

### Triplex Pump Trouble shooting guide - common to all pressure cleaners

Symptoms	Cause	Action	User check	Service Agent only
No pressure	No gun/lance assembly fitted	Fit gun/lance assembly	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Unloader jammed	Replace unloader valve	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Worn unloader valve	Replace unloader valve	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Debris in pump valves	Wash out pump , flush manifold and install inlet water filter, clean valves	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pump runs normally but pressure is low or drops	Pump is sucking air	Check that hoses and fittings are tight	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Insufficient water supply	Check supply, clean or replace water filter if fitted	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Nozzle worn, missing or incorrect	Check size is correct, replace if worn	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Valves worn or dirty	Replace valves	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Unloader seat worn or damaged	Replace unloader valve	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Worn piston packing	Replace packing	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Relief valve jammed, plugged or improperly adjusted	Clean, adjust relief valve	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Cracked pistons caused by dry running	Replace pistons	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pressure fluctuates	Pump sucking air	Check that hoses and fittings are tight	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Valves are worn, dirty or stuck	Clean or replace valves	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Worn piston packings	Replace piston packings	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Back pressure in supply hose when on by-pass	Low pressure valves dirty or worn	Clean or replace low pressure valves	<input type="checkbox"/>	<input checked="" type="checkbox"/>
High pressure hose vibrates	Insufficient water supply	Check supply, clean or replace water filter if fitted.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Pump is sucking air from empty detergent tank	Refill the detergent tank	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Pump sucking air from hoses or fittings	Check that hoses and fittings are tight	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Air in water circuit	Check for leaks. Tighten all fittings. Disconnect high pressure hose and let machine run until water is flowing constantly without air	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Valves dirty or stuck	Clean or replace valves	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Machine is noisy	Pump sucking air	Check hoses and fittings are tight	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Water too hot	Reduce temperature to below 60°C	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Valves worn, dirty or stuck	Clean or replace valves	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Worn bearings	Replace bearings	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pump oil is milky (water in oil)	Worn packings & oil seals	Replace packings & oil seals	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	High humidity in air	Check and change oil more frequently	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Sand or dirt entering system	Check supply, use only clean water and fit water filter if required	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Water dripping from pump	Safety valve activated due to pressure spike	Reset safety valve, if it keeps activating refurbish or replace unloader	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Thermal dump activated	Activated if water temperature exceeds 60°C. Should reset once water in pump cools. If not, replace	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Piston seals worn/damaged	Replace piston seals	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	O-rings of piston guide or retainer worn	Replace o-rings	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Oil leak	Travel plug in use on pump	Replace with breather plug	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Loose drain plug	Check drain plug fitted correctly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Worn oil seals	Replace oil seals	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Oil level too high	Drain excess oil	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Unloader valve 'knocking' during operation	Water nozzle partially blocked	Clean water nozzle	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Water filter dirty	Clean water filter	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Unloader valve is 'knocking' when gun is closed	Gun is leaking	Clean inside gun removing any deposits or build-up	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Air in water circuit	Check for leaks. Tighten all fittings. Disconnect high pressure hose and let machine run until water is flowing constantly without air	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Damaged high pressure hose	Check and replace	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Faulty unloader valve	Replace unloader valve	<input type="checkbox"/>	<input checked="" type="checkbox"/>
No detergent supplied	Lance not set to low pressure	Adjust lance or fit detergent nozzle	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Empty detergent tank	Refill detergent tank	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Detergent valve stuck	Clean or replace	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Intake hose and/or filter dirty	Check and clean	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pressure gauge shows high pressure fluctuations when shutting off gun	Unloader valve set too high above operating pressure	Adjust the unloader at the operating pressure	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Dirty valve	Clean unloader valve (removing lime deposits etc). Grease parts before installing	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Leaky unloader at nominal pressure	Nozzle too small, too much water	Check nozzle size correct	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Worn out unloader valve	Replace unloader valve	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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Symptoms	Cause	Action	User check	Service Agent only
<b>Electric drive pressure cleaners</b>				
<b>Machine does not start</b>	Power not connected	Check plug, cable and switch	<input checked="" type="checkbox"/>	
	Wrong voltage	Check mains voltage	<input checked="" type="checkbox"/>	
	Power cable damaged	Replace cable		<input checked="" type="checkbox"/>
<b>Motor hums but does not run</b>	Voltage supply is too low	Check power supply for correct voltage	<input checked="" type="checkbox"/>	
	Pump is stuck	Manually turn motor		<input checked="" type="checkbox"/>
	Spray gun not activated	Activate spray gun when switching on	<input checked="" type="checkbox"/>	
	Cross section of extension lead too small	Use correct dimension extension lead	<input checked="" type="checkbox"/>	
<b>Motor stops suddenly</b>	Cut out switch activated due to overheating	Check power supply is correct. Disconnect machine and allow to cool off for a few minutes.	<input checked="" type="checkbox"/>	
<b>Motor trips out</b>	Unit run on excessive extension lead	Remove lead	<input checked="" type="checkbox"/>	
	Power lead or plug damaged	Fix or replace		<input checked="" type="checkbox"/>
	Excessive pressure build up	Check pressure, nozzle size, unloader setting		<input checked="" type="checkbox"/>
	Motor down to earth e.g. water ingress	Electrician to test, fix or replace		<input checked="" type="checkbox"/>
	Suction amperage cut-out set too low	Reset to correct setting		<input checked="" type="checkbox"/>
<b>Engine drive pressure cleaners ....</b> For further assistance with engine trouble shooting consult the manufacturers handbook				
<b>Machine does not start</b>	Battery dead	Recharge or replace battery		<input checked="" type="checkbox"/>
	Battery cables disconnected	Clean connections and reconnect cables		<input checked="" type="checkbox"/>
	Engine, pump or gearbox is seized	Replace or repair seized part		<input checked="" type="checkbox"/>
	Low oil shutdown is activated	Add oil to engine, consult user guide		<input checked="" type="checkbox"/>
	Low on fuel	Add fuel		<input checked="" type="checkbox"/>
<b>Engine slows down under load, whenever gun trigger is pressed</b>	Engine needs service	Consult engine service centre		<input checked="" type="checkbox"/>
<b>Hot water &amp; Steam cleaners</b>				
<b>Burner is smoking</b>	Water in the fuel tank	Empty fuel tank, clean and refill with clean fuel		<input checked="" type="checkbox"/>
	Fuel pressure incorrect	Adjust fuel pressure		<input checked="" type="checkbox"/>
	Air throttle adjusted incorrectly	Adjust air intake on fan		<input checked="" type="checkbox"/>
	Electrodes positioned incorrectly	Clean, adjust or replace as required		<input checked="" type="checkbox"/>
	Fuel nozzle dirty	Clean fuel nozzle		<input checked="" type="checkbox"/>
	Fuel nozzle worn or damaged	Change fuel nozzle		<input checked="" type="checkbox"/>
	Heating coil blocked by soot	Remove & clean heating coil		<input checked="" type="checkbox"/>
	Fuel pump dirty	Replace fuel pump		<input checked="" type="checkbox"/>
	Fuel solenoid valve not working	Replace fuel solenoid		<input checked="" type="checkbox"/>
<b>Burner will not fire</b>	Burner switch not on	Turn switch on burner	<input checked="" type="checkbox"/>	
	Diesel fuel level low	Add diesel	<input checked="" type="checkbox"/>	
	Trigger on spray gun not pulled	Squeeze trigger to fire burner	<input checked="" type="checkbox"/>	
	Fuel filter blocked	Clean and replace if necessary		<input checked="" type="checkbox"/>
	Overload on burner motor tripped	Consult service manual		<input checked="" type="checkbox"/>
	Low water pump pressure	Trouble shoot pump (see page 105)		<input checked="" type="checkbox"/>
	Fuel blockage	Check fuel system for flow, clear blockage		<input checked="" type="checkbox"/>
	Electrode gap incorrect	Reset		<input checked="" type="checkbox"/>
	No power to electrodes	Trace power & replace faulty parts		<input checked="" type="checkbox"/>
<b>Burner cuts out during operation</b>	Fuel tank is empty (burner will produce white smoke)	Refill the fuel tank	<input checked="" type="checkbox"/>	
	Suction filter is dirty	Remove filter and clean using fuel and a brush		<input checked="" type="checkbox"/>
	Water in fuel	Empty fuel tank, clean and refill with clean fuel		<input checked="" type="checkbox"/>
	Pressure switch not functioning	Replace pressure switch		<input checked="" type="checkbox"/>
	Ignition transformer faulty	Replace transformer		<input checked="" type="checkbox"/>
	Rotation of electrodes	Adjust electrodes		<input checked="" type="checkbox"/>
	Fuel nozzle is dirty	Clean fuel nozzle		<input checked="" type="checkbox"/>
	Fuel nozzle is worn Fuel pump is faulty	Replace fuel pump		<input checked="" type="checkbox"/>
	Fuel solenoid valve not working	Replace solenoid valve		<input checked="" type="checkbox"/>
Fuse burnt out	Check & replace		<input checked="" type="checkbox"/>	
<b>Water does not reach working temperature</b>	Thermostat adjusted too low	Adjust thermostat	<input checked="" type="checkbox"/>	
	Thermostat is faulty	Replace thermostat		<input checked="" type="checkbox"/>
	Scale build up in water circuit	De-scale inside of coil		<input checked="" type="checkbox"/>
	Burner sooted	Remove & clean outside of coil & inside of cove		<input checked="" type="checkbox"/>

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