

DUAL PRESSURE WASHER

DPW-4000, DPW-4000-0AHA, DPW-4000-0AHU



OPERATOR'S MANUAL

Table of Contents

INTRODUCTION	4
DISCLAIMER	4
ABOUT THIS MANUAL.....	5
KEY TERMS.....	5
PRODUCT INFORMATION	6
SAFETY INFORMATION	6
SAFETY DECALS	10
PRODUCT DESCRIPTION AND SPECIFICATIONS	10
OVERALL MACHINE DIMENSIONS.....	13
CONTROLS AND FEATURES.....	16
OPERATION	18
BEFORE USE	18
OPERATING YOUR PRESSURE WASHER	20
1. How to Pre-start your pressure washer.....	20
2. Attaching High pressure hose to spray gun	20
3. Connect garden hose to water inlet connector	21
4. Adjust valve position to Roto-Clean	22
5. Start the engine	22
6. Checking/adjusting pressure.....	23
7. Two types of operations.....	24
8. Nozzle selection	25
9. Foldable Handle	26
10. How to stop your pressure washer	27
MAINTENANCE	28
General Recommendations:	28
Pressure Washer Maintenance.....	29
Nozzle Maintenance	30
Pump Maintenance	31

Changing Pump Oil	31
Checking the oil level	32
Lengthy pump lay-offs	33
Putting the pump back into service	33
Roto-clean Maintenance	34
Engine Maintenance	34
STORAGE	35
TROUBLESHOOTING	38
LIMITED WARRANTY	40
WARRANTY: (Ex-factory/ Reseller premise)	40
Warranty exclusions:	41
Normal Wear	41
Installation, Use and Maintenance	41
Other Exclusions	41
Responsibility of the consumer under this Limited Warranty:	41
Claim Procedure:	42
WARRANTY CONTACT INFORMATION:	43
CONTACT INFORMATION	44
APPENDICES	45
APPENDIX A – GENERAL EXPLODED PARTS DIAGRAM	46
APPENDIX B – PUMP ASSEMBLY PARTS	47
APPENDIX C – HANDLE ASSEMBLY PARTS	48
APPENDIX D – FRAME ASSEMBLY PARTS	49
APPENDIX E - PUMP PARTS BREAK DOWN	50
APPENDIX F- ROTARY CLEANER EXPLODED PARTS	53
APPENDIX G- RISK ASSESSMENT	55

INTRODUCTION

Thank you for purchasing a MAKINEX product.

This manual provides information and procedures to safely operate and maintain the *Dual Pressure Washer DPW-4000 Range*. For your own safety and protection from injury, carefully read, understand and observe the safety instructions described in this manual.

Keep this manual or a copy of it with the machine. If you lose this manual or need an additional copy, please contact MAKINEX. This machine is designed and built with user safety in mind; however, it can present hazards if improperly operated and serviced. Please follow the operating instructions carefully. If there are any questions regarding operating or servicing of this machine, please contact MAKINEX.

The information contained in this manual was based on machines in production at the time of publication. Work Smart Equipment reserves the right to change any portion of this information without notice.

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Any type of reproduction or distribution not authorised MAKINEX represents an infringement of valid copyrights and will be persecuted. We expressly reserve the right to make technical modifications, even without due notice, which aim at improving our machines or their safety standards.

DISCLAIMER

MAKINEX and its affiliates take no responsibility for any damage, injury or death resulting from the incorrect or unsafe use of this product. Use of this product should be undertaken by competent persons only. It is the operator's responsibility to ensure that the following safety procedures are followed. If you are unsure, do not operate this product.

Record the model and serial numbers as well as date and place of purchase for future reference. Have this information available when ordering parts and when making technical or warranty inquiries

MAKINEX SUPPORT

+61 2 9460 8071 (AUS)

407 446 1966 (USA)

MODEL NO.

DPW-4000, DPW-4000-0AHA, DPW-4000-0AHU

SERIAL NO.






DATE OF PURCHASE

PURCHASE LOCATION

ABOUT THIS MANUAL

This manual uses the following symbols to help differentiate between different kinds of information. The safety symbol is used with a key word to alert you to potential hazards in operating and owning power equipment. Follow all safety messages to avoid or reduce the risk of serious injury or death.

KEY TERMS

 READ CAREFULLY	READ CAREFULLY – refers to <i>important information</i> that should be paid careful attention.
 CAUTION	CAUTION - indicates a potential hazardous situation which, if not avoided, <i>may</i> result in minor or moderate injury
 WARNING	WARNING – indicates a potentially hazardous situation which, if not avoided, <i>could</i> result in death or serious injury
 DANGER	DANGER – indicates a imminently hazardous situation which, if not avoided, <i>will</i> result in death or serious injury
 PROHIBITED	PROHIBITED – identifies actions that <i>should never</i> be carried out by any one interacting with the machine.

PRODUCT INFORMATION

SAFETY INFORMATION



WARNING

Read this manual **thoroughly** before operating your pressure washer. Failure to follow instructions could result in serious injury or death



WARNING

MAKINEX Dual Pressure Washer is designed for professional operators only, instruct operators in care and use of the machine before use!



DANGER

RISK OF EXPLOSION OR FIRE

- Fuel and its vapours are extremely flammable and explosive
- Fire or explosion can cause severe burns or death

- ALWAYS shut off engine and allow it to cool a least 2 minutes before adding fuel to the tank
- ALWAYS use care in filling tank to avoid spilling fuel. Move pressure washer away from fuelling area before starting engine.
- ALWAYS keep maximum fuel level below top of tank to allow for expansion.
- ALWAYS operate and use equipment in well ventilated areas free from obstructions. Equip areas with fire extinguishers suitable for gasoline fires
- NEVER operate pressure washer in an area containing dry bush or weeds.
- ALWAYS keep pressure washer a minimum of 1.2m away from surfaces (such as houses, automobiles, or live plants) that could be damaged from muffler exhaust heat.
- ALWAYS store fuel in an OSHA approved container, in a secure location away from work area.
- NEVER spray flammable liquids.




DANGER


RISK OF BREATHING

- Running engine gives off Carbon Monoxide, an odourless, colourless, poisonous gas.
- Breathing Carbon Monoxide can cause nausea, fainting or death.
- Some chemicals or detergents may be harmful if inhaled or ingested, causing severe nausea, fainting or poisoning.

- ALWAYS operate pressure washer in a well-ventilated area. Avoid enclosed areas such as garages, basements etc.
- ALWAYS keep exhaust gas from entering a confined area through windows, doors, ventilation intakes, or other openings.
- ALWAYS follow manufacturer's recommendations, use a respirator or mask whenever there is a chance that vapours may be inhaled.
-

 WARNING	<p>RISK OF FALL HAZARD</p> <ul style="list-style-type: none"> • Use of pressure washer can create puddles and slippery surfaces. • Kick back from spray gun can cause you to fall.
---	---

- Keep operating area clear of all persons, pets and obstacles.
- DO NOT operate the product when fatigued or under the influence of alcohol or drugs. Stay alert at all times.
- DO NOT operate the machine with missing, broken, or genuine parts.
- NEVER leave wand unattended while unit is running.
- Keep children away from pressure washer at all times.
- DO NOT overreach or stand on an unstable support.
- The cleaning area should have adequate slopes and drainage to reduce the possibility of a fall due to slippery surfaces.
- Be extremely careful if you must use the pressure washer from a ladder, scaffolding, or any other off ground location.
- Firmly grasp spray gun with both hands when using high pressure spray to avoid injury when spray gun kicks back.

 WARNING	<p>RISK OF ELECTRICAL SHOCK</p> <ul style="list-style-type: none"> • Risk of electrocution. • Contact with power source can cause electric shock or burn.
---	--

- Unplug any electrically operated product before attempting to clean it. Direct spray away from electric outlets and switches.
- NEVER spray near power source.



RISK OF FLUID INJECTION

- The high pressure stream of water that this equipment produces can cut through skin and its underlying tissues, leading to serious injury and possible amputation. Spray guns trap high pressure, even when engine is stopped and water is disconnected, which can cause injury.

- ALWAYS point spray gun in safe direction and squeeze trigger, to release high pressure, every time you stop the engine.
- NEVER aim spray gun at people, animal, or plants.
- NEVER place hands in front of nozzle.
- Make sure hose and fittings are tightened and in good condition. Never hold onto the hose or fitting during operation.
- DO NOT allow hose to contact muffler.
- NEVER attach or remove wand or hose fittings while system is pressurised.
- Use only hose and high pressure accessories rated for pressure higher than your pressure washer's psi.
- To relieve system pressure, shut off engine, turn off water supply, and pull gun trigger until water stops flowing.
- DO NOT allow children to operate pressure washer.
- NEVER direct the spray jet at any surface that may contain asbestos material.
- DO NOT leave spray gun unattended while machine is running.
- NEVER use a spray gun which does not have a trigger lock or trigger guard in place and in working order.
- ALWAYS be certain spray gun, nozzles and accessories are correctly attached.
- ALWAYS wear personal protective clothing such as goggles, ear muffs, gloves, and closed foot wear.



RISK OF CHEMICAL BURN

- Use of acids, toxic or corrosive chemicals, poisons, insecticides, or any kind of flammable solvent with this product could result in serious injury or death.

- Wear protective clothing to protect eyes and skin from contact with sprayed material.



RISK OF HOT SURFACES

- Contact with hot surfaces, such as engines exhaust components, could result in serious burn.

- During operation, touch only the control surfaces of the pressure washer. Keep children away from the pressure washer at all times. They may not be able to recognise the hazards of this product.



RISK OF MOVING PARTS

- Starter and other rotating parts can entangle hands, hair, clothing, or accessories.

- DO NOT wear loose clothing, jewellery or anything that may be caught in the starter or other rotating parts.
- Tie up long hair and remove jewellery.



RISK OF EYE INJURY

- Spray can splash back or propel objects.

- ALWAYS wear safety goggles when using this equipment or in vicinity of where equipment is in use.
- Before starting the pressure washer, be sure you are wearing adequate safety goggles.
- NEVER substitute safety glasses for safety goggles.

SAFETY DECALS

MAKINEX®

Dual Pressure Washer DPW-4000

OPERATING INSTRUCTIONS

- Use the lever on the valve to switch between wand and rotary cleaner
- Disconnect wand for transport

CAUTION

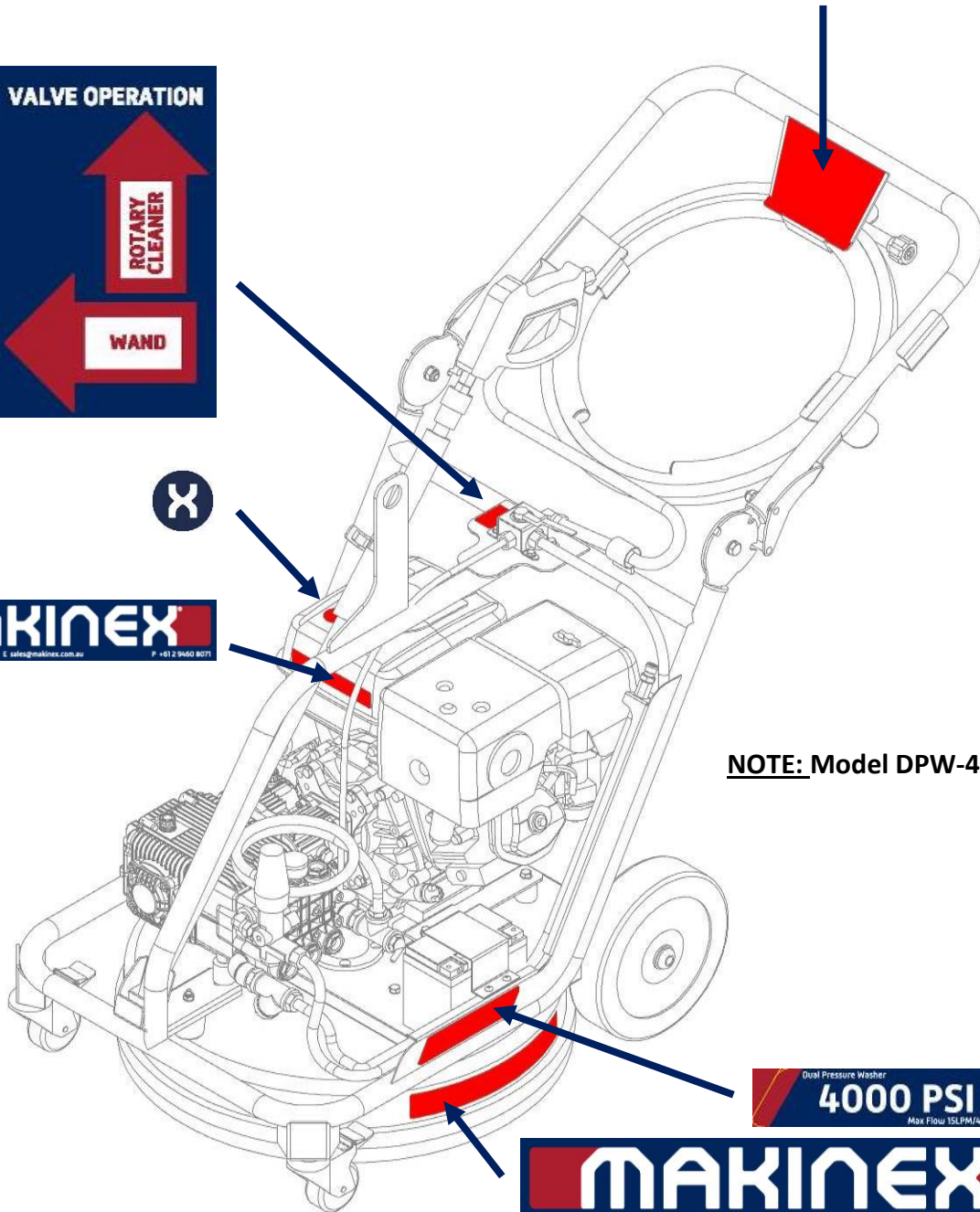
- Do not leave machine running without releasing pressure; internal seals will be damaged
- Ensure wand is attached before operation
- Always make sure all joints are connected before operation
- Never aim spray gun at people, animals or plants
- Never place hands in front of nozzle

SPECIFICATIONS

Engine - HONDA GX390 13HP@3600rpm
 Pump - AB XW13.30N
 Gears - Z1 reduction
 Pressure - 4000psi/275bar (rotary and spray gun)
 Flow - 1500l/min
 Rotary cleaner - 24" / 610mm diameter
 Hose length - 5m
 Battery - 12V Glassmat 180CCA 10Ah

Designed in Australia
 Made in Australia
 Registered Design

makinex.com.au



NOTE: Model DPW-4000



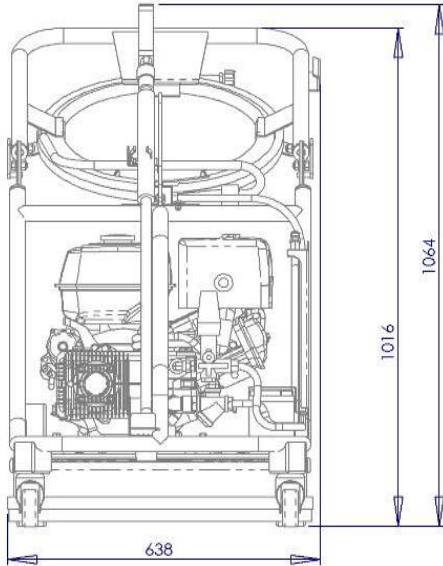
PRODUCT DESCRIPTION AND SPECIFICATIONS

The MAKINEX Dual Pressure Washer DPW-4000 Range is a versatile, 2 in 1 compact 4000 psi pressure cleaner. It is designed and engineered to simplify the process of pressure washing. The pressure washer includes a combination of a rotary cleaner, a spray gun, a control valve, five metres of high pressure hose, heavy duty industrial- strength Italian- made pump, and the reliable Honda GX390 engine, all mounted on a compact, easy to transport, durable galvanised steel frame.

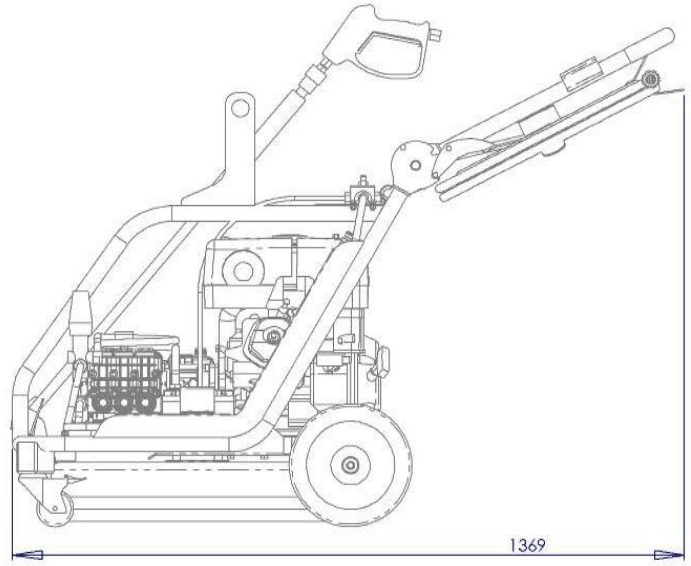
OVERALL MACHINE SPECIFICATIONS			
MAKINEX USA		MAKINEX AUS	
DPW-4000-0AHU (With RKV3.5G40HD-F24 Pump)		DPW-4000 (With AR XW15.30N pump)	DPW-4000-0AHA (With SXW15.35 Pump)
OVERALL WEIGHT	101kg/222.7lb	107kg/235.9lb	107kg/235.9lb
OVERALL WIDTH	620mm/24.4inch	620mm/24.4inch	620mm/24.4inch
HANDLE FOLDED HEIGHT	875mm/34.4inch	875mm/34.4inch	875mm/34.4inch
HANDLE EXTENDED HEIGHT	1015mm/40.0inch	1015mm/40.0inch	1015mm/40.0inch
HANDLE FOLDED LENGTH	810mm/31.9inch	810mm/31.9inch	810mm/31.9inch
HANDLE EXTENDED LENGTH	1360mm/53.5inch	1360mm/53.5inch	1360mm/53.5inch
HOSE LENGTH	10m/32.8ft	10m/32.8ft	10m/32.8ft
PRESSURE OUTPUT	4000psi/275 bar	4000psi/275 bar	4000psi/275 bar
FLOW RATE	13.2L/min (3.5 gal/min)	15L/min (4 gal/min)	15L/min (4 gal/min)
ENGINE	13HP HONDA GX390 pull start	13HP HONDA GX390 electric start	13HP HONDA GX390 pull start

GEAR BOX	Direct Drive	2:1 Reduction	Direct Drive
NOISE LEVEL @ HANDLE	92dBA	92dBA	92dBA
NOISE LEVEL @ 7m	88dBA	88dBA	88dBA
ROTOCLEAN	610mm (24")	610mm (24")	610mm (24")
BALL VALVE	500 bar/7200 psi rated 3 way ball valve	500 bar/7200 psi rated 3 way ball valve	500 bar/7200 psi rated 3 way ball valve
TRIGGER GUN	5200psi rated	5200psi rated	5200psi rated
WAND LENGTH	900mm/35.4inch	900mm/35.4inch	900mm/35.4inch

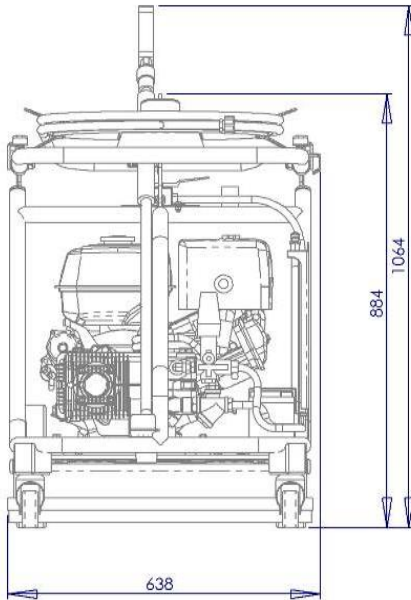
OVERALL MACHINE DIMENSIONS



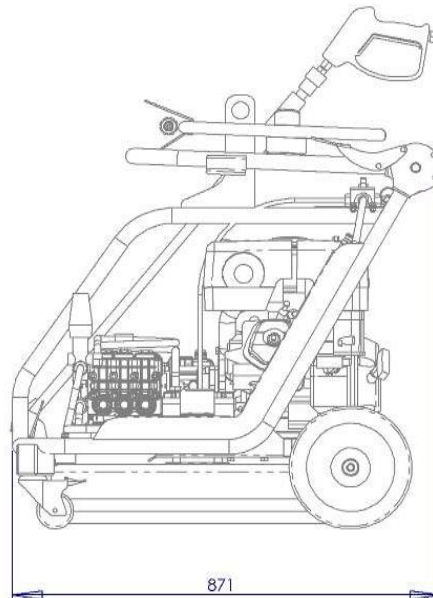
FRONT VIEW



SIDE VIEW



FRONT VIEW



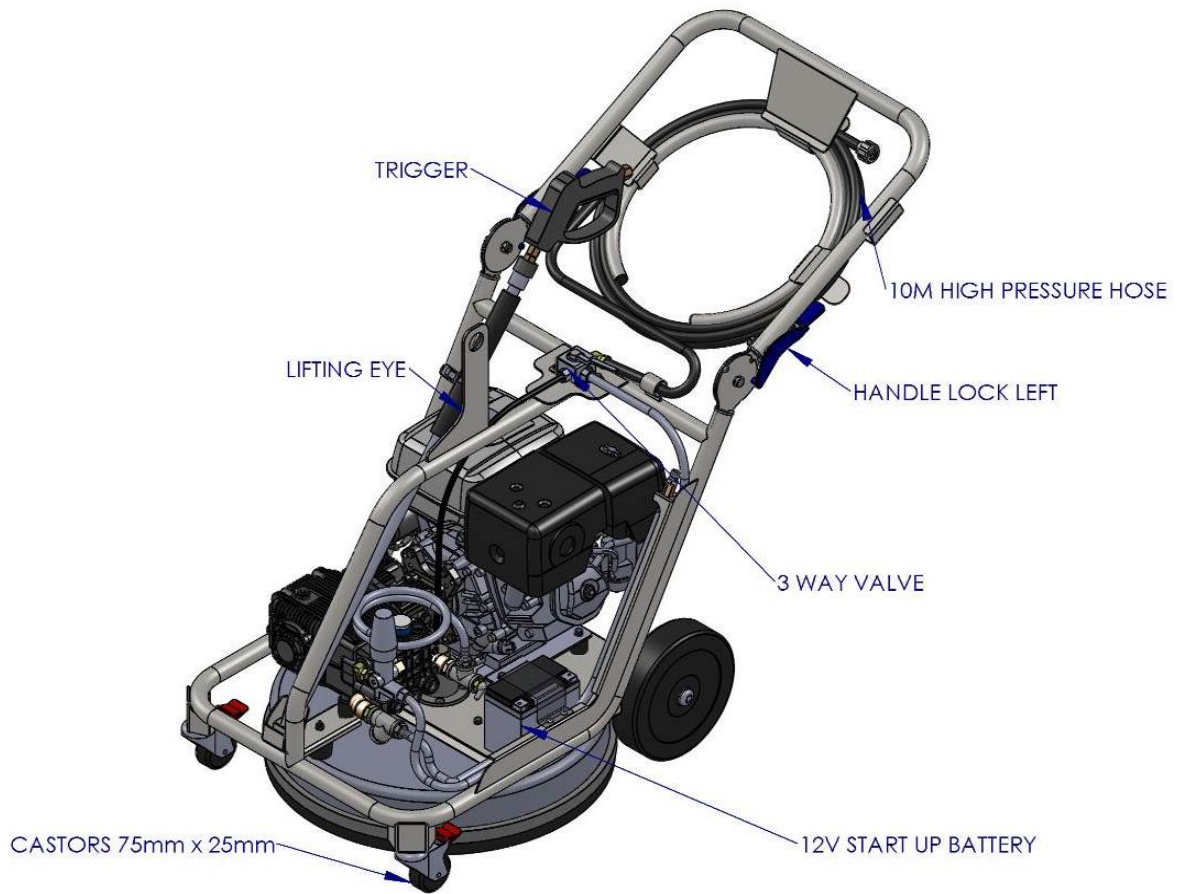
SIDE VIEW

NOTE: Model DPW-4000

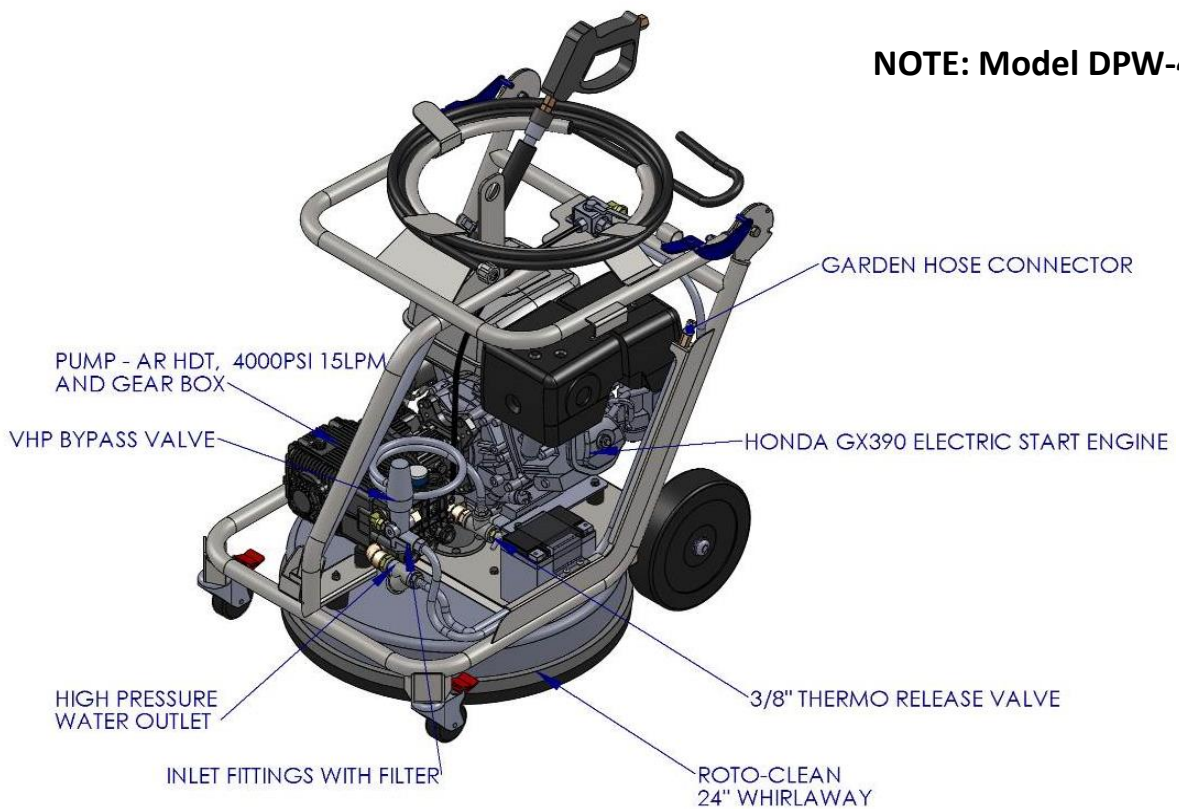
PUMP SPECIFICATIONS		
MAKINEX AUS		MAKINEX USA
AR XW15.30N (with gear reduction) for Model DPW-4000		RKV3.5G40HD-F34 (direct drive) for Model DPW-4000-0AHU
PRESSURE OUTPUT MAX	4000 psi/275.8 bar	4000 psi/275.8 bar
FLOW RATE MAX	15L/min (4 gal/min)	13.2L/min (3.5 gal/min)
OIL TYPE	SAE30	SAE30
RPM	1450	3400
WEIGHT	15.5kg/34lb	9.5kg/21lb
SXW15.35 (direct drive) for Model DPW-4000-0AHA		
	5100 psi/351.6 bar	
	15L/min (4 gal/min)	
	10W30	
	1450	
	15.4kg/34lb	
GEARBOX SPECIFICATIONS (Model DPW-4000)		
REDUCTION	2:1	
SHAFT SIZE	1" SHAFT	
OIL TYPE	SAE90W	
ENGINE SPECIFICATIONS		
ENGINE TYPE	Honda GX390 Air-cooled 4-stroke OHV	
BORE x STROKE	88 x 64mm/3.5 x 2.5inch	
DISPLACEMENT	389cm ³ /23.7inch ³	

MAX POWER OUTPUT	13HP (9.6kW) @ 3600 rpm
NET TORQUE	19.5 lb-ft (26.4Nm) @ 2500 rpm
PTO SHAFT ROTATION	Counter-clockwise (from PTO shaft side)
COMPRESSION RATIO	8.2:1
LAMP/CHARGE COIL OPTIONS	25W, 50W/1A, 3A,10A,18A
CARBURATOR	Butterfly Float Type
IGNITION SYSTEM	Digital CDI with variable timing
STARTING SYSTEM	Pull Start (DPW-4000)/Pull Start (DPW-4000-0AHA, DPW-4000-0AHU)
LUBRICATION SYSTEM	Splash
GOVERNOR SYSTEM	Centrifugal Mass Type
AIR CLEANER	Dual Element
OIL CAPACITY	1.1L (1.16 US qt)
FUEL TANK CAPACITY	6.1L (6.4 U.S. qts)
FUEL	Unleaded 86 Octane or higher
DRY WEIGHT	31.5kg (69lbs)
RUN TIME (Full tank)	100min

CONTROLS AND FEATURES



NOTE: Model DPW-4000



FEATURES
Adjustable valve for easy operation switch
Adjustable Pressure 1000-4000 psi
Built in Pressure Gauge
Durable Galvanised frame
Easy manoeuvrable Trolley with front swivel castors
Electric Start Motor (DPW-4000) Pull Start Motor (DPW-4000-0AHA, DPW-4000-0AHU)
Gear Box reduction (2:1) for prolonged pump life (DPW-4000)
External Bypass Valve for seal heat protection
Thermal dump valve for over heat discharge
Multi cushion isolators for vibration reduction
10m high pressure hose attached
Spray gun included and mounted on frame
Built in 24" 4000 psi Roto-Clean
Compact design for easy storage and transport
Lifting point for transportation

OPERATION

BEFORE USE

1. Add Engine Oil (New machines will be pre-oiled from MAKINEX)

- 1.1 Place Pressure Washer on a flat, level surface.
- 1.2 Clean area around oil fill and remove oil fill cap.
- 1.3 Using oil funnel (optional), slowly pour contents into oil fill opening. (Oil capacity is 1.1L)
- 1.4 Replace oil fill cap and tighten.

NOTE: IMPROPER treatment of pressure washer can damage it and shorten its life. DO NOT attempt to crank or start the engine before it has been properly serviced with the recommended oil. This may result in an engine failure.

Adding Fuel



FAILURE TO USE FUEL AS RECOMMENDED IN THIS MANUAL WILL VOID WARRANTY

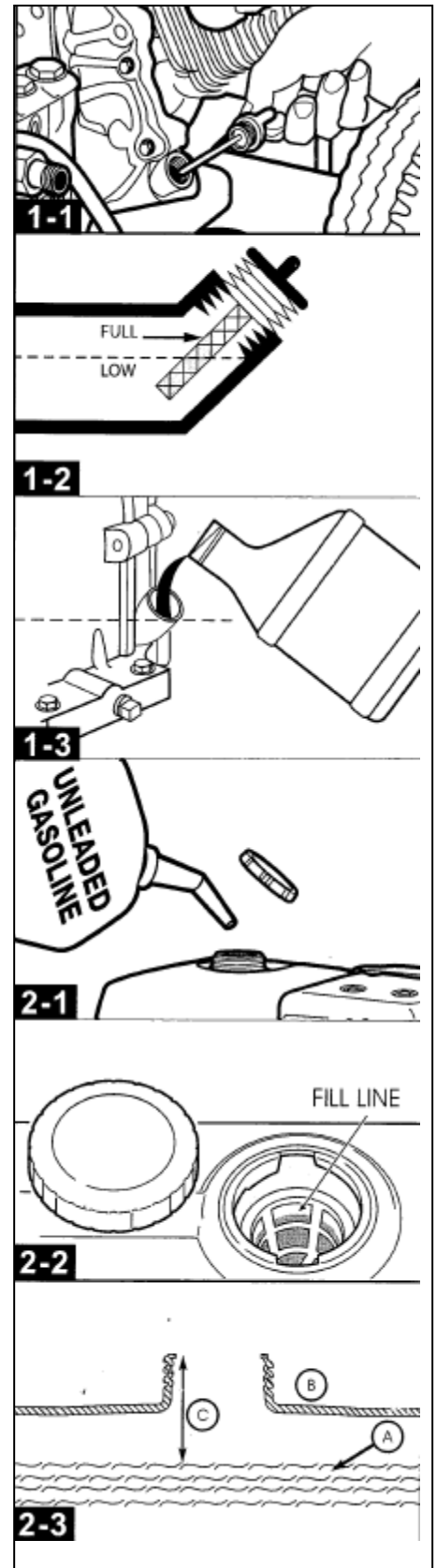
-DO NOT use unapproved gasoline such as E85 (85% ethanol/15% gasoline).

-DO NOT mix oil with gasoline.

-DO NOT modify engine to run on alternate fuels.



Fuel and fuel vapour are extremely flammable and explosive. Fire or explosion from misuse of fuel can cause severe burns and even death.



WHEN ADDING FUEL TO PRESSURE WASHER, OBSERVE THE FOLLOWING STEPS:

- 2.1 Turn pressure washer OFF and let it cool for at least two minutes before removing fuel cap. Loosen fuel cap slowly to release pressure.
- 2.2 Fill fuel tank outdoors.
- 2.3 DO NOT overfill fuel tank. Leave room for fuel to expand.
- 2.4 Wait for spilled fuel to evaporate before cranking engine.
- 2.5 Keep fuel away from sparks, open flames, pilot lights, heat and other ignition sources.
- 2.6 DO NOT light a cigarette or smoke near open fuel tank or container.
- 2.7 Clean area around fuel fill cap and slowly remove cap to allow any pressure to escape.
- 2.8 Slowly add unleaded gasoline (A) to fuel tank (B). Use extreme caution not to fill fuel above baffle (C). This allows appropriate space for fuel expansion.
- 2.9 Install fuel cap and allow any spilled fuel to evaporate before starting engine.

OPERATING YOUR PRESSURE WASHER

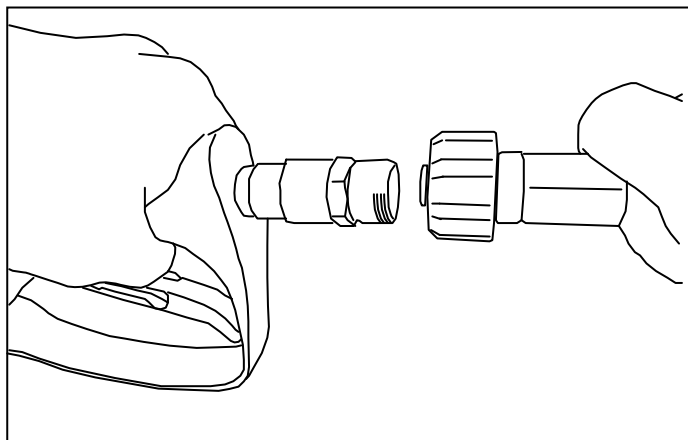
1. How to Pre-start your pressure washer

To start your pressure washer for the first time, follow these instructions. This information also applies if you let the pressure washer sit idle for at least a day.

- 1.1 Place pressure washer near an outside water source capable of supplying water at a flow rate at least 5 gallons/19L per minute and no less than 20 psi at pressure washer end of garden hose.
- 1.2 Check all high pressure hose connections are tightly connected to the pump, valve, spray gun and Roto-Clean.
- 1.3 Make sure there are no kinks on hoses
- 1.4 Make sure the unit is in a levelled position.

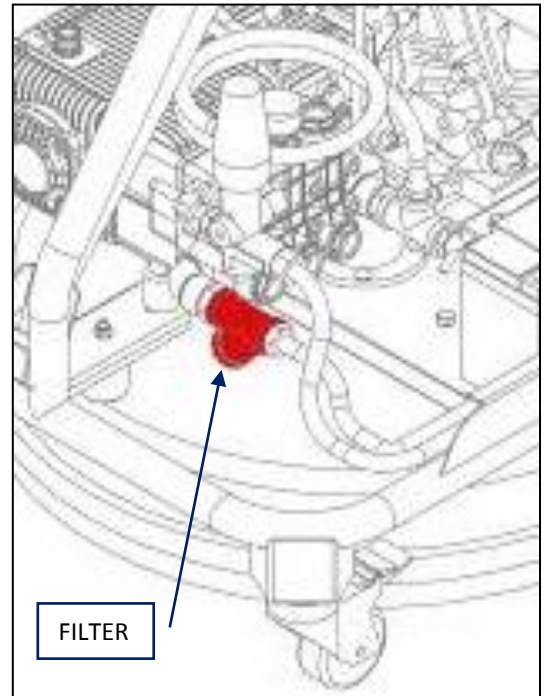
2. Attaching High pressure hose to spray gun

- 2.1 The spray gun is preassembled to a swivel M22 Male nipple.
- 2.2 Connect the M22 female twist knob from the high pressure hose to the spray gun as shown by hand (some models come with QC), make sure it's a tight fit and the threads are not cross threaded (the connection is a self-sealed one, hence no plumbing is needed)

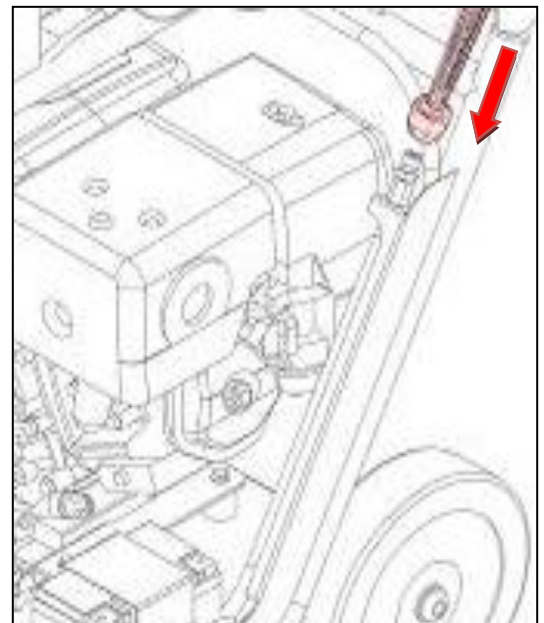


3. Connect garden hose to water inlet connector

- 3.1 Before connecting the garden hose to the water inlet connector, inspect the filter
- 3.2 Run water through your garden hose for 30 seconds to clean put any debris
- 3.3 Release any pressure from spray gun by pulling the trigger.
- 3.4 Connect the garden hose to the water inlet connector (not to exceed 15m/50ft in length and with the inner diameter of hose no less than **13mm**).
- 3.5 Turn on inlet hose Water

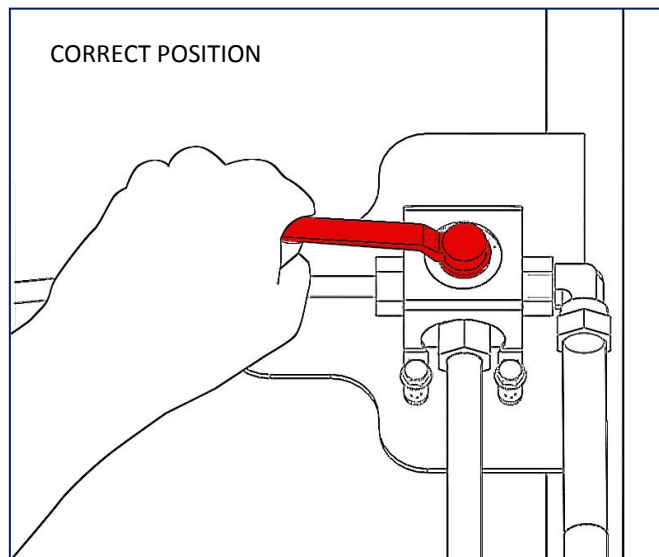


*****IMPORTANT*****
DO NOT siphon standing water for the water supply. Use ONLY cold water (less than 37°C/100°F)



4. Adjust valve position to Roto-Clean

4.1 Make sure the valve is pointing to the Roto-Clean position before starting as this makes sure pressure is constantly released before you start the engine and during initial running.



RISK OF EYE INJURY. SPRAY CAN SPLASH BACK OR PROPEL OBJECTS

- Always wear safety goggles when using this equipment or in vicinity of where equipment is in use.
- Before starting the pressure washer, be sure you are wearing adequate safety goggles.
- NEVER substitute safety glasses for safety goggles.

5. Start the engine

Refer to your Honda GX390 Engine Operator's manual for more details



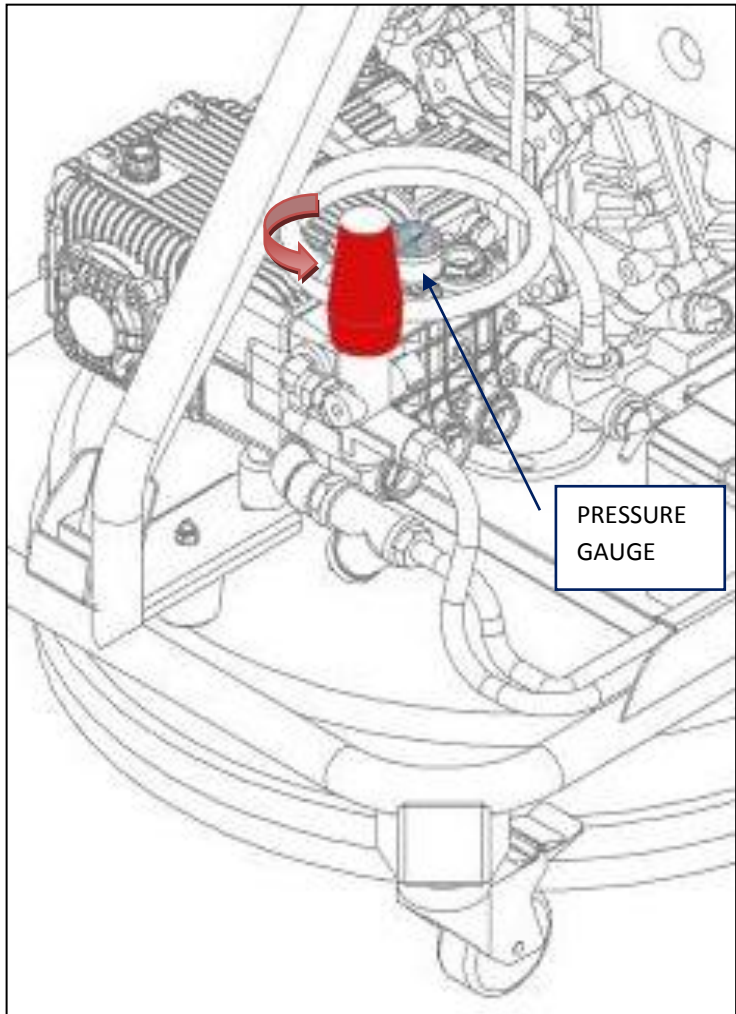
*****IMPORTANT*****

DO NOT run the pump without the water supply connected and turned on. Damage to equipment resulting from failure to follow this instruction will VOID WARRANTY

6. Checking/adjusting pressure

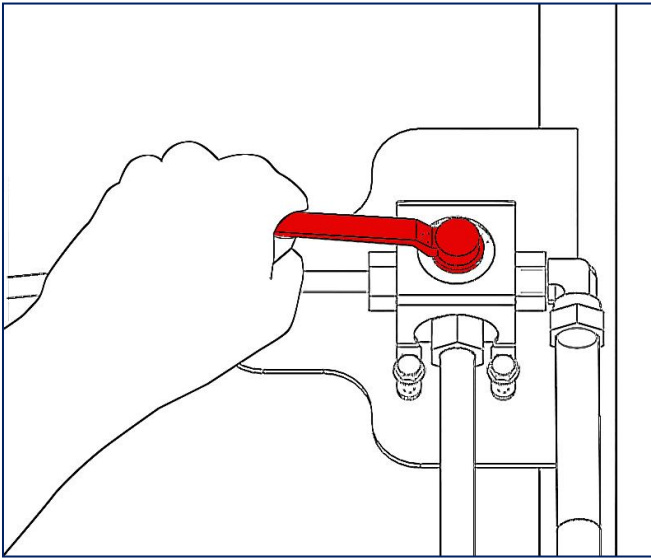
The MAKINEX dual pressure washer operating pressure is pre-adjusted to 4000 Psi. Over adjusting pressure will VOID WARRANTY.

- 6.1 Check the operating pressure when the machine starts; allow some time to build up pressure.
- 6.2 The by-pass valve has a knob to adjust pressure. DO NOT over adjust to the rated machine operating pressure. (i.e. >4000psi)

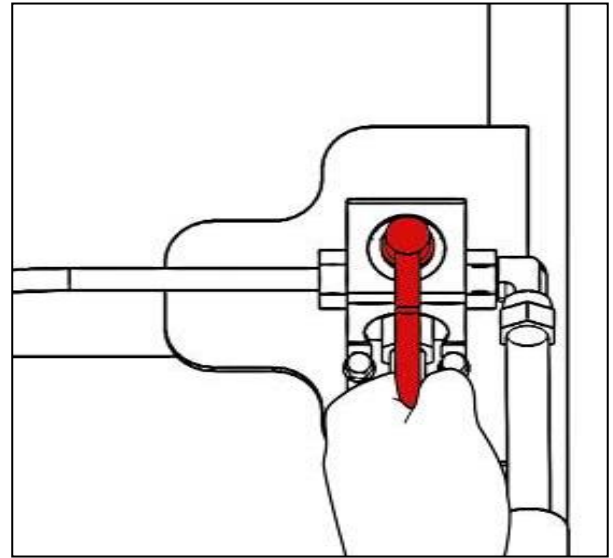


7. Two types of operations

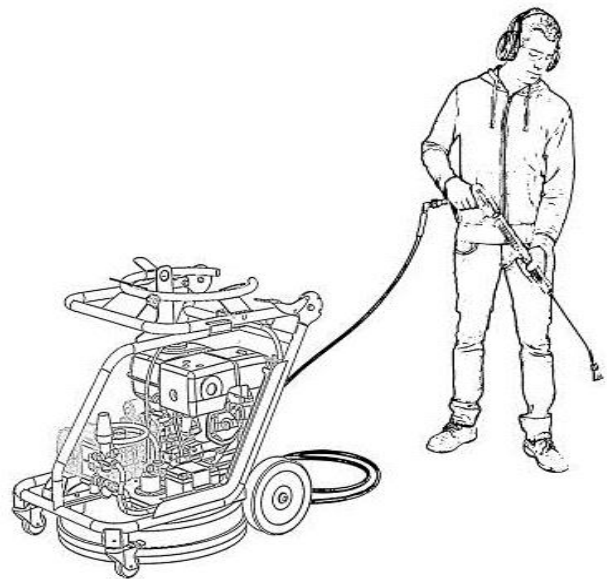
By using the valve, you can choose between two types of operation.



ROTO-CLEAN OPERATION



SPRAY GUN OPERATION



8. Nozzle selection

The nozzle on the spray gun that comes with the MAKINEX dual pressure washer is a ¼ NPT M 15° Size 4.

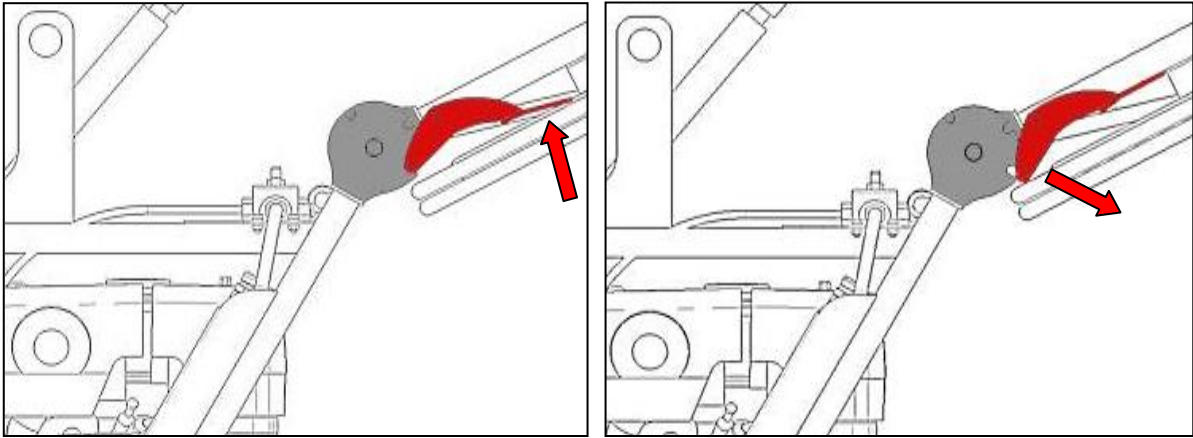
Your Roto-clean will come installed with one set of 25020 nozzles (25 degree 2.0 orifice).

The minimum orifice to be used in your Roto-clean is half that which is being used in your pressure washer. Example: If your pressure washer uses a size 5 orifice, you need to use a size 2.5 orifice in your Roto-clean.

The nozzles being used should have a 15° -25° spray pattern; anything less than a 15° spray pattern can damage the area being cleaned. Anything more than 25° may not allow the bar to rotate.

Nozzles should be screwed into the rotating bar. The spray fan should be parallel to the rotating bar.

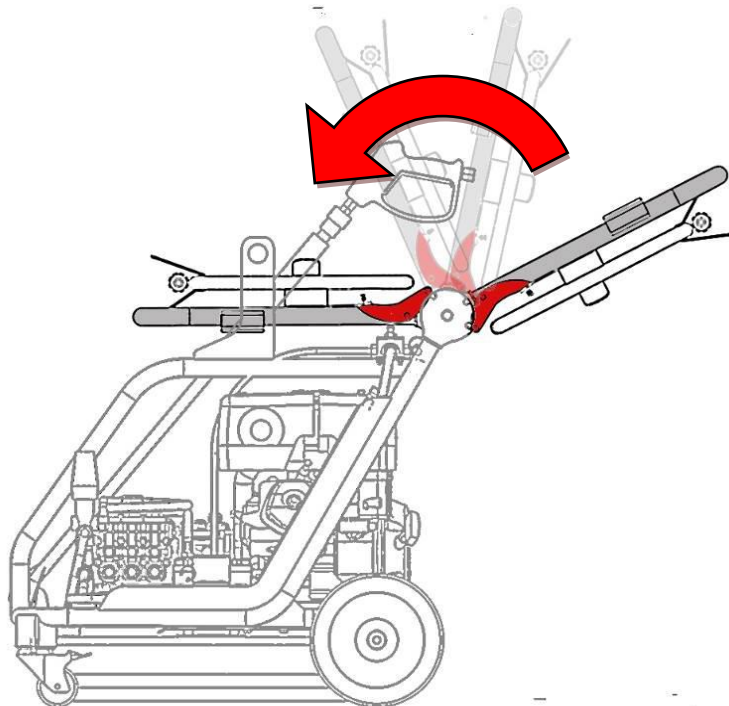
9. Foldable Handle



8.1 release the lock pin by pressing down on spring tab of the handle lock tab. Refer to above.

8.2 Use both hands at the same time.

8.3 Lock pin will spring into place at their designated grooves.



10. How to stop your pressure washer

10.1 Turn off the engine

10.2 Release pressure from spray gun, ALWAYS point gun in safe position before pressing trigger.

NOTE: Spray gun traps high water pressure, even when engine is stopped and water is disconnected.

10.3 Move throttle control lever on engine to stop position

10.4 Store in a safe area

MAINTENANCE

General Recommendations:

Regular maintenance will improve the performance and extend the life of the pressure washer.

The pressure washer's warranty does not cover items that have been subjected to operator abuse or negligence. To receive full value from the warranty, the operator must maintain the pressure washer as instructed in this manual and in the engine manual, including proper storage as detailed in Winter Storage and Long Term Storage.

NOTE: An hour meter is installed on the machine to help with tracking operation hours.



Should you have questions about replacing components on your pressure washer, please contact dealer for assistance.

****IMPORTANT****



DO NOT RUN EXCESSIVE BY-PASS (this means engine running but no water flow)!
Switch machine off within two minutes of ceasing operation as excessive by-pass can cause heat to build up in pump and subsequent damage. **EXCESSIVE BY-PASS RUNNING VOIDS WARRANTY!**

Pressure Washer Maintenance

Clean Debris

Daily or before use, clean accumulated debris from cleaning system. Keep the unit clean at all times. Keep area around and behind muffler free from any combustible debris. Inspect cooling air slots and openings on the pressure washer. These openings must be kept clean and unobstructed.

NOTE: IMPROPER treatment of pressure washer can damage it and shorten its life. DO NOT spray any objects through cooling slots.

Cleaning system parts should be kept clean to reduce the risk of overheating and ignition of accumulated debris.

- Use a damp cloth to wipe exterior surfaces clean.
- Use a soft bristle brush to loosen caked on dirt, oil, etc.
- Use a vacuum cleaner to pick up loose dirt and debris.

Check and Clean Inlet Filter

Examine the inlet water filter on the pump after every use and clean it if the screen is clogged or replace immediately if screen is damaged.

Check High Pressure Hose

The high pressure hose can develop leaks from wear, kinking, or abuse. Inspect the hose each time before using it. Check for cuts, leaks, abrasions or bulging of cover, damage or movement of couplings. If any of these conditions exist, replace the hose immediately.



- The high pressure stream of water that this equipment produces can cut through skin and its underlying tissues, leading to serious injury and possible amputation.
- NEVER repair high pressure hose. Replace it.
- Replacement hose rating MUST exceed maximum pressure rating of unit.

Check Spray Gun

Examine the hose connection to the spray gun and make sure it is secure, and make sure the 'safety lock' is present and attach on the trigger, it helps to prevent any accidental jets when in operation. Replace spray gun immediately if the safety lock is damaged or not functioning.

Check Wand

Occasionally, the spray wand can be clogged with foreign materials such as dirt. When this happens, excessive pressure can develop. Whenever the pressure nozzle becomes partially clogged, the pump pressure will pulsate. It should be cleaned immediately cleaned.

Nozzle Maintenance

A pulsing sensation felt while squeezing the spray gun trigger may be caused by excessive pump pressure. The principal cause of excessive pump pressure is a spray tip clogged or restricted with foreign materials, such as dirt, etc. To correct the problem, immediately clean the spray tip following these instructions:

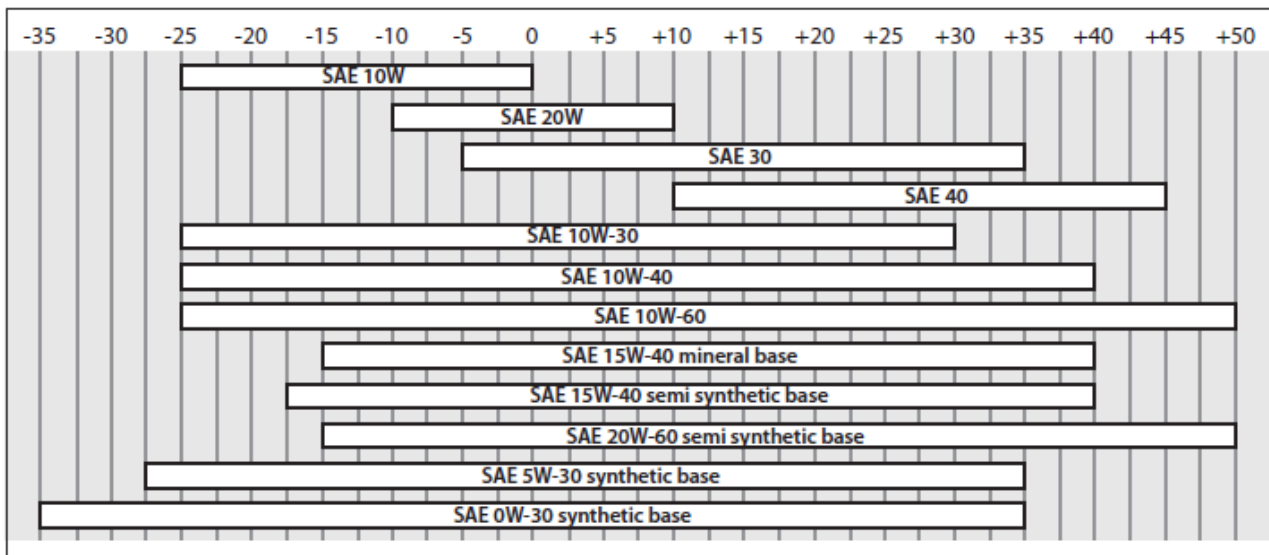
1. Shut off engine and turn off water supply.
2. ALWAYS point spray gun in safe direction, squeeze spray gun trigger to release retained high water pressure.
3. Remove spray tip from end of nozzle extension.
4. Use a small paper clip to free any foreign material clogging or restricting spray tip of the nozzle.
5. Remove nozzle extension from spray gun.
6. Using a garden hose, remove additional debris by back flushing water through the nozzle extension.
7. Reinstall spray tip into nozzle extension.
8. Reconnect nozzle extension to spray gun.
9. Make sure garden hose is connected to spray gun and pump. Turn on water.
10. Start engine following instructions 'How to Start Your Pressure Washer'.
11. Test pressure washer by operating the spray gun

12. Use same nozzle maintenance with the Roto-clean.

If pressure drops off check nozzle for wear. Nozzles should be replaced on a regular basis (suggestion: every month for machines in regular use, every three months for machines used intermittently). Using the machine with the incorrect nozzle size or worn nozzle will VOID WARRANTY and can be DANGEROUS to operator.

Pump Maintenance

Changing Pump Oil



The pump is delivered complete with oil, with the characteristics stated on the data plate. When changing the oil, use oil suitable for conditions in the operating environment. The correct lubricating oil viscosity depends on the external temperature. Use the graph to select the degree of viscosity best suited to the temperature of use.

Change oil after first 50 hours of operation and then every 200 hours of operation or every 3 months of regular use, whichever occurs first.

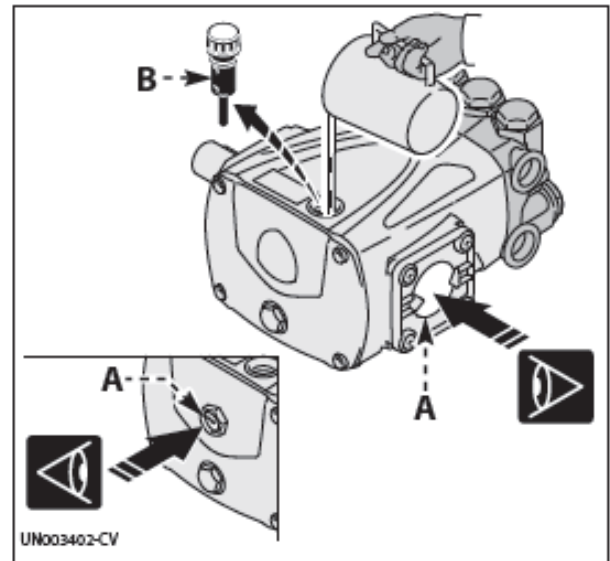
NOTE: When changing pump oil, use only high quality non-detergent oil. Use no special additives.

Checking the oil level

- Check the oil with the pump level and cold.
- Check the amount of oil through the level gauge (A).
- If necessary, top up with oil with the characteristics specified in the 'lubricants table'.

To top up with oil proceed as described below.

1. Unscrew the plug (B) and pour oil in until it is halfway up the level gauge (A).
2. Screw on the plug (B).

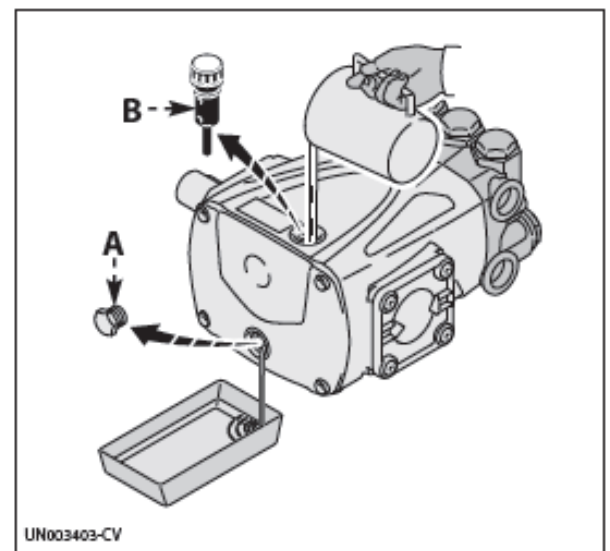


Position the machine in which the pump is incorporated perfectly level, with the pump slightly warm. Do not release oil into the environment.

Dispose of spent oil in accordance with statutory requirements.

To change the oil, proceed as described below.

1. Position a receptacle of suitable capacity to collect the spent oil.
2. Unscrew the drain plug (A) and allow all the oil to flow out.
3. Screw on the drain plug (A).
4. Unscrew the filler plug (B).
5. Pour in the fresh oil through the filter hole until the correct level is reached.
6. Screw on the filler plug (B)



Lengthy pump lay-offs

If the pump is to be unused for a long time, proceed as described below.

1. Run the pump with clean water for a few minutes.
2. Operate the pump without water for 10 seconds with the end of the delivery pipeline open to empty the pump and the delivery circuit and prevent scaling.
3. Flush the pump with water and solvents authorised by the relevant laws.
4. Dry the pump with a pressurised air jet.
5. Protect the pump from weather.

Putting the pump back into service

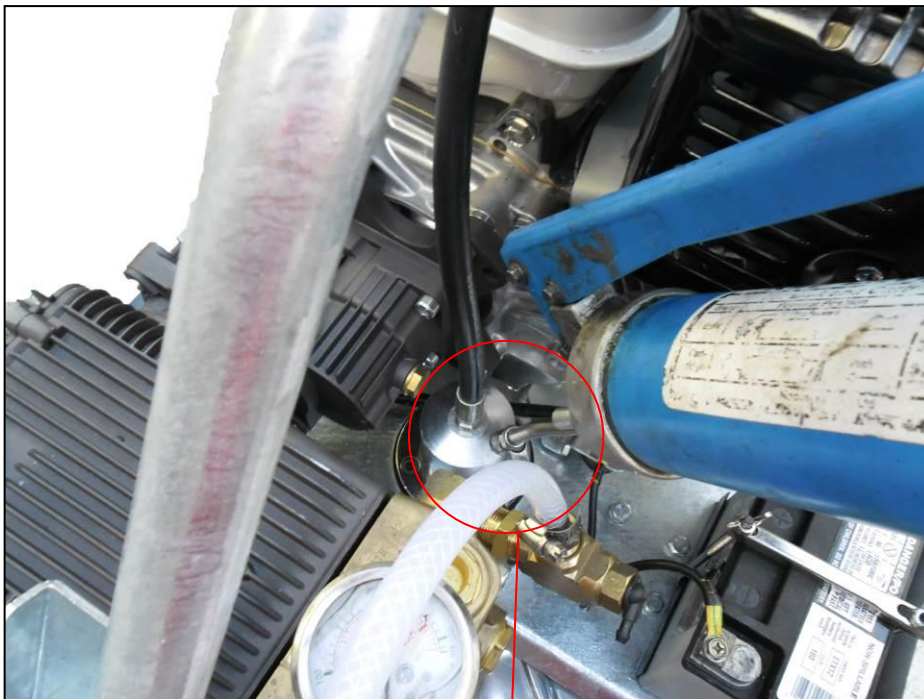
Before putting the pump back into service after a long period out of use, check the oil level and the tightness of the mounting screws.

Roto-clean Maintenance

The Roto-clean must be maintained to ensure correct function and longevity of life.

There are two nozzles attached and they need to be checked before every use and are similar to nozzle maintenance of the spray gun.

We recommend that you supply grease to the rotary head every 30 – 40 hours of use (if frequent usage, grease every 20-30 hours of operation). Simply add a small squirt of automotive grease, do not overfill with grease as it will bog down the rotary head.



Grease nipple location for Roto Clean

Engine Maintenance


See the engine operator's manual for instructions on how to properly maintain the engine.

STORAGE

Long term storage instructions (fuel in tank)


Gasoline fuel can become stale when stored over 30 days. Stale fuel causes acid and gum deposits to form in the fuel system or crucial carburetor parts. To keep fuel fresh, add a fuel stabiliser liquid additive to fuel. The fuel stabiliser is available at most auto parts stores.

Draining gasoline is unnecessary if the fuel stabiliser is used according to the instructions that come with it. Run pressure washer engine for a minimum of two minutes, after stabiliser is added to fuel, to allow it to circulate throughout the engine. The engine and fuel can be stored up to 24 months.

 WARNING	Fuel and fuel vapour are extremely flammable and explosive. Fire or explosion from misuse of fuel can cause severe burns and even death.
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To protect against rust formation during storage, oil the cylinder bore:

1. Remove spark plug and pour approx. 15ml (1/2oz) of clean engine oil into the cylinder.
2. Install spark plug and pull starter handle slowly to distribute oil. **DO NOT** start engine at this time.
3. Slowly pull the recoil starter 2-3 times to distribute and coat the cylinder bore with oil.

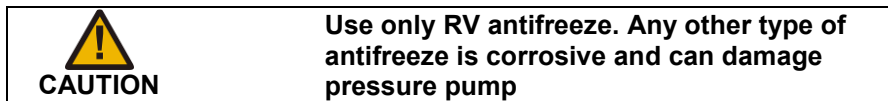
 WARNING	Unintentional sparking can cause fire or electrical shock. Failure to observe this warning can cause severe property damage, severe burns and even death. Disconnect spark plug wire from spark plug and cover tip of spark plug wire with insulating tape and place wire where it cannot come in contact with spark plug or pressure washer frame.
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Storage of Pressure washer

1. Drain all water from high pressure line, coil it and store it in cradle of pressure washer handle.
2. Drain all water from spray gun and spray wand by holding spray gun in vertical position with nozzle pointed downward. Squeeze trigger to remove fluids from spray gun and spray wand. Store in spray gun holder.
3. Store high pressure hose and spray wand so they are protected from damage.

It is RECOMMENDED that you follow these steps to protect the internal seals of pressure washer when storing unit for more than 30 days and/or when freezing temperatures are expected.

1. Obtain a funnel, 170g (6oz) of RV antifreeze and approximately 0.9m (36inches) of garden hose with a male hose connector on one end.



2. Disconnect spark plug wire. Ensure it cannot touch any metal on pressure washer.
3. Connect the 0.9m of garden hose to water inlet of pressure pump.
4. Add RV antifreeze.
5. Pull engine starter rope slowly several times until antifreeze comes out of pressure hose connection of pressure pump.
6. Remove hose from water inlet of pressure pump.
7. Reconnect spark plug wire.

Disconnect Battery

1. Disconnect the negative lead from the battery terminal and store cap screw and lock washer
2. Repeat for the positive battery lead.
3. Store the battery in a cool, dry place.

Charge the battery

For pressure washer equipped with batteries for electric starting, proper battery maintenance and storage should be followed. An automatic battery charger with automatic trickle charging capability should be used to charge the battery. Maximum charging rate should not exceed 1.5amps. Follow the instructions included with the battery charger. The battery should be fully charged at least once per month.

Other Storage tips

1. DO NOT store gasoline from one season to another unless it's been treated with fuel stabiliser.
2. Replace fuel container, if metal, and if it begins to rust. Rust and dirt and debris can contaminate fuel supply and components resulting in poor performance and/or internal damage to engine. Fuel should be stored in newer approved plastic storage container.
3. Cover pressure washer with a suitable cover that does not retain moisture such as a plastic or plastic coated tarp.
4. Store pressure washer in a clean and dry area.



Certain storage covers can be flammable or can melt in high temperatures. DO NOT place storage cover over pressure washer unit until it has completely cooled.

TROUBLESHOOTING

TROUBLE SHOOTING GUIDE		
PROBLEM	CAUSE	REMEDY
Pump does not reach the specified pressures	Pump sucking air	Restore the tightness of the intake line
	Intake flow rate insufficient	Increase the size of the intake pipelines
		Remove and kinks from the pipes
		Increase the filter capacity or clean the filter cartridge
		Increase the RPM to the rated speed
	Worn intake and delivery valves	Replace the valves (1)
	By-pass valve seat worn	Replace the valve
	Worn gaskets	Replace the gaskets (1)
	Unsuitable, worn nozzle	Replace nozzle
Faulty Gauge	Check and Replace	
Irregular variations in pressure	Worn intake and delivery valves	Replace the valves (1)
	Valves blocked by dirt	Clean the valves (1)
	Air being sucked into system	Restore the tightness of the intake pipeline connections
	Worn gaskets	Replace the gaskets (1)
Fluctuating pressure	Valves worn	Check and replace
	Valves blocked	Check and replace
	Pump sucking air	Check water supply and air ingress at joints in suction line
	Worn piston packing	Check and replace
Pressure drop	Nozzle worn	Replace Nozzle
	Worn intake and delivery valves	Replace the valves (1)
	Valves blocked by dirt	Clean the valves (1)
	By-pass valve seat worn	Replace the valve
	Worn gaskets	Replace the gaskets (1)
Pump noisy	Air being sucked into system	Restore the tightness of the intake pipeline connections
	intake and/or delivery valve springs broken or collapsed	Replace the valves (1)
	Valves blocked by dirt	Clean the valves (1)
	Worn bearings	Replace the bearings (1)
	Intake liquid temperature too high	Reduce liquid temperature
Pump overheating	High pump operating pressure	Reduce the pressure to the rated values
	Not enough water flowing through	Check water inflow through pump
	Pump left on Idle for too long	DO NOT LEAVE PUMP ON IDLE FOR >2min VOIDS WARRANTY!

Water in oil	Guide piston gasket worn	Replace the gaskets (1)
	High humidity percentage in air	Change the oil twice as often
	Worn gaskets	Replace the gaskets (1)
Oil leak from pump	Worn gaskets	Replace the gaskets (1)
	Worn pistons	Replace the pistons (1)
	Loose drain plug	Tighten drain plug
	pump overfilled	Check for correct amount
	incorrect oil use	Drain and refill with correct type and amount of oil
	Oil seals worn	Replace seals (1)
Water leaking at pump	loose connections	Tighten connections
	Piston packings worn	Check and replace (1)
	Worn or broken O-rings	replace O-rings
	Pump head or tubes damaged from freezing	Check and replace (1)
Engine shuts down when running	Out of fuel	Fill fuel tank
	Low engine oil	Add oil
Engine will not start	Out of fuel	Fill fuel tank
	Low engine oil	Add oil
	wrong fuel	Drain and refill recommended fuel
	Rocker switch set to off	Set to on
	Fuel valve is in off position	Set to on
	Spark plug wire not connected to spark plug	Check and make sure its wired
	Faulty spark plug	Check and replace
	Water in fuel	Drain tank and carburetor and refill
	Flooded	Wait 5 minutes and re-crank engine
	Engine too hot	Allow engine to cool
	Choke in wrong position	Change choke position
	too much pressure build up	Release pressure
(1) operations which must be carried out at an authorised service centre		

LIMITED WARRANTY

In order to take advantage of the MAKINEX limited warranty, you must have maintenance performed according to the schedule (contained in relevant owner's manual supplied with this product), by an authorised MAKINEX dealer or MAKINEX service technician. You are free to have your MAKINEX product serviced by any suitably qualified mechanic or electrician (depending on the mechanical or electrical requirement) and this will not affect your statutory warranties, however, failure by the owner to have the recommended servicing carried out by an authorised MAKINEX dealer/service technician means that you cannot take advantage of the MAKINEX limited warranty.

In order to ensure your safety, we strongly recommend that you only use an authorised MAKINEX dealer for servicing. Only authorised MAKINEX dealers have access to all the special tools, technical information, parts and training required to maintain your MAKINEX product in peak operating condition.

MAKINEX warrants each new Dual Pressure Washer to be free from defects in material and workmanship under normal domestic and industrial use and service for the period specified below, conditional to the limitations and exclusions printed on this page. This warranty applies only to new MAKINEX pressure washers distributed by us and by our authorised MAKINEX dealers.

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

WARRANTY: (Ex-factory/ Reseller premise)

MAKINEX warrants to the original purchaser:

- Frame and Engine will be free of defects in material and workmanship for a period of one (1) year from the original date of purchase.
- Honda GX Engine is subject to (3) years warranty. Please see www.hondapowerequipment.com.au for details.
- 12 months warranty on pressure pump (Note: Maintenance is not warranty. Excludes service and consumables required at scheduled maintenance intervals)

Warranty exclusions:

This warranty does not cover the following repairs and equipment:

Normal Wear

Pressure washers need periodic parts and service to perform well. This warranty does not cover repair when normal use has exhausted the life of a part or the equipment as a whole.

Installation, Use and Maintenance

This warranty will not apply to parts and/or labour if this pressure washer is deemed to have been misused, neglected, involved in an accident, abused, loaded beyond the pressure washer's limits, modified, installed improperly or connected incorrectly to any water supply. Normal maintenance such as spark plugs, air filters, adjustments, fuel system cleaning and obstruction due to build-up is not covered by this warranty.

Other Exclusions

This warranty excludes:

- Cosmetic defects such as paint, decals, etc.
- Wear items such as filter elements, Pistons, O-rings, etc.
- Accessory parts such as starting batteries, and storage covers.
- Failures due to acts of God and other force majeure events beyond the manufacturer's control.
- Problems cause by parts that are not original MAKINEX parts.

Responsibility of the consumer under this Limited Warranty:

- Only clean, potable water should be used through our pressure washers with a flow rate at least 15% more than the pump requirements (e.g a 15LPM pump requires a water supply of 18LPM minimum to prevent pump cavitation).

- Strict adherence to the maintenance daily checks and schedule with proof of scheduled maintenance service required by an authorised agent or qualified mechanic and/or electrician.
- Maintenance services are not covered under warranty.
- It is the consumer's responsibility to deliver the machine in question to our service premises or to the premises of our appointed agent at the consumer's expense for replacement or repair as applicable.

Claim Procedure:

- Contact MAKINEX by phone or email informing us of your machines problem or defect.
- Once the extent of the claim has been assessed, we retain the right to compensate the consumer for such defect, or repair (pars & labour), or replace the machine under warranty.
- All warranties will be carried out by MAKINEX authorised staff or appointed agents at a premises to be determined by the Manufacturer.
- Transportation charges on product submitted for repair or replacement under this warranty are the sole responsibility of the purchaser. This warranty only applies to the original purchaser and is not transferable.
- It is the responsibility (and cost) of MAKINEX or our appointed agent to return the machine to be repaired or replaced under warranty to the consumer- this is valid for domestic territories only (e.g. Australian units will be delivered within Australian territory, USA units will be delivered within USA territory and European units will be delivered within its designated country's territories).
- Where the specific warranty component (e.g. Engine) is under a Manufacturer's warranty other than MAKINEX (e.g. HONDA), the consumer can either contact MAKINEX or the applicable Manufacturer for repairs where such warranty was registered with that manufacturer at purchase.
- Warranty calls will only be carried out by our representatives and not via client's choice of repairer. We will not accept back charges for any work not carried out by our representatives, or accept any charges due to equipment being un-operational for any reason even during its warranty period.

WARRANTY CONTACT INFORMATION:

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Fax +61 2 9439 9815

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Tel 407-446-1966

407-826-0000

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m.spencer@makinexusa.com

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Tel +31 (0)6 24881203

+31 (0)6 50841849

SERVICE & PART ORDERING

For service and ordering parts, please call

AUS: 1300 795 953 or +61 2 9460 8071

USA: 407-446-1996, 407-826-0000

EUROPE: +31 (0)6 24881203 or +31 (0)6 50841849

Or your nearest MAKINEX distributor

We have very knowledgeable, experienced staff to assist you with help and advice.

CONTACT INFORMATION



AUSTRALIA/ NEW ZEALAND
UNITED STATES OF AMERICA
EUROPE

W makinex.com
E sales@makinex.com

APPENDICES

APPENDIX A – GENERAL EXPLODED PARTS DIAGRAM

APPENDIX B – PUMP ASSEMBLY PARTS

APPENDIX C – HANDLE ASSEMBLY PARTS

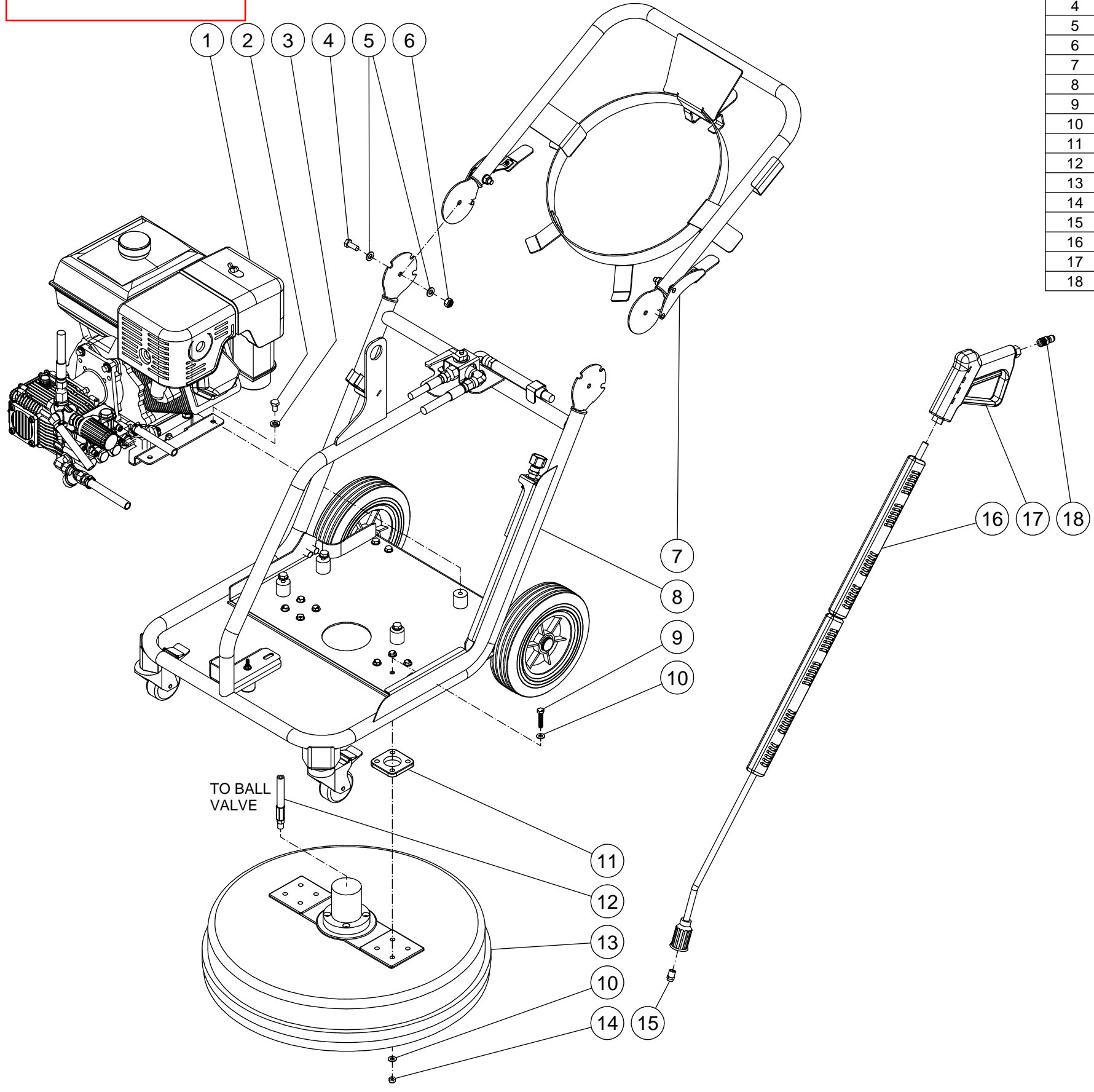
APPENDIX D – FRAME ASSEMBLY PARTS

APPENDIX E – PUMP EXPLODED PARTS

APPENDIX F- ROTARY CLEANER EXPLODED PARTS

APPENDIX G- RISK ASSESSMENT

**APPENDIX A -
GENERAL EXPLODED
PARTS DIAGRAM**



ITEM	PART #	VENDOR	DESCRIPTION	P/L	R/Q	QTY
1	N/A	-	DPW-4000-0AHU PUMP/ENG ASSY	N/A	X	1
2	27-8060	DPW4A-46-1470	HHCS-ZI GR 8.8 M10-1.5P X 16mm			4
3	29-0009	DPW4-29-0009	LOCKWASHER - MED 7/16			4
4	27-8064	DPW-27-8064	HHCS-ZI GR 8.8 M10-1.5P X 25mm			2
5	28-0004	DPW-28-0004	WASHER - ZI SAE 3/8"			4
6	30-3159	DPW-30-3159	HEX NYLON LOCKNUT-ZINC M10-1.5			2
7	N/A	DPW4-200	DPW-4000 HANDLE ASSEMBLY	N/A	X	1
8	N/A	DPW4-100	DPW-4000 FRAME ASSY	N/A	X	1
9	27-8066	DPW-27-8066	HHCS-ZI GR8.8 M8-1.25 X 40MM			8
10	28-0003	DPW-28-0003	WASHER-ZI SAE TYPE A 5/16"			16
11	33-0568	DPW-311	RUBBER PAD 2.85" X 2.85"			2
12	15-0342	DPW2-306	HIGH PRESSURE HOSE - 1/4" X 27.5" 4000 PSI		X	1
13	851-0410	DPW4-303	24" WHIRLAWAY			1
14	30-3156	DPW-30-3156	HEX NYLON LOCKNUT M8 X 1.25P X 6mm			8
15	18-0254	DPW4-N15035	NOZZLE 15035 1/4 MEG			1
16	16-0471	DPW4-308-L-U	LANCE- 48" INSUL 5000PSI 302F			1
17	16-0001	DPW-308-G	TRIGGER GUN 5000 PSI			1
18	17-0005	DPW-307-6	QC 3/8MX3/8 PLUG SS			1

ITEM	PART #	SHIPS WITH	QTY
-	34-0100	TAG - CONTROL CHECKLIST	1
-	37-1337	MANUAL - DPW-4000	1
-	N/A	ENGINE MANUAL - W/ ENGINE	1
-	41-0035	PLASTIC BAG - ZIPLOCK 9 X 12	1

ITEM	PART #	BOXING	QTY
-	35-0100	SKID-TREATED 36 X 29 X 4 1/4	1
-	41-0420	INSERT-33 15/16"X22 3/16"	1
-	41-0606	BOX 35 1/4 X 28 1/4 X 36 1/2	1
-	27-2277	LAG BOLT - ZI 1/4 X 1	2
-	27-9524	HHCS - GR8.8 M8-1.25P X 20MM	4
-	20-1409	BRACKET - HOLDDOWN	2

Mi-T-M Corporation

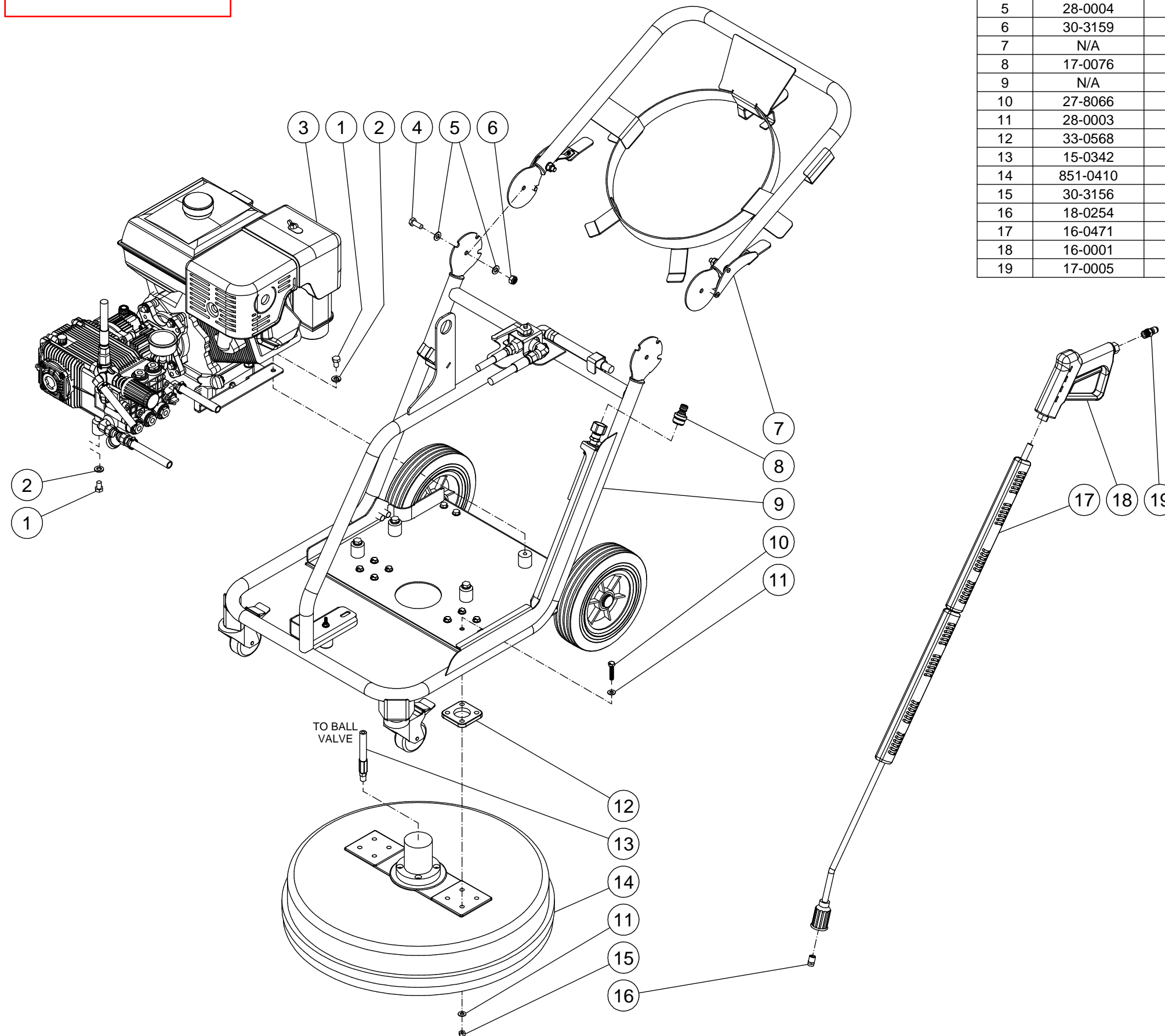
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DWP-4000-0AHU UNIT ASSY

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**APPENDIX A –
GENERAL EXPLODED
PARTS DIAGRAM**



ITEM	PART #	VENDOR	DESCRIPTION	P/L	R/Q	QTY
1	27-8060	DPW4-27-8060	HHCS-ZI GR 8.8 M10-1.5P X 16mm			5
2	29-0009	DPW4-29-0009	LOCKWASHER - MED 7/16			5
3	N/A	-	DPW-4000-0AHA PUMP/ENG ASSY	N/A	X	1
4	27-8064	DPW-27-8064	HHCS-ZI GR 8.8 M10-1.5P X 25mm			2
5	28-0004	DPW-28-0004	WASHER - ZI SAE 3/8"			4
6	30-3159	DPW-30-3159	HEX NYLON LOCKNUT-ZINC M10-1.5			2
7	N/A	DPW4-200	DPW-4000 HANDLE ASSEMBLY	N/A	X	1
8	17-0076	DPW-307-3-A	ADAPTER, 1/2" PLUG X 3/4"F M22			1
9	N/A	DPW4-100	DPW-4000 FRAME ASSY	N/A	X	1
10	27-8066	DPW-27-8066	HHCS-ZI GR8.8 M8-1.25 X 40MM			8
11	28-0003	DPW-28-0003	WASHER-ZI SAE TYPE A 5/16"			16
12	33-0568	DPW-311	RUBBER PAD 2.85" X 2.85"			2
13	15-0342	DPW2-306	HIGH PRESSURE HOSE - 1/4" X 27.5" 4000 PSI		X	1
14	851-0410	DPW4-303	24" WHIRLAWAY			1
15	30-3156	DPW-30-3156	HEX NYLON LOCKNUT M8 X 1.25P X 6mm			8
16	18-0254	DPW4-N15035	NOZZLE 15035 1/4 MEG			1
17	16-0471	DPW4-308-L-U	LANCE- 48" INSUL 5000PSI 302F			1
18	16-0001	DPW-308-G	TRIGGER GUN 5000 PSI			1
19	17-0005	DPW-307-6	QC 3/8MX3/8 PLUG SS			1

ITEM	PART #	SHIPS WITH	QTY
-	34-0100	TAG - CONTROL CHECKLIST	1
-	37-1337	MANUAL - DPW-4000	1
-	N/A	ENGINE MANUAL - W/ ENGINE	1
-	41-0035	PLASTIC BAG - ZIPLOCK 9 X 12	1

ITEM	PART #	BOXING	QTY
-	35-0100	SKID-TREATED 36 X 29 X 4 1/4	1
-	41-0420	INSERT-33 15/16"X22 3/16"	1
-	41-0606	BOX 35 1/4 X 28 1/4 X 36 1/2	1
-	27-2277	LAG BOLT - ZI 1/4 X 1	2
-	27-9524	HHCS - GR8.8 M8-1.25P X 20MM	4
-	20-1409	BRACKET - HOLDDOWN	2

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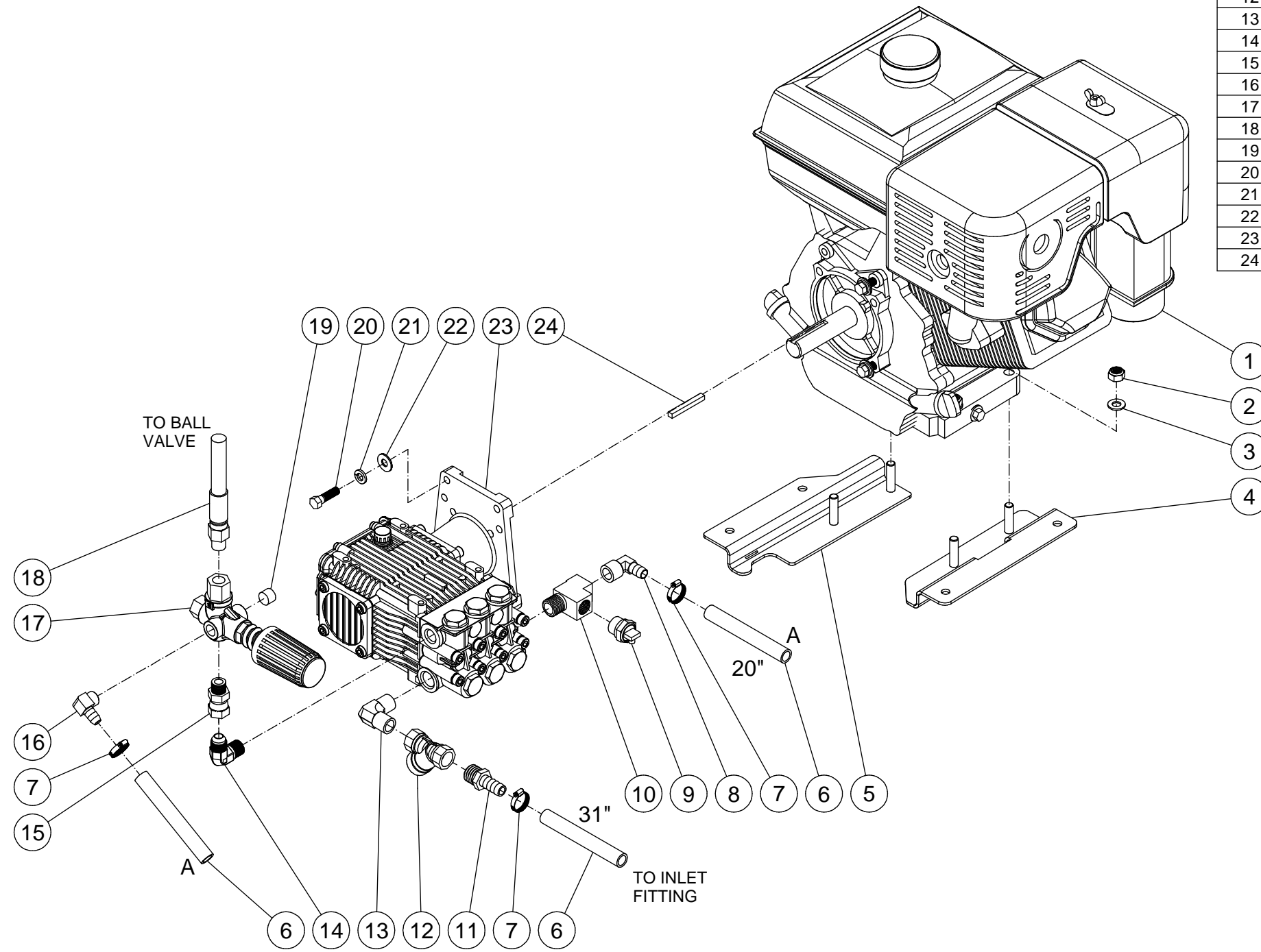
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DPW-4000-0AHA UNIT ASSY

DRAWING/PART NO: DPW-4000-0AHA UNIT ASSY

**APPENDIX B -
PUMP ASSEMBLY
PARTS**

ITEM	PART #	VENDOR	DESCRIPTION	R/Q	QTY
1	1-0086	DPW4-301	ENGINE - HONDA 13HP RECOIL GX390		1
2	30-3159	DPW-30-3159	HEX NYLON LOCKNUT-ZINC M10-1.5		4
3	28-0004	DPW-28-0004	WASHER - ZI SAE 3/8"		4
4	20-1388A77	DPW4-128R	MOTOR Z PLATE - RIGHT		1
5	20-1387A77	DPW4-128	MOTOR Z PLATE - LEFT		1
6	15-0007	DPW-307-1	HOSE 1/2 250psi	4.25'	1
7	42-0011	DPW-309-4	SS WORM CLAMP 3/8"-1"		3
8	23-0418	DPW4-309-2	ELBOW 90° - 1/2" MNPT x 1/2" BARB		1
9	22-0005	DPW-309-6	VALVE - THERMAL RELIEF 1/2MNPT		1
10	23-0124	DPW4-309-1	TEE - 1/2M X 1/2F X 1/2F STREET		1
11	23-0045	DPW-309-2	BARB 1/2M X 1/2 HOSE		1
12	23-0514	DPW2-309-5	1/2NPT Y FILTER - BRASS		1
13	23-0386	DPW4-309-6	ELBOW - 1/2 MNPT 90 DEG BRASS		1
14	24-0092	DPW4-24-0092	ELBOW-3/8M X #8JIC M 90° STEEL		1
15	24-0037	DPW4-24-0037	3/8 MNPT X #8 FJIC SWIVEL		1
16	23-0050	DPW4-309-3	ELBOW 3/8M X 1/2" HOSE BARB-BRASS		1
17	8-0633	DPW4A-302-UL	UNLOADER- PULSAR W/CAP		1
18	15-0197	DPW-305	HOSE - 3/8 ID X 3/8 M SWIVEL X 3/8M X 28"		1
19	23-0244	DPW4U-23-0244	PLUG 3/8 HEX SOCKET HEAD BRASS		1
20	27-0118	DPWN2U-27-0118	BOLT - HHCS - ZI GR5 3/8-16 x 1 1/4		4
21	29-0008	DPWN2U-29-0008	LOCKWASHER - ZI MED 3/8		4
22	28-0022	DPW-28-0022	WASHER - ZI STANDARD 5/16"		4
23	3-0310	DPW4U-302	PUMP-DD GAS 4000 PSI @ 3.5		1
24	43-0078	DPW4-43-0078	KEY - 1/4" SQ x 2 1/8"		1



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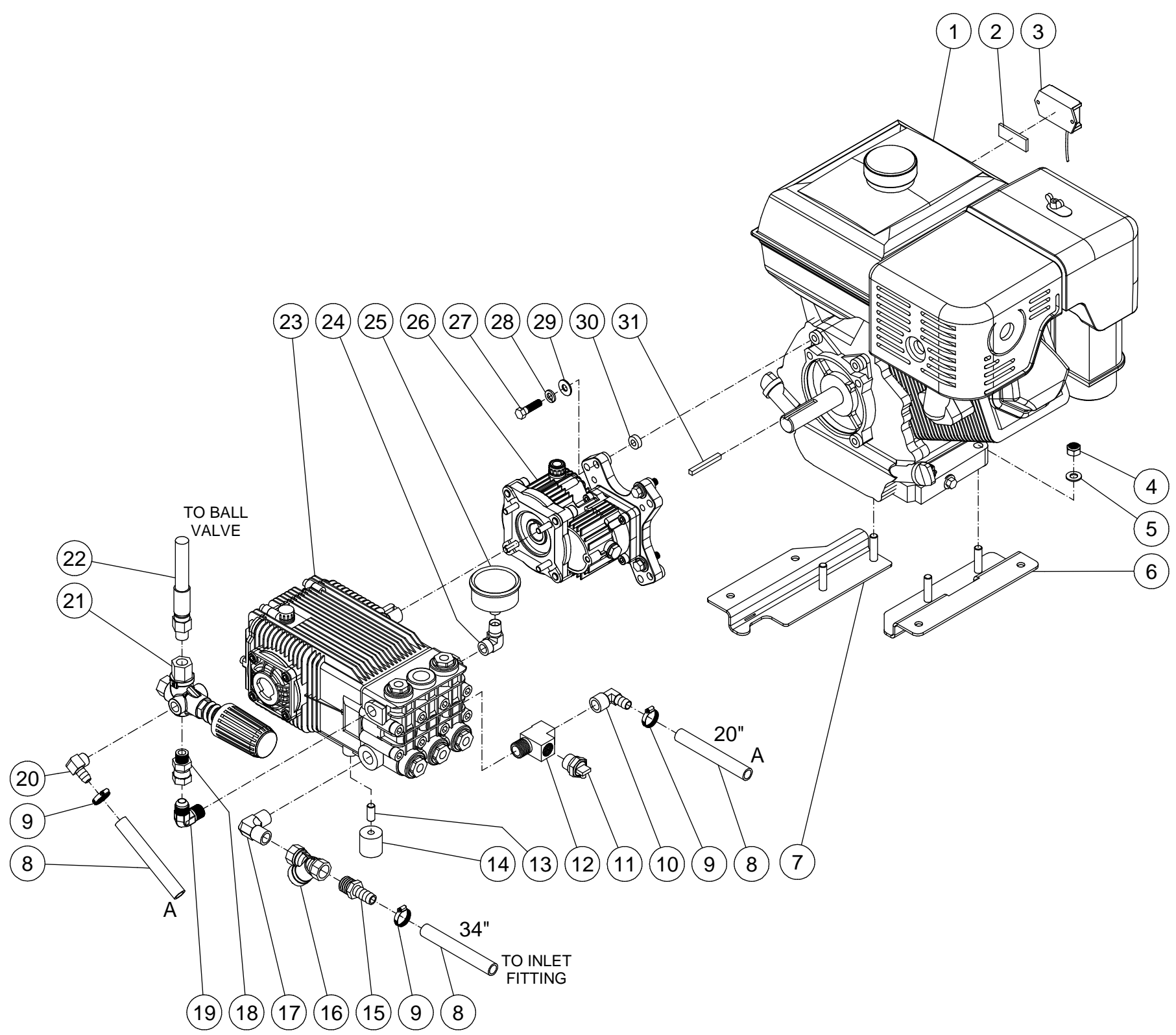
SCALE: NTS DATE: 2/8/2015 DRAWING SIZE: B APPD: DRAWN BY: ALC

DPW-4000-0AHU PUMP/ENG ASSY

DRAWING/PART NO: DPW-4000-0AHU PUMP/ENG ASSY

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**APPENDIX B -
PUMP ASSEMBLY
PARTS**



ITEM	PART #	VENDOR	DESCRIPTION	R/Q	QTY
1	1-0086	DPW4-301	ENGINE - HONDA 13HP RECOIL GX390		1
2	33-0503	DPWA-33-0503	DOUBLE SIDED WHITE FOAM TAPE	2.00"	1
3	32-0416	DPWA-313	GAUGE-DIGITAL TACH/HOURMETER		1
4	30-3159	DPW-30-3159	HEX NYLON LOCKNUT-ZINC M10-1.5		4
5	28-0004	DPW-28-0004	WASHER - ZI SAE 3/8"		4
6	20-1388A77	DPW4-128R	MOTOR Z PLATE - RIGHT		1
7	20-1387A77	DPW4-128	MOTOR Z PLATE - LEFT		1
8	15-0007	DPW-307-1	HOSE 1/2 250psi	4.50'	1
9	42-0011	DPW-309-4	SS WORM CLAMP 3/8"-1"		3
10	23-0418	DPW4-309-2	ELBOW 90°- 1/2" MNPT x 1/2" BARB		1
11	22-0005	DPW-309-6	VALVE - THERMAL RELIEF 1/2MNPT		1
12	23-0124	DPW4-309-1	TEE - 1/2M X 1/2F X 1/2F STREET		1
13	31-2020		M10-1.5mm X 23mm THREADED STUD		1
14	14-0140	DPW4-129	VIB/ISO 30mm X 30mm HEIGHT		1
15	23-0045	DPW-309-2	BARB 1/2M X 1/2 HOSE		1
16	23-0514	DPW2-309-5	1/2NPT Y FILTER - BRASS		1
17	23-0386	DPW4-309-6	ELBOW - 1/2 MNPT 90 DEG BRASS		1
18	24-0037	DPW4-24-0037	3/8 MNPT X #8 FJIC SWIVEL		1
19	24-0092	DPW4-24-0092	ELBOW-3/8M X #8JIC M 90° STEEL		1
20	23-0050	DPW4-309-3	ELBOW 3/8M X 1/2" HOSE BARB-BRASS		1
21	8-0633	DPW4A-302-UL	UNLOADER- PULSAR W/CAP		1
22	15-0197	DPW-305	HOSE - 3/8 ID X 3/8 M SWIVEL X 3/8M X 28"		1
23	3-0213	DPW4A-302	PUMP - SXW1535NL		1
24	24-0004	DPWA-24-0004	ELBOW - 3/8 MNPT X 1/4 FNPT		1
25	22-0465	DPW-309-7	GAUGE - 0-5000PSI 2 1/2"DIA BACK MOUNT		1
26	47-0039	DPW4A-47-0039	GEARBOX 1" SHAFT 1:2.24 RATIO		1
27	27-0118	DPWN2U-27-0118	BOLT - HHCS - ZI GR5 3/8-16 x 1 1/4	X	4
28	29-0008	DPWN2U-29-0008	LOCKWASHER - ZI MED 3/8		4
29	28-0022	DPW-28-0022	WASHER - ZI STANDARD 5/16"		4
30	46-1470	DPW4A-46-1470	SPACER	X	4
31	43-0078	DPW4-43-0078	KEY - 1/4" SQ x 2 1/8"		1

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SCALE: NTS DATE: 2/8/2015 DRAWING SIZE: B APPD: DRAWN BY: ALC

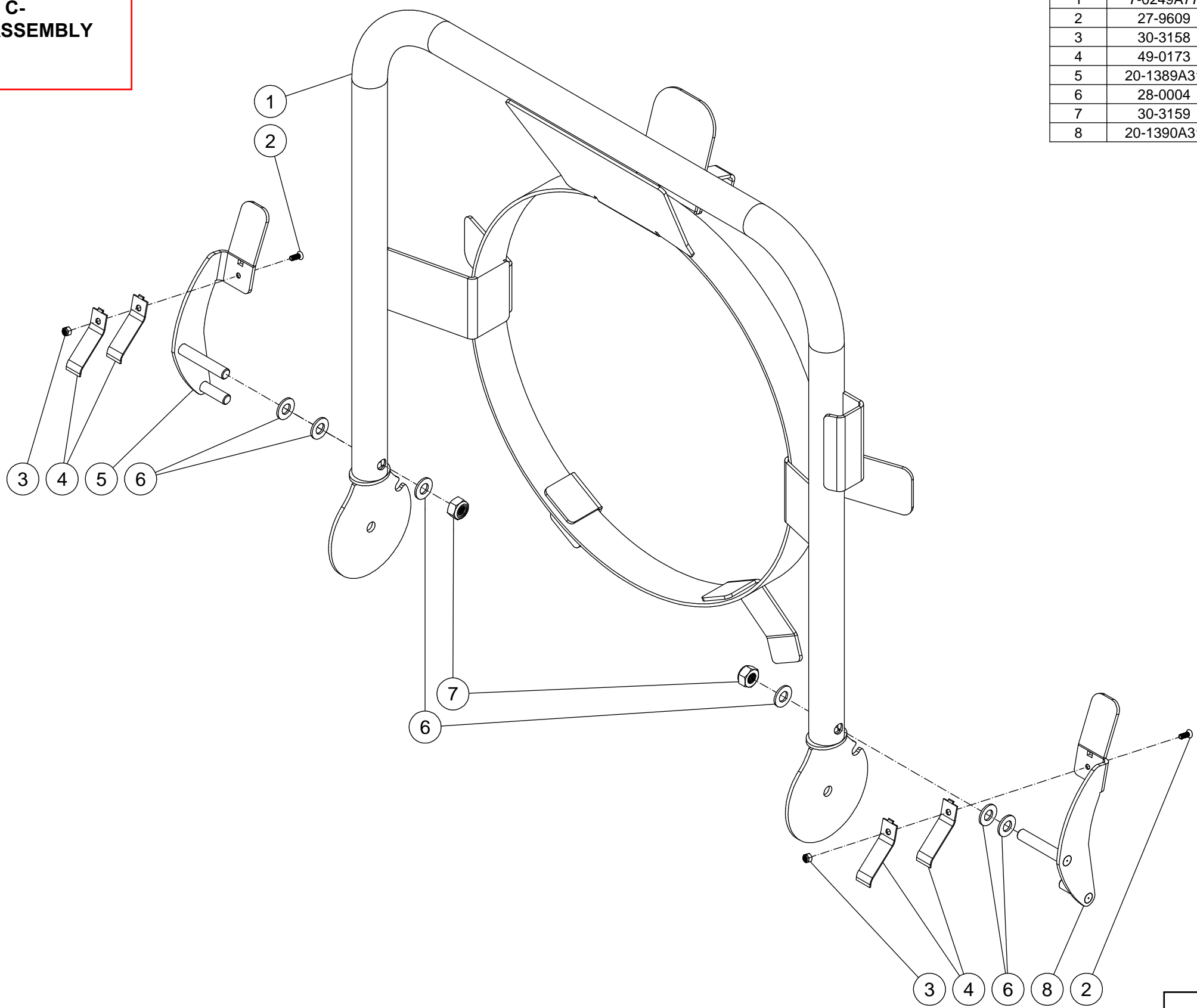
DPW-4000-0AHA PUMP/ENG ASSY

DRAWING/PART NO: DPW-4000-0AHA PUMP_ENG ASSY

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**APPENDIX C-
HANDLE ASSEMBLY
PARTS**

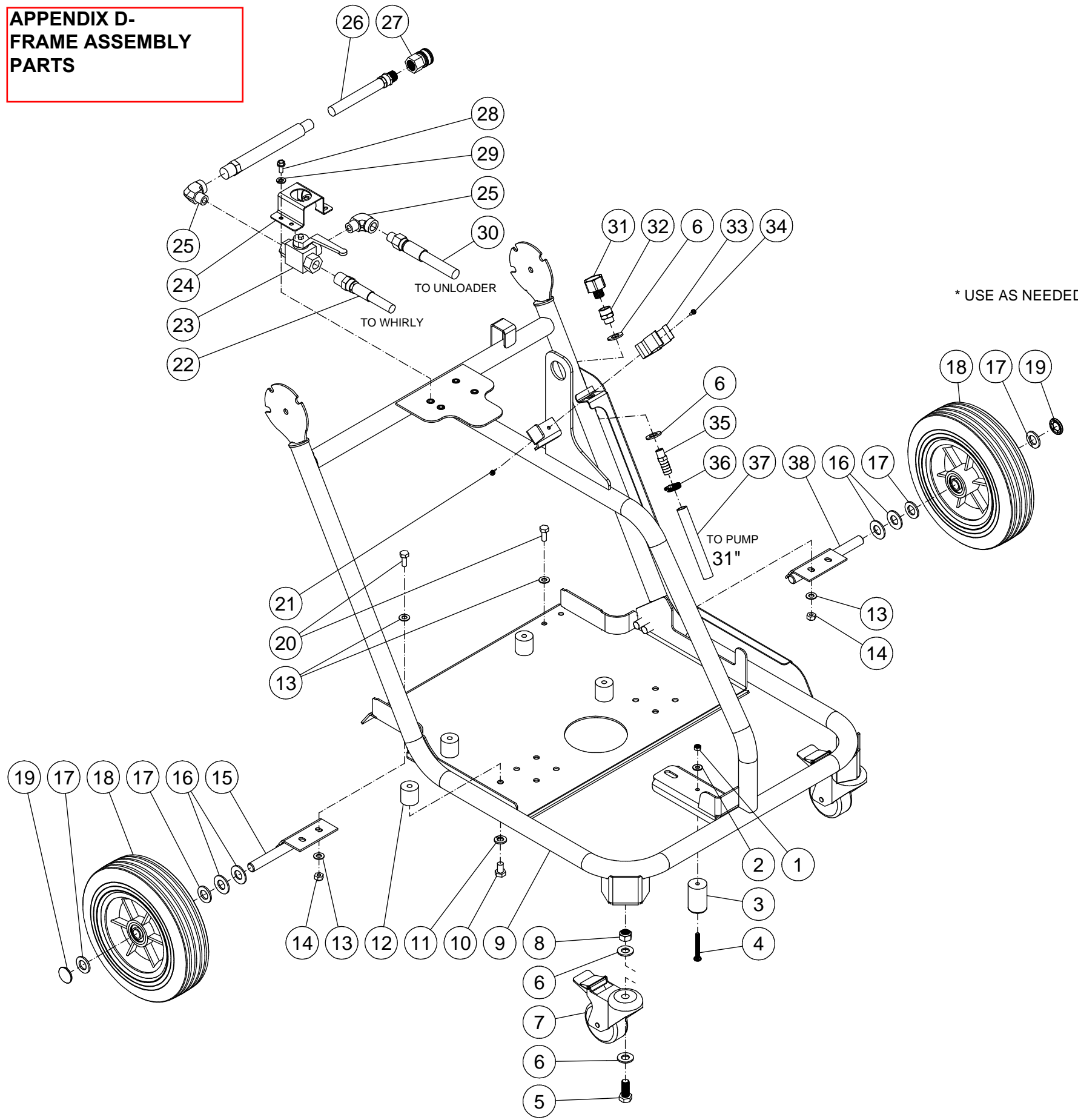
ITEM	PART #	VENDOR	DESCRIPTION	QTY
1	7-0249A77	DPW4-200	HANDLE - DPW4000	1
2	27-9609	DPW-27-9609	PFHMS - M4-0.7 X 12MM	2
3	30-3158	DPW-30-3158	HEX NYLON LOCKNUT-ZINC M4-0.7	2
4	49-0173	DPW-210	LEAF SPRING- HANDLE RELEASE	4
5	20-1389A31	DPW-205	HANDLE LOCK - RIGHT	1
6	28-0004	DPW-28-0004	WASHER - ZI SAE 3/8"	6
7	30-3159	DPW-30-3159	HEX NYLON LOCKNUT-ZINC M10-1.5	2
8	20-1390A31	DPW-206	HANDLE LOCK - LEFT	1



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Mi-T-M Corporation				
SCALE: NTS	DATE: 2/8/2015	DRAWING SIZE: B	APPD:	DRAWN BY: ALC
DPW-4000 HANDLE ASSEMBLY				
DRAWING/PART NO: DPW-4000 HANDLE ASSEMBLY				

**APPENDIX D-
FRAME ASSEMBLY
PARTS**



ITEM	PART #	VENDOR	DESCRIPTION	R/Q	QTY
1	30-3157	DPW-30-3157	HEX NYLON LOCKNUT-ZINC M6-1.0		1
2	28-0002	DPW-28-0002	WASHER-ZI SAE TYPE A 1/4"		1
3	14-0118	DPW4-118	ISOLATOR - Ø 1 1/4" x 2" TALL		1
4	27-2931	DPW4-27-2931	PPHMS - M6-1.0 X 50MM		1
5	27-8499	DPW-27-8499	HHCS-ZI GR8.8 M12-1.25 X 30MM		2
6	28-0006	DPW-28-0006	WASHER - ZI SAE TYPE A 1/2		6
7	14-0141	DPW-110	CASTORS 75mm x 25mm		2
8	30-3160	DPW-30-3160	HEX NYLON LOCKNUT-ZINC M12-1.75		2
9	5-0340A77	DPW4-100	FRAME - DPW4000		1
10	27-8060	DPW4-27-8060	HHCS-ZI GR 8.8 M10-1.5P X 16mm		4
11	29-0009	DPW4-29-0009	LOCKWASHER - MED 7/16		4
12	14-0140	DPW4-129	VIB/ISO 30mm X 30mm HEIGHT		4
13	28-0003	DPW-28-0003	WASHER-ZI SAE TYPE A 5/16"		8
14	30-3156	DPW-30-3156	HEX NYLON LOCKNUT M8 X 1.25P X 6mm		4
15	20-1385A77	DPW-122	RIGHT AXLE BRACKET		1
16	28-0008	DPW-28-0008	WASHER-ZI SAE TYPE A 5/8"		4
17	28-0073	DPW-125	WASHER-NYLON M16 O.D. 30MM		4
18	14-0139	DPW-121	WHEEL-10" RUBBR-SOLID GREY RIM		2
19	33-0018	DPW-126	CAP HUB 5/8"		2
20	27-8032	DPW-27-8032	HHCS-ZI GR 8.8 M8-1.25P X 20MM		4
21	30-3158	DPW-30-3158	HEX NYLON LOCKNUT-ZINC M4-0.7		2
22	15-0342	DPW2-306	HIGH PRESSURE HOSE - 1/4" X 27.5" 4000 PSI	X	1
23	22-0491	DPW-310	3 WAY BALL VALVE - 3/8" FNPT 7350PSI		1
24	20-1384A77	DPW-113	VALVE BRACKET		1
25	24-0105	DPW-309-1	ELBOW 90°- STEEL - 3/8M x 3/8F		2
26	15-0341	DPW-304	HOSE-3/8" x 33' 4000 PSI		1
27	17-0004	DPW-307-5	QC 3/8FX3/8 SOCKET BRASS		1
28	27-8001	DPW-27-8001	BOLT - HHCS M6 - 1.00P x 15mm		4
29	29-0007	DPWN2A-29-0007	LOCKWASHER-ZINC MED 5/16		4
30	15-0197	DPW-305	HOSE - 3/8 ID X 3/8 M SWIVEL X 3/8M X 28"		1
31	23-0096	DPW4-23-0096	SWIVEL - 3/8 M x 3/4 F GARDEN HOSE - BRASS		1
32	23-0047	DPW-307-4	COUPLING 1/4F X 3/8F HEX BRASS		1
33	42-0059	DPW-130	CLIP-SPRING WAND HOLDER		1
34	27-2770	DPW-27-2770	PPHMS M4-0.7X16MM - SS		2
35	23-0120	DPW-307-2	HOSE BARB 1/4" M NPT x 1/2" - BRASS		1
36	42-0011	DPW-309-4	SS WORM CLAMP 3/8"-1"		1
37	15-0007	DPW-307-1	HOSE 1/2 250psi	2.59'	1
38	20-1386A77	DPW-123	LEFT AXLE BRACKET		1

* USE AS NEEDED

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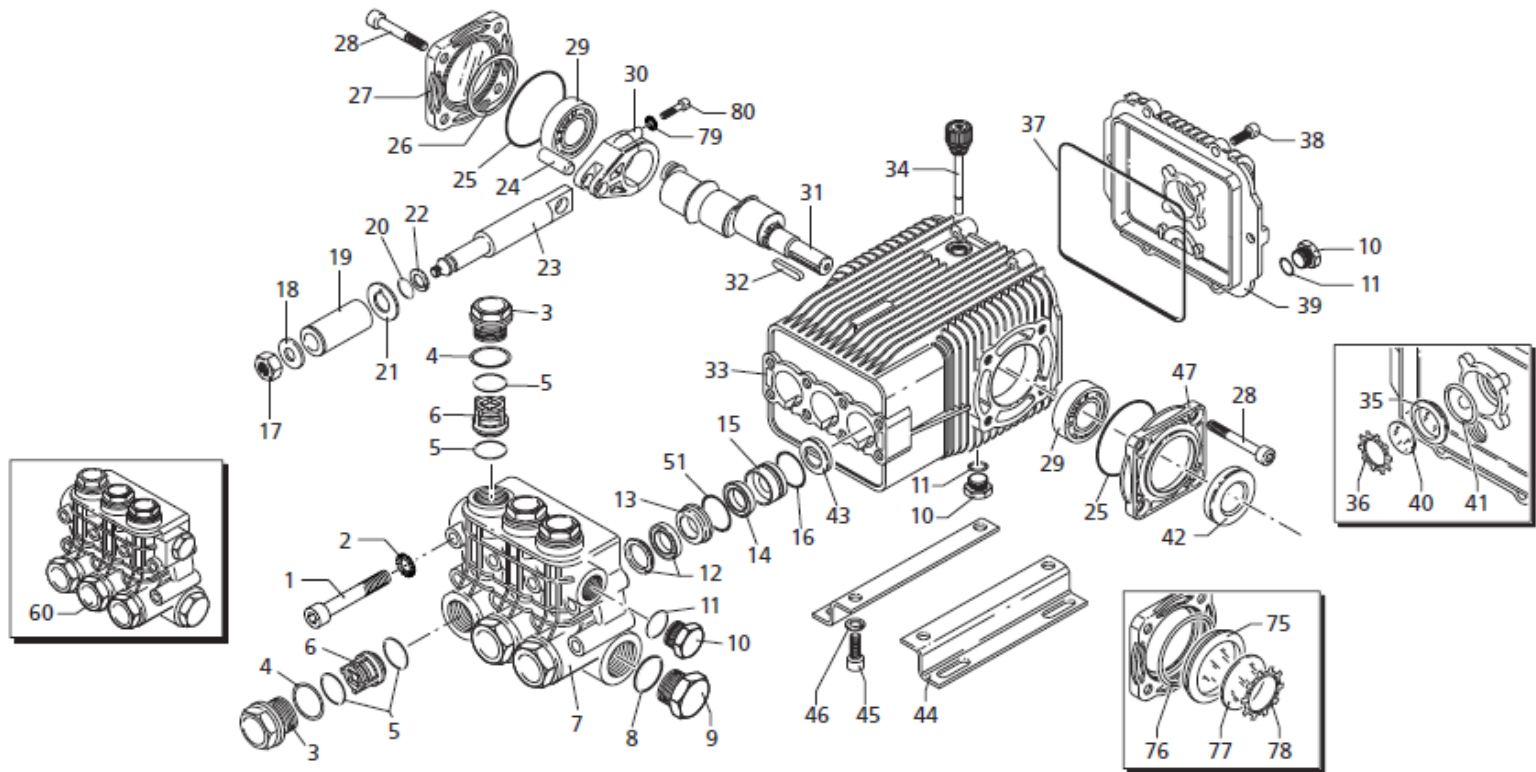
Mi-T-M Corporation

SCALE: NTS	DATE: 2/8/2015	DRAWING SIZE: B	APPD:
DPW-4000 FRAME ASSY			
DRAWING/PART NO: DPW-4000 FRAME ASSY			

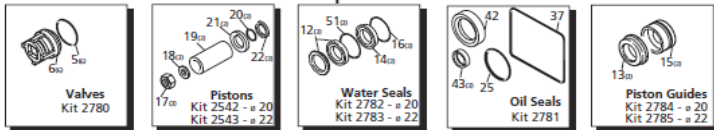
2.59'

APPENDIX E - PUMP PARTS BREAK DOWN

Model AR XW15.30N



Repair Kits



Special Parts / Kits

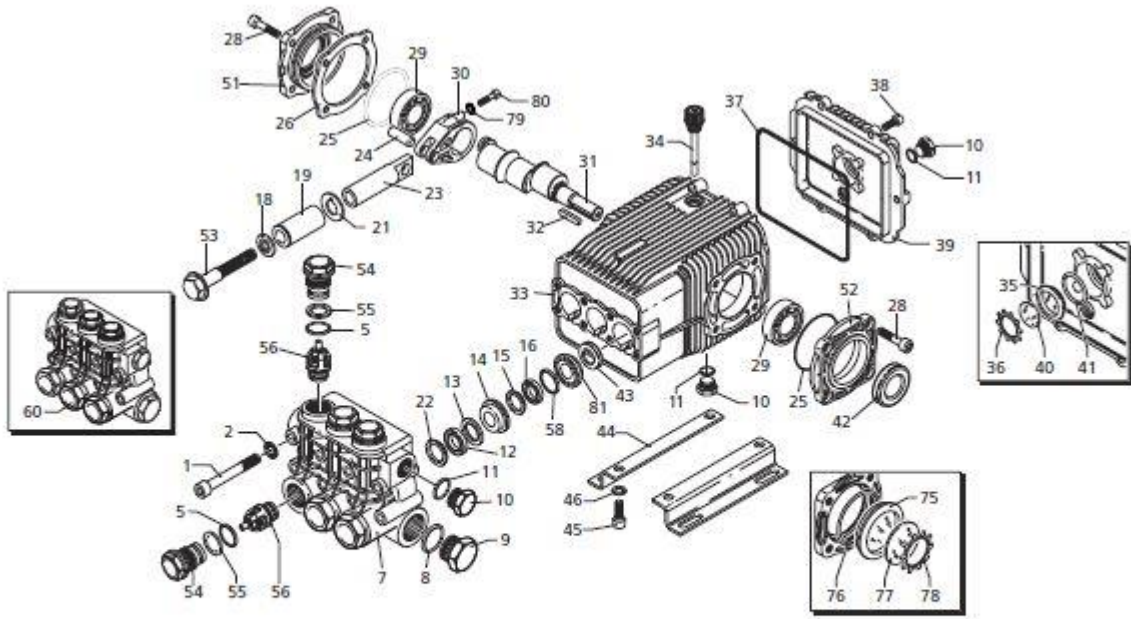
Code	Description	Qty.
2778	Viton water seals ø20	1
2779	Viton water seals ø22	1
980069	Packing extractor	1
2748	Rail kit 1-1/4" - 2 Rails - 4 Bolts - 4 Washers	1

Pos	Code	Description	Qty.	Pos	Code	Description	Qty.
1	1940260	Head bolt M10x80	(442 invlts) 8	28	850370	Bolt M8x16	(217 invlts) 8
2	650530	Washer	8	29	1941370	Bearing	2
3	1940140	Valve cap	(602 invlts) 6	30	1140410	Bearing	2
3	1941970	Valve cap 1/4" threaded	(602 invlts) 1	31	1940050	Con-rod	(89 invlts) 3
4	1940150	Ring	6	31	1940520	Crankshaft 24mm	1
5	1140450	O-Ring ø20.24x2.62	12	31	1940180	Crankshaft 24mm	1
6	1949050	Complete valve	6	31	1940160	Crankshaft 24mm	1
7	1940021	Pump head	1	32	650250	Key	1
7	1941210	Pump head	1	33	1941330	Pump housing	1
8	550350	O-Ring ø23.81x2.62	1	34	1140370	Vented oil cap	1
9	1140300	Plug 3/4" G	1	35	1260250	Oil sight glass	1
10	1980740	Plug 3/8" G	3	36	1260430	Snap ring	1
11	740290	O-Ring ø14x1.78	3	37	1940410	O-Ring ø132x3	1
12	1940440	High pressure packing w/ring	ø20 3	38	1200430	Bolt M6x16	(89 invlts) 6
13	1940270	High pressure packing w/ring	ø22 3	39	1949010	Compete cover	1
13	1940430	Front piston guide	ø20 3	40	1780690	Contrast disc	1
14	1940200	Front piston guide	ø22 3	41	1140450	O-Ring ø20.24x2.62	1
14	1940470	Low pressure seal	ø20 3	42	820680	Oil seal	1
14	1940480	Low pressure seal	ø22 3	43	1940560	Oil seal	3
15	1940450	Rear piston guide	ø20 3	44	1940370	Rail 1-1/4"	2
15	1940460	Rear piston guide	ø22 3	45	1940380	Bolt	4
16	820490	O-Ring ø34.65x1.78	3	46	200231	Washer	4
17	1940570	Nut	(106 invlts) 3	47	1941240	Open bearing support	1
18	1940580	Washer - Copper	3	51	1941220	Slit O-Ring	3
19	1420430	Piston	ø20 3	60	1949200	Complete pump head	ø20 1
19	1420120	Piston	ø22 3	60	1949203	Complete pump head	ø22 1
20	880840	O-Ring ø9.25x1.78	3	75	1941270	Oil sight glass	1
21	960460	Slinger	3	76	100410	O-Ring ø34.6x2.62	1
22	1940120	Back-up ring	3	77	1941260	Contrast disc	1
23	1940070	Guiding piston	3	78	1941290	Seal	1
24	1940060	Piston pin	3	79	1380510	Con-rod bolt	6
25	1941380	O-Ring ø66.34x2.62	2	80	1381550	Lockwasher	6
26	1941390	Shim 0.05 mm	1-3				
26	1941400	Shim 0.10 mm	1-3				
26	1941410	Shim 0.19 mm	1-3				
26	1941420	Shim 0.25 mm	1-3				
27	1949011	Side cover w/sight glass	1				

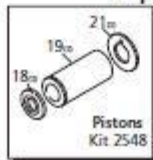
MODEL DPW-4000

Legend			
ø 20	ø 20	ø 20	ø 22
For ●	For ○	For ■	For ▲
XW15.15	XW21.20	XW26.12	XW30.10
XW15.20	XW21.25	XW26.15	XW30.15
XW15.30	XW21.28	XW26.20	XW30.20
		XW26.23	XW30.25

Model 2: SXW15.35



Repair Kits



Special Parts / Kits

Code	Description	Qty.
2748	Rail kit 1-1/4" - 2 Rails - 4 Bolts - 4 Washers	1

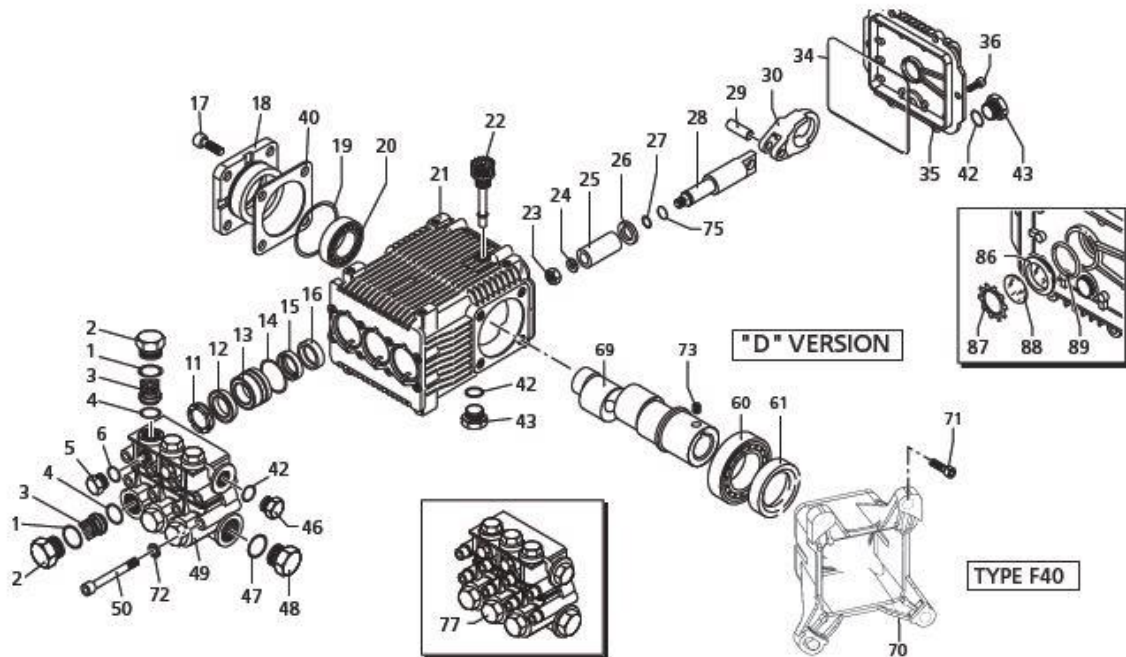
Pos	Code	Description	Qty.	Pos	Code	Description	Qty.
1	1940260	Head bolt M10x80	(442 inlbs) 8	40	1780690	Sight glass back cover	1
2	650530	Washer	8	41	1140450	O-Ring ø20.24x2.62	1
5	880830	O-Ring ø15.54x2.62	6	42	820680	Seal	1
7	1940930	Pump head	1	43	1940560	Oil seal	3
8	180101	O-Ring ø17.5x2	1	44	1940370	Base 1-1/4"	2
9	820361	Plug 1/2" G	1	45	1940380	Bolt M10x18	4
10	1980740	Plug 3/8" G	3	46	200231	Washer	4
11	740290	O-Ring ø14x1.78	3	51	1949011	Side cover w/sight glass	1
12	1941200	High pressure packing	3	52	1941240	Open bearing support	1
13	1941050	Support ring	3	53	1940920	Piston-fixing screw	(62 inlbs) 3
14	1942470	Piston guide	3	54	1940940	Valve cap	(531 inlbs) 6
15	1941350	Support ring	3	55	1941070	Back-up ring	6
16	1941340	Low pressure seal	3	56	1949051	Complete valve	6
18	1340600	Washer - Copper	3	58	820490	O-Ring ø34.65x1.78	3
19	1941020	Piston	3	75	1941270	Oil sight glass	1
21	1383190	Slinger	3	76	100410	O-Ring ø34.6x2.62	1
22	1941190	Support ring	3	77	1941260	Contrast disc	1
23	1940960	Guiding piston	3	78	1941290	Seal	1
24	1940060	Con-rod pin	3	79	1380510	Con-rod bolt	6
25	1941380	O-Ring ø66.34x2.62	2	80	1381550	Lockwasher	6
1941390	Shim 0.05 mm	1-3	81	1942480	Piston guide	3	
1941400	Shim 0.10 mm	1-3					
1941410	Shim 0.19 mm	1-3					
1941420	Shim 0.25 mm	1-3					
28	850370	Bolt M 8x16	(217 inlbs) 8				
29	1140410	Bearing	2				
30	1940050	Con rod	(88 inlbs) 3				
31	1940980	Crankshaft 24mm	• 1				
	1940970	Crankshaft 24mm	○ 1				
32	650250	Key	1				
33	1941330	Pump housing	1				
34	1140370	Oil cap	1				
35	1260250	Oil sight glass	1				
36	1260430	Snap ring	1				
37	1940410	O-Ring ø132x3	1				
38	1200430	Bolt M6x16	6				
39	1949010	Complete cover	1				
					AR64516	Oil	2
						Oil CAPACITY - 32 oz	

Legend

ø 18	ø 18
For ●	For ○
SXW15.35	SXW21.35



Model 3: RKV3.5G40HD-F24



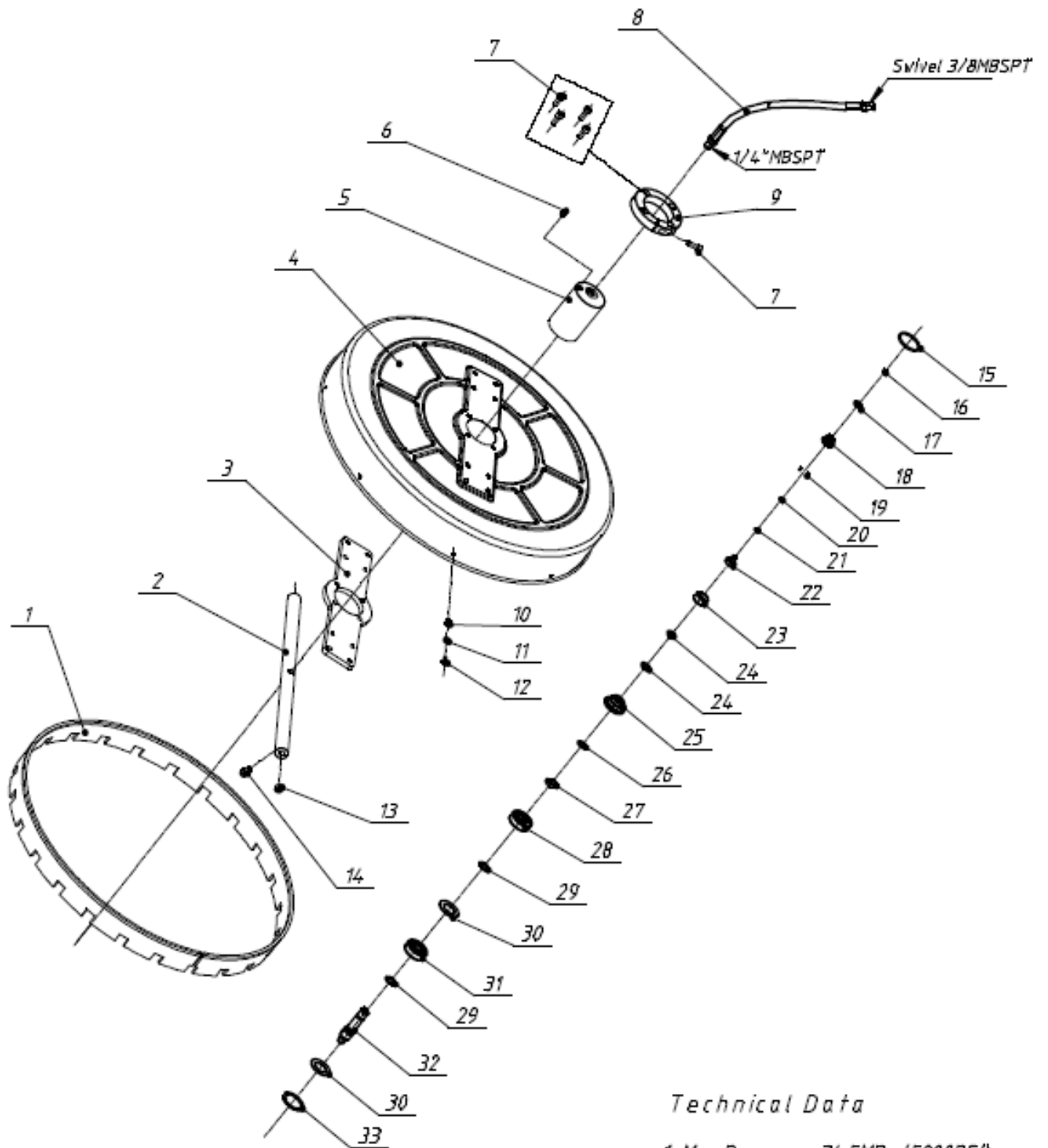
Repair Kits	
	
	
	

Special Parts / Kits		
Code	Description	Qty.
2809	Viton water seals $\phi 18$	1

Pos	Code	Description	Qty.	Pos	Code	Description	Qty.	
1	960160	O-Ring $\phi 17.86 \times 2.62$	6	1380120	Shim 0.10 mm	1-3		
2	960090	Valve cap - Brass (478 inlbs) $\phi 6$	6	1380130	Shim 0.20 mm	1-3		
3	960850	Valve cap - SS (478 inlbs) $\times \blacklozenge \square$ 6	6	1380530	Shim 0.25 mm	1-3		
4	960090T	Valve cap - 1/4" threaded - Brass (478 inlbs) 1	1	1382810	Shim 0.05 mm	1-3		
5	960850T	Valve cap - 1/4" threaded - SS (478 inlbs) 1	1	740290	O-Ring $\phi 14 \times 1.78$	3		
6	889052	Complete valve	6	43	1980740	Plug 3/8" G - Brass	2	
7	880830	O-Ring $\phi 15.54 \times 2.62$	6	46	1980740	Plug 3/8" G - Brass	$\phi \bullet 1$	
8	880581	Plug 1/4" G - Brass	2	47	1981180	Plug 3/8" G - NP	$\times \blacklozenge \square 1$	
9	1380690	Plug 1/4" G - NP	2	48	180101	O-Ring $\phi 17.5 \times 2$	$\bullet 1$	
10	820510	O-Ring $\phi 10.82 \times 1.78$	2	49	820361	Plug 1/2" G - Brass	$\phi \bullet 1$	
11	960110	Support ring	3	50	960870	Plug 1/2" G - NP	$\times \blacklozenge \square 1$	
12	880320	High pressure packing	3	51	1381071	Pump head - Brass	$\phi \bullet 1$	
13	1380090	Piston guide	3	52	1381070	Pump head - NP	$\times \blacklozenge \square 1$	
14	961240	O-Ring $\phi 31.47 \times 1.78$	3	53	820150	Head bolt M8x70	(27 inlbs) 8	
15	880330	Gasket	3	54	1380320	Bearing	1	
16	1383130	Oil seal	3	55	621170	Oil seal	1	
17	850370	Bolt M8x16	(217 inlbs) 8	56	1380220	O-Ring $\phi 72.75 \times 1.78$	1	
18	1380050	Closed bearing support	1	57	2280140	Hollow shaft $\phi 1$	$\phi \times 1$	
19	640030	O-Ring $\phi 59.99 \times 2.62$	2	58	2280130	Hollow shaft $\phi 1$	$\bullet \times 1$	
20	2280240	Bearing	1	59	2280590	Hollow shaft $\phi 1$	$\blacklozenge 1$	
21	1382770	Pump housing	1	60	2280600	Hollow shaft $\phi 1$	$\square 1$	
22	880130	Vented oil cap	1	61	70	2281510	Gas engine flange F40	1
23	962010	Nut M8	(106 inlbs) 3	62	71	180030	Bolt	4
24	962000	Washer $\phi 8.1$	3	63	1381850	Washer	8	
25	1380940	Ceramic piston	3	64	820440	Set screw M6x6	1	
26	1380950	Slinger	3	65	1080401	Back-up ring	3	
27	600180	O-Ring $\phi 7.66 \times 1.78$	3	66	2289208	Complete pump head	$\phi \bullet 1$	
28	1380920	Guiding piston	3	67	2289209	Complete pump head	$\bullet 1$	
29	1380060	Piston pin	3	68	2289221	Complete pump head	$\times \blacklozenge \square 1$	
30	1383020	Con rod - Bronze	3	69	86	1260250	Oil sight glass	1
31	1383050	Con rod - Aluminum	3	70	87	1260430	Snap ring	1
32	1780510	O-Ring	1	71	88	1780690	Contrast disc	1
33	1789010	Complete cover	1	72	89	1140450	O-Ring $\phi 20.24 \times 2.62$	1
34	1343510	Bolt M6x14	(89 inlbs) 6					

Legend			
$\phi 18$	$\bullet 18$	$\blacklozenge 18$	$\square 18$
For ϕ	For \bullet	For \blacklozenge	For \square
RKV3.5G25	RKV4G30A	RKA4.5G32	RKV5.5G40H
RKV3.5G30	RKV4G30	RKV4.5G40H	
RKV3.5G37	RKV4G36		
	RKV4G37		
For \blacksquare	For \times	For \star	
RKV4G32	RKV3.5G35H	RKV4G35H	
	RKV3.5G40H	RKV4G40H	

APPENDIX F- ROTARY CLEANER EXPLODED PARTS



Technical Data

1. Max Pressure: 34.5MPa (5000PSI).
2. Max Flow Rate: 16.9L/min (4.46GPM).

33	GB/T893.1	Snap Ring	1	
32	F32102	Rotor Shaft	1	
31	GB/T 292	Bearing 7302AL	1	
30	F32115	Bearing Spacer 4.5x41.7x0.8	2	SS 304
29	F32116	Bearing Spacer 15.3x22x0.8	2	SS 304
28	GB/T 276	Bearing S6302-Z	1	
27	F32107	Bearing Back-up Ring	1	SS 420
26	GB/T 894.1	Snap Ring	1	SS
25	F32104	Bearing Retainer, Big	1	SS 420
24	GB/T 3452.1	O-ring 14.2X2.4	2	FKM-70
23	F32103	Bearing Retainer, Small	1	H59 Cu
22	F32106	Stem	1	SS 420
21	F32117	Backup ring 6.1x8.5x1.2	1	PTFE
20	GB/T 3452.1	O-ring 4.47x1.78	1	EPDM-70
19	F32108	Pin	2	SS 420
18	F32105	Bolt	1	H59 Cu
17	GB/T 3452.1	O-ring 14.2x1.9	1	FKM-80
16	F32109	Spring 0.8x7x8.5	1	SS
15	GB/T 3452.1	O-ring 40.94x2.62	1	FKM-70
14	F51048	Nozzle 25020	2	SS 420
13	F10131	Screw (MNPT1/4)	2	H59 Cu
12	GB/T 9074.1	Screw M6x14	8	SS
11	GB/T 97.1	Washer 6	8	SS
10	GB/T 889.1	Nut M6	8	SS
9	F32013	Clamp Ring	1	ADC 6061
8		1/4"Hose, 800mm Length	1	
7	GB/T 70.1	Screw M8x20	5	
6	F32110	Grease Nipple	1	
5	F32101	Swivel Housing	1	ADC 6061
4	F32052	Deck	1	SS 304
3	F32009	lower Plate	1	ADC 6061
2	F32012	Spray Bar	1	ADC 6061
1	F32020	Brush Assembly	1	
No.	Code	Description	Qty	Material

[Type text]

APPENDIX G- RISK ASSESSMENT

PRODUCT RISK / HAZARD ASSESSMENT TABLE	
PRODUCT NAME: DUAL PRESSURE WASHER DPW-4000	Assessment Carried Out By: MICHAEL CHEN
MANUFACTURER: MAKINEX	Document Revision Number: 001
OPERATOR COMPETENCY: PLANT LICENCE NOT REQUIRED	Date Created: 05/08/2013

No:	TYPE / NATURE OF RISK or HAZARD	LIKELIHOOD	CONSEQUENCE	RISK LEVEL	CONTROL ACTION	
						LIKELIHOOD
1.0	1.1 CONTACT WITH FLUID UNDER PRESSURE	PERSONAL INJURY BY WATER JET FROM SPRAY GUN	MINOR	3	MEDIUM	NEVER POINT SPRAY GUN AT OTHER PEOPLE OR USE HIGH PRESSURE WATER TO CLEAN PEOPLE, ANIMALS, CLOTHING AND FOOTWEAR
	1.2	PERSONAL INJURY BY WATER JET FROM ROTARY CLEANER	MINOR	4	LOW	NEVER PLACE ANY PART OF YOUR BODY WHILST THE ROTARY CLEANER IS IN OPERATION UNDER PRESSURE
	1.3	EXCESS PRESSURE AND/OR DAMAGED ACCESSORIES CAUSING BLOW OUT OF AIR OR WATER	NEGLIGIBLE	5	LOW	ENSURE EQUIPMENT IS OPERATED PROPERLY
2.0	2.1 IMPACT/CUTTING	POTENTIAL IMPACT FROM BACK SPRAY CONTAINING WATER/OR DEBRI	NEGLIGIBLE	4	LOW	WEAR APPROPRIATE PPE (e.g. GOGGLES AND WATER PROOF CLOTHING ETC)
	2.2	STRIKE WITH UNCONTROLLED HOSE OR COUPLING	NEGLIGIBLE	5	LOW	ENSURE HIGH PRESSURE WASHER IS OPERATED AND MAINTAINED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS WEAR APPROPRIATE PPE (e.g. GOGGLES AND WATER PROOF CLOTHING ETC)
3.0	3.1 SLIPS/TRIPS/FALLS	SLIP, TRIP OR FALL DUE TO UNEVEN, SLIPPERY OR STEEP WORK SURFACES	NEGLIGIBLE	4	LOW	TAKE EXTRA CAUTION WHEN OPERATING ON UNEVEN, SLIPPERY OR STEEP WORK SURFACES ALWAYS WEAR APPROPRIATE FOOT WEAR
	3.2	SLIP, TRIP OR FALL DUE TO POOR HOUSEKEEPING	NEGLIGIBLE	4	LOW	ENSURE THAT APPROPRIATE HOUSEKEEPING STANDARDS ARE MAINTAINED AT ALL TIMES TO MINIMISE THE RISK OF A SLIP, TRIP OR FALL ALWAYS WEAR APPROPRIATE FOOT WEAR
	3.3	TRIPPING ON HOSES	NEGLIGIBLE	4	LOW	MAKE SURE TO REEL HOSES NEATLY
4.0	4.1 BURNS/FIRE	PERSONAL INJURY – BURNS WHILST DOING MAINTENANCE ON MACHINE	NEGLIGIBLE	4	LOW	BE CAUTIOUS OF HOT PARTS (SUCH AS MUFFLERS). ALLOW TO COOL BEFORE MAINTENANCE/ADJUSTMENTS
	4.2	FIRE/EXPLOSION WHILST REFUELLING ENGINE	MAJOR	3	MEDIUM	SHUT OFF MACHINE AND ALLOW TO COOL BEFORE REFUELLING. NEVER REFUEL WHILE MOTOR IS RUNNING. DO NOT SMOKE AND ENSURE REFUELLING IS UNDERTAKEN IN WELL VENTILATED AREA (OUTSIDE, CLEAR OF IGNITION SOURCES)
5.0	5.1 ELECTROCUTION	ELECTROCUTION DUE TO WATER IN CONTACT WITH LIVE ELECTRICAL EQUIPMENT	FATALITY	2	HIGH	ENSURE PRESSURE WASHER IS NOT DIRECTED TO LIVE ELECTRICAL EQUIPMENT
	5.2	ERGONOMIC INJURY	MAJOR	2	HIGH	STAFF TRAINING ON CORRECT LIFTING PROCEDURE
7.0	7.1 NOISE	HEARING DAMAGE DUE TO LONG TERM USE	MAJOR	3	MEDIUM	ALWAYS WEAR HEARING PROTECTION WHILST OPERATING AND/OR IN CLOSE VICINITY OF THE MACHINE

<p>"LIKELIHOOD LEVEL" REFERS TO THE PROBABILITY OF AN EVENT HAPPENING. THE FOLLOWING SCALE HAS BEEN USED TO DESCRIBE THE LIKELIHOOD OF A DEFINED RISK / HAZARD EVENT OCCURRING DURING NORMAL OPERATION OF THE EQUIPMENT: NOTE THAT LIKELIHOOD EVALUATION IS QUALITATIVE AND BASED ON BEST ESTIMATION VIA CONSULTATION AND EXPERIENCE:</p> <ol style="list-style-type: none"> 1. VERY LIKELY 2. LIKELY 3. UNLIKELY 4. VERY UNLIKELY 	<p>"CONSEQUENCE" REFERS TO THE SEVERITY OF INJURY CAUSED DUE TO AN EVENT OCCURRING, USING THE FOLLOWING SCALE AS DEFINED BY THE "HAZPAK" DOCUMENT:</p> <ol style="list-style-type: none"> 1. FATALITY = INJURIES RESULT IN DEATH 2. MAJOR = NORMALLY IRREVERSIBLE INJURIES 3. MINOR = REVERSIBLE INJURIES REQUIRING SEVERAL DAYS OFF 4. NEGLIGIBLE = ABLE TO BE TREATED USING FIRST AID 	<p>"RISK LEVEL" REFERS TO THE SEVERITY OF A RISK BASED ON THE "LIKELIHOOD LEVEL" AND "INJURY LEVEL". INHERENTLY, AS THE CONSEQUENCE INCREASES IN SEVERITY, RISK INCREASES - EVEN WHEN LIKELIHOOD IS LOW - THE FOLLOWING SCALE HAS BEEN USED:</p> <ol style="list-style-type: none"> 1. HIGH = POTENTIAL DEATH, PERMANENT DISABILITY, OR MAJOR STRUCTURAL DAMAGE. 2. MEDIUM = POTENTIAL TEMPORARY, DISABILITY, OR MINOR STRUCTURAL DAMAGE. 3. LOW = POTENTIAL INCIDENT THAT HAS THE POTENTIAL TO CAUSE PERSONS TO REQUIRE FIRST AID.
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NOTES:

- > THIS PRODUCT HAS BEEN DESIGNED AND MANUFACTURED AS A PRESSURE WASHER ONLY
- > THIS DOCUMENT HAS BEEN PREPARED ACCORDING TO GUIDELINES AND RECOMMENDATIONS FOUND IN:
 1. 'HAZPAK' PRODUCED BY THE WORK-COVER AUTHORITY AND THE AUSTRALIAN STANDARDS 4024.1-4/5 - 1996
 2. 'SAFEGUARDING OF MACHINERY - PART 1: GENERAL PRINCIPLES AUSTRALIAN STANDARD, AS/NZS 3760 IN-SERVICE SAFETY INSPECTION AND TESTING OF ELECTRICAL EQUIPMENT.

