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BUILT TO LAST

sales@powerwashers.co.uk
sales +44 (0) 1984 624 500

POWERWASHERS.CO.UK



Mini Bowserwasher Manual

sales@powerwashers.co.uk
Sales +44 (0) 1984 624 500

Version: V2.0

EC Declaration of Conformity

Brendon Powerwashers of Units 1-5 Station Road Industrial Estate, Wiveliscombe,
Taunton, Somerset, TA4 2LX.

Declare that:

Equipment: Engine Driven Cold Water High Pressure Water Powerwasher

Model:

Serial No:

In accordance with the following Relevant EU Directives:

- 2006/42/EC The Machinery Directive (29.12.2009)
- 2000/14/EC The Low Noise Directive (and its amending directives)
- 2004/108/EC The Electromagnetic Compatibility Directive
(and its amending directives)

I hereby declare that the equipment named above has been designed and
manufactured to comply with all essential requirements of the listed Directives.

Signed by:



Mr. R J Hendy Technical Director

Signed at Station Road Factory address as named above on 15.01.2010

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Symbols and Warnings

Throughout this manual the following symbols are used in order to visually indicate hazard warnings. Please study them and understand their explanations.



This symbol appears next to all safety instructions. The nonobservance to all instructions relating to safety may cause severe damages to the machine and/or the operator.



Chemical Hazard present

Specifications

The Brendon MBW units are a range independent self contained powerwashers intended for use outdoors only.

It has been designed for standard powerwashing and other general cleaning. There are many choices of powerwashers specifications, diesel and petrol driven options plus an optional live hose reel kit. Other configurations our available if required. (Please call our sales department for further information 01984 624 500)

It must not be used in any flame proof area unless the correct engine protection equipment is fitted and approved.

The machine has been designed to be used with clean potable water (Do Not USE WITH SALT WATER) and it must not be modified in any way without the written consent of Brendon Ltd. Any unauthorised modifications will invalidate any warranty and product liability.

Notes:

| Model | MBW15KPJ | MBW20KPS | MBW20KDSB |
|-------------------|----------------------|----------------------|----------------------|
| Engine | Honda Petrol GX200 | Honda Petrol GX200 | Yanmar Diesel LN48 |
| Pump | Cat Pump 2SF | Cat Pump 3CP | Cat Pump 3CP |
| Working Pressure | 0-103Bar | 0-140Bar | 0-140Bar |
| Water Consumption | 13.2Ltr/min | 13.2Ltr/min | 13.2Ltr/min |
| Delivery Hose | 10M 3/8" | 15M 3/8" | 15M 3/8" |
| Nozzle Size | NZ1505 | NZ21504 | NZ21504 |
| Lance | 2Pc Twin Lance | 2Pc Twin Lance | 2Pc Twin Lance |
| Vibration Level | <2.5m/s ² | <2.5m/s ² | <2.5m/s ² |
| Noise Level LWa | 103 Lwa | 103 Lwa | 103 Lwa |
| Water Tank | 125Ltr | 125Ltr | 125Ltr |
| Dry Weight in Kg | 100KG | 105KG | 115KG |
| Dimensions | Length | 1680mm | 1680mm |
| | Width | 710mm | 710mm |
| | Height | 800mm | 800mm |

Service History

| Date | Record of work done | Engineer |
|------|---------------------|----------|
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Introduction

Thank you for purchasing a Brendon Mini Bowserwasher. The purpose of this manual is to show you how to use, maintain and service your machine and covers the Brendon MBW range. It cannot be overstressed that the life of any machine with moving parts is dictated to a degree by the following factors:

Length of Operation

Regular Maintenance

User Abuse

Please read this manual fully along with the specific powerwasher manual before operating your machine, if you are unsure of any of the instructions please phone our factory Help line 01984 624500.

All manuals must be stored in a safe place for later use or subsequent owners.









Please check that your machine has been delivered in good order and is complete with any extras you have ordered (See delivery note.)

If you find anything is missing or if any damage has occurred due to transit/carrier please contact us within 3 working days of delivery.









Health & Safety Information

Never

-  Point the gun at any person, pet or animal - even if the machine is switched off.
-  Direct the spray on any electrical machinery.
-  Work from a ladder or rooftop.
-  Use without a safety shut off gun or with the gun trigger locked in the open position.
-  Tamper with any of the settings on the Unloader and safety valves.
-  Run or operate the machine with the canopy in the raised position.
-  Use the machine indoors or in a confined space or in a flame proof zone.
-  Run the pump dry of water.

Always

-  Release the residual pressure in the gun after use and when the gun is left unattended.
-  Wear the correct protective clothing.
-  Check that the high-pressure hose and all connections are in good service order before each use.
-  Make sure that the machine is on level ground. SERIOUS engine and pump damage can occur due to lack of lubrication.
-  Turn the Heater off and cool down before disconnecting the high pressure hose from the gun.
-  Turn the fuel off on the engine when not in use.

Protective Clothing

The following protective clothing should be worn when using the pressure washer or drain cleaner.



Wear
Goggles



Wear
Helmet



Wear
Gloves



Wear
Boots



Wear Ear
Protection

Warranty Conditions

We, Brendon Ltd, undertake that if within twelve months of the date of delivery this BRENDON product or any part thereof is proved to be defective by reason only of faulty workmanship or materials, the company will at its option, repair or replace the same FREE OF CHARGE for labour, materials or carriage on the condition that:

- A) The machine has been correctly installed, and used in accordance with the supplied instructions/operation manual.
- B) The machine has been serviced by a competent person as per the Brendon and engine manufacturer's instructions.
- C) The machine is still in the possession of the original purchaser.

To make a claim please phone the Brendon Technical Department and ask for WARRANTY PROCEDURE form WPF01. This form can be emailed to you and will explain the correct procedure required to verify your claim.

This Warranty is void if:

- 1) The machine is used with a damaged or without the "Brendon Suction Strainer".
- 2) The machine is used with dirty or contaminated water.
- 3) The engine throttle screw is tampered with causing the engine and pump to run to fast
- 4) The engine has been used with dirty or contaminated fuel.
- 5) The machine is used with the incorrect nozzle.
- 6) The machine is used with chemicals/accessories/parts not approved by Brendon.
- 7) The machine has been adapted or technically altered without prior written authorization from the Brendon Technical Department.
- 8) The machine has been obviously mistreated or has had no basic maintenance.

Unloader Valve Components

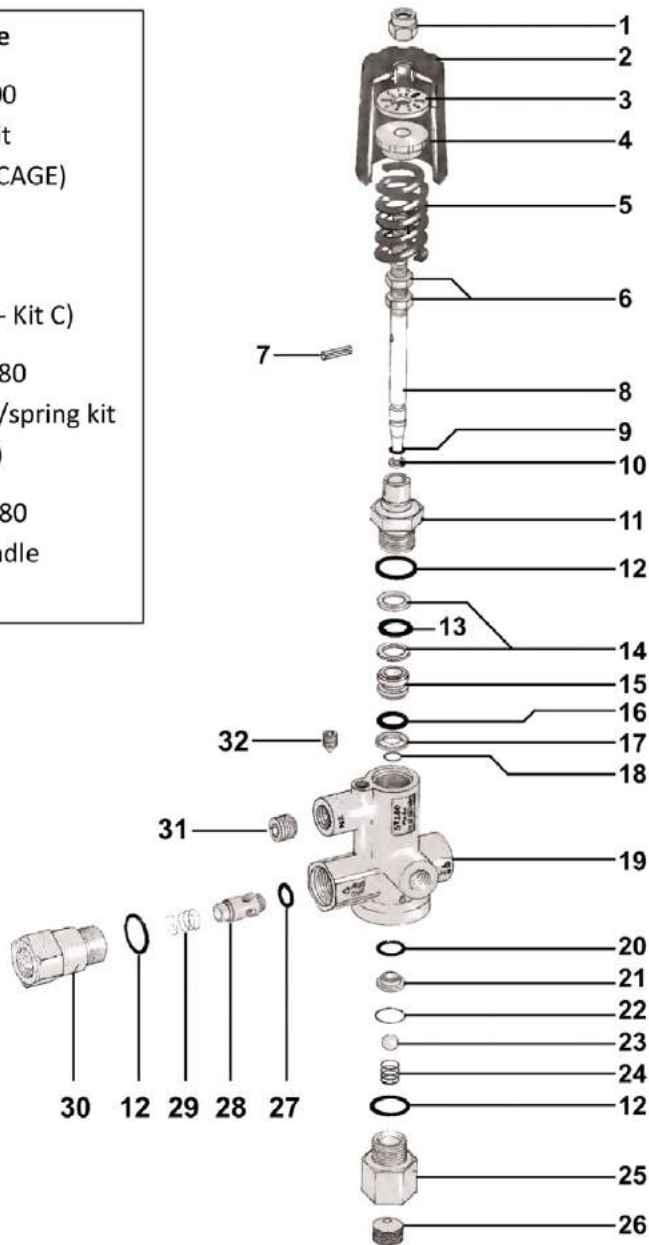
Repair kits available

PART NO: UVKNR100
 Non Return Valve kit
 (Parts: 27, 28, 29 + CAGE)

PART NO: PRK15P
 Piston repair kit
 (Parts: 9, 10, 12-18 - Kit C)

PART NO: UVKBSK280
 Unloader Valve ball/spring kit
 (Parts: 20 - 24 Kit D)

PART NO: UVKSPA280
 Unloader Valve spindle
 (PARTS: 1 - 18)



Unpacking Instructions

The machine is delivered ready for use and has been filled with the necessary lubricants however check the lubricant levels before using the machine.

Please make a visual check of your machine for any transit damage. If any damage is found please advise us immediately.



In the winter months (November - March) the machine will be delivered with a 25% Anti-freeze solution in the pump and hoses. (See instructions for reclaiming the anti-freeze).



Environment Protection

The packaging material can be recycled. Please send it for recycling.

Key Components

Before using your machine for the first time you will need to identify and understand the functions some of the key components. Please study the following pictures and explanations:

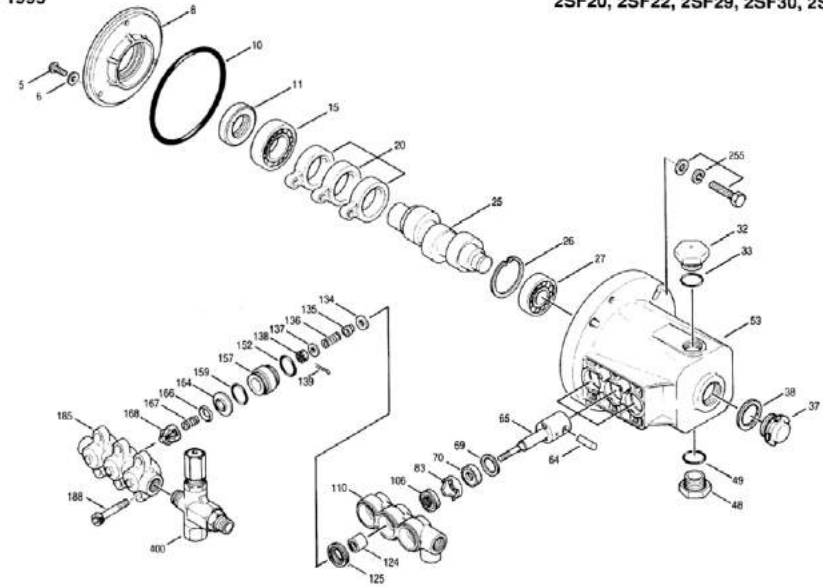


1. Honda Petrol / Yanmar Diesel Engine
2. High Pressure CAT Pump
3. Main 125Ltr Water Tank
4. Optional Hose Reel Kit
5. Adjustable Detergent Injection Valve
6. Inline Water Filter
7. Unloader Valve
8. Thermo Sensor Valve

Pump Diagram 15KPJ Units

EXPLODED VIEW
November 1995

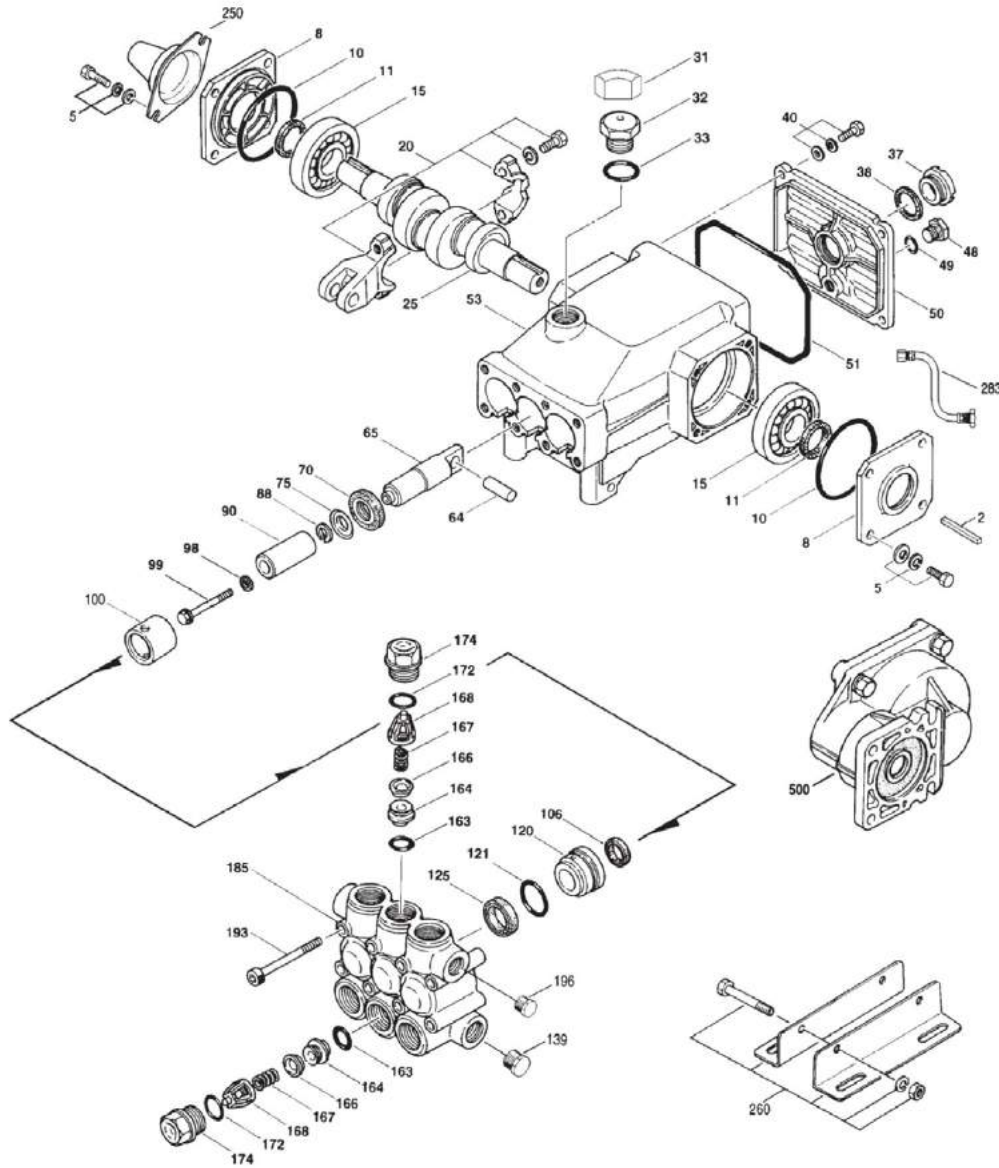
SF PLUNGER PUMP MODELS
2SF20, 2SF22, 2SF29, 2SF30, 2SF35



PARTS LIST

| ITEM | PART NO. | DESCRIPTION | MODEL USED | QTY | ITEM | PART NO. | DESCRIPTION | MODEL USED | QTY |
|------|----------|-----------------------------------|------------------------|-----|----------|-------------------------|--|---------------|-----|
| 5 | 89551 Z | Phil. Hex Head Screw (M6 x 16) | All Models | 3 | 134 | 45854 S | Inlet Valve | All Models | 3 |
| 6 | 150810 B | Seal Washer (M6) | All Models | 3 | 33873 | 33873 | Inlet Valve - Hi-Temp | All Models | 3 |
| 8 | 44057 A | Bearing Case, Inner | All Models | 1 | 135 | 44871 S | Spacer | All Models | 3 |
| 10 | 14044 B | O-Ring, Bearing Case | All Models | 1 | 136 | 44872 S | Inlet Valve Spring | All Models | 3 |
| 11 | 44859 B | Oil Seal | All Models | 1 | 137 | 88575 S | Conical Washer (M6) | All Models | 3 |
| 15 | 14488 | Bearing, Inner | All Models | 1 | 138 | 27000 S | Slotted Nut (M6) | All Models | 3 |
| 20 | 44903 | Connecting Rod | All Models | 3 | 139 | 14158 S | Cotterpin | All Models | 3 |
| 25 | 45092 | Crankshaft, 3450 RPM, 5/8" | All "H"-S" Versions | 3 | 152 | 23172 B | O-Ring, Adapter, Inner | All Models | 3 |
| | 44933 | Crankshaft, 3450 RPM, 3/4" | 22E | 1 | 157 | 44878 BB | Discharge Valve Adapter | All Models | 3 |
| | 44929 | Crankshaft, 3450 RPM, 5/8" | 22G | 1 | 45430 BB | Discharge Valve Adapter | All Models except 29EL | 3 | |
| | 44934 | Crankshaft, 3450 RPM, 3/4" | 30G, 30GH, 30GS | 1 | 159 | 23172 B | O-Ring, Adapter, Outer | All Models | 3 |
| | 44931 | Crankshaft, 3450 RPM, 5/8" | 30E | 1 | 164 | 44881 S | Valve Seat | All Models | 3 |
| | 45096 | Crankshaft, 3450 RPM, 5/8" | 35E | 1 | 166 | 43723 S | Valve | All Models | 3 |
| | 45100 | Crankshaft, 3450 RPM, 3/4" | 35G, 35GH | 1 | 167 | 541062 P | Valve Spring | All Models | 3 |
| | 45160 | Crankshaft, 1725 RPM, 5/8" | 22EL, 22ELH | 1 | 168 | 44655 P | Spring Retainer | All Models | 3 |
| | 45426 | Crankshaft, 1725 RPM, 5/8" | 29EL, 29ELH | 1 | 185 | 44879 BB | Discharge Manifold | All Models | 1 |
| | 45146 | Crankshaft, 1725 RPM, Solid, 3/4" | 22SL | 1 | 188 | 87859 Z | Hex Socket Head Screw (M8 x 75) | All Models | 6 |
| 26 | 12385 | Retaining Ring | All Models | 1 | 249 | 30968 | Adapter Mount Kit, Gas | 22G, 30G, 35G | 1 |
| 27 | 15710 | Bearing, Outer | All Models | 1 | 15845 | 15845 | Split Lock Washer (M8) | All Models | 4 |
| 32 | 45690 | Oil Filler Cap | All Models | 1 | 44843 | 44843 | Hex Head Screw 5/16-24 | All Models | 4 |
| 33 | 14179 B | O-Ring, Oil Filler Cap | All Models | 2 | 44942 | 44942 | Flange | All Models | 1 |
| 37 | 43987 | Bubble Oil Gauge | All Models | 1 | 12489 | 12489 | Washer (M8) | All Models | 4 |
| 38 | 44428 B | Flat Flex. Gasket, Oil Gauge | All Models | 1 | 255 | 30517 Z | Bolt Mount Kit | All Models | 1 |
| 48 | 44842 | Drain Plug - 1/2" NPT | All Models | 1 | 30980 Z | 30980 Z | Flat Washer 3/8" | All Models | 4 |
| 49 | 14179 B | O-Ring, Drain Plug | All Models | 1 | 30921 Z | 30921 Z | Split Lock Washer 3/8" | All Models | 4 |
| 53 | 45702 A | Crankcase | All Models | 1 | 34100 Z | 34100 Z | Hex Bolt (3/8"-16 x 1-3/8") | All Models | 4 |
| 64 | 16948 | Piston Rod Pin | All Models | 3 | 6106 | 6106 | Antisizee Lubricant | All Models | 1 |
| 65 | 44865 S | Piston Rod | All Models except 29EL | 3 | 30050 | 30050 | Key (3/16" x 3/16" x 1-1/4" HD) | All Models | 1 |
| | 45427 | Piston Rod | 29EL | 3 | 259 | 30973 | Mounting Bracket Kit (Incl. w/Pump) | 22SL | 1 |
| 69 | 23017 | Washer | All Models | 3 | | | (Incl.: Bracket, Washers, Bolts, Nuts) | | |
| 70 | 25461 B | Oil Seal | All Models | 3 | 300 | 34053 | Seal Kit (Incl.: 106, 125, 139, 152) | All Models | 1 |
| 83 | 44869 P | Seal Retainer | All Models | 3 | 33503 | 33503 | Seal Kit - Hi-Temp (Incl.: 106, 125, 139, 152) | All Models | 1 |
| 106 | 44876 B | Lo-Pressure Seal | All Models | 3 | 310 | 34052 | Valve Kit (Incl.: 164, 166, 167, 168) | All Models | 1 |
| 110 | 44874 BB | Inlet Manifold | All Models | 1 | 311 | 34668 | Inlet Valve Kit (Incl.: 134-137, 152) | All Models | 1 |
| 124 | 45847 CC | Plunger | All Models | 3 | 352 | 44050 | Oil Gauge Removal Tool | All Models | 1 |
| | 45429 CC | Plunger | 29EL | 3 | 400 | 7500 | Regulating Unloader - 1500 PSI | All Models | 1 |
| | 43245 S | Hi-Pressure Seal | All Models | 3 | 7500S | 7500S | Regulating Unloader - 2000 PSI | "S" Versions | 1 |
| | 46652 | Hi-Temp Seal (190° Max) | All Models | 3 | | | | | |

Pump Diagram for KPS Units



Key Components

| | | |
|--|---|--|
| <p>1</p> <p>Engine</p> <p>This is the engine provides the power to run the High Pressure pump. We fit either a Honda Petrol or Yanmar Diesel engines to this model. (Please see appropriate engine manual for instructions and maintenance)</p> | <p>2</p> <p>High Pressure Cat Pump</p> <p>This high quality Triplex ceramic piston pump draws the water from the water tank and creates the high pressure cleaning power.</p> | <p>3</p> <p>Main Water Tank</p> <p>125Ltr polyethylene water tank. Fill this with clean potable water ONLY. Always drain this water tank down after use.</p> <p>⚠ Do NOT leave water standing in the tank for long periods of time. (To prevent any risk of bacterial growth)</p> |
| <p>4</p> <p>Hose reel Kit Available</p> <p>An optional Hose reel Kit is available. The reel comes with 3/8" High Pressure Hose for general cleaning operations. Other reels available upon request i.e. a low pressure feed reel could be fitted instead.</p> <p>⚠ DO NOT extend the length of this hose to more than 20M. If longer lengths are required see our web site... www.powerwashers.co.uk and look for the Brendon Mobile Reel range.</p> | <p>5</p> <p>Adjustable Chemical Injector</p> <p>This valve introduces a chemical cleaning agent into the water. The amount of Detergent induced is dependent on the small black adjusting ring – turn fully clockwise = zero Detergent. (Please see "Using the Chemical" for further details)</p> | <p>6</p> <p>Inline Water Filter</p> <p>The inline filter prevents debris from entering the pump. Please clean this once every 6-12 Months.</p> |
| <p>7</p> <p>Unloader Valve</p> <p>Allows the water to bypass back to the pump when the trigger is closed. This valve is factory pre-set. Pressure is adjusted using the engine throttle.</p> <p>⚠ DO NO TAMPER WITH THIS VALVE</p> | <p>8</p> <p>Thermo Valve</p> <p>This valve helps protect the pump from overheating if the machine has been left running with the trigger closed for long periods of time.</p> <p>It is the best to turn off unit if not being used for 3+ minutes</p> | |

Label Locations

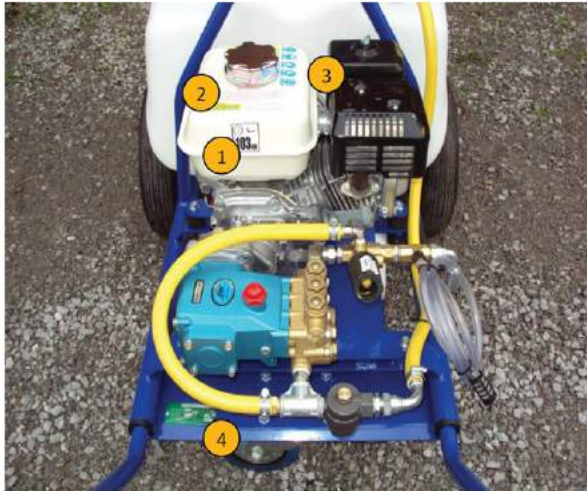


Figure 1 above shows the position of the safety/component labels. If any of these labels are damaged or removed from the machine please order new ones and apply in the positions shown before using the machine.

Parts Diagram List

- | | | | |
|----|---|----|--|
| 1 | Two Piece Gun and Lance Assembly BGC102 | 19 | Thermo-Sensor Valve TSV100 |
| 2 | Twin Gun and Lance Assembly BGC103T | 20 | 1/2" Male Tapered Nipple 12MTX12MT |
| 3 | Gun Assembly BGC050P | 21 | T-Piece Fitting 161G050 |
| 4 | 500mm Stainless Steel Lance SLL050PC | 22 | Brass Hose Tail 369050 - 1/2" |
| 5 | Nozzle Shroud NSL104 | 23 | Handle Grip HGRIP30 |
| 6 | High Pressure Fan Nozzle NZ1504 | 24 | Jockey Wheel JW40 |
| 7 | 10/14 KEL,15KPJ, 20KPS HKS208 - 8M Or HKS210 - 10M | 25 | Mini Bowser Toggle Clamp CLAMPBW |
| 8 | Gun Assembly BGC050P | 26 | Mini Bowser Lid Grommet MBWGROMMET |
| 9 | Twin Lance TLA050PC | 27 | Mini Bowser Lid MBWLID |
| 10 | Low Pressure Brass Nozzle NZLPBR | 28 | Mini Bowser Strainer MBWSTRAINER |
| 11 | Chemical Valve Knob and Screw CNV101 | 29 | Hose Reel MBWRK30 |
| 12 | Elbow 75X75BELBOW | 30 | Mini Bowser Tank MBWTANK |
| 13 | Jubilee Clip JUBMS0 - 1/2" | 31 | Mini Bowser Wheel WHE40 |
| 14 | Chemical Valve CNV100 | 32 | 1" Axle Collar & Grub Screw SLC100 |
| 15 | Chemical Strainer CSB100 | 33 | Complete Pump CAT23FX35GS (15KPJ) Or CAT3CP1120G (20 Range) |
| 16 | Chemical Suction Hose CSH100 | 34 | Unloader Return Hose PUVHOSE |
| 17 | 1/4 Hydraulic Elbow 14FS90X14S | | |
| 18 | Inline Strainer ILS15P | | |



Working Sound Level



Warning label



Mandatory Safety Labels



Serial Plate

Parts Diagram


Mini Bowserwasher



Using the Powerwasher

Initial Set Up

Please follow the procedures as set out below:

1. Place the unit on level ground.
2. Fill the main water tank with clean water.  **Not Salt Water**
3. Check Lubricant levels in the engine and pump.
4. Fill the engine fuel tank with the correct fuel.
5. Check the condition of the high pressure hose and couplings.

Operating the Powerwasher

Please read the engine manual and understand fully before using this machine.

(Extra manual supplied)

1. Connect the Gun and lance to the High pressure Hose Reel
2. Start the Engine (See Engine Manual)
3. Adjust the engine throttle to approximately half speed
4. Pull on the trigger and allow any air to purge out the system. It may be necessary to open and close the gun several times.
5. Set the engine speed to the desired cleaning pressure. (Take care not to damage the surface being cleaned)
6. Always safely release the pressure in the trigger and lance after you have finished using the powerwasher. Releasing the pressure enables the hose fitting to be easily unscrewed from the gun.

Using Detergent

A Detergent cleaning agent can be introduced to the water by activating the Detergent Injecting valve. Please follow the steps below:

Step 1:

Place the chemical suction hose into the Detergent



Step 2:

Twist Black Detergent Knob



Step 3:

Pull Trigger and wait for Detergent to bleed through



Please use approved Detergent only.

Lifting Procedure

The MBW machines have a single lift point the location is shown by the Red arrow on the picture below.



Use lifting slings / chains certified to lift 500KG Max



Anti-Freeze COSSH Certificate

| | |
|--------------------------------|--|
| Product: | Elf Universal Antifreeze |
| Application: | Water freezing point suppressant |
| Composition: | Monoethylene glycol with anti-corrosion additives |
| Physical Data: | Green/Blue liquid. Soluble in water |
| Boiling Point: | 198°C |
| Specific Gravity: | 1.139 |
| Oduor: | Sweetish |
| Fire Hazard Data: | Flash point = 115°C |
| Hazardous Combustion Products: | CO ₂ , Dry Powder, Foam, Halon, Water Vapour |
| Extinguisher media: | Oxides of carbon, water vapour and Unidentified carbon compounds |
| Incompatible materials: | Strong oxidizers and perchloric acid |
| Toxicological Data: | Toxic Dose - 100ml adult man - Ethylene glycol |
| TLV: | 10Mg/m ³ (Mist) 60Mg/m ³ (Vapour) |
| Effect on Skin: | Can cause irritation |
| Effect on Eyes: | Mild irritation and smarting, with temporary conjunctive reaction |
| Toxicological Data: | |
| Ingestion: | Can be fatal (Minimal dose 100 ml adult men) DO NOT INDUCE VOMITING. Seek urgent medical attention Give milk or water if patient is conscious. |
| Contact with eyes: | Flush with plenty of water for 15 minutes |
| Contact with skin: | Wash with soap and water |
| Inhalation of mist: | In the event of dizziness or nausea, remove from exposure keep warm and at rest. If affects persist, seek medical attention. If breathing stops give artificial respiration and if necessary cardiac resuscitation. Seek medical help. Notes for Doctors: Gastric lavage should be considered if significant quantities have been swallowed in previous 4 hours. |
| Spillages: | Soak up with absorbent material and collect solids in container. Clean floor with water. |
| Disposal: | Incinerate or land dump in accordance with local regulations. |