



HUGH CRANE

Cleaning Equipment Limited



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OPERATOR INSTRUCTION MANUAL

COMMANDO[®] 500P



For Sales, Service and Spare Parts contact:

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INTRODUCTION

COMMANDO® high pressure equipment is manufactured to rigorous quality standards.

The basic design concept is to use quality materials and proven designs to attain reliability and safe functional operation. This instruction manual is provided to assist the operator to obtain the best from the equipment, together with basic safety points.

Should you require information or technical assistance regarding the unit or any aspect of jetting or pressure cleaning, do not hesitate to contact **Hugh Crane (Cleaning Equipment) Ltd** or their approved distributor.

GUARANTEE

COMMANDO® products are guaranteed for one year for parts and labour from the date of purchase (guarantees are not transferable) subject to good use and adherence to recommended service procedures. Major components are subject to individual manufacturer's warranty conditions. Wearing parts, including tyres, pump seals, valves, hoses, filters, jets and tooling are excluded from warranty cover unless subject to faulty materials or manufacture.

WHEN ORDERING SPARES - Please quote:-

- a) Your Company Name and Address
- b) Model Type and Serial Number of unit
- c) Full description of parts required
- d) Your contact name and telephone number
- e) Your order number

SPECIFICATION**MODEL No:** Recoil start **COMMANDO**® 500P**SERIAL No:****ENGINE:**

Model:	Honda GX390
Nett Power	8.7 kW @ 3600 rev/min
Fuel:	Petrol

PUMP:

Model	UDOR MC20/20S
Type	Triplex Ceramic Plunger
Pump pressure	200 bar/2900psi
Pump flow	20 l/min / 4.40 gal/min

UNLOADER VALVE:

Type	ST280
Pressure setting	200 bar/2900psi

OPERATING INSTRUCTIONS

IMPORTANT

This handbook should be read and understood by the operator before using this equipment. It should be kept with the equipment and made available to anybody who is intending to use the equipment.

GENERAL HEALTH AND SAFETY DATA

BEFORE USING THE EQUIPMENT

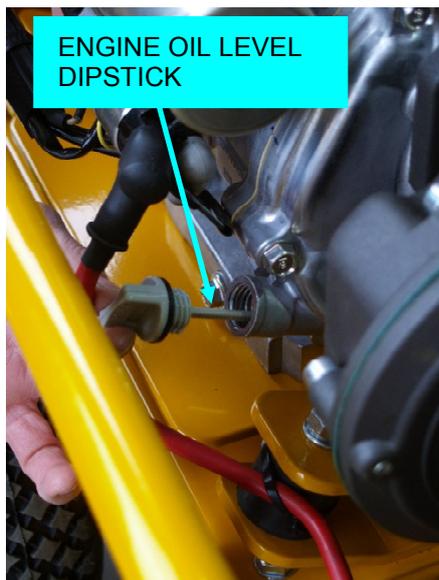
- a) Before using this equipment, operators should have undergone basic training in the safe use of high pressure washing equipment. Training courses are available from Hugh Crane (Cleaning Equipment) Ltd. if required.
- b) Suitable protective clothing should be provided and worn.
High pressure jets are dangerous if subjected to misuse.
Care should be taken to ensure that animals and children are well out of the working area.
The jet must not be directed at people, animals, the machine itself, non- waterproof, fragile or electrical equipment.
- c) User's attention is drawn to health and safety guidance note P.M.29 which deals with the use of high pressure cleaners and steam cleaners. Eye protection to BS2092/2 must be worn when this equipment is used.
- d) Repairs to this equipment must be carried out by suitably qualified personnel only. No modifications or changes to the specification of this machine should be made without consultation and approval of the manufacturer.
- e) The machine is supplied with guarding in compliance with current legislation. The machine should not be operated with any of the guards, covers or any other safety equipment removed or damaged.
- f) Components as supplied by others i.e. motors and pumps are covered by these manufacturer's handbooks, which are included for your use.
- g) Chemicals may be used in conjunction with this equipment. Only chemicals supplied or recommended by the manufacturer should be used, as other products may affect the safe use of the equipment. Consideration should also be given to environmental and COSHH regulations.
- h) **Never attempt to adjust or clean any part of the machine with the motor running.**
Always stop the motor before carrying out adjustments, especially to the high pressure pipework etc.
- i) High pressure spray guns are provided with safety lock which enables the trigger to be locked off to prevent inadvertent use.

OPERATION

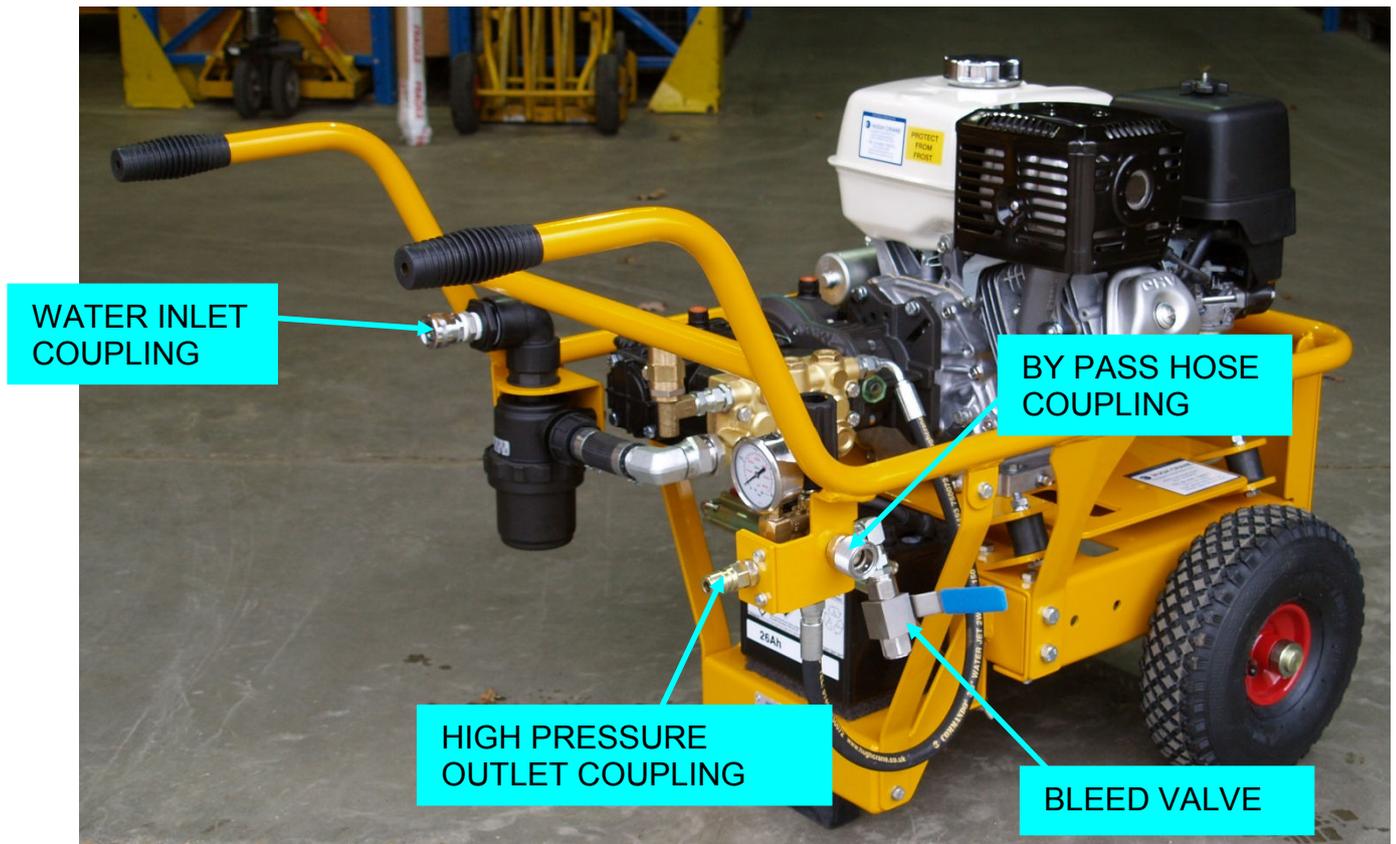
PREPARING THE MACHINE FOR USE:

BEFORE STARTING WORK

- a) Check engine, gearbox and pump oil level and top up if required.

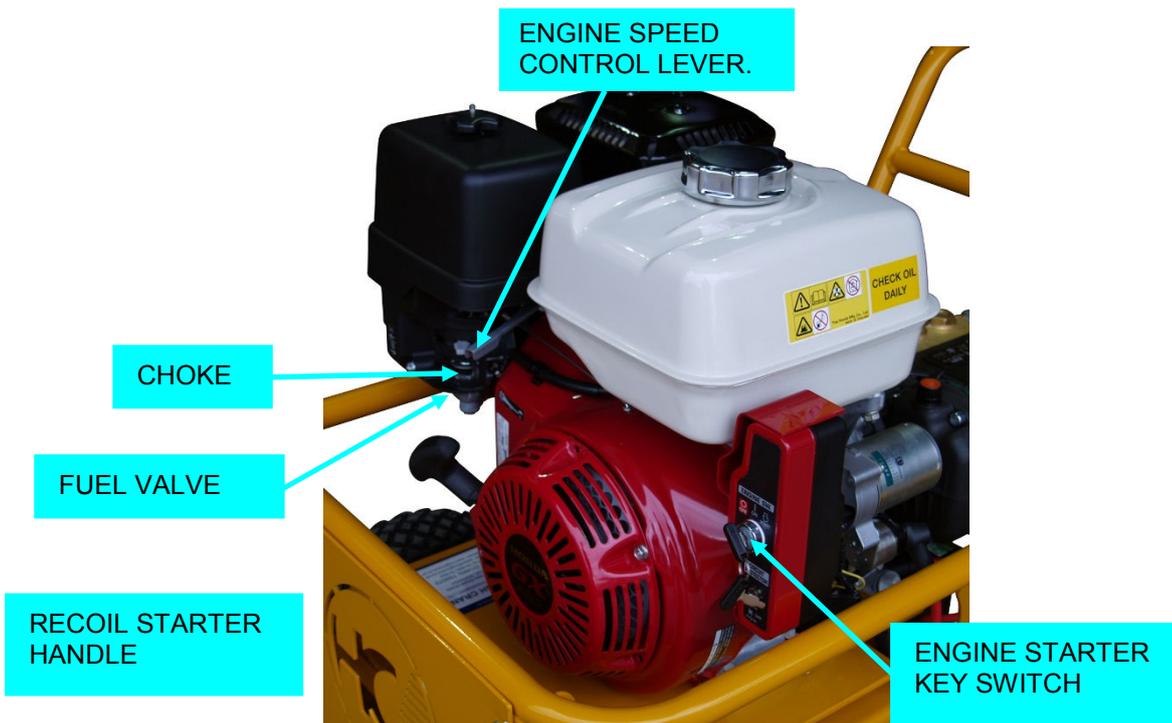
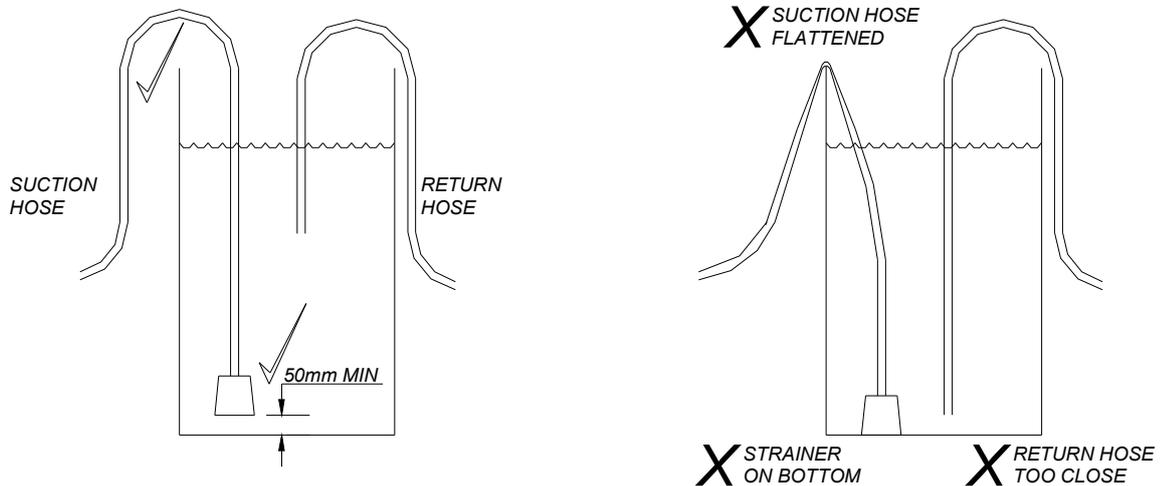


- b) Fill the fuel tank with clean petrol.
- c) Ensure that the machine is standing on level ground.



- d) Connect the mains supply hose to the water inlet coupling. Confirm that the water supply has sufficient capacity to keep the **COMMANDO**® 500P supplied continuously with 25 litres/min at a positive pressure. Alternatively a suitable vessel may be used with the suction hose and strainer provided.
- e) Connect the by-pass return hose to its connection point and place the end of it in a suitable receiving vessel.
- f) Connect the high pressure hose to the outlet coupling and ensure that it is fitted with a spray gun and lance before turning on the mains water and starting the machine.

- g) When the machine is to be operated on suction connect the inlet suction hose and foot strainer to the inlet quick coupling and line strainer on the machine and connect the return hose to the female quick release coupling provided on the unloader valve. Place the other end of both hoses in a clean tank of water and secure in place. Ensure that the suction hose is not flattened or crimped and that the foot strainer is at least 50mm from the bottom of the tank and not placed too close to the return hose as illustrated below.



- h) Open the bleed valve.
- i) Open the engine fuel valve. Move the engine speed control lever to the ½ speed position. Pull the recoil starter cord to start the engine. When starting from cold first move the choke lever to the closed position. (Refer to the Honda Engine instruction manual for further information)
- j) Close the bleed valve

- k) Now operate the wash gun to bleed air out of the hose until air free water is issuing from the lance.
- l) Increase the engine speed to the desired working level, using the hand throttle lever at the side of unit. Use of the throttle will directly affect output water volume and pressure.

DURING WORK:

- a) **Do not leave the COMMANDO® 500P idling as re-circulating water heats up rapidly and will eventually boil causing severe damage to the pump.**
- b) Should any vibration, fluctuation of pressure or any other abnormal symptoms occur during operation, this should be investigated immediately.

Likely causes include:-

- i) A lack of water entering the unit causing air to be drawn into the pump.
- ii) A blockage of the main inlet filter causing water starvation at the pump.
- iii) The inlet water valve between tanks and pump not fully open.
- iv) Leaking seals or damaged valves etc.

AFTER WORK

- a) To stop the **COMMANDO® 500P** Turn the starter key to the 'O' position.
- b) Pull the gun trigger to release any pressure trapped in the hose.
- c) Open the bleed valve.
- d) Close the engine fuel valve.

REGULAR MAINTENANCE

CHECK LIST

ENGINE:	Refer to the Honda Instruction Book	Daily	First 20 hours	50 hours	100 hours	300 hours
	Oil level	*				
	Oil Change		*		*	
	Check air cleaner	*				
	Clean air cleaner			*		
	Replace air cleaner					*
	Clean sediment cup				*	
	Check/adjust spark plug				*	
	Replace spark plug					*
	Check/adjust idle speed					*
	Check/adjust valve clearances					*
	Clean fuel tank & filter				*	
	Check tightness of all fasteners		*	*		
	Check Battery Terminals		*	*		

GEARBOX:	Refer to the Udor Instruction Book	Daily	First 50 hours	300 hours		
	Check oil level	*				
	Change oil		*	*		

PUMP	Refer to the Udor Instruction Book	Daily	First 50 hours	300 hours		
	Clean inlet filter	*				
	Check oil level	*				
	Change oil		*	*		

UNLOADER VALVE			First 50 hours	300 hours		
	Check break off pressure		*	*		

ENGINE: Refer to Honda Handbook.

PUMP: Refer to Udor Handbook

UNLOADER: No user serviceable parts.

Under no circumstances should any adjustments be made to the unloader as serious damage to engine, gearbox or pump could result.

UNLOADER AND SAFETY VALVE

The unloader and safety valves have no user serviceable parts. Under no circumstances should any adjustments be made to the unloader OR the safety valve, as serious personal injury or damage to the pump could result.

FROST PROTECTION

It is essential to protect the unit from damage by frost. The following instructions will be adequate to protect the unit to temperatures down to - 5°C. During winter months it is strongly recommended to store the unit inside whenever possible.

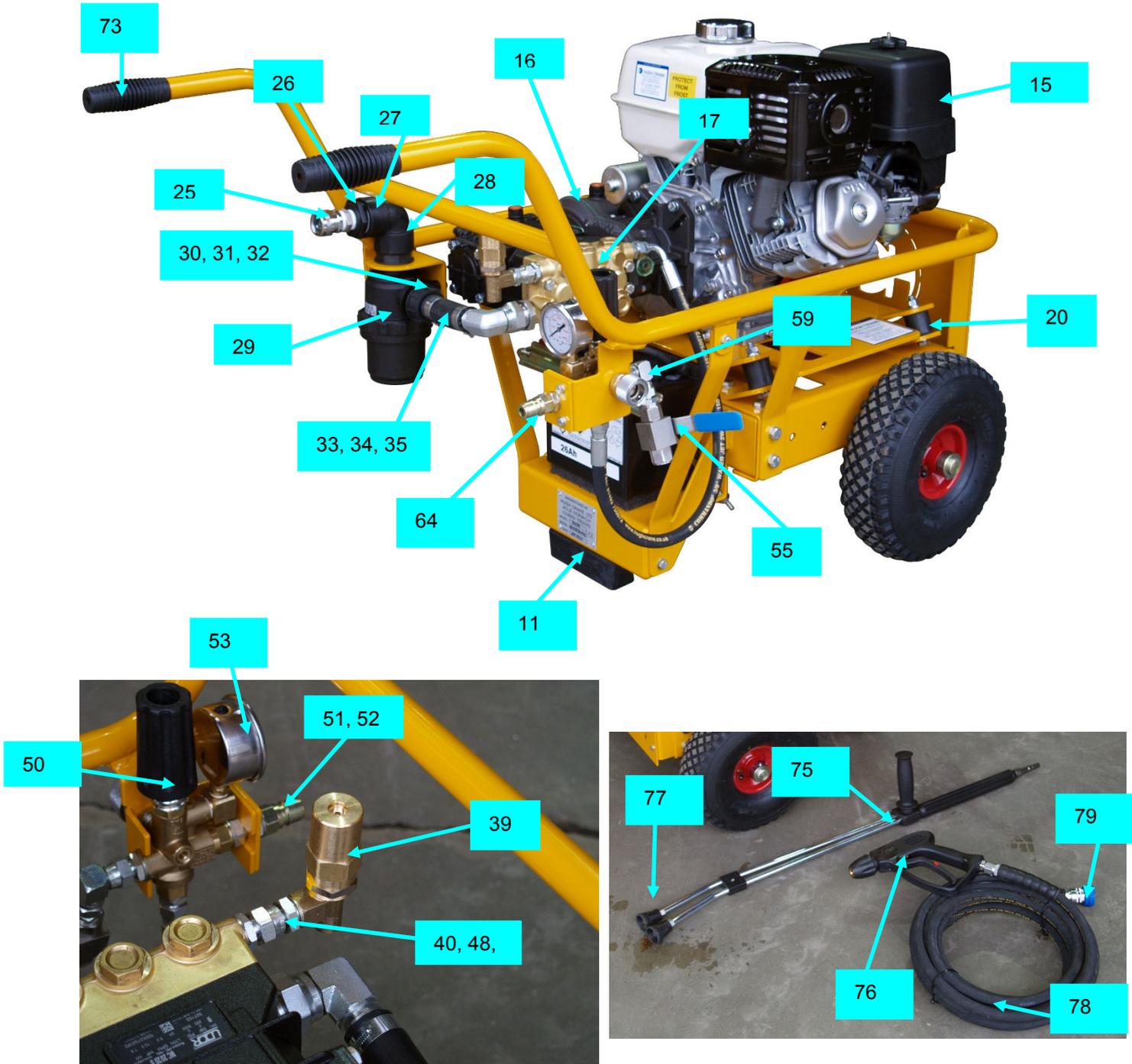
- 1) Run engine for **one minute** with open ended hoses or gun open to expel all water and stop the engine.
- 2) Remove bowl from inlet strainer and store safely together with its filter screen.
- 3) During severe weather, the unit should be stored inside, if possible. Where this is not possible a 25% anti-freeze/water mixture should be introduced into the pump, hose and gun. The antifreeze mixture can be reclaimed after use for recycling when next required.
- 4) Before starting work again the antifreeze must be emptied out of the system by running the pump and directing the using the solution back into the container. Always ensure that all anti-freeze solutions are flushed out of the system before using the unit for cleaning tasks, as anti-freeze solution can be highly detrimental to certain surfaces and materials.

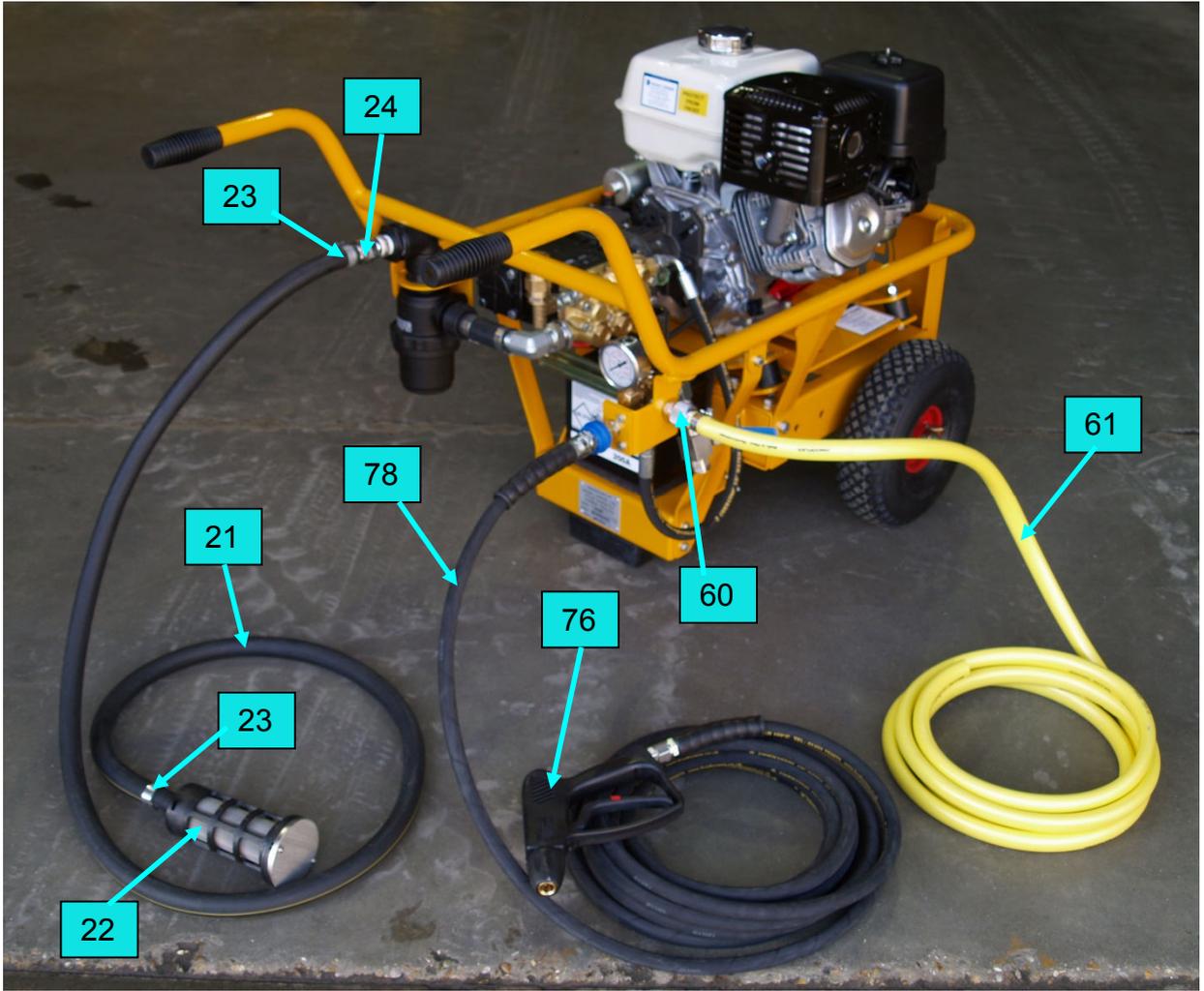
REPLACEABLE ITEMS LIST

See the following illustrations for component reference numbers.

Ref.	Description	Qty.	Part Number
11	BUFFER	1	50x50x150
12	WHEEL	2	HCOB/154
15	ENGINE GX390 RECOIL START	1	HC01602
16	GEARBOX RM122	1	HC52012
17	PUMP MC 20/20S	1	HC52011
20	ANTI VIBRATION MOUNT	4	HC79123
21	HOSE ¾ TRICOFLEX	4	2302011
22	FOOT STRAINER 1"	1	GSST35A
23	HOSE CLIP	2	HC81207
24	LP HOSE TAIL NIPPLE 1" HOSE	1	HCQC053
25	LP COUPLING 3/4"BSP FEM	1	HCQC050
26	HEX NIPPLE ¾"BSPT S/S	1	HC66204
27	REDUCING BUSH 1¼" TO ¾"	1	DP9901RB125075
28	ELBOW 1¼" FEM	1	DP EL125-90
29	STRAINER 1¼"	1	DP8074005
30	FLYNUT 1¼"	2	DP8012301
31	FLYNUT GASKET	1	DPG00001022
32	FLYNUT HOSE TAIL 1 1/4x25" 90°	1	DP8012301
33	HOSE ¾" NOVOLINE	0.4	2302011
34	HOSE CLIP ¾"	2	HC81206
35	HOSE TAIL 90° 1" TO 1" F	1	HYIN1616NU90S
36	ADAPTOR 1" BSP TO ½"BSP MM	1	HYAD100-1608
37	BONDED SEAL ½"	1	HY504
38	BONDED SEAL ¼"	1	HY502
39	SAFETY VALVE	1	GS200230633
40	ADAPTOR 3/8"BSP TO ¼"BSP FM	1	HYAD150-0406
41	BONDED SEAL 3/8"	1	HY503
42	ADAPTOR 3/8"BSP TO 3/8"BSP MM	1	HYAD100-0606
43	INSERT 90° 3/8 HOSE TO 3/8 BSP F	1	HYIN0606NU90
44	CRIMP FERRULE 3/8 HOSE	2	HYSF06R12T
45	INSERT 3/8 HOSE TO 3/8 BSP F	1	HYIN0606NU
46	HOSE 3/8	1	HYJ406
48	ADAPTOR 3/8"BSP MM	1	HYAD100-0606
49	BONDED SEAL 3/8"	1	HY503
50	UNLOADER ST280	1	GSST280
51	BULKHEAD FITTING 3/8"	1	HY603
52	COUPLING NIPPLE ½"BSP HP	1	GS55729
53	PRESSURE GAUGE	1	GS54940
54	ADAPTOR 90° BLOCK ¼"BSP	1	HYAD229-0404
55	BALL VALVE 3/8 6000LB SS	1	Hc02052
56	ADAPTOR ½" TO 3/8"BSP MM	1	HYAD100-0608
57	ADAPTOR ½" BSP MF BLOCK 90°	1	HYAD229-0808
59	LP FEMALE COUPLING ½"BSP	1	02ST/NT6364A
60	LP HOSE TAIL NIPPLE 3/4" HOSE	1	02ST/NT6350S

61	HOSE ¾” TRICOFLEX	4m	2302002
62	HOSE CLIP ¾”	1	HC81206
73	HANDGRIP	2	VIP1041
75	LANCE DOUBLE	1	GSST54
76	GUN Q/R SWIVEL ST1500	1	GSST1500SQR
77	JET 1506 1/4MEG		02XX1506/MEG
78	HOSE 15m 3/8”	1	GS345944315
79	HP COUPLING	1	KW1402890





MANUFACTURE'S LITERATURE

UDOR MC20/20 PUMP

<Q:\SUPPLIERS\UDOR\ManualSmallPumps>

MANUFACTURE'S LITERATURE

UDOR RM122 GEARBOX

<Q:\SUPPLIERS\UDOR\SparePartsRM122.pdf>

MANUFACTURE'S LITERATURE

HONDA GX390 ENGINE

<Q:\Suppliers\Honda\ Honda GX390 service manual from 31-05-2011>