

SAFE OPERATING PROCEDURES

DM200 AND DM300 MODELS



SAFE OPERATING PROCEDURES

DM200 & DM300

AN IMPORTANT MESSAGE FOR OWNERS & OPERATORS OF DM SPRAYERS

Safety is our primary concern in the design, manufacture, sale and use of BA Sprayers. BA Pumps & Sprayers would like to remind you of the safety rules when operating one of our sprayers or it's accessories.

Failure to follow these rules can result in severe injury or death. It is essential that everyone involved in the assembly, operation, transport, maintenance and storage of this equipment be properly trained in safety.

- Read this entire instruction manual together with the installation procedures before attempting to install or operate the sprayer.
- Prior to sprayer usage, all users and operators must have read and fully understood the contents of this operator's manual.
- Never allow inadequately trained personnel to attach or operate the sprayer.
- Be warned of the dangers of loading your UTV or another vehicle in excess of its carrying capacity.
- It is important to understand that any loads or attachments whether fastened to or placed on a vehicle or UTV will alter the stability or handling characteristics of that vehicle or UTV.
- Spray tanks or other equipment must be filled only to a level where the gross weight is within the load limit of the UTV or another vehicle.
- Never exceed the load limit capacity of the UTV or another vehicle.
- All UTV and trailed equipment tyres should be inflated to manufacturers recommended operating pressures.
- Please note that filling the spray tank and fitting sprayer accessories (eg: Spray booms) to the UTV may exceed the UTV's maximum load capacity. Do not exceed the manufacturer's guidelines.

Please note that 1 litre of water is 1 kilogram

- The DM sprayer should be properly distributed and securely attached.
- Reduce speed when carrying cargo or pulling a trailer or trailed application equipment and allow greater distance for braking.
- Never allow anyone to ride on your sprayer or other equipment.
- Always follow the instructions in the owner's vehicle manual for carrying cargo or pulling a trailer.
- Proper maintenance of your UTV or another vehicle in line with manufacturer's recommended maintenance procedures is essential. (eg: Brakes and Suspension)
- All users of the UTV or other vehicle must be trained and competent in not only operating the vehicle, but also operating the vehicle when the attachment is being used.
- Before applying chemicals, read the SDS (safety data sheet) and label of the chemical manufacturer or supplier for personal protective equipment and operate as recommended.

- The safety of all chemicals used in agriculture is under the jurisdiction of a government agency, ie NZ Ministry for the Environment. Further local government laws may apply.
- BA recommend the use of a safety roll bar on your UTV.
- BA recommend that DM sprayers are used on a suitable UTV providing UTV manufacturers guidelines are fully observed.
- This sprayer is designed and manufactured solely for the purpose of applying agricultural chemicals to crops. Under no circumstances may it be used for any other purpose.
- Before carrying out any maintenance work wash the sprayer thoroughly. Remove all toxic chemicals that may contaminate the machine.
- Do not point the spray gun at a human's body as high-pressure spray may cause serious bodily harm.
- After completing spraying task in the field, turn the pump off at the switch and discharge the residual pressure in the hose by activating the gun/lance trigger handle. This will prevent accidental discharge by a 3rd party at any later stage.

NOTE – **DO NOT** loan your sprayer to anyone without providing full operator safety and operating training

Throughout this manual, there are safety warnings and operational tips. Please thoroughly read this whole manual for your safety.

To reduce the chance of UTV instability it is essential that the UTV is stationary when spot spraying as divided attention leads to rollover incidents, especially when spraying on slopes or next to streams or ditches.

Please note that you will not be able to ride the same speed/slopes/hills on your UTV once your sprayer is filled.

BA Pumps & Sprayers Warranty Policy

All products

Private Domestic Use	12 months
Private and Commercial Agriculture	12 months
Agricultural Contractors	6 months
All Non-Agricultural Applications	3 months

The warranty period begins on the date the product is delivered to the first retail purchaser.

BA Pumps & Sprayers warrants the owner that it will repair or replace without charge parts found defective or malfunctioning in accordance with the warranty limitation and adjustment schedule below.

- BA Pumps & Sprayers (Company) hereby warrants to the original purchaser (Owner) of this machine against faulty material and workmanship for a period as described above after delivery according to the conditions outlined.
- This Warranty does not extend to any part or parts of the machine not manufactured by the said Company. These parts being covered by the Warranty of the makers.
- This Warranty does not extend to defects due to parts damaged by the neglect, misuse or negligence of the purchaser or any damage caused as a result of incorrect installation of the machine or to normal wear.
- This Warranty does not extend to any damage to tanks due to the chemicals being used or left in tanks when not in use.
- In the event of a defect occurring within the said period as stated above, the purchaser must not attempt to correct or remedy such defect either by modification of, adjustment or alteration to any part or parts of the machine.
- This Warranty will stop by right if the product is used in a manner not up to the manufacturer's directions or for bad maintenance.
- In the event of any defect being disclosed to BA Pumps & Sprayers within the specified period, BA Pumps & Sprayers, after due examination and on being satisfied that such defect is due to faulty material or workmanship undertakes to repair or replace such defective part or parts free of charge.
- Freight and labour costs in relation to any replacement under this warranty are the responsibility of the purchaser.
- In no event shall BA Pumps & Sprayers be liable for downtime expenses, loss of chemicals, loss of machine use or other incidental, consequential or special damages.
- This warranty is subject to the following conditions, which must be conformed to by the purchaser.

CONDITIONS OF WARRANTY

1. The warranty is NOT transferable.
2. The purchaser must complete the Warranty Registration Form on our website upon completion of starting the machine. The form must be completed within 14 days of delivery of the unit. Only when this is completed and returned, can BA Pumps & Sprayers fulfil all obligations. The form can be found at: www.bertolini.co.nz/warranty-registration
3. Abuse: Failure resulting from neglect, such as improper operation, lack of required maintenance or continued use of a sprayer after the discovery of a defect which results in greater damage to the unit.

BA Pumps & Sprayers Warranty Policy

- **Environmental Conditions and Application:** Deteriorated or failed components such as diaphragms, O'rings, hoses, seals, electrical wiring and connections damaged by corrosive chemicals dirt and sand, excessive heat or moisture. Owners should ensure the type and strength of chemicals used in the sprayer are compatible with the design of the unit. Warranty determination for these types of failures will be made BA Pumps & Sprayers only after inspection of failed components. In most instances, these will incur inspection charges and cost of replacement parts.
- **Normal Wear:** Normal wear and consumable items such as oils and lubricants, diaphragms, filter elements and nozzles are considered to be normal wear items and are not warranted.
- **Maintenance:** Component failure caused by not performing scheduled maintenance service such as oils, grease, failure to clean tanks, pumps, filters, spray lines, nozzles, fans or any other blocked components. Not tightening or replacing loose or missing bolts, nuts, fittings, shields and covers.
- **Damage:** Damages or machine failure, caused by carelessness or accidental damage, improper operation, inappropriate transportation or storage of the sprayer or attachment.
- **Power Source:** Failures due to faulty or inadequate electrical sources of power. Owners who use their own 12-volt power source must make sure that it is suitable for operating the spraying equipment.
- **Alterations:** Any unauthorised alteration, modification, attachments or unauthorised repairs to the sprayer or attachments. Written approval must be obtained from BA Pumps & Sprayers for any such items to maintain the warranty.
- **Removal and Installation:** The time taken to remove and re-install a warranted part or component into other brands of spreaders will not be covered by the BA Pumps & Sprayers Warranty. Only parts and labour directly attributable to the repair of the sprayer is covered.
- **Clean-up Time:** BA Pumps & Sprayers does not pay for cleaning the sprayer, parts, accessories or work area before or after the warranty repair. Clean-up time is affected primarily by the application or conditions in which the sprayer is operated and maintained. Since clean-up time can be so variable, cleaning time should be considered a customer expense.
- **Transportation Costs:** Warranty does not cover transportation or insurance costs for sprayers or other equipment needing repair or replacement of warranted components. Nor does it cover any freight or insurance costs in obtaining new parts or returning old parts to BA Pumps & Sprayers for inspection purposes.
- **Travel Time:** Travel time required for warranty repairs is the responsibility of the Owner.
- **Diagnostic Time:** Warranty does not cover the time required to diagnose a warranty problem. Diagnostic time is affected greatly by the training and expertise of the technician employed to do the job. With proper training of service personnel, diagnostic time should be at a minimum. BA Pumps & Sprayers expects that their Agents are well trained and proficient to handle any warranty repairs. Since BA Pumps & Sprayers is not in control of these responsibilities, we elect not to cover diagnostic time.
- **Non-Genuine Repairs:** Use of parts other than genuine parts for repair of warranted parts will automatically negate any guarantee. Warranted components must be replaced with genuine BA Pumps & Sprayers repair parts.
- **Unauthorised Repairs:** Repairs by an unauthorised agent will automatically forfeit any warranty. Warranty repairs must be carried out by an authorised BA Pumps & Sprayers dealer only.
- **Disclaimer:** The contents of this manual are published and given in good faith. However, neither BA Pumps & Sprayers nor any of its associates or directors or employees give any warranty of accuracy nor accept any responsibility in law. No reader should act on the basis of any matter contained in this manual without considering and taking appropriate advice based upon their particular circumstance. BA Pumps & Sprayers.
- **Due to continuous product development, BA Pumps & Sprayers reserves the right to change specifications and design without notice**

To the Owner of this Sprayer

Our sprayers have been designed and manufactured with the discerning operator in mind. BA Pumps & Sprayers provides long-term durability by using the finest materials in the construction of our products. This booklet deals with the Warranty, Operation and Trouble Shooting of the DM range of sprayers. Read thoroughly before attempting to use your sprayer. If you are unsure of any aspect, ask the dealer who supplied the machine to explain any unclear points.

DM SPRAYERS

Whether you are a lifestyle block owner or farmer, you will find many uses for our DM spray units. The tank, pump and spray gun fittings are corrosion resistant and are suitable for applying weedicides, herbicides, insecticides, fungicides, miticides, and green formulations. The unit is designed for spot-spraying but may be used in conjunctions with a boom for boom spraying.

Please read the safety instructions before installing or operating your sprayer

Specifications

Model	Tank	Length	Width	Height	Dry Weight
12 Volt	200L	895mm	1000mm	682mm	70kgs
	300L	895mm	1000mm	842mm	75kgs
POLY2030	200L	895mm	1000mm	682mm	91kgs
	300L	895mm	1000mm	842mm	96kgs
PA430	200L	895mm	1000mm	682mm	103kgs
	300L	895mm	1000mm	842mm	108kgs

Please refer to the accessories page for weights of spray booms.

Model Specifications

DM200/300 12 Volt

Tank: 200 or 300 litre UV stabilized and impact resistant polyethylene tank.

Pump: Shurflo 5059 pump, 20.1 lpm and 60 psi

Hose & Reel: 30 metre easy reel

Spray Gun: K pistol

Filter: Arag 32mm, 50 Mesh Filter

Controls: On/off power switch, pressure regulating valve

DM200/300 POLY2030

Tank: 200 or 300 litre UV stabilized and impact resistant polyethylene tank.

Pump: Bertolini POLY2030 pump, 30 lpm and 280 psi

Engine: Honda GX160

Hose & Reel: 30 metre easy reel

Spray Gun: K pistol

Filter: Arag 32mm, 50 Mesh Filter

Controls: Karin two tap pressure regulator with 15 BAR spring

Recommended Operating Pressure: Spot Spraying: 100-150 psi Boom: 1-6BAR

XP Kit: 1-3 BAR

DM200/300 PA430

Tank: 200 or 300 litre UV stabilized and impact resistant polyethylene tank.

Pump: Bertolini PA430 pump, 40 lpm and 580 psi

Engine: Honda GX160

Hose & Reel: 50 metre maxi reel

Spray Gun: K pistol

Filter: Arag 32mm, 50 Mesh Filter

Controls: Karin two tap pressure regulator with 40 BAR spring

Recommended Operating Pressure: Spot Spraying: 100-400 psi Boom: 1-6BAR

XP Kit: 1-3 BAR

Installation

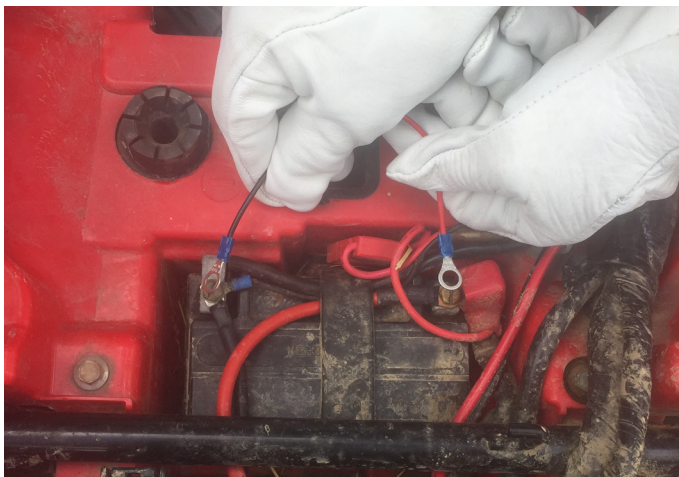
Unpack the sprayer and check all parts are included and nothing is damaged. Items included for each model are listed in the below chart.

Item	12 VOLT	POLY2030	PA430
Tank with pump	✓	✓	✓
Battery cable assembly	✓	X	X
Spray Hose & Reel	✓	✓	✓
Spray Gun	✓	✓	✓
Operators manual	✓	✓	✓

PLEASE CHECK VEHICLE MANUFACTURERS SPECIFICATIONS FOR COMPATIBILITY BEFORE FITTING YOUR SPRAYER

Connection to 12-volt DC supply (12 Volt Model Only)

The sprayer requires a 12-volt DC power source. A 2-metre loom is provided to allow the sprayer to be connected to the 12-volt DC battery. The red wire is positive and the black is negative. An on/off switch is fitted to the sprayer to allow the sprayer to be disconnected from the 12-volt source to prevent the accidental drain of power. The switch also allows the pump to be shut down when the tank is empty preventing overheating and damage to the pump. It is recommended that if installing the sprayer on an UTV or any vehicle that a 10 amp fuse be installed to prevent any potential damage to the electrical system on the vehicle. Consult your vehicle instruction manual for the correct electrical connection.



- **To avoid damage to the pump ensure the red wire is connected to the positive battery terminal.**
- **To avoid fire do not remove the fuse and ensure the wiring loom is not located near hot engine parts or the exhaust.**

Mounting the Spray Tank

Position the sprayer so as to minimize contamination of the operator. With the pump away from the operator the risk of contamination due to hose failure can be minimized.

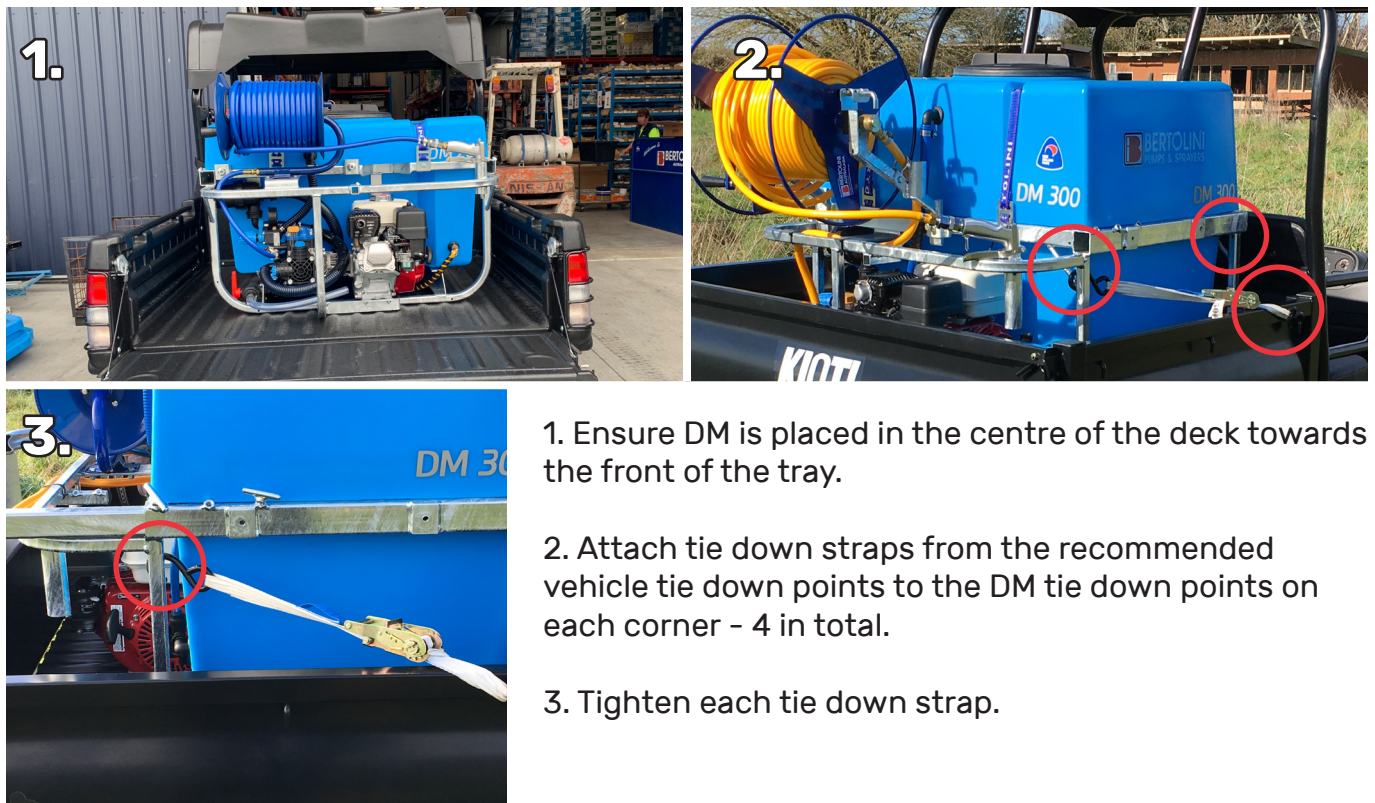
The sprayer should be mounted centrally as near to the centre of the gravity of the UTV as possible. It should not protrude so as to not cause an obstruction. Refer to manufacturer's instructions for appropriate load limits and fitting instruction. Never fill the tank to beyond the vehicle's weight limits.

Please note that 1 litre of water is 1 kilogram

Ratchet Strap

It is recommended that the sprayer is securely attached to any UTV or another vehicle with tie-down straps. To prevent any movement when fitted, these should be firmly secured to approved attachment points on the UTV or another vehicle. Below is an example of how to route the tie-down straps. Please note that this is an example and is for illustration purposes only. Depending on your make/model of UTV, you will need to secure your DM sprayer following your vehicles guidelines.

DM Mounting



1. Ensure DM is placed in the centre of the deck towards the front of the tray.

2. Attach tie down straps from the recommended vehicle tie down points to the DM tie down points on each corner - 4 in total.

3. Tighten each tie down strap.

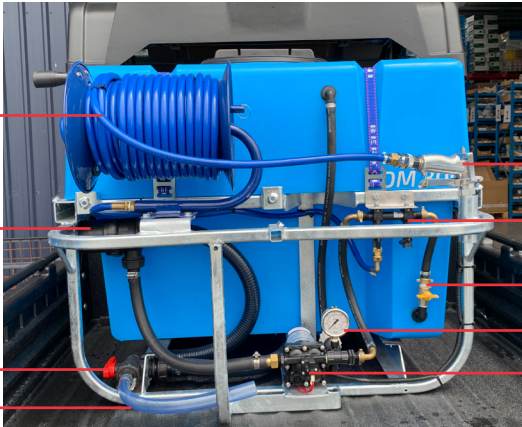
It is essential that the spray unit is securely strapped towards the front of the tray to ensure stability.

DM200/300 12 Volt

Hose Reel

Filter

Drain Tap
Drain Pipe



K Pistol

Control Valves

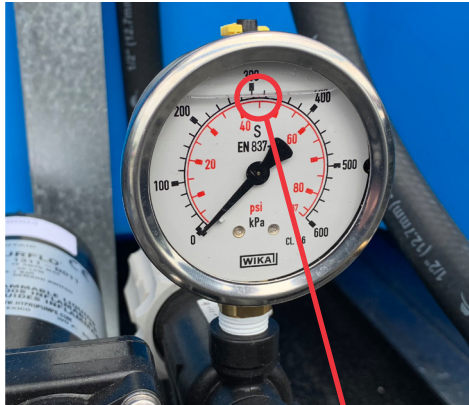
Agitation Tap

Pressure Gauge

Pump



Shurflo 5059 Pump



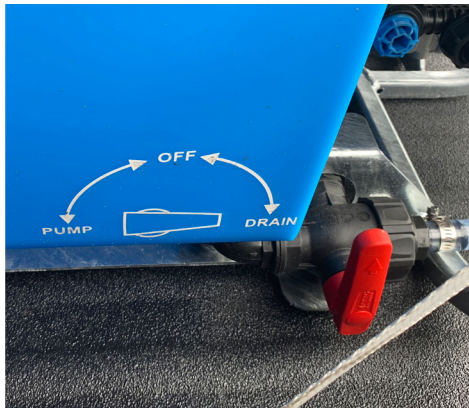
Pressure Gauge - **MAX 45 PSI**



Control Valves
Hose Reel & Optional Boom



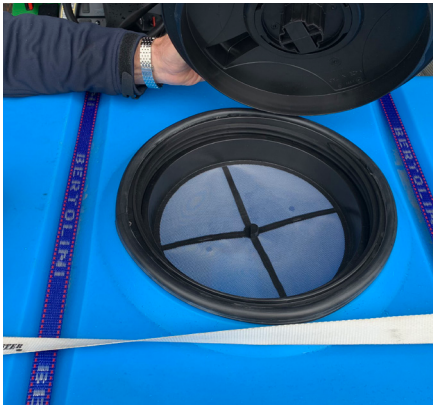
Filter



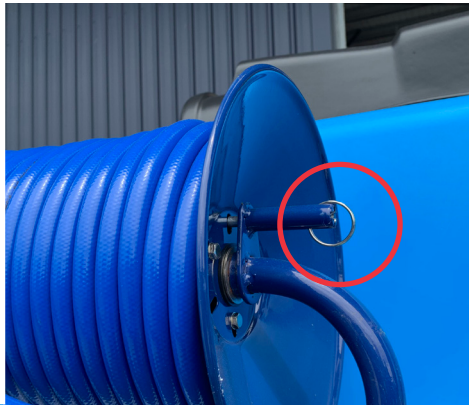
Drain Tap & Pump Suction



Drain Pipe



Filter Basket & Lid



Hose Reel Lock



K Pistol With Adjustable Nozzle
To Change Spray Pattern

DM200/300 POLY2030



Pressure Adjustment & Gauge **MAX 215 PSI**



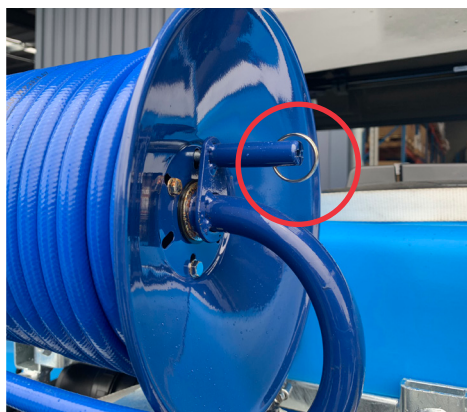
Spare tap for Boom or XP Kit



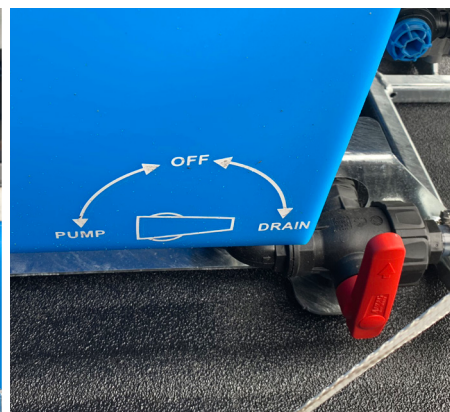
Hose Reel On/Off



Engine Oil Dip Stick



Hose Reel Lock



Drain Tap & Pump Suction



Pump Sight Glass (Oil **should not** be seen in sight glass when the pump is off)

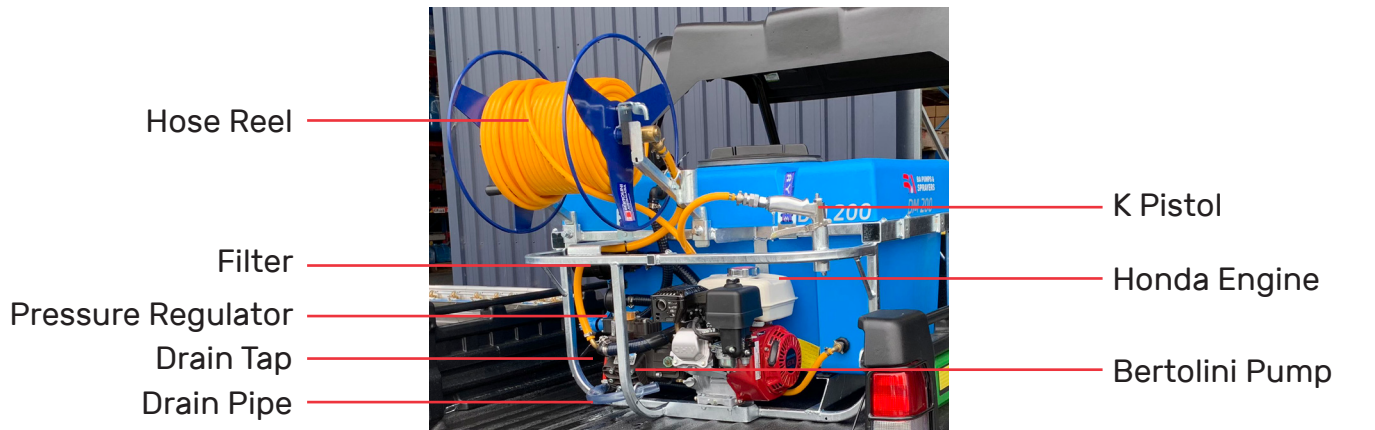


Pump Oil Level (Oil **should not** exceed max line)



K Pistol With Adjustable Nozzle To Change Spray Pattern

DM200/300 PA430



Pressure Adjustment & Gauge **MAX 580 PSI**



Spare tap for Boom or XP Kit



Hose Reel On/Off



Engine Oil Dip Stick



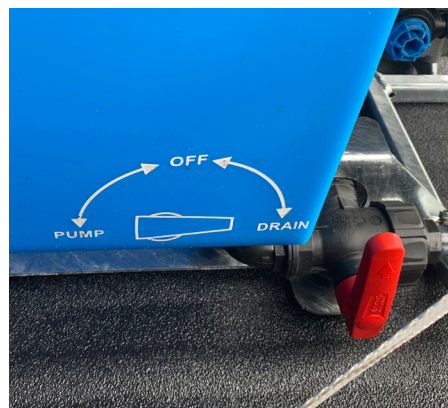
Hose Reel Lock



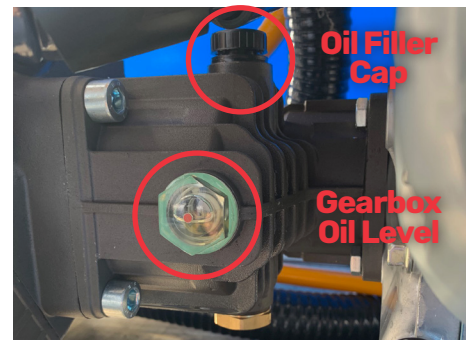
Pump Sight Glass. Check oil level on pump when running. (Oil **should not** exceed max line)



K Pistol With Adjustable Nozzle To Change Spray Pattern



Drain Tap & Pump Suction



Oil filler cap and gearbox oil level

Honda Engine - Before Operation Checks

It is essential you read the Honda Manual before operation of your sprayer for the first time. Improper use can result in serious injury or death.

For your safety, and to maximize the service life of your equipment, it is very important to take a few moments before you operate the engine to check its condition. Be sure to take care of any problem you find, or have your servicing dealer correct it, before you operate the engine.

Warning! Improperly maintaining this engine, or failure to correct a problem before operation, can cause a malfunction in which you can be seriously hurt or killed. Always perform a preoperation inspection before each operation, and correct any problem.

Before beginning your preoperation checks, be sure the engine is level and the engine switch is in the OFF position. Always check the following items before you start the engine:

Check the General Condition of the Engine:

1. Look around and underneath the engine for signs of oil or gasoline leaks.
2. Remove any excessive dirt or debris, especially around the muffler and recoil starter.
3. Look for signs of damage.
4. Check that all shields and covers are in place, and all nuts, bolts, and screws are tightened.

Check the Engine:

1. Check the fuel level.

Starting with a full tank will help to eliminate or reduce operating interruptions for refueling.

2. Check the engine oil level.

Running the engine with a low oil level can cause engine damage. The Oil Alert system (applicable types) will automatically stop the engine before the oil level falls below safe limits. However, to avoid the inconvenience of an unexpected shutdown, always check the engine oil level before startup.

3. Check the reduction case oil level on applicable types. Oil is essential to reduction case operation and long life.

4. Check the air filter element. A dirty air filter element will restrict air flow to the carburetor, reducing engine performance.

5. Check the equipment powered by this engine. Review the instructions provided with the equipment powered by this engine for any precautions and procedures that should be followed before engine startup.

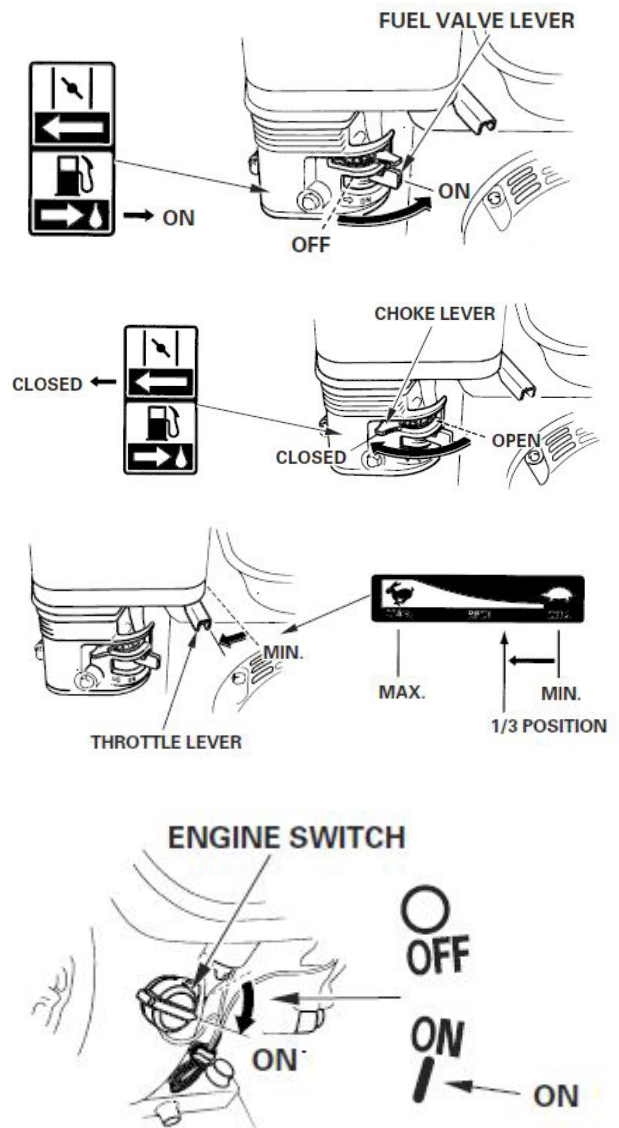
Honda Engine - Operation

Before operating the engine for the first time, please review the SAFETY INFORMATION in the Honda Manual.

Warning! Carbon monoxide gas is toxic. Breathing it can cause unconsciousness and even kill you. Avoid any areas or actions that expose you to carbon monoxide.

Operation Instructions:

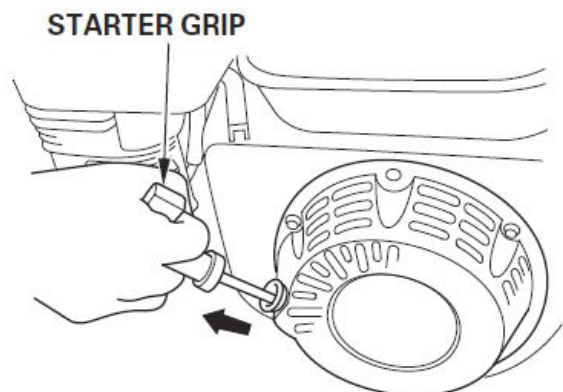
1. Move the fuel valve lever to the ON position.
2. To start a cold engine, move the choke lever to the CLOSED position. To restart a warm engine, leave the choke lever in the OPEN position.
3. Move the throttle lever away from the MIN. position, about 1/3 of the way toward the MAX. position.
4. Turn the engine switch to the ON position.
5. Operate the starter. Recoil starter by pulling the starter grip lightly until you feel resistance, then pull briskly. Return the starter grip gently. **DO NOT** allow the starter grip to snap back against the engine. Return it gently to prevent damage to the starter.
6. If the choke lever has been moved to the CLOSED position to start the engine, gradually move it to the OPEN position as the engine warms up.
7. Position the throttle lever for the desired engine speed. We recommend moving the throttle to full engine speed.



Stopping the Engine:

To stop the engine in an emergency, simply turn the engine switch to the OFF position. Under normal conditions, use the following procedure:

1. Move the throttle lever to the MIN. position.
2. Turn the engine switch to the OFF position.
3. Turn the fuel valve lever to the OFF position.



Bertolini Pump - Before Operation Checks

It is essential you read the Bertolini Manual before operation of your sprayer for the first time. Improper use can result in serious injury or death.

For your safety, and to maximize the service life of your equipment, it is very important to take a few moments before you operate the pump to check its condition. Be sure to take care of any problem you find, or have your servicing dealer correct it, before you operate the pump.

Warning! Improperly maintaining this pump, or failure to correct a problem before operation, can cause a malfunction in which you can be seriously hurt or killed. Always perform a preoperation inspection before each operation, and correct any problem.

Checks to make before using the pump:

1. Check, with the pump not running, to make sure that the oil level is correct. Otherwise pour oil, but take care not to exceed the indicated level on the oil sight tube.
ATTENTION: too much oil creates pressure inside the crankcase, so this can result in some leakages or diaphragm failures.
2. Be sure that the inlet and discharge hoses are not crimped and the strainer is clean. In any case, be sure connections are tight to prevent any hose restrictions or air entering, since these conditions will compromise pump performance.
3. When starting, the pressure adjustment lever must be turned to the "by-pass" position.
4. When fitted, the pulsation dampener on the pump or on the pressure line is generally charged at $6 \div 8$ BAR, equal to the maximum pressure rating of the pump.

Use of the pump:

When starting up the pump, turn the valve lever to the by-pass position to facilitate priming. Once pump is primed, turn the valve lever to "press" position and adjust the working pressure with the knob; turning knob clockwise will increase pressure, turning knob counter-clockwise will decrease pressure.

After use:

After use, in order to prevent damage, flush pump and let operate for a few minutes at working pressure with clean water. Afterwards empty it, so that pressure drops to "0", then let the pump run without liquids for two minutes.

For winter storage, if a freezing condition will be encountered, empty the pump completely or flush pump with a mixture of water and antifreeze.

Oil Change:

Change oil after the first 500 hours as follows:

- Remove the tank plug and the drain plug
- Rotate the shaft to remove excess oil
- Wash inside the parts with Diesel oil
- Refill pump with oil through the glass and rotate the shaft to distribute oil and fill to the proper level
- Start pump and let run for a few minutes at zero to facilitate the correct lubrication of inside parts
- **USE ONLY "SAE 30" OIL**

For all pumps without the drain plug normally oil is changed whenever the wear parts (like diaphragms, o-rings, valves assembly) are changed. Always perform this routine maintenance on the pump at the end of the season. Drain the oil from the pump by removing the pump heads one by one and the relevant piston sleeves.

Instructions for the correct use of the Pressure Regulation Valve:

1. Start the pump only when valve is in the "by-pass" position, let it run for at least two minutes and, in any case, until air has been vented from the hydraulic circuit.
2. Turn the valve lever clockwise to "Press" position, close the spray gun or spray boom, turn the adjustment knob clockwise up to the working pressure selected, open the spray gun or spray boom and start spraying.

Routine maintenance on the pump includes changing the diaphragms, oil, valves assembly, O-rings, all of which are normal wear parts.



Trouble Shooting (Diaphragm Pumps)

TROUBLES	CAUSES	REMEDY
The pump doesn't reach the required pressure	- Valves have worn seats - Suction hose with air pockets or irregular elbows - Worn nozzles or with wrong diameter - Clogged strainer	- Check valves - Check hose - Check nozzles - Clean strainer
The pressure gauge fluctuates	- Pump is sucking air, or air hasn't been evacuated completely - Valves blocked	- Start pump with the gun open, to evacuate the air and commutate - Clean or change valves
The liquid flow is irregular	- The air in the pulsation-damper is incorrectly set	- Check pressure in pulsatio-damper
Output drops and the pump is noisy	- Oil level is too low	- Top up with oil to correct level (halfway up the sump), when pump is operating
Oil comes out of the discharge pipe	- One or more diaphragms are ruptured	- Drain the pumps of oil. Dismantle the head and change diaphragms. Fill to the correct oil level
Oil is changing colour into white	- Diaphragm failures. Stop pump immediately	- Drain the pumps of oil. Dismantle the head and change diaphragms. Fill to the correct oil level

Operating Instructions

- Fill the sprayer with clean water.
- Check suction line strainer for dirt or damage.
- Connect pump and ensure it primes correctly, holding the spray lance trigger on until it sprays steadily.
- Check all pipes, hoses, hose clamps and connections for leaks or damage.
- Check pump and engine oil levels
- Ensure the tank lid is securely closed
- If you own a DM2030 or 430 model (petrol model) - When starting up the pump, turn the valve lever to the dump position (by-pass) to facilitate priming. Once pump is primed, turn the valve lever to "press" position and adjust the working pressure with the knob; turning knob clockwise will increase pressure, turning knob counter-clockwise will decrease pressure.

Hints

Spray Hose - Be careful not to wrap the hose so tight as to inhibit the flow of fluid by kinking the hose.

Nozzle Choice - Nozzles provided have been selected to match the performance of the pump. The adjustable nozzle sprays from a cone to a jet. See your dealer for other nozzle sizes.

CHEMICAL APPLICATION

CAUTION

This handgun sprayer is not a high-volume sprayer nor is it ultra-low volume. As no control can be exercised over the use of the equipment or over weather, plant or soil conditions, or over the storage, handling, mixing, use or application of sprays or chemicals, BA Pumps & Sprayers will not accept any liability for loss or damage (consequential or otherwise) arising directly or indirectly from the use of this equipment.

Chemical Advice

BA Pumps & Sprayers or their agents cannot make recommendations or give advice as to the use of chemicals and cannot accept responsibility for any damage, injury or other consequence for disregarding this warning notice. Refer to the SDS (safety data sheet) that came with your chemical. This sheet holds all the information users need for their protection and should be read carefully before application. Contact your chemical supplier for further advice.

WARNING

Mixing chemicals is a most dangerous activity as it involves handling the concentrated material. For toxic compounds, use protective clothing such as overalls, hat, gloves, safety glasses, boots and a respirator. Note: People with beards do not get full protection from normal masks and respirators.

When using diluted sprays always wear at least a hat, long-sleeved cotton overalls, safety glasses, respirator and boots. If you use pesticides regularly, it is a good idea to always wear

Care of Protective Clothing

Protective clothing should be properly cared for. Rinse heavily contaminated clothes in the open before washing in the laundry. Wash and dry these clothes every day and keep them separate from other washing.

Respirators need special care. Clean the respirator after spraying. Use soapy water then rinse and allow to dry completely before storing in a clean plastic bag. Replace canisters in respirator after eight hours use. Never store used canisters with the respirator.

The minimum requirements for personal safety are that the operator avoids spray inhalation and does not allow chemicals or spray mixture to contaminate the eyes or skin.

General Guidance

Do Spray:

- Only after reading this instruction manual carefully and following the advice given.
- With pump pressures as low as possible consistent with chemical container label conditions and nozzle type.
- With nozzles that reduce spray drift to a minimum.
- With booms as close to the ground as practicable.
- With less than a 5km wind.
- Using the correct personal protective equipment specified on the label of the chemical container.

Don't Spray:

- With booms higher than is necessary, and no more than about one metre above the ground.
- In a figure eight or a similar pattern.
- Unless you have been trained to spray using an UTV or RTV.
- Holding the spray lance while driving the UTV.
- In winds higher than 5km.

Care and Maintenance

Always fill the sprayer from a clean water source. The line strainer should be checked and cleaned if necessary each time the tank is filled. Appropriate protective equipment should be used whenever maintenance is carried out.

Cleaning

Clean the sprayer regularly! After each use, flush the unit out three times with fresh water. Use a neutralizing agent for the second rinse.

CAUTION

To prevent damage to the sprayer and spray gun, drain the water from the sprayer and spray gun when there is a risk of frost.

Shutdown and Storage

Check the chemical manufacturer's label for disposal of the chemical. Drain the excess material from the tank. Select an appropriate place (one that will not endanger animals or the environment) for cleaning and flushing the system. Flush tank, pump and hose until they flow clean. This prevents the build-up of residues in hoses and pump valves. If there are heavy frosts, run the pump to make sure the pump and spray lines are dry. This will prevent water from freezing in the pump or spray lines and damaging the sprayer.

Trouble Shooting For 12 Volt Shurflo Diaphragm Pumps

PROBLEM	PROBABLE CAUSE	REMEDY
Pump starts but doesn't prime	Low Voltage	Check electrical connection
	No liquid / low liquid	Food filter (if fitted) not fully submerged. Check liquid level Check suction hose for kinks
	Air leak in the inlet line Damaged / sticky valves Debris in pump	Check fittings and in-line filter o' ring Replace / clean valves Clean filter Check for debris in the bottom of tank
	Blocked Filter Worn or dislodged valve Suction/delivery line	Clean / replace Replace o rings Fit lines to correct ports or fitted vice-versa
External leak from the pump head	Ruptured diaphragm Piston screw loose Piston screw cross threaded	Replace diaphragm Tighten piston screws Re-thread and fit the new screw
Suction Leak	Pinched diaphragm Cracked upper housing Inlet fitting lose Cracked valve housing	Replace diaphragm Replace upper housing Tighten fitting Replace valve housing
Pump running rough or noisy	Faulty motor Loose body screws Broken magnet in motor housing Damaged bearing	Replace motor Tighten screws Replace motor Replace bearing
Low Performance	Blocked filter Improper voltage Worn / damaged valves Loose fasteners	Clean / replace Check wiring and connections Replace valves Tighten fasteners
The pump will not start	Motor faulty Loose/contaminated connection Failed pressure switch Damaged/worn brushes/ broken brushspring Blown main fuse No power to pump	Replace motor Check all connections Replace broken pressure switch Replace brush housing assembly Replace fuse Check power source and all connections

Service Bulletin

Shurflo Pumps

To facilitate the spot assessments and rectifications, the above Trouble Shooting information has been provided for your use. These checks need to be performed prior to submission of suspected warranty claims or requests for replacement pumps. If further assistance is required please contact our customer service staff on 07 847 7950.

Other Useful Information

Pressure Operation Switch (If Equipped)

The pressure switch reacts to outlet pressure and interrupts power at the preset shut-off pressure indicated on the pump label. When outlet pressure drops below the preset limit, the switch will close and the pump operates until the shut-off (high) pressure is achieved. The shut-off pressure is set to factory calibrated standards and shouldn't be re-adjusted.

Mounting

The pump may be mounted in any position. However, if mounting the pump vertically the pump head should be in the down position so that in the unlikely event of a leak, fluid will not enter the motor.

DM SERIES SMART-FIT ACCESSORIES



DM430-KIT 12v in Cab On/Off

Our In Cab On/Off is the ideal addition to your SMART-FIT Boom or BoomJet, allowing for in-cab control. Includes TeeJet 12volt 430 S/Steel Ball valve, in-cab switch box and wiring loom.

Part # DM430-KIT



SMART-FIT XP BoomJet Kit

The SMART-FIT XP BoomJet Kit is designed specifically for our DM range. Sprays up to an 8 metre swath! Includes mounting bracket, TeeJet XP BoomJet boomless nozzles and individual left/right nozzle on/off control.

Part # DMXP10/20



SMART-FIT 3, 4.5 OR 6 METRE FOLDING SPRAY BOOM WITH TEEJET AIXR NOZZLES

3 Metre Boom

Part # DMBM-BA300-N

4.5 Metre Boom

Part # DMBM-BA400-N

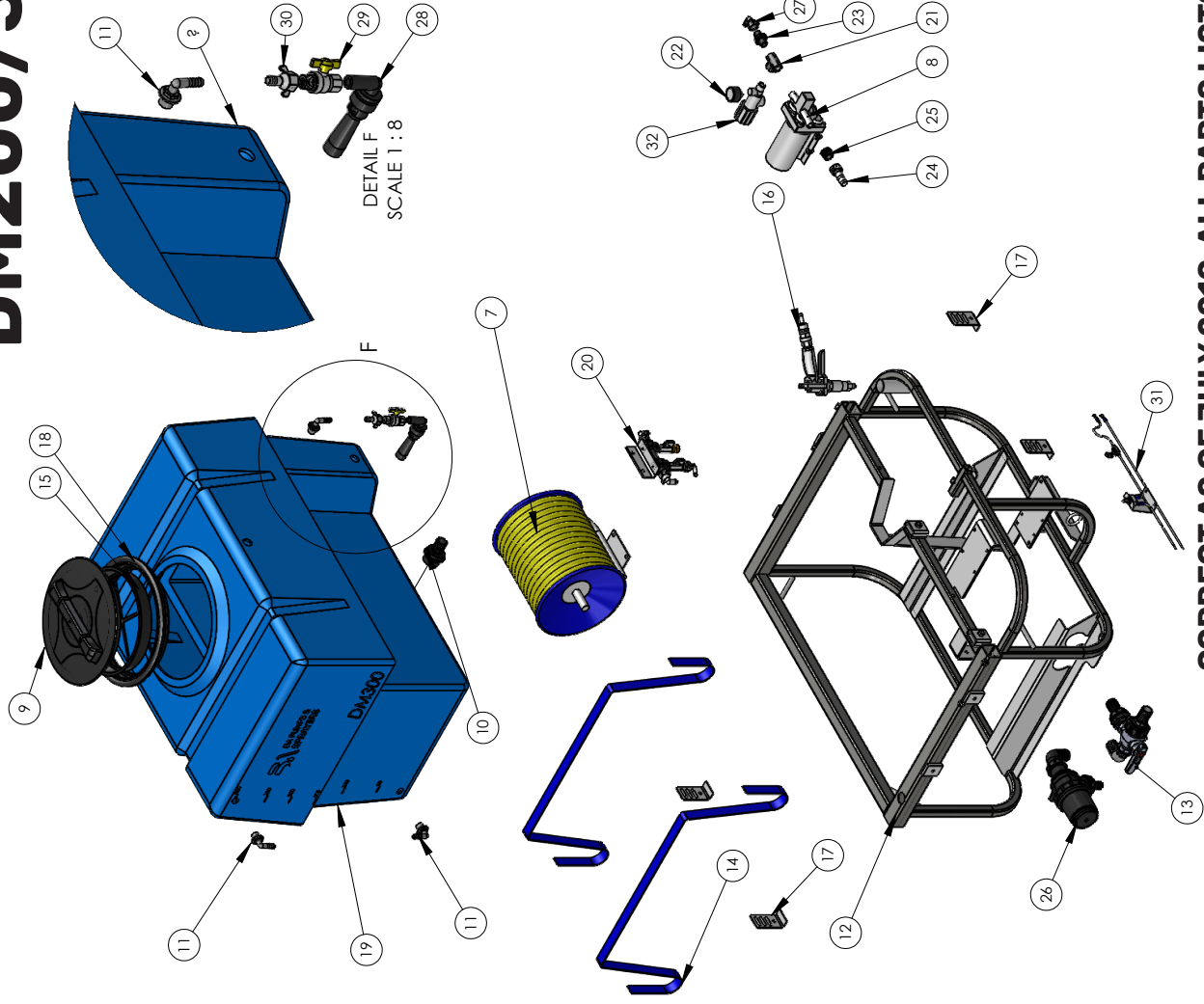
6 Metre Boom

Part # DMBM-BA600-N

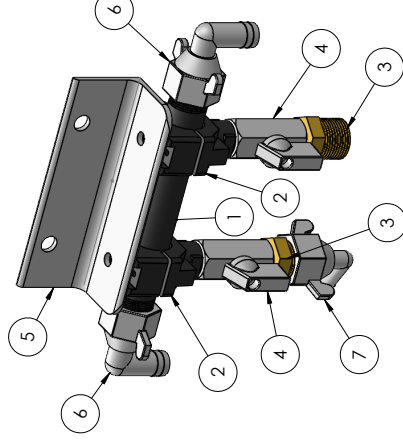
**For More Info
Call Us On**

0800 833 538

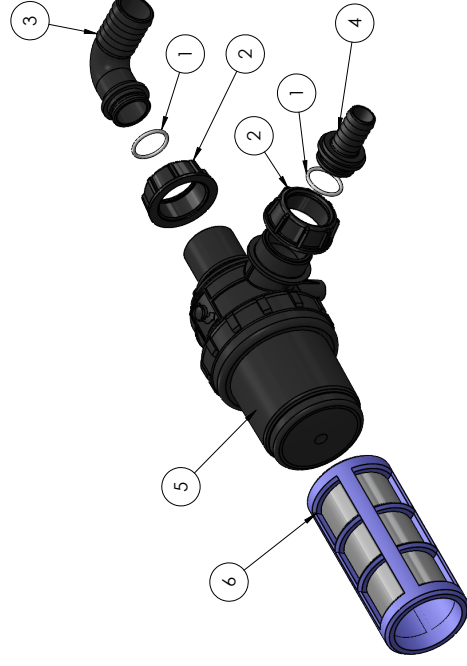
DM200/300-12V



DM 12 VOLT TAP ASSEMBLY



DM 12 VOLT FILTER ASSEMBLY



CORRECT AS OF JULY 2019. ALL PARTS LISTS ARE ALSO AVAILABLE ON OUR WEBSITE

DM200/300-12V

ITEM NO.	PART NUMBER	DESCRIPTION	12v/QTY.
7	SJ201	Hose Reel	1
8	5059-1311-D011	Shurflo 5059-1311-D011 Pump	1
9	3522040	LID 355mm C/W BREATHER	1
10	1032632	1 1/4" Straight Hose Tail	1
11	1132213	Hose tail 90deg 1/2M, D.13	3
12	P97083-48	BAD 200/300 MK4 frame	1
13	DM tap assem	See exploded view for part numbers	2
14	1581	Tank Strap Dm200=1040mm .Dm300=1340mm	2
15	300330	BASKET 355mm SHALLOW	1
16	PK85200K	Spray Gun	1
17	2309	CLIP TANK STRAP [GALV.]	4
18	350640	RING 355mm WITH GASKET	1
19	300tankDM-1 or 200tankDM-1	300 or 200 Liter DM Tank	1
20	97083-55	12v Manifold assembly	1
21	TI8PP	F pipeth tee 1/2 pp	1
22	908006	Guage 6 bar 1/8 be	1
23	2502020	Nipple 1/2 inch	1
24	162.604.9	Hose tail, 19mmx 3/4 hex nut	1
25	RB128PP	Bush reducing 3/4 x1/2	1
26	DM 12V Filter Assembly	See exploded view for part numbers.	1
27	8-034-01	Hexnut swiv elbow 1/2" S/FLO	1
28	502010	VENTURI AGITATOR 6" 90 DEGREE	1
29	2279	Ball valve 1/2 MF T handle	1
30	8-070-01	Hexnut swiv straight 1/2" S/FLO	1
31	12v loom assem	DM 200/300 12v wire loom	1
32	23120-.5 -PP-60	Pressure releief valve	1

DM 12 VOLT TAP ASSEMBLY

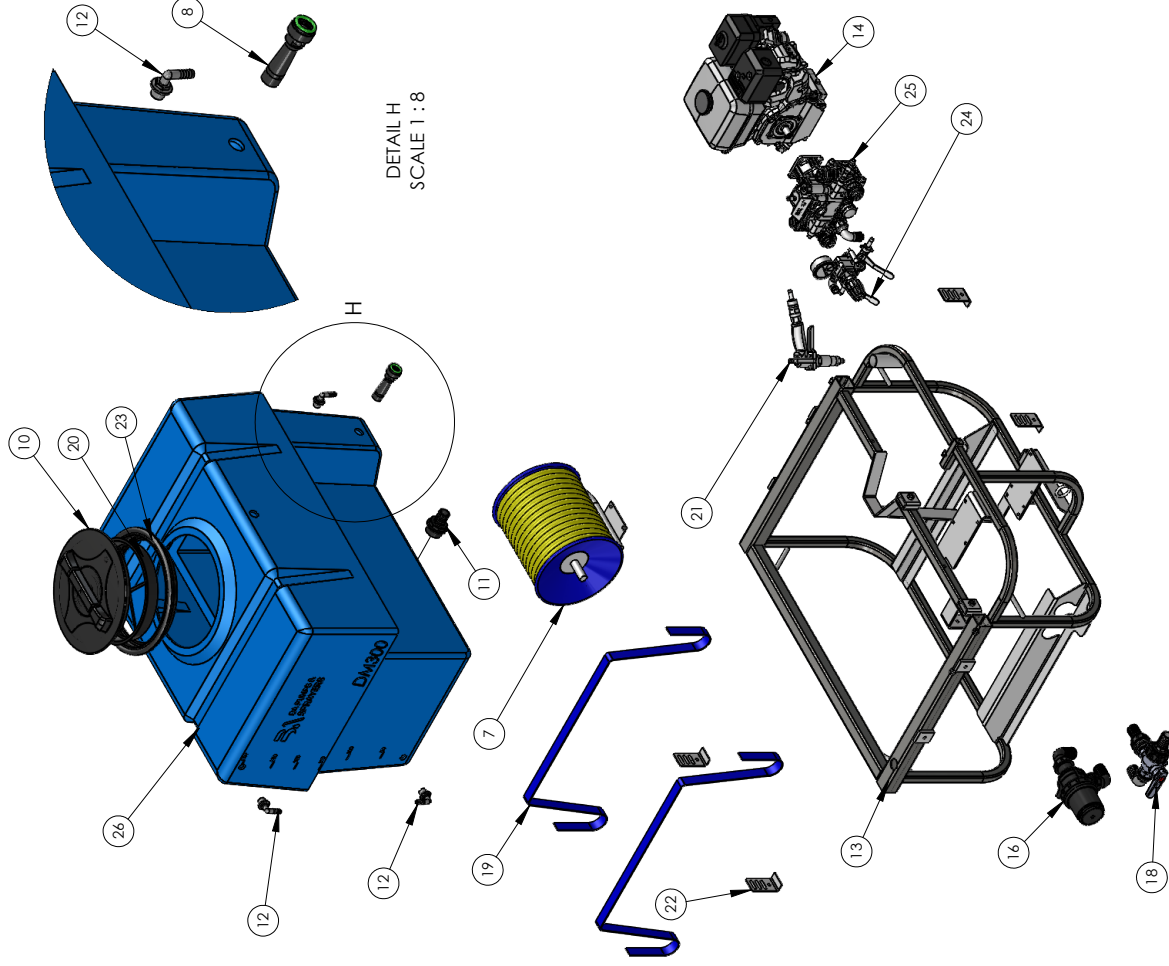
ITEM NO.	PART NUMBER	Description	QTY.
1	3073	Long Nipple 1/2(15mm)BSPx150mm poly	1
2	25888-1-2-nyb	Eyelet connector Tee/et	2
3	332484	Reducing nipple 1/2 x 1/4	2
4	2558	Valve-ball F-F 8mm .25 inch	2
5	97083-56	Tap bracket	1
6	8-034-01	Hexnut swiv elbow 1/2" S/FLO	2
7	8-060-01	Hexnut swiv elbow 3/8" S/FLO	1

DM 12 VOLT FILTER ASSEMBLY

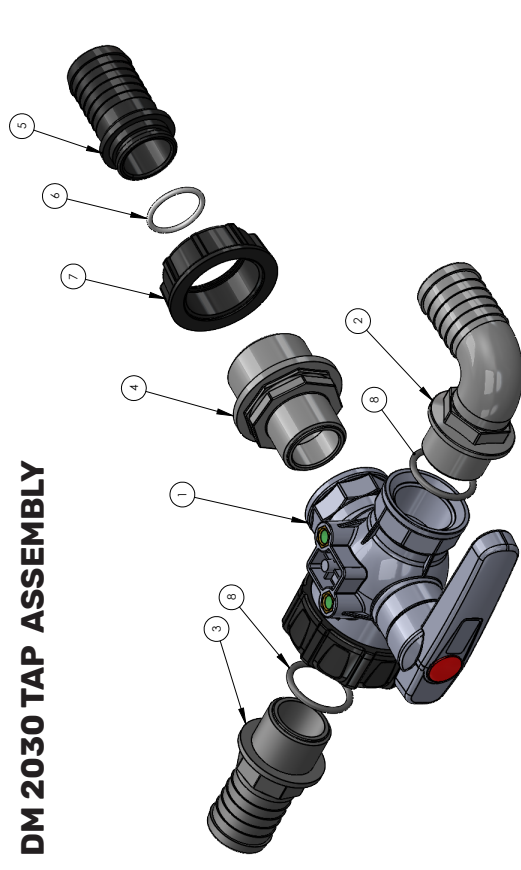
ITEM NO.	PART NUMBER	MATERIAL	Cut To Length	Cut Type	QTY.
1	G10051			SC	2
2	2002050				2
3	116533			SC	1
4	106522			SC	1
5	3122153			SC	1
6	312003,030 blue 50 mesh			SC	1

CORRECT AS OF JULY 2019. ALL PARTS LISTS ARE ALSO AVAILABLE ON OUR WEBSITE

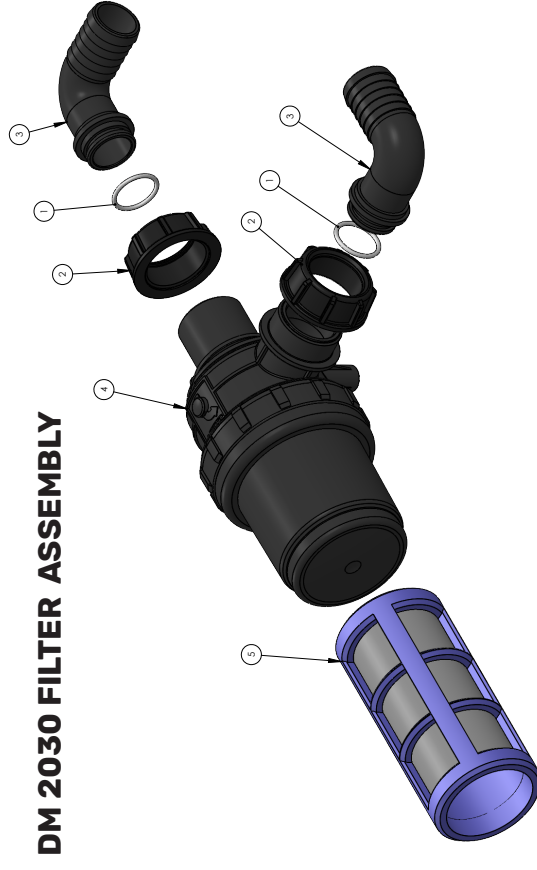
DM200/300-2030



DM 2030 TAP ASSEMBLY



DM 2030 FILTER ASSEMBLY



CORRECT AS OF JULY 2019. ALL PARTS LISTS ARE ALSO AVAILABLE ON OUR WEBSITE

DM200/300-2030

ITEM NO.	PART NUMBER	DESCRIPTION	Default/QTY.
7	SJ201	Hose Reel	1
8	502020	VENTURI AGITATORS STRAIGHT 6"	1
10	3522040	LID 355mm C/W BREATHER	1
11	1032632	1 1/4" Straight Hose Tail	1
12	1132213	Hose tail 90deg 1/2M, D.13	3
13	P97083-48	BAD 200/300 MK4 frame	1
14	GX160 TI QX	Honda motor 5.5hp. 3/4 shaft	1
16	DM Filter Assembly	See exploded view for part numbers.	1
18	DM tap assem	See exploded view for part numbers	2
19	1581	Tank Strap Dm200=1040mm .Dm300=1340mm	2
20	300330	BASKET 355mm SHALLOW	1
21	PK85200K	Spray Gun	1
22	2309	CLIP TANK STRAP (GALV.)	4
23	350640	RING 355mm WITH GASKET	1
24	24.4011.97	Regulator,Karin,2tap,15bar	1
25	94.7421.97	Pump poly 2030RT 4.1 3/4	1
26	300tankDM-1 or 200tankDM-1	300 or 200 Liter DM Tank	1

DM 2030 TAP ASSEMBLY

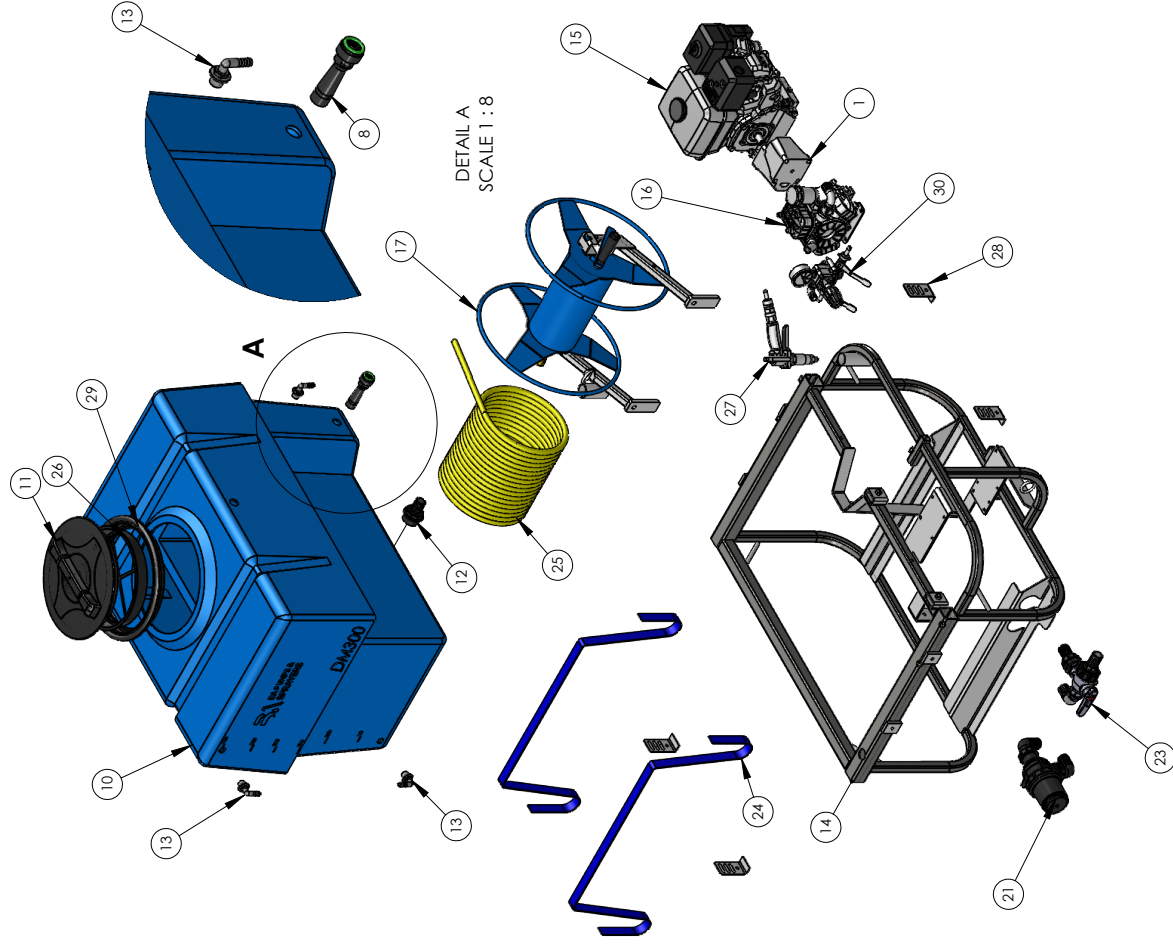
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	45521114	Ball valve 3 way . 1 inch	1
2	1132432	Hose tail 90deg.1 inch.dia32	1
3	1032432	Hose tail straight 1" M. D-32	1
4	2402054	Reduction M-M, 1 1/4"- 1"	1
5	106533	Hose tail strf male 1.1/4 x 1. 1/4	1
6	G10051	O-ring 1 1/4"	1
7	2002050	Fly nut 1 1/4"	1
8	G10061	O-ring to suit 1.5inch	3

DM 2030 FILTER ASSEMBLY

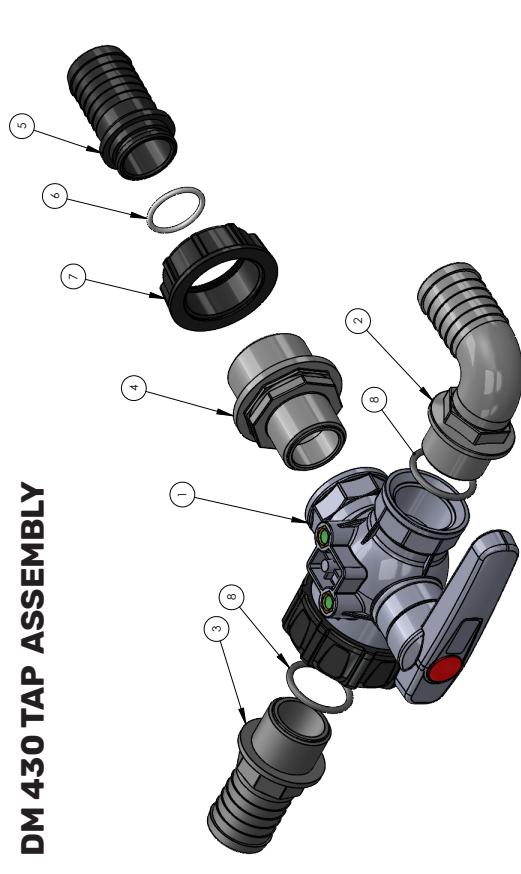
ITEM NO.	PART NUMBER	Description	QTY.
1	G10051	O-ring 1 1/4"	2
2	2002050	Fly nut 1 1/4"	2
3	116533	ELBOW 90 DEG 1 1/4"x33	2
4	3122153	FILTER SUCTION 1 1/4" 50 MESH	1
5	312003.030 blue 50 mesh	Cartridge 50mesh ,150mm, blue	1

CORRECT AS OF JULY 2019. ALL PARTS LISTS ARE ALSO AVAILABLE ON OUR WEBSITE

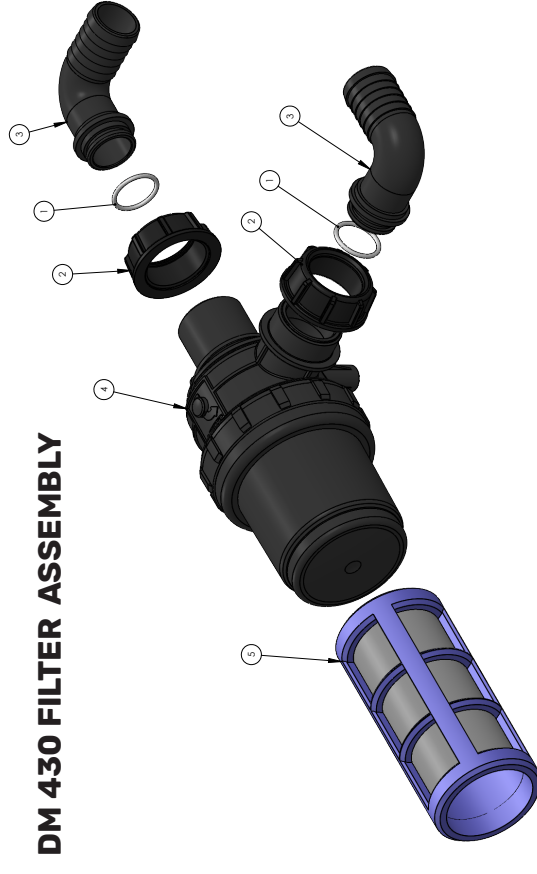
DM200/300-430



DM 430 TAP ASSEMBLY



DM 430 FILTER ASSEMBLY



CORRECT AS OF JULY 2019. ALL PARTS LISTS ARE ALSO AVAILABLE ON OUR WEBSITE

DM200/300-430

ITEM NO.	PART NUMBER	DESCRIPTION	430/QTY.
1	RTA 155 32.1000.97.3	Gear box for PA 430-330	1
8	502020	VENTURI AGITATORS STRAIGHT 6"	1
10	300tankDM-1 or 200tankDM-1	300 or 200 Liter DM Tank	1
11	3522040	LID 355mm C/W BREATHER	1
12	1032632	1 1/4" Straight Hose Tail	1
13	1132213	Hose tail 90deg 1/2M, D.13	3
14	P97083-48	BAD 200/300 MK4 frame	1
15	GX160 TI QX	Honda motor 5.5hp. 3/4 shaft	1
16	BPPA 430-0	Pump bare PA430VF	1
17	BA 120	Hose reel	1
21	DM Filter Assembly	See exploded view for part numbers.	1
23	DM tap assem	See exploded view for part numbers	2
24	1581	Tank Strap Dm200=1040mm Dm300=1340mm	2
25	1352-Per MTR	10mm AG spray hose 50M.	1
26	300330	BASKET 355mm SHALLOW	1
27	PK85200K	Spray Gun	1
28	2309	CLIP TANK STRAP (GALV.)	4
29	350640	RING 355mm WITH GASKET	1
30	24.4001.97	Regulator,Karin,2tap,40bar	1

DM 430 TAP ASSEMBLY

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	45521114	Ball valve 3 way . 1 inch	1
2	1132432	Hose tail 90deg.1 inch.dia32	1
3	1032432	Hose tail straight 1" M. D-32	1
4	2402054	Reduction M-M. 1 1/4"- 1"	1
5	106533	Hose tail strf made 1.1/4 x 1. 1/4	1
6	G10051	O-ring 1 1/4"	1
7	2002050	Fly nut 1 1/4"	1
8	G10061	O-ring to suit 1.5inch	3

DM 430 FILTER ASSEMBLY

ITEM NO.	PART NUMBER	Description	QTY.
1	G10051	O-ring 1 1/4"	2
2	2002050	Fly nut 1 1/4"	2
3	116533	ELBOW 90 DEG 1 1/4"x33	2
4	3122153	FILTER SUCTION 1 1/4" 50 MESH	1
5	312003.030 blue 50 mesh	Cartridge 50mesh ,150mm, blue	1

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Thank you for choosing a BA Pumps & Sprayers Product!

BA Pumps & Sprayers is a New Zealand family owned and operated business. We are proud to be members of Buy NZ Made and strive to offer as many New Zealand made products as possible.

We specialise in supplying the latest spraying and pressure cleaning technology along with a comprehensive range of parts and accessories to our clients. This is achieved from our close business relationship with many overseas suppliers such as Idromeccanica Bertolini for the latest pump technology and TeeJet® for the best in spray application technology.

All our products are supported by a comprehensive dealer network throughout New Zealand. We would like to thank you for choosing BA Pumps & Sprayers products and trust that our product and service will surpass your expectations.

You might also like our LS range of linkage spray units designed for larger spraying jobs!

