

SILENT OIL-FREE AIR COMPRESSORS

OPERATION MANUAL



PLEASE READ THE INSTRUCTIONS CAREFULLY BEFORE OPERATION

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1 INTRODUCTION

Our WONDER Silent series of oil-free air compressors are made from the highest quality and provide a large flow rate while generating a stable source of oil-free gas. The whole system is made in accordance with the requirements for high flow, low noise, automatically controlled 'dry' gas – particularly designed for dental practices. The compressor can be set to shut down or start up by setting a minimum or maximum value.

2 SAFETY GUIDELINES

**DANGER – AN IMMEDIATE HAZARD THAT WILL
CAUSE SERIOUS INJURY OR LOSS OF LIFE.**

1. TO REDUCE THE RISK OF FIRE OR EXPLOSION, NEVER SPRAY FLAMMABLE LIQUIDS IN A CONFINED AREA. It is normal for the motor and pressure switch to produce sparks while operating. If sparks come into contact with vapours from gasoline or other solvents, they, may ignite, causing a fire or explosion. Always operate the compressor in a well-ventilated area. Do not smoke while spraying. Do not spray where sparks or flame are present. Keep compressor as far from spray area as possible.

2. The solvents Trichloroethane and Methylene Chloride can chemically react with aluminium used paint spray guns, paint pump etc, and cause an explosion. If you are using these solvents, use only stainless-steel spray equipment. This does not affect your air compressor, but may affect the equipment being used.
3. Never directly inhale the compressed air produced by a compressor. It is not suitable for breathing purposes.

WARNING – A POTENTIAL HAZARD THAT COULD CAUSE SERIOUS INJURY OR LOSS OF LIFE

1. Do not weld on the air tank of this compressor. Welding on the air compressor tank strength and cause an extremely hazardous condition. Welding on the tank in any manner will void the warranty.
2. Never use an electric air compressor outdoors when it is raining or on a wet surface, as it may cause an electric shock.
3. This unit starts automatically. ALWAYS shut off the compressor, remove the plug from the outlet, and bleed all pressure from the system before servicing the compressor, and when the compressor is not in use.
4. Check the manufacturer's maximum pressure rating for air tools and accessories. Compressor outlet pressure must be regulated as to never exceed the maximum pressure rating of the tool.
5. High temperature and moving parts are present under the shroud. To prevent burns or other injuries. DO NOT operate with the shroud removed. Allow the compressor components to cool down before handling or servicing.
6. Be certain to read all labels when you are spraying paints or toxic materials, and follow the safety instructions. Use a respirator mask if there is a chance of inhaling anything you are spraying. Read all instructions and be sure that your respirator mask will protect you.
7. Always wear safety goggles or glasses when using an air compressor. Never point any nozzle or sprayer towards a person or any part of the body.
8. Do not adjust the pressure switch or relief valve for any reason. Doing so will void all warranties as they have been pre-set at the factory for the maximum pressure.

CAUTION – A POTENTIAL HAZARD THAT MAY CAUSE MODERATE INJURY OR DAMAGE TO EQUIPMENT

1. Drain the moisture from the tank daily. A clean/dry tank will help prevent corrosion.
2. Pull the pressure relief valve ring daily to ensure that the valve is functioning properly, and to clear the valve of any possible obstructions.
3. To provide proper ventilation for cooling, the compressor must be kept to a minimum of 31cm (12 inches) from the nearest wall in a well-ventilated area.
4. Fasten the compressor down securely if transporting is necessary. Pressure must be released from the tank before transporting.
5. Protect the air hose and electric cord from damage and puncture. Inspect them weekly for weak or worn spots and replace if necessary.

3 OPERATION AND ADJUSTMENT

1. While operating the air compressor, make sure it is soundly situated on a levelled surface. The environment is to be dry, with sufficient ventilation, and free from particles such as dust. If these requirements can't be met, the filter must be increased.
2. Check for blockages in the gas circuit by opening and closing the output valve without connecting power. Then plug the power cord into the power outlet (power outlet must have good grounding), run the motor, close the valve, and the starting procedure is completed.
3. When the pressure gauge, which indicates the pressure level, has reached the maximum, pressure control will automatically disconnect and the motor will shut down and then restart when pressure level drops to less than 4 Bar. If power supply is suspended before the pressure has reached maximum, the motor can be restarted by restoring power and having the pressure lowered to less than 4 Bar. The minimum and maximum limits for the motor to shut-down and restart are set from factory, and the user generally can't adjust these values.
4. Connecting the appliance to the valve e.g. through pipeline, air fitting; open exhaust valves can supply gas to the equipment directly.
5. If the supply voltage range is not within $\pm 10\%$ of the recommended standard voltage, the air compressor will not work correctly and it can cause damage to the motor and electrical components of the air compressor. If the standard voltage cannot be met, power stabilisers and boosters may be applied to reach the desired voltage.
6. The tank will accumulate some condensed moisture, so the air compressor must be drained at least once a week (or daily if using the compressor on a daily basis). Switch the power off before draining, open the exhaust valves and then unscrew the bottom seal lock of the tank. The silencer should also be washed due to the accumulation of dust, at least once a week.
7. Use the screw on top of the regulator to control the pressure. The cut off pressure has been set and adjusted from the factory and is not to be adjusted by users as it may exceed the design parameters and damage the air compressor.

4 PRESERVATION

1. This compressor is oil-free; adding oil in an attempt to lubricate will void all warranty.
2. Use of an extension cord can cause voltage drop and overheat the motor. DO NOT use extension cords and always use the closest power supply available.
3. Operating temperature range is from 5°C to 40°C.
4. Do not water the whole unit when cleaning the air compressor; use a soft dry cloth to clean the dust and be careful to not damage the components.
5. After operation, turn off the power supply and switch off the air supply.

5 CAUTION

1. Never unscrew any connecting parts when the tank is in a pressurised condition.
2. Never disassemble any electrical parts before connecting the plug.
3. Never adjust the safety valve carelessly.
4. Never use the compressor in place where the voltage is too low or too high.
5. Never use an electric wire less than 4mm² and more than 5m in length.
6. Never disconnect the plug to stop the compressor, set switch to OFF position instead.
7. If the release valve doesn't work as the motor stops, find the cause immediately to prevent any chances of damaging the motor.
8. Lubricating oil must be clean. Oil level should be kept in the red circle of leveller.
9. Never run the compressor continuously unsupervised or overnight.

6 TROUBLESHOOTING

Problem	Possible cause	Solution
The motor does not start or starts slowly.	<ol style="list-style-type: none"> 1. The power is not connected. 2. Low voltage from the power supply. 	<ol style="list-style-type: none"> 1. Plug the compressor into a suitable power source. 2. Check that the voltage is within $\pm 10\%$ of the specification. Use of an extension cord can cause voltage drop and overheat the motor. Use the closest available power supply.
The motor does not start and makes a humming noise.	<ol style="list-style-type: none"> 1. Capacitor has burnt out. 	<ol style="list-style-type: none"> 1. Repair or replace the capacitor.
The compressor has stopped and will not start.	<ol style="list-style-type: none"> 1. The air tank is full. 2. The lever is in the OFF position. 3. The Overload switch has activated due to overheating. 	<ol style="list-style-type: none"> 1. Release the air in the tank until the pressure drops to less than 4 Bar and the compressor restarts. 2. Move the lever to the ON position. 3. Check that the mains voltage is within $\pm 10\%$ of the specification. Use of an extension cord can cause voltage drop and overheating. Press the overload switch and then plug in the compressor to the closest available power supply.
Pressure in the tank drops during operation.	<ol style="list-style-type: none"> 1. Air is leaking at a connection 2. Drain valve/plug is open 	<ol style="list-style-type: none"> 1. Let the compressor build pressure in the tank to the maximum if possible. Brush soapy water on air connection and look for air bubbles. Tighten leaking connections. 2. Close the drain valve/plug.

Solenoid valve leaks when compressor is idle.	<ol style="list-style-type: none"> 1. Non-return valve seal is defective. 2. Solenoid valve coil is defective. 	<ol style="list-style-type: none"> 1. Let the air in the tank flow out until the pressure is released. Remove the non-return valve plug and clean the valve sea. If necessary, replace the seal and then reinstall the components. 2. Let the air in the tank flow out until the pressure is released. Remove and inspect the solenoid valve coil. Replace if necessary.
The compressor is noisy with metallic clangs.	<ol style="list-style-type: none"> 1. Compressor head gasket broken or the valve is faulty. 	<ol style="list-style-type: none"> 1. Stop the compressor and contact your closest seller.
The compressor does not reach the maximum pressure.	<ol style="list-style-type: none"> 1. There is air leaking from a connection. 2. Drain valve/plug is open. 3. Compressor head gasket broken or valve faulty. 	<ol style="list-style-type: none"> 1. Let the compressor build pressure in the tank to the maximum if possible. Brush soapy water on air connections and look for air bubbles. Tighten the leaking connections. 2. Close the drain valve/plug. 3. Stop the compressor and contact your closest seller.
The compressor doesn't seem to provide as much air as it did when first purchased and/or the compressor cuts off within a short time period.	<ol style="list-style-type: none"> 1. The pressure switch needs readjusting. 2. The tank is full of water due to condensation. 	<ol style="list-style-type: none"> 1. Stop the compressor and contact your closest seller. 2. Open the ball valve and release the pressure. Open the drain valve/plug and release the water within the tank.
The motor pump unit does not stop when the tank reaches its maximum working pressure and the safety valve vents air.	<ol style="list-style-type: none"> 1. Pressure switch is defective and/or needs adjusting. 	<ol style="list-style-type: none"> 1. Stop the compressor and contact your local seller.

7 MAINTENANCE

The product, from the date of purchase (invoice contains date), will contain a 6-months warranty that covers any malfunctioning due to faulty parts unless caused by natural phenomena, man-made damage, or disaster e.g. lightning increasing voltage supply, flooding. The appearance and wearing down of parts are not included in the warranty. After the warranty period, we can still provide services for maintaining the quality of the air compressor, but a cost may be applied.

Draining the Compressor Tank

The frequency at which you should drain the air tank depends on the environmental conditions (altitude, humidity etc.) and the amount of operating time average logged. The draining frequency is every 2 to 3 days.

1. Place a container capable of holding water directly underneath the drain valve/plug.
2. With compressed air in the air tank, slowly open the drain valve/plug. The water in the air tank will drain out.
3. After all of the accumulated water has drained out of the tank, close the drain valve/plug until it is tight, in order to avoid leakage.

Changing the Air Filter

An air filter is installed on the compressor's air inlet. This helps prevent the dust in the air from entering the air compressor, and reduces noise.

After being used for a period of time, the air filter will become clogged. This will reduce the air intake capabilities of the air compressor, reducing performance. Therefore, the air filter must be replaced regularly.

1. Open the lid on the air filter then, remove the older filter.
2. Replace it with a new filter then, close the lid.

Testing for Leaks

Make sure all connections are tight. Do not overtighten. A small leak in any hose or pipe connection will reduce the air compressor's performance. To test for small leaks, spray a small amount of soapy water on the area suspected of leaking. If the soapy are shows bubbles, repair or replace the broken part.

Cleaning

Clean items with a soft bush, or wipe with a moistened cloth using a biodegradable solvent.

Do not use flammable liquids such as gasoline or alcohol. Always keep parts clean from dirt and dust for better performance.

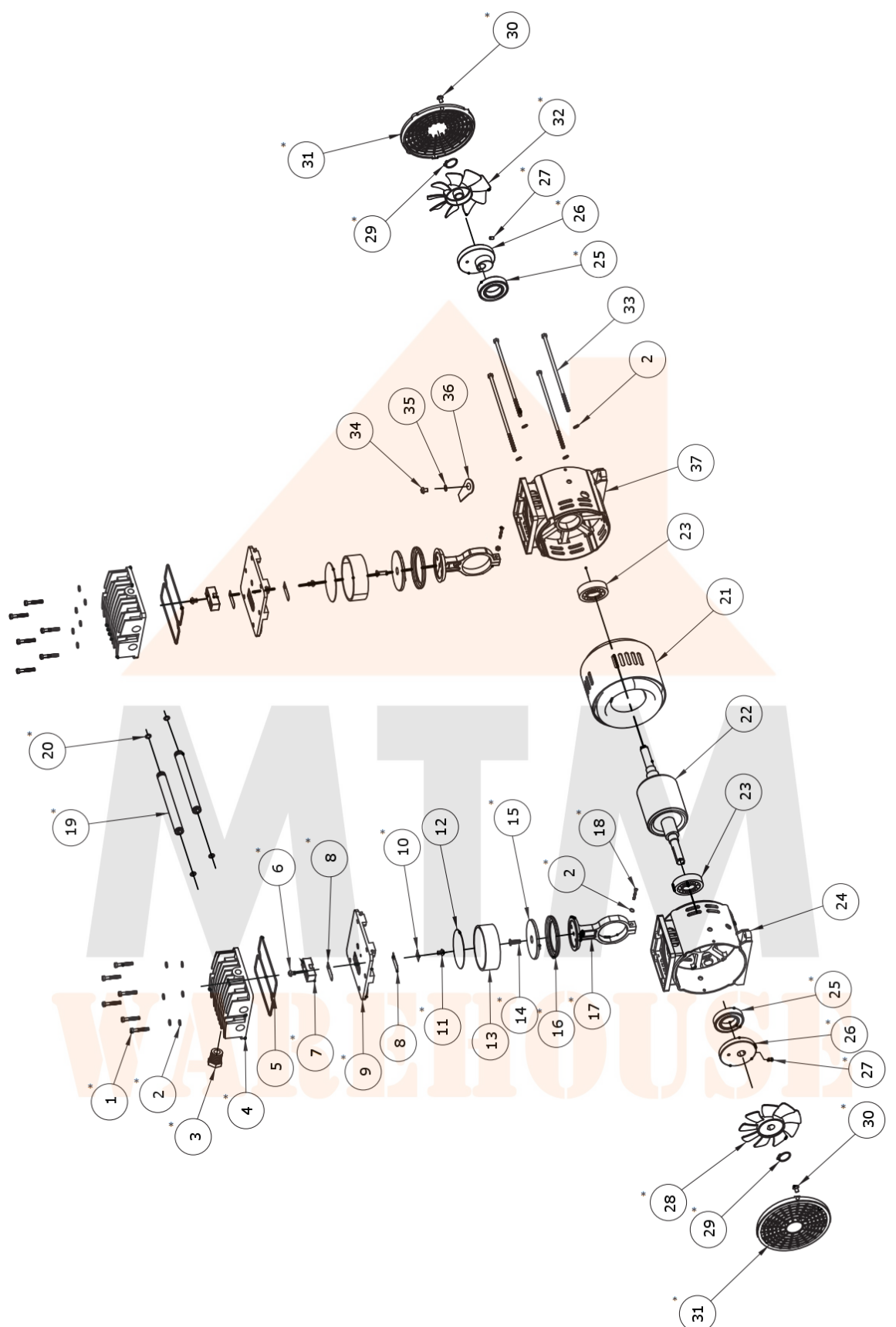
8 SPECIFICATIONS

Model: WS1D1/29 – 1HP Vertical			
Motor	750W (1HP)	Air Displacement	135L/min (4.75 cfm)
Max Pressure	8 Bar (116 psi)	Tanks	29L (7.6 Gal)
Noise	55 dB	Weight	27kg
Dimensions	40 x 40 x 54cm		

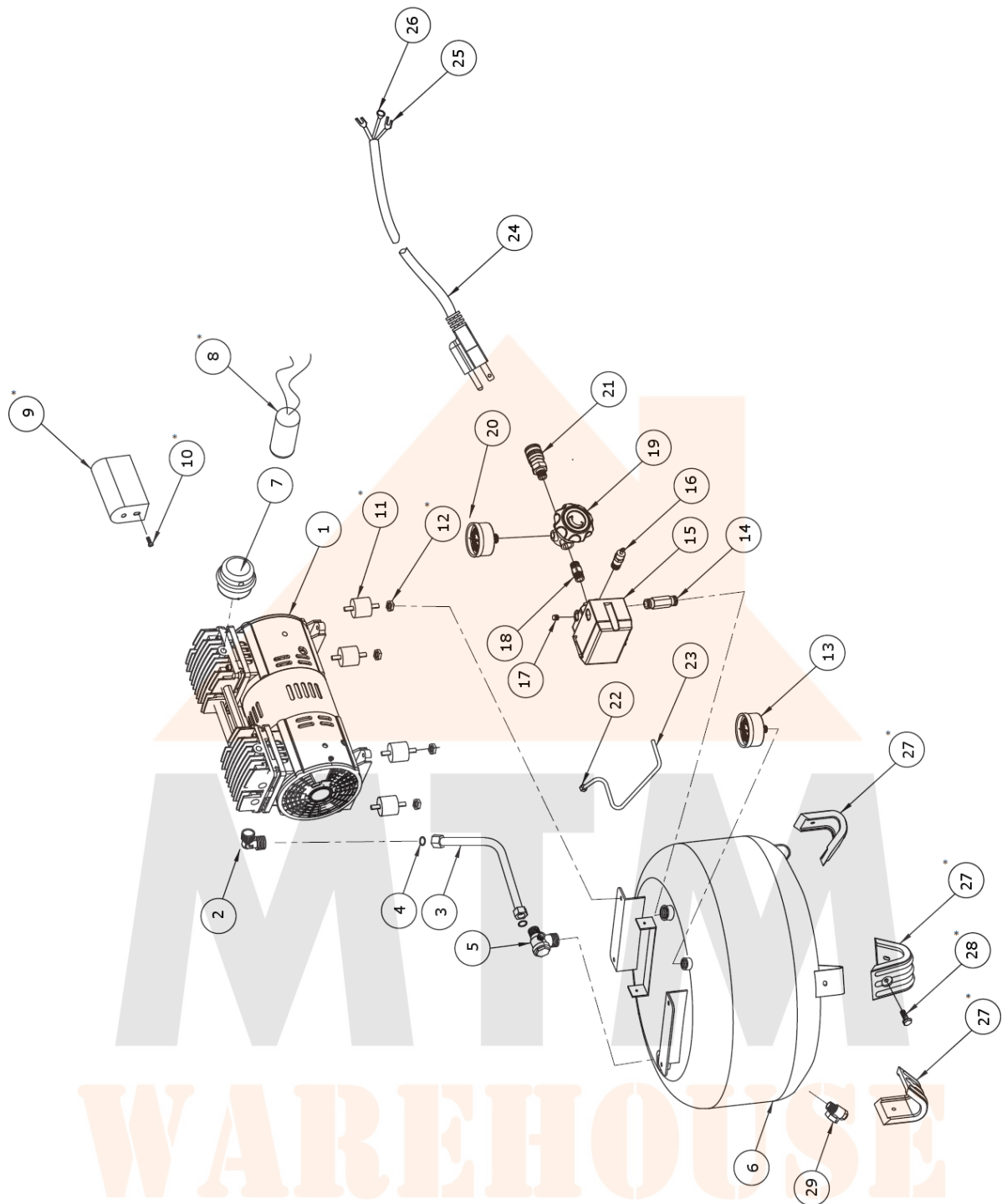
9 DIAGRAM & PART LIST

Motor					
No.	Description	Quantity	No.	Description	Quantity
1	Bolt, M5 x 30	12	26	Eccentric	2
2	Pressure Washer, M5	18	27	Eccentric Screw, M8 x 10	2
3	Relief Valve	1	28	Fan (Left)	1
4	Cylinder Head	2	29	External Retention Ring	2
5	Cylinder Head Seal	2	30	Compact Screw, ST4 x 18	4
6	Screw, M4 x 8	2	31	Fan Cover	2
7	Elevation Valve Protector	2	32	Fan (Right)	1
8	Valve Tongue	4	33	Engine Bolt, M5 x 182	4
9	Valve Plate	2	34	Screw, M4 x 6	1
10	Valve Background	2	35	Washer, M4	1
11	Screw, M4 x 6	2	36	Ground Connection	1
12	O-Ring Cylinder	2	37	Rear Terminal Hood	1
13	Cylinder	2			
14	Piston Cover Screw	2			
15	Piston Cover	2			
16	Piston Ring	2			
17	Connecting Rod	2			
18	Bolt Screw, M5 x 20	2			
19	Fusion Tube	2			
20	Fusion Tube O-Ring	4			
21	Stator	1			
22	Rotor	1			
23	Tread	2			
24	Front Terminal Hood	1			
25	Tread	2			

WAREHOUSE



Assembly		
No.	Description	Quantity
1	Pump/Engine Assembly	1
2	Elbow	1
3	Exhaust pipe	1
4	Washer	2
5	Retention Valve Assembly	1
6	Tank	1
7	Filter	1
8	Condenser	1
9	Condenser Cover	1
10	Screw, M5 x 10	2
11	Rubber Cap	4
12	Nut – M6	4
13	Tank Meter, 1/8 NPT 1.5 Inches Diameter	1
14	Connector, 1/4 x 48 NPT	1
15	Pressure switch	1
16	Security Valve	1
17	Plug, 1/4 NPT	1
18	Connector, 1/4 x 30 NPT	1
19	Regulator	1
20	Output Meter, 1/8 NPT 2 Inches Diameter	1
21	Coupler	1
22	Relief Nut	1
23	Discharge Tube	1
24	Power Cord	1
25	Connector Cable (U)	2
26	Connector Cable (O)	1
27	Rubber Support	3
28	Screw, M5 x 12	6
29	Drain Valve	1





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