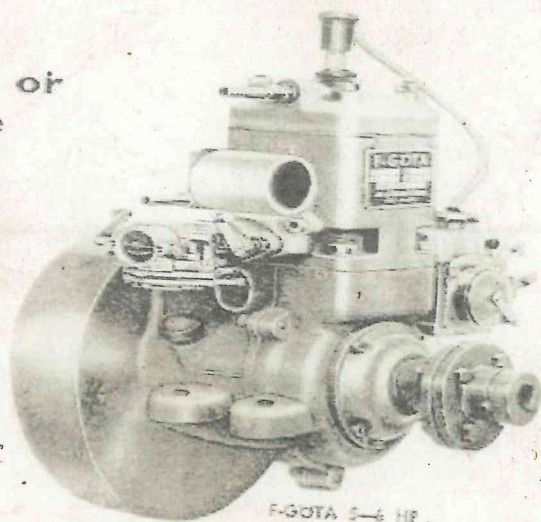


Gasoline or  
Kerosene

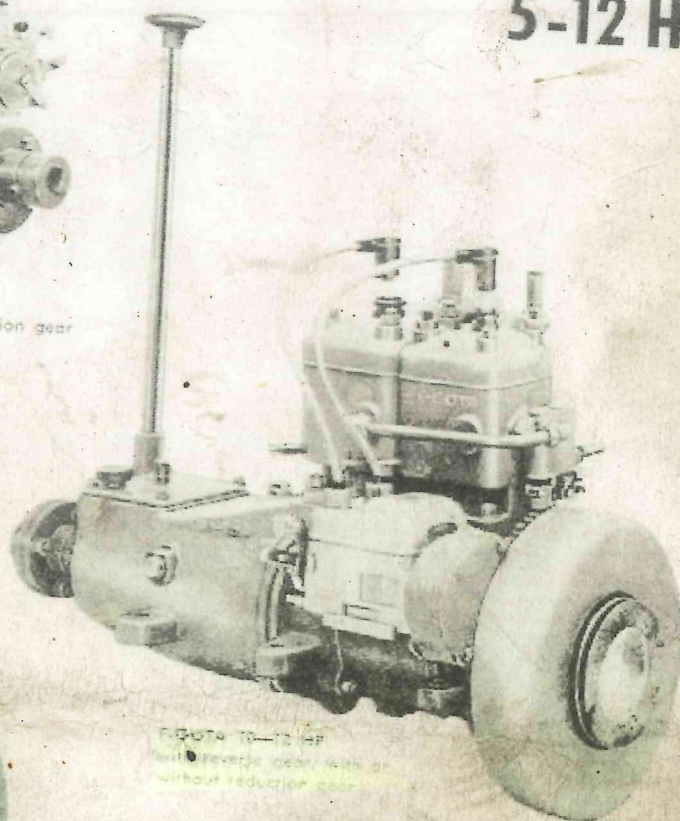
Swedish Marine 2-stroke Engine

**F-GÖTA**

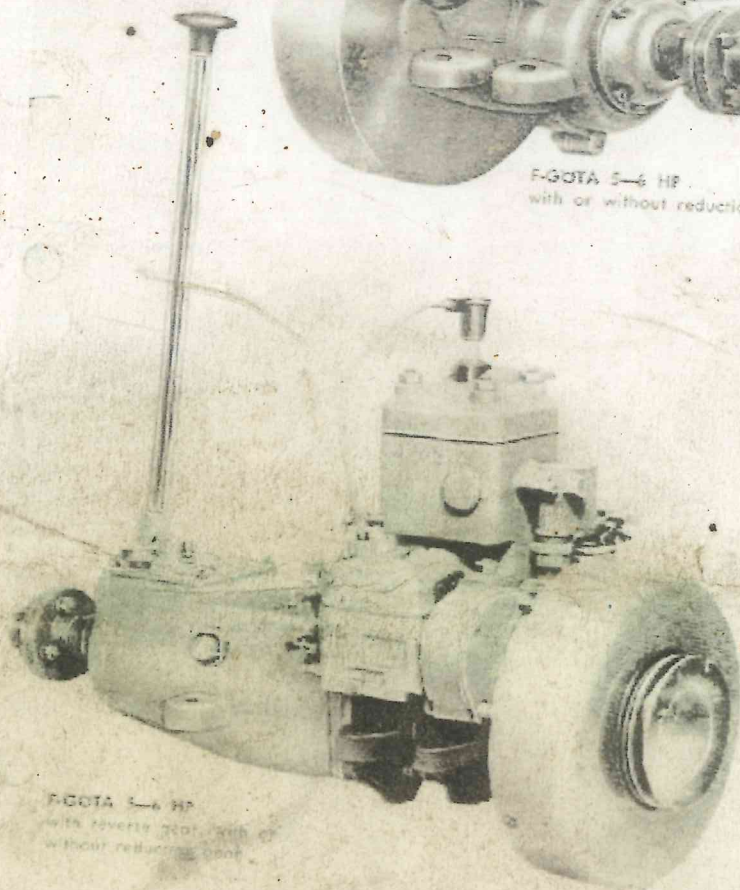
**5-12 HP**



F-GÖTA 5-6 HP  
with or without reduction gear



F-GÖTA 10-12 HP  
with reverse gear, with or  
without reduction gear



F-GÖTA 5-6 HP  
with reverse gear, with or  
without reduction gear

Motor	F-GÖTA											
Type*	5	5B	5V	6R	6BR	6VR	10	10B	10V	12R	12B	12V
HP	5	5	5	6	6	6	10	10	10	12	12	12
Number of cylinders	1	1	1	1	1	1	2	2	2	2	2	2
Cylinder bore mm	270	270	270	270	270	270	340	340	340	340	340	340
Cylinder stroke mm	70	70	70	70	70	70	70	70	70	70	70	70
Cylinder diameter mm	170	170	170	170	170	170	170	170	170	170	170	170
Propeller rpm	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Net weight, motor, kg	270	270	270	270	270	270	340	340	340	340	340	340
Gross weight, motor, kg	70	70	70	70	70	70	70	70	70	70	70	70
Net weight, equipment, kg	9	9	9	9	9	9	9	9	9	9	9	9
Gross weight, equipment, kg	2	2	2	2	2	2	2	2	2	2	2	2
Shipping box, motor, m <sup>3</sup>	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Shipping box, equipment, m <sup>3</sup>	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Fuel consumption, l/h	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1

\* Designation: B = Reverse gear, V = Reversible propeller, R = Reduction gear, E = Electric equipment.  
1 kg = 2.205 lbs, 1 m<sup>3</sup> = 35.3147 cubic feet, 1 l/h = 0.22 imp. gallon, 25.4 mm = 1"

**AB GÖTAMOTORER - OSBY**

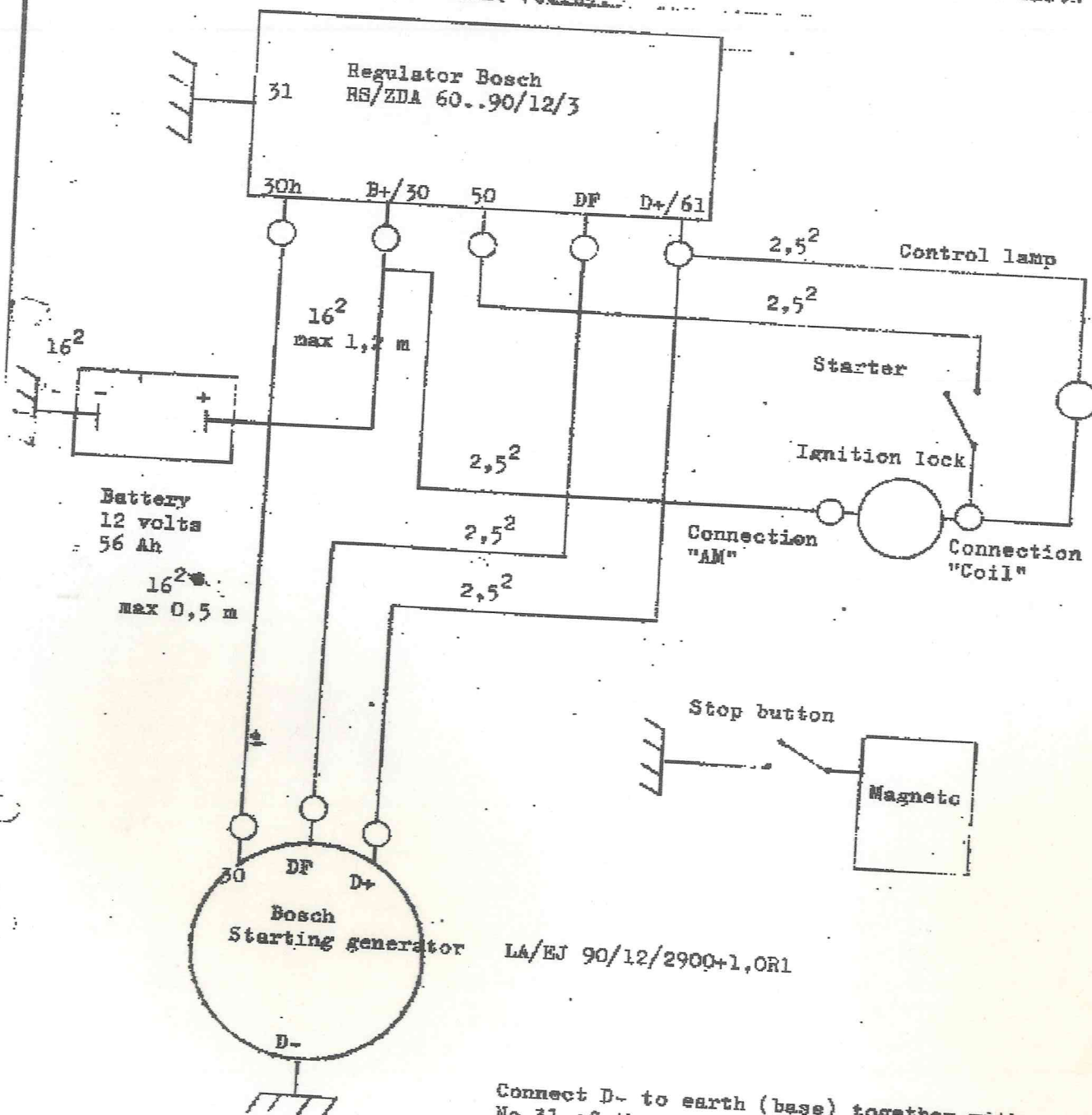
Tel. 100 25

SWEDEN

Tel. 112 05

# CONNECTION DIAGRAM FOR P-GÖTA 5 - 12 HP, BOSCH 12 VOLTS.

ATTENTION! Connect 31 together with D- of the starting generator to earth (base), 2,5<sup>2</sup> cable (wire).



Connect D- to earth (base) together with No 31 of the regulator. cable (wire) 2,5<sup>2</sup>.

ATTENTION! For DF use always forked cableclips, for other terminals closed clips.

AB GÖTAMOTOREN  
OSBY

A4 - 910



Connecting diagram for Bosche electric equipment  
on marinmotor F-G3ta.

The regulator should not be mounted too close to the motor, so that risk for its heating up appears. When too high a regulator temperature the tension of loading becomes altered with the result of unsatisfactory loading of the battery.

The regulator has to be mounted in such a manner, that it is well protected against splashing water. The mounting is to be made vertically with the terminals at the bottom end. Vibrations occurring in the support have to be repressed as far as possible.

Connection of the current has to take place by means of a separate cable (wire), 2,5 mm<sup>2</sup>, between the terminals 31 of the regulator and the D-terminal of the starting generator.

The connecting cables (wires) ought not to be shifted as heavy damage can occur in the regulator and starting generator. For DF use forked cable clips and for the other terminals closed clips. If the length of the starting cables (wires) exceeds mentioned max. length, choose a cable with the next bigger size of area.

The V-belts have to be controlled by even intervals concerning the tension of the belts. When pressing the thumb on the belts they have to slack within 10 mm (3/8"). Too high a stretching pressure on the belts might cause damage on the bearings of the starting generator, and the contrary might cause starting difficulties and unsatisfactory loading. The capacity of the battery might not exceed 90 watts. Loads lasting very short (i.e. alarm) exceeding this maximum of load may be granted.

# SEM

## MAGNETOS

Type E-2R

Type E-2L

Type E-2R35\*

for twin cyl. 2- and 4-stroke engines

\* For F5r-Göta engines model 10-12



### DESCRIPTION

**SEM** Magnetos type E-2R(L) and E-2R35 are of a design employing the rotating magnet principle. The permanent magnet of Alnico-steel is diecast in a single unit with the laminated pole pieces and the spindles to form the magneto rotor. The less robust parts, such as the coil and condenser, are stationary. The contact breaker, which does not rotate, is of the pivotal type and entirely enclosed in a metal casing. The magnetos are designed for service under the most arduous conditions. The entire units are enclosed within a dust- and moisture-proof metal frame. The coil is effectively insulated by a method which protects against deterioration and power leakage under adverse running conditions.

### INSPECTION AND MAINTENANCE

When faulty ignition occurs, the high tension cables and sparking plugs should first be examined. If the insulation shows signs of deterioration or cracking, the cables must be exchanged. For this purpose the main cover of the magneto housing need not be removed. Unscrew the nut on the cable outlet and remove the cable. The new cable should not be bared but must be cut off flush to the required length. The rubber bush is pulled onto the cable for a distance of at least 40 mm from its end and the cable is pushed well down into the bottom of the insulator. The nut on the cable outlet must then be screwed home.

The plug electrodes burn away slightly in service whereby the gap length gradually increases. Examine and clean them from time to time, adjusting them to the right setting if necessary. The distance should normally be 0.4 mm.

### ADJUSTMENT OF BREAKER POINTS

The contact breaker should be inspected from time to time. It is important that the contacts should be kept clean. If they are burned or blackened, they may be cleaned with a very fine car-

### DATA

Cylinders: two

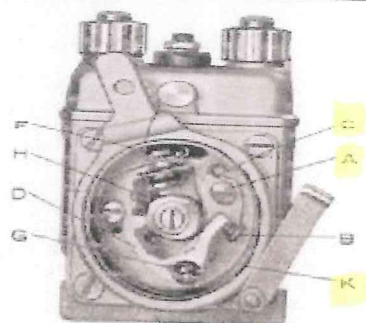
Timing range: 20°

Weight: 2.1 kgs

Drawing No. 17200 for E-2R(L)

No. 17218 for E-2R35

In the type designation «R» indicates right hand drive and «L» left hand drive.



borundum stone or emery cloth. Care must be taken that all particles of dirt or metal dust are wiped away. This can be done with a cloth moistened with petrol.

The gap between the contacts, when fully opened, should be 0.4 mm. The distance can be checked by means of the gauge on the adjusting spanner. If adjustment is necessary, proceed as follows. Slack off the screw A (See fig.) slightly. Insert the screw driver of the adjusting spanner in the slot C. Turning the spanner to the left decreases, and turning to the right increases, the distance between the contacts. When the gap is set to the thickness of the gauge tighten the screw A.

If the cam is removed from the shaft for any reason, make sure that it is replaced in its original position. The end surfaces of the cam are marked with an R and an L respectively. On magnetos for a right-hand drive the letter R must be turned towards the breaker cover. On magnetos for a left-hand drive the letter L should have the same position.

If the moving contact D is to be replaced, unscrew the nut F with the adjusting spanner and remove the split pin G. Fill the groove of the contact breaker pivot with ball bearing grease and install the new moving contact. If the felt lubricator H is dry, add a few drops of thin machine oil onto the felt. When replacing the contact breaker housing, fill its lubricating groove with ball bearing grease before assembly.

### REPLACEMENT OF CONDENSER

When replacing the condenser remove the two retaining screws. When reassembling ensure that the cable connections from the contact breaker and the wound core are replaced in their original positions. The eyelet from the winding and the nickel-plated cable terminal from the contact breaker are placed under one of the retaining screws. The brass cable terminal from the contact breaker and the eyelets from the ignition coil and condenser are placed under the retaining screw for the shorting spring clip.

### CLEANING OF HIGH TENSION MOULDING AND SLIP RING

The high tension moulding should be removed about once a year and cleaned. Wipe off any deposits and polish with a fine dry cloth. See that the pick up brushes move freely in their holders. Before replacing the high tension moulding, clean the slip ring by inserting a soft cloth and at the same time slowly turning the engine. When reassembling ensure that the cable connections from the wound core, the condenser and the contact breaker are made according to the instructions for replacement of the condenser.

**SEM**  
SERVICE-  
LIST  
ME — 201



**AKTIEBOLAGET SVENSKA ELEKTROMAGNETER · ÅMÅL · SWEDEN**

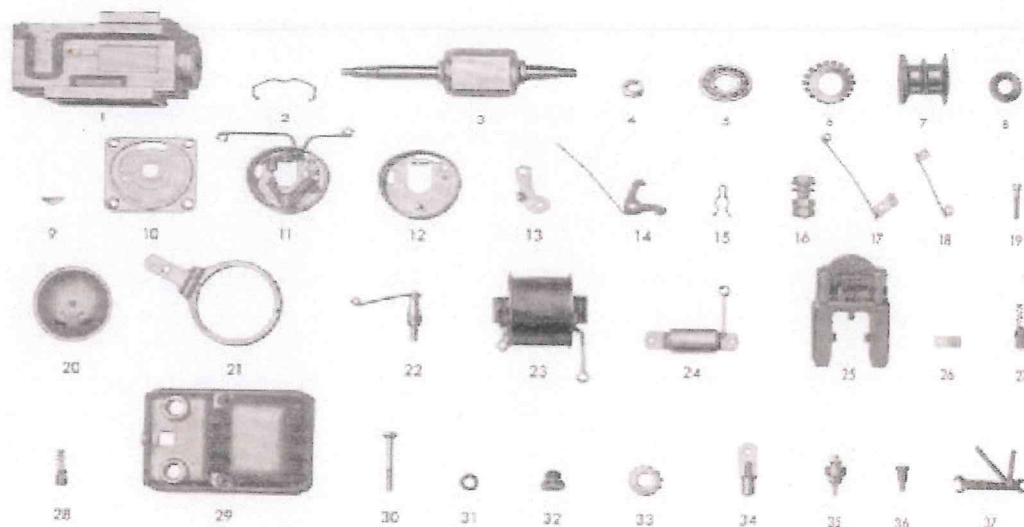
TELEPHONE: 12010

Telegraphic address: MAGNETER



# MAGNETOS type E-2R(L)

for twin cyl. 2- and 4-stroke engines  
and type E-2R35 for Färe-Göta engines model 10—12



## SPARE PARTS LIST

Fig. No.	Order No.	Fig. No.	Order No.
1 Main housing, standard .....	17221	17 Earthing cable with felt lubricator .....	17246
— Main housing for magnetos type E-2R35 .....	17224	18 Contact breaker cable connection .....	17080
2 Retaining spring .....	17030	19 Strap screw for contact breaker housing .....	17081
3 Rotor .....	17231	20 Contact breaker cover .....	17082
4 Contact breaker cam .....	17239	21 Timing lever .....	17088
— Retaining screw with washers for contact breaker cam .....	17059	— Retaining screw for bearing plate .....	17086
— Woodruff key for contact breaker cam .....	17051	22 Breaker cover spring and stud .....	17083
5 Ball bearing, breaker end .....	1761	23 Wound core .....	17250
6 Ball bearing packing, breaker end .....	17052	24 Condenser .....	17272
— Felt packing, breaker end (diam. 28 hole 11) .....	1704	25 High tension moulding .....	17256
— Adjustment washers (assortment of 4) diam. 17.5 hole 12 .....	1750	26 Short circuiting spring clip .....	17270
— Spring washer (diam 26 hole 12.1) .....	17240	— Screw for short circuiting spring clip (CS 4x8) .....	2438
7 Slip ring .....	17236	27 Collector carbon with spring .....	1954
— Ball bearing, drive shaft end .....	1760	28 Collector carbon (cylindrical) with spring .....	17268
— Ball bearing packing, drive shaft end .....	17039	— Retaining screw for high tension moulding (CS 4x18) .....	2720
8 Rubber packing, drive shaft end .....	17038	— Washer for screw 2720 (diam. 8 hole 4.1) .....	1746
9 Woodruff key, drive shaft end .....	1597	— Spring washer for screw 2720 (FB 4.3) .....	2463
— Washer for drive shaft (diam. 18 hole 10) .....	17053	29 Main housing cover, standard .....	17278
— Nut for drive shaft (LB6M-9) .....	10110	— Main housing cover with hole for push button .....	17279
10 Bearing plate .....	17061	30 Retaining screw for main housing cover .....	17148
11 Contact breaker housing complete .....	17245	31 Insulating bush for high tension cable outlet .....	17143
12 Contact breaker housing .....	17064	32 Rubber bush for cable outlet .....	14133
13 Contact plate with contact .....	17069	33 Nut for cable outlet .....	17146
— Retaining screw for contact plate (PKCS 3.5x4.5) .....	17093	34 Flat terminal .....	1819
— Washer for contact plate (diam. 7 hole 3.5) .....	10159	35 Contact screw for shorting cable .....	17147
14 Contact breaker lever .....	17071	— Metal washer for same .....	17152
— Washer for contact breaker pivot (diam. 8 hole 4.5) .....	17131	— Insulating washer for same (diam. 15 hole 7) .....	17151
15 Lock spring for contact breaker pivot .....	17063	— Nut for same .....	17157
16 Screw for cable connection with bush, insulating washers and nuts .....	17097	36 Short circuiting push button, complete .....	17156
— Nut only for cable connection .....	17094	37 Spanner .....	1849

When ordering spare parts please state, in addition to the order number of the part (not number of the Fig.), also the type and factory number of the magneto.

**AKTIEBOLAGET SVENSKA ELEKTROMAGNETER • ÅMAL • SWEDEN**

TELEPHONE: 120 10

Telegraphic address: MAGNETER

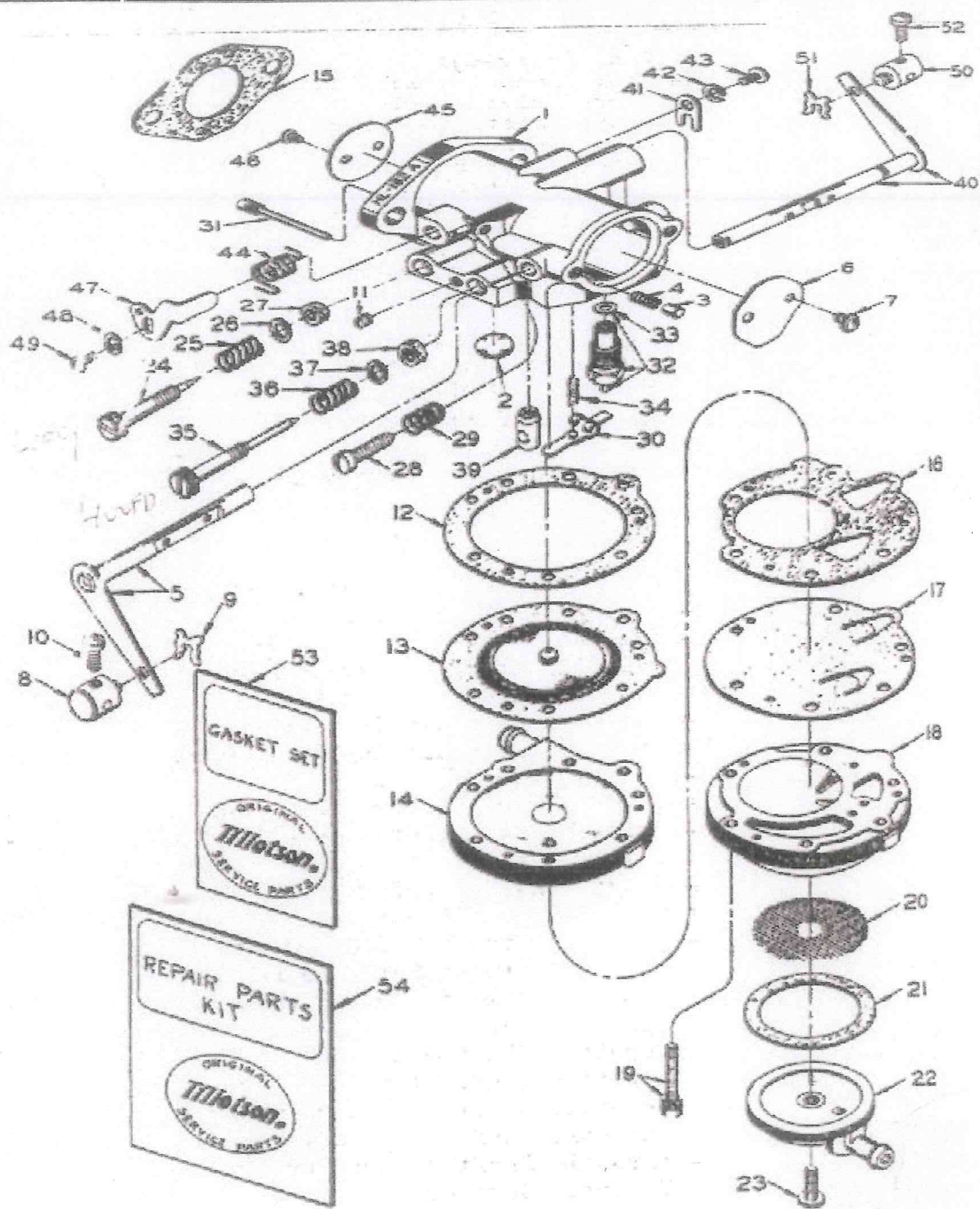


Ref.	H3-162A	
No.	Part No.	Part Name
1	013204	Body (service)
2	02531	* Body Channel Welch Plug
3	05454	Choke Friction Pin
4	08805	Choke Friction Spring
5	013199	Choke Shaft & Lever
6	09195	Choke Shutter
7	08942	Choke Shutter Screw (2)
8	012406	Choke Wire Connection
9	010392	Choke Wire conn. Ret. Clip
10	058	Choke Wire Ret. Screw
11	02232	Diaphragm Chamber Drain Screw
12	012473	Diaphragm Gasket
13	012475	* Diaphragm
14	010834	Diaphragm Cover
15	012354	Flange Gasket
16	012930	Fuel Pump Gasket
17	012708	* Fuel Pump Diaphragm
18	010525	Fuel Pump Body
19	010098	Fuel Pump Body Screw & Lockwasher (6)
20	010530	* Fuel Strainer Screen
21	010529	Fuel Strainer Cover Gasket
22	010527	Fuel Strainer Cover
23	010571	* Fuel Strainer Cover Ret. Screw
24	011498	* Idle Adjustment Screw
25	08793	* Idle Adjustment Screw Spring
26	011428	Idle Adjustment Screw Washer
27	011401	Idle Adjustment Screw Packing
28	05095	* Idle Speed Regulating Screw
29	0788	* Idle Speed Regulating Screw Spring
30	010513	* Inlet Control Lever
31	010581	* Inlet Control Lever Pinion Screw
32	012655	* Inlet Needle, Seat & Gasket
33	012656	Inlet Seat Gasket
34	011503	* Inlet Tension Spring
35	013195	* Main Adjustment Screw
36	08793	* Main Adjustment Screw Spring
37	011428	Main Adjustment Screw Washer
38	011401	Main Adjustment Screw Packing
39	012458	Nozzle Check Valve
40	013202	Throttle Shaft & Lever
41	09678	Throttle Shaft Clip
42	0992	Throttle Shaft Clip Lockwasher
43	01974	Throttle Shaft Clip Ret. Screw
44	010775	* Throttle Shaft Return Spring
45	012283	Throttle Shutter
46	08942	* Throttle Shutter Screw & Lockwasher (2)
47	010783	Throttle Stop Lever
48	06396	* Throttle Stop Lever Ret. Lockwasher
49	06393	* Throttle Stop Lever Ret. Screw
50	012406	Throttle Wire Connection
51	010392	Throttle Wire Conn. Ret. Clip
52	058	* Throttle Wire Ret. Screw
53	GS-170	* Gasket & Packing Set
54	RK-585	Repair Parts Kit

(\*) Indicates contents of Repair Parts Kit

June 25, 1963





NOTE: SEE DRAWING 100-102-100 FOR THE FOLLOWING PARTS:

THE TILLOTSON MFG. CO., LTD. CHICAGO, ILL.

A 8 G014407098

REVISION DATA

REV.	DATE	BY	CHKD.	APP'D.
1	11-15-57	W.E.		
2	11-15-57	W.E.		
3	11-15-57	W.E.		
4	11-15-57	W.E.		
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6	11-15-57	W.E.		
7	11-15-57	W.E.		
8	11-15-57	W.E.		
9	11-15-57	W.E.		
10	11-15-57	W.E.		
11	11-15-57	W.E.		
12	11-15-57	W.E.		
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53	11-15-57	W.E.		
54	11-15-57	W.E.		

1L-102A



# TILLOTSON DIAPHRAGM CARBURETOR FIELD HINTS

## For The Operator

Set idle speed slightly slower than the chain-creep speed or clutch engagement speed. This will reduce stalling to a minimum.

Adjust idle mixture for best running. The correct adjustment is usually about 1/2 to 3/4 turn open. Don't force the adjustment into its seat.

Adjust high speed reasonably rich, to prevent overheating of engine. Do not try to use an economy mixture. The best adjustment is usually 1 to 1-1/4 turns open. Don't force the adjustment into its seat.

If the carburetor mixture cannot be leaned sufficiently at high speed with the high-speed adjustment, something is causing the fuel inlet valve to leak. It may be dirt under the inlet valve, leaky rubber seat, wrinkled metering diaphragm, or rocker arm projecting out of the casting.

Speed the engine just before turning the saw to a new sawing position. This clears the crankcase of a possible fuel puddle, and stabilizes the engine to the new position.

Inspect the fuel tank filter and hose occasionally. The hose may have a split in it, or may have dropped off the mounting, or is too stiff to allow the filter head to drop into the tank corners. The filter also may be clogged or broken. Our Model QW-497 Fuel Tank Filter will perform a long time without servicing. If necessary, it can be cleaned by reverse blowing with an air hose.

Flush the gasoline tank thoroughly at least every 100 hours of service to keep the sawdust and water content from accumulating. Keep the oil-measuring cup clean.

Run the carburetor dry and drain the fuel tank before storing engine longer than two or three months. Gasoline gum may form in both, and render the unit inoperable if this is not done.

The Model HL Carburetor can be cleaned easily in the following way if air pressure is available:

- (1) If possible, flush the carburetor clean with gasoline before removing it from the saw so that the external dirt will not get into the carburetor or on the work area. After removing the carburetor, flush it with gasoline and blow with compressed air to further remove external dirt. Do not blow compressed air into the fuel inlet connection on the bottom, or into the small, square vent-hole on the left side of the carburetor. The high pressure may damage the diaphragms.
- (2) Select a clean area for disassembly and repair of the carburetor. Dirt is the most frequent cause of carburetor trouble; and a clean work area is necessary. Clean gasoline to wash the parts, and clean compressed air to blow dirt out of passages, is also required. Do not wipe the carburetor or parts with a cloth, or lint may cling to the parts.
- (3) Remove the filter cover, gasket, and filter, by removing one screw in the center of the cover on the bottom of the carburetor. Remove the six screws that hold the plates to the carburetor body. Notice that under the air intake there is a projection on each plate; and by inserting a screwdriver end between the projections, the plates can be pried apart without damaging the gaskets and diaphragms.

Note the locations of the gaskets and diaphragms so that they can be replaced in the correct order.

(4) Remove the high and low-speed adjustments, the rocker arm shaft, rocker arm, spring, and inlet needle. Do not remove the inlet seat unless you are certain that it is damaged and needs to be replaced. Handle the rocker arm spring very carefully.

(5) Blow clean, compressed air into all openings of the body casting to remove dirt from the channels and holes of this part. Do not use wires or drills to clean the carburetor body.

(6) Wash all parts with clean gasoline and blow with clean, compressed air before reassembling the parts to the carburetor body. Replace all worn or damaged parts with new parts. Do not use a brush on the final cleaning operation. A brush is always contaminated with dirt particles.

9B. The Model HL diaphragm carburetor can be cleaned in the field with a minimum number of tools. Usually, cleaning and correct adjustment of the carburetor is all that is necessary.

(1) After removing the carburetor, flush it with gasoline to remove all external dirt; also, wash the tools and hands so that they will be totally free from sawdust and dirt.

(2) Select a clean area for disassembly and repair of the carburetor - a rock or a stump that has been wiped clean, a lunch box, a board that is dust-free, or similar clean area. Lint, sawdust, sand, and dirt are the most frequent causes of carburetor trouble; and a clean repair area is necessary for a good carburetor cleaning job.

(3) Remove the filter cover, gasket, and filter by removing one screw in the center of the cover on the bottom of the carburetor. Remove the six screws that hold the plates to the carburetor body. Notice that under the air intake there is a projection on each plate; and by inserting a screwdriver end between the projections, the plates can be pried apart without damaging the gaskets and diaphragms. Note the locations of gaskets and diaphragms so that they can be replaced in the correct order.

(4) Remove the high and low-speed adjustments, the rocker arm shaft, rocker arm, spring, and inlet needle. Do not remove the inlet seat unless you are certain that it is damaged and needs to be replaced. Handle the rocker arm spring very carefully.

(5) Flush the body casting spotlessly clean with clean gasoline. Do not try to re-use gasoline because this would put dirt back into the carburetor. Flush each part with fresh gasoline just before assembling to the carburetor body. Keep hands and tools clean. Do not use a cloth on parts or tools because small pieces of cloth or lint may cling to the parts and spoil the cleaning job.

10. When installing a new inlet seat, tighten lightly so as to form a light ring on the copper seat; or, tighten to 30 inch-pounds torque, or 24 Kg-Cm.

11. Do not force the inlet needle valve into the rubber seat when setting the rocker arm. It may tear the seat if you do.

12. When cleaning the carburetor filter screen, CLEAN IT VERY THOROUGHLY. Never install a dirty or partly-clean screen reversed to its original position, or particles will be washed off the dirty side into the carburetor jets and valves.

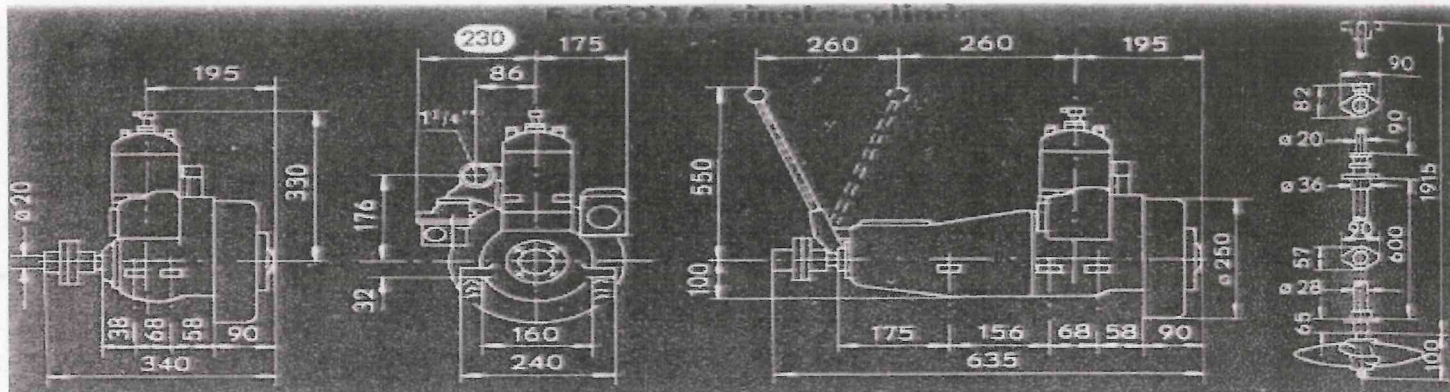
11-60

**TILLOTSON MANUFACTURING CO.**  
PARTS AND SERVICE DIVISION  
TOLEDO 12, OHIO USA

Printed in U.S.A.

Form S-560  
Reprinted 2-61





## SPECIFICATIONS

**Cylinder block** with detachable cylinder head is made of special finegrained, alloyed cast iron possessing high tensile strength and resistance to wear. The cylinder bore is accurately ground and water and gas jackets of ample size. Reverse lateral flow provides increased efficiency and reduced fuel consumption.

**Crankshaft** is forged of alloyed steel, with accurately ground journals, and is statically and dynamically balanced.

**Main bearings** consist of amply dimensioned SKF ball bearings.

**Piston** is of aluminium alloy with domed top and provided with three compression rings.

**Connecting rod** of drop forged H section steel has the big end provided with an accurately ground race for double SKF needle bearings. Piston pin bushing is of bronze.

**Piston pin** is of alloy steel hardened and ground and securely fitted to the piston.

**Exhaust and intake manifold** is cast in one piece. Pre-heating the fuel-air mixture provides complete combustion of the fuel, whether petrol or kerosene.

**Water pump** is of the plunger type and of an efficient and wear resistant design. It is cam-operated, runs in oil and requires no maintenance.

The carburettor of the brand Tillotson is a diaphragm type. **Not dropping that eliminates the danger of fire.**

**Ignition** is by magneto, gear operated from the crankshaft, with the middle gear wheel made of Ferobestos. The silent drive runs in oil, the level of which is measured by a stick. The spark plug is protected by a splash guard.

**Lubrication** of the motor is by oil mixed with the fuel.

**Sealing** of the main bearings and pump plunger is obtained by self-adjusting spring loaded rings. Flat surfaces are provided with high grade oil resistant gaskets. Cylinder top gasket of Klingerit.

**Reverse gear** is enclosed in a robust casing and provided with SKF ball bearings running in oil for silent operation and insignificant wear. The oil level is measured by a stick.

**Starting** is accomplished by cord, crank handle or by electric motor. The engine starts easily hot or cold.

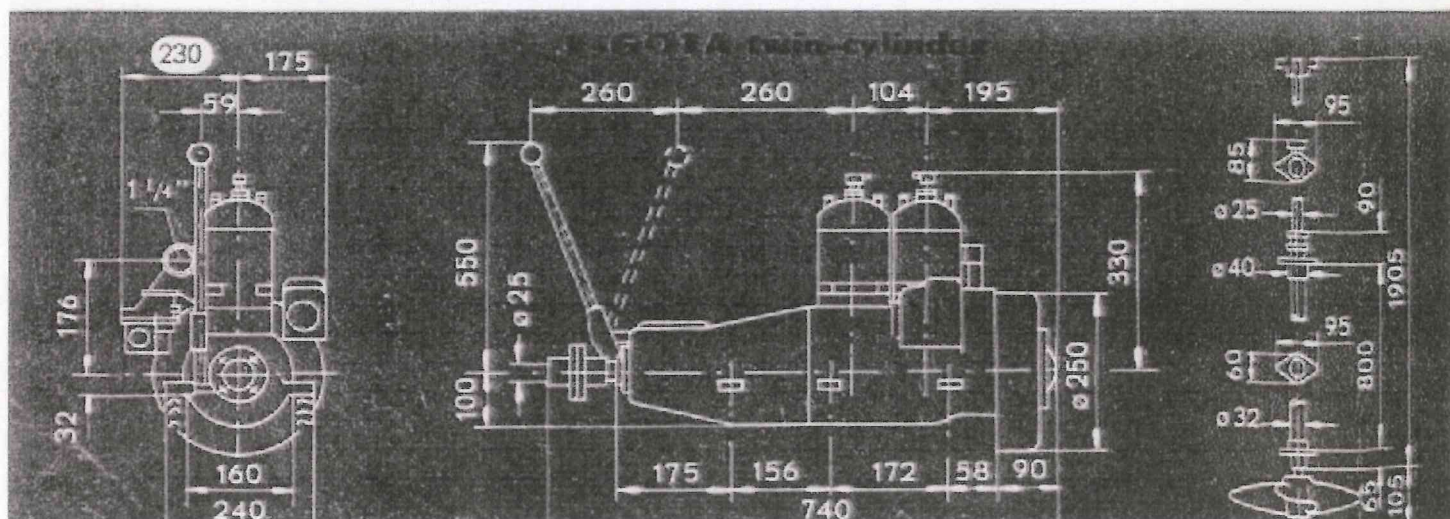
**Warranty.** Each engine is thoroughly tested prior to delivery. It is sold with a warranty against defective material and workmanship for a period of one year.

**Propeller equipment**, consisting of propeller shaft and stern bush of brass and of propeller and propeller bearing of bronze. Bearing lining made of Ferobestos. The equipment can also be supplied with reversible blades. Length of propeller shaft 2.0 Metres (6' 6.3/4"), Standard length of stern bush 0.8 M. (2' 7 1/2").

**Assembly fittings** consisting of oil fuel tank for petrol and paraffin, cock, cock mountings and fuel flexible tube. Cooling water equipment consisting of a filter, sea cock with mountings and hose for sea inlet and exhaust.

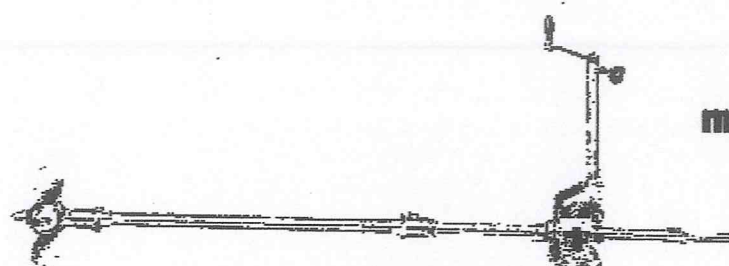
**Electrical equipment** supplied on special order includes motor-generator, instrument panel, wiring accessories but less battery and cables.

Data and illustrations are subject to modifications





# SCREW PROPELLER EQUIPMENT



with  
movable blades  
for

## F-GÖTA 5-18

### SPECIFICATIONS

Propellershaft, Shifting collar, Propeller shaft stem casing, Thrust bearing casing, Bearing flanges, Clamp collars and Stuffing box are made of first class brass.

Manouver-housing made of cast steel.

Manouvring nut made of brass.

Manouvring shaft made of stainless steel, Locking handwheel of Bakelite, Handle of Bakelite.

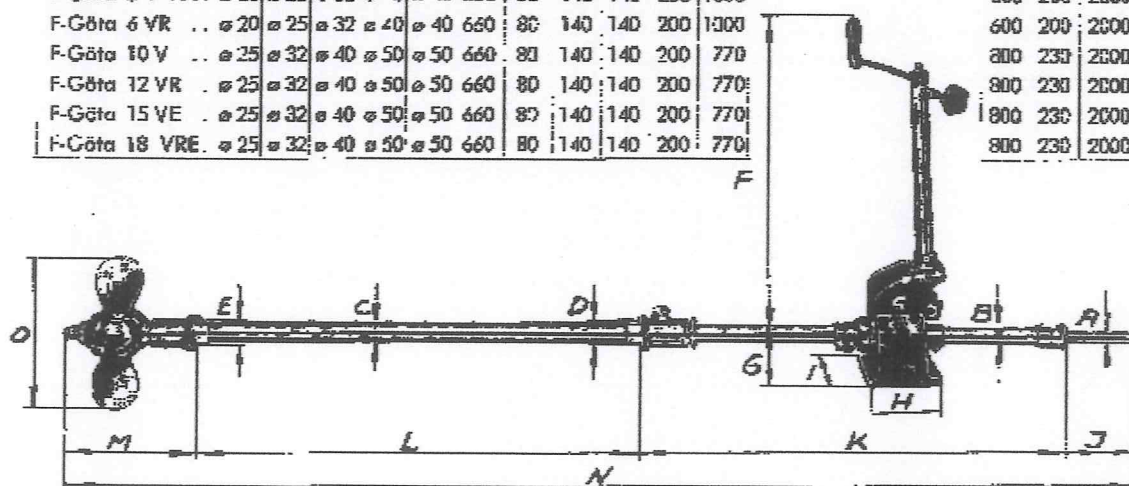
Propeller bearing casing, Propeller hub housing and propeller blades made of bronze.

The bearing cups are made of ferobestos.

The propellerthrust is caught by a SKF- thrust bearing housed in the manouvring screw.

The propellerblades can be placed into the position most suitable when sailing.

Type of motor	A	B	C	D	E	F	G	H	I	J	K	L	M	N	ø
F-Göta 5 V ....	ø 20	ø 25	ø 32	ø 40	ø 40	660	80	143	140	200	1300	600	200	2000	300
F-Göta 6 VR ..	ø 20	ø 25	ø 32	ø 40	ø 40	660	80	140	140	200	1300	600	200	2000	400
F-Göta 10 V ..	ø 25	ø 32	ø 40	ø 50	ø 50	660	80	140	140	200	770	800	230	2000	320
F-Göta 12 VR ..	ø 25	ø 32	ø 40	ø 50	ø 50	660	80	140	140	200	770	800	230	2000	450
F-Göta 15 VE ..	ø 25	ø 32	ø 40	ø 50	ø 50	660	80	140	140	200	770	800	230	2000	320
F-Göta 18 VRE ..	ø 25	ø 32	ø 40	ø 50	ø 50	660	80	140	140	200	770	800	230	2000	450



Notes and pictures are valid with the reservations for amendments of design.

**AB GÖTAMOTORER • OSBY**

TELEPHONE OSBY 100 25, 112 05 — WIREADDRESS: "GÖTAMOTORER SWEDEN"



## Description of reverse gear for F-Gota

(The figures in paranthesis refer to the illustrated numbers of the spare part list, picture 10 & 11)

The reverse gear mechanism consists of a housing (176) together with a conical coupling, which in turn consists of a cone (184) and a bowl (186) for propulsion ahead, and a reversing coupling (199-205) for driving astern. The reversing coupling is housed in the front half of the conical coupling.

In the aft part of the housing an axial thrust bearing is placed together with an oilseal.

Movement ahead is accomplished by pushing the gear lever forward when the conical coupling engages.

Movement astern is accomplished by pulling the gear lever aft as far as possible and is fully engaged after weak resistance is felt.

The idling or neutral position of the gear lever lies between ahead and astern. The bowl and the cone inside the conical coupling are disengaged when idling by means of a compression spring (185).

For movement ahead the coupling ball (191) connected to the gear lever will move ahead, the three claws in their support (192) will grip and, in turn, force the aft part of the conical coupling, (the bowl), against the front half, (the clutch). These will rotate together and establish direct drive to the shaft.

If this coupling slips after having been used for a while, the claw support (192), after first having been released by unscrewing the locking (Allen) screw, must be turned slightly to the right (clockwise) and the locking screw then re-tightened, thus allowing the claws to obtain a tighter grip and a firmer coupling.

Movement astern is accomplished when the brake-band (187) firmly engages the aft half of the conical coupling, (the bowl), preventing it from turning and thus actuating the reverse movement. The gear lever is connected to the operating shaft (188) which by means of an oblique angled surface constricts the brake-lining. An adjusting (Allen) screw (237) on the upper part of the housing is provided for adjustment to the brake-lining. The adjustment should be carried out when gear is engaged in astern. The screw visible on the side of the housing (232) is a lock screw for the brake-lining and must not be used for adjustment. The adjustment screw (234) on the lower part of the housing is for adjustment of the brake-lining. This must not be touched before the upper adjustment screw has been screwed in to its limit. All adjustments can be performed when the inspections cover (177) has been removed. In no case should the inclination of the motor exceed  $15^{\circ}$ , and within this limit the level of lubrication oil must be high enough to cover the cogwheels of the equalizing gear at the fore end of the mechanism. The graduation of the dip-stick is based on the motor being level.

Complete dismantling of the reverse gear is accomplished in the following manner:

The flange (5) is removed from the shaft.  
The end-cover (178) is removed by means of a special tool.  
Thereafter dismount the coupling link (189) entirely.  
After removing the six connecting bolts, the housing of the reverse gear can be taken off completely.

When dismantling and later reassembling the cog-wheels in the traversing gear, careful note should be made of the markings.

Unless one is competent, a "do it yourself" repair may turn out to be the most costly.

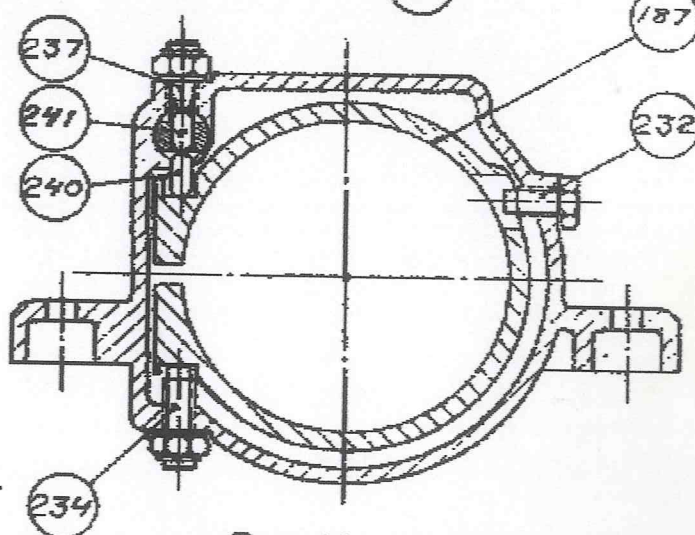
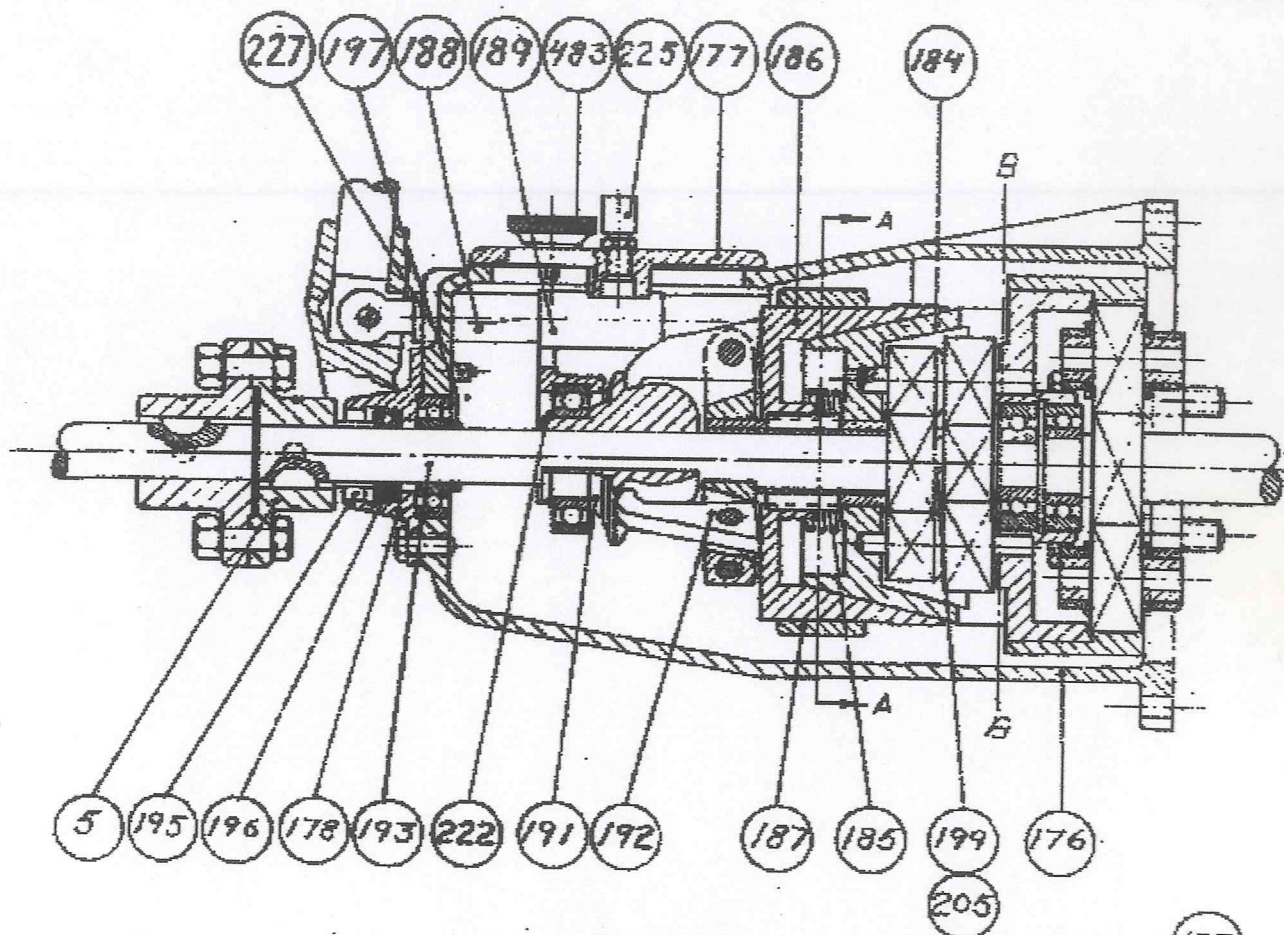
$$- \frac{1}{2} \frac{d^2}{dt^2} \ln \left( \frac{1}{\det g} \right) = \frac{1}{2} \frac{d^2}{dt^2} \ln \left( \frac{1}{\det g} \right)$$

**Movement Ahead:** Rotate the claw support (192) clockwise on the adjusting ring (222) until sufficient grip is obtained to avoid slip when the mechanism is put into forward gear. Tighten locking screw (220 with spring washer 221, not on drawing but located on claw support adjusting ring). Check and re-adjust if necessary. Replace inspection cover and check oil level.

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Sektion A-A

- |     |                            |
|-----|----------------------------|
| 483 | Dipstick                   |
| 241 | Set pin short              |
| 240 | Set pin long               |
| 237 | Adjustment screw           |
| 234 | Adjustment screw           |
| 232 | Locking screw              |
| 227 | Set screw                  |
| 225 | Air valve                  |
| 222 | Clamp ring                 |
| 205 | Details for reversing gear |
| 199 | Details for reversing gear |
| 197 | Clampring                  |
| 196 | Axial bearing (51104)      |
| 195 | Jointing ring              |
| 193 | Shaft for reversing gear   |
| 192 | Claw holder                |
| 191 | Clutch ball                |
| 189 | Cluth coupling             |
| 188 | Operating axle             |
| 187 | Brake linning              |
| 186 | Bowl                       |
| 185 | Spring                     |
| 184 | Cone                       |
| 178 | End cover                  |
| 177 | Top cover                  |
| 176 | Cap for reversing gear     |
| 5   | Coupling flange            |

Nr	Benämning	Ant.	Material	Modell nr
Skala		Datum	Namn	Kontr.
1:2,5	Ritad	18-6-63	L. W.	
A.B. GÖTAMOTORER - OSBY				
REVERSE GEAR WITH REDUCTIONS- GEAR FOR F-GÖTA			A4-9/E	