

Includes models
HG40-01
HG40-03
HG40R-02
HG40F-02

HG40 OIL CONTROL GUN WITH MECHANICAL METER



INSTRUCTION MANUAL

Introduction

Thank you for purchasing a Macnaught HG40 oil control gun complete with mechanical meter. This Macnaught oil control gun has been designed to accurately dispense, measure and control oil flow. This control gun is suitable for use with engine oil, gear oil, automatic transmission fluid and anti-freeze/anti-boil and compatible fluids.

Please read and retain this instruction manual to assist you in the operation and maintenance of this quality product.

GENERAL INFORMATION

This manual assists you in operating and maintaining your new oil control gun. The information contained will help you ensure many years of dependable performance and trouble free operation.

Please take a few moments to read through this manual before installing and operating your new oil control gun. If you experience problems with this product, refer to the trouble shooting sections of this manual. If you require further assistance please contact your local Macnaught distributor or authorised Macnaught service centre.

IMPORTANT INFORMATION



READ THIS INFORMATION CAREFULLY BEFORE USE.

Your safety is important to us. Please read and follow all safety instructions listed inside.

Some of these instructions alert you to the potential for personal injury. "Cautions" listed throughout this manual advise of potential practices or procedures which may cause damage to your equipment.

Ensure all operators have access to adequate instructions about safe operating and maintenance procedures.



WARNING

This oil control gun should not be used for in-line installations or used with a manual a shut off nozzle.

The Safe operating pressure of this nozzle is 500 PSI

The line pressure between the pump and the dispensing handle trigger valve must not exceed 1500 PSI (103 BAR). Please ensure an adequate pressure relief valve is installed for operator safety.

The auto non drip nozzle MUST not be modified



CAUTION

Do not hit the oil control gun if it fails to operate. Refer to "trouble shooting guide" or return the unit to your nearest authorised service centre.

Never point the nozzle at yourself or anyone else.

Never exceed the pressure rating of any component installed in the System.

Before each use check all hoses for signs of wear, leaks or loose fittings. Tighten all fluid connections regularly and replace weak or damaged hoses.

Before attempting any repairs or maintenance of this product firstly disconnect the air supply from the oil pump, then release the oil line pressure by pressing the lever on your oil control gun.

ASSEMBLY

Use Teflon tape (or suitable thread sealant) when connecting the oil control gun to an oil hose.

Outlet Nozzle.

The outlet nozzle can be fitted either "inline" (forward) or on the outlet port "pistol style" located under the gun.

The long outlet tube should be used for the "inline" option.

The short adaptor should be used (instead of the long outlet tube) when using the "pistol style" option.

Note: Use the threaded Plug supplied to seal the outlet port not in use.

OPERATION

To latch the handle first press the lever (34) followed by push button (37). To release latch simply press and release lever (34).

The top accumulative register will record the total volume of oil passed through the meter. The bottom register is a reset-able batch total, which can be reset by pressing the reset button.

MAINTENANCE



CAUTION

Before carrying out any maintenance disconnect the air supply to the pump and release the fluid pressure in the system by pressing the lever on the control gun.

Inspect your oil control gun daily for any signs of damage. Replace any damaged parts or components as required.

CONTROL HANDLE DISASSEMBLY

Use a clean bench to carry out maintenance.

- A) Remove the oil hose from the control gun inlet swivel (45).
- B) Unscrew and remove swivel (45) washer (43) and o-ring (44) from the control gun inlet. Clean or replace the strainer and o-ring.



CAUTION the swivel is under spring tension

- C) Slide off the handle sleeve (42).
- D) Remove valve spring (41), valve seal assembly (40) and plunger (39).

LEVER AND VALVE REMOVAL

- A) Using a 2.5 mm Allen key, remove the 2 handle screws (38).
- B) Remove lever (34).
- C) Remove the backup ring (32), O-Ring (31), then push the valve cam (30) from the gun body (4), and remove O-Ring (33).

CONTROL HANDLE REASSEMBLY

- A) Clean and inspect all parts. Replace any suspect, worn or damaged components.

Note: Lightly lubricate the valve cam (30) before assembly.

- B) Place O-Ring (31) onto valve cam (30).

Note: The cut out section in the middle of the valve cam (30) must face the inlet swivel (45).

- C) Replace the valve cam (30) into the body (4). Note the orientation shown on the assembly drawing. Fit the second O-Ring (33) and backup ring (32).

- D) Slide lever assembly (34) into position and replace the two Allen screws (38). (Use Loctite or similar sealant).

- E) Replace plunger (39).

Note: The end hole in the plunger must face the meter.

- F) Assemble the valve seal assembly (40), and spring (41) then replace into the gun body.

Note: Install the spring, small end first.

- G) Replace handle sleeve (42).

- H) Replace washer (43), o'ring (44) swivel assembly(45) and screw firmly into place (Use Loctite or similar sealant).

Note: After assembly ensure the handle latch is operating correctly.

METER DISASSEMBLY

- A) Remove rubber boot (28).
- B) Unscrew the 4 x Philips head screws (21), from the underside of the gun body (4) and remove register assembly (25).

- C) Using 4mm Allen key remove 4 screws (29) from the underside of the gun body (4).

- D) Remove register housing (23) assembly.

Note: Take care when removing register housing as the outlet shaft (16) and assembly are also removed.

- E) Remove gearbox housing (10) assembly.

- F) Remove rotors (8, 9).

- G) Clean and inspect all parts. Replace any suspect, worn or damaged parts.

Gear and O-Ring replacement (register casting)

- A) Pull bevel gear off the shaft (24) from inside register housing (23).

- B) Remove gear (17), circlip (18), washer (19), O-Ring (20) and shaft (16) from the underside of register housing.

Note: Use all new parts when reassembling the gear and shaft assembly.

- C) Assembly is a reversal of disassembly.

FACIA REPLACEMENT

Note: refer to Meter Disassembly Parts A and B.

- A) Remove register assembly (25) and remove the register bracket clip (27).

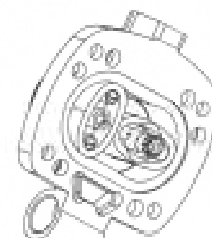
- B) Remove facia (26).

- C) Assembly is a reversal of disassembly.

METER REASSEMBLY

Note: Ensure all components are clean prior to reassembly.

- A) Replace rotors (8,9) into body casting (4) (see fig 1 for correct positioning).



Note: Turn rotors by hand to confirm correct assembly. If rotors do not turn freely. (refer to fig 1 for correct rotor position).

- B) Fit O-Ring (5) to the gun body (4).

- C) Fit gears (13,14,15) into gear box (10).

Note: Gears are marked in order of assembly 1, 2 and 3.

- D) Replace O-Ring (11) on gear box housing (10) and position gearbox assembly on top of gun body (4).

E) Replace register housing assembly (23) on top of gearbox housing assembly (10).

Note: The gear shaft (16) on the register housing assembly (23), must be located through gear 2 (14) inside the gearbox and fitted into the location hole in the gearbox housing (10).

F) Replace 4 Allen head screws (29) and screw the meter assembly together.

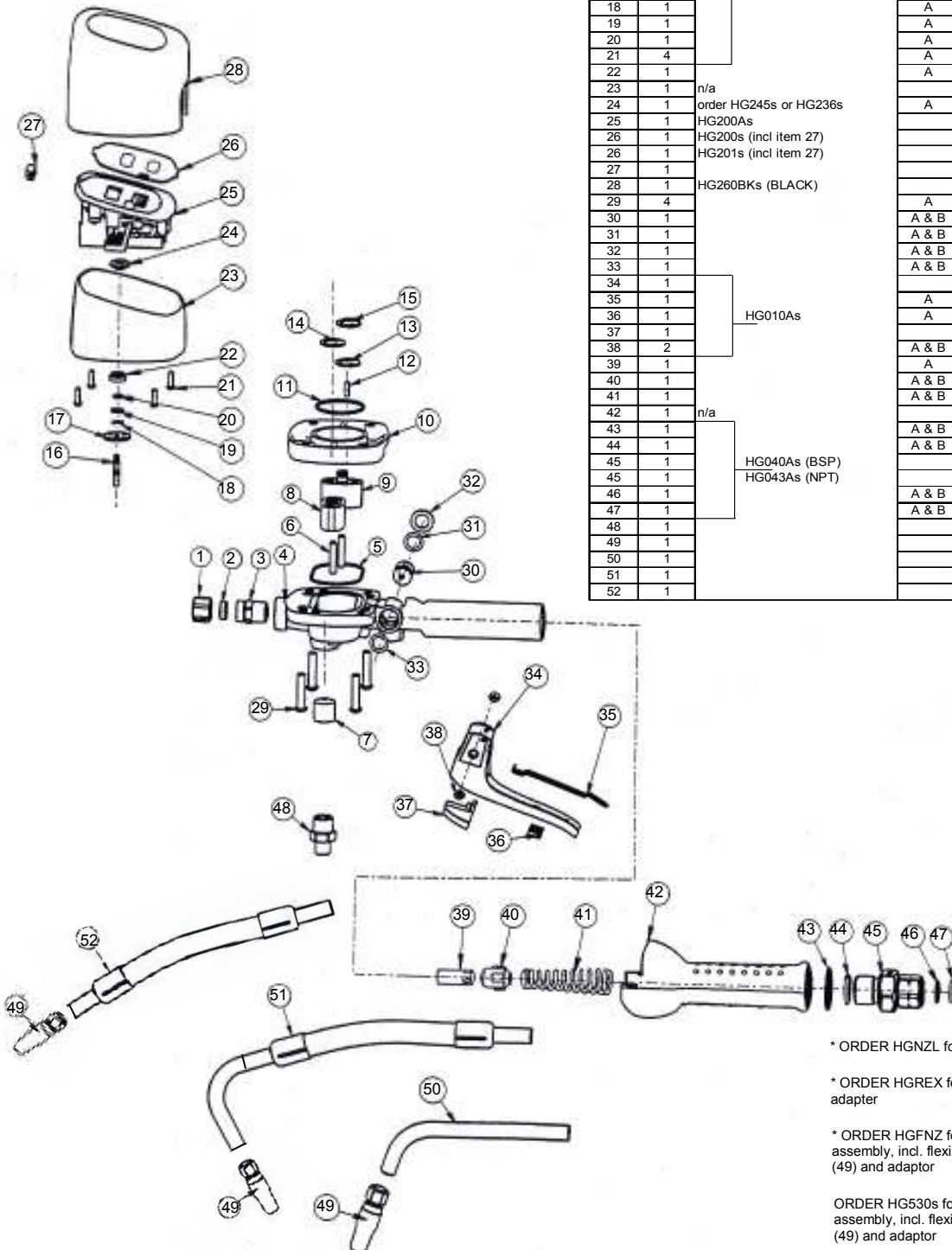
G) Fit bevel gear (24) inside the register housing (23).

H) Fit register assembly (25) into register housing (23) and replace 4 x Philips head screws.(21).

Note: To check correct operation, latch the lever and use low air pressure or blow into the oil inlet. The meter should now register flow.

SPARE PARTS LIST

Item	No. off	Order for replacement Part or set	Kit ref	Description
		HG40-1K (KIT A)		Major service kit
		HG50-2K (KIT B)		Valve service kit
1	1			Compression fitting
2	1			Olive
3	1			Adapter
4	1	n/a - new gun req'd		Gun body
5	1		A	O'ring (BS035)
6	2	n/a - new gun req'd		Rotor shafts
7	1			3/8" Plug
8	1	HG006s incl BS035		Oval gear
9	1			Oval gear and pinion
10	1	n/a		Gearbox housing
11	1		A	O'ring (BS029)
12	1			Middle shaft
13	1			QL1 LTR / QRT Gear
14	1			QL2 LTR / QRT Gear
15	1			L3 LITRE Gear
15	1			Q3 QUART Gear
16	1			Outlet shaft
17	1	HG245s (LITRE)		L4 Liter gear
17	1	HG236s(QUART)		Q4 Quart gear
18	1		A	E-Clip
19	1		A	Washer
20	1		A	O'ring (BS007V)
21	4		A	HI-LO screws
22	1		A	Brass boss
23	1	n/a		Register housing
24	1	order HG245s or HG236s	A	Bevel gear (Ltr /Qrt)
25	1	HG200As		Register assy
26	1	HG200s (incl item 27)		Facia (Ltr)
26	1	HG201s (incl item 27)		Facia (Qrt)
27	1			Register bracket clip
28	1	HG260BKs (BLACK)		Mechanical boot (STD)
29	4		A	Taptite screws
30	1		A & B	Valve cam
31	1		A & B	O'ring (BS111)
32	1		A & B	Back up ring
33	1		A & B	O'ring (BS111)
34	1			Lever (Latching)
35	1		A	Button spring
36	1		A	Lever plug
37	1			Push button
38	2		A & B	Countersink screws
39	1		A	Plunger
40	1		A & B	Seal
41	1		A & B	Valve spring
42	1	n/a		Handle sleeve
43	1		A & B	Washer
44	1		A & B	O'ring (BS117)
45	1			Swivel assy (BSP)
45	1			Swivel assy (NPT)
46	1		A & B	STRAINER
47	1		A & B	O'RING (BS113)
48	1			ADAPTOR (PISTOL STYLE)
49	1			OUTLET NOZZLE ASSEMBLY
50	1			RIGID TUBE
51	1			90 DEG FLEXIBLE EXTENSION
52	1			STRAIGHT FLEXIBLE EXTENSION



* ORDER HGNZL for a Automatic non Drip nozzle (49)

* ORDER HGREX for a Rigid Tube Extension (50) incl. adaptor

* ORDER HGFNZ for a 90 Deg Flexible Extension assembly, incl. flexible extension (51), non drip nozzle (49) and adaptor

ORDER HG530s for a Straight Flexible Extension assembly, incl. flexible extension (52), non drip nozzle (49) and adaptor

TROUBLE SHOOTING GUIDE

TROUBLE	CAUSE	REMEDY
Meter not accurate	Flow rate not correct	Adjust flow rate to correct rate (1-30 Ltr/min)
No fluid passing through the meter	a) Blocked strainer	a) Clean or replace strainer
	b) Dirt particles jamming the rotors	b) Dismantle meter assembly and clean (refer to meter disassembly)
	c) Damaged plunger seal	c) Replace damaged plunger seal
The meter is not registering fluid output	a) Damaged register assembly (25)	a) Replace register assembly
	b) Damaged gear or gears (13, 14, 15, 17, 24)	b) Replace complete gear set, also replace (16) shaft and (20) "o"ring.
Constant oil leak from the nozzle	Damaged plunger seal (20)	Replace plunger seal (check for damage)
Intermittent drip from the nozzle	Dirt in the nozzle (49)	Remove the nozzle and blow out any dirt particles, replace if necessary.
Oil leak from the lever assembly area	Damaged o'rings (31)	Replace damaged o'rings
Oil leak from between the body casting and the computer module casting	Damaged o'rings (5)	Replace damaged o'ring
Low flow rate	Blocked strainer (46)	Replace strainer
Oil leaking from the swivel inlet	Damaged o'ring or swivel	Replace swivel

SPECIFICATIONS

Accuracy:	+ - 1% (of Reading)
Flow Range:	1-30 l/min (0.26 – 8 US gal/min)
Maximum Supply Pressure:	103.50 BAR / 10350kPa / 1500 PSI
Pressure Loss:	1Bar/ 100kPa / 14.4PSI @ 12 l/min (3.2US) gal/min) with calibration fluid (6 Centipoise Viscosity) without extension
Weight:	1.16kg (2.55lbs)
Swivel Inlet:	½" BSPT or ½" NPT
Outlet:	3/8"
Operating Temperature:	-10deg to +50 deg C (14 – 122 deg F)
Wetted Parts:	Aluminium, Acetal, Steel, Nitrile Rubber
Fluid Compatibility:	Engine Oil, Diesel Oil, Automatic Transmission Fluid, Anti-freeze / Anti-BoilMixture. (Maximum Viscosity SAE140)
Dimensions:	25.8cm (10 inch) Long x 9.5 cm (3.7 inch) High, x 11cm (4.33 inch) Wide (Dimensions without extension)



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Note:

This product should be disposed of according to all applicable local and national government environment regulations and guidelines.



For Warranty Terms and Conditions see macnaught.com.au
For a list of Australian Service Centres see macnaught.com.au