PROCHEM®

Bravo

PORTABLE CARPET & UPHOLSTERY SPOT CLEANING MACHINE

SAFETY, OPERATION & MAINTENANCE INSTRUCTIONS

MODELS: *BV100 BRAVO SPOTTER*
BV300 BRAVO PLUS

- ***CAUTION – READ THE INSTRUCTION MANUAL BEFORE USING THE APPLIANCE***
- ***ORIGINAL INSTRUCTIONS***
- ***MANUAL ALSO AVAILABLE ON LINE AT WWW.PROCHEM.CO.UK***

CE

MACHINE DATA

MODEL NO.	
SERIAL NO.	
DATE OF PURCHASE	
DISTRIBUTOR NAME	
DISTRIBUTOR TEL NO.	
MANUFACTURER CONTACT	Prochem Europe Ltd. Oakcroft Road, Chessington, Surrey KT9 1RH, UK Telephone: + 44 (0)20 8974 1515 Fax: + 44 (0)20 8974 1511 Email: sales@prochem.co.uk Website: www.prochem.co.uk

All information and specifications in this manual are current at the date of issue. However, because of Prochem Europe policy of continual product improvement, we reserve the right to make changes at any time without notice. Please note that this manual applies to all models and explains variations including accessories used. Therefore, you may find some explanations for variations and options not installed on your equipment.

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This product is marked according to the **European Directive (2002/96/EC) on Waste Electrical and Electronic Equipment (WEEE).**

The symbol on this product indicates that this product must not be disposed of with normal household waste. Please protect human health and the environment by disposing of this product responsibly in the correct manner.

For further information regarding the disposal, treatment, recycling and recovery of this product, please contact:

Prochem Europe Sales Department
Telephone: +44 (0)20 8974 1515

Prochem Europe Ltd. EEE Producer Registration Number: WEE / AJ0044SY

European Directive (2015/863/EU) Restriction of use of certain Hazardous Substances in Electrical and Electronic Equipment (RoHS2).

This equipment does not contain more than the maximum permitted levels by weight of the following substances:
Lead (Pb), Mercury (Hg), Cadmium (Cd), Hexavalent Chromium (Cr (VI)), Polybrominated Biphenyls (PBB), Polybrominated Diphenyl Ethers (PBDE)

MACHINE WARRANTY

DATE EFFECTIVE: 1/7/26

As of the above date, this warranty supersedes all previous warranties and forms part of the contract of sale.
Prochem Europe Ltd. (hereafter referred to as "Prochem") guarantees this machine to be free from defects in materials and workmanship for the relevant time period as shown below, and from the actual date of purchase by the user. Proof of the purchase date from a Prochem Authorised Distributor will be required for performance of this warranty.

Rotationally moulded polyethylene tanks ……2 Years
All other parts except maintenance items (see below) ……..1 Year

THIS WARRANTY EXCLUDES NORMAL MAINTENANCE ITEMS, including but not limited to HOSES, FILTERS, O-RINGS, DIAPHRAGMS, VALVES, DRIVE BELTS, GASKETS, CARBON BRUSHES and damage to motors and other components as a result of failure to replace normal maintenance items. THIS LIST IS NOT EXHAUSTIVE.

To obtain performance of this warranty, contact the Prochem Authorised Distributor who supplied the product.

The Prochem Authorised Distributor is responsible as the selling agent for the provision of initial training in the correct use and application of the machine and approved chemicals. The distributor is also responsible for service maintenance and repairs during and after the warranty period and the administration of any warranty claims in conjunction with the Prochem Service Department. Failure of any of these provisions and responsibilities may invalidate the warranty and the authorised status of the distributor.

If Prochem receives notice of any defects during the warranty period, Prochem reserves the right to either repair, or replace components that prove to be defective. Goods must be returned before the warranty is approved. Goods sent out prior to the return of faulty items will be invoiced at current prices, subject to standard payment terms (see Prochem Standard Terms and Conditions of Sale). Replacement parts supplied under warranty will be guaranteed for the remainder of the original machine warranty and **NOT** from the date of installation. Electrical spares (pumps and vacuum motors) supplied after the expiry of machine warranty may be covered by a 3 month/90-day warranty. This warranty is activated from date of purchase from Prochem, warranty may be applied after inspection by Prochem Europe Ltd.& at its sole discretion. Normal maintenance items, however, are not covered. Replacement or credit of any returned parts will be at the discretion of the Prochem Service Department. Any subsequent refusal to accept their decision will serve to invalidate this warranty with immediate effect.

PROCHEM AUTHORISED DISTRIBUTORS are responsible for machine and accessories service back up during and after the warranty period. Prochem will furnish parts if the warranty is approved, but **DISTRIBUTORS** will be responsible for fitting, service, labour and related charges including travel, if applicable, and the cost of returning the machine or parts to Prochem. If any chargeable work is undertaken by Prochem for **DISTRIBUTORS** the labour, parts (if applicable) and return carriage will be charged at **FULL LIST PRICE**. If warranty is approved due to genuine manufacturing defect, then labour charges and carriage charges may be waived at Prochem's discretion.

Prochem may send replacement parts to customers supplied by a **DISTRIBUTOR** or directly by Prochem, subject to the same conditions of replacement and payment above. The customer, however, will be responsible for fitting, labour and the carriage costs of returning repaired parts. Alternatively, Prochem will undertake warranty work at Chessington, subject to the same conditions, but the customer will be responsible for all carriage charges.

Any of the following circumstances involving the machine will serve to invalidate this warranty:-
NORMAL WEAR, ACCIDENTS, USE OF THE MACHINE FOR A PURPOSE OTHER THAN THAT FOR WHICH IT WAS INTENDED, INCORRECT MAINTENANCE, THE USE OF CHEMICALS OTHER THAN THOSE SUPPLIED OR APPROVED BY PROCHEM, INCORRECT INSUFFICIENT OR NON-USE OF DEFOAMER, EXPOSURE TO EXTREME TEMPERATURES OR CONDITIONS, INCORRECT INSTALLATION OR REPAIR & UNAUTHORISED INTERVENTION.

Liability is excluded for the following:-
All forms of damage and special damage founded in tort (apart from death and personal injury) and contract law including but not limited to consequential loss, loss of income and losses incurred in reliance of the contract; service, labour or third party charges and the cost of returning the machine or defective parts to Prochem or Prochem's Authorised Distributor.
As against a person dealing as a consumer, this warranty creates specific rights in addition to any statutory rights, which are unaffected. As against a person dealing otherwise than as a consumer, however, this warranty excludes any implied term that the machine will correspond with a description or a product sample. With the exception of some specific products which are labelled and intended to be used by a consumer, all equipment, machinery, accessories, products, services and advice supplied by Prochem is intended for professional and industrial use only.

Your Prochem unit is designed to give you many years of reliable service. If a problem should arise during or after the warranty period, contact the Prochem Authorised Distributor or the Prochem Service Department, for details of the services available. Only the original purchaser of the new equipment may seek performance of this warranty – these rights cannot be transferred to a third party.

Prochem Europe Ltd.
Oakcroft Road, Chessington, Surrey KT9 1RH, UK
Telephone: + 44 (0)20 8974 1515 Fax: + 44 (0)20 8974 1511

Machine Warranty Issue 11 1/1/26

WARNING!

- **Warning!**
  Machines shall not be used by children. Children should be supervised to ensure that they do not play with the appliance. This machine can be used by people with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning the use of the machine in a safe way and understand the hazards involved.

- **Caution** this machine is for indoor use only.

- **Caution** this machine shall be stored indoors only.

- **Warning!**
  This machine must be disconnected from the mains during cleaning or maintenance, when replacing any parts or converting the machine to another function.

- **Warning!**
  Do not allow the power cord to come into contact with the rotating brush.

- **Caution** under no circumstances should the machine be carried by or bumped up a flight of stairs using the handle, always empty the bucket before storage or transporting the machine.

- **Warning!**
  This machine is fitted with an isolator switch – this does not disconnect the machine from the main supply – this can only be done by disconnecting the plug from the mains outlet.

IMPORTANT SAFETY INSTRUCTIONS

PLEASE READ THE FOLLOWING IMPORTANT SAFETY INSTRUCTIONS (!!) BEFORE ATTEMPTING TO USE THIS MACHINE. FAILURE TO OBSERVE THE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY.

!! CAUTION
Read the instruction manual before using the appliance.

!! SOUND PRESSURE LEVEL
The sound pressure of this machine, when in use, does not exceed 85 dB (A).

!! APPLIANCE SUITABILITY
This appliance is suitable for commercial use, for example, in hotels, schools, hospitals, factories, shops, offices and rental businesses.

***!! FOR MAINS POWERED APPLIANCES** during cleaning and maintenance – the plug is to be removed from the outlet socket.*

!! TRAINING
You must be trained in the operation of this machine before use. Please read this manual carefully and obtain operating instruction from your Prochem Distributor or authorised representative in the correct use of this equipment and suitable chemicals before attempting to clean.

!! REPAIRS
Should any repairs, including supply cord replacement be required, we recommend that the appliance be returned to an authorised dealer.

!! ELECTRICAL CABLE INSPECTION & REPLACEMENT
This machine must be earthed while in use to protect the operator from electric shock. It is equipped with a sealed and approved EC three conductor cable and three-prong 13A plug. If the supply cord is damaged it must be replaced by a special cord or assembly available from the manufacturer or its service agent. During operation a hazard may occur when running the machine over the power supply cord. The power supply cord should be regularly inspected for signs of damage. If the power supply cord is damaged, it must be replaced.

!! RCD CIRCUIT BREAKER
In common with other household and commercial electrical equipment, an 'RCD' circuit breaker plug device is strongly recommended for this type of equipment.

!! EXTENSION CABLES
Avoid using extension cables with this machine. If an extension cable is used it should be of a suitable rating and no longer than 30 metres. Use only three wire CE approved extension cable with CE approved three-prong earthed plugs and three pole receptacles that accept the machine 13 amp plug.

***!! DO NOT** use a multiple adaptor socket to connect the machine or other devices to a single extension cable.*

***!! DO NOT** stand the machine in water to operate such as during flood extraction.*
SERIOUS INJURY OR DEATH MAY RESULT IF MACHINE IS IMMERSED IN WATER!

***!! DO NOT** pull the machine by the power cable or hoses.*

***!! DO NOT** use this machine with or near flammable vapours. These machines can ignite flammable vapours such as fuels, solvents or thinners.*

***!! DO NOT** operate the machine unless it is completely assembled.*

***!! DO NOT** attempt repairs or maintenance unless you are suitably qualified or experienced. Repairs and maintenance should only be performed by qualified personnel and the machine should be tested for electrical safety before re-use.*

***!! SPRAY LIQUID** ejection could be hazardous as a result of its temperature, pressure or chemical content.*

***!! IF FOAM** or liquid escapes from the appliance, switch off immediately.*

***!! ALWAYS** disconnect machine from mains supply during cleaning and maintenance, when replacing parts or converting to another function, when left unattended and when emptying the waste container.*

***!! WHEN CLEANING THE WASTE TANK** use a broad spectrum disinfectant cleaning agent to prevent contamination from any infectious material.*

GENERAL DESCRIPTION OF APPLIANCE

The Bravo and Bravo Plus machines are hot water spray extraction machines that incorporate a solution and vacuum hose assembly and hand tool or carpet wand depending upon the model.

The machines have an integral cleaning solution tank and removable waste water bucket for the collection of dirty water.

The machines can also be fitted with various accessories to convert the machine to upholstery cleaning unit or a small area wand type cleaning unit.

IMPORTANT OPERATING INSTRUCTIONS

PLEASE READ THE FOLLOWING IMPORTANT OPERATING INSTRUCTIONS (!) BEFORE ATTEMPTING TO USE THIS MACHINE. FAILURE TO OBSERVE THE INSTRUCTIONS MAY RESULT IN DAMAGE TO THE EQUIPMENT.

***! DO NOT** expose the machine to rain or freezing temperatures. Drain solution system and store indoors when not in use.*

***! DO NOT** operate the machine without solution and waste tank filters.*

***! DO NOT** use boiling water or temperature in excess of 60^{O}C.*

***! DO NOT** use chemicals in the machine other than those manufactured or recommended by Prochem Europe.*

***! DO NOT** use the machine for dry vacuuming. The vacuum must only be used for wet extraction in conjunction with the spray system.*

***! DO NOT** run the solution pump dry. Always switch off and disconnect the machine when re-filling with solution.*

***! ALWAYS** use a clean bucket to fill the solution tank.*

***! AFTER USE** flush solution system and rinse the waste tank with clean water.*

***! ALWAYS** observe directions and safety precautions on chemical products.*

***! ALWAYS** pre-test carpet or fabric for colour fastness and suitability with ready-to-use cleaning solution before proceeding.*

***! ALWAYS** use defoamer in the waste tank to control foaming from previous shampoo residues in the carpet.*

***! USE ONLY** genuine replacement parts for this machine, supplied by an authorised Prochem Distributor.*

***! DO NOT** use this machine for any purpose other than for its intended design function. Any deviation from its proper use or purpose and any consequential damage that may occur is the sole responsibility of the user.*

***! ALWAYS** discharge soiled solution to a sewage drain linked to a sewage treatment facility.*

***! DO NOT** discharge soiled solution into roadside storm drains.*

GENERAL OPERATING INSTRUCTIONS

BEFORE OPERATING THE MACHINE

Read the manual carefully and completely before attempting to operate the unit. This manual has important information for the use and safe operation of the machine and should be kept available at all times. This machine will ensure years of satisfactory service if operated and maintained according to recommendations in this manual. If additional help or information is needed, please contact your distributor or Prochem.

Prochem soil extraction machines have been designed with the operator in mind. Provided you read the instructions relating to the care of your machine and follow them carefully and take advantage of the helpful hints and advice that we have passed on, you will achieve excellent cleaning results and very quickly pay for your investment. A detailed operational guide is given in the following sections, however, the following important points must be emphasised.

FAILURE TO OBSERVE THESE INSTRUCTIONS MAY SERIOUSLY AFFECT THE PERFORMANCE OF THE MACHINE AND INVALIDATE THE WARRANTY

- Connection instructions - The 220 - 240V AC models have been fitted with the appropriate EC type sealed power cable and 3 prong 13 amp plug for the UK market. Ensure the machine is connected to a 13 amp socket outlet having the same configuration as the plug. No adapter should be used with this machine. Any modification to the plug type may be dangerous and will void the warranty.
- This equipment is intended for commercial use only.
- The machine was designed for use on carpet and upholstery extraction applications as per instructions and recommendations written in this manual. Any deviation from its proper use or purpose and the consequential damage that may occur is the sole responsibility of the end user.
- Disconnect the power cord from outlet before servicing. Do not leave machine connected to an electrical outlet when unattended.
- Do not immerse or use this machine in standing water. Such use may cause electric shock.
- This equipment is not designed to handle or use combustible/volatile substances such as gasoline or kerosene, in, on, or near the machine. The use of such materials will cause an extreme hazardous condition.
- Use defoamer at all times to prevent damage to the vacuum motor.
- Do not use water in excess of 140°F (60°C).
- To prevent seal damage and chemical build-up to the pump system, run clean water through the solution lines after each days use.
- All repairs must be carried out by an authorised Prochem distributor.
- Repairs should only be carried out by a qualified person.
- Do not use replacement parts other than genuine manufacturer’s parts as specified in the parts list.
- Do not use chemicals in the machine other than those supplied or approved by Prochem Europe.
- Do not use the machine as a 'dry' vacuum. Always pre-vacuum carpets thoroughly with a separate 'dry' vacuum cleaner.
- Keep the solution tank and inlet filters clean. Always use a clean bucket to fill the solution tank.
- Clean the recovery tank daily. Empty recovery tank completely before re-filling the solution tank. Empty recovery tank regularly during use, do not wait for it to fill up.
- After use, flush through the pump, solution lines and waste tank with 5 litres of hot water.
- Do not allow the machine, hoses or tools to freeze. Freezing may seriously damage the pump and fittings. Always drain solution and store indoors when not in use. When in transit during freezing weather, insulate and cover machine, wand and hoses. To prevent hose cuffs splitting in cold conditions, immerse them in warm water before use.

UNDERSTANDING YOUR SOIL EXTRACTOR

OVERVIEW

The Bravo has two switches on the rear plate of the machine. One is the mains isolator - this is green and illuminated when the switch is in the on position, it will extinguish when in the off position. This only means that there is no power to the main components. The mains cord will remain live until it is unplugged from the mains outlet, the other is a plain black three position switch, this switch operates the two mechanical parts, a solution pump and fan type vacuum motor - both operated by a combined electrical switch located on the back of the main housing. Switch position (I) operates the vacuum only and switch position (II) operates the vacuum and pump simultaneously. The pump forces a cleaning solution under pressure from a housing tank to the face fibre of the carpet or fabric via a solution feed hose and cleaning tool. The cleaning tool has a spray jet system that is compatible with the pressure from the pump and delivers just the right amount of solution to the carpet or fabric. The solution has a short amount of time to be forced into the fibres and emulsify the soil particles before it is extracted by the powerful suction of the vacuum motor. ***Because both these functions take place at the cleaning tool, it will soon be realised that the speed at which the operator moves the cleaning tool is an important factor.***

RECOVERY SYSTEM

The recovery tank on the Bravo does not have a built-in shut-off system and relies on the recovery tank capacity being greater than the solution tank capacity.

With this in mind it is important to understand that the recovery tank must be emptied each time the solution tank is re-filled. The design of the Bravo ensures that the recovery tank must be removed for emptying before the solution tank can be re-filled. Care should be taken to ***empty the recovery tank frequently and to use a defoamer*** if heavy foam build-up occurs due to previous shampoo residue in the carpet. After emptying the recovery tank, flush through with clean water before re-fitting the recovery tank to the machine. For regular maintenance and internal cleaning of the recovery tank, a screw-type clear cover is provided on the rear of the tank. For internal cleaning, remove recovery tank from the machine and pull the handle upwards and clear of the window. Unscrew window anti-clockwise to remove and gain access to inside of recovery tank. Clean with broad spectrum disinfectant before re-assembly.

WARNING - Do not use extraction machines for dry vacuuming

The vacuum motor on your extractor is not protected by a dry dust filter. You should only use the vacuum in conjunction with the solution spray.

SOLUTION SYSTEM

The quick connector on the end of the cleaning tool solution hose is connected to the machine, completing the solution circuit from the solution tank via the pump to the cleaning tool head. The female connector incorporates a pull-back release ring which houses steel ball bearings. These should be lubricated regularly otherwise connection may become difficult. The cleaning tool head is made from high impact thermoplastic. Do not attempt to use the cleaning tool on hard surfaces or concrete, which may result in damage to the plastic head.

- ***Always check that the filters in the solution tank are in good condition.*** Remember that the filters are there to protect the pump from dirt and fibres and it is a lot easier and cheaper to replace the filter than it is the pump!
- ***Always use a clean bucket when you replenish your solution tank.*** This help will prevent soil and sediment from entering the cleaning solution tank and pump system!

ACCESSORIES & CHEMICALS

ACCESSORIES

UPHOLSTERY TOOL
A hand / upholstery tool and hose assembly is available as an optional accessory for the Bravo Plus.

HAND SPRAY UNITS
For efficient cleaning and spotting operations, you will need at least two trigger sprayers or pump-up type spray units to apply the spotting solutions before extraction cleaning with the Bravo machine. These are available in the Prochem catalogue from your local distributor. The Bravo is designed to hold two 1 litre sprayer type bottles in the top of the recovery tank for convenient storage and accessibility.

SPOTTING BRUSHES
A natural fibre spotting brush and a selection of natural and synthetic fibre specialist cleaning brushes are available in the Prochem catalogue from your local distributor.

OTHER ACCESSORIES
A selection of essential spot cleaning accessories such as white terry towels and spotting scrapers are available in the Prochem catalogue from your local distributor.

CHEMICALS

Prochem specialise in manufacturing chemical products for the soft furnishing cleaning industry. This section refers only to the basic **Prochem** chemicals for general on-site carpet and fabric cleaning using the Bravo extractor.

B109 FIBRE & FABRIC RINSE
A mild acidic rinse concentrate, for use as a cleaning/stabilising rinse to restore correct pH to the fibre. B109 will help to stabilise fugitive dyes and reduce the possibility of 'jute browning' caused by over-wetting or the use of alkaline cleaning solutions. ***B109 Fibre & Fabric Rinse is the recommended solution for use in the Bravo extraction machine solution tank, Dilute 20 ml. B109 per litre of warm water in your machine solution tank.***

B144 STAIN PRO
A heavy-duty alkaline spotter with added solvents for the removal of most stains including blood, vomit, water-based inks, fresh tea and coffee. Suitable for use on most fibres including synthetics, but it is recommended to always rinse out with B109 Fibre & Fabric Rinse (see below) when cleaning wool or wool mix fibres.

B122 NEUTRAL PRO-SPOTTER
An all-purpose spotting agent effective on a wide range of food, drink and water-based stains. B122 has a neutral pH and therefore may be applied to most fibres including wool and other natural fibres without neutralising rinse (subject to testing).

B195 COFFEE STAIN REMOVER
A special acidic spotter for use on dried tea, coffee, beer, tannin, brown and yellow water-mark type stains. Usually effective on old tea and coffee stains when used in conjunction with the Bravo machine and B109 Fibre & Fabric Rinse.

E840 CITRUS GEL
An all-purpose solvent and detergent gel which is effective on oil-based stains such as grease, oils, butter, adhesives etc. Citrus Gel may be applied and then rinsed out with the Bravo machine provided this is for small spots only. ***Do not rinse extract large quantities of Citrus Gel or other solvent based spotters due to the possible build-up of flammable solvent vapours in the recovery tank and vacuum system.***

S760 LIQUID DEFOAMER
Always use S760 in the Bravo recovery tank, especially when foam problems from soapy residue left from previous shampoo cleaning are encountered. Mix 20 ml. of S760 with 500ml of cold water and add to vacuum hose and recovery tank. As you empty the recovered soiled solution, you simply add more S760 as necessary. Remember, it is only necessary to add S760 when extraction cleaning previously shampooed carpets, so always check the recovery tank for foam at the start of each job.

OTHER STAIN REMOVERS, SPOTTERS, PROTECTORS & DEODORISERS
Speciality products such as those listed above are available from the **Prochem** range. Refer to the chemical section of the Product Catalogue for more details. Individual Product Safety Data Sheets on all products are available direct from **Prochem Europe** (www.prochem.co.uk) or from your local **Prochem** Distributor.

OPERATING INSTRUCTIONS

PUTTING INTO SERVICE

Ensure all switches are in the off position.
Unfasten the two latches that hold the recovery tank to the solution tank and remove the waste tank from the machine and place to one side.
Pour clean solution into the solution tank using a bucket with pouring lip. Do not overfill the solution tank.
A maximum of 5 litres is recommended.
Use only approved correctly diluted chemical (see chemical bottle label for correct dilution rates).
Replace the waste tank onto the solution tank and fasten the two latches.
Plug the power cable into a suitable electrical outlet.
Connect the vacuum hose from the cleaning tool to the inlet on the top of the recovery tank.
Connect the solution hose female quick connector from the cleaning tool to the male quick connector on the front of the machine. (Pull back outer sleeve on female connector and push fit onto male connector so that the outer sleeve snaps shut.)
Add defoamer solution (as per label instructions) to the waste tank.
When moving the machine from place to place pull up on the handle and wheel using the 2 rear wheels.
Only place the hand tool or wand onto the area to be cleaned when in use.
The machine must be used in an upright condition on a flat and level surface.

OPERATING INSTRUCTIONS - CLEANING TOOL

Important: Use only the hand tool supplied with the Bravo or the carpet wand supplied with the Bravo Plus. They are designed to deliver and maintain the correct amount of solution and pressure when attached to the Bravo pump system. Use of other manufacturers wands and hand tools may cause over-wetting of carpet or fabric, damage to the pump system and lack of pressure.

Operate the mains isolator switch so that the switch illuminates, this indicates the machine is powered up. Turn on the vacuum and solution pump (switch position II). Slowly pull the cleaning tool towards you with the solution valve trigger engaged. Repeat passes as required to remove staining residue. Then make passes forward and backward with the vacuum only (no spray) over the cleaned area to remove as much residue, soil and solution as possible. Do not over-wet carpet or fabric! Make overlapping passes to prevent streaking.

When you run out of solution, turn off the vacuum and pump by operating the switch to the centre off position. Power down the machine by operating the mains isolator switch the light will extinguish in the switch indicating that the machine is powered down. Disconnect the vacuum hose from the recovery tank, unfasten the latches and lift recovery tank off solution tank. Drain recovery tank completely and flush several times with clean water to remove all soil and residue.

When the job is completed, turn the pump and vacuum switch off (centre off position), power down the machine by operating the mains isolator switch, the light will extinguish in the switch indicating that the machine is powered down, disconnect from the mains outlet by unplugging the cord and disconnect the vacuum and solution hose from the cleaning tool. Empty the recovery tank as before and empty any unused cleaning solution from the solution tank.

SPOT CLEANING UPHOLSTERY

CAUTION – WE STRONGLY RECOMMEND ATTENDING AN UPHOLSTERY CLEANING COURSE BEFORE ATTEMPTING TO CLEAN FABRIC UPHOLSTERY.

General instructions
Cleaning upholstery with success requires a good knowledge of the type of fabric to be worked on. Look for the cleaning instruction label sewn on the underside of the furniture for the recommended method of cleaning the fabric. If it calls for dry cleaning, do not attempt to clean with the wet extraction method. Otherwise, damage to the fabric could occur. Extraction works perfectly on most wet-cleanable fabrics including synthetic (acrylic) velvets.

Before proceeding, test the fabric for colour-fastness. Apply a small amount of ready-to-use cleaning solution on the fabric in an inconspicuous area. Wait for 2 to 3 minutes and blot the area with a white terry cloth towel. If no colour comes off onto the towel, the fabric should be safe to clean. If a little colour comes off, there is some risk of colours running when you clean. It may be possible to stabilise colours by rinse extracting with B109 Fibre & Fabric Rinse.

Prepare the machine in the same manner as for carpet (see preparing the machine). Connect the cleaning tool hoses to the machine. Pour warm water into the solution tank. Add recommended amount of cleaning concentrate into the solution tank. Turn on the vacuum and pump (switch position II).
Clean with the tool using as little solution as possible. Make overlapping passes to prevent streaking. Go over the area you just cleaned without depressing the lever (vacuum only) and gauge the amount of moisture extracted for dryness. On heavily soiled areas such as arm rests, pre-treat with a recommended pre-spray.

STORAGE AND TRANSPORTATION

The machine can be prepared for storage (indoors only), by ensuring the power cord is correctly wound around the cord wrap.
The solution tank and waste tank are empty and clean.
The waste tank is securely fitted to the machine using the latches.
The operators pull control handle is pushed to the storage position.
Transporting the machine to another site in a vehicle can be carried out if the previous conditions are met but the waste tank must be securely fitted.
If the machine is to be lifted into a vehicle two lifting points are supplied one being the pull-up handle and the other the front bottom edge of the machine.
Due to the weight of the machine it may require two people to lift it into any vehicle, or carry it upstairs.
Caution, under no circumstances should the machine be bumped up a flight of stairs using the handle, always empty the bucket before storage or transporting the machine.

USE OF PERSONAL PROTECTIVE EQUIPMENT (PPE)

Operation of this machine requires the use of protective latex gloves. Please be aware that the chemicals may require specific PPE to be worn. This can be found on the Material Safety Data Sheet (MSDS) for that particular product.

GENERAL MAINTENANCE

All Prochem machines are engineered and built to require a minimum of maintenance. But like any machine, it does require some care to keep it in optimum working condition. Careful attention to these maintenance instructions will give you maximum operating performance and will increase the life expectancy of the machine.
To ensure a trouble-free machine, we strongly advise the following preventative maintenance.

DAILY MAINTENANCE

The following should be carried out at the end of each cleaning session.

POWER CABLE & PLUG
Check the condition of the power cable and plug. Make sure all wires are correctly located and tightly connected. If damaged, the power cable and plug assembly must be replaced.

DO NOT ATTEMPT REPAIR.
Instruction for replacement of power cable with combined plug (all machines)

!! CAUTION - ONLY QUALIFIED MAINTENANCE PERSONNEL SHOULD ATTEMPT THE FOLLOWING REPAIR

Should the power cable require replacement, please follow the instructions below.

1. The replacement cable and plug shall be of the same specification as the original Prochem part number BE4901 (3 core 1.5mm with 13Amp sealed plug unit)
2. Ensure that machine is disconnected from electrical supply and open electrical housing by means of tool required.
3. Disconnect the live (brown), neutral (blue) and earth (green/yellow) wires from the cable terminal block by means of unscrewing the terminal block wire clamp screws.
4. Release the outer cable clamp next to the terminal block by unscrewing the two securing screws, then unscrew the outer cable gland to release the cable which can then be pulled out of the cable gland assembly.
5. Insert the new cable through the gland, then secure and clamp the outer cable by means of tightening the outer cable gland and the two securing screws next to the terminal block.
6. Connect the live (brown), neutral (blue) and earth (green/yellow) wires to the cable entry gland terminal block by means of inserting the wire conductors into the terminal block as follows :-
   The conductor of the wire coloured brown shall be connected to the terminal marked (L), the conductor of the wire coloured blue shall be connected to the terminal marked (N) and the conductor of the wire coloured green and yellow shall be connected to the terminal marked with the Earth symbol thus - ⏚
7. Ensure that all connections are secure and close machine electrical housing and secure with tool required.

SOLUTION TANK
Flush the solution tank and pump through with 5 litres of hot water. Check the **filters** and clean if necessary. If damaged or compressed, unscrew the **filters** and re-shape or replace as necessary.

RECOVERY TANK
Check the foam filter, filter screen and gasket which is located on the top of the solution tank. Clean or replace as required and ensure that the recovery tank fits securely over the filter gasket and provides a secure seal when the latches are fastened.
Flush through with clean water after each use. For regular maintenance and internal cleaning of the recovery tank, a screw-type clear cover is provided on the rear of the tank. For internal cleaning, remove recovery tank from the machine and pull the handle upwards and clear of the window. Unscrew window anti-clockwise to remove and gain access to inside of recovery tank. Clean with broad-spectrum disinfectant before re-assembly.

CLEANING TOOLS AND HOSES
Inspect the hand tool or wand head for sharp edges or damage. Check the **spray nozzle** for debris, correct alignment and spray pattern. Clean if necessary using **only** a soft bristle brush - **DO NOT use metal or wire.** Rinse the **vacuum hose** with hot water to prevent soil build-up. Lubricate the female quick connect sleeve with WD-40 or similar.

Check all nuts and bolts and tighten if necessary.

Always keep the machine clean inside and out.

WARNING! FREEZING PROTECTION

If your Bravo machine is exposed to freezing weather with solution in the components, the solution will **FREEZE** and in most cases **SERIOUSLY DAMAGE** the machine. To avoid damage, consider the following in the winter season. When the machine is not in use, store it in a **heated building.** To avoid freezing between jobs, pump out all the cleaning solution from the machine and hand tool and make sure that the machine and hand tool are insulated from the vehicle floor (wrap in a blanket or tarpaulin).

PERIODIC MAINTENANCE

Inspect the internal components, solution fittings and electrical connections. Check for signs of **fluid leakage** and tighten or replace fittings as necessary. Make sure all **electrical connections** and **cables** are in place.

SOLUTION PUMP

!! CAUTION - ONLY QUALIFIED MAINTENANCE PERSONNEL SHOULD ATTEMPT THE FOLLOWING REPAIRS

A solenoid type pump is fitted to the Bravo and requires little maintenance other than occasional inspection of the pump to check for any fluid leakage from the inlet and outlet fittings. In the event of a reduction in operating pressure, leakage or pump failure, refer to the **'Fault Finding Guide'** and contact your **Prochem** Distributor

VACUUM MOTOR

!! CAUTION - ONLY QUALIFIED MAINTENANCE PERSONNEL SHOULD ATTEMPT THE FOLLOWING REPAIRS

The vacuum motor is lubricated for life - no additional lubrication is required. The only other maintenance that may be required is changing the motor brushes. **This should only be carried out by an individual with THOROUGH knowledge of electric motors**.

The brushes should be changed before the brush wears to within 3/8" of the brass holder.

With heavy usage we recommend that the brushes be checked every 3 months. The recommended inspection period for normal usage is at least every 6 months. The estimated brush life is approximately 400 to 450 hours, but inspection and replacement should take place at least every 350 hours to prevent the possibility that brush wear may cause damage to the vacuum motor.

On re-assembly, the lead wires must be kept away from the rotating parts and the motor frame. Always ensure that the green earth wire is re-connected to the vacuum motor body to ensure safe operation. To achieve maximum life, the brushes should be seated on the commutator before full voltage is applied. Do this by applying 50% of the rated voltage for thirty minutes. In the event of electrical or mechanical failure, refer to the General Fault Finding Guide page in this manual and contact your Prochem Distributor. Although some service parts are available, we recommend that defective vacuums be replaced.

GENERAL FAULT FINDING GUIDE

CAUTION - Repairs should only be carried out by a QUALIFIED AND FULLY TRAINED PERSON!

NO POWER

With the vacuum and pump switch in the 'on' position (II), the vacuum and pump will not run.

PROBABLE CAUSES	CORRECTIVE ACTION
Defective power cord	Replace power cord
Defective switch	Replace switch
Loose connections to terminal block	Re-fit connections
Blown plug fuse	Replace fuse
House or building circuit breaker tripped	Re-set breaker switch

NO VACUUM

With the vacuum switch in the 'on' position (I or II), the vacuum will not run.

PROBABLE CAUSES	CORRECTIVE ACTION
Defective switch	Replace switch
Vacuum motor defective	Replace vacuum motor
Loose wire connections	Check and correct wiring

LOSS OF VACUUM

While the unit is running, there is a loss of suction at the cleaning tool.

PROBABLE CAUSES	CORRECTIVE ACTION
Vacuum filter between tanks is clogged	Clean foam and filter screen
Vacuum gasket between tanks is worn or damaged	Replace gasket
Internal vacuum hose damaged or clogged	Inspect and clean or replace
Hole in vacuum hose	Repair or replace hose
Vacuum hose not fitted tightly onto recovery tank inlet	Re-fit hose cuff
Recovery tank not firmly clamped down onto solution tank	Check clamps and filter gasket for correct fit
Vacuum motor defective or fans clogged	Replace vacuum motor

NO PUMP PRESSURE

With the pump switch in the 'on' position (II), the pump will not run.

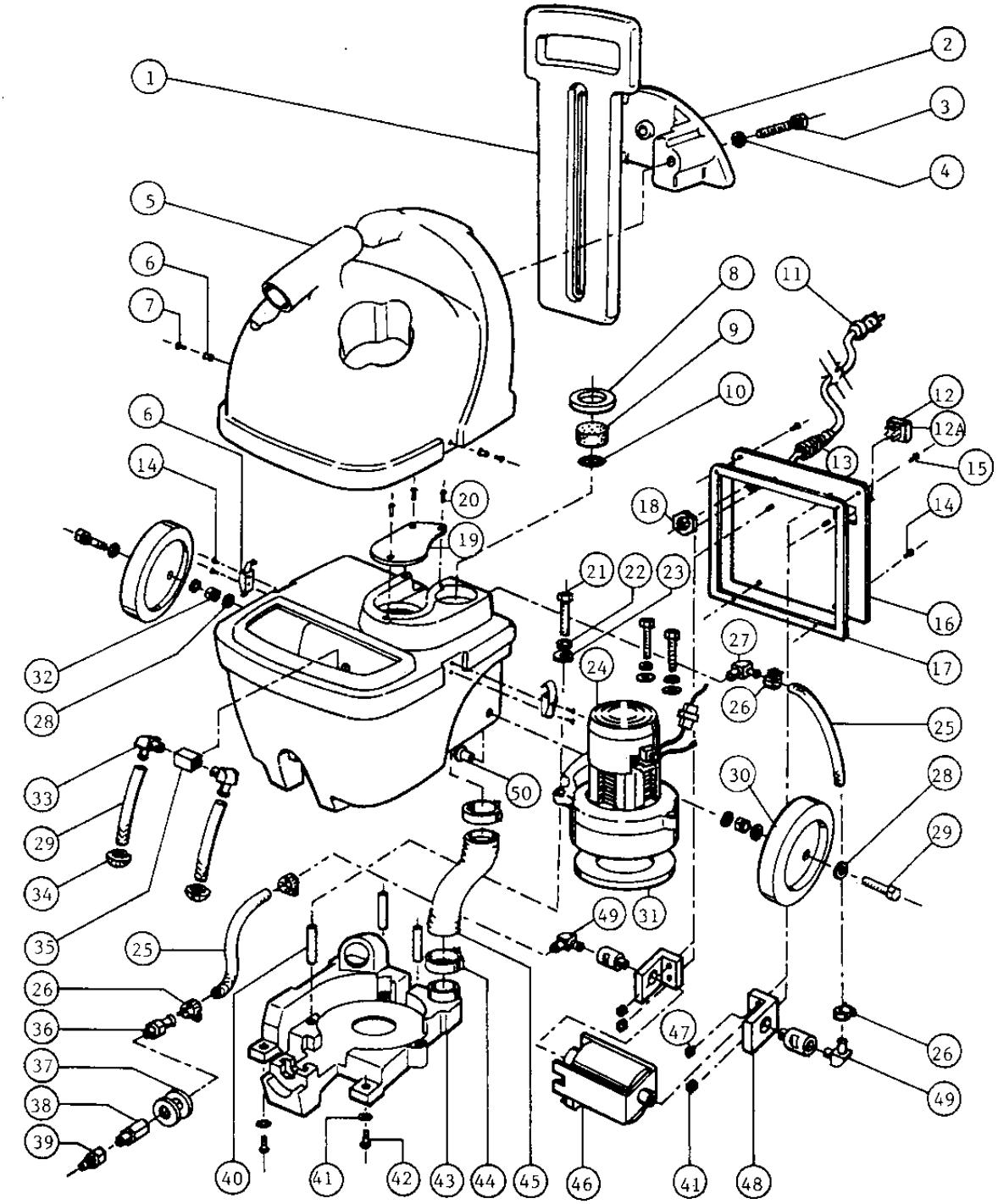
PROBABLE CAUSES	CORRECTIVE ACTION
Defective switch	Replace switch
Defective pump	Replace pump
Loose wire connections	Check and correct wiring

LOW PUMP PRESSURE

With the pump motor running the spray from the cleaning wand is below normal.

PROBABLE CAUSES	CORRECTIVE ACTION
Solution tank filters clogged	Clean as necessary
Accumulation of debris in pump or solution lines	Locate blockage and clean as required
Suction leak at pump inlet	Locate leak and repair
Pressure leak at pump outlet	Locate leak and repair
Quick connect(s) defective	Replace quick connect(s)
Spray tip worn, clogged or incorrectly positioned	Replace, clean or re-position

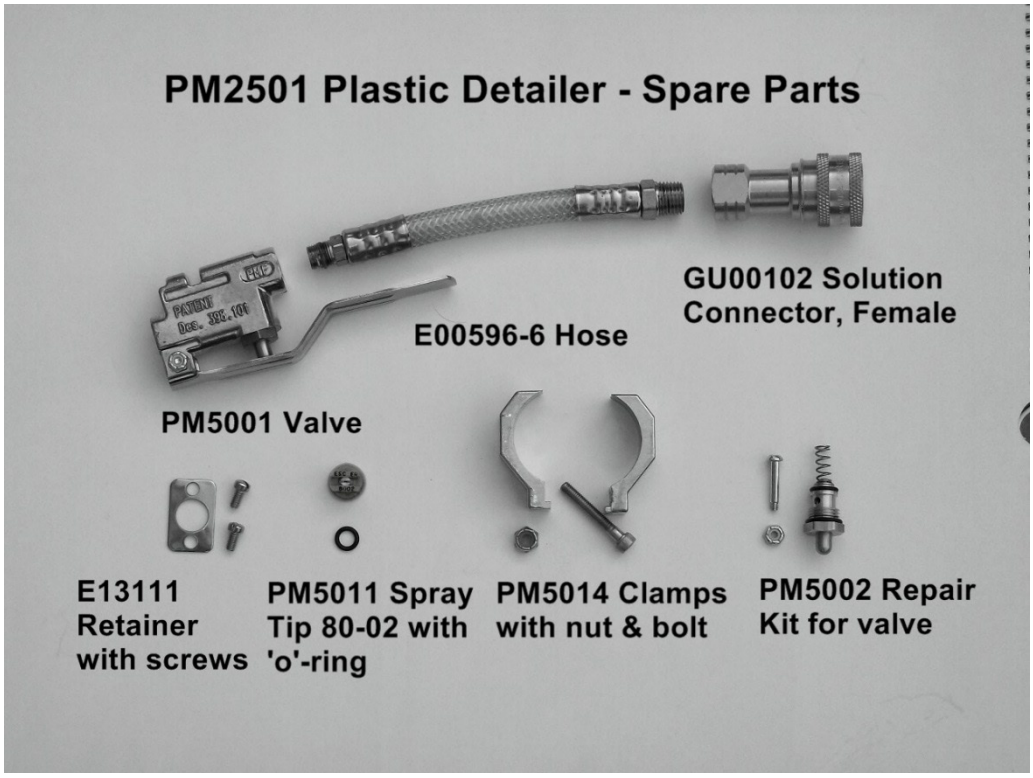
BRAVO MACHINE PARTS ILLUSTRATION



BRAVO MACHINE PARTS LIST

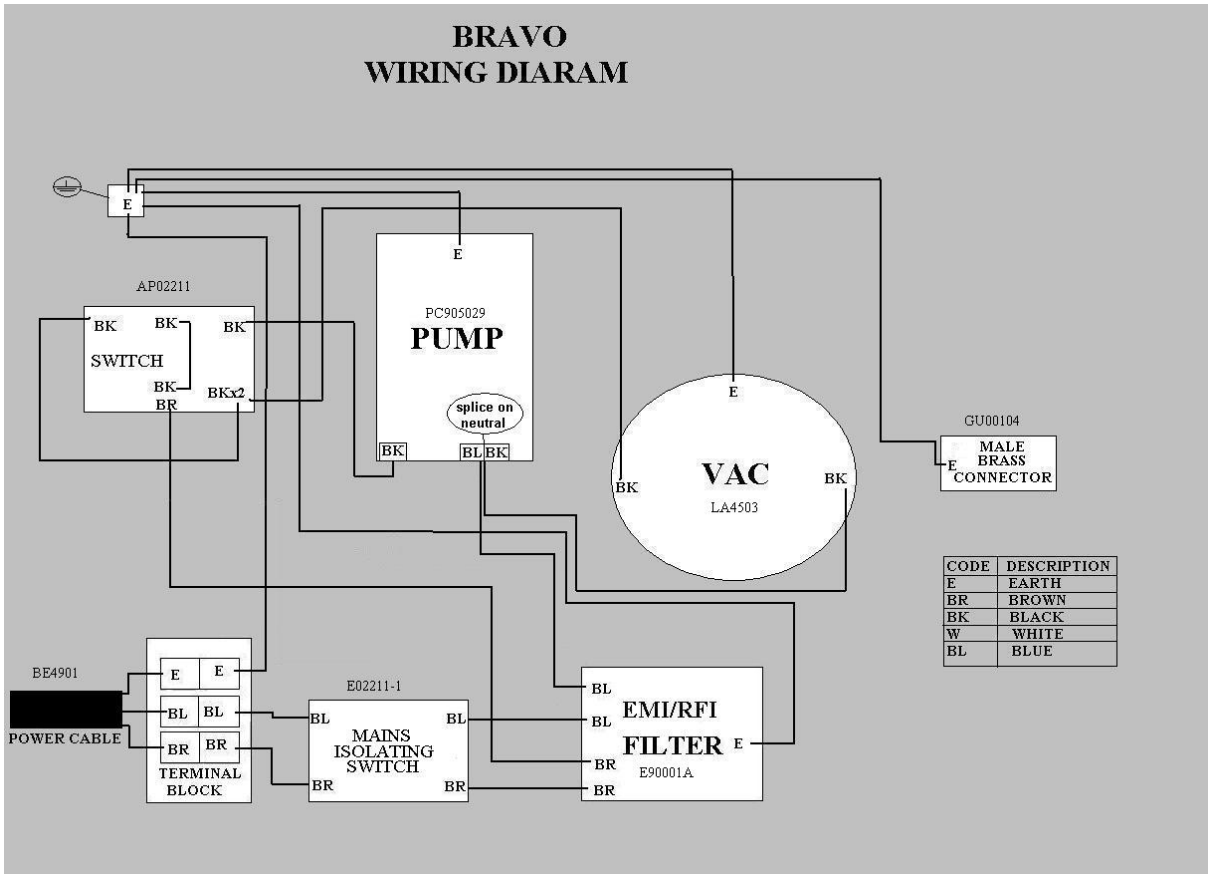
REF.	STOCK CODE	PART NO.	DESCRIPTION	QTY
1		F11695-B	HANDLE, BLUE	1
2		F11694-B	CORD WRAP	1
3	E00314-1	C00314-1	HEX BOLT, ¼"-20 X 1	2
4	JE00233	C00233	WASHER, ¼" FLAT	2
5		F11696-B	RECOVERY TANK	1
6	E11692	D11692	LATCH W/STRIKER (EARLY VERSION)	2
6	E12020	D12020	LATCH, NEW TYPE (LATER VERSION)	1
7		C00310-12	SCREW, 8-32 X ½" (MAKE FROM E90010)	2
8	E11044	E11044	GASKET, 2 ¼" OD	1
9	E11045	E11045	FOAM DISC 1 ½" OD ½" THICK	1
10	E11043	D11043	FILTER SCREEN	1
11	BE4901		POWER CORD 220-240V EC	1
12	AP02211	B00188	ROCKER SWITCH 2 POSITION CENTRE OFF	1
12A	E00214-2	B00214-2	COVER, SWITCH	1
13	E11199	B11199	STRAIN RELIEF	1
14	E00311	C00310-38	SCREW 8-32 X 3/8"	6
15	E11529	C11529	SCREW 10-32 X 3/8"	2
16		D11699	SWITCH PLATE	1
17		E11722	GASKET, VENT PLATE	1
18		B02214	STRAIN RELIEF NUT (Comes with E11199)	1
19		F11711	VAC DUCT	1
20		C00293	SCREW #8 X ½" PAN BLACK	5
21		C02291	SCREW ¼"-20 X 2 ½" (Sub from E00319)	3
22	JE00254	C00254	¼" LOCK WASHER	3
23	JE00233	C00238	WASHER ¼" FLAT	3
24	E02521	G02521	VACUUM MOTOR 5.7" 230V	1
25	WP4001	J00596	SOLUTION HOSE ¼" BRAIDED	3FT
26	E00651	J00651	SCREW CLAMP ¼" - 5/8"	4
27	E00073	A00166	90° ELBOW 1/8" FP X ¼" BRASS (Requires WL4001)	1
28	E00252	C00252	WASHER 3/8" X 13/16"	7
29		C11701	BOLT, 3/8-16 X 2, ZINC	2
30	E11688	G11688	WHEEL 6"	2
31	E11169	E10521	GASKET VACUUM MOTOR	1
32		C11702	HEX NUT 3/8" 16	2
33	E00310	A00130	90° ELBOW 1/8" MP X ¼" BRASS	2
34	W135	D11684	INLET FILTER (Filter Assy. shown as 29 hose + 33 & 34 = E00613)	2
35	E00152	A00152	TEE 1/8" MP X 1/8" FP X 1/8" FP	1
36	CH4013	A00139	¼" MP X ¼" BARB BRASS	1
37	PC000058	C00232	WASHER ½" FLAT	3
38	CH00121	A00121	¼" MP X ¼" FP BRASS	1
39	GU00104	A00104	QUICK CONNECT ¼" MALE	1
40	E10691	K11703	SPACER ¼" – 20 X ½" OD X 1 ¾" LONG (sub from E10691)	3
41	E03251	C03251	WASHER 3/16" ID BACKUP 0.490 OD	4
42		C90007-1	SCREW 10 – 32 X 1" PHILLIPS TRUSS HEAD SS	2
43		F11698-B	MOTOR BASE	1
44		J00656	HOSE CLAMP 1 ½"	2
45	E00618-1	J00618-1	VACUUM HOSE 1 ½" WIRE REINFORCED	10"
46	PC905029	G11689	PUMP, OSCILLATING 230V	1
47		C00278	NYLON LOCK NUT 10-32	1
48		E11691	PUMP BRACKET	2
49	E00073	A00134	90° ELBOW 1/8" MP X ¼" BRASS (Requires WL4001)	2
50		C11724	3/8" – 16 WELD NUT	2
PARTS NOT SHOWN				
		F11802	SOLUTION TANK, BRAVO, 6L	1
			SOLUTION TANK, BRAVO PLUS, 10L	1
	E11723	F11723	CLEAN OUT PORT	1
		C02237	SCREW, PHILLIPS (CLEAN OUT PORT)	6
	AC322B		HAND / UPHOLSTERY TOOL COMPLETE WITH 2.4M HOSES	
	PM5005		REPLACEMENT PLASTIC HEAD FOR HAND TOOL	
	GU00120		FEMALE QUICK CONNECT ¼" BRASS	
	PM5001	V1245P	VALVE FOR HAND TOOL	
	PM5011	H53 8002	SPRAY NOZZLE 8002 FLAT PLASTIC / SS YELLOW	
	AC1030		CARPET WAND 10" STAINLESS STEEL, BRAVO PLUS	
	AC342	342AC	2.4M VACUUM & SOLUTION HOSE ASSEMBLY, BRAVO PLUS	
	E02211-1	B02211-1	MAINS SWITCH ILLUMINATED	

BRAVO HAND TOOL PARTS LIST
AC322B (PM2501)



WIRING DIAGRAM

MODEL BV100
220 – 240V AC 50 / 60Hz



DECLARATION OF CONFORMITY

We:

Prochem Europe Ltd.,
Oakcroft Road,
Chessington,
Surrey, KT9 1RH
UK
(Importer / EC Responsible Person)

E.D.I.C
1753, Blake Avenue,
Los Angeles,
California, 90031-1006
USA
(Manufacturer)

Declare that the product(s):

Type(s): **BRAVO, BRAVO PLUS**
Model(s): **BV100, BV300**
Description: **CARPET & FABRIC CLEANING MACHINE 220 - 240V 50 Hz**

Has been manufactured in conformity with the following standards and specifications:

EN 60335-1
EN 60335-2-68
EN 50081-1
EN 61000-3-2
EN 61000-3-3

And complies with the requirements of (as amended):

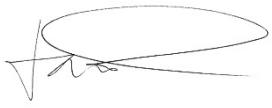
2014/35/EU **Low Voltage (LVD) Directive**
2004/108/EC **Electromagnetic Compatibility (EMC) Directive**
2015/863/EU **RoHS Directive**

A Technical file is held by Prochem Europe Ltd.

Certificate of test and test reports have been issued by:

SGS United Kingdom Ltd.
Unit 10, Bowburn South Industrial Estate
Bowburn, Durham DH6 5AD
LVD Ref: DUR 40719/1/CL/03
EMC Ref: DUR 40719/2/R/SW/03

Signed
(For and on behalf of the Importer / EC Responsible Person)



Name: J Hattersley
Position: Equipment Product Manager
Place of Issue: Chessington UK
Date of Issue: 25/3/2021