	792d	17	Stuffing box greaser cup No. 4 . . .	982b
6	Stern bearing . . . . .	2H92c	18	Stern tube, 450 mm . .	B91h
7	Gland . . . . .	B92g			
8	Lock nut . . . . .	592g			
9	Stuff. box packing (6)	841e			
10	Stern wood screw . . . .	91L			
11	Nut (1/2") . . . . .	491c			
12	Greaser tube, 3/8"×750 mm . . . . .	664a			
	Greaser tube, 3/8"×1500 mm . . . . .	664b			

For GRP and steel boats (1975):  
10b Stern bolt, stainless  
steel, M12×50 . . . . . 432.108  
11b Nut, M12 . . . . . 441.068  
Washer (2 pcs.) . . . . 721.007



### Group GA 600. FUEL PIPES

No.	Part Name	Part No.	No.	Part Name	Part No.
1	Fuel tank pipe, complete, 5/16×1700, Cu .	S-663b	13	Banjo nipple washer, pump, 12 mm . . . . .	844d
2	Filter Pump suction hose, 350 mm . . . . .	S-844ae	14	Banjo nipple washer, filter, 14 mm . . . . .	867d
3	Injection pipe, compl, 1,6∅×6∅×640 . . . . .	S-653g	15	Banjo nipple plug, Leak-off, NW 3/4 NRS 5299/1x (M8) . . . . .	953h
4	Leak-off pipe, compl.	S-653fe	16	Banjo nipple plug, pump, NW 6 NSR 5301/1x (M12) . . . . .	944b
5	Solder ring . . . . .	563b	17	Banjo nipple plug, filter, NW 8 NRS 5202/1x (M14) . . . . .	967a
6	Solder ring . . . . .	522b			
7	Pipe nut, 1/4" BSP . . . . .	553b			
8	Pipe nut, 1/4" BSP . . . . .	553g			
9	Injection pipe nut . . . . .	453m			
10	Inj pipe rubber seal . . . . .	811fd			
11	Rubber washer . . . . .	853n			
12	Banjo nipple washer, Leak-off, 8 mm . . . . .	853e			

## IRREGULAR ENGINE OPERATION    MOTORKLUSS – FEILSØKING

### Faults Location Chart

#### 1. THE ENGINE WILL NOT START

- Fuel control not wide open (in full speed position).
- Too low cranking speed.
- Dry cylinder. Inject lub.oil.
- Water in fuel.
- Injection not good. Check injector.

#### MOTOREN STARTER IKKE

Regulator ikke i fullfartsstilling.

For liten hastighet på sveiven.  
Tørr sylindervegg. Smør med sprøyte-kannen.  
Vann i brennoljen  
Feil med innsprøytingen.  
Kontroller dysen.

#### 2. LACK OF COMPRESSION

- Check valve tapped clearance, 0,3 mm.
- Valve sticking. To loosen, squirt mixture of lub.oil and fuel through springs to lubricate valve stem. Check valve movement by hand.
- Valve leaking. Listen for leakage while turning engine by hand. If blow-by, remove cylinder head to clean and grind valve seats.
- Check adjustment of decompressor.
- Check cylinder and piston wear.

#### MANGEL PÅ KOMPRESJON

Kontroller at ventilkclearingen er 0,3 mm.

Undersøk om ventilene går lett ved å trykke dem ned med hånden. Går de trøt, så sprøyt en blanding brenn- og smøreolje gjennom fjæren på ventilspindel, samtidig som den trykkes ned. Lytt til ventilene når motoren tørnes for hånd. Hvis en eller begge blåser gjennom, må topplokket av og ventilene gøres rene eller slipes inn hvis nødvendig. Kontroller innstilling av dekompresjons-ventilen.  
Kontroller stempel- og ringclearingen.

#### 3. THE ENGINE IS HARD TO CRANK

- Too heavy lubricating oil.
- Bent propeller shaft. Check flange coupling.
- Flywheel rusted in housing. Clean and apply rust inhibitor.

#### MOTOREN ER TUNG A DREIE RUNDT

For tykk smøreolje.  
Bend i akselledning til propell.  
Kontroller flenskobling.  
Svinghjul fastrustet.

#### 4. LACK OF POWER

- Fuel oil filter clogged. Change element.
- Air in fuel system. Bleed.
- Dirty injector nozzle.
- Clutch slipping. Remove clutch cover. Tighten clamp nuts 1/6 turn each.
- Incorrect valve tapped clearance.
- Exhaust pipe clogged.
- Lack of compression. See above.

#### MOTOREN TREKKER IKKE

Oljefilteret tilstoppet.  
Skift brennoljefilterinnsats.  
Luft i oljesystemet. Utluft.  
Skitt i dysen.  
Koblingen slurer. Etterstram koblings-klemmemutrene 1/6 tørn gjennom luken.  
Feil ventilkclearing.  
Tilstoppet eksosrør.  
Mangel på kompresjon. Se ovenfor.

#### 5. ENGINE STOPS

- Overheating of engine. Let the engine cool down before turning to check compression. Start again and slowly load the engine.
- Leak of fuel. Fuel tank cock closed. Fuel filter clogged.

#### MOTOREN STOPPER

Motoren for varm. La den gå for avkjøling. Tørn forsiktig for hånd og prøv kompresjonen. Start igjen og belast motoren langsomt.

Mangel på brennolje. Brennoljekran stengt. Filterinnsats tett.

## SPARE PARTS FOR LIFEBOAT ENGINE MODEL GA AND GAG

Every engine needs regular servicing and maintenance. Quick delivery of correct spare parts is of utmost importance, wherever the ship might call.

SABB MOTOR A.S maintains full stocks of spares all times, and every part will be available at short notice.

However, to save time and expences SABB MOTOR A.S has prepared *SPECIAL SETS OF SPARES* containing the most vital parts to the engines. See below.

### ORDERING SPARE PARTS

SABB MOTOR A.S is prepared to give express spares service, and you can help out by giving us full details when ordering spares.

TYPE OF ENGINE: GA or GAG

ENGINE SERIAL NO. (engine number plate at rear side of starter bracket)

Note that serial no. also comprises the year of manufacture, and this figure is very important

F. inst.: GA 75—100

i.e.: Model GA—year 1975—engine no. 100

PART NAME AND PART NO. as stated in this manual.

*Your order should be sent by:*

TELEX: 42559 sabb n

TELEPHONE: Bergen, Norw.: Intern. + 47 5 343510

CABLE: "SABBMOTOR"

MAIL: Box 272B, 5010 Bergen, Norway

State your address—port of call—name of ship—marking—forwarding instructions (airmail, by ship, by mail).

### STANDARD SETS OF SPARES:

	Code:
1. Maintenance set of spares, GA . . . . .	V-15
2. Maintenance set of spares, GAG . . . . .	V-15A
3. Maintenance set of gaskets, GA—GAG . . . . .	P-7
4. Repair set of gaskets, GA . . . . .	P-8
5. Repair set of gaskets, GAG . . . . .	P-9
6. O-rings and oil seals . . . . .	O-15
7. Set of piston rings . . . . .	S1-GA32b
8. Fuel lift pump maintenance set . . . . .	944ka
9. Fuel lift pump repair set . . . . .	944kb

## RESERVEDELER TIL LIVBÅTMOTOR TYPE GA OG GAG

Enhver livbåtmotor trenger regelmessig service og vedlikehold. Rask tilgang på korrekte reservedeler er av største betydning, samme hvor skipet befinner seg.

SABB MOTOR A.S har til enhver tid på lager alle reservedeler til motoren. For å spare tid, har vi laget opp *STANDARDSETT* av de viktigste delene som erfaringsmessig brukes. Se nedenfor.

### BESTILLING AV RESERVEDELER

Vi er klar til å gi hurtig service, og De kan hjelpe oss ved å gi fullstendige opplysninger ved bestilling:

MOTOR TYPE: GA eller GAG

SERIENUMMER: Motorskiltet er plassert i bakkant av startstativet. Merk at motornummeret også inneholder årstallet motoren er bygget. F.eks.: GA 75—100 type GA — år 1975 — nr. 100.

DEL NAVN OG DEL NUMMER: Se stykkklister

FULLSTENDIG ADRESSE: Skipets navn, anløpshavn, agent, forsendelsesmåte (skip, fly, post, ilpost) og hvordan forsendelsen skal merkes.

*Bestillingen kan sendes oss:*

TELEX: 42559 sabb n

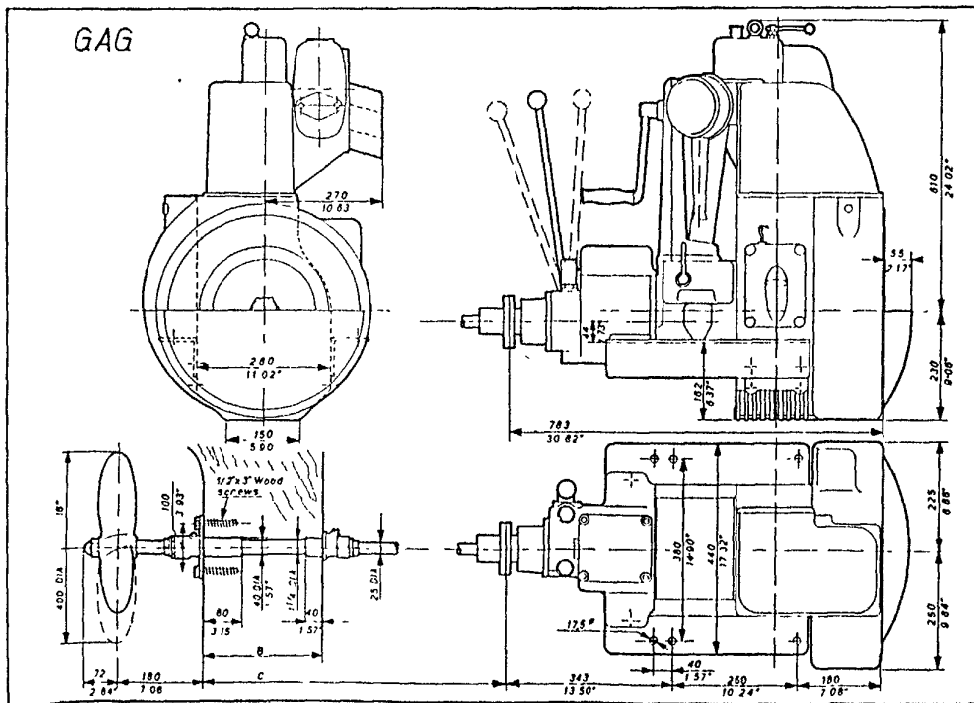
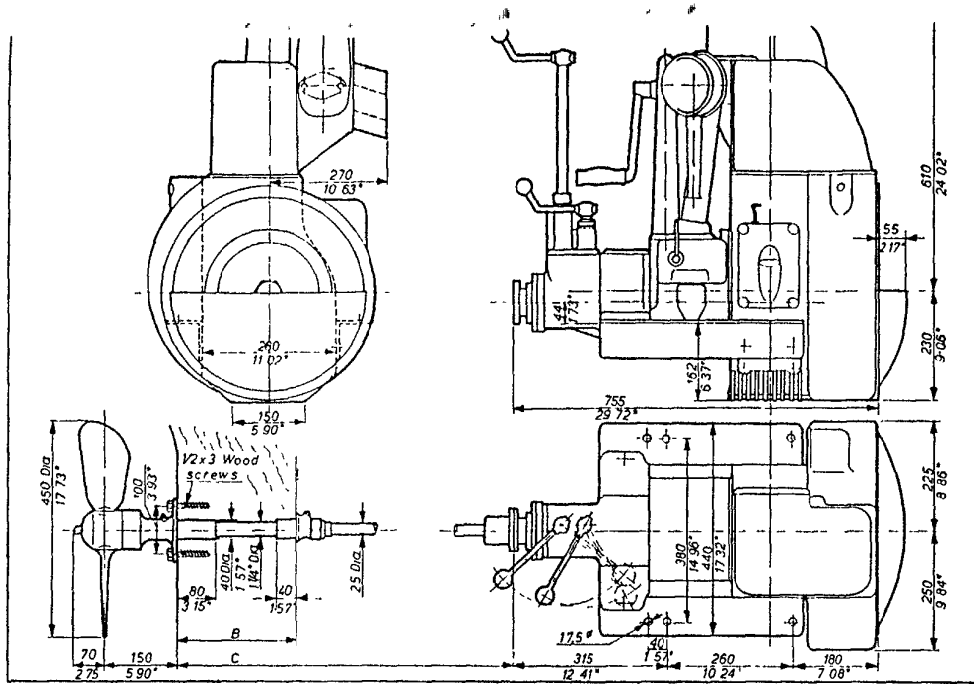
TELEGRAM: «SABBMOTOR»

TELEFON: (05) 343510, Bergen, Norway

BREV: Boks 272B 5010 Bergen, Norway

### STANDARD RESERVEDELSSETT

	Bestillingskode:
1. Vedlikeholds-reservedelssett, GA . . . . .	V-15
2. Vedlikeholds-reservedelssett, GAG . . . . .	V-15A
3. Vedlikeholds-pakningssett, GA—GAG . . . . .	P-7
4. Reparasjons-pakningssett, GA . . . . .	P-8
5. Reparasjons-pakningssett, GAG . . . . .	P-9
6. O-ringer og oljetettingsringer . . . . .	O-15
7. Stempelingssett . . . . .	S1-GA32b
8. Fødepumpe-vedlikeholdssett . . . . .	944ka
9. Fødepumpe-reparasjonssett . . . . .	944kb



Dimensional drawing 1.15



**STANDARD RESERVEDELSSETT/STANDARD SETS OF SPARES:**

For motor med sylinderboring 100 mm<sup>ø</sup>/  
For engine with Cylinder bore 100 mm dia.

1. Vedlikeholds-reservedelssett, GA/ Maintenance set of spares . . . . .	Code: V-15B
2. Vedlikeholds-reservedelssett, GAG/ Maintenance set of spares . . . . .	V-15C
3. Vedlikeholds-pakningssett, GA—GAG/ Maintenance set of gaskets . . . . .	P-7A
4. Reparasjons-pakningssett, GA/ Repair set of gaskets . . . . .	P-8
5. Reparasjons-pakningssett, GAG/ Repair set of gaskets . . . . .	P-9
6. O-ringer og oljetettingsringer/ O-rings and oil seals . . . . .	0-15
7. Stempelringsett (Rød), 100 mm <sup>ø</sup> dia./ Set of piston rings (Red), 100 mm dia. . .	2J32.005
8. Fødepumpe-vedlikeholdssett/ Fuel lift pump maintenance set . . . . .	944ka
9. Fødepumpe-reparasjonssett/ Fuel lift pump set . . . . .	944kb

**LIVBÅTMOTOR,  
LUFTKJØLT, TYPE GA—GAG**

ØKET YTELSE FRA  
MEDIO 1978:  
Motor nr. GA.78.

**S P E S I F I K A S J O N E R :**

En-sylindret,  
4-takts, luftkjølt dieselmotor  
Normal ytelse:  
14 hk ved 2000 omdr./min.  
Sylinderboring/slaglengde:  
100×120 mm  
Slagvolum:  
940 cm<sup>3</sup>  
Ventilklaring:  
Eksos- og luftventil 0,05-0,1 mm

**NYE DELER/NEW PARTS:****Group GA 21—23. Side/Page 19.**

Pos. 2. Ribbesylinder/Ribbed cylinder, 100 mm <sup>ø</sup> . . . . .	GA21.001	<b>New Part No.:</b>
» 14. Toppakning/Cylinder head gasket, 100 mm . . . . .	831.039	
» 15. Ribbesylinderpakning/Ribbed cylinder O-ring, innv./int. dia. 104,5×3 . . . . .	821.044	

**Group GA 30—1. Side/Page 22.**

Pos. 15. Stempel/Piston, 100 mm <sup>ø</sup> . . . . .	GA32.001
» 16. Toppstempelring/Top compression ring, 100 mm . . . . .	2J32.001
» 17. Kompresjons stempelring/Compression ring, 100 mm . . . . .	2J32.002
» 18. Kompresjons skrapering/Compr./scraper ring, 100 mm . . . . .	2J32.003
» 19. Spiralfjær oljeskrapering/Spiral oil control ring, 100 mm Stempelringsett/Piston ring set, 100 mm (Rød/Red) . . . . .	2J32.004 2J32.005
» 21. Kryssbolt/Gudgeon pin . . . . .	2J32d

**Group GA 50—60. Side/Page 31.**

Pos. 1. Dyseholder komplett/Injector holder complete . . . . .	S-GA53db
» 2. Dyse/Nozzle, 0 433 271 090 (DLLA 150 S273) . . . . .	2J53i
» 8. Innsprøytingspumpe/Injection pump complete . . . . .	S-2J44a
» 10. Elementinnsats/Injector pump element . . . . .	2J44am
» 11. Trykkventil/Delivery valve . . . . .	2J44ap
Sumpvarmer/Sump heater complete . . . . .	969.068

**Group GA 34. Side/Page 26**

B. Valve lifter, EX (1) . . . . .	GA34.001
B. Valve lifter, IN (1) . . . . .	GA34g

**LIFEBOAT ENGINE,  
AIR-COOLED, MODEL GA—GAG**

INCREASED PERFORMANCE FROM  
MEDIO 1978:  
Engine serial No. GA.78.

**S P E C I F I C A T I O N S :**

One-cylinder,  
four stroke, aircooled diesel engine  
Normal output:  
14 hp at 2000 rpm.  
Cylinder bore/stroke:  
100×120 mm, 3.93/4.720 in.  
Cylinder displacement:  
940 cm<sup>3</sup>, 57.36 cu.in.  
Valve clearance:  
Inlet- and exhaust. cold  
0,05 - 0,1 mm

Date: **21 08 92** Sign.: *Wess*

EGENPRODUSERT RIBBESYLINDER Ø100 FOR  
MOTORER PRODUS. FØR GA 78 118 - 12HK

Type:  
**GA 21-23**

Side/Page: **1** Av/Ot: **2**

NEW RIBBED CYLINDER FOR GA 12 HP  
(SERIAL NOS. BEFORE GA 78 118)

**GA - GAG**

Del nr./Part No.:

Gr. nr./Gr. No.:

Ansak til forandring/Cause of change:  
Det har lenge vært et problem å skaffe Ø95 mm ribbesylinder GA21N, til utskifting på 12HK Luftkjølte motorer produsert før GA 78 118.

Toppakning  
Cyl. head gasket  
831011

Ribbed Cylinder GA21N is not available from manufacturer (Foundry).

Ribbesylinder/  
Ribbed cylinder  
GA21N, Ø95

Forandring/Alteration:

Til erstatning lages en ny ribbesylinder 011482 med 100 mm boring. Den nye sylinderen vil passe til eldre veivhus med 110 mm styring. Ved montering nyttes pakningspasta (Jointing Compound 991040) i stedet for O-ring. Videre monteres nytt Stempel GA32.001-002471 Kryssbolt 2J32D-001548 Ringsett 2J32.005-002601 Toppakning 831039 Pakn.pasta (1 tube) 991040 (påføring som vist)

Ribbesyl.pakning  
Ribbed cyl. gask.  
O-ring, 821030

Replacement Ribbed Cylinder with 100 mm bore is machined to fit older type crankcase. Previous O-ring is replaced by special Jointing Compound included.  
Also supplied:

Toppakning  
Cyl. head gasket  
831039

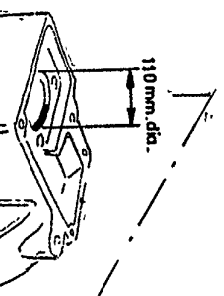
Cylinder Head Gasket 831039  
Piston GA32.001-002471  
Guddeon Pin 2J32D-001548  
Piston Rings 2J32.005-002601  
Jointing Compound 991040  
Apply compound as shown.

Ribbesylinder/  
Ribbed cylinder  
GA21.004.1.3/  
011482, Ø100

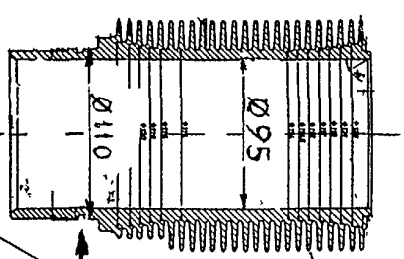
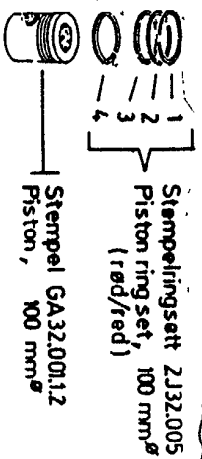
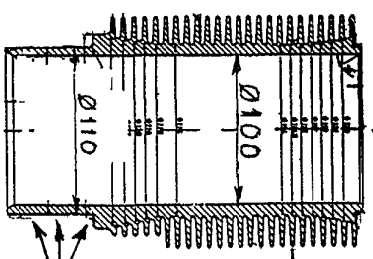
See page 2.

NOTE: PISTON COMBUSTION CHAMBER POSITIONED FORWARD AGAINST INJECTOR.

Merknader/Marks:



Veivhus/  
Crankcase  
GA22A



Fra motor nr./From engine serial No.:

August 1992

**SABB MOTOR** AS  
5010 BERGEN - NORWAY

**FORANDRINGSMELDING /  
ALTERATION REPORT**

Meld. nr./Rep. No.:  
**623**

Date:  
**15. 10. 79**

Sign.: *MS*

Gr. nr./Gr. No.:  
**GA10-20**

Side/Page: **1** Av/Ot: **3**

**Ny lydtemper / New Silencer**

Type:

**GA - GAG**

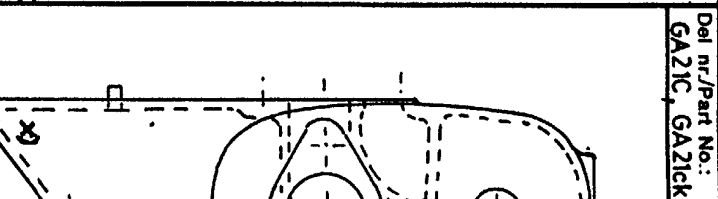
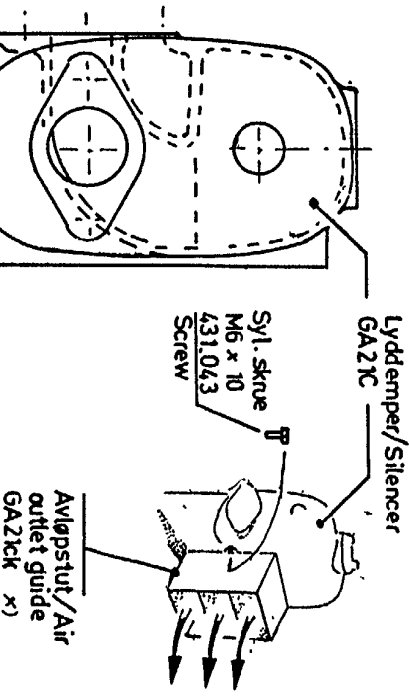
Årsak til forandring/Cause of change:

Lyddemper GA21C for luftkjølt livbåt/  
motor er stor i forhold til volumet  
og komplisert å lage (støpe).

Del nr./Part No.:  
GA21C, GA21ck

**GA - GAG**

Silencer for air cooled lifeboat  
engine is too big and difficult to  
make.



Forandring/Alteration:

Vi har konstruert en ny, mindre og enklere lydtemper, nytt nr. GA21.002.1.1. Tidligere støpte "luftavløpsskjerm" (X) på GA21C erstattes av en enkleiere luftavløpsskjerm av 1 mm galvan. st. plate, GA21.003.1.2. For nye plater se side 2.

**ETTERBEIJEINING**

Den nye lydtemper GA21.002 sammen med luftavløpsskjerm, GA21.003 og plater etc., direkte utskiftbar med tidligere som utgår.

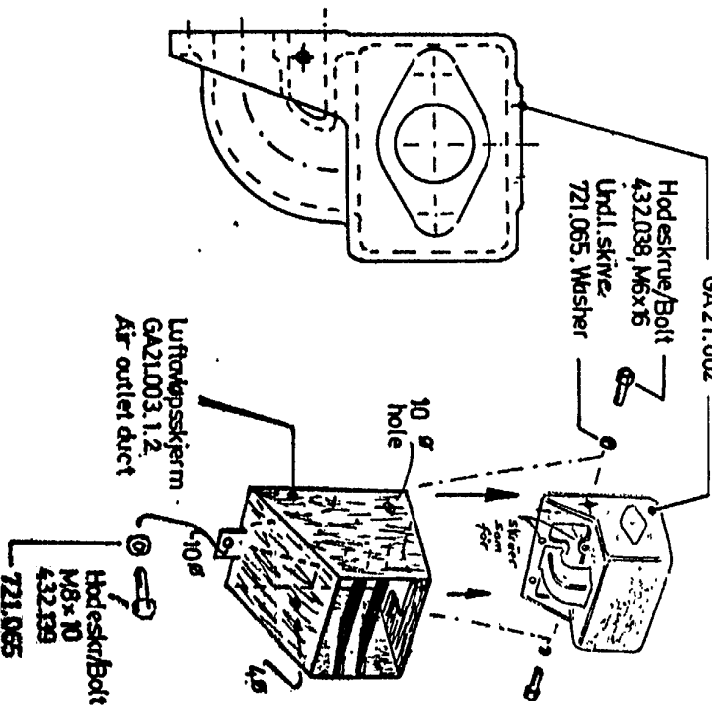
Se eget oppsett side 3.

New smaller silencer, New part No. GA21.002.1.1

**AFTER SERVICING**

New silencer GA21.002 together with new air outlet duct and plates is directly interchangeable with silencer GA21C. See special part list page 3. Silencer GA21C cancelled. Air outlet guide GA21ck in stock.

X) 2. ligning 1-84. 10stk. bestill 1-84.  
Del nr./Part No.:  
GA21.002, GA21.003



Merknader/Notes: *Avløpstut GA21ck beholder for etterbeijening*

Fra motor nr. 79, 133

**GA 79.133**

**K112-113-114-115**

**SABB MOTOR A/S**  
5010 BERGEN - NORWAY

**FORANDRINGSMELDING /  
ALTERATION REPORT**

Meld. nr./Rep. No.:  
**623.**

Date:  
**28. 2. 80**

Sign.:  
*[Signature]*

Side/Page: **2**

Av/Ot: **3**

**Ny ledplate og plate for luftskjerm  
New deflector plate and air guard rear pl.**

Gr. nr./Gr. No.:  
**GA 24**

Årsak til forandring/Cause of change:

Del nr./Part No.:

Type:  
**GA GAG**

Er overgang til NY  
lyddemper og luftavløps-  
skjerm  
Se melding nr. 623.  
side 1

Introducing of new silencer and  
Air outlet duct - See report 623  
page 1

*Tilføyelse 30.04.81  
Lagert bestiller (Svar nr.) noen  
GA24c for eldre motorer*

**Forandring/Alteration:**

Ledplate GA24b utgår - erstattes av  
ny ledplate GA24.001 - også for eldre  
motorer.

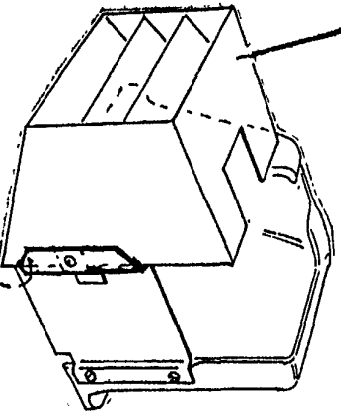
Plate GA24c utgår også. Erstattes av  
ny plate GA24.002. På eldre motorer  
kan den erstatte GA24c ved å bore  
ekstra (9ø) hull for 734d.

Noen GA24c (ca 25 stk) holdes av for  
etterbehandling. 30.04.81 Oppbrukt.

Deflector plate GA24b cancelled.  
Replaced by new deflector plate  
GA24.001 - also for older engines.

Plate GA24c cancelled also.  
Replaced by new air guard rear plate  
GA24.002

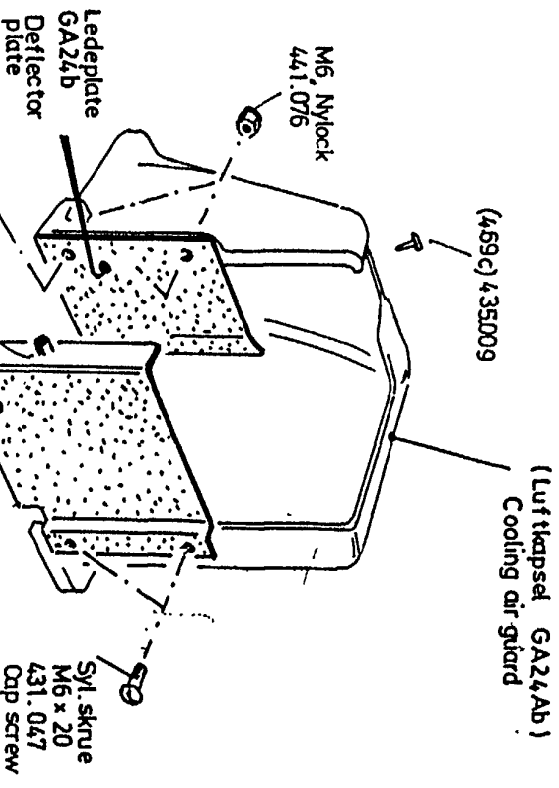
GA21.003



*Endret til 30.04.81*

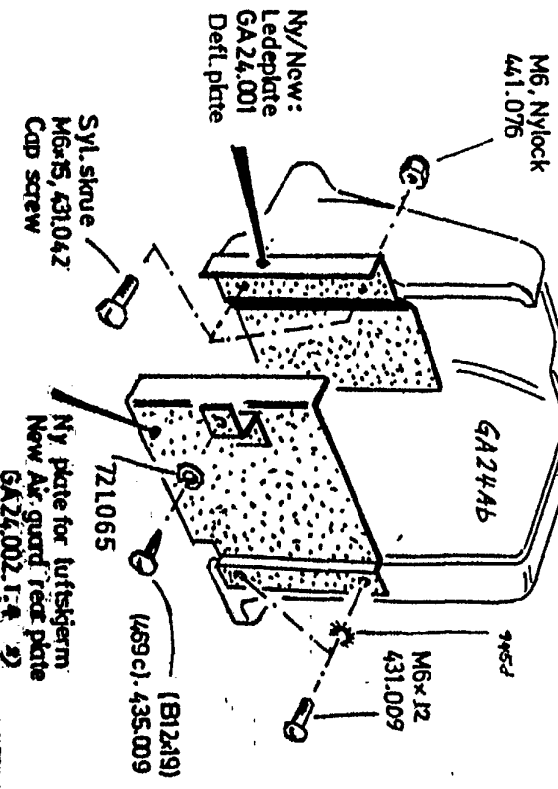
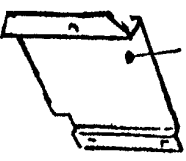
Del nr./Part No.:

**GA GAG**



Del nr./Part No.:

*2) Fast. av/Rephremby GA24.002.2-4  
(høsten '80)*



Fra motor nr./From engine serial No.:

**GA 79 133**

MOVEK V10R7

SABB QPADEV0024

Firma 002/div 1Sabb Motor AS ProduksjonsdataFirma: 002-1Virks enhet.... 001 Sabb Motor, Damsgård1 Produktnummer Stp Niv Antall.... Rev. Str dt001562 STD 1 1 51199LUFFKAPSEL+LEDE/KAPSELPL. Benevning

Niv Materialnummer Antall Enh A sat Tegm pos

1 001560 1 STK LUFFKAPSEL SNAU1 003547 1 STK LEDEPLATE FRONT1 003743 1 STK LUFFKAPSELPLATE BAKKE1 431042 2 STK SYLSKR M/SPOR M6X15 NS10871 431047 2 STK SYLSKR M/SPOR M6X20 NS10871 441076 2 STK LÅSEMUTTET M6 NYLOC ELFRS

F3=Avslutt

F4=Forespørsel

F5=Forny

F12=Foregående

F13=Parametre

F14=Konfigurere

F23=Alternativ

F24=Flere F-taster

Date: Sign: N

28.8.80

Lyddemper GA21C utgår

Gr. nr./Gr. No.:

GA10-20 / 24

Side/Page: 3 Av/Ot: 3

Silencer GA21C obsolete

Type:

GA - GAG

Del nr./Part No.:

Ved levering av ny type Lyddemper til eldre motorer før GA 79 133 - leveres følgende./New type silencer for older engines before GA 79 133 - following parts are supplied:

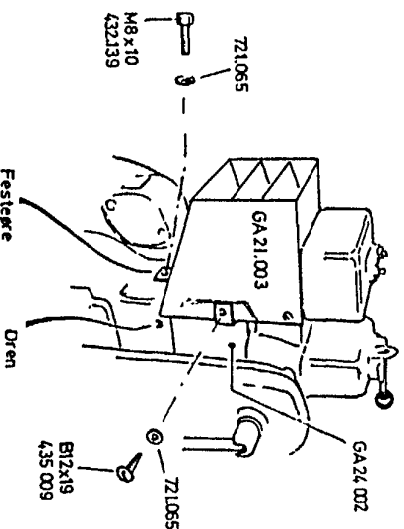
- |   |             |         |
|---|-------------|---------|
| 1 Lyddemper/Silencer .....                      | 51-GA21.002 |         |
| x) 1 Luftavløppskjerm/Air outlet duct .....     | GA21.003    |         |
| 1 Ledeplate/Deflector plate .....               | GA24.001    |         |
| 1 Plate for luftskjerm/Air guard rear plate ... | GA24.002    |         |
| 2 Hodeskruve/Bolt .....                         | M6x16 ..... | 432.038 |
| 1 Plateskruve/Screw (469c.- B12x19) .....       | 435.009     |         |
| 4 Underlagskriver/Washer .....                  | 721.065     |         |
| 1 Hodeskruer/Bolt .....                         | M8x10.....  | 432.139 |
- S2-GA21.002

For motorer eldre enn GA.72.256 (Meld./Rep.No.: 464)  
Leveres i tillegg./For engines older than GA 72 256  
add following parts:

- |   |             |         |
|---|-------------|---------|
| 1 Luftkapsel/Cooling air guard .....            | GA24AB      |         |
| 4 Hodeskruer/Bolt 5/16 UNC x 1" ... (421k)..... | 432.028     |         |
| 4 Underlagsskriver/Washer .....                 | (781j)..... | 721.065 |

x) Når luftavløppskjerm (GA21.003) er ferdig påmontert motoren, må veivhuset bores opp med M8 gjengebor - (bruk "festestøret" GA21.003 som mal) for hodeskruve 432.139.

x) When air outlet duct (GA21.003) has been fitted, drill and tap M8 as shown to fasten duct at lower end



S3-GA21.002

PDS100/B

Visse består-av-analyse

5.11.99 10.56.37

MOVEK V10R7

SABB QPADEV0024

Firma 002/dlv 1

Sabb Motor AS Produksjonsdata

Firma: 002-1

Virks enhet.... 001 Sabb Motor, Damsgård

1 Produktnummer Stp Niv Antall.... Rev. Str dt

003934 STD 1 1 51199

LYDDEMPER/KAPSEL/SKJERM GA72 BENEVNING

Niv Materialnummer Antall Enh A sat Tegns pos

1 001562 1 STK LUFFTKAPSEL+LEDE/KAPSELPL.

1 003545 1 STK LYDDEMPER FRA 1979

1 003548 1 STK LUFFTAVLSKJERM FRA GA79-133

1 432028 4 STK HSKRUE 6K 5/16UNCX25 NS963

1 432038 2 STK HSKRUE 6K M 6X 16 FZB

1 432139 1 STK HSKRUE 6K M 8X 10 FZB

1 435009 1 STK PLATESKRUE B12X19 SYREFAST

1 721065 4 STK UNDERLAGSSKIVE 8,5X17X2

F3=Avslutt F4=Forespørsel F5=Forny F12=Foregående

F13=Parametre F14=Konfigurerere F23=Alternativ F24=Flere F-taster