

T512 OILMASTER (5:1 RATIO) INSTRUCTION MANUAL

INTRODUCTION

Thank you for purchasing a Macnaught T512 Oilmaster air operated oil pump. The Macnaught T512 Oilmaster is a 5:1 ratio, double action piston type stubby pump designed to dispense lubricating oils (eg: engine oils, hydraulic and gear oils) from bulk tanks or drums through pipelines, hose reels and hose end oil delivery guns with or without a flow meter.

The Oilmaster is supplied with a standard 2" BSP adjustable bung adaptor which is suitable for most tanks and drums. The fluid inlet of the pump is tapped 1" BSP female (or 1" NPT for USA/Canada) so you have the choice of either supplying your own threaded suction tube or you can purchase the optional Macnaught telescopic suction tube kit (TB25s) which is suitable for drums or tanks up to 1.2 metres (48") deep.

Macnaught manufacture a full range of accessories to suit the T512 Oilmaster, please consult your local Macnaught reseller for more information.

With your appropriate care combined with the Macnaught Guarantee of dependable after sales service, provided by our worldwide distribution network, you will be assured of continuous safe, efficient and reliable product operation.

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 T512 Oilmaster. 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 T512 Oilmaster pump. If you experience problems with the product, refer to the Maintenance and Trouble Shooting sections of this manual. If you require further assistance please contact your local Macnaught Distributor, Authorised Macnaught Service Centre or Macnaught.



IMPORTANT INFORMATION



Read this information carefully before use!

Your safety is important to us. Please read, understand and follow all safety instructions listed below. Some of these instructions alert you to the potential for personal injury. 'Cautions' listed throughout the manual advise of potential practices or procedures which may cause damage to your equipment.


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

Do not exceed the maximum recommended air-inlet pressure of 1000 kPa/ 150 psi/ 10 bar. The pump requires a minimum air inlet pressure of 400 kPa/ 60 psi /4 bar and we recommend that you operate the unit at 690 kPa/ 100 psi/ 6.9 bar.

Do not hit unit if it fails to operate. Refer to 'Trouble Shooting Guide' or return unit to your nearest Authorised Service Centre.

Use suitable thread sealant (eg Teflon tape) on all screwed fittings, but do not over tighten to avoid component damage.

This pump has been fitted with a pressure release valve. This unique feature will protect both the pump and the system against damage created by excessive pressure, possibly caused by thermal expansion.

 **Never allow any part of the human body to come in front of or in direct contact with a material outlet. Never point the nozzle of the gun at yourself or anyone else.**

Most accidents occur because of a component rupture. Be certain that any and all system components will withstand the pressures being developed. Never exceed the pressure rating of any component installed in the system.

Weak, worn or damaged hoses are also a hazard. Before each use check hose for signs of wear, leaks or loose fittings. Tighten all fluid connections regularly and replace weak or damaged hose. Your personal safety and well being are at stake.

 **WARNING**

Before attempting any repairs or maintenance of this product disconnect air supply and release oil line pressure by squeezing hand piece/gun trigger.

ASSEMBLY

- 1) Measure the depth of the drum/tank and attach appropriate length of 1" BSP (1" NPT USA/Canada) threaded pipe to the inlet of the pump (or use a Macnaught suction tube kit TB25s)
- 2) Remove the bung adaptor assembly from the pump and screw into drum/tank opening. Carefully lower the pump through bung adaptor and tighten the clamp screw located at the clamp sleeve.

Note: There is a wire mesh strainer located in the brass air inlet. It is recommended that a micro-fine (5 micron) in-line air filter is fitted to the air inlet to ensure maximum efficiency of this pump

- 3) Before connecting the air supply, the user should add a 'stop' compressed air cock.

Note: The air cock must be a ¼ turn type (allowing quick closure) and should be located close to the body of the pump and be easily recognised.

OPERATION

- 1) Ensure that the drum or tank is 'vented'
- 2) Partially open the on/off air valve. The pump will prime automatically
- 3) Open the oil delivery outlet/nozzle. The pump will automatically start
- 4) Adjust on/off air valve to regulate the flow. Close delivery outlet/nozzle to stop flow

Caution! Do not run the pump dry. Remember to switch air supply off if not using the pump for an extended period e.g. at the end of each working day.

MAINTENANCE

Before carrying out any maintenance disconnect the air supply and release the fluid pressure in the system.

Inspect your oil pump weekly for any signs of damage. Replace any suspect or damaged parts/components as required.

Every 2 weeks (or sooner if the pump is used every day) apply a few drops of light oil to the air inlet of the pump. (Sewing machine oil is ideal.)

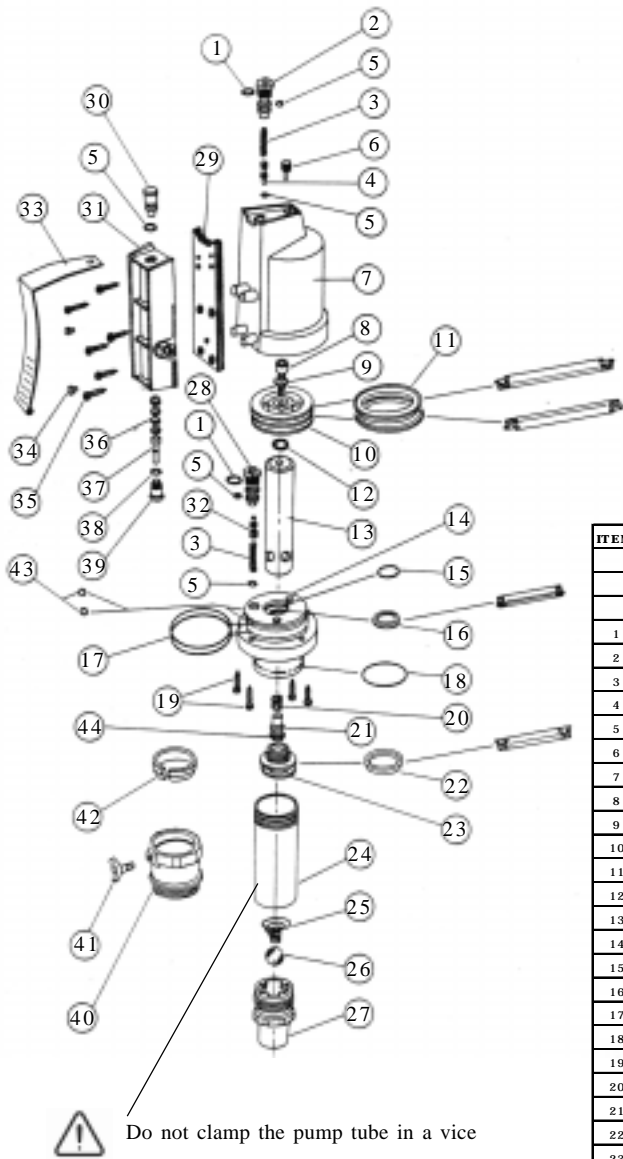
PUMP DISASSEMBLY

- 1) Remove oil hose from the pump unit
- 2) Withdraw pump from the oil drum/tank. Use a clean bench to carry out maintenance
- 3) Remove the 4 screws (19) holding cylinder (7) to base (14). Lever the cylinder off the base. There is a slot in the base near the valve body (31)
- 4) Remove the cover screw (6) and valve body cover (33)
- 5) Remove the 6 screws (35) holding the valve body (31) to the cylinder (7). Remove the valve body assembly and valve gasket (29)
- 6) Pull out the 2 brass pins (34) from the valve body. Lever out the valve plugs (30) and (39)
- 7) Gently push the spool (36) out of the valve body. Be careful when removing the O-Rings (5) and (38)
- 8) Remove top (long) poppet valve assembly (2), (3), (4) and O-Rings (1), (5) and the bottom (short) poppet valve assembly (28), (32) (3) and O-Rings (1) (5)
- 9) Hold hex section foot valve (27) horizontally in a vice. Hold air piston firmly and unscrew allen head screw (8). Remove screw and piston from piston rod.
- 10) Carefully unscrew the foot valve and pump cylinder assembly (24), (25), (26) (27) from cylinder base (14)
- 11) Withdraw the piston and piston rod assembly from the cylinder base
- 12) Clean and inspect all parts. Replace any suspect, worn or damaged parts

PUMP REASSEMBLY

- 1) Ensure that all parts have the correct orientation. If parts are assembled upside down, the pump will not work. Check the parts diagram for correct orientation.
- 2) Apply thread sealant (Loctite or similar) to pump cylinder thread (24) when reassembling the unit.
- 3) Assembly of the pump is a reversal of the disassembly procedure
- 4) Ensure that all O-Rings, particular in the valve body (31) and poppet valve (2), (28) areas sit square
- 5) Apply light grease (eg Petroleum Jelly) to O-Rings (17), (43) and piston seals (11) before fitting cylinder (7) to base (14)
- 6) Fit the pump to your oil drum/tank and reconnect the oil hose and air supply. Open dispensing nozzle to ensure correct operation

PARTS DIAGRAM



PARTS LIST

ORDER FOR REPLACEMENT						
ITEM	PART No.	No. off	PART/SET	KIT. REF	DESCRIPTION	
			T512-2K (KIT A)		MAJOR REPAIR KIT	
1	BS013	2	PA45s	A	O'RING	
2	PA31	1		A	UPPER POPPET PISTON	
3	PA8	2		A	POPPET SPRING	
4	PA45	1		A	POPPET PISTON ASSY	
5	BS011	5		A	O'RING	
6	PA21	1	order PA44s		SCREEN SCREW	
7	PA35	1	PA35s		AIR CYLINDER	
8	N54	1	PA26s		1/4" UNC 'UNBRACO'	
9	N129	1			1/4" WASHER	
10	PA3	1			AIR PISTON	
11	PA25	2		A	CUP SEAL	
12	PA49	1		A	SEAL	
13	TB1	1	TB1s		PISTON ROD	
14	TB40 **	1	TB40s		CYLINDER BASE	
15	BS124	1		A	O'RING	
16	TB9	1		A	OIL SEAL	
17	BS231	2		A	O'RING	
18	BS134	1		A	O'RING	
19	N38	4	order PA2s incl 4xN38, 4xN37		H-Lo SCREW	
20	TB3	1	TB48s		PISTON SPRING	
21	TB47	1			PISTON VALVE	
22	TB4	1		A	"U" PACKING	
23	TB48	1			PUMP PISTON	
24	TB2	1	TB2s		PUMP CYLINDER	
25	TB8	1	TB34s		FOOT VALVE SPRING	
26	N418	1			FOOTVALVE BALL	
27	TB34 **	1			FOOTVALVE HOUSING	
28	PA33S	1		PA33s		LOWER POPPET VALVE SET
29	PA38	1	order PA39s	A	VALVE GASKET	
30	PA93	1	order PA24s		VALVE PLUG	
31	PA39	1	PA39s		VALVE BODY	
31	PA39	1	PA30s		VALVE BODY (COMPLETE ASSY)	
32	PA32	1	order PA33s	A	LOWER POPPET PISTON SET	
33	PA44	1	PA44s		EXHAUST SCREEN	
34	PA15	2	order PA24s		END PLUG PIN	
35	N37	6	order PA2s incl 4xN38, 4xN37		H-Lo SCREW	
36	PA34	1	PA34s	A	VALVE SPOOL ASSY	
37	PA95	1	order PA24s incl PA15 1xBS011, PA93	A	RESET BUTTON ASSY	
38	BS012	1			A	O'RING
39	PA16	1				END PLUG
40	TB12	1		TB12s		BUNG ADAPTOR
41	GR10	1				CLAMP SCREW
42	TB32	1				CLAMP SLEEVE
43	BS006	2	incl in T512-2K	A	O'RING	
44	BS015	1	incl in T512-2K	A	O'RING	

** For BSP Versions order TB39s in lieu of TB40s & TB15s in Lieu of TB34s

TROUBLE SHOOTING GUIDE

PROBLEM	CAUSE	REMEDY
1) The air leaks continuously from the exhaust screen (33).	Damaged or worn air piston cup seals (11) or air piston (10).	Replace the cup seals and piston.
2) The air motor does not operate or cycle when the reset button is pressed.	The lower poppet spring (3) fatigued.	Replace the bottom poppet spring.
3) The air motor does not operate, but will cycle when the reset button is pressed.	a) The spool (36) is jammed in the valve body (31).	a) Push the reset button. 1) If the motor starts, disconnect the air line and apply 3 or 4 drops of light oil to the air inlet of the pump. 2) If the motor does not start, replace the spool (36), and clean the valve body bore. Note: When re-assembled, apply 3 or 4 drops of light oil to the air inlet of the pump.
	b) The top poppet spring (3) fatigued.	b) Replace the top poppet spring.
4) The air motor cycles much faster than normal but fails to pump oil.	a) The suction tube is not fitted correctly	a) Re-seal the suction tube to the pump with thread sealant.
	b) The piston valve (21) is not seating properly or the o'ring (44) is damaged.	b) Check that the piston valve is seating correctly, or replace if damaged.
5) The air motor runs slower than normal.	a) The air pressure is too low	a) Increase the air pressure to specifications (See below)
	b) The air strainer is partially blocked	b) Clean air strainer.
6) The air motor cycles intermittently when not using the pump.	The ball (26) in the foot valve is not seated properly	Check that the footvalve ball is seating correctly. (Clean if necessary)

SPECIFICATIONS

Maximum Air Pressure	1000 kPa / 150 psi / 10 bar
Minimum Air Pressure	400 kPa /60 psi / 4 bar
Typical Air Consumption	0.27m ³ per minute (9 cfm)
Noise Level	85Db @ 2 metres
Air Inlet	¼" (F) NPT (Swivel Type)
Pump Inlet	1"(F) * See Below
Pump Outlet	½" (F) * See Below
Pump Ratio	5:1 (Oil Pressure is 5 times air pressure)
Bung Adaptor	2" (M)
Maximum Static Head	50 m/160 ft
Output (at pump)	15 litres / 3.75 US gallons per minute of SAE 10 oil @ 850 kPa/ 125 psi/ 8.5 bar
Fluids Handled	Mineral based oils (eg engine oils, gear oils,Hydraulic oils) up to SAE 140
Construction	Wetted Components: Zinc, Hard Chrome Plated Steel, Aluminium, Brass, Nitrile, Polurethane Rubber
Manufacture Date	Week/Year located on side of cylinder base

* Asterisck referance to indicate relevant thread fitted. (i.e. BSP or NPT)

WARRANTY POLICY

Macnaught Limited ("Macnaught") warrants that Products purchased after 1st of July 1999 will be free from any defects caused by faulty materials or workmanship for a period of (5) years from the date of purchase of the product.

For componentry contained in the product which are subject to wear, the warranty period will be (12) months from the date of purchase of the product.

Provided that during the Warranty period:

- 1) Macnaught receives notice setting out full details of any defect in any product and details of the time and place of purchase.
- 2) The Purchaser, at their own cost returns the product to the nearest authorized Macnaught service center.

Macnaught shall, at its option repair or replace any product found defective by its inspection.

This warranty does not cover failure of parts or components due to normal wear or damage, which in the judgment of Macnaught, arises from misuse, abrasion corrosion, negligence, accident, substitution of non-Macnaught parts, faulty installation or tampering.

If Macnaught inspection discloses no defect in material or workmanship, repair or replacement and return will be made at customary charges.

Macnaught's liability and the purchaser's rights under this Warranty shall be limited to such repair or replacement and in particular, shall not extend to any direct, special, indirect or consequential damage or losses of any nature.

The foregoing warranty supersedes, voids and is in lieu of all or any other warranties.

Note:

This warranty does not form part of, nor does it constitute, a contract between Macnaught and the purchaser. It is additional to any warranty given by the seller of the products and does not exclude, limit, restrict or modify the rights and remedies conferred upon the purchaser, or the liabilities imposed on the seller, by any statute or other laws in respect of the sale of the product.



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