

HOLLAND BOLINDER
INDUSTRIAL B.V.
C.B. 12
ROTTERDAM

B. Berhelaar
Herengweg 11
Vinkbeem

4417

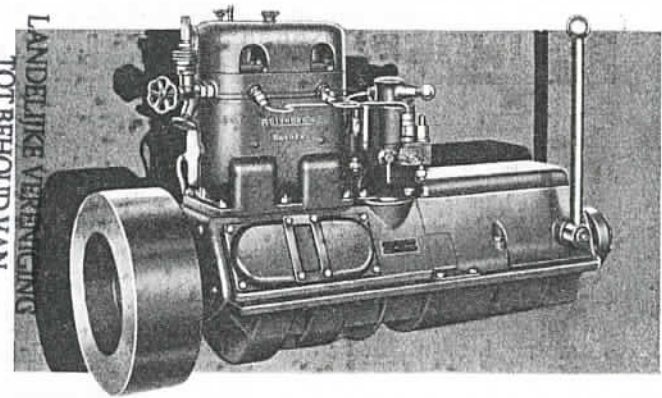
LIST OF SPARE PARTS FOR

BOLINDER'S

OIL ENGINES

TYPE W3

HET ZEILEND BEDRIJFSVAARTUIG
Werkgroep Oude Motoren en
Opduwers.



AKTIEBOLAGET

BOLINDER-MUNKTELL

ESKILSTUNA

SWEDEN

NOTICE.

When ordering spare parts the number of the engine must always be given. That number will be found on the name plate of the engine and stamped on each cylinder.

When telegraphing an order for spare parts the number of the engine should first be given, after which the number of parts required in letters and last of all the number corresponding with the part desired which will be found in this list.

When several different kinds of spare parts are ordered at the same time, the number of pieces of each kind of spare should be separately written.

For example: Munktells, Eskilstuna.
Mail 17892 two 41 one 36 D.

This telegram would mean that 2 piston rings and 1 gudgeon pin bearing are desired for engine No. 17892.

AKTIEBOLAGET

BOLINDER-MUNKTELL

ESKILSTUNA SWEDEN

Telegraphic address: Munktells

Branch offices and spare parts depots.

Bolinders Company Ltd., Coronation House, 4, Lloyds Avenue,
London E. C. 3. Telegraphic address: »Bolinders».

Bolinders Company Inc., 33 Rector Street, New York.
Telegraphic address: »Bolinders».

Bolinders Finska A.-B., Södra Esplanadgatan 24, Helsingfors.
Telegraphic address: »Bolinders».

Società Anonima Motori per la Pesca, Corso Vittorio Emanuele,
323, Rome. Telegraphic address: »Motopesca».

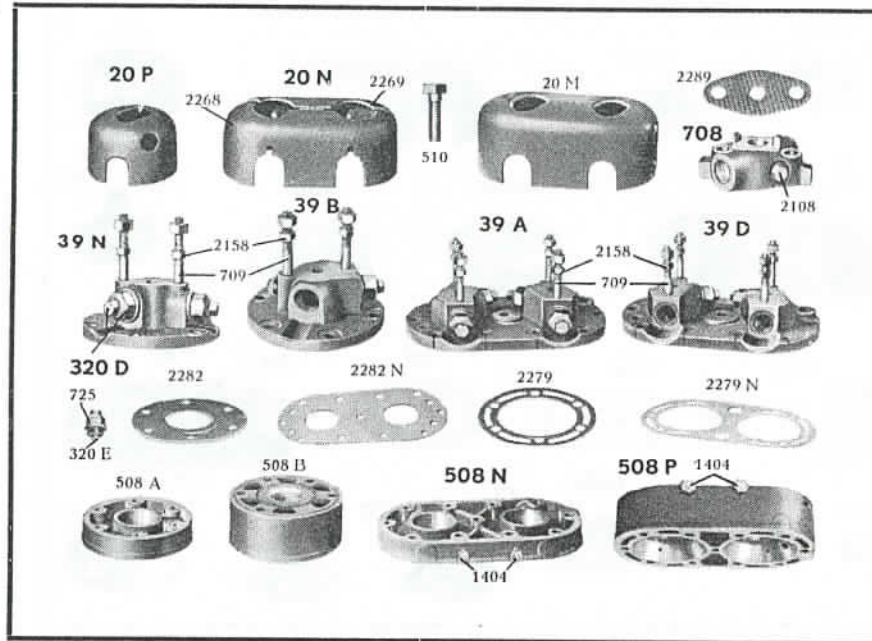
J. & C. G. Bolinders mek. Verkstedes norske A/S., Huitfeldts gate 14,
Oslo. Telegraphic address: »Bolinders».

Compagnie Bolinders, 3, Avenue Friedland, Paris 8.
Telegraphic address: »Bolinders».

N. V. Technisch Bureau Holland-Bolinder, ~~Mathenesserlaan 335,~~
Rotterdam. Telegraphic address: »Bolinders».

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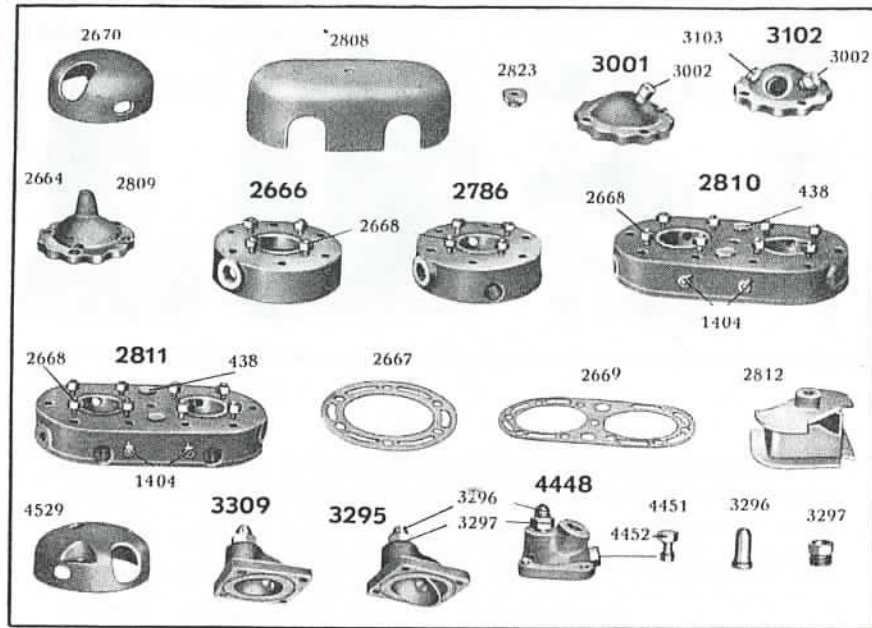
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Cylinder head and ignition chamber for engine with top injection.

- 20P Hood with set screw for ignition chamber (1-cyl. engine)
- 2283 Set screw for ditto (not illust.)
- 20N Hood, divided, for ignition chamber (2- and 4-cyl. engine)
- 2268 Hood, large part, only
- 2269 ,, , small part, only
- 510 Stud for divided hood (2- and 4-cyl. engine)
- 20M Hood for ignition chamber (2- and 4-cyl. engine, old design)
- 2823 Lock nut for ditto (illust. on page 6)
- 708 Cooling house with plug for fuel injection device
- 2108 Plug for cooling house
- 2289 Packing between cooling house and ignition chamber
- 39N Ignition chamber, complete with two idling plugs and studs with nuts (1-cyl. engine with heating lamp or quick starting lamp)
- 39B Ignition chamber, complete with one idling plug and studs with nuts (1-cyl. engine with electric start)
- 39A Ignition chamber, complete with four idling plugs and studs with nuts (2- and 4-cyl. engine with quick starting lamp)
- 39D Ignition chamber, complete with two idling plugs and studs with nuts (2- and 4-cyl. engine with electric start)

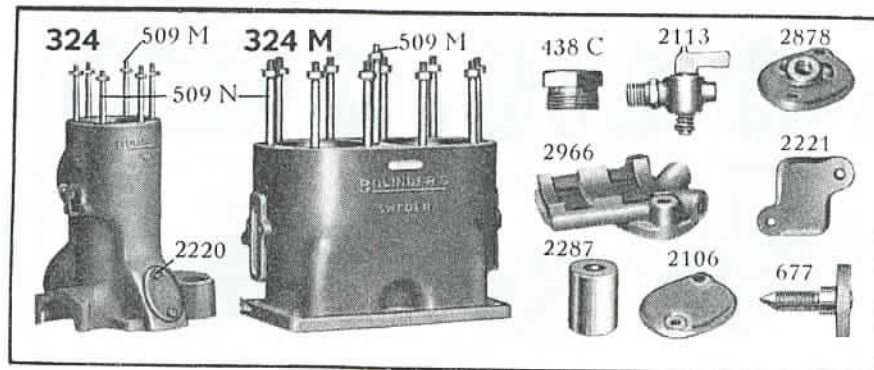
- 709 Stud with nuts for fixing cooling house and fuel injection device
- 2158 Nut for cooling house
- 320D Idling plug, compl. with inner part
- 320E Inner part of idling plug
- 725 Outer part of idling plug
- 2282 Gasket between ignition chamber and cylinder head (1-cyl. engine)
- 2282N Gasket between ignition chamber and cylinder head (2- and 4-cyl. engine)
- 508A Cylinder head, low (1-cyl. engine)
- 508B Cylinder head, high (1-cyl. engine, old design)
- 508N Cylinder head, low, with studs and nuts (2- and 4-cyl. engine)
- 508P Cylinder head, high, with studs and nuts (2- and 4-cyl. engine, old design)
- 1404 Stud with nut for quick starting lamp (2- and 4-cyl. engine)
- 2279 Gasket between cylinder and cylinder head (1-cyl. engine)
- 2279N Gasket between cylinder and cylinder head (2- and 4-cyl. engine)



Cylinder head and ignition chamber for engine with side injection.

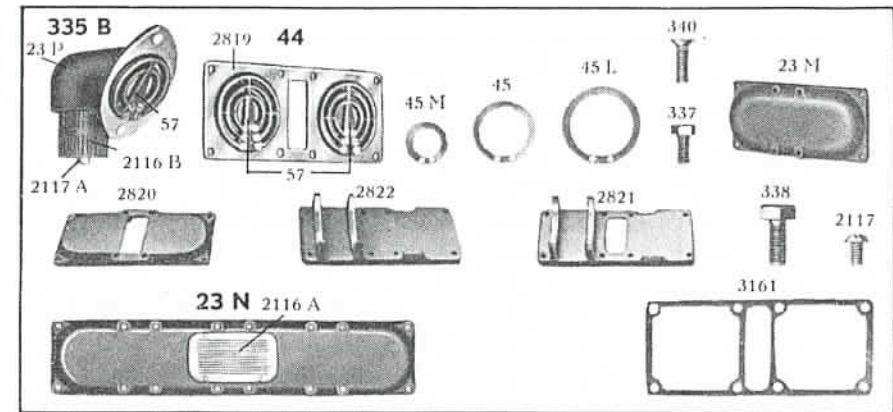
- 2670 Hood with screws and nuts for ignition chamber (1-cyl. engine)
- 2671 Screw with nut for ditto (not illust.)
- 4529 Hood for ignition chamber (1-cyl. engine)
- 2808 Hood for ignition chamber (2-cyl. engine)
- 2806 Stud for fixing hood 2808 (2-cyl. engine) (not illust.)
- 3309** Ignition chamber with plugs (1-cyl. engine)
- 3295** Ignition chamber with lip and plugs (2-cyl. engine)
- 3296 Starting plug for 3309 and 3295
- 3297 Nut for starting plug
- 4448** Ignition chamber with ignition plugs but without electr. igniter (by el. start)
- 4451 Ignition cup with nut
- 4452 Nut, only, for ditto
- 3296 Starting plug
- 3297 Nut for starting plug
- 3001** Ignition chamber with ignition plug and starting plug, for engine with heating lamp or quick starting lamp
- 3102** Ignition chamber with ignition plug and starting plug with threads for electric igniter
- 3002 Starting plug for ignition chamber
- 3103 Replacement plug in ignition chamber

- 2664 Ignition chamber for engine with heating lamp or quick starting lamp (old design)
- 2809 Ignition chamber for engine with electric start (old design)
- 2665 Gasket between ignition chamber and cylinder head (not illust.)
- 2666** Cylinder head with plugs and studs with nuts (1-cyl. engine)
- 2786** Cylinder head with plugs, studs with nuts, and threads for electr. igniter (1-cyl. engine)
- 2810** Cylinder head with plugs and studs with nuts (2-cyl. engine)
- 2811** Cylinder head with plugs, studs with nuts, and threads for electric igniter (2-cyl. engine)
- 2668 Stud with nut for ignition chamber
- 1404 Stud with nut for quick starting lamp (2-cyl. engine) ..
- 438 Plug in cylinder head
- 2667 Gasket between cylinder and cylinder head (1-cyl. engine)
- 2669 Gasket between cylinder and cylinder head (2-cyl. engine)
- 2812 Flame spreader (with flanges) for quick starting lamp (2-cyl. engine)
- 2823 Lock nut for hood and flame spreader



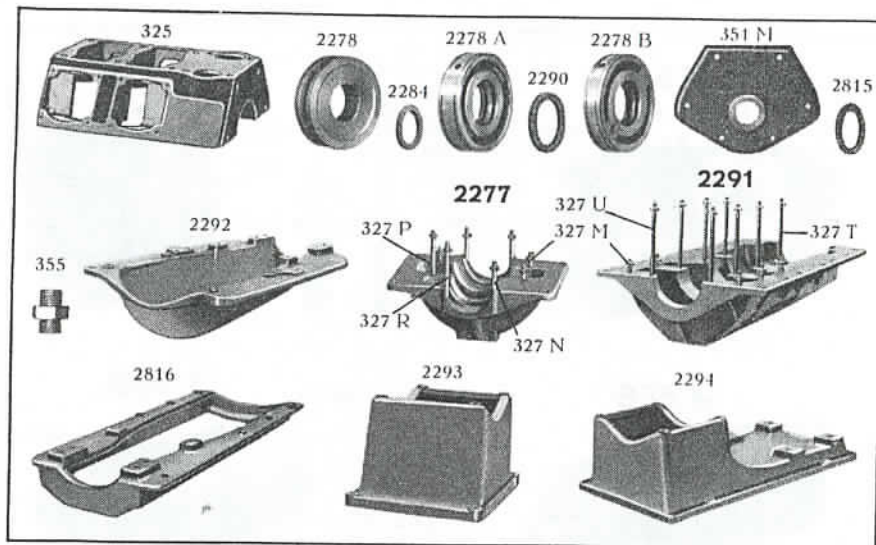
Cylinder.

- 324 Cylinder in one piece with crank case with studs and nuts, plug with drain cock or union for circulating water inlet (1-cyl. engine)
- 324M Cylinder block with studs and nuts, plug with drain cock and plug or union for circulating water inlet (2- and 4-cyl. engine)
- 438C Threaded plug for drain cock in cylinder
- 2113 Drain cock for cylinder
- 438M Plug in cylinder block (2- and 4-cyl. engine) (not illust.)
- 2807 Union for circulating water inlet in cylinder (" ")
- 2106 Cover for crank case (1-cyl. engine)
- 2220 Screw for ditto
- 2878 Cover for crank case with recess for drain oil pipe (1-cyl. engine)
- 2879 Screw for ditto (not illust.)
- 2966 Cover for crank case with recess for drain oil pipe and bracket for starting motor (1-cyl. engine)
- 2967 Screw for ditto (not illust.)
- 2221 Cover for circulating water inlet
- 2126 Packing for ditto (not illust.)
- 2222 Screw for cover 2221 (not illust.)
- 677 Blowing-off valve for cylinder
- 2287 Flame spreader, cylindrical, for quick starting lamp (2- and 4-cyl. engine)
- 509M Stud with nut, long, for cylinder head (top injection) ..
- 509N Stud with nut, short, for cylinder head (top injection) ..
- 2805 Stud with nut for cylinder head (side injection) (not illust.)



Air valve.

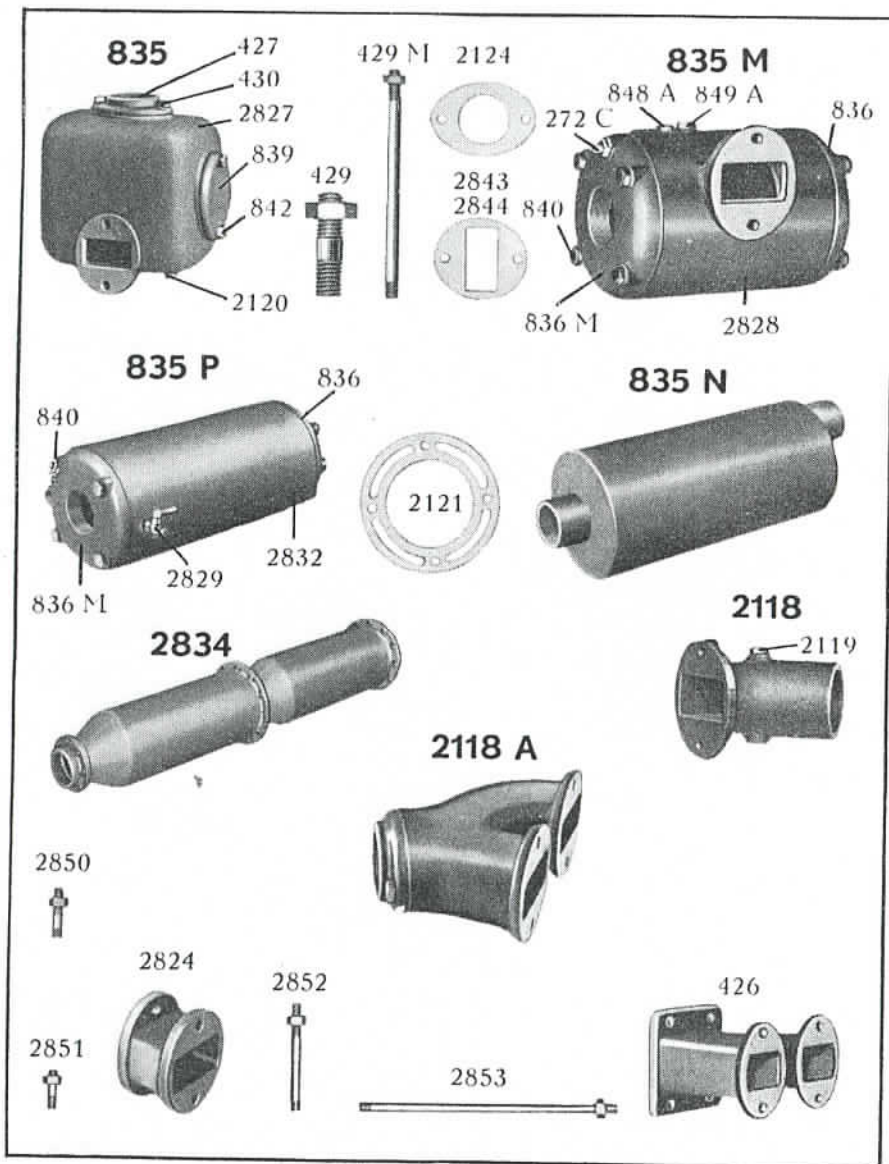
- 335B Air valve in one piece with hood, compl. with valve springs, valve stop and cylindrical air filter (1-cyl. engine) ..
- 44 Air valve seat, compl. with valve springs and valve stop (2- and 4-cyl. engine)
- 23P Air valve seat in one piece with hood, only, for cylindrical air filter (1-cyl. engine)
- 2819 Air valve seat, only (2- and 4-cyl. engine)
- 45M Air valve spring, 59×39 mm.
- 45 Air valve spring, 86×65 mm.
- 45L Air valve spring, 114×90 mm (2- and 4-cyl. engine) ...
- 57 Air valve stop
- 340 Screw for air valve stop
- 2116B Air filter, cylindrical (1-cyl. engine)
- 2117A Stud with castellated nut and split pin for cylindrical air filter 2116B (1-cyl. engine)
- 2817 Castellated nut for stud 2117A (1-cyl. engine) (not illust.) ..
- 2818 Split pin for castellated nut 2817 (1-cyl. engine) (not illust.)
- 337 Screw for air valve (1-cyl. engine)
- 23M Air valve hood without air inlet (2- and 4-cyl. engine) ..
- 2820 Air valve hood with air inlet (2- and 4-cyl. engine)
- 2822 Air valve hood without air inlet but with bracket for starting motor (2-cyl. engine)
- 2821 Air valve hood with air inlet and bracket for generator (2-cyl. engine)
- 2116 Air filter with gauze (not illust.)
- 338 Screw, short, for air valve hood and air valve seat (2- and 4-cyl. engine)
- 338M Screw, long, for air valve hood and air filter (2- and 4-cyl. engine) (not illust.)
- 23N Air valve hood, compl., with air filter (old design, 2- and 4-cyl. engine)
- 2116A Air filter with slits (old design)
- 2117 Screw for air filter (old design)
- 3161 Gasket between air valve seat and crank case (2-cyl. engine)
- 3162 Gasket between air valve seat and crank case (4-cyl. engine) (not illust.)



Crank case, frame, bed plate, base etc.

- 325 Crank case (2- and 4-cyl. engine)
- 2278 Packing cover for crank shaft (= side cover for 1-cyl. engine)
- 2284 Felt ring for packing cover 2278
- 2278A Packing cover, in halves, wide, for crank shaft (2- and 4-cyl. engine)
- 2278B Packing cover, in halves, narrow, with lubricating oil intake for crank shaft (2- and 4-cyl. engine)
- 2286 Guide pin for packing cover 2278A and 2278B (not illust.)
- 2290 Felt ring for packing cover 2278A and 2278B
- 351M Side cover at fly-wheel end (2- and 4-cyl. engine)
- 351N Side cover at governor end (2- and 4-cyl. stationary engine) (not illust.)
- 2815 Felt ring for side cover 351M and 351N
- 352 Screw for side cover 351M and 351N (not illust.)
- 2277** Bed plate with studs and nuts for engine only
- 2291** Bed plate with studs and nuts for engine and reversing gear or friction clutch
- 327M Stud with nut for cylinder or crank case, 1/2" x 52 mm.
- 327N Stud with nut for cylinder, 1/2" x 120 mm. (1-cyl. engine)
- 327P Stud with nut for cylinder and governor housing, 1/2" x 135 mm. (1-cyl. engine)
- 327R Stud with nut for cylinder and governor housing 1/2" x 165 mm. (1-cyl. engine)

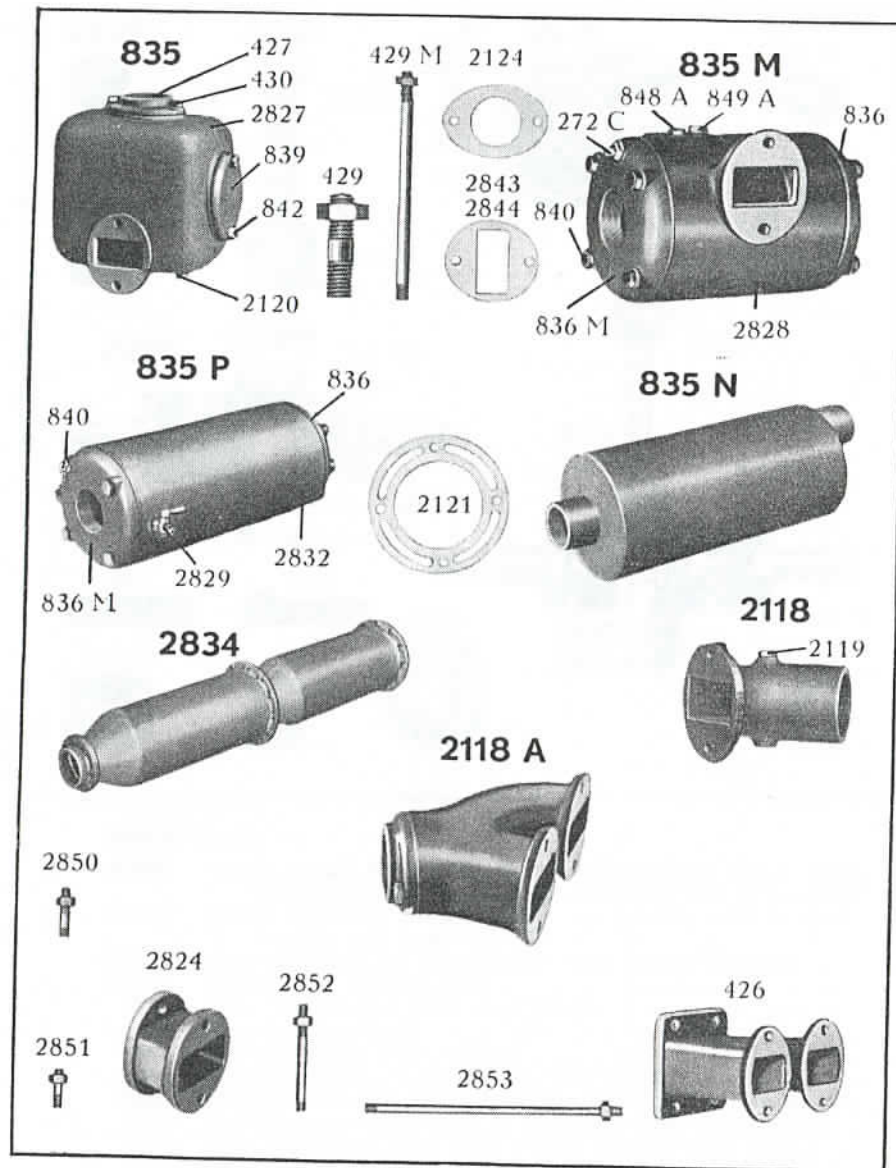
- 327S Stud with nut for crank case, 1/2" x 85 mm. (2- and 4-cyl. engine) (not illust.)
- 327T Stud with nut for crank case and branch piece 1/2" x 195 mm. (2- and 4-cyl. engine)
- 327U Stud with nut for crank case and governor housing or cylinder block, 1/2" x 200 mm. (2- and 4-cyl. engine)
- 355 Union in bed plate for drain oil outlet
- 2888 Plug in bed plate for drain oil outlet (not illust.)
- 2292 Frame (1-cyl. marine engine)
- 2816 Frame (2- and 4-cyl. marine engines with bed plate 2277)
- 2293 Base for stationary engine
- 2294 Base, common for engine and D. C. generator
- 2813 Base, common for engine and A. C. generator (not illust.)
- 2295 Base, common for engine and centrifugal pump (not illust.)
- 2814 Base, common for engine and winch (see page 68)
- 2157 Screw for engine on base or bed plate (not illust.)



Silencer.

- 835** Silencer, non-cooled, compl., fitted direct on engine (1-cyl. engine)
- 2827 Jacket, only
- 427 Pipe flange for 2½" exhaust pipe
- 430 Screw for pipe flange 427

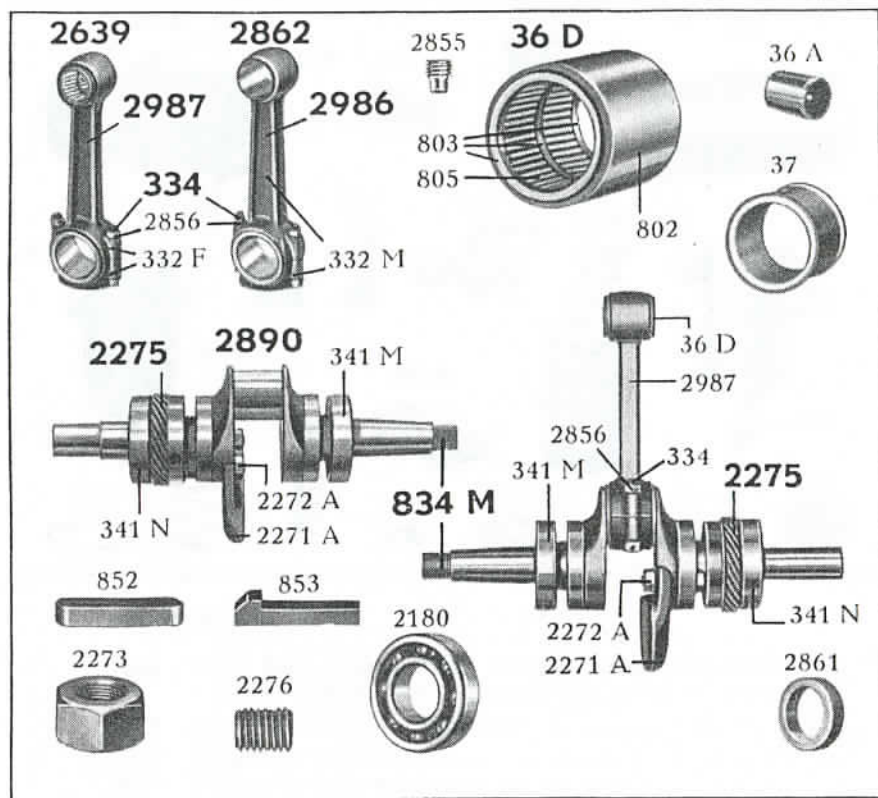
- 839 Blind flange for silencer 835
- 842 Screw for blind flange 839
- 2124 Packing for pipe flange 427 or blind flange 839
- 2120 Plug for exhaust chamber for silencer 835
- 429 Stud with nut, ½" × 55 mm., for fixing silencer to cylinder
- 429M Stud with nut, ½" × 215 mm., for fixing silencer to cylinder
- 2843 Gasket between silencer 835 and cylinder
- 835M** Silencer, water-cooled, compl., fitted direct on engine (1-, 2- and 4-cyl. engine)
- 835P** Silencer, water-cooled, compl., on the exhaust piping (1- and 2-cyl. engine)
- 2828 Jacket, only, for silencer 835M
- 2832 Jacket, only, for silencer 835P
- 836 Cover for silencer
- 836M Cover " " with outlet in the centre
- 836N " " " " " at an angle (not illust.) ..
- 836P " " " " " in the upper edge (not illust.)
- 2121 Packing for cover for silencer
- 840 Screw for cover for silencer
- 2829 Drain cock for silencer
- 848A Plug for circulating water chamber for silencer 835M (4-cyl. engine)
- 849A Plug for exhaust chamber of silencer 835M and 835P
- 272C Union on silencer for circulating water inlet
- 272D Union on silencer for circulating water outlet (not illust.)
- 839M Blind flange for silencer 835M (4-cyl. engine)
- 2125 Packing for blind flange 839M (not illust.)
- 841B Screw for blind flange 839M (not illust.)
- 2191 Pipe flange for 3" exhaust pipe on silencer 835M (4-cyl. engine) (not illust.)
- 2837 Packing for pipe flange 2191 (not illust.)
- 2838 Screw for pipe flange 2191 (not illust.)
- 429 Stud with nut, ½" × 55 mm., for silencer
- 2849 Stud with nut, ½" × 75 mm., for silencer (not illust.)
- 2843 Packing between silencer 835M and cylinder (1-cyl. engine)
- 835N** Silencer, non-cooled, compl. on exhaust piping (without perforated pipe(s) (1- and 2-cyl. engine)
- 2833** Silencer, non-cooled, compl. with perforated pipe(s) on exhaust piping (1- and 2-cyl. engine) (not illust.)
- 2834** Silencer type 35, non-cooled, compl. on exhaust piping (1- and 2-cyl. engine)
- 2835 Lining for silencer type 35 (not illust.)
- 2836 Deflector for silencer type 35 (not illust.)



Silencer, see pages 12-13.

Exhaust piping.

- 2118 Exhaust flange with plug (1-cyl. engine)
- 2119 Plug for ditto
- 2850 Stud with nut for exhaust flange 2118
- 2844 Gasket between exhaust flange 2118 and cylinder
- 2118A Exhaust flange with two inlets and outlets to the side, compl. with pipe flange (2- and 4-cyl. engine)
- 2118D Exhaust flange with two inlets and outlets upwards compl. with pipe flange (2- and 4-cyl. engine) (not illust.)
- 427 Pipe flange for 2½" exhaust pipe
- 2124 Packing for ditto
- 430 Screw for pipe flange 427
- 2851 Stud with nut for exhaust flange 2118A or 2118D
- 2845 Gasket between exhaust flange 2118A or 2118D and cylinder (not illust.)
- 2118B Exhaust flange with four inlets and outlets to the side, compl. with pipe flange (4-cyl. engine) (not illust.)
- 2118C Exhaust flange with four inlets and outlets in the middle, compl. with pipe flange (4-cyl. engine) (not illust.)
- 2825 Pipe flange for 3" exhaust pipe (not illust.)
- 2839 Packing for ditto (not illust.)
- 2826 Screw for pipe flange 2825 (not illust.)
- 2851 Stud with nut for exhaust flange 2118B or 2118C
- 2846 Gasket between exhaust flange 2118B or 2118C and cylinder (not illust.)
- 2824 Exhaust pipe between silencer and cylinder (1-cyl. engine with side injection and electr. start)
- 2852 Stud with nut, ½" × 135 mm., for exhaust pipe 2824 and silencer
- 2853 Stud with nut, ½" × 310 mm., for exhaust pipe 2824 and silencer
- 2847 Packing for exhaust pipe 2824 against cylinder (not illust.)
- 2848 Packing for exhaust pipe 2824 against silencer (not illust.)
- 426 Exhaust pipe between silencer and cylinder (4-cyl. engine)
- 2854 Stud with nut for fixing exhaust pipe 426 to cylinder (not illust.)
- 2122 Packing for exhaust pipe 426 against cylinder (not illust.)
- 2123 Packing for exhaust pipe 426 against silencer (not illust.)

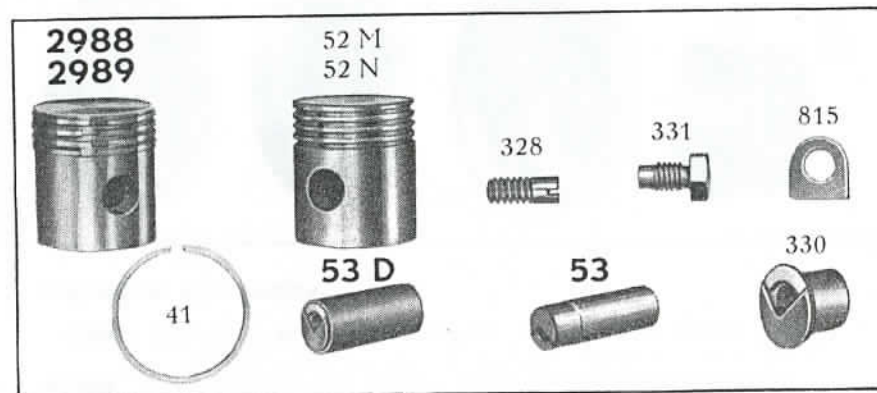


Crank shaft.

- 2890** Crank shaft for bronze crank pin bearing, compl. with counterweights, keys, main bearings and worm-gear
- 834M** Crank shaft for bronze crank pin bearing with counterweights and keys
- 2271A** Counterweight for crank shaft with bronze bearings
- 2272A** Screw with nut for ditto
- 2858** Lock washer for ditto (not illust.)
- 852** Key for fly-wheel
- 853** Key for pulley ($\frac{3}{8} \times 8 \times 70$)
- 2859** Key for pulley ($\frac{1}{2} \times 10 \times 70$) (not illust.)
- 2860** Key for eccentric for circulating water pump (not illust.)
- 1871** Key for gear wheel 1920 in reversing gear (not illust.)
- 2650** Stud for crank shaft ends (4-cyl. engine) (not illust.)
- 2651** Lock washer for ditto (4-cyl. engine) (not illust.)
- 2652** Key for crank shaft ends (4-cyl. engine) (not illust.)
- 2273** Nut for fly-wheel
- 2275** Worm-gear with set screw on crank shaft for driving governor
- 2276** Set screw for worm-gear
- 341M** Main bearing at fly-wheel
- 341N** Main bearing at governor
- 341P** Centre main bearing (4-cyl. engine) (not illust.)
- 2180** Support bearing aft of governor
- 2861** Distance ring for ditto

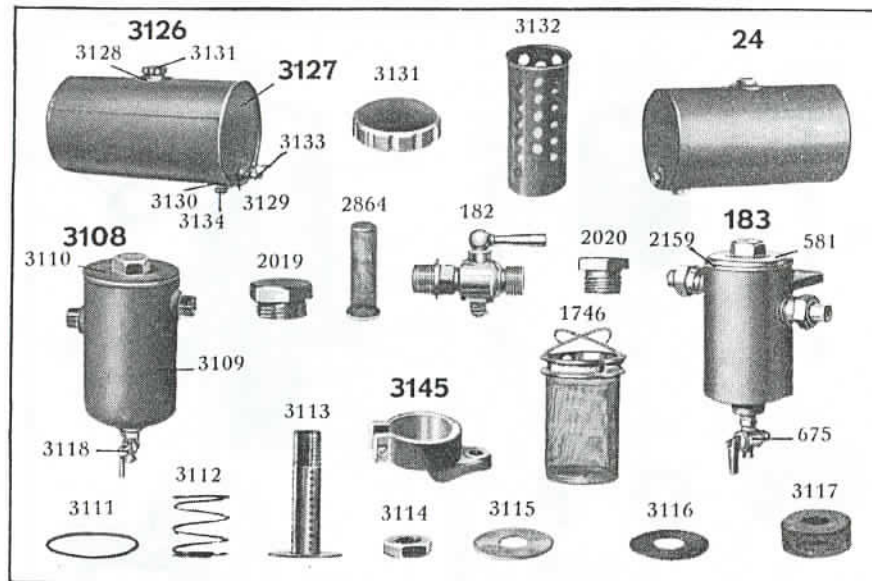
Connecting rod.

- 2639** Connecting rod compl. with bronze crank pin bearing, gudgeon-pin bearing with needles, and bolts
- 2862** Connecting rod compl. with crank and gudgeon-pin bearings of bronze, and bolts
- 2987** Connecting rod with outer sleeve and bolts, for needle bearing
- 2986** Connecting rod with bolts, for bronze bearing
- 332F** Connecting rod with outer sleeve, only, for needle bearing
- 332M** Connecting rod, only, without bolts, for bronze bearing
- 2296** Stop for crank pin bearing (not illust.)
- 2855** Set screw for gudgeon-pin bearing of bronze
- 334** Crank pin bearing bolt with castellated nut and split pin
- 2856** Castellated nut for crank pin bearing bolt
- 2857** Split pin for ditto (not illust.)
- 36D** Gudgeon-pin bearing (needle bearing), compl.
- 802** Outer sleeve for needle bearing
- 803** Distance ring for needle bearing
- 805** Needles for needle bearing (1 set = 90 pieces)
- 36A** Gudgeon-pin bearing of bronze
- 37** Crank pin bearing of bronze



Piston.

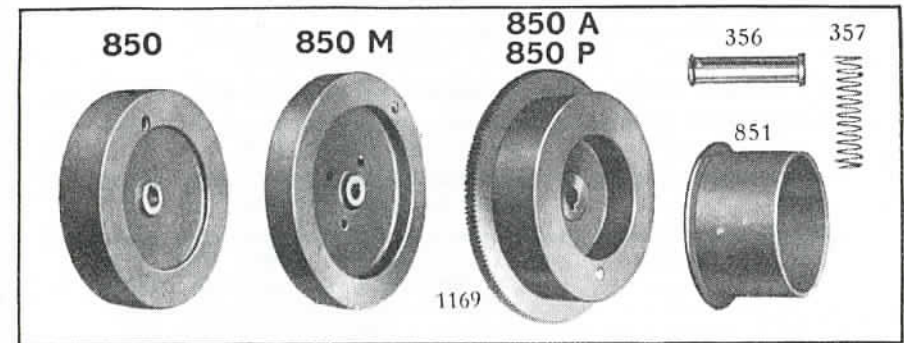
- 2989** Piston compl. with piston rings, for needle bearing
- 2988** Piston compl. with piston rings, for bronze bearing (flat top)
- 52N** Piston without piston rings, for needle bearing
- 52M** Piston without piston rings, for bronze bearing
- 328** Set screw for piston ring
- 331** Set screw for gudgeon-pin
- 815** Lock washer for set screw for gudgeon pin
- 41** Piston ring
- 53D** Gudgeon-pin, compl. with oil catcher for needle bearing
- 53** Gudgeon-pin, compl. with oil catcher for bronze bearing
- 330** Oil catcher for gudgeon-pin



Fuel tank and filter.

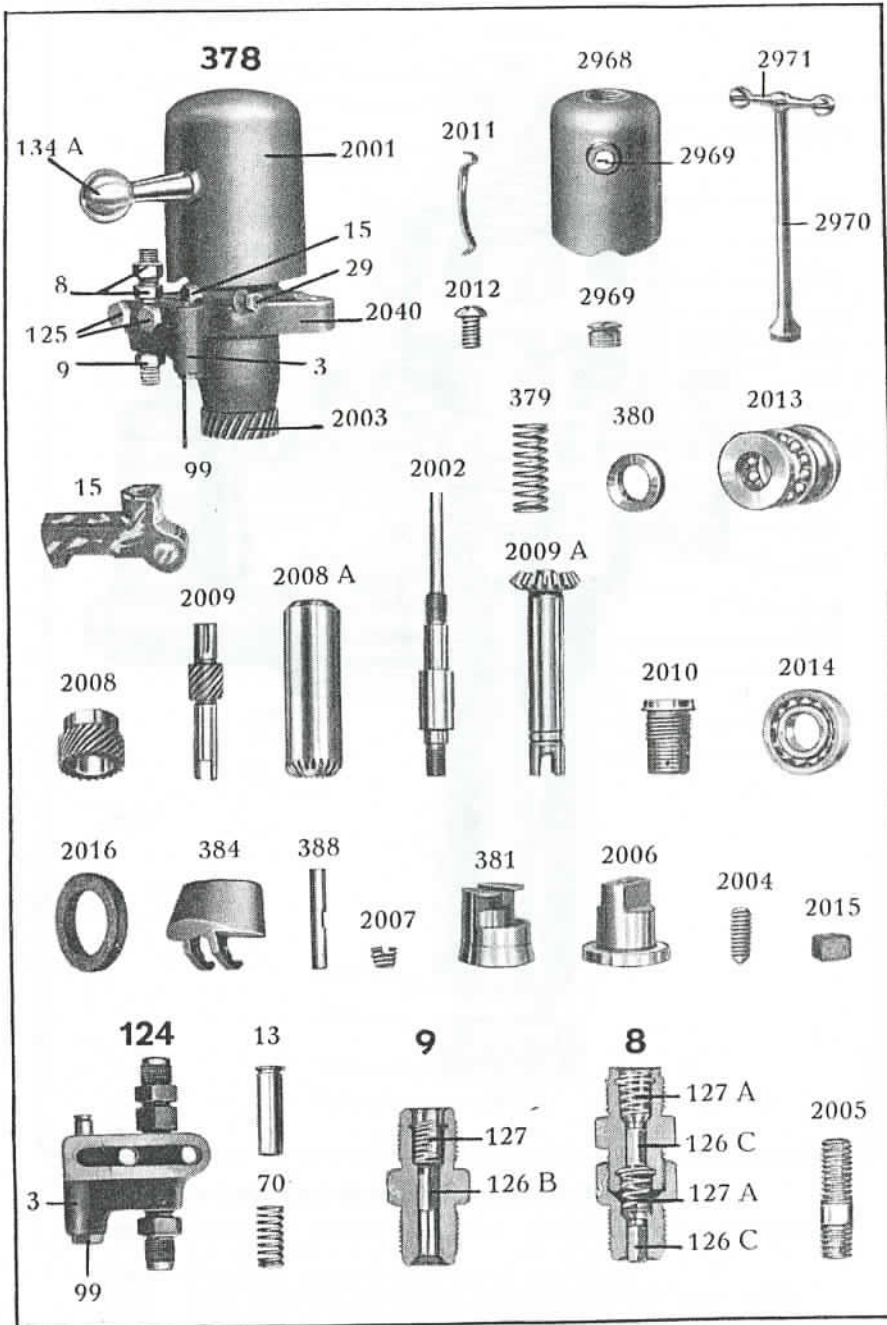
- 3126 Fuel tank, compl. with flanges, cover, stop-valve, plug and strainer (51×115 mm.)
- 3127 Fuel tank with flanges, only
- 3128 Flange for refilling
- 3129 Flange for stop-valve
- 3130 Flange for draining
- 3131 Cap for fuel tank
- 3132 Strainer 51×115 mm. for fuel tank
- 3133 Stop-valve for fuel tank
- 3134 Plug for draining
- 2863 Fuel tank, compl. with flanges, plugs, stop-valve and strainer (21×75 mm.) (old design) (not illust.)
- 24 Fuel tank with flanges, only
- 2019 Plug for refilling
- 2864 Strainer 21×75 mm. for fuel tank
- 182 Stop-valve for fuel tank
- 2020 Plug for draining
- 3108 Fuel filter with double strainers, compl. but without unions
- 3109 Housing for filter
- 3110 Cover for ditto
- 3111 Packing for cover
- 3308 Air screw in cover (not illust.)
- 3304 Spring in filter with double strainers (not illust.)
- 3305 Outer strainer (not illust.)
- 3306 Inner strainer (not illust.)

- 3307 Packing for outer and inner strainer (not illust.)
- 3118 Drain cock
- 3112 Spring in filter with felt rings
- 3113 Pipe with washer for ditto
- 3114 Nut for ditto
- 3115 Washer for ditto
- 3116 Packing for washer
- 3117 Felt ring (1 set = 5 pieces)
- 3145 Bracket with holding screw for filter
- 3146 Holding screw with nut for ditto (not illust.)
- 183 Fuel filter with single strainer, compl. but without unions (old design)
- 581 Cover for filter 183
- 2159 Packing for cover
- 1746 Strainer with ring
- 675 Drain cock



Fly-wheel and pulley.

- 850 Fly-wheel for marine engine, compl. with handle and spring
- 850M Fly-wheel for stat. engine, compl. with handle and spring, 550×80 mm.
- 850N Fly-wheel for stat. engine, heavy, compl. with handle and spring, 600×130 mm. (not illust.)
- 850A Fly-wheel for marine engine, compl. with handle, spring and ring gear for electric start
- 850P Fly-wheel for stat. engine, compl. with handle, spring and ring gear for electric start
- 356 Fly-wheel handle with plug and pin but without spring, for marine engine
- 357 Spiral spring for ditto
- 356M Fly-wheel handle with plug and pin but without spring, for stat. engine (not illust.)
- 357M Spiral spring for ditto (not illust.)
- 1169 Ring gear for fly-wheel (not illust.)
- 851 Pulley on crank shaft
- 851A Pulley on fly-wheel
- 854 Screw for pulley on fly-wheel (not illust.)



Governor and fuel pump (old design).

378 Governor compl. with fuel pump(s)

2778 Governor without fuel pump(s) (not illust.)

2040 Governor bracket

2001 Governor hood without handle

134A Regulating handle

2011 Spring ratchet for governor hood

2012 Screw for spring ratchet

2968 Governor hood with plug with threads for rod

2969 Plug in governor hood

2970 Rod for regulating handle

2971 Regulating handle for rod

3310 Handwheel for rod for winch engine (not illust.)

2002 Governor shaft

2003 Worm-gear on governor shaft

379 Governor spring

380 Guide washer for governor spring

2013 Ball bearing for governor spring

2008 Worm-gear on governor shaft for driving lubrication device (1-cyl. engine)

2009 Spindle shaft for lubrication device (1-cyl. engine)

2008A Sleeve with conical gear wheel for driving lubrication device (2- and 4-cyl. engine)

2009A Shaft with conical gear wheel for driving lubrication device (2- and 4-cyl. engine)

2010 Bushing for No. 2009 respectively bearing sleeve for No. 2009A

2014 Ball bearing for governor shaft

2016 Packing for governor shaft

384 Governor weight

388 Pin for ditto

2007 Set screw for governor weight pin

381 Regulating sleeve

2006 Pump cam

2004 Set screw for worm-gear or pump cam

15 Fuel pump arm

29 Pin for fuel pump arm

2015 Packing for fuel pump arm

124 Fuel pump compl. with valves

3 Fuel pump housing

13 Plunger for fuel pump

70 Spiral spring for pump plunger

99 Spring guide for spiral spring for pump plunger

9 Suction valve (cone valve) compl.

126B Valve cone for suction valve

127 Spiral spring for ditto

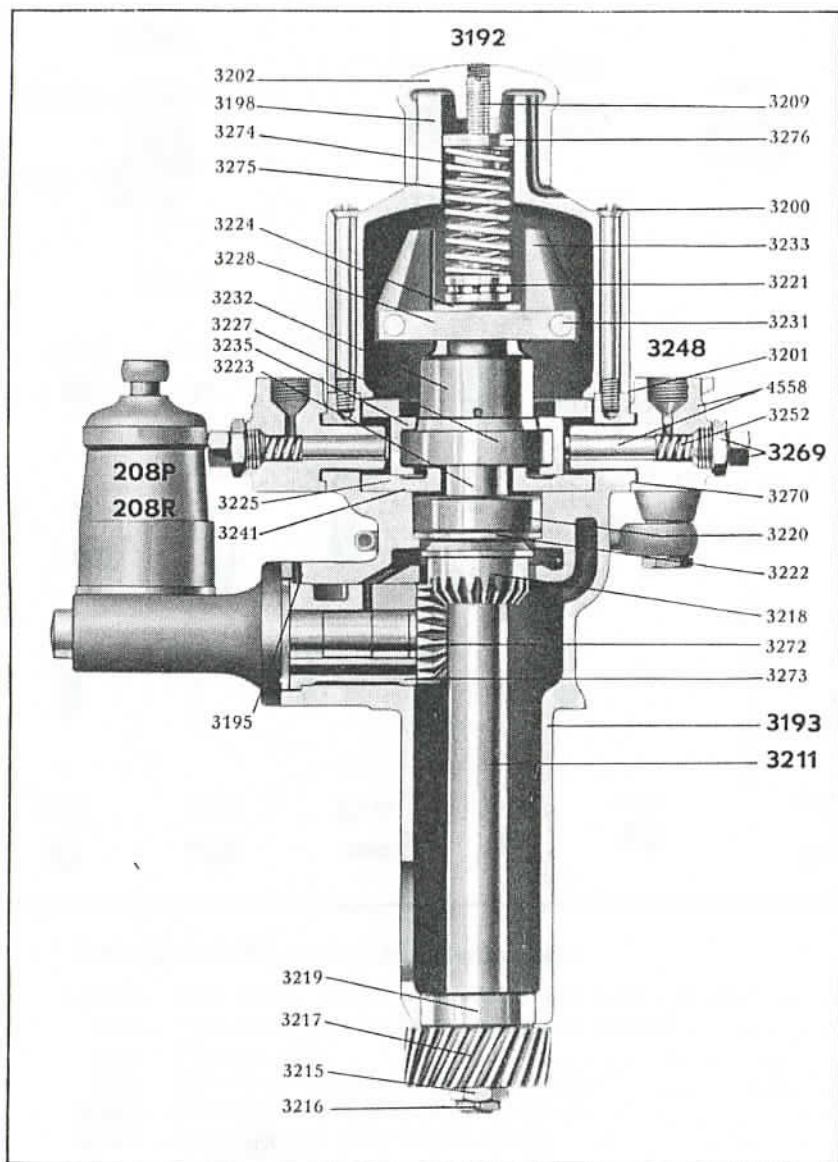
8 Discharge valve, compl.

126C Valve cone for discharge valve

127A Spiral spring for ditto

125 Holding screw for fuel pump

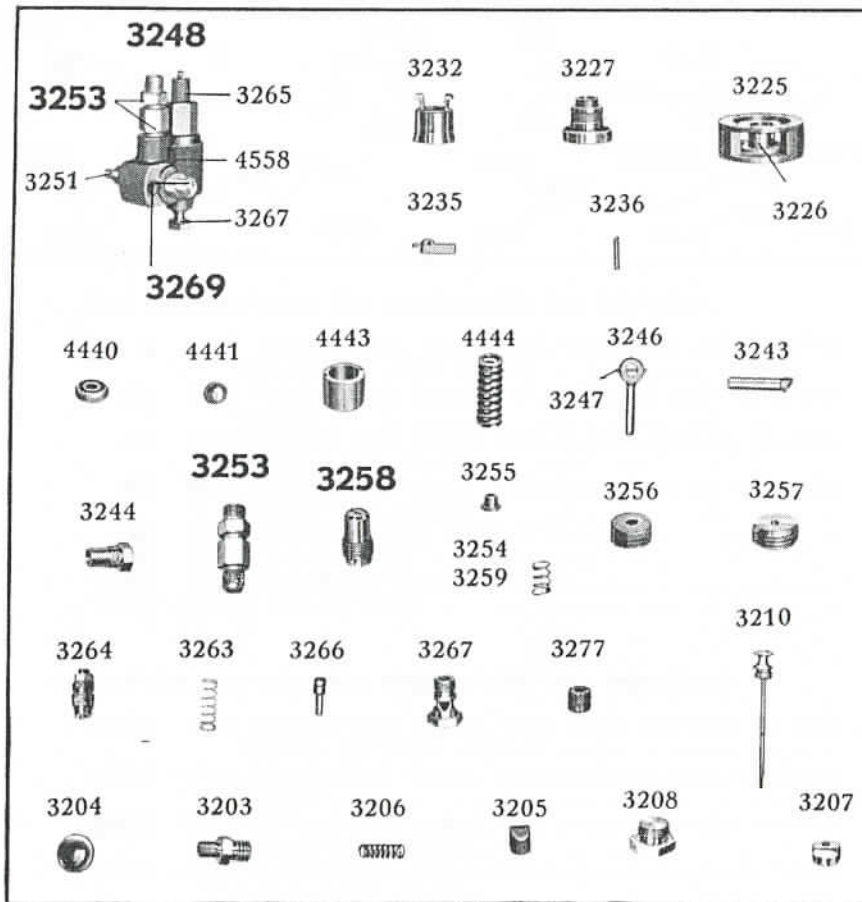
2005 Stud with nut for governor (2- and 4-cyl. engine)



Governor and fuel pump with horizontal plunger.

- 3192 Governor compl. with fuel pumps (without lubrication device)
- 3193 Governor bracket with studs and union
- 3194 Stud with nut for fixing lubrication device (not illust.) ..
- 3195 Lock pin in governor bracket for bearing sleeve
- 3196 Union in governor bracket for lubrication pipe (not illust.)
- 3197 Packing for ditto (not illust.)

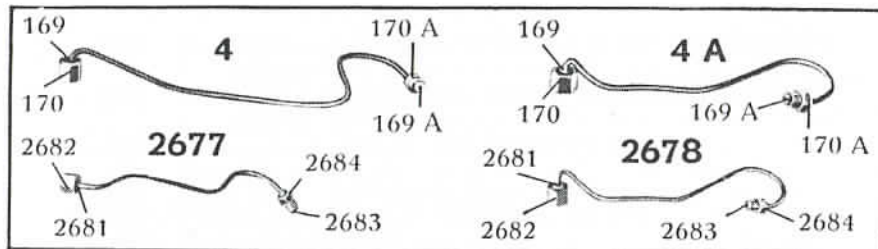
- 3198 Governor hood with guard
- 3199 Guard, only, with rivets (not illust.)
- 3200 Screw for governor hood
- 3201 Packing for governor hood
- 3202 Governor handle, only
- 3203 Screw in governor handle for knob (illust. on page 24)
- 3204 Knob with nipple
- 3205 Ratchet in governor handle
- 3206 Spring for ratchet
- 3207 Block in governor handle
- 3208 Plug for block
- 3209 Stop screw in governor handle for governor spring
- 3210 Oil level stick with handle (illust. on page 24)
- 3211 Governor shaft with keys
- 3212 Key for pump cam (not illust.)
- 3213 Key for gear wheel for lubrication device (not illust.) ..
- 3214 Key for worm-gear (not illust.)
- 3215 Castellated nut on governor shaft for worm-gear
- 3216 Split pin for ditto
- 3217 Worm-gear on governor shaft
- 3218 Gear wheel for driving lubrication device
- 3219 Ball bearing at worm-gear on governor shaft
- 3220 Ball bearing at gear wheel 3218
- 3221 Ball bearing at governor spring
- 3222 Ring at ball bearing 3220
- 3223 Distance sleeve at ball bearing 3220
- 3224 Washer at ball bearing for governor spring
- 3227 Pump cam (illust. on page 24)
- 3228 Holder for governor weight
- 3229 Lock screw for holder 3228 (not illust.)
- 3230 Lock washer for ditto (not illust.)
- 3231 Link bolt with split pin for governor weight
- 3232 Regulating sleeve (illust. on page 24)
- 3233 Governor weight with bushing
- 3234 Bushing, only, for governor weight (not illust.)
- 3235 Fuel pump arm (illust. on page 24)
- 3236 Shaft for fuel pump arm (illust. on page 24)
- 3272 Shaft for driving lubrication device
- 3273 Bearing sleeve for shaft 3272
- 3274 Governor spring, outer, for load
- 3275 Governor spring, inner, for idling
- 3276 Washer for governor springs
- 3277 Oil filter in washer 3276 (illust. on page 24)
- 4461 Guide washer for governor springs (not illust.)
- 4460 Washer for oil tightening (not illust.)
- 3225 Bearing cover with level glass and cap (illust. on page 24)
- 3226 Level glass, only (illust. on page 24)
- 3241 Packing for bearing cover
- 3238 Screw for cap (not illust.)
- 3239 Lock washer for ditto (not illust.)
- 3240 Distance sleeve at screw for cap (not illust.)
- 208P High pressure lubrication device (4 pipes "Assa") (1-cyl. engine)
- 208R High pressure lubrication device (6 pipes "Assa") (2-cyl. engine)



Fuel pump with horizontal plunger etc.

3248	Fuel pump, compl. with valves and suction vessel
4558	Fuel pump housing with lining and plunger
3251	Plunger, only
3252	Spiral spring for plunger (not illust.)
3253	Discharge valve (flat valve), compl.
3258	Suction valve (flat valve), compl.
3254	Valve spring for discharge valve 3253
3259	" " " suction valve 3258
3255	Valve (flat) for suction and discharge valve
3256	Valve seat " " " " "
3257	Valve nut " " " " "
3263	Spring for lifting suction valve
3264	Plug for suction valve
3265	Suction vessel

3266	Fuel filter in fuel pump
3267	Union for filter and fuel suction pipe
3268	Packing at union 3267 (not illust.)
3269	Safety-valve for fuel pump
4438	Valve seat for safety-valve (not illust.)
4439	Packing for valve seat (not illust.)
4440	Valve for safety-valve
4441	Valve ball for safety-valve
4442	Washer for safety-valve (not illust.)
4443	Guide sleeve for safety-valve
4444	Spiral spring " " "
3270	Packing for fuel pump (not illust.)
3271	Stud for fuel pump (not illust.)
3227	Pump cam
3232	Regulating sleeve
3235	Fuel pump arm
3236	Shaft for fuel pump arm
3225	Bearing cover with level glass and cap
3226	Level glass, only
3241	Packing for bearing cover (not illust.)
3243	Hand pump shaft
3244	Bushing for hand pump shaft
3245	Packing in bushing for hand pump shaft (not illust.)
3246	Pump handle with taper pin
3247	Taper pin in pump handle
3277	Oil filter in washer 3276
3203	Screw in governor handle for knob
3204	Knob with nipple
3205	Ratchet in governor handle
3206	Spring for ratchet
3207	Block in governor handle
3208	Plug for block
3210	Oil level stick with handle



Fuel delivery pipe for engine with top injection.

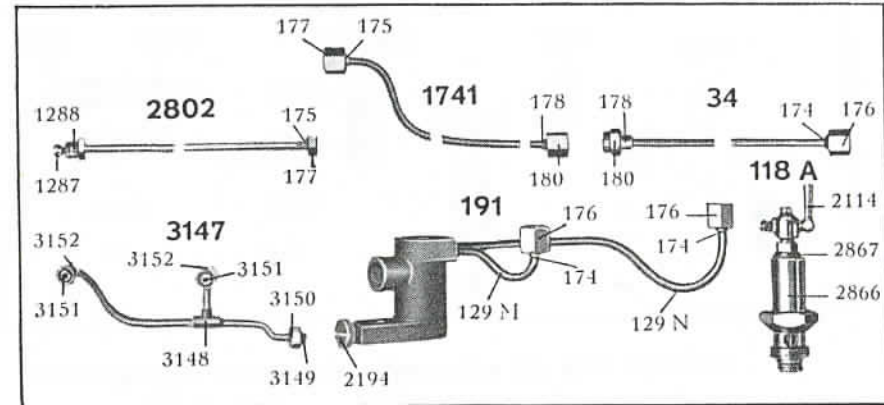
- 4 Fuel delivery pipe, compl. with cones and nuts, to first cylinder (or 1-cyl. engine)
- 4A Fuel delivery pipe, compl. with cones and nuts, to second cylinder
- 4B Fuel delivery pipe, compl. with cones and nuts, to third cylinder (not illust.)
- 4C Fuel delivery pipe, compl. with cones and nuts, to fourth cylinder (not illust.)
- 169 Cone against delivery valve of fuel pump
- 170 Union nut for ditto
- 169A Cone against fuel injection device
- 170A Union nut for ditto

Fuel delivery pipe for engine with side injection.

- 2677 Fuel delivery pipe, compl. with cones and nuts, to first cylinder (or 1-cyl. engine)
- 2678 Fuel delivery pipe, compl. with cones and nuts, to second cylinder
- 2679 Fuel delivery pipe, compl. with cones and nuts, to third cylinder (not illust.)
- 2680 Fuel delivery pipe, compl. with cones and nuts, to fourth cylinder (not illust.)
- 2681 Cone against delivery valve of fuel pump
- 2682 Union nut for ditto
- 2683 Cone against fuel injection device
- 2684 Union nut for ditto

Fuel delivery pipe for engine with side injection and horizontal fuel pump.

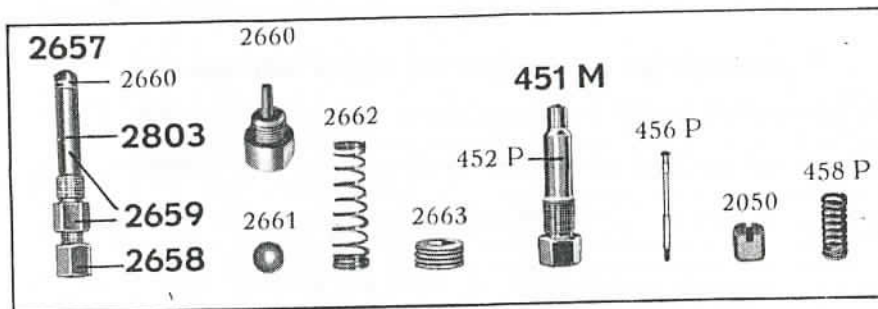
- 4533 Fuel delivery pipe, compl. with cones and nuts, to first cylinder (or 1-cyl. engine) (not illust.)
- 4534 Fuel delivery pipe, compl. with cones and nuts, to second cylinder (not illust.)
- 4535 Cone against fuel injection device (not illust.)
- 4536 Union nut for ditto (" ")
- 4537 Cone against horizontal fuel pump (" ")
- 4538 Union nut for ditto (" ")



Fuel piping.

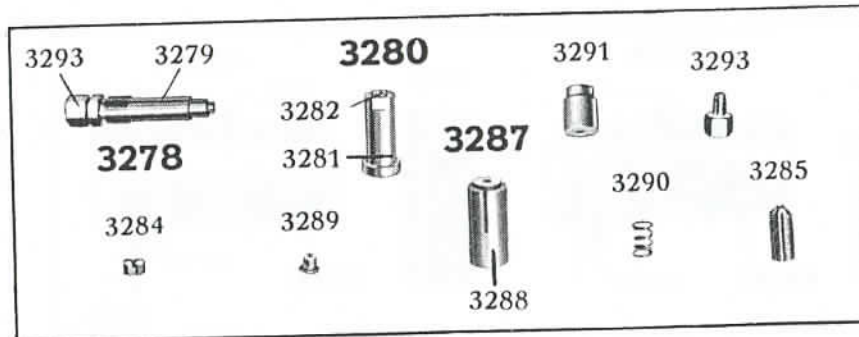
- 2802 Fuel delivery pipe, compl. with cones and nuts, from fuel tank to fuel pumps (1-cyl.) or branch piece (2-4-cyl.) 10 feet
- 1741 Fuel delivery pipe, compl. with cones and nuts, from fuel tank to filter (when ordering please state required length)
- 34 Fuel delivery pipe, compl. with cones and nuts, from filter to fuel pump (1-cyl.) or branch piece (2-4-cyl. (when ordering please state required length)
- 175 Cone against stop-valve on fuel tank
- 177 Union nut for ditto
- 178 Cone against filter
- 180 Union for ditto
- 174 Cone against suction valve of fuel pump
- 176 Union nut for ditto
- 1287 Cone against branch piece (not illust.)
- 1288 Union nut for ditto (not illust.)
- 3147 Branch pipe, compl. with T-piece, cones and nuts, between filter and fuel pumps (2-cyl. engine)
- 3148 T-piece, only, for pipe 3147
- 3149 Cone against filter, for pipe 3147
- 3150 Union nut for ditto
- 3151 Cone against fuel pump, for pipe 3147
- 3152 Union nut for ditto
- 2865 Branch piece for fuel, compl. with pipe, valve screw and suction vessel (2-4-cyl. engine) (old design) (not illust.)
- 191 Branch piece with pipe and valve screw (2-4-cyl. engine)
- 129M Fuel suction pipe with cone and nut to fuel pump for first cylinder
- 129N Fuel suction pipe with cone and nut to fuel pump for second cylinder

- 129P Fuel suction pipe with cone and nut to fuel pump for third cylinder (not illust.)
- 129R Fuel suction pipe with cone and nut to fuel pump for fourth cylinder (not illust.)
- 174 Cone against suction valve of fuel pump
- 176 Union nut for ditto
- 2194 Valve screw for branch piece
- 118A** Suction vessel, compl. with cock, for fuel
- 2866 Suction vessel, only
- 2114 Cock with pipe for ditto
- 2867 Packing for cock 2114



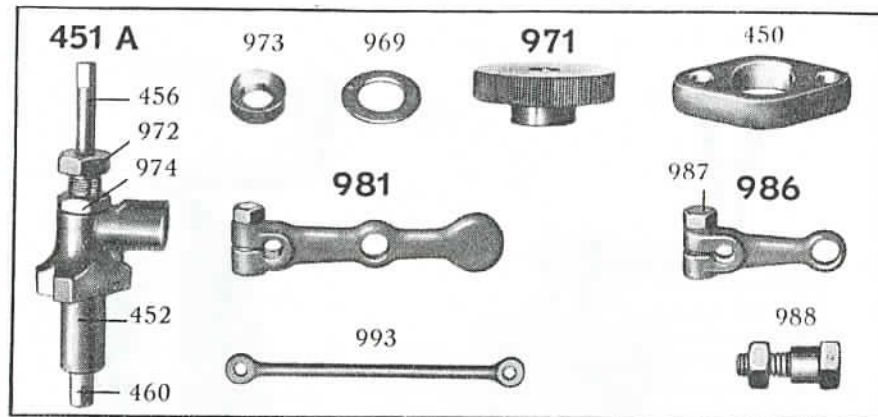
Fuel injection device for engine with side injection.

- 2657** Fuel injection device, compl. with check valve for side injection
- 2659** Injection valve with nozzle
- 2803** Injection valve without nozzle
- 2660 Nozzle with inner part
- 2658** Check valve, compl.
- 2661 Valve ball for Nos 2658 and 2659
- 2662 Valve spring " " " "
- 2663 Valve nut " " " " "
- 2676 Packing for injection valve (not illust.)
- 451M** Fuel injection device, compl. for side injection (old design)
- 452P Housing for ditto
- 456P Valve spindle
- 2050 Nut for ditto
- 458P Spiral spring



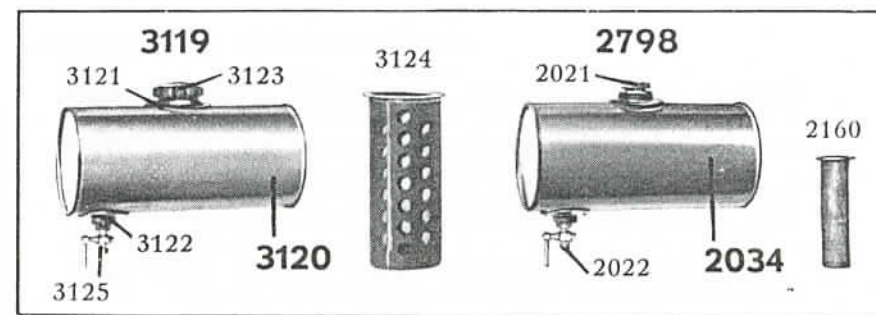
Fuel injection device with flat valve for side injection.

- 3278** Fuel injection device compl. with check valves and union
- 3279 Valve housing for fuel injection device
- 3280** Sprayer with nozzle and holder
- 3281 Holder for sprayer
- 3282 Nozzle, only
- 3283 Packing for nozzle (not illust.)
- 3284 Sprayer spiral
- 3285 Thrust screw for sprayer
- 3286 Packing for sprayer (not illust.)
- 3287** Check valve, compl.
- 3288 Holder for check valve
- 3289 Valve (flat), only
- 3290 Valve spring for check valve
- 3291 Valve seat for check valve
- 3292 Packing for check valve (not illust.)
- 3293 Union for fuel injection device
- 3294 Packing for fuel injection device (not illust.)



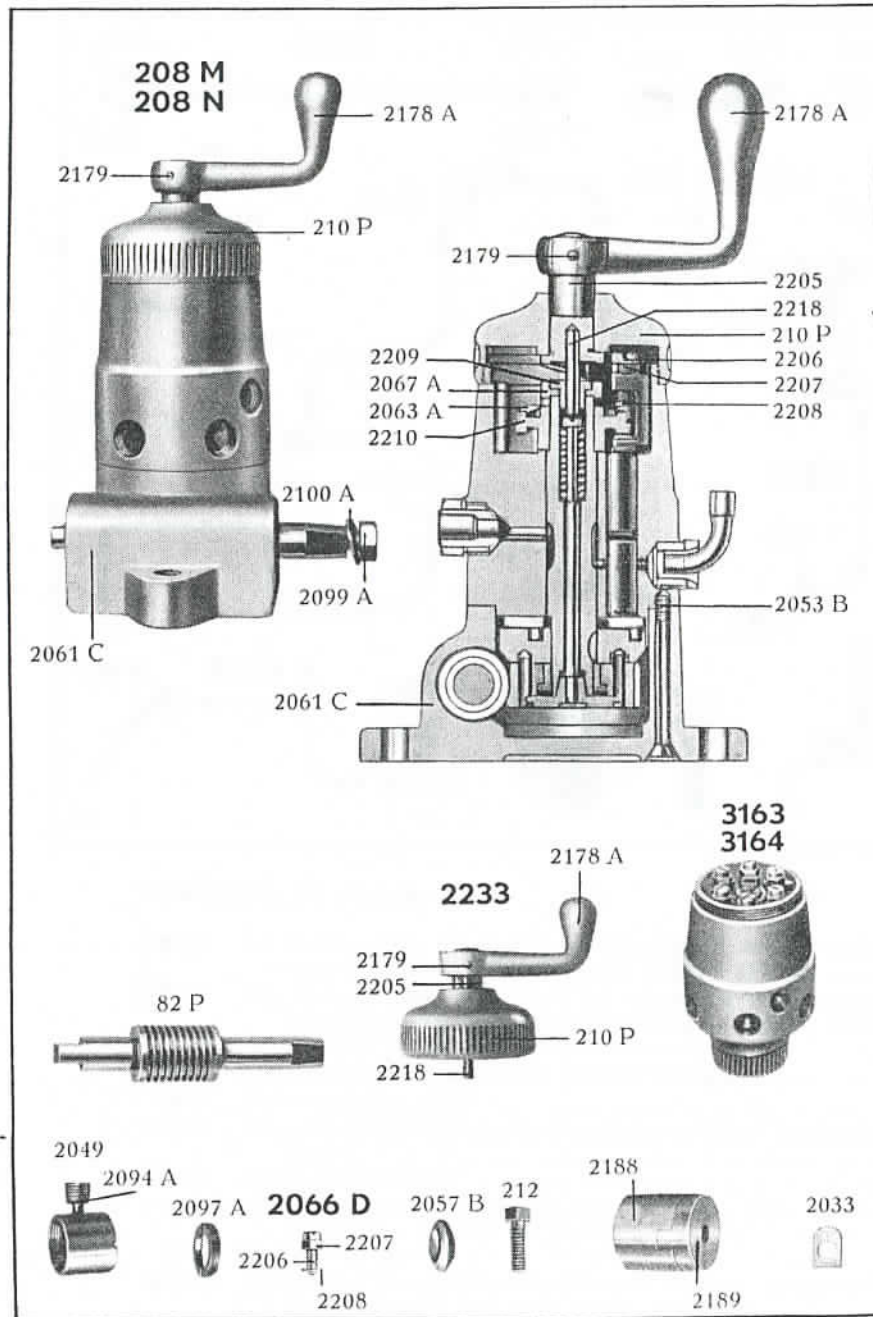
Fuel injection device for engine with top injection.

- | | |
|-------------|--|
| 451A | Fuel injection device, compl. but without knob, for top injection |
| 451B | Fuel injection device, compl. with knob, for top injection (not illust.) |
| 452 | House for fuel injection device |
| 456 | Spindle for ditto |
| 972 | Stuffing box nut |
| 973 | Stuffing box gland |
| 974 | Lock-nut |
| 460 | Nozzle |
| 970 | Stuffing box packing for spindle (not illust.) |
| 969 | Packing between injection device and cooling house |
| 971 | Knob with bushing and taper pin |
| 2868 | Taper pin for ditto (not illust.) |
| 450 | Holder for fuel injection device |
| 981 | Manoeuvring arm with bolt for spindle (2—4-cyl. engine) |
| 986 | Arm with bolt for spindle (2—4-cyl. engine) |
| 987 | Bolt for ditto (2—4-cyl. engine) |
| 993 | Connecting link without pins (2—4-cyl. engine) |
| 988 | Pin with nut for ditto (2—4-cyl. engine) |



Lubricating oil tank.

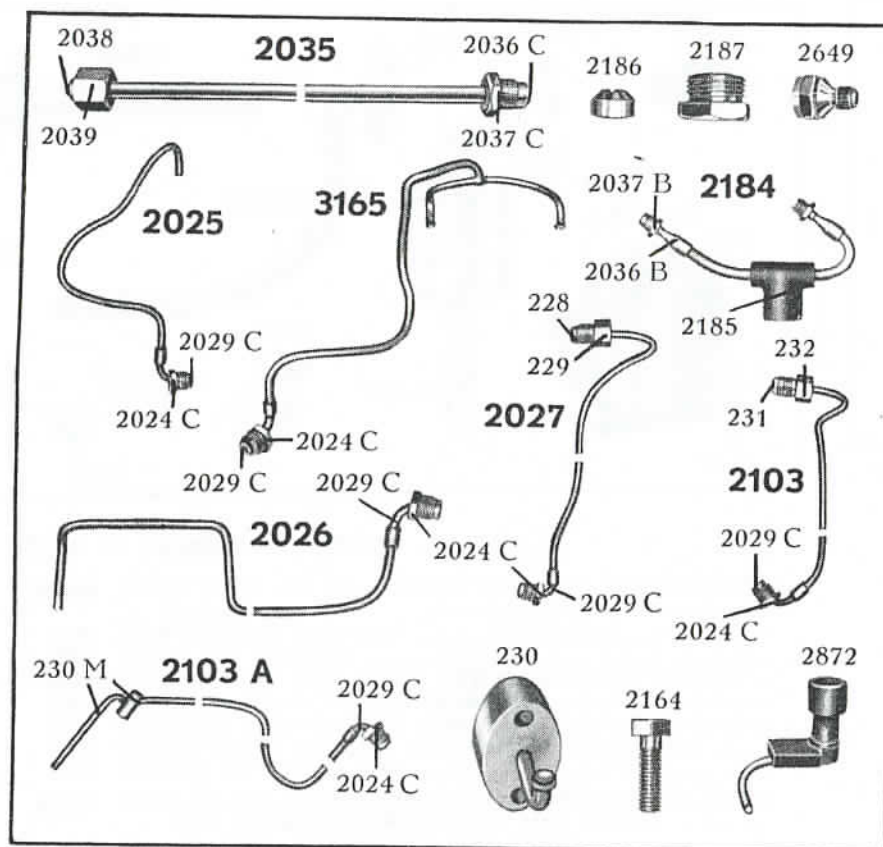
- | | |
|-------------|---|
| 3119 | Lubricating oil tank, compl. with flanges, cover, stop-valve and strainer (51×115 mm.) |
| 3120 | Lubricating oil tank with flanges, only |
| 3121 | Flange for refilling |
| 3122 | Flange for stop-valve |
| 3123 | Cap for lubricating oil tank |
| 3124 | Strainer, 51×115 mm., for lubricating oil tank |
| 3125 | Stop-valve for lubricating oil tank |
| 2798 | Lubricating oil tank, compl. with flanges, plug, stop-valve and strainer (21×75 mm.) (old design) |
| 2034 | Lubricating oil tank with flanges, only |
| 2021 | Plug for refilling |
| 2160 | Strainer, 21×75 mm., for lubricating oil tank |
| 2022 | Stop-valve for lubricating oil tank |



High pressure lubrication device.

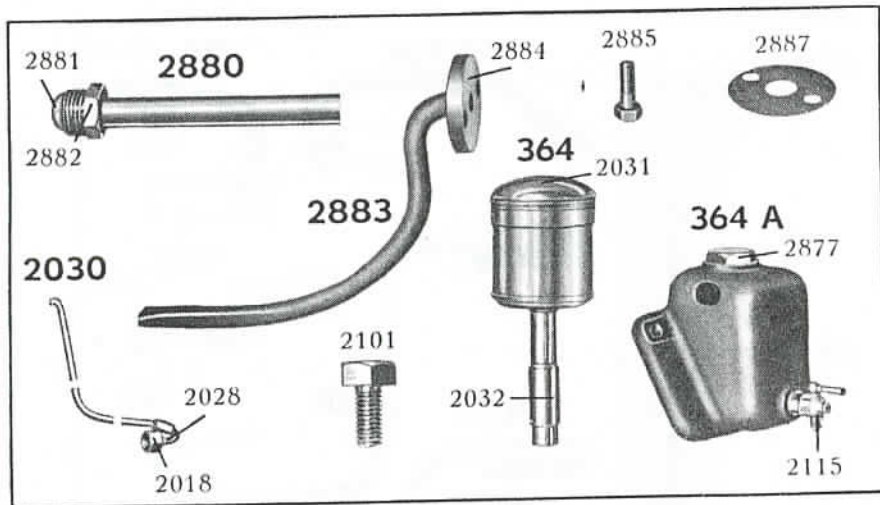
- 208M Lubrication device, compl. but without unions (4 pipes "Assa") (1-cyl. engine)
- 208N Lubrication device, compl. but without unions (6 pipes "Assa") (2-4-cyl. engine)
- 3163 Pump housing, compl. with plungers, adjusting screws, guide pistons, pump shaft and worm-gear (4 pipes "Assa")
- 3164 Pump housing, compl. with plungers, adjusting screws, guide pistons, pump shaft and worm-gear (6 pipes "Assa")
- 2066D Adjusting screw with nut and stop ring
- 2206 Adjusting screw, only
- 2207 Stop nut for adjusting screw
- 2208 Stop ring for adjusting screw
- 2065 Pump plunger (not illust.)
- 2216 Guide piston (" ")
- 2063A Cam disk
- 2210 Brake ring for ditto
- 2209 Ring nut
- 2067A Carrier sleeve
- 2053B Screw for pump housing
- 2233 Cover with handle and shaft etc.
- 210P Cover, only
- 2178A Handle
- 2205 Handle spindle
- 2179 Pin for ditto
- 2218 Pressure pin
- 82P Driving shaft
- 2099A Screw on driving shaft for coupling half
- 2100A Spring washer for ditto
- 2049 Bearing for driving shaft
- 2094A Bearing set screw
- 2097A Pressure ring
- 2057B Cork packing
- 2804 Plug for discharge pipe (not illust.)
- 2061C Lower part of lubrication device
- 212 Stud for lubrication device
- 2033 Lock washer for ditto
- 2188 Coupling half with groove, between lubrication devices, (4-cyl. engine)
- 2189 Coupling half with knob, between lubrication devices, (4-cyl. engine)

Note. Pump shaft, worm-gear etc. are not furnished separately but only together with the pump housing.



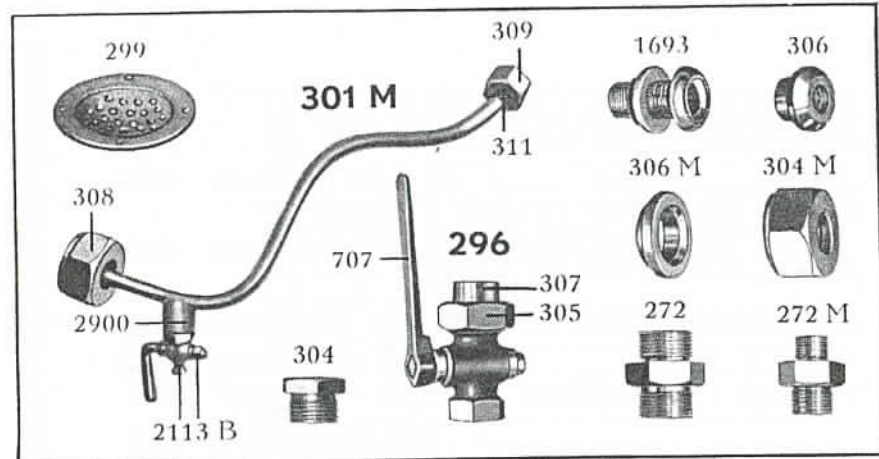
Lubricating oil piping.

- | | |
|---|---|
| <p>2035 Oil feeding pipe from tank to lubrication device, compl. with cones and nuts (1—2-cyl. engine) 10 feet</p> <p>2555 Oil feeding pipe from tank to connecting pipe between lubrication devices, compl. with cones and nuts (4-cyl. engine) (not illust.) 10 feet</p> <p>2038 Cone for oil feeding pipe to fit cock on tank</p> <p>2039 Union nut for ditto</p> <p>2036C Cone for oil feeding pipe to fit nipple on "Assa" lubrication device</p> <p>2037C Union nut for ditto</p> <p>2186 Cone for oil feeding pipe to fit connecting pipe between lubrication devices (4-cyl. engine)</p> <p>2187 Union nut for ditto</p> <p>2184 Connecting pipe between lubrication devices, compl. with T-piece, cones and nuts (4-cyl. engine)</p> <p>2036B Cone with reduction nipple to fit "Bosch" lubrication device "MRB"</p> <p>2037B Union nut for ditto</p> | <p>2185 T-piece, only</p> <p>2649 Reduction nipple on "Assa" lubrication device</p> <p>2025 Lubricating oil pipe (single), compl. with cone and nut for governor (1-cyl.) and (2—4-cyl. old design)</p> <p>3165 Lubricating oil pipe (branch piece) for governor (2-cyl. engine)</p> <p>4539 Lubricating oil pipe, compl. for governor with horizontal fuel pump (not illust.)</p> <p>2029C Cone with pipe bend to fit "Assa" lubrication device</p> <p>2024C Union nut for ditto</p> <p>4540 Nipple against governor (not illust.)</p> <p>2026 Lubricating oil pipe, compl. with cone and nut, for eccentric of circulating pump at fly-wheel</p> <p>2871 Lubricating oil pipe, compl. with cone and nut, for eccentric of circulating pump on bed plate (not illust.)</p> <p>2029C Cone with pipe bend to fit "Assa" lubrication device</p> <p>2024C Union nut for ditto</p> <p>2027 Lubricating oil pipe, compl. with cones and nuts, for cylinder (1-cyl. engine)</p> <p>2027A Lubricating oil pipe, compl. with cones and nuts, for 1st cylinder (2—4-cyl. engine) (not illust.)</p> <p>2027B Lubricating oil pipe, compl. with cones and nuts, for 2nd cylinder (2—4-cyl. engine) (not illust.)</p> <p>2027C Lubricating oil pipe, compl. with cones and nuts, for 3rd cylinder (4-cyl. engine) (not illust.)</p> <p>2027D Lubricating oil pipe, compl. with cones and nuts, for 4th cylinder (4-cyl. engine) (not illust.)</p> <p>2029C Cone with pipe bend to fit "Assa" lubrication device</p> <p>2024C Union nut for ditto</p> <p>228 Cone for lubricating oil pipe to cylinder</p> <p>229 Union nut for ditto</p> <p>2103 Lubricating oil pipe, compl. with cones and nuts, for crank pin bearing (1-cyl. engine)</p> <p>2103A Lubricating oil pipe, compl. with cone, nut and nipple, for crank pin bearing 1st cylinder (—4-cyl. engine)</p> <p>2103B Lubricating oil pipe, compl. with cone, nut and nipple, for crank pin bearing 2nd cylinder (2—4-cyl. engine) (not illust.)</p> <p>2103C Lubricating oil pipe, compl. with cone, nut and nipple, for crank pin bearing 3rd cylinder (4-cyl. engine) (not illust.)</p> <p>2103D Lubricating oil pipe, compl. with cone, nut and nipple, for crank pin bearing, 4th cylinder (4-cyl. engine) (not illust.)</p> <p>2029C Cone with pipe bend to fit "Assa" lubrication device</p> <p>2024C Union nut for ditto</p> <p>231 Cone for lubricating oil pipe 2103 to fit nozzle for crank pin lubricator (1-cyl. engine)</p> <p>232 Union nut for ditto</p> <p>230M Lubricating oil nipple with short pipe, for lubricating oil pipe 2103A, B, C and D (2—4-cyl. engine)</p> <p>230 Nozzle for crank pin lubrication (old design) (1-cyl. engine)</p> <p>2164 Screw for ditto</p> <p>2872 Drip cup for crank pin lubrication (1-cyl. engine)</p> <p>2873 Screw for ditto (not illust.)</p> |
|---|---|



Drain oil piping and collector.

- 2880** Outer drain oil pipe, compl. with cone and nut (1-cyl. engine)
- 2881 Cone for outer drain pipe
- 2882 Union nut for ditto
- 2883** Inner drain oil pipe, compl. with flange (1-cyl. engine) ..
- 2884 Flange, only, for inner drain oil pipe
- 2885 Screw for inner drain oil pipe
- 2886 Spring washer for ditto (not illust.)
- 2887 Packing for flange 2884
- 2874** Drain oil pipe, compl. with cone and nut (1-cyl. old design with recess at fly-wheel side) (not illust.)
- 2875 Cone for drain oil pipe 2874 (not illust.)
- 2876 Union nut for ditto (not illust.)
- 2030** Drain oil pipe, compl. with cone and nut, (1-cyl. old design with recess at governor side)
- 2030A** Drain oil pipe, compl. with cone and nut, from 1st cylinder (2-4-cyl. engine) (not illust.)
- 2030B** Drain oil pipe, compl. with cone and nut, from 2nd cylinder (2-4-cyl. engine) (not illust.)
- 2030C** Drain oil pipe, compl. with cone and nut, from 3rd cylinder (4-cyl. engine) (not illust.)
- 2030D** Drain oil pipe, compl. with cone and nut, from 4th cylinder (4-cyl. engine) (not illust.)
- 2028 Cone for drain oil pipe 2030A, B, C and D
- 2018 Union nut for ditto
- 364** Drain oil collector, compl. (1-cyl. engine)
- 2031 Cover, only, for drain oil collector 364
- 2032 Nipple for drain oil collector 364
- 364A** Drain oil collector, compl. (2-4-cyl. engine)
- 364B** Drain oil collector, in one piece with bracket for lubrication device, compl. (4-cyl. engine) (not illust.)
- 2115 Drain cock for collector 364A and 364B
- 2877 Plug for drain oil collector 364A and 364B
- 2101 Screw for drain oil collector 364A and 364B

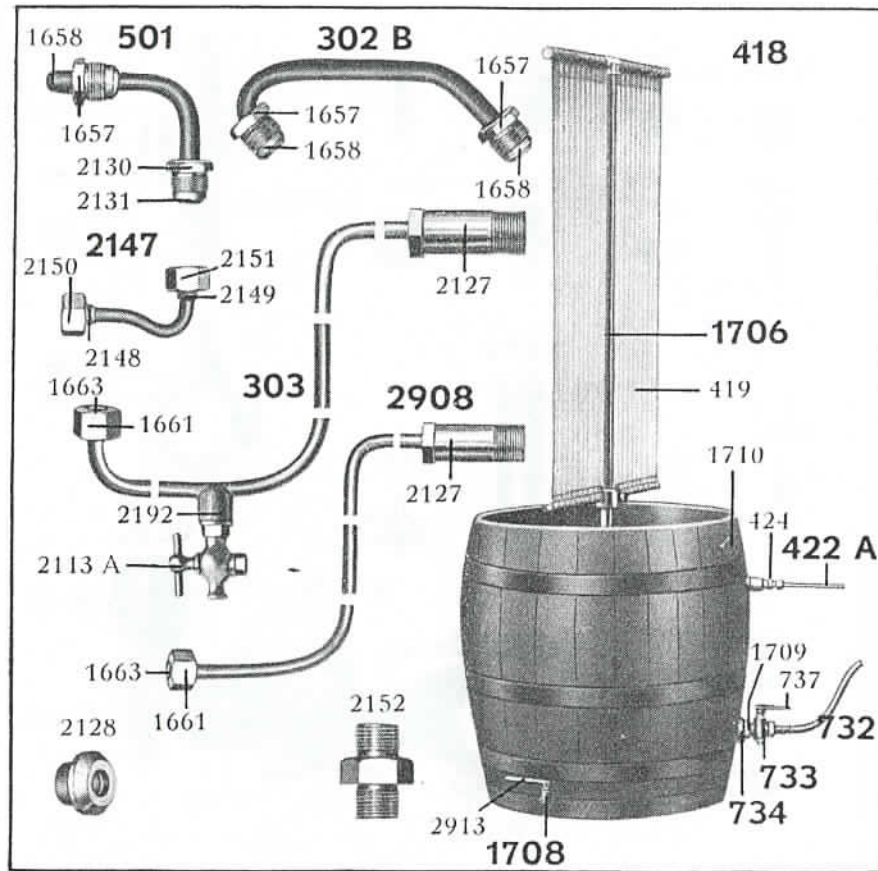


Sea-cock.

- 296** Sea-cock, compl. with cone, nut and key
- 707 Key for sea-cock
- 307 Cone for suction pipe to sea-cock
- 305 Union nut for ditto
- 306 Cone for suction pipe to circulating pump on cylinder at fly-wheel
- 304 Union nut for ditto
- 306M Collar for suction pipe to circulating pump on bed plate
- 304M Union nut for ditto
- 312 Packing for suction pipe to circulating pump on bed plate (not illust.)
- 299 Strainer for sea-cock
- 1693 Connection for sea-cock

Circulating water piping.

- 301M** Circulating water pipe between pump on exhaust side of bed plate and cylinder, compl. with cones, nuts and drain cock (-2-cyl. engine)
- 2901** Circulating water pipe between pump on exhaust side of bed plate and 1st cylinder block, compl. with cones, nuts and drain cock (4-cyl. engine) (not illust.)
- 2902** Circulating water pipe between pump on exhaust side of bed plate and 2nd cylinder block, compl. with cones, nuts and drain cock (4-cyl. engine) (not illust.)
- 301N** Circulating water pipe between pump on manoeuvring side of bed plate and cylinder block, compl. with cones, nuts and drain cock (4-cyl. engine) (not illust.)
- 310 Cone for discharge pipe, against circulating water pump (not illust.)
- 308 Union nut for ditto
- 314 Packing for ditto (not illust.)
- 311 Cone for union in cylinder (block)
- 309 Union nut for ditto
- 2900 Soldered connection for drain cock 2113B
- 2113B Drain cock for circulating water pipe 301M, 2901, 2902 and 301N
- 272 Union for cylinder (block)
- 272M Union for cylinder (block)



Circulating water piping for engine with top injection.

- 501 Circulating water pipe between cylinder head and cooling house, compl. with cones and nuts (1—2—4-cyl. engine)
- 302B Circulating water pipe between cooling houses, compl. with cones and nuts (2—4-cyl. engine)
- 2131 Cone against cylinder head for circulating water pipe 501 and 302B
- 2130 Union nut for ditto
- 1658 Cone against cooling house for circulating water pipe 501 and 302B
- 1657 Union nut for ditto
- 2147 Air-exhausting pipe between cylinder head and cooling house, compl. with cones and nuts (2—4-cyl. engine)
- 2148 Cone for ditto against union in ignition bulb
- 2150 Union nut for ditto
- 2149 Cone for ditto against union in cooling house
- 2151 Union nut for ditto
- 2152 Union in ignition bulb for air-exhausting pipe
- 2153 Union in cooling house for air-exhausting pipe (not illust.)

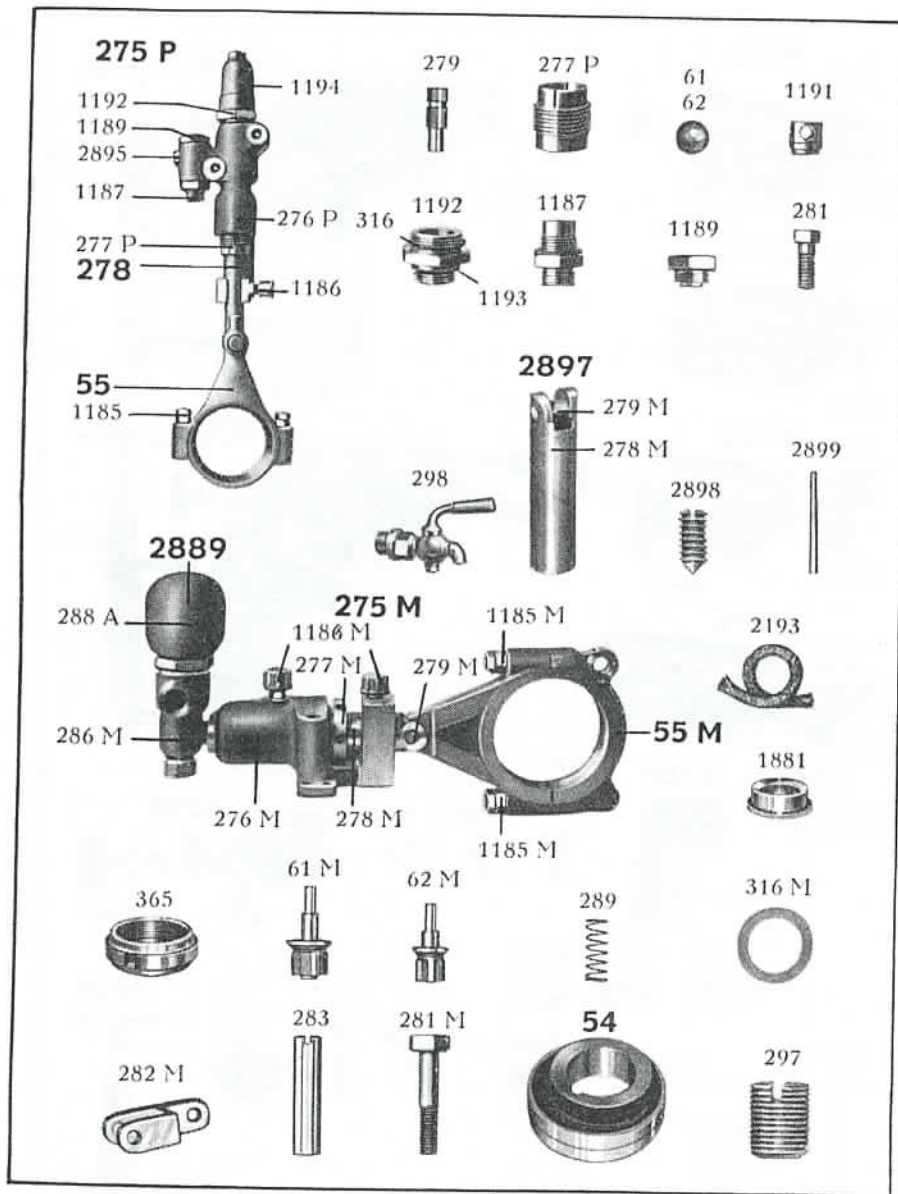
- 303 Circulating water pipe between cooling house and silencer, compl. with cones, nuts and drain cock (for 1—2-cyl. engine, or from first cylinder block for 4-cyl. engine)
- 303M Circulating water pipe between cooling house and silencer, compl. with cones, nuts and drain cock (from 2nd cylinder block for 4-cyl. engine (not illust.)
- 2908 Circulating water pipe between cooling house and silencer, compl. with cones and nuts (without connection and cock) (1—2-cyl. engine)
- 2128 Cone against cooling house for circulating water pipe 303, 303M or outlet
- 2127 Union nut for ditto
- 1663 Cone against silencer for circulating water pipe 303 or 303M
- 1661 Union nut for ditto
- 2192 Soldered connection for drain cock 2113A
- 2113A Drain cock for circulating water pipe 303 or 303M

Circulating water piping for engine with side injection.

- 2903 Circulating water pipe between cylinder head and silencer, compl. with cones and nuts (not illust.)
- 2904 Cone against cylinder head = outlet (not illust.)
- 2905 Union nut for ditto (not illust.)
- 2906 Cone against silencer (not illust.)
- 2907 Union nut for ditto (not illust.)

Water cooling system and wood base.

- 418 Water cooling system, compl. with water-tub
- 1705 Water cooling system, without water-tub (not illust.) ..
- 1706 Screen stand
- 419 Galvanized screen for cooling system, with holder
- 1707 Wooden support, compl. with flange for screen stand (not illust.)
- 2909 Stud for ditto (not illust.)
- 2910 Washer for ditto (not illust.)
- 1710 Water-tub, only, without fittings
- 734 Flange with wooden shim for discharge pipe
- 2911 Packing for ditto (not illust.)
- 2912 Stud with nut for flange 734 (not illust.)
- 733 Cock with key, for discharge pipe
- 737 Key, only, for cock 733
- 1708 Drain cock with key and nipple with nut
- 2913 Key, only, for drain cock
- 2920 Nipple with nut for drain cock (not illust.)
- 2914 Strainer for discharge pipe (not illust.)
- 1709 Union at cock for discharge pipe
- 424 Union for feeding pipe against water-tub
- 732 Water pipe between cooling system and circulating water pump, compl. with cones and nuts
- 422A Water pipe between engine and cooling system, compl. with cones and nuts
- 2915 Wood base, compl. with shafts and wheels (not illust.) ..
- 2916 Wood base, compl. but without shafts and wheels (not illust.)
- 821 Shafts (1 pair) (not illust.)
- 2918 Wheels (1 pair) (not illust.)
- 2919 Wheel shaft, compl. (not illust.)



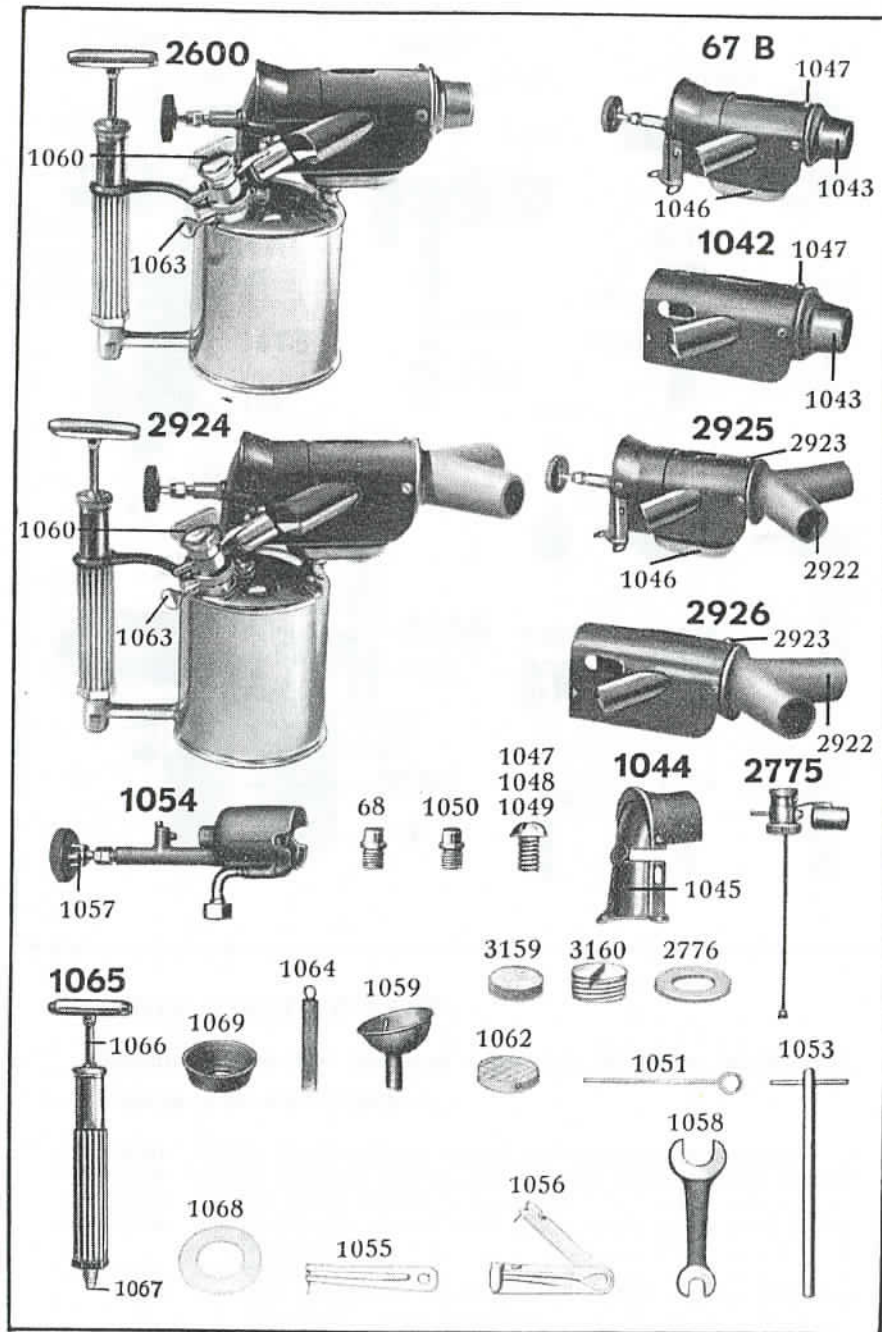
Circulating water pump at fly-wheel.

- 275P** Circulating water pump with guide for plunger, compl. with eccentric strap, on cylinder at fly-wheel
- 275** Circulating water pump without guide for plunger, compl. with eccentric strap, on cylinder at fly-wheel (not illust.)
- 276P** Pump housing with guide for plunger, only
- 276** Pump housing without guide for plunger, only (not illust.)
- 2895** Plug in pump housing 276P
- 2896** Plug in pump housing 276 (not illust.)
- 1186** Grease cup on pump housing 276P

- 278** Pump plunger with riveted pin
- 279** Plunger pin, only
- 2894** Packing for plunger (not illust.)
- 277P** Stuffing box gland, threaded, for pump with guide
- 277** Stuffing box gland, threaded, for pump without guide (not illust.)
- 61** Discharge valve ball
- 1191** Discharge valve seat for pump 275P
- 1192** Ball stop for discharge valve for pump 275P
- 2893** Ball stop for discharge valve for pump 275 (not illust.) ..
- 1193** Packing for ball stop 1192
- 62** Suction valve ball
- 1187** Suction valve seat for pump 275P
- 1189** Ball stop for suction valve for pump 275P
- 2892** Ball stop for suction valve for pump 275 (not illust.)
- 1194** Discharge air vessel for pump on cylinder at fly-wheel ..
- 316** Packing for ditto
- 55** Eccentric strap, compl. with bolts, for pump on cylinder at fly-wheel
- 1185** Stud with nut for ditto
- 2126** Packing between circulating water pump and cylinder (not illust.)
- 281** Screw for circulating water pump on cylinder at fly-wheel

Circulating water pump and bilge pump on bed plate.

- 275M** Circulating water pump compl. with eccentric strap, on exhaust side of bed plate
- 275N** Circulating water pump or bilge pump compl. with link and pin, on manoeuvring side of bed plate (not illust.) ..
- 276M** Pump housing, only, for pump on bed plate
- 298** Drain cock for pump housing
- 1186M** Grease cup on pump housing
- 2897** Pump plunger, compl. with pin and stop screw
- 278M** Plunger, only
- 279M** Plunger pin
- 2898** Stop screw for plunger pin
- 2899** Lock pin for plunger pin
- 2193** Packing for plunger
- 1881** Stuffing box gland (1-cyl. engine)
- 365** Stuffing box nut (1-cyl. engine)
- 277M** Stuffing box gland, threaded (2-cyl. engine)
- 2889** Valve housing, compl. with valves, springs and discharge air vessel for pump on exhaust side
- 2891** Valve housing, compl. with valves, springs and discharge air vessel, for pump on manoeuvring side (not illust.) ..
- 286M** Valve housing, only, for pump on exhaust side
- 286N** Valve housing, only for pump on manoeuvring side (not illust.)
- 61M** Discharge valve
- 290** Spiral spring for ditto (not illust.)
- 62M** Suction valve
- 289** Spiral spring for ditto
- 288A** Discharge vessel for pump on bed plate
- 316M** Packing for ditto
- 55M** Eccentric strap, compl. with bolts, for pump on bed plate ..
- 1185M** Stud with nuts for ditto
- 282M** Link for pump on bed plate
- 283** Pin for ditto
- 281M** Screw for pump on bed plate
- 2132** Eccentric disk combined with intermediate shaft, for pump on bed plate (1-cyl. engine) (illust. on page 58)
- 54** Eccentric disk with stop screw, for pump on bed plate (2-cyl. engine)
- 297** Stop screw for ditto



STARTING LAMP.

Special parts for engines with top injection and for 1-cyl. engine with side injection.

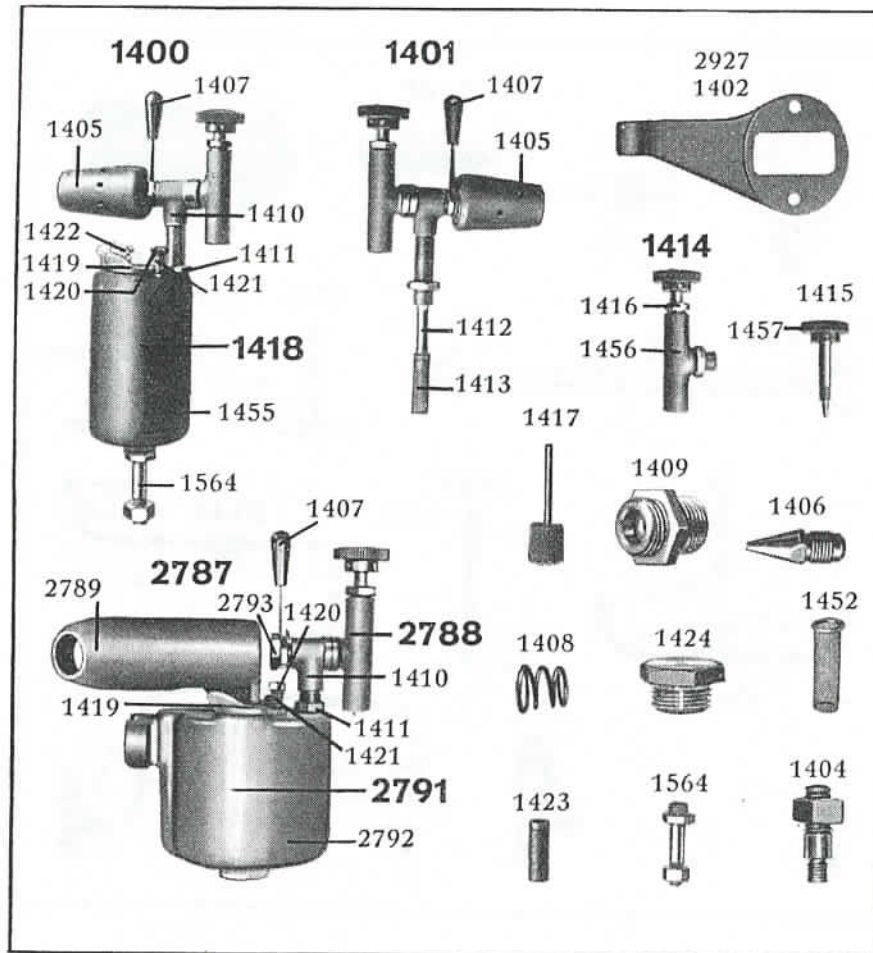
- 2600 Heating lamp, compl. with igniter and simple flame former
- 67B Lamp burner, compl. with burner coil, regulating valve, spirit cup, sheet iron frame and simple flame former
- 1042 Burner shield with simple flame former
- 1043 Simple flame former for burner shield
- 1047 Screw for flame former
- 65 Lamp bracket (not illust.)

Special parts for 2-cyl. engine with side injection.

- 2924 Heating lamp, compl. with igniter and branched flame former
- 2925 Lamp burner, compl. with burner coil, regulating valve, spirit cup, sheet iron frame and branched flame former
- 2926 Burner shield with branched flame former
- 2922 Branched flame former for burner shield
- 2923 Screw for flame former
- 2921 Bracket for lamp burner (not illust.)

Common parts.

- 1054 Burner coil (vaporizer) with regulating valve, compl. ...
- 68 Nozzle for burner coil
- 1050 Plug for gas pipe
- 1057 Regulating valve
- 1046 Spirit cup for burner
- 1048 Screw for fastening burner shield on frame
- 1044 Sheet iron shield with cap for burner
- 1045 Sheet iron shield without cap for burner
- 1049 Screw for fastening shield on container
- 2775 Igniter, compl. ...
- 3159 Felt washer in igniter for nozzle
- 3160 Screw for ditto
- 2776 Packing for igniter (not illust.)
- 1065 Air pump, compl. ...
- 1066 Pump rod with piston and handle
- 1067 Spring valve for air pump
- 1069 Leather packing for air pump
- 1060 Filling cap
- 1063 Air valve screw
- 1064 Strainer for discharge pipe of container
- 1059 Funnel
- 1062 Cork packing for cover
- 1068 Asbestos packing for air pump
- 1055 Cleaning needle without guard
- 1056 Cleaning needle with guard
- 1051 Cleaning pin for gas pipe
- 1058 Spanner for lamp nuts
- 1053 Spanner for nozzle and gas pipe plug
- 1061 Spanner for regulating valve (not illust.)
- 1070 Spanner for air pump piston (not illust.)
- 1052 Box with spare parts for lamp (not illust.)



QUICK STARTING LAMP.

Special parts for engines with top injection and 1-cyl. engine with side injection.

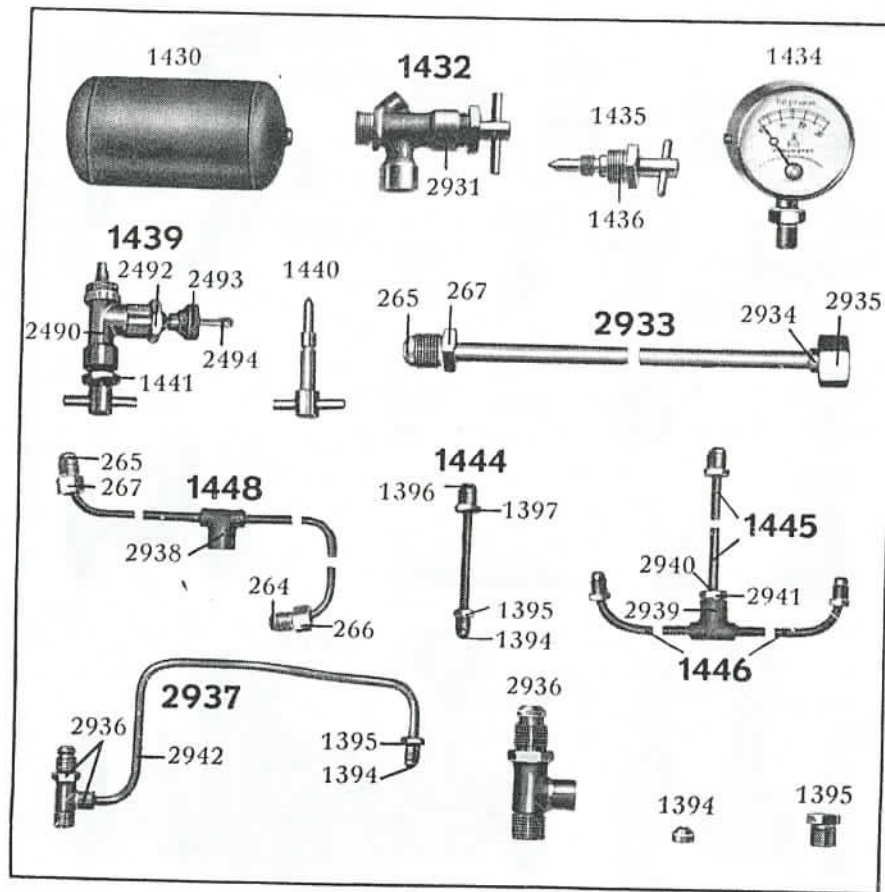
- 1400 Quick starting lamp, compl. with simple flame former ..
- 1401 Quick starting burner, compl. with simple flame former ..
- 1405 Simple flame former ..
- 1418 Oil container, compl. with plug, wick, cover and filling strainer ..
- 1455 Oil container, only ..
- 1402 Bracket for quick starting lamp (1-cyl. engine with top injection) ..
- 2927 Bracket for quick starting lamp (1-cyl. engine with side injection) ..

Special parts for 2-cyl. engine with side injection.

- 2787 Quick starting lamp, compl. with branched flame former ..
- 2788 Quick starting burner, compl. but without flame former ..
- 2793 Nut for regulating handle ..
- 2791 Oil container, compl. with plug, wick, cover, filling strainer and branched flame former ..
- 2792 Oil container, only, for branched flame former ..
- 2789 Branched flame former ..
- 2790 Screw for ditto (not illust.) ..

Common parts.

- 1414 Valve for burner, compl. with air strainer (without nozzle)
- 1456 Valve housing, only ..
- 1415 Valve spindle with knob ..
- 1457 Knob with taper pin ..
- 1416 Stuffing box nut ..
- 2475 Box packing (not illust.) ..
- 1417 Air strainer in valve for burner ..
- 1410 T-piece, only, for quick starting burner ..
- 1411 Nut for ditto ..
- 1407 Regulating handle ..
- 1409 Mixing chamber for burner ..
- 1406 Nozzle ..
- 1408 Spring at nozzle ..
- 1424 Plug for oil container ..
- 1419 Cover for oil container ..
- 1420 Stud for cover ..
- 1421 Spiral spring for ditto ..
- 1452 Filling strainer ..
- 1422 Wick for oil container ..
- 1423 Wick holder ..
- 1412 Fuel suction pipe with ring (without strainer) ..
- 1413 Fuel strainer for suction pipe ..
- 2474 Spacer for burner (nat illust.) ..
- 1564 Bolt with nut for quick starting lamp (1-cyl. engine)
- 1404 Bolt with nut for quick starting lamp (2-4-cyl. engine)



Air receiver with fittings.

- 2928 Air receiver, compl. with stop-valve, pressure gauge and valve for charging by hand pump (not illust.)
- 1430 Air receiver without fittings
- 1432 Stop-valve for ditto
- 2931 Housing for stop-valve
- 1435 Valve spindle with pin
- 1436 Stuffing box nut
- 2932 Stuffing box packing (not illust.)
- 1434 Pressure gauge
- 1439 Valve compl. with hose union for charging the air receiver by hand pump
- 2490 Valve housing
- 1440 Valve spindle with pin
- 1441 Stuffing box nut
- 2491 Stuffing box packing (not illust.)
- 3170 Hose union, compl. incl. 2492, 2493 and 2494)

- 2492 Union for hose nozzle
- 2493 Nut for hose nozzle
- 2494 Hose nozzle

Air piping.

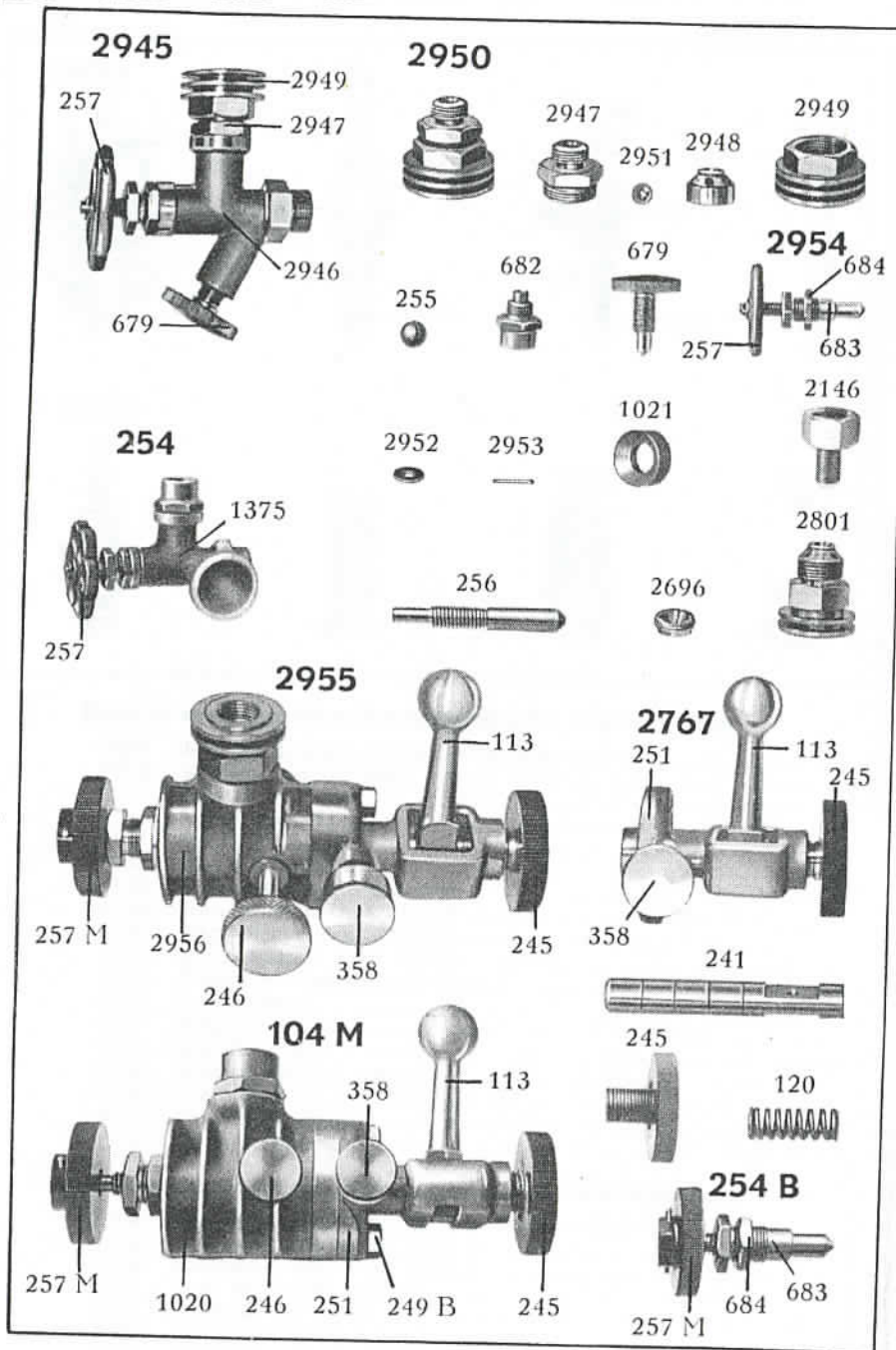
- 2933 Air pipe between stop-valve of air receiver and T-piece on starting valve or combined valve, compl. with cones and nuts, 2 m.
- 1448 Air pipe between stop-valve of air receiver and charging valve or combined valve, compl. with T-piece, cones and nuts (old design)
- 265 Cone against stop-valve
- 267 Union nut for ditto
- 2934 Cone against T-piece on charging valve or combined valve
- 2935 Union nut for ditto
- 2938 T-piece for air pipe 1448
- 264 Cone against charging valve or combined valve
- 266 Union nut for ditto
- 1444 Air pipe between T-piece 2938 and quick starting lamp, compl. with cones and nuts (1-2-cyl. engine) (old design)
- 1396 Cone against T-piece 2938
- 1397 Union nut for ditto
- 1445 Air pipe between T-piece 2938 and branch pipe for quick starting lamps, compl. with cones and nuts (4-cyl. engine)
- 2940 Cone against T-piece 2939
- 2941 Union nut for ditto
- 1446 Branch pipe between quick starting lamps, compl. with T-piece, cones and nuts (4-cyl. engine)
- 2939 T-piece in branch pipe 1446

Air piping for engine with top injection.

- 2937 Air pipe between charging valve or combined valve and quick starting lamp, compl. with T-piece, cones and nuts (1-2-cyl. engine)
- 2942 Air pipe between T-piece 2936 and quick starting lamp with cone and nut

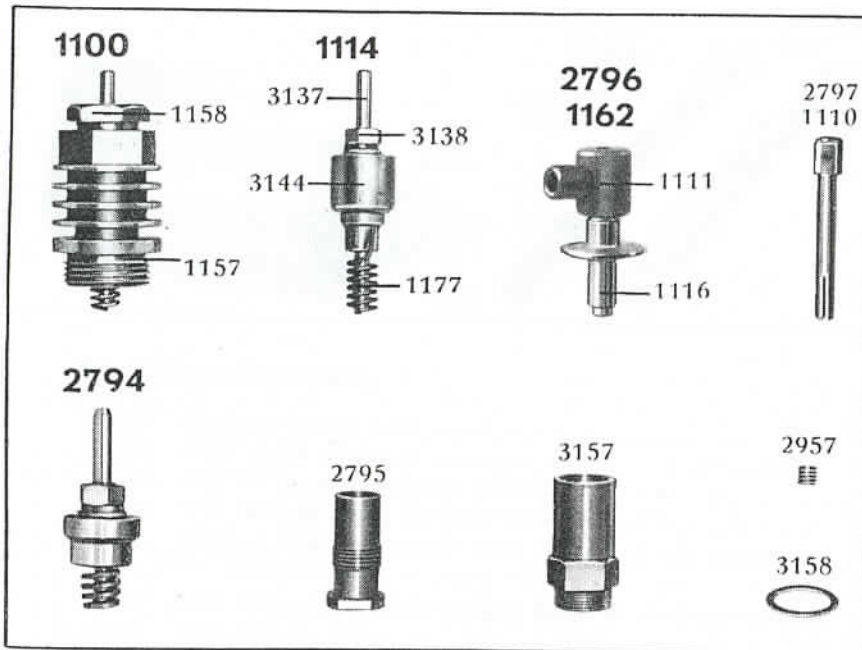
Air piping for engine with side injection.

- 2943 Air pipe between charging valve or combined valve and quick starting lamp, compl. with T-piece, cones and nuts (1-2-cyl. engine) (not illust.)
- 2944 Air pipe between T-piece 2936 and quick starting lamp with cone and nut (not illust.)
- 2936 T-piece with cone and nut for air pipe 2937 or 2943
- 1394 Cone against quick starting burner
- 1395 Union nut for ditto



Charging and starting valve.

- 2945 Charging valve, compl. with ball stop of steel (not combined)
- 2946 Valve housing, only, for ditto
- 2950 Ball valve, compl. consisting of valve seat, valve ball, ball stop and hexagonal nipple
- 2947 Valve seat
- 2951 Valve ball of steel
- 2948 Ball stop of steel
- 2949 Hexagonal nipple, internal threads (with cams)
- 254 Charging valve, compl. with ball stop of bronze (not combined) (old design)
- 1375 Valve housing, only, for ditto
- 255 Valve ball of bronze
- 682 Ball stop of bronze
- 679 Blow-off valve screw on charging valve 2945 or 254 ..
- 2954 Valve, compl., for charging valve 2945 or 254
- 256 Valve spindle
- 257 Hand wheel for valve spindle
- 2952 Washer for hand wheel
- 2953 Split pin for ditto
- 683 Stuffing box gland, with threads
- 684 Stop nut for stuffing box gland
- 1021 Stuffing box gland, inner, for charging valve
- 2415 Stuffing box packing (not illust.)
- 2146 Nipple for charging valve
- 2955 Combined charging and starting valve, compl. with ball stop of steel
- 2956 Housing with valve seat for ditto
- 2696 Valve seat
- 2951 Valve ball of steel
- 2801 Steel ball stop, internal threads (with cams)
- 104 M Combined charging and starting valve, compl. with ball stop of bronze (old design)
- 1020 Housing, only, for ditto
- 255 Valve ball of bronze
- 682 Ball stop of bronze, internal threads
- 246 Blow-off valve screw on combined charging and starting valve 2955 or 104 M
- 2767 Starting valve, compl. for combined valve
- 251 Spindle guide for starting valve
- 241 Valve spindle for starting valve
- 113 Handle with split pin for ditto
- 245 Hand wheel with sleeve for starting valve
- 120 Spiral spring for starting valve
- 358 Grease cup
- 249 B Screw for starting valve
- 254 B Charging valve, compl., for combined valve
- 256 Valve spindle for ditto
- 257 M Hand wheel with bushing and taper pin
- 119 Taper pin for hand wheel 257 M (not illust.)
- 683 Stuffing box gland, with threads
- 684 Stop nut for stuffing box gland
- 1021 Stuffing box gland, inner, for charging valve
- 2415 Stuffing box packing (not illust.)

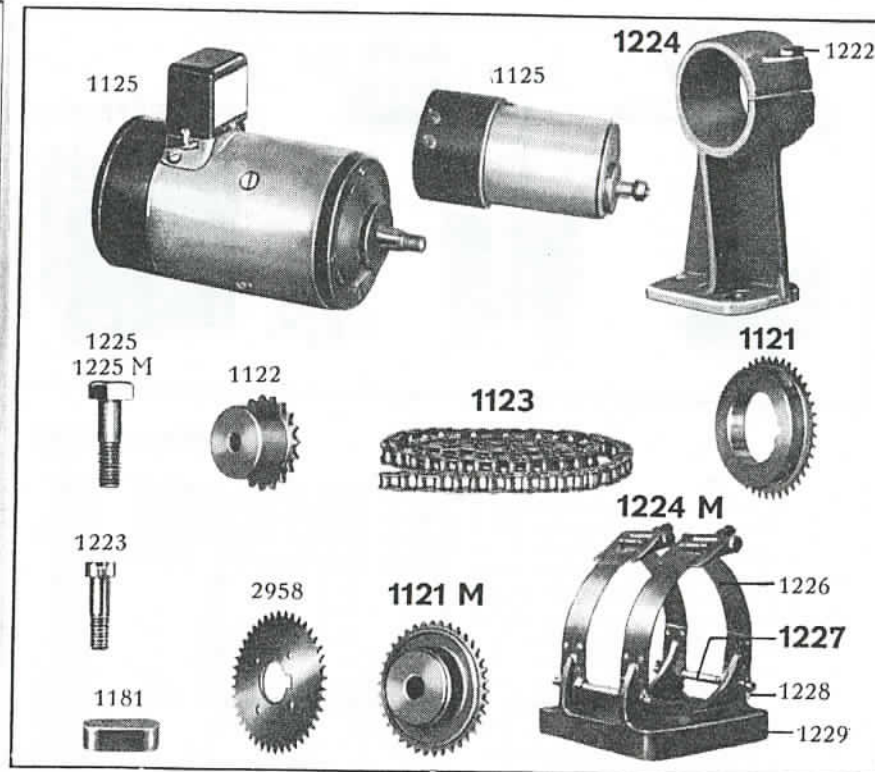


Electric start ignition for engine with top injection.

1100	Electric igniter, compl. with plug and nut
1114	Electric igniter with coil, 6 volts
1177	Igniter coil, only
2957	Screw for fixing igniter coil
3137	Insulator screw
3138	Nut for igniter
3139	Spring washer (not illust.)
3140	Iron washer (not illust.)
3141	Mica sleeve (not illust.)
3142	Mica washer (not illust.)
3143	Asbestos washer (not illust.)
3144	Igniter seat
1157	Plug for igniter
1158	Nut for plug
1162	Socket contact, compl.
1110	Contact, only, for ditto
1116	Protecting sleeve
1111	Ebonite guard

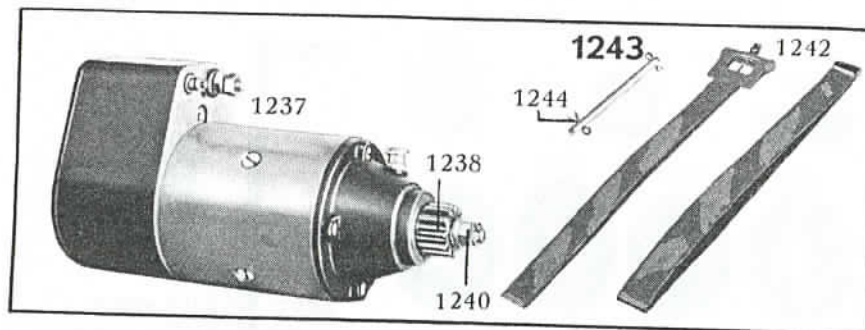
Electric start ignition for engine with side injection.

2794	Electric igniter, compl. with coil, 4 volts
2795	Clamping sleeve for ditto
4456	Clamping nut (not illust.)
3157	Seat for 4-volt igniter
3158	Packing for ditto
2796	Socket contact, compl.
2797	Contact, only, for ditto
1116	Protecting sleeve
1111	Ebonite guard



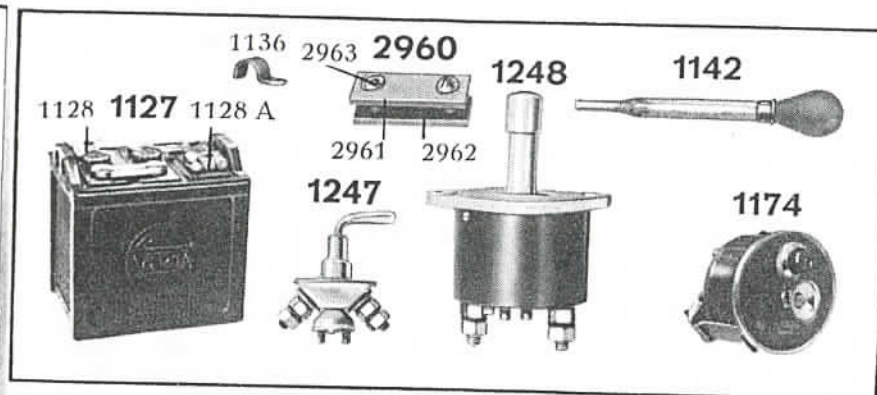
Generator and driving mechanism.

1125	Generator, only
1224	Bracket with clamping screw for generator (1-cyl. engine)
1222	Clamping screw for ditto
1225	Screw for bracket
1226	Holding band (1 pair) with rivets but not riveted for generator (2-cyl. engine)
1227	Bolt with split pins for holding band for generator
1228	Split pin for ditto
1122	Sprocket-wheel for generator
1123	Roller chain, compl. with joining link and chain lock
1179	Joining link for roller chain (not illust.)
1180	Chain lock (not illust.)
1121	Sprocket-wheel on crank shaft for driving generator, in halves (1-cyl. engine)
1223	Bolt for joining ditto
1181	Key for sprocket-wheel 1121
2958	Sprocket-wheel on pulley for driving generator (1-cyl. engine)
2959	Screw for ditto (not illust.)
1121M	Sprocket-wheel on crank shaft for driving generator (2-cyl. engine)
1223M	Stop screw for ditto (not illust.)
1224M	Generator bracket, compl. with holding band and bolts (old design) (2-4-cyl. engine)
1229	Generator bracket, only (old design)
1225M	Screw for ditto



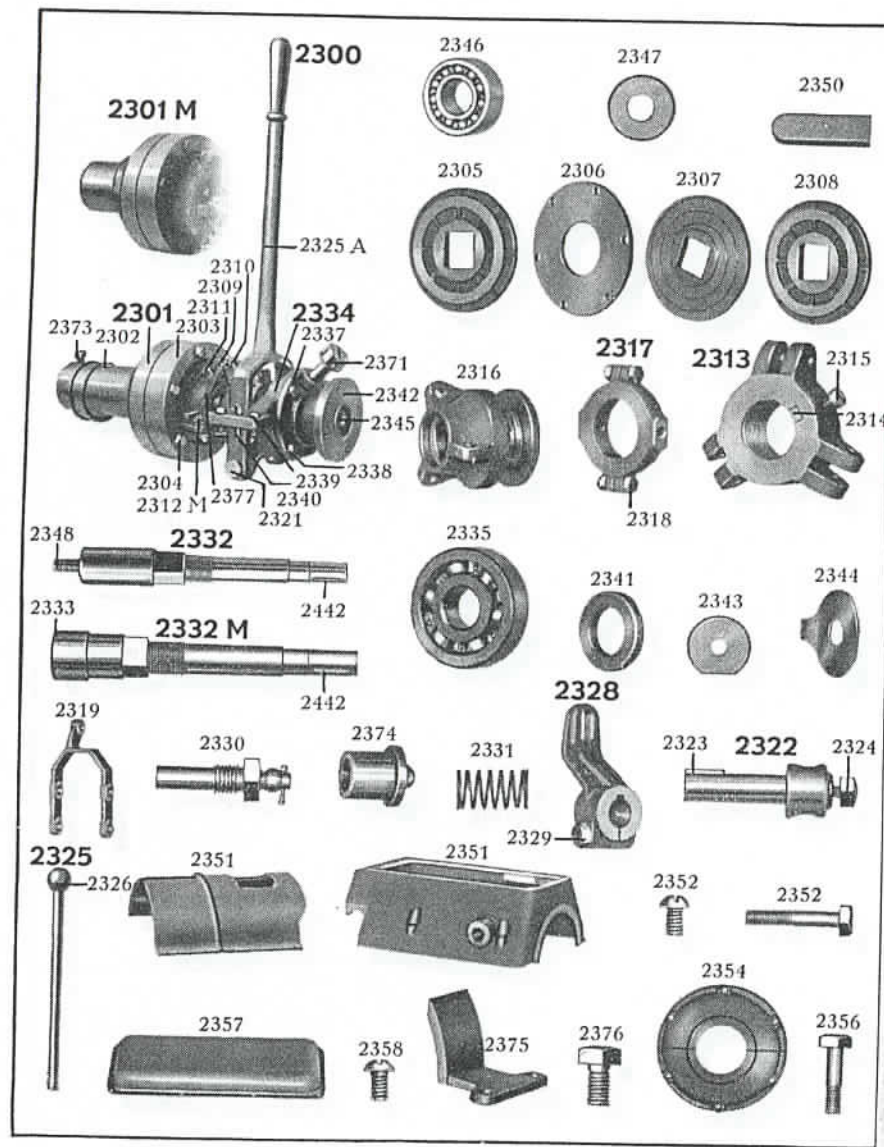
Electric starting motor.

- 1237 Starting motor, only
- 1238 Gear wheel for ditto
- 1239 Key for gear wheel (not illust.)
- 1240 Nut with split pin for gear wheel
- 1242 Holding band (1 pair) with rivets but not riveted, for starting motor
- 1243 Bolt with split pins for holding band for starting motor ..
- 1244 Split pin for ditto
- 1241 Bracket for starting motor, compl. with holding band and bolts (old design) (not illust.)
- 1245 Bracket, only (old design) (not illust.)
- 1246 Stud for ditto (not illust.)



Battery, cables etc.

- 1127 Battery, compl. with terminals
- 1128 Terminal for battery + pole
- 1128A Terminal for battery — pole
- 1234 Cable, 2,5 mm² (not illust.)
- 1220 " 6 " " " "
- 1130 " 10 " " " "
- 1131 " 16 " " " "
- 1235 " 25 " " " "
- 1236 " 70 " " " "
- 1136D Cable clip for 2,5 mm² cable (not illust.)
- 1136E " " " 6 " " " (" ")
- 1136 " " " 10 " " " (" ")
- 1136A " " " 16 " " " (not illust.)
- 1136F " " " 25 " " " (" ")
- 1136G " " " one 70 mm² cable (" ")
- 1137A " " " two 70 " " " (" ")
- 2960 Cable holder with screws
- 2961 Upper part with smooth holes
- 2962 Lower part with threaded holes
- 2963 Screw for assembling cable holder
- 1142 Hydrometer syringe
- 1247 Ignition switch
- 1248 Pedal switch
- 2965 Resistance for 4-volt igniter (engine with side injection) (not illust.)
- 2964 Resistance for 6-volt igniter (engine with top injection) (not illust.)
- 1174 Switch for starting motor
- 1141 Voltmeter (not illust.)
- 1173 Amperemeter (not illust.)



Friction clutch.

Friction clutch.

2300 Friction clutch, compl. with flanged coupling (without hood)

For driving shaft.

2346 Ball bearing on thrust shaft (1-cyl.) and driving shaft (2-cyl.)

2347 Washer for ditto

2348 Castle nut (not illust.)

2349 Split pin for ditto (not illust.)

2350 Key for clutch housing

Clutch.

2301 Clutch housing with plug and stop screw for friction clutch (1-cyl. engine)

2301M Clutch housing with plug for friction clutch (2-4-cyl. engine)

2302 Plug in clutch housing

2373 Stop screw for clutch housing (1-cyl. engine)

2303 Guide drum

2304 Screw for ditto

2305 Stop flange for friction disks

2306 Friction disk with cylindrical hole

2307 Friction disk with square hole

2308 Pressure friction disk

2313 Adjustment nut with key and set screw

2314 Key for adjustment nut

2315 Set screw for ditto

2309 Lever

2311 Pin with split pins in pressure friction disk for lever

2310 Link between muff and lever

2312 Pin with split pins for link (not illust.)

2312M Pin with split pins for link and spring (1-cyl. engine) ..

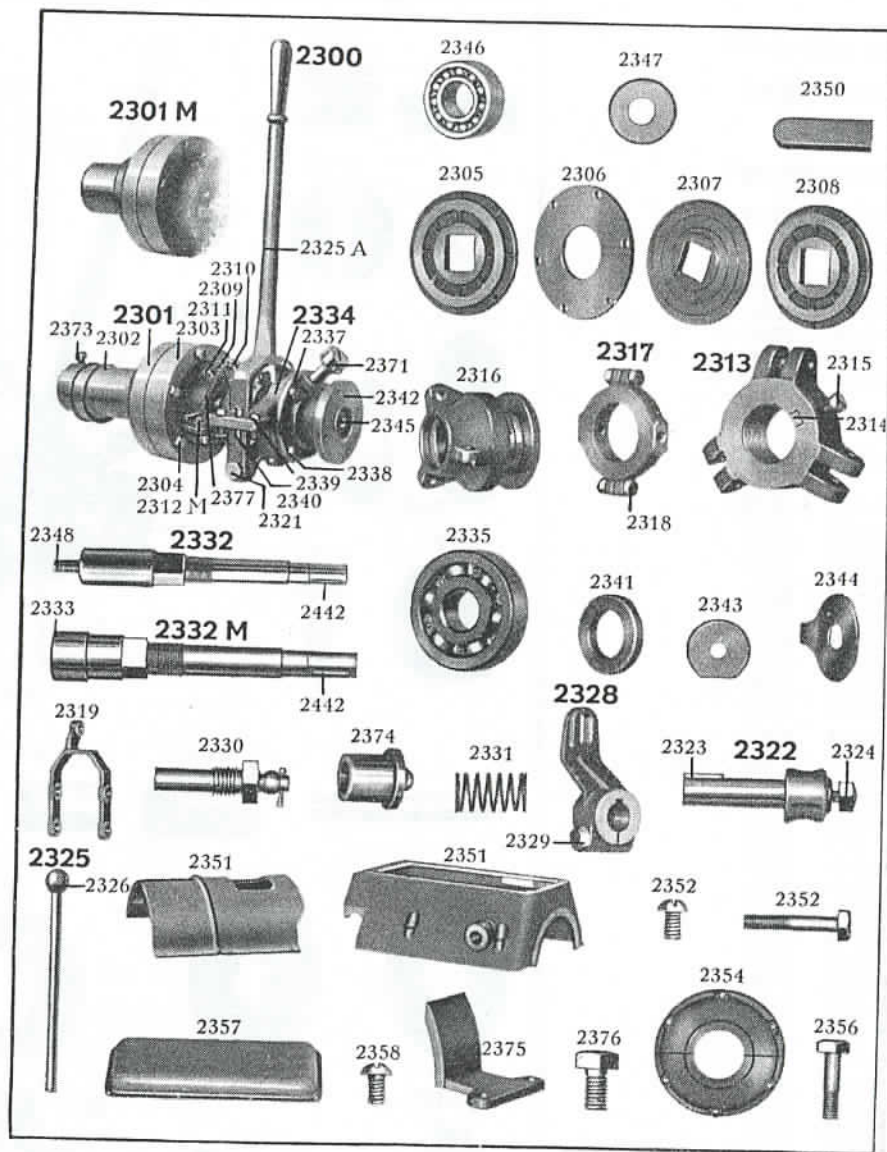
2377 Spring between links (1-cyl. engine)

2316 Muff

2317 Pressure collar, compl.

2318 Screw with nut for ditto

2378 Spring washer for ditto (not illust.)



Thrust bearing and thrust shaft for friction clutch.

- 2332 Thrust shaft, compl. with key, castle nut and split pin (1-cyl. engine)
- 2332M Thrust shaft, compl. with keys (2-4-cyl. engine)
- 2348 Castle nut for ball bearing (1-cyl. engine)
- 2349 Split pin for ditto (1-cyl. engine) (not illust.)
- 2333 Key for stop flange (2-4-cyl. engine)
- 2442 Key for coupling flange

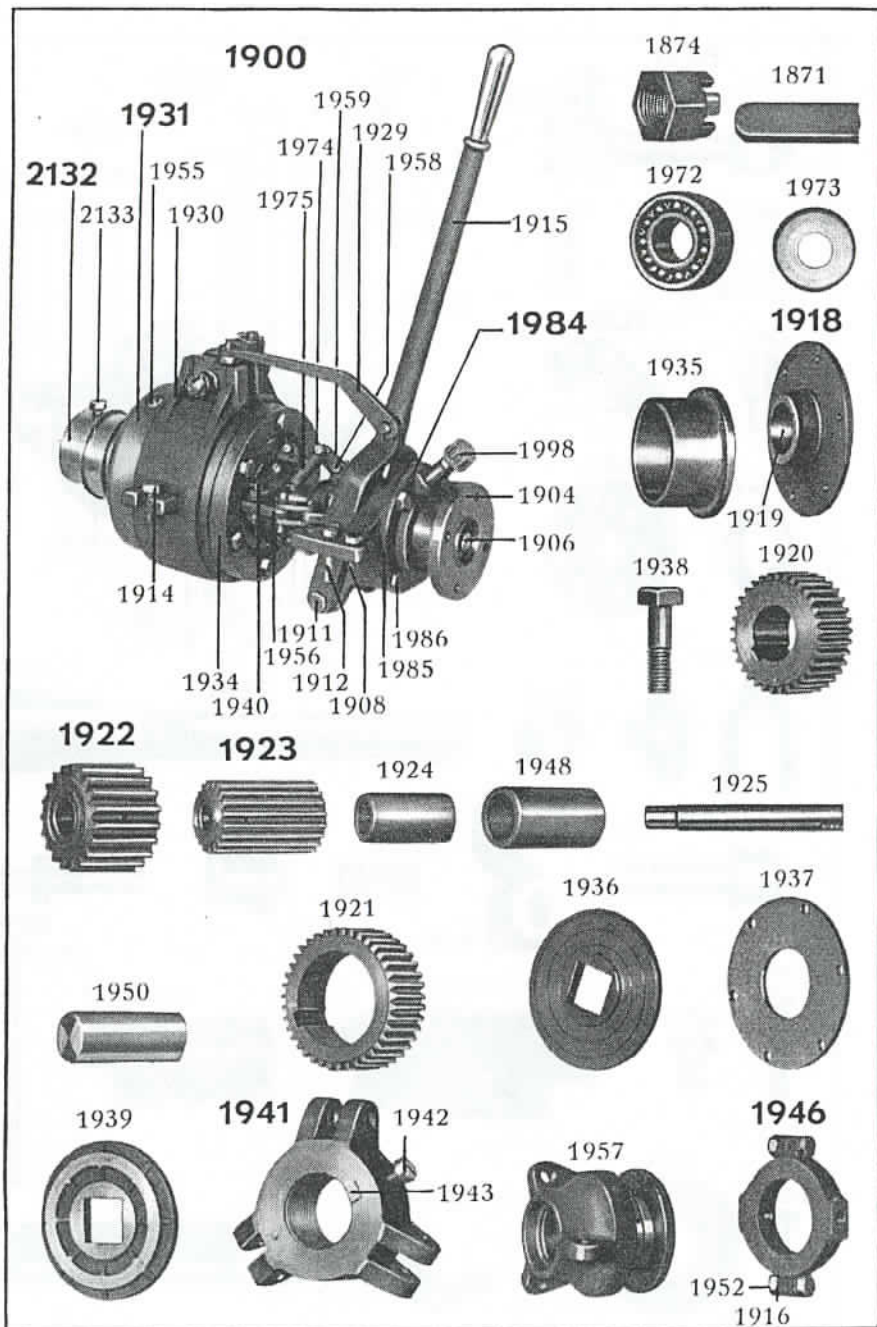
- 2336 Thrust bearing, compl. with housing, ball bearing and cover (1-cyl. also with grease cup) (not illust.)
- 2334 Thrust bearing housing with guide pins
- 2340 Guide pin for thrust bearing housing
- 2372 Felt ring in thrust bearing housing (1-cyl.) (not illust.)
- 2335 Thrust bearing (ball bearing), only
- 2337 Cover for thrust bearing housing
- 2338 Screw for cover 2337
- 2371 Grease cup for thrust bearing (1-cyl. engine)
- 2972 Hexagonal nipple for ditto (1-cyl. engine) (not illust.) ..
- 2973 Socket for ditto (1-cyl. engine) (not illust.)
- 2341 Stop ring for thrust bearing
- 2339 Screw for thrust bearing housing
- 2342 Coupling flange on thrust shaft
- 2974 Lubrication nipple in coupling flange for thrust bearing (2-4-cyl. engine) (not illust.)
- 2343 Washer for coupling flange
- 2345 Screw for coupling flange
- 2344 Lock washer for ditto

Manoeuvring device for friction clutch.

- 2319 Manoeuvring fork (2-4-cyl. engine)
- 2321 Pin for manoeuvring fork
- 2320 Pin for manoeuvring fork and pressure collar (not illust.) ..
- 2330 Pin with split pin for manoeuvring fork and manoeuvring arm (2-4-cyl. engine)
- 2374 Lock pin (2-4-cyl. engine)
- 2331 Spring for lock pin (2-4-cyl. engine)
- 2328 Manoeuvring arm with screw (2-4-cyl. engine)
- 2329 Screw for ditto (2-4-cyl. engine)
- 2322 Manoeuvring shaft, compl. with key and stop screw (2-4-cyl. engine)
- 2323 Key for manoeuvring arm (2-4-cyl. engine)
- 2324 Stop screw for manoeuvring lever (2-4-cyl. engine)
- 2325 A Manoeuvring lever with fork, only (1-cyl. engine)
- 2325 Manoeuvring lever with knob (2-4-cyl. engine)
- 2326 Knob for ditto (2-4-cyl. engine)

Cover for friction clutch.

- 2351 Cover for friction clutch
- 2352 Screw for ditto
- 2357 Top cover for ditto (2-4-cyl. engine)
- 2358 Screw for ditto (2-4-cyl. engine)
- 2375 Blind flange for cover (2-4-cyl. engine)
- 2376 Screw for ditto (2-4-cyl. engine)
- 2354 End cover in halves (2-4-cyl. engine)
- 2356 Screw for ditto (2-4-cyl. engine)
- 2355 Felt ring for end cover (2-4-cyl. engine) (not illust.) ..



Reversing gear.

1900 Reversing gear, compl. with flanged coupling (with hood)

For driving shaft.

2132 Counter shaft with stop screw, castellated nut, split pin and key (1-cyl. engine)

2133 Set screw for intermediate shaft (1-cyl. engine)

1874 Castellated nut for gear wheel 1920 (1—2-cyl. engine) ..

2349 Split pin for ditto (1—2-cyl. engine) (not illust.)

1871 Key for gear wheel 1920 (1—2-cyl. engine)

1972 Ball bearing on driving shaft

1973 Washer for ditto against gear wheel 1920

Gear housing and disk clutch.

1931 Gear drum with bushing and filling plug

1935 Bushing for gear drum

1955 Filling plug for gear drum

4495 Shaft packing ring in gear drum (not illust.)

1918 End cover for gear drum with bushing

1919 Bushing in end cover for ditto

4496 Shaft packing ring in end cover for gear drum

1934 Guide hood for friction disks

1938 Screw for guide hood

1920 Gear wheel for driving shaft

1922 Gear wheel, short, with bushing

1923 Gear wheel, long, with bushing

1924 Bushing for gear wheel 1922 and 1923

1948 Distance sleeve for gear wheel 1922

1925 Pin for gear wheel 1922 and 1923

1950 Set screw for 1925

1921 Gear wheel for thrust shaft

1936 Friction disk with square hole

1937 Friction disk with cylindrical hole

1939 Pressure friction disk

1941 Adjustment nut with key and set screw

1942 Set screw for ditto

1943 Key for adjustment nut

1940 Pin with split pins in pressure friction disk for lever

1956 Lever

1959 Link between muff and lever

1958 Pin with split pins for link

1974 Pin with split pins for link and spring (1-cyl. engine) ..

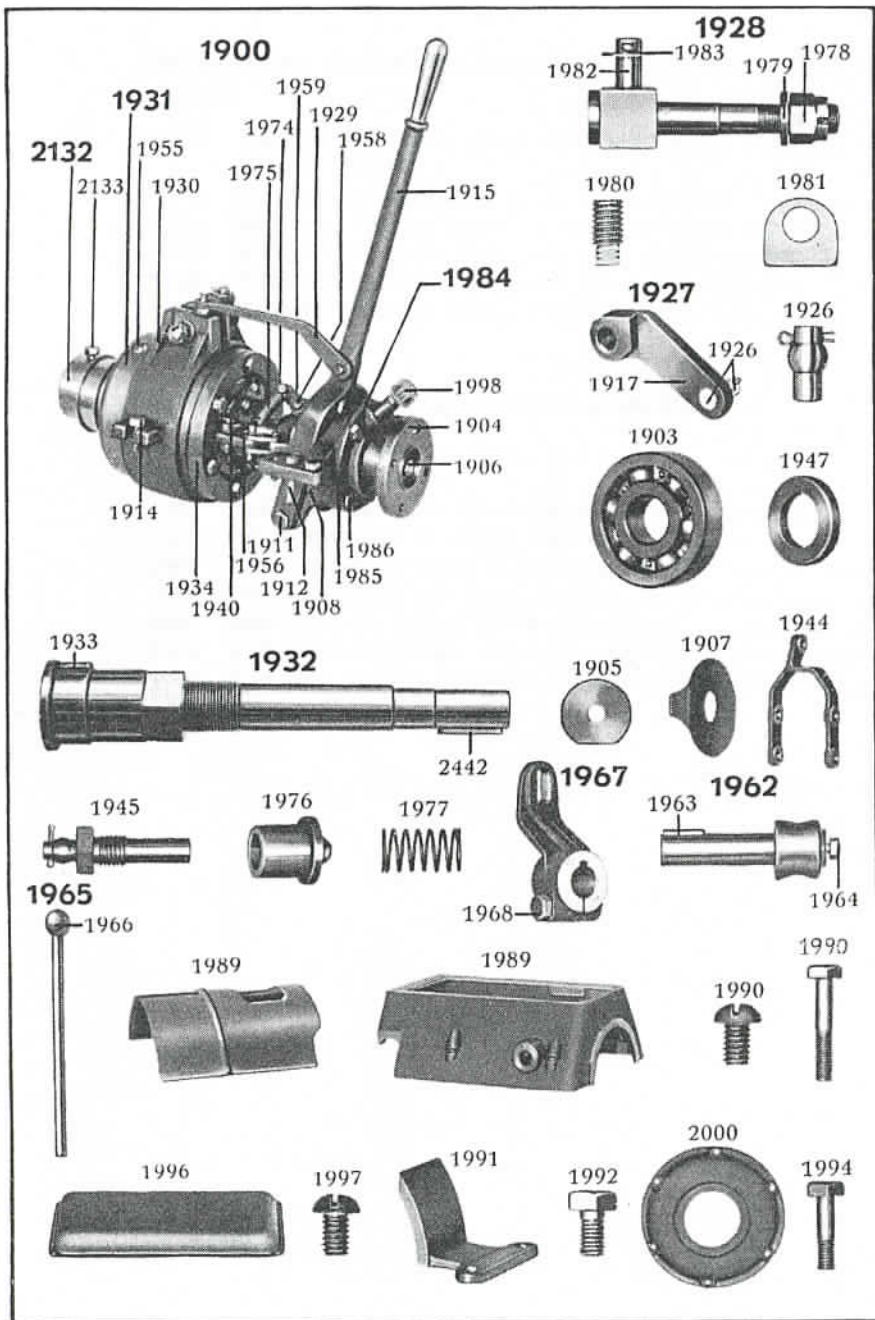
1975 Spring between links (1-cyl. engine)

1957 Muff

1946 Pressure collar, compl.

1952 Screw with nut for ditto

1916 Spring washer for ditto



Brake strap for reversing gear.

- 1930 Brake strap
- 1914 Screw for ditto
- 1928** Lever for brake strap, compl. with pin, nut and washers
- 1978 Nut for ditto
- 1979 Washer for ditto
- 1980 Set screw for 1928
- 1982 Pin for 1928
- 1983 Washer for ditto
- 1981 Thrust washer for cam
- 1927** Lever with ball pin and split pin
- 1917 Lever, only
- 1926 Ball pin with split pin

Thrust bearing and thrust shaft for reversing gear.

- 1932** Thrust shaft with keys
- 1933 Key for gear wheel 1921
- 2442 Key for coupling flange
- 1901** Thrust bearing, compl. with housing, ball bearing and cover (1-cyl., also with grease cup) (not illust.)
- 1984 Thrust bearing housing with guide pins
- 1912 Guide pin for thrust bearing housing
- 1999 Felt packing in thrust bearing housing (1-cyl. engine) (not illust.)
- 1903 Thrust bearing (ball bearing), only
- 1985 Cover for thrust bearing housing
- 1986 Screw for cover 1985
- 1998 Grease cup for thrust bearing (1-cyl. engine)
- 2972 Hexagonal nipple for ditto (1-cyl. engine) (not illust.) ..
- 2973 Socket for ditto (1-cyl. engine) (not illust.)
- 1947 Stop ring for thrust bearing
- 1908 Screw for thrust bearing
- 1904 Coupling flange on thrust shaft
- 2974 Grease nipple in coupling flange for thrust bearing (2-4-cyl. engine) (not illust.)
- 1905 Washer for coupling flange
- 1906 Screw for coupling flange
- 1907 Lock washer for screw

Manoeuvring device for reversing gear.

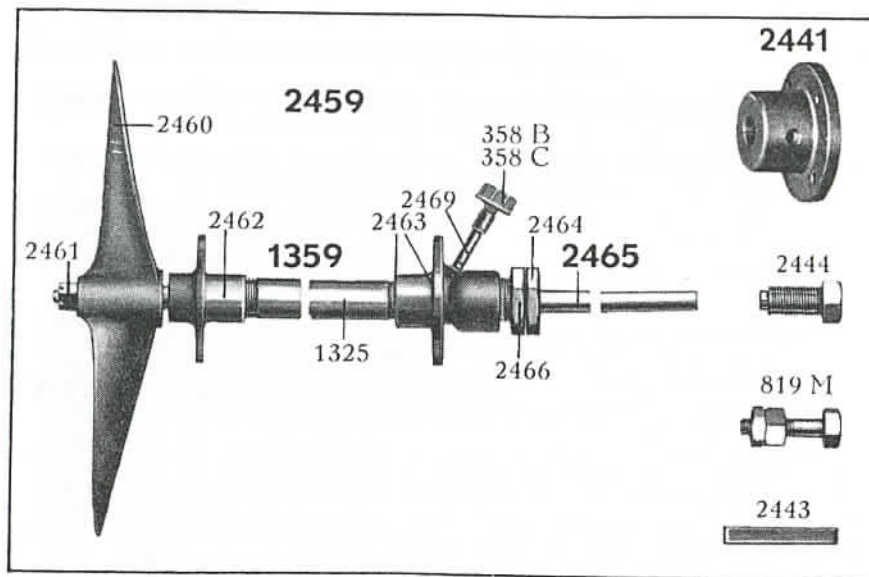
- 1944 Manoeuvring fork (2-4-cyl. engine)
- 1911 Pin for manoeuvring fork
- 1953 Pin for manoeuvring fork and pressure collar (not illust.) ..
- 1945 Ball pin with split pin in manoeuvring fork for link
- 1929 Link
- 1976 Lock pin (2-4-cyl. engine)
- 1977 Spring for lock pin (2-4-cyl. engine)
- 1967** Manoeuvring arm with screw (2-4-cyl. engine)
- 1968 Screw for ditto (2-4-cyl. engine)

Manoeuvring device for reversing gear, cont., (illust. on page 60).

- 1962 Manoeuvring shaft, compl. with key and set screw (2—4-cyl. engine)
- 1963 Key for manoeuvring arm (2—4-cyl. engine)
- 1964 Set screw for manoeuvring lever (2—4-cyl. engine)
- 1915 Manoeuvring lever with fork, only (1-cyl. engine)
- 1965 Manoeuvring lever with knob (2—4-cyl. engine)
- 1966 Knob for ditto (2—4-cyl. engine)

Cover for reversing gear, (illust. on page 60).

- 1989 Cover for reversing gear
- 1990 Screw for ditto
- 1996 Top cover for ditto (2—4-cyl. engine)
- 1997 Screw for ditto (2—4-cyl. engine)
- 1991 Blind flange for cover (2—4-cyl. engine)
- 1992 Screw for ditto (2—4-cyl. engine)
- 2000 End cover in halves (2—4-cyl. engine)
- 1994 Screw for end cover (2—4-cyl. engine)
- 1995 Felt ring for end cover (2—4-cyl. engine) (not illust.) ..

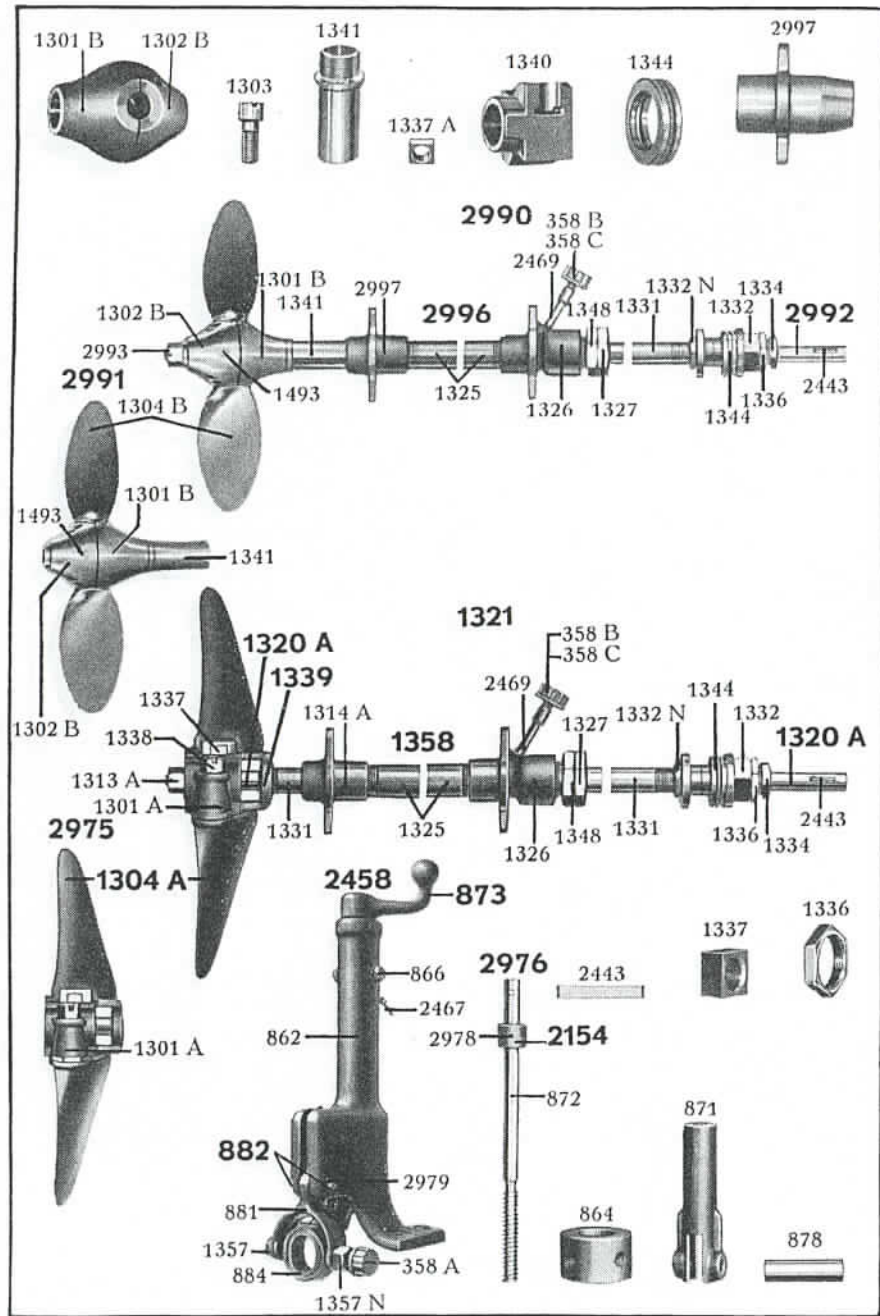


Stern gear.

- 2441 Coupling flange for propeller shaft
- 2444 Set screw for ditto
- 819M Bolt with nuts for flanged coupling

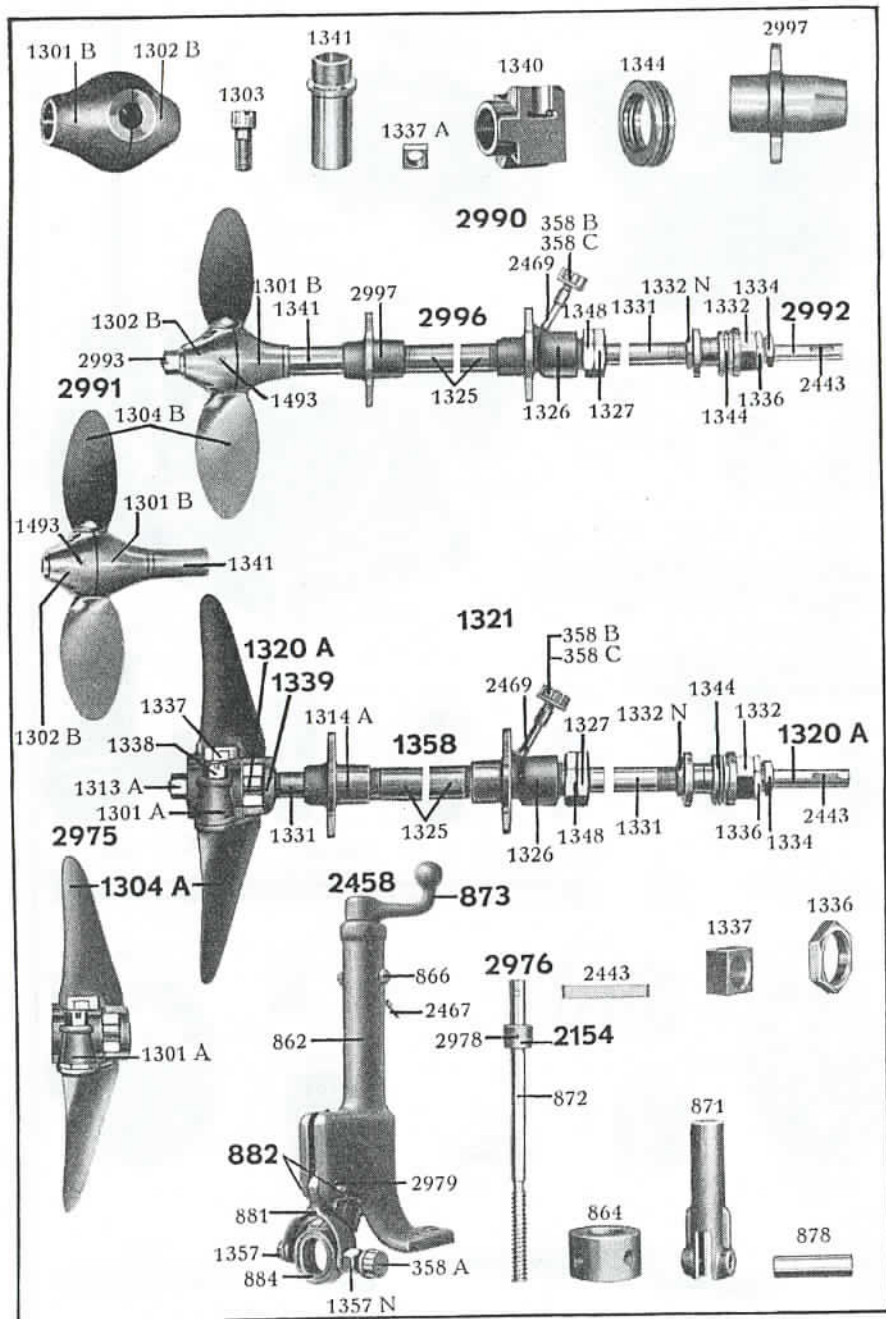
Stern gear for propeller with fixed blades.

- 2459 Stern gear with fixed blades, compl., but without coupling flange
- 2465 Propeller shaft with keys and nut
- 2443 Key for coupling flange
- 2470 Key for propeller (not illust.)
- 2461 Nut for propeller
- 1323 Split pin for ditto (not illust.)
- 2460 Propeller (three bladed)
- 1359 Stern tube, compl. with stern-post fitting
- 2463 Stuffing box for stern tube
- 2464 Stuffing box gland for ditto
- 2466 Stop nut for stuffing box gland (1—2-cyl. engine)
- 2998 Stuffing box packing (not illust.)
- 1318 Stud with nuts for stuffing box gland (4-cyl. engine) (not illust.)
- 1349 Flange for stuffing box (4-cyl. engine) (not illust.)
- 1350 Screw for ditto (4-cyl. engine) (not illust.)
- 358B Grease cup No. 4 (1-cyl. engine)
- 358C Grease cup No. 5 (2-cyl. engine)
- 2469 Pipe with socket for ditto (1—2-cyl. engine)
- 586 Grease cup (4-cyl. engine) (not illust.)
- 1325 Stern tube
- 2462 Stern-post fitting



Stern gear with reversible propeller blades.

- 2990** Stern gear with reversible blades and closed hub, compl., but without coupling flange
- 2991** Propeller hub (closed), compl. with bronze jacket, propeller blades, blocks and manoeuvre piece
- 1301B** Propeller hub, forward
- 1302B** Propeller hub, aft
- 1493** Filling plug for propeller hub
- 1303** Screw for propeller hub
- 1341** Bronze jacket
- 1304B** Propeller blade (1 pc.)
- 1337A** Block for propeller blade
- 1340** Manoeuvre piece for propeller blade
- 2992** Propeller shaft with keys and nut
- 2995** Key for propeller hub (not illust.)
- 2443** Key for coupling flange
- 2993** Nut for propeller hub
- 2994** Split pin for ditto (not illust.)
- 1331** Manoeuvre tube
- 1332** Manoeuvre collar (fore)
- 1334** Stuffing box gland for ditto
- 1336** Stop nut for stuffing box gland
- 3000** Stuffing box packing for manoeuvre collar (not illust.) ..
- 1332N** Manoeuvre collar (aft)
- 1344** Ball bearing for manoeuvre ring
- 884** Manoeuvre ring
- 2996** Stern tube, compl. with stern-post fitting
- 1326** Stuffing box for stern tube
- 1327** Stuffing box gland for ditto
- 1348** Stop nut for box gland
- 2999** Stuffing box packing (not illust.)
- 358B** Grease cup No. 4 (1-cyl. engine)
- 358C** Grease cup No. 5 (2-cyl. engine)
- 2469** Pipe with socket for ditto (1—2-cyl. engine)
- 1325** Stern tube
- 2997** Stern-post fitting
- 1321** Stern gear with reversible blades and open hub, compl. but without coupling flange
- 2975** Propeller hub (open), compl. with propeller blades, manoeuvre fork and blocks
- 1301 A** Propeller hub, only
- 1304A** Propeller blade with nut and cylindrical pin (1 pc.)
- 1338** Nut for propeller blade
- 1322** Cylindrical pin for ditto (not illust.)
- 1339** Manoeuvre fork with set screw
- 2468** Set screw for ditto (not illust.)
- 1337** Block for propeller blade
- 1320A** Propeller shaft with keys and nut
- 1300** Key for propeller hub (not illust.)
- 2443** Key for coupling flange
- 1313A** Nut for propeller hub
- 1323M** Split pin for ditto (not illust.)
- 1331** Manoeuvre tube
- 1332** Manoeuvre collar, fore
- 1334** Stuffing box gland for ditto

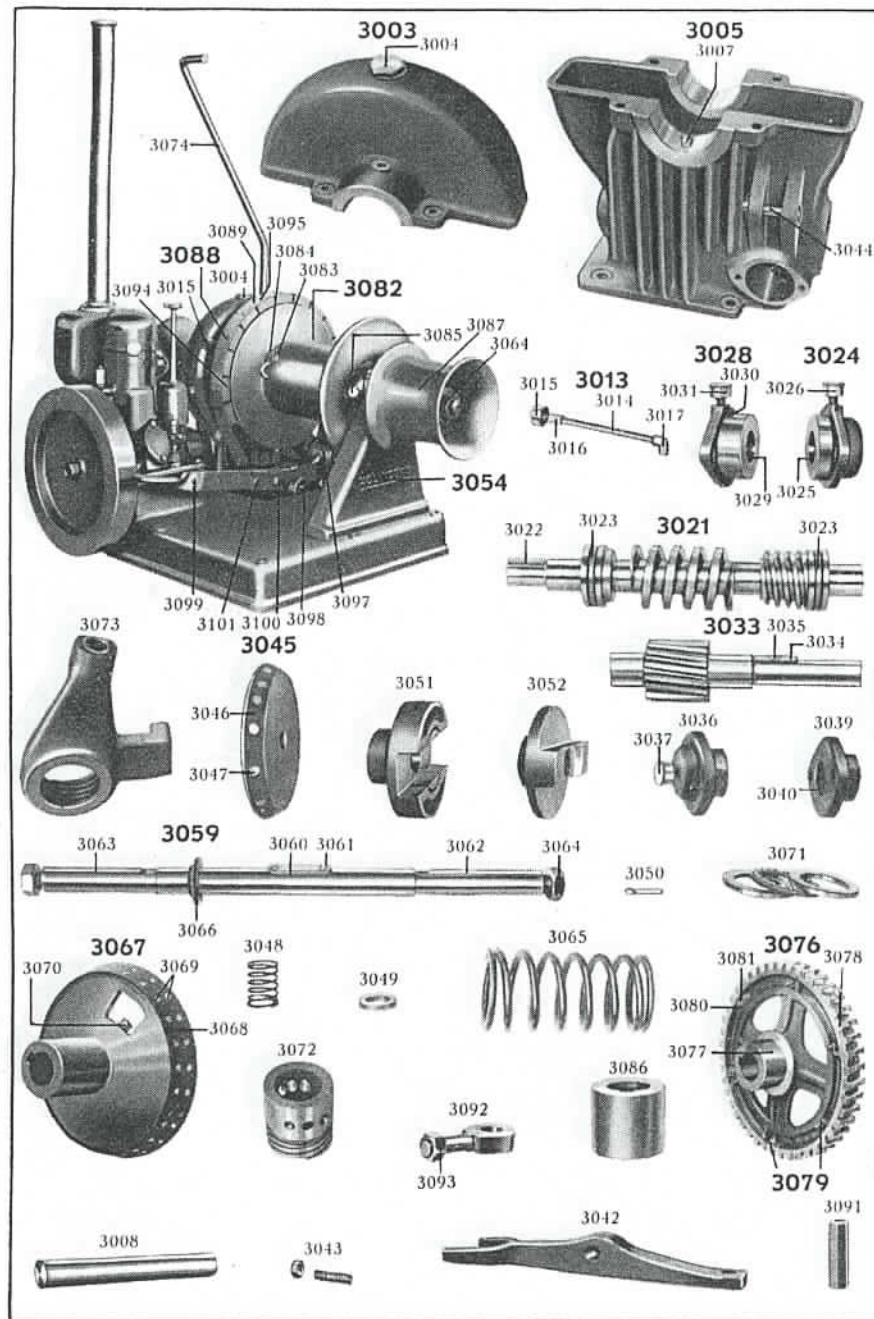


Stern gear with reversible propeller blades, cont.

- 1336 Stop nut for stuffing box gland
- 3000 Stuffing box packing for manoeuvre collar (not illust.) ..
- 1332N Manoeuvre collar, aft
- 1344 Ball bearing for manoeuvre ring
- 884 Manoeuvre ring
- 1358 Stern tube, compl. with stern-post fitting
- 1326 Stuffing box for stern tube
- 1327 Stuffing box gland for ditto
- 1348 Stop nut for stuffing box gland
- 2999 Stuffing box packing (not illust.)
- 358B Grease cup No. 4 (1-cyl. engine)
- 358C Grease cup No. 5 (2-cyl. engine)
- 2469 Pipe with socket for ditto (1—2-cyl. engine)
- 1325 Stern tube
- 1314A Stern-post fitting

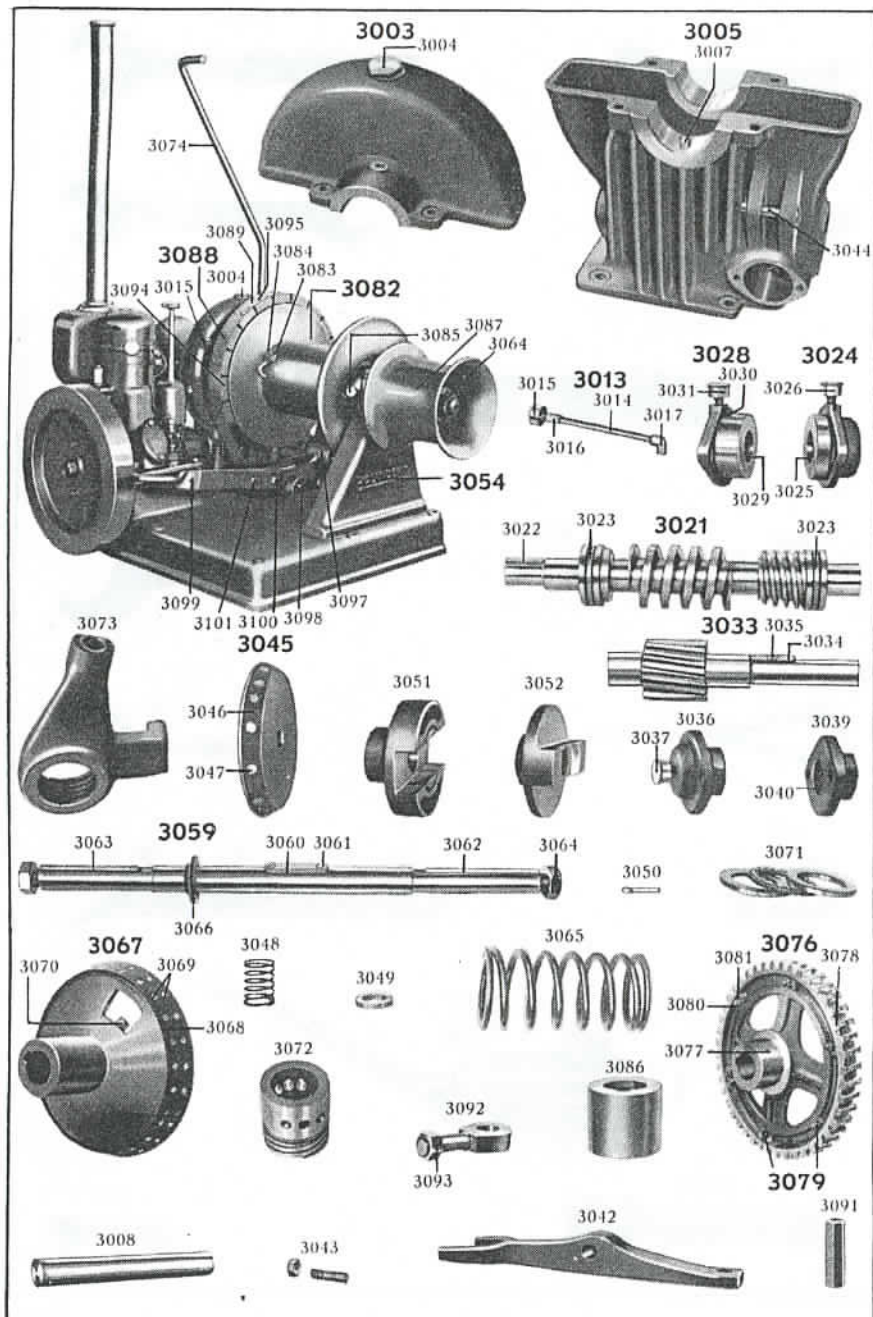
Manoeuvring device for reversible propeller blades.

- 2458 Manoeuvring device for reversible blades, compl.
- 862 Manoeuvre column, only
- 873 Manoeuvre handle with taper pin
- 2977 Taper pin for ditto (not illust.)
- 2467 Lock screw for manoeuvre handle
- 2976 Manoeuvre screw with stop ring and taper pin
- 872 Manoeuvre screw, only
- 2154 Stop ring with taper pin for manoeuvre screw
- 2978 Taper pin for ditto
- 864 Guide for manoeuvre screw
- 866 Set screw for ditto
- 871 Cross-piece
- 878 Pin in cross-piece for 881
- 881 Manoeuvre fork
- 882 Pin with split pins in manoeuvre column for 881
- 2979 Split pin for ditto
- 1357 Bolt in manoeuvre fork for manoeuvre ring
- 1357N Bolt in manoeuvre fork for manoeuvre ring, bored for grease cup
- 358A Grease cup No. 3



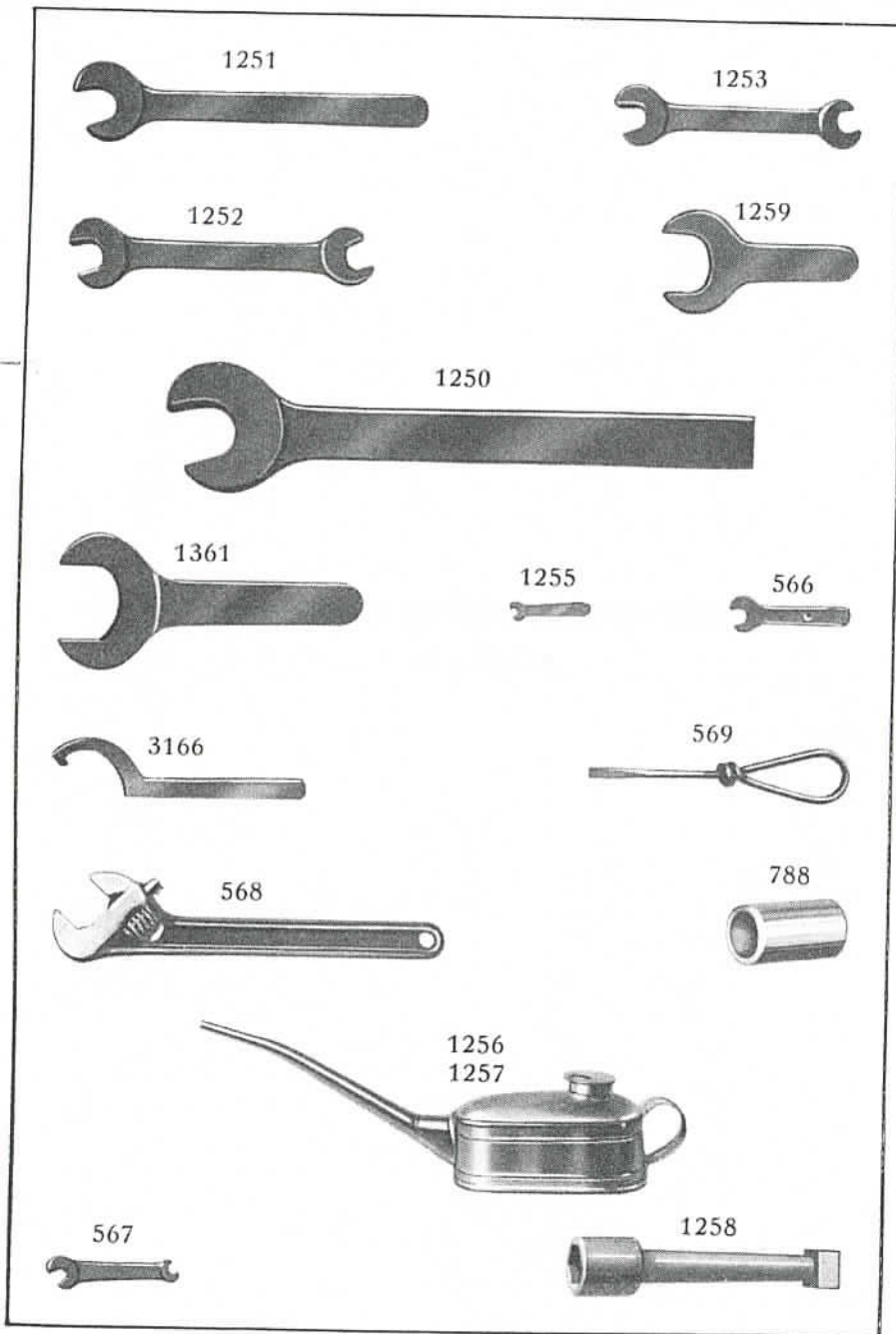
Winch.

- 3003 Worm-wheel housing, upper part, with plug
- 3004 Plug in upper part of worm-wheel housing
- 3005 Worm-wheel housing, lower part, with guide pins, plug and cylindrical pin
- 3006 Threaded taper pin with nut for ditto (not illust.)
- 3007 Plug in lower part of worm-wheel housing
- 3008 Cylindrical pin
- 3009 Grease cup in upper part of worm-wheel housing (not illust.)
- 3010 Guide bolt with nut for assembling worm-wheel housing (not illust.)
- 3011 Screw with nut for assembling worm-wheel housing (not illust.)
- 3012 Screw for worm-wheel housing (not illust.)
- 3013 Lubrication pipe, compl. with grease cup, socket, elbow and nipple
- 3014 Lubrication pipe, only
- 3015 Grease cup for lubrication pipe
- 3016 Socket for grease cup for lubrication pipe
- 3017 Elbow for lubrication pipe
- 3018 Nipple for lubrication pipe (not illust.)
- 3019 Clamp for lubrication pipe (not illust.)
- 3020 Screw for pipe clamp (not illust.)
- 3021 Worm shaft with ball bearing and key
- 3022 Key on worm shaft for coupling flange
- 3023 Ball bearing on worm shaft
- 3024 Bearing with bottom, compl. with bushing and grease cup, for worm shaft
- 3025 Bushing for bearing 3024
- 3026 Grease cup for bearing 3024
- 3027 Screw for bearing 3024 (not illust.)
- 3028 Bearing with felt ring, compl. with bushing and grease cup, for worm shaft
- 3029 Bushing for bearing 3028
- 3030 Felt ring for bearing 3028
- 3031 Grease cup for bearing 3028
- 3032 Screw for bearing 3028 (not illust.)
- 3033 Worm-gear shaft with key
- 3034 Key for friction wheel
- 3035 Screw for key
- 3036 Bearing with bottom, only, for worm-gear shaft
- 3037 Grease cup for bearing 3036
- 3038 Screw for bearing 3036 (not illust.)
- 3039 Bearing with felt ring, only, for worm-gear shaft
- 3040 Felt ring for bearing 3039
- 3041 Screw for bearing 3039 (not illust.)
- 3042 Lever, only
- 3043 Adjusting screw with nut for lever
- 3044 Link bolt with split pin for lever
- 3045 Friction wheel, compl. with brake band
- 3046 Brake band, only, for friction wheel
- 3047 Rivet for ditto (1 set = 13 pc.)
- 3048 Spiral spring on worm-gear shaft for friction wheel
- 3049 Washer for spiral spring 3048
- 3050 Split pin for washer 3049



Winch, cont.

- 3051 Coupling flange at the winch
- 3052 Coupling flange at the engine
- 3053 Leather belt (1 pair) in coupling flange (not illust.)
- 3054 Bearing pedestal, compl. with guide pins, cap and grease cup
- 3055 Threaded taper pin with nut for ditto (not illust.)
- 3056 Stud with nuts for cap (not illust.)
- 3057 Grease cup in cap (not illust.)
- 3058 Screw for bearing pedestal (not illust.)
- 3059 Shaft with keys, nuts and washer for barrel and warping-end
- 3060 Key for friction disk
- 3061 Screw for key
- 3062 Key for worm-gear and warping-end
- 3063 Key for distance sleeve and warping-end
- 3064 Nut for warping-end
- 3066 Washer for spiral spring 3065
- 3065 Spiral spring on shaft for barrel
- 3067 Friction disk, compl. with brake band and grease cup
- 3068 Brake band, only, for friction disk
- 3069 Rivet for ditto (1 set = 50 pieces)
- 3070 Grease cup for friction disk
- 3071 Ball bearing on shaft for barrel
- 3072 Manoeuvre screw
- 3073 Manoeuvre arm, only
- 3074 Manoeuvre lever
- 3075 Screw for manoeuvre lever (not illust.)
- 3076 Worm-gear, compl. with toothed rim
- 3077 Centre for worm-gear
- 3078 Toothed rim for worm-gear
- 3079 Screw with castle nut and split pin for toothed rim
- 3080 Castle nut for screw 3079
- 3081 Split pin for ditto
- 3082 Barrel with rope holder
- 3083 Rope holder
- 3084 Screw for rope holder
- 3085 Grease cup for barrel
- 3086 Distance sleeve on shaft for barrel
- 3087 Warping-end
- 3088 Brake band, compl. with brake blocks and eye-bolt
- 3089 Brake band with riveted stretching bolt, only
- 3090 Nut, left-threaded, for stretching bolt for brake band (not illust.)
- 3091 Adjusting nut for brake band
- 3092 Eye-bolt with nut for brake band
- 3093 Nut for eye-bolt for brake band
- 3094 Brake block (1 set = 12 pieces)
- 3095 Screw for brake block
- 3096 Pin with split pins for brake band (not illust.)
- 3097 Counterweight, only
- 3098 Pin with split pins for counterweight
- 3099 Pedal
- 3100 Screw for pedal
- 3101 Screw with split pin for pedal and brake band



Tools and accessories.

2980	Spanner, width of jaw 28 mm. (not illust.)	.....
1251	" " " " 33 "	.....
1294	" " " " 11×13 mm. (not illust.)	.....
1279	" " " " 15×18 " ( " " )	.....
1253	" " " " 18×23 " ( " " )	.....
1280	" " " " 21×25 " (not illust.)	.....
1252	" " " " 25×28 " (not illust.)	.....
1281	" " " " 28×33 " (not illust.)	.....
1250	Spanner for fly-wheel nut	.....
2981	Spanner for ball stop for circulating water pump on cylinder at the fly-wheel (not illust.)	.....
1259	Spanner for circulating water pipe for pump on bed plate	.....
1361	Spanner for stuffing box gland for stern tube	.....
1255	Spanner, small, for lubrication device "Assa"	.....
566	Spanner, big, for lubrication device "Assa"	.....
2982	Spanner for nut at warping-end of winch (not illust.)	..
2983	Socket wrench for nut at cylinder block (not illust.)	...
1297	Socket wrench for screw for cover over reversing gear or friction clutch (not illust.)	.....
2984	Socket wrench for gear wheel for reversing gear (not illust.)	.....
3166	Spanner for box gland for circulating water pump on cylinder at the fly-wheel	.....
2985	Spanner for box nut for circulating water pump on bed plate (not illust.)	.....
2830	Key for valve seat for charging valve (not illust.)	.....
3406	Key for nozzle for quick starting lamp (not illust.)	....
568	Adjustable spanner	.....
569	Screw driver	.....
788	Mounting sleeve for needle bearing	.....
1256	Oil can	.....
1257	Spirit can	.....
1295	Grease gun (not illust.)	.....
1285	Device for removing fly-wheel (not illust.)	.....
1286	Bolt with nut for ditto (not illust.)	.....

Special tools for engine with top injection.

567	Spanner for fuel injection device	.....
1258	Socket wrench for idling plug	.....
3106	Socket wrench for nut on electric igniter (not illust.)	..
3107	Socket wrench for plug for electric igniter (" ")	..

Special tools for engine with side injection.

2673	Valve key for injection valve (not illust.)	.....
2674	Valve miller for injection valve (not illust.)	.....
2675	Valve punch for injection valve (not illust.)
4462	Tool for removing inner part of injector (not illust.)	..

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