



Operations Manual

Demon Tempest Range

Tempest 1 Tempest 3 Tempest 4 Cabinet Washer

A Declaration of Conformity (E.H.S.R.)

We, Demon International Limited of Abbots Close, Lee Mill Industrial Estate, Ivybridge, Devon PL21 9GA declare that this machine must be operated in accordance with the operation and safety instructions as supplied with this machine.

This machine is manufactured in accordance with the following standards and recommendations.

HSE PVB PM29 – BS5415 Part 1 – BS5415 Section 2.4 1986

HSE PVB PM29 – BS5415 Part 1 – BS5415 Section 2.4 1986

This instruction manual is relevant only to the following machine and will not be kept updated unless specifically requested by the customer. However, any changes to the operating procedure or changes which might affect the safety of this machine will be notified to the registered owner of this machine only.

Machine Type	
Serial Number	
Working Pressure	
Date of Supply	

Technical Specifications

Tempest 1 / Auto / Cabinet Washer 240V (Blue Cable)

Pump		XT11.11	Boiler	
Pump pressure	100 bar	1500psi	Fuel type	Kerosene/gas oil/derv
Flow rate	111pm	2.45gpm	Pressure	7 bar 110psi
Max by-pass setting	110 bar	1650psi	Nozzle	1.5 US galls
Min pressure setting	50 bar	750psi	Nozzle make	Monarch 60°R or AR Danfoss 60° S
H.P nozzle	2504		Electrode gap	6mm ± 1mm
Motor power	2.2KW(MTR00100)		Ignition Transformer	70 Watts
Pump oil	10W40		Fuel pump	50 Watts
Unloader valve	VRZ TSS ARG M3		Fan motor	75 Watts
Noise			Fuse001	1 amp semi delay 20mm glass
Valve Kit	ARKIT1864		Oil Seal Kit	ARKIT1872
Seal Kit	ARKIT1874		Piston Kit	ARKIT2629

Generator size required 6KVA

Tempest 3 / Auto 110V (Yellow Cable)

Pump		XT11.11	Boiler	
Pump pressure	100 bar	1500psi	Fuel type	Kerosene/gas oil/derv
Flow rate	11 lpm	2.45gpm	Pressure	7 bar 100psi
Max by-pass setting	110 bar	1650psi	Nozzle	1.5 US galls
Min pressure setting	50 bar	750psi	Nozzle make	Monarch 60°R or AR Danfoss 60° S
H.P nozzle	2504		Electrode gap	6mm ± 1mm
Motor power	2.2KW(MTR00301)		Ignition Transformer	70 Watts
Pump oil	10W40		Fuel pump	50 Watts
Unloader valve	VRZ TSS ARG M3		Fan motor	75 Watts
Noise			Fuse002	3 amp semi delay 20mm glass
Valve Kit	ARKIT1864		Oil Seal Kit	ARKIT1872
Water Seal Kit	ARKIT1874		Piston Seal Kit	ARKIT2629

Generator size required 8KVA

Tempest 4 / Auto /Cabinet Washer 415V (Black Cable)

Pump		RK15.20H	Boiler	
Pump pressure	200bar	2900psi	Fuel Type	kerosene/gas oil/ derv
Flow rate	151pm		Pressure	7 Bar 110psi
Max by-pass setting	200bar	2900psi	Nozzle	1.75 US galls
Min pressure setting	50bar	750psi	Nozzle make	Monarch 60°R or AR Danfoss 60° S
H P Nozzle	2504		Electrode gap	6mm + 1mm
Motor power	7.5KW(MTR00220)		Ignition Transformer	70watts
Pump oil	10W40		Fuel pump	50watts
Unloader Valve	VRZ TSS ARG M3		Fan Motor	75watts
Noise			Fuse001	1amp semi delay 20mm glass
Valve Kit	ARKIT1828		Water Seal Kit	ARKIT1857
Oil Seal Kit	ARKIT1856		Piston	ARKIT2757

Tempest Cabinets fitted with low water and low fuel cut out sensors

Service Part Numbers for Tempest 1 & 3	
ARKIT1874	Seal Kit
ARKIT2812	Seals for Unloader
ARKIT1864	Valve Kit
AR1271160	Pistons
AR1980200	Unloader Seat
DB000010	Fuel Nozzle
DB000110	Electrodes
DB00250	Fuel Filter
N26001/25045	Nozzle
DEM10115	Detergent Pipe
AR1320351	Piston Guides
Tempest 4 Service Kit	
ARKIT1857	Seal Kit
ARKIT2611	Valves
AR1560320	Pistons
AR1560051	Valve Tube
ARKIT1828	H P Valves
DB000015	Fuel Nozzle
DB000110	Electrodes
DB00250	Fuel Filter
N26001/2505	Nozzle
DEM10115	Detergent Pipe
AR1380090	Seal Carriers

Fault Finder

FAULT	CAUSE	REMEDY
Machine stops suddenly or will not start	Blown Fuse	Check mains power, power overload 13 amp fuse and 1 or 3 amp control fuse.
Sudden pressure loss	No water Low water sensor activated No chemical Burst disk failure	Check water supply Fill with water Check chemical drum Close valve Replace disk
Low pressure	H.P. Nozzle worn or unloader set incorrectly.	Replace HP Nozzle Reset unloader valve
Low pressure with noise and vibration	Valves worn or blocked Piston seals worn Pump sucking air	Clean and replace as required Replace Check water supply pipe and unions
Pump will not By-pass	Non return valve dirty or jammed.	Clean or replace
Water drips from pump	Pump seals worn	Replace
Oil drips from pump bottom	Pump seals worn	Replace
Burner will not ignite	Fuel tank empty Low fuel tank sensor tripped out Fuel filter blocked Fuel nozzle blocked Electrodes dirty or out of adjustment. Flow switch out of adjustment	Refill Refill Replace Clean, replace Clean, replace or adjust Adjust
Oil is milky in colour	Water ingress through oil filter plug	Replace oil.
IF IN DOUBT ASK– OUR ADVICE IS FREE AND CAN SAVE YOU MONEY		

Minimum Service Schedules

DAILY CHECK THE FOLLOWING

- a. Oil level - top up as required.
- b. Fuel tank - top up as required.
- c. All hose unions for leaks- replace O rings if leaking.
- d. Hose condition - cuts etc.
- e. Electrical led and plug—damaged etc

EVERY 500 HOURS OR SIX MONTHS (WHICHEVER COMES FIRST)

- a. Drain and replace pump oil.
- b. Drain and refill fuel tank.
- c. Clean and reset electrodes.
- d. Replace fuel filter.
- e. Clean water filter.
- f. Replace high pressure nozzle.
- g. Replace fuel nozzle.
- h. Descale water system. (hard water areas only)

EVERY 1000 HOURS OR 12 MONTHS (WHICHEVER COMES FIRST)

- a. Complete 500 hour service.
- b. Replace pump seals.
- c. Replace oil seals.
- d. Check float level.
- e. Replace chemical pipes.
- f. Check unloading pressure and safety valve pressure and adjust.
- g. Replace fuel nozzle and set fuel pressure.
- h. Check flow switch and adjust if necessary.
- i. Check electrical connections for tightness.

The above service schedules are intended as a guide only, actual service times and replacements parts required will vary according to the area and the usage of the machine.

Preparation

- a. Connect hose to water inlet connector and turn on.
- b. Connect high pressure hose to connector.
- c. Connect lance to hose.
- d. Connect plug to suitable RCD protected supply and turn on.
- e. Top up fuel levels and check oil levels in pump and engine.
- f. If chemical is to be used place filter in drum of chemical and open valve. If not make sure valve is closed.

OPERATION TO START MACHINE

- a. Push blue switch once to start the engine.
- b. Pull trigger until operating pressure is reached.
- c. Push red switch once, burner will then operate.
- d. Burner will then ignite once trigger is pulled.
- E. Leaving the pressure washer on by-pass for prolonged periods without operating the Lance will cause the water in the pump to heat up, this heat build up may damage the Seals and valves in the pump.

OPERATION TO STOP MACHINE

- a. Close the chemical valve if opened.
- b. Switch to cold by pressing red button once and run the machine until the water turns cold.
- c. Switch off by pressing blue button once.
- d. Pull trigger to release excess pressure and disconnect from machine.
- e. If the machine is to be stored, drain water system and top up the fuel and oil levels.

Demon do not recommend the use of an extension lead using an extension lead will result in switch failure or motor damage.. Warranty claims for damaged switches and motors used on extension leads will not be allowed.

IF IN DOUBT ASK - OUR ADVICE IS FREE

Safety

- I. Under the terms of the **Health & Safety at Work Act** and for the operators protection a **Residual Current Device (R.C.D)** or Earth Leakage Trip **MUST** be used with this machine.
- ii **Water at high pressure is dangerous and can cause serious injury. This machine is to be used with great caution.**
 - a. NEVER point the high pressure spray jet at any person, animal, glass or any other material which may shatter.
 - b. PREVENT any over-spray from injuring other people or damaging property.
 - c. DO NOT even try to use a pressure washer on machinery or electrical equipment that is connected in any way to the mains supply. (all switches in the off position, pull out all plugs and if possible remove fuses). Cover or seal electric motors and fittings to prevent entry of water.
 - d. ALWAYS when using machine:-
 - wear safety goggles and helmet or helmet with a visor.
 - wear waterproof clothing and gloves.
 - take particular care with detergents and chemicals.
 - e. NEVER attempt to disconnect any hose with pressure in it or allow the hose to be flattened or kinked.
 - f. DO NOT use a high pressure hose from a ladder. Use a platform tower or proper scaffolding.
 - g. CHECK that your supply voltage agrees with that shown on the machine.
 - h. Extention leads are not recommended for use with this equipment. Fit extention hoses or contact the service department.
 - i. Where a cable is found to be damaged, the power must be switched off and the plug removed before attempting to remove the equipment.
 - j. ALWAYS disconnect the hoses when the machine is not in operation and protect the machine from frost and cold winds.
 - k. ALWAYS use the machine in a well ventilated area.

CAUTION - if using chemicals some brands will adversely affect the brass components fitted to this machine. If in doubt please telephone our technical department for advice.

Tempest Cabinet Installation Instructions

The Tempest Cabinet washer is simple to install, there are four holes in the feet for bolting to a solid surface such as a concrete plinth and a 10 mm masonry drill can be drilled to a depth to suit either raw bolts or sleeve anchors. The water supply is via a standard hose pipe to a tap and there is a stepped nipple to suit 13 mm and 19 mm pipe.

Electricity supply must be wired by a competent electrician and we recommend the supply is wired using armoured cable with an isolator nearby. If a separate supply is required for the frost protection system then this must be installed upstream of the isolator so the heater will work even if the mains supply is turned off. A fused spur is ideal for this application.

230V model – needs a D20 MCB on your distribution panel

415V model – needs a D20 triple MCB on your distribution panel

Both models – separate feed for frost protection 5 amp fused spur

Prolonged periods of cold weather

In prolonged periods of cold weather we advise turning the water off and running the machine until it is empty then disconnect all hoses and isolate from the mains power but leaving the frost protection circuit live to give some heat inside the cabinet.

Warranty

This warranty covers the cost of all replacement parts and labour charges incurred. It does not cover the cost of transport or carriage. It is the owners responsibility to return the machine to a service depot or pay the travelling expenses of a service engineer to attend. Demon International's decision in warranty matters is final and binding.

Demon International Ltd undertake to repair or replace, any component which may fail due to a manufacturing fault within a period of 12 months from the date of purchase, provided that any fault or damage was not sustained by;

- A. Lack of regular and proper maintenance, user negligence, misuse, or damage caused by ice and frost.**
- B. The effects of contaminated fuel or water, the use of non-approved chemicals or an insufficient or unsuitable electrical supply.**
- C. The effects of un-authorized modification and use.**
- D. Compression damage to high pressure hose. (HOSES WARRANTED FOR 1 MONTH ONLY)**
- E. Worn out items considered fair wear and tear.**

Parts which may or may not wear out during the first year and which are considered service items which will need replacing from time to time: High pressure nozzle, lance, trigger, hoses, fuel nozzle, fuel filter, piston seals, valves, unloader seats and seals, water filter, non-return valve, chemical barbs, chemical pipes and pump oil seals.

It is the owners responsibility to ensure the Pressure Washer is kept in a safe and suitable environment and any faults reported by operatives to be rectified at the earliest possible date.

It is the operators responsibility to check the Pressure Washer for any faults and report them immediately. The Pressure Washer must be used in accordance with the manufacturers specifications and guidelines.

Demon International Ltd undertake to use the highest quality components available during manufacture, but cannot be held responsible for any undue consequence arising from the use of there Pressure Washer.

This warranty is given to the original purchaser only and is not transferable without the fully authorised and written consent of Demon International Ltd.

Warranty Procedure

End Users

If your machine develops a problem:

1. Phone Demon for advice with the model and serial number to hand.
2. Describe fully the problem as best you can.
3. If the problem cannot be resolved over the phone then the machine can be booked in for repair and if the faults are covered by the warranty the repair will be carried out free of charge. If you cannot bring the machine in for repair then we will despatch an engineer. If the fault is covered by the warranty then we will not charge for labour or spares used, however the transport charge will be payable whether or not the repair is warranty.

Hire Centres and Dealers

If your machine develops a problem:

1. Phone Demon for advice with the model and serial number to hand.
2. Describe fully the problem.
3. We will advise you on the best course of action, however if parts are required you must raise a purchase order number to cover the parts. When the parts are fitted they must be returned for examination before a credit note is issued.
4. If you are unable to repair the machine then we will despatch an engineer to carry out the repair. We will need a purchase order to cover the cost of transport to and from the site and for parts and labour if the repair is not covered under the warranty.
5. If required Demon will arrange for a carrier to collect a damaged machine, if the warranty claim is valid we will pay this cost, if not it will be charged to the customer.
6. For parts warranty ring Demon and request a warranty claim form faxed to you. This form must accompany any returned parts.

Notes:

You will not invalidate the warranty by investigating faults and repairing them yourself providing you follow our advice. Hire Centres and Dealers are expected to carry out all repairs themselves with Demon crediting faulty parts upon receipt and inspection.

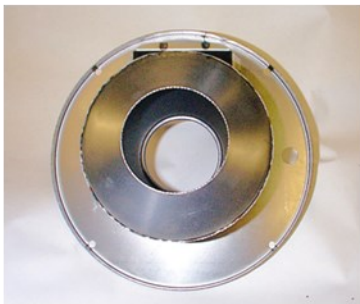
Spare parts fitted to machines are guaranteed for 1 month only or the remainder of the warranty period whichever is longer.

The water is not as hot as it used to be—Why?

The fuel nozzle in your hot water pressure washer is a wearing item. It needs to be changed regularly. When depends entirely on the quality of fuel passing through it. As the nozzle wears the droplets which are atomised become bigger until they will no longer ignite easily. The symptom of this is flames appearing up the chimney. As soon as the flames are visible half way up the square section, change your nozzle and your filter, as well as removing the fuel tank and draining out the sediment and water that will have accumulated.



Another reason for the water not getting as hot it used to, is a damaged cone. The one on the left is new and how it should look, the one on the right is burnt and has one side missing. If you strip a fuel nozzle you will find that there are three very small grooves that the fuel travels along before it leaves the nozzle.



Dirt can block one of these grooves which forces most of the fuel out of one side causing a lopsided flame, which will in time oxidise the metal causing it to flake and drop into the bottom of the coil. The flame will burn mostly on one side of the boiler and even heating of the coil will not occur leading to a loss of heat output. Other symptoms include a hot outer casing and a partially melted fuel tank.

TIP:
Change your fuel nozzle frequently and you won't need to fit a new inner drum lid & cone.

The nozzle we use is a Danfoss 1.50 US gallons per minute 60° solid nozzle. From the picture you can see that it is made up of five parts. The bits that get damaged by dirty fuel is the third and fourth items from the left. If you take one apart you will see how small the fuel grooves really are.



Demon Technical Support 01752 - 690690

I can't get the pressure to where it used to be — where do I start?



Well by now you should know to check the nozzle - assuming that is correct and you still have no or low pressure the golden rule is to connect the pump to the mains water supply - whichever machine you are testing start with a good mains feed.

1. With the gun and lance connected turn the tap on - can you see a leak? If so there is your problem, if water can leak out air can get in and the pump won't produce pressure - simple as that. (Leaks from underneath the pump are either worn seals or a cracked piston - strip to find out which.)

Remedy: Fix leak or replace seals or piston.

2. Check enough flow of water can get into the pump. Make sure all the filters are clean. The new Tempest hot water machines have a fine filter which will remove most solids. All Demon machines are now double filtered. Have you checked both of them?

Remedy: Strip and inspect filters.

3. There are no leak's what next? With the pump switched off pull the trigger, water will spray out. Keeping the trigger pulled switch the pump on, if the water spray does not improve the valves are the fault. Either worn out or dirty. Strip and inspect. (The high pressure hose will also vibrate on the ground.)

Remedy: Replace or clean valves.

4. The valves are OK there are no leaks but it still won't get up to pressure – what next? The unloader valve piston and seat are damaged or worn allowing some of the water to circulate around the cylinder head - strip and inspect, you will see any damage.

Remedy: Strip unloader and inspect - replace damaged parts.

5. My cold water pressure washer does not feel as powerful as it used to be but the pressure gauge shows the correct pressure. What causes this? The chemical pick-up has a nozzle of 1.8mm or 2.0mm size and can get partially blocked. This will allow some but not all of the water to flow to the lance.

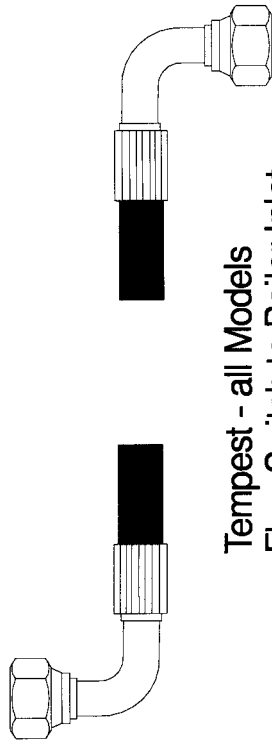
Remedy: Strip and remove the blockage.

6. The pressure remains high even when I let go of the trigger and the engine or motor is struggling or stalling. The non- return valve in the unloader is damaged or jammed.

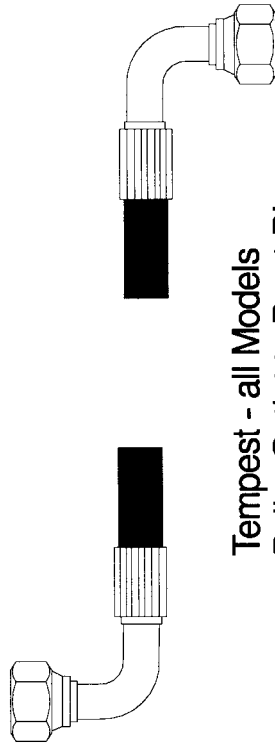
Remedy: Strip and clean or replace.

Demon Technical Support 01752 - 690690

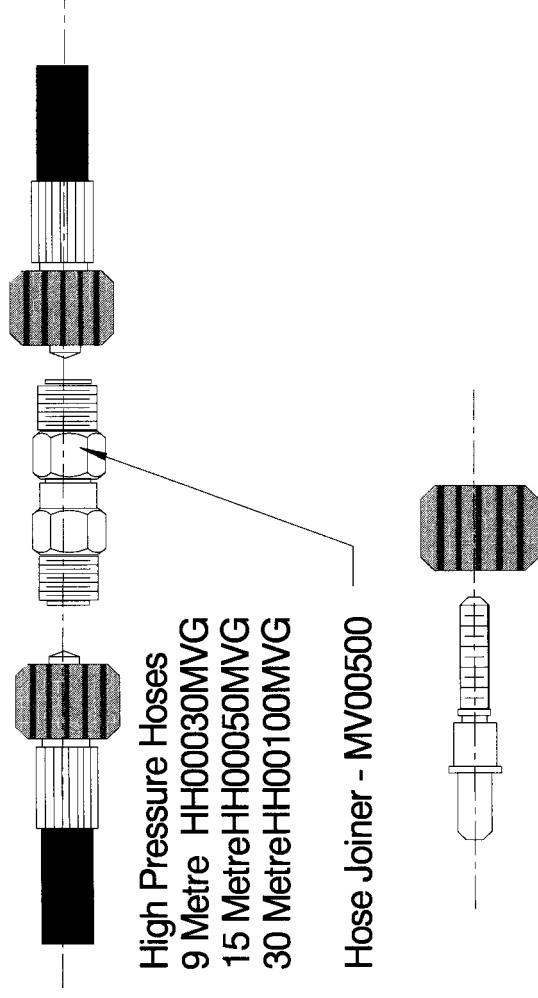
High Pressure Hoses



Tempest - all Models
Flow Switch to Boiler Inlet
HH00022 - 200mm Long



Tempest - all Models
Boiler Outlet to Burst Disc
HH00021 - 800mm Long



High Pressure Hoses
9 Metre HH00030MVG
15 Metre HH00050MVG
30 Metre HH00100MVG

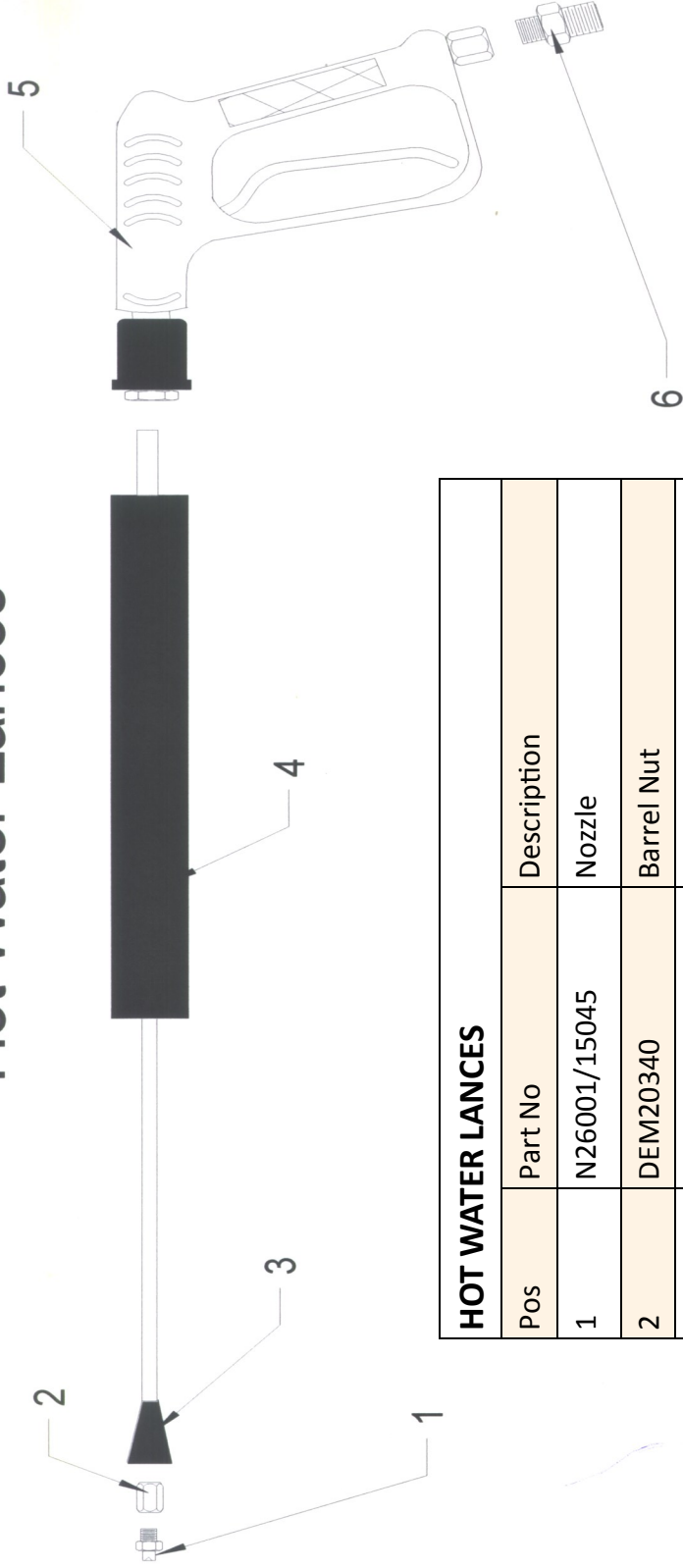
Hose Joiner - MV00500

Hose Insert and Nut MV00490

HH0049 3/8 Ferrules (R1A)

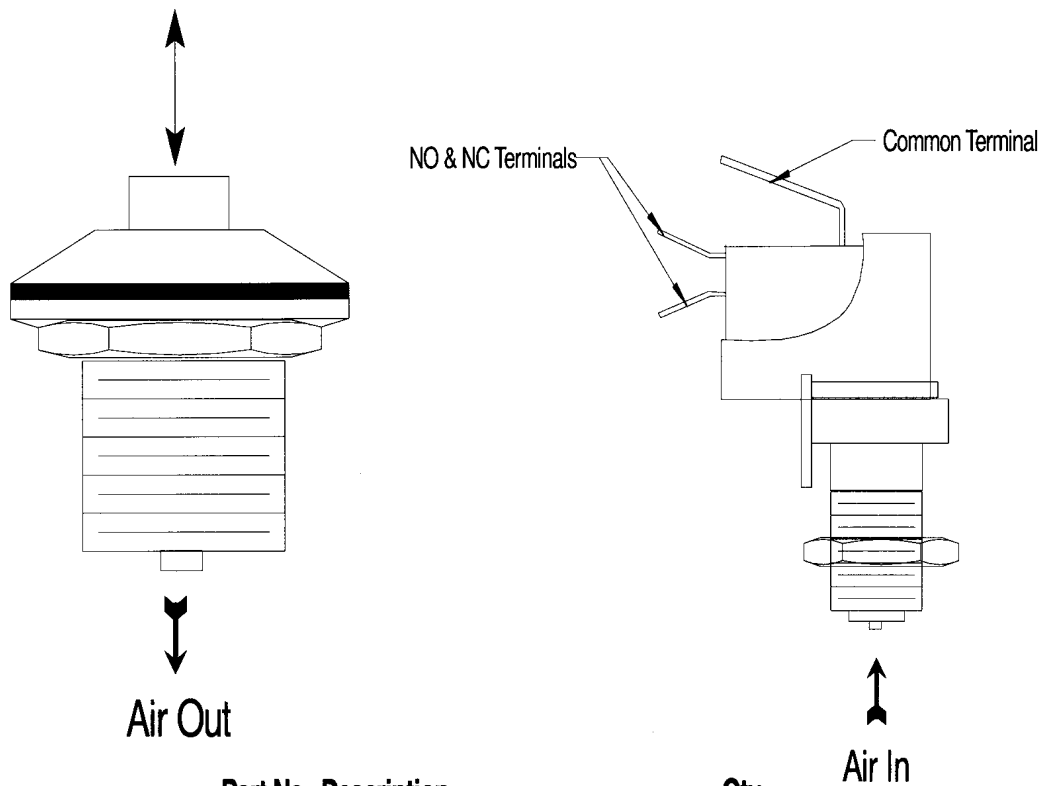
HH0053 Hose from Pump to Tap 1/2" L/P Yellow Hose

Hot Water Lances



HOT WATER LANCES		
Pos	Part No	Description
1	N26001/15045	Nozzle
2	DEM20340	Barrel Nut
3	MTM0001000	Rubber Cover
4	DEM10032B	Hot Water QR Lance
5	DEM10030	QR Trigger
6	MTM70012	MVG Nipple 3/8 male

Air operated push button and switch



Part No.	Description	Qty
H6442B	Push Button (Blue)	1
H6442R	Push Button (Red)	1
H65000	Air Pipe	2
H6871AC	Switch	2

How does this work ?

The air switch push button contains a membrane which, when the button is pushed it increases the air pressure in the air pipe which in turn activates a mechanism inside the switch.

The top terminal on the switch is a common live feed in and the other two are N/O and N/C respectively which means it does not matter which terminal you use for the switching signal.

With the Typhoon 1 you are turning the fan motor on which gives a live feed to the flow switch which in turn signals the relay to give fuel and sparks at the same time.

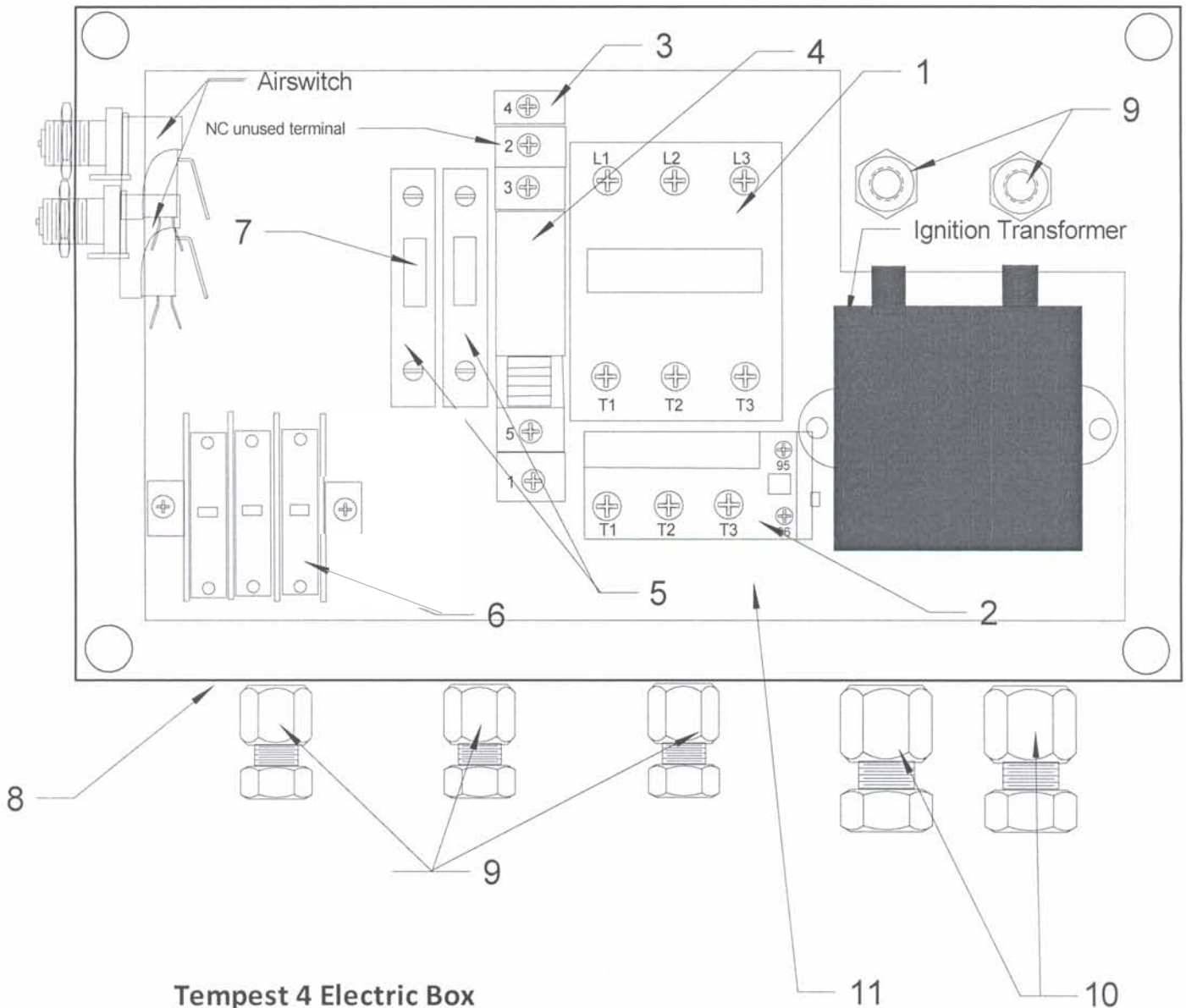
Tempest 240V Electrical Part Numbers

Part No	Description
MTR00100	Ravel Motor 240V
ARXT11-14	Pump
DEM10125	Contactor
DEM101251	MCB 13 amp
DEM100920	Fuse Holder
FUSE001	Fuse
DB000160	Fan Motor 240V
DB0002526	Ignition Transformer
DEM100750	Relay Base
DEM100910	Relay
DEM100948	Connector Block (3 way)
DEM10341	Enclosure Base
DEM10322	Lid for Enclosure
DEM10327	Screws for Lid
DEM10323	Complete Electrical Box
DEM10330	Chassis Plate
DEM20100	PG11 Cable Gland
DEM20110	PG9 Cable Gland
H6871AC	Air Switch

Tempest 110V Electrical Part Numbers

Part No	Description
MTR00301	Ravel Motor 110V
ARXT11-14	Pump
DEM10111	Contactor
DEM10130	MCB 110V
DEM100920	Fuse Holder
FUSE002	Fuse 3.5
DB000170	Fan Motor 110V
DB000255	Ignition Transformer
DEM100750	Relay Base
DEM100915	Relay
DEM100948	Connector Block (3 way)
DEM10341	Enclosure Base
DEM10322	Lid for Enclosure
DEM10327	Screws for Lid
DEM10323	Bare Electrical Box
DEM10325	Complete Electrical Box
DEM10330	Metal Chassis Plate
DEM20100	PG11 Cable Gland
DEM20110	PG9 Cable Gland

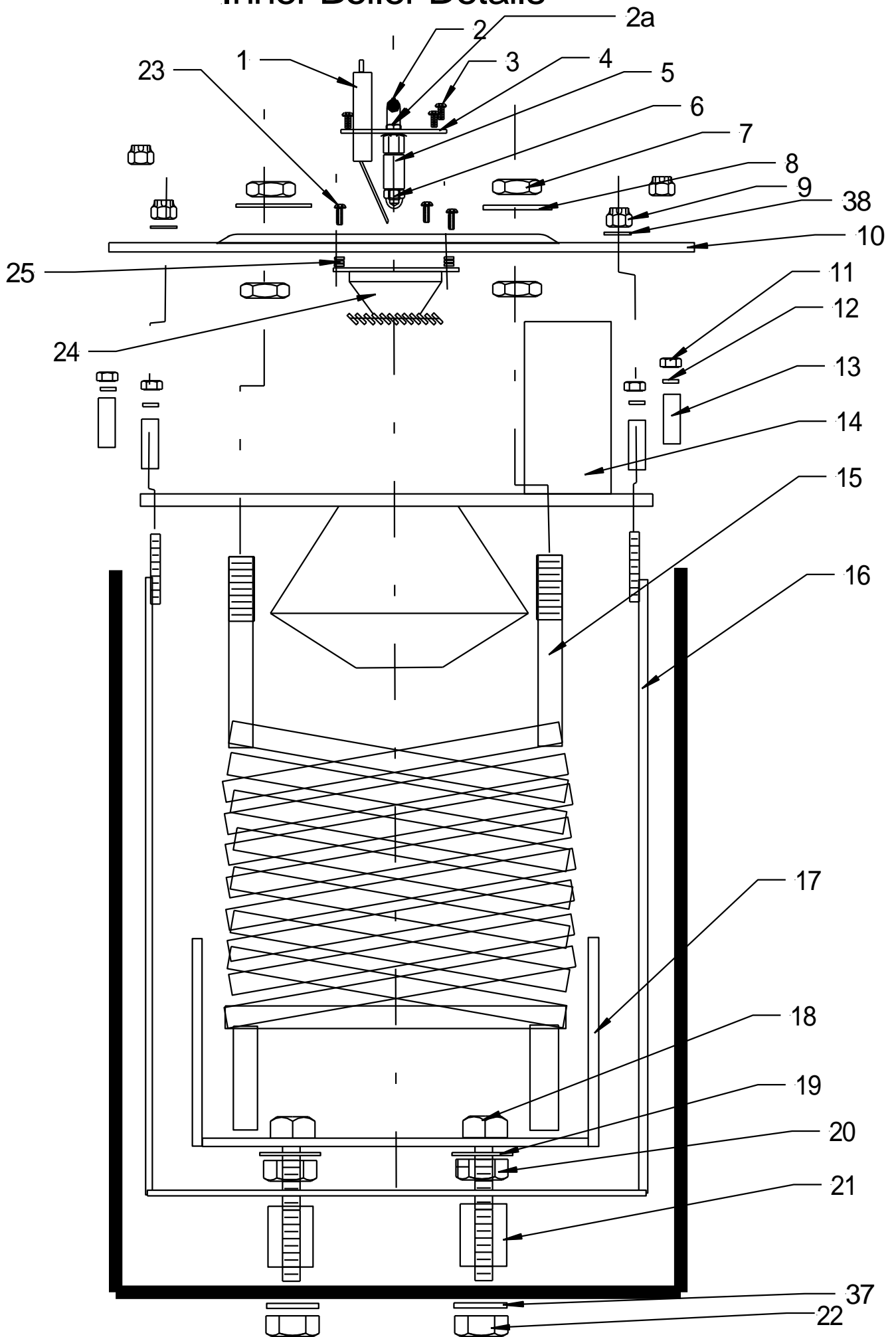
Tempest 4 Electric Box



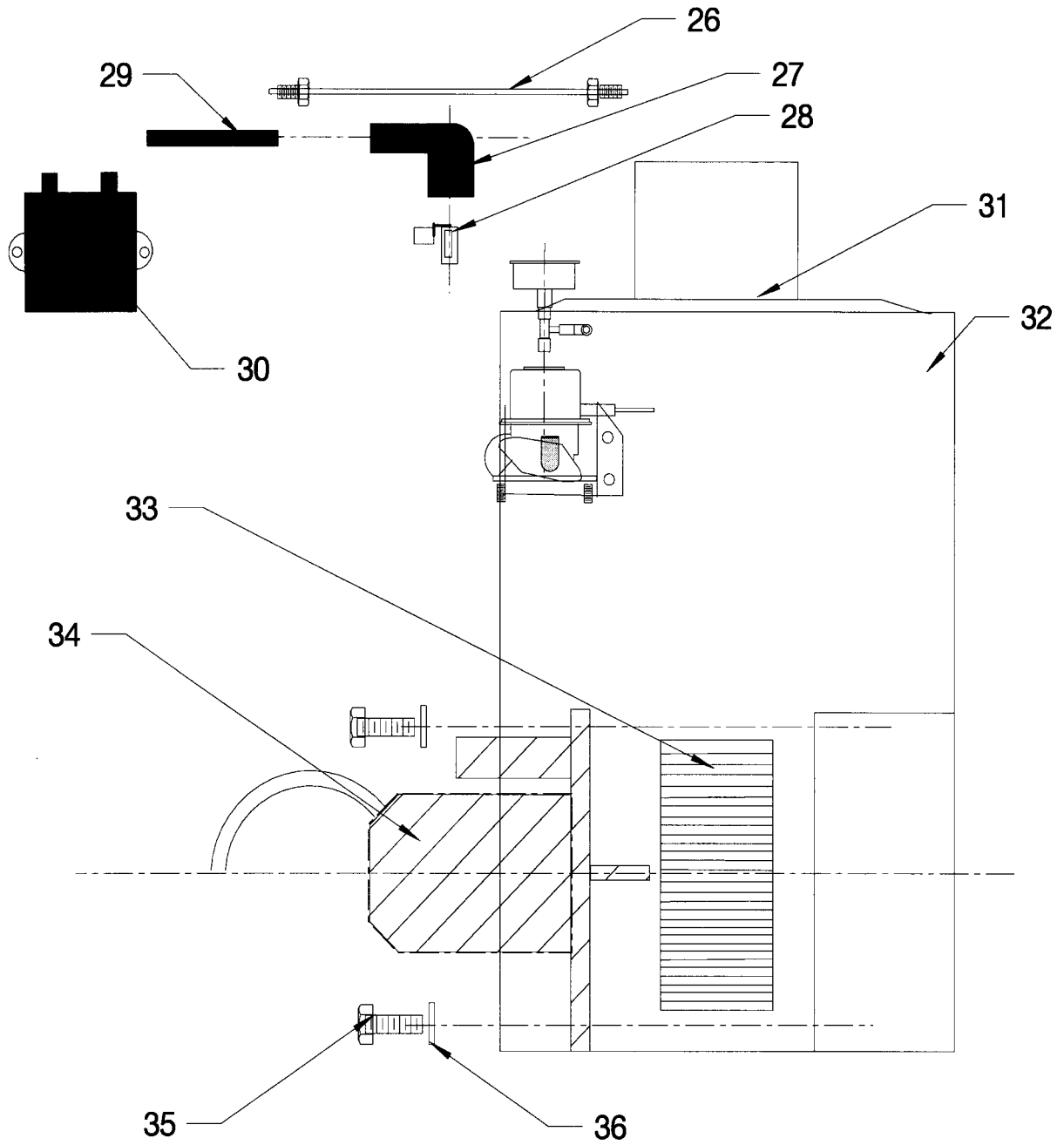
Tempest 4 Electric Box

Pos.	Part No.	Description	Qty
1	DEM10133	Contacteur	1
2	DEM10134	Overload	1
3	DEM100750	Relay Base	1
4	DEM100900	Relay 230V	1
5	DEM100920	Fuse Holder	2
6	DEM100948	Connector Block	1
7	FUSE001	Fuse 1 Amp	2
8	DEM10341	Enclosure	1
9	DEM20110	PG9 Cable Gland	5
10	DEM20100	PG11 Cable Gland	2
	DEM10322	Lid for Enclosure	1
11	DEM10326	Metal Chassis Plate	1
	DEM10327	Screws for Lid	4

Inner Boiler Details



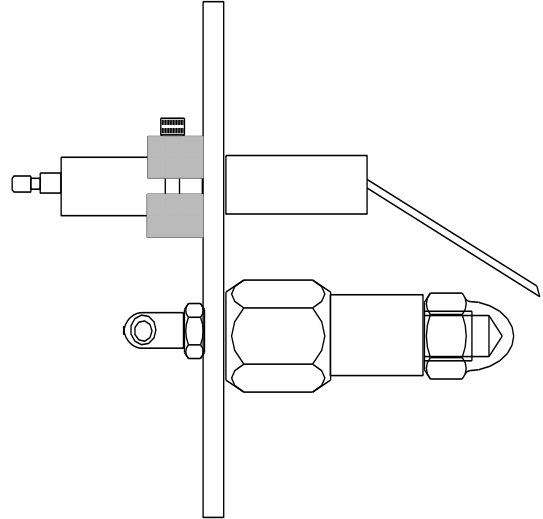
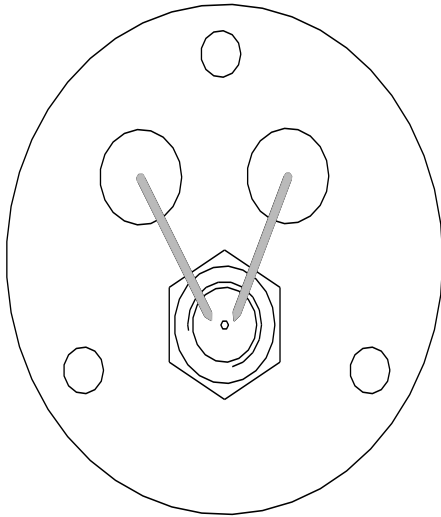
Outer Boiler Details



Boiler Parts List

No	Description	Part No	Qty
1	Electrode	DB000110	2
2	Adaptor	DB000130	1
2a	1/8 male male & nut adaptor	DB000240	1
3	Screw	NBW00450	3
4	Top Plate	DB000030	1
5	Nozzle Holder	DB000020	1
6	Nozzle	DB000010	1
7	³ / ₈ " BSP Nut	DB000340	4
8	16mm Washer	DB000320	2
9	Nyloc Nut	NBW00160	4
10	Outer Drum Lid	DB000041	1
11	Plain Nut	NBW00200	4
12	M6 Washer	NBW00300	4
13	M6 Spacer	DB000280	4
14	Inner Drum Lid & Cone	DB000051	1
15	Heating Coil	DB000094	1
16	Inner Drum	DB000071	1
17	Flame pan	DB000081	1
18	M10 x 70mm Bolt	DB000065	3
19	M10 Washer	NBW00310	3
20	M10 Nut	DB000345	3
21	M10 Spacer	DB000350	3
22	M10 Nyloc Nut	DB000345	3
23	Screw	NBW00460	3
24	Flame swirler	DB000100	1
25	Washer	NBW00300	9
26	Fuel Pipe	DB002400	1
27	HT Cap (Rubber)	DB000080	2
28	Rajah Clip	DB000230	2
29	HT Lead	DB000215	2
29a	HT leads for Cabinet	DB0002155	2
30	Ignition Transformer 230V	DB000256	1
	Ignition Transformer 110V	DB000255	1
31	Gasket	DB000300	1
32	Outer drum + Fan Housing	DB000061	1
33	Impeller	DB000180	1
34	Fan Motor 230V	DB000160	1
	Fan Motor 110V	DB000170	1
35	Bolt	NBW00060	2
36	Washer	NBW00280	2
37	M10 Penny Washer	NBW00311	3
38	M6 Penny Washer	NBW00301	4

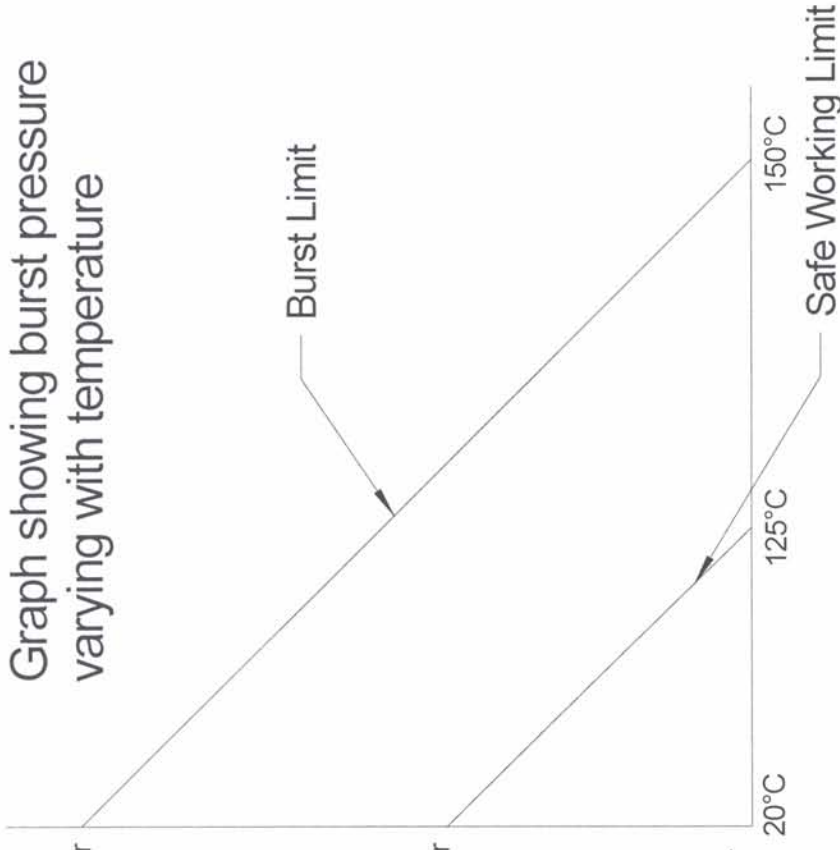
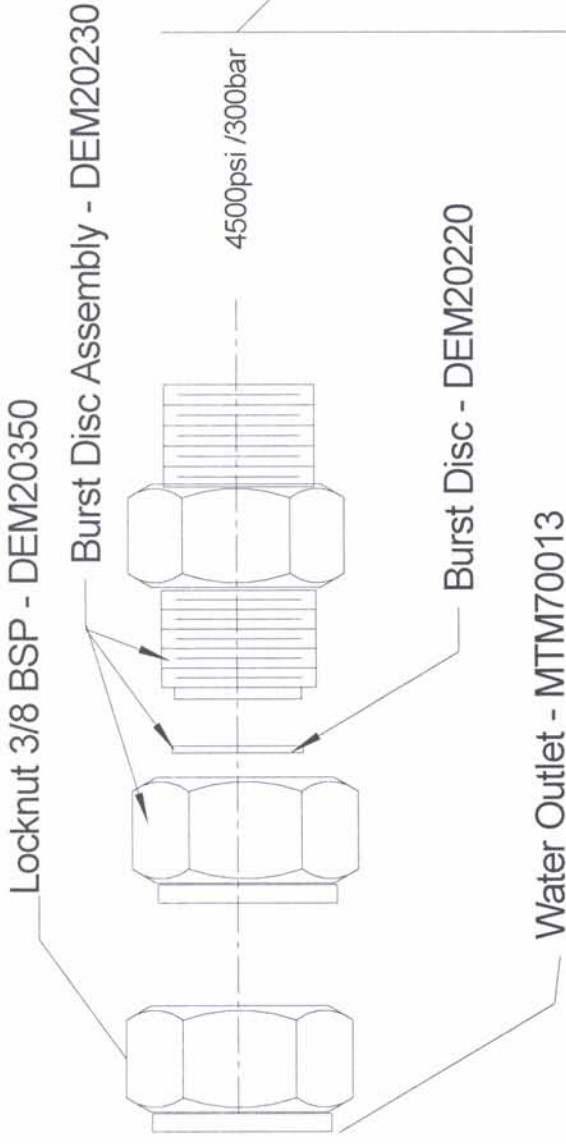
Electrode Setting Details



The electrodes should be set according to the picture. 50% of the ceramic insulation should be inside the boiler and 50% outside. The electrode gap should be approximately 6mm and the tips should not be in the fuel spray.

Common problems - fuel filters and nozzles are not changed regularly enough. The nozzle is a precision instrument that can be damaged by small particles of solid matter in the fuel that it is not possible to filter out. Nozzles will not atomise the fuel correctly leading to a longer flame path which you can see by flames visible near the top of the chimney. To remedy this empty the fuel tank and fill with clean fuel, change the filter and then change the fuel nozzle. Clean the electrodes and grind the tips to reveal new metal. Reset and refit and run the boiler with the gun removed for 10 minutes. This will burn off any excess fuel and clean the boiler tubes.

Service the boiler frequently for reliable running, an unserviced boiler does not heat the water correctly wasting your money!!

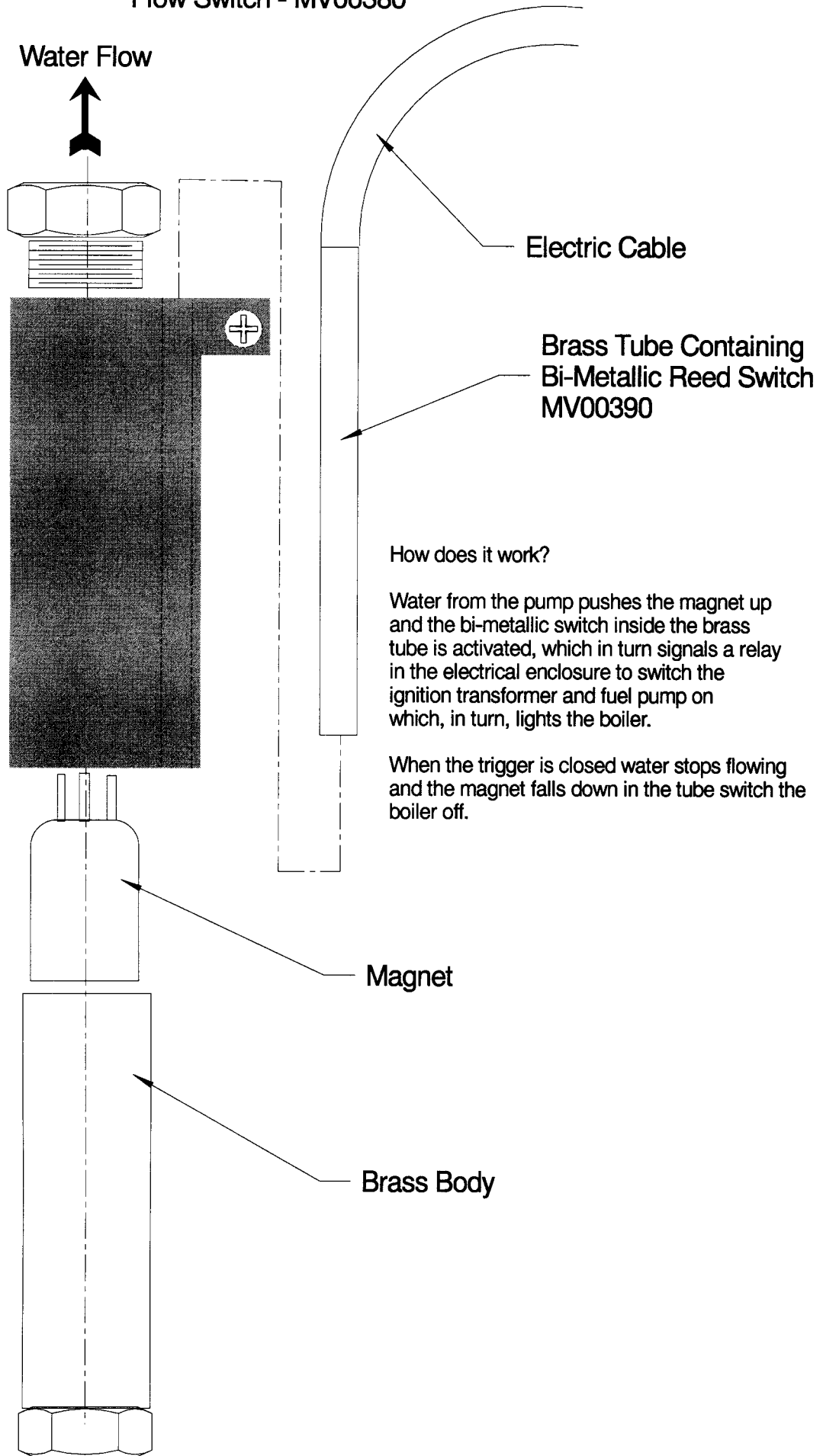


The burst disc fitted to the Demon hot water range of machines is designed to burst either with excess heat or excess pressure. The burst disc works like a fuse and will always fail safe. Rupturing of the burst disc is commonly due to one of three faults, not cooling the machine after using, a poorly maintained boiler or flow switch failure.

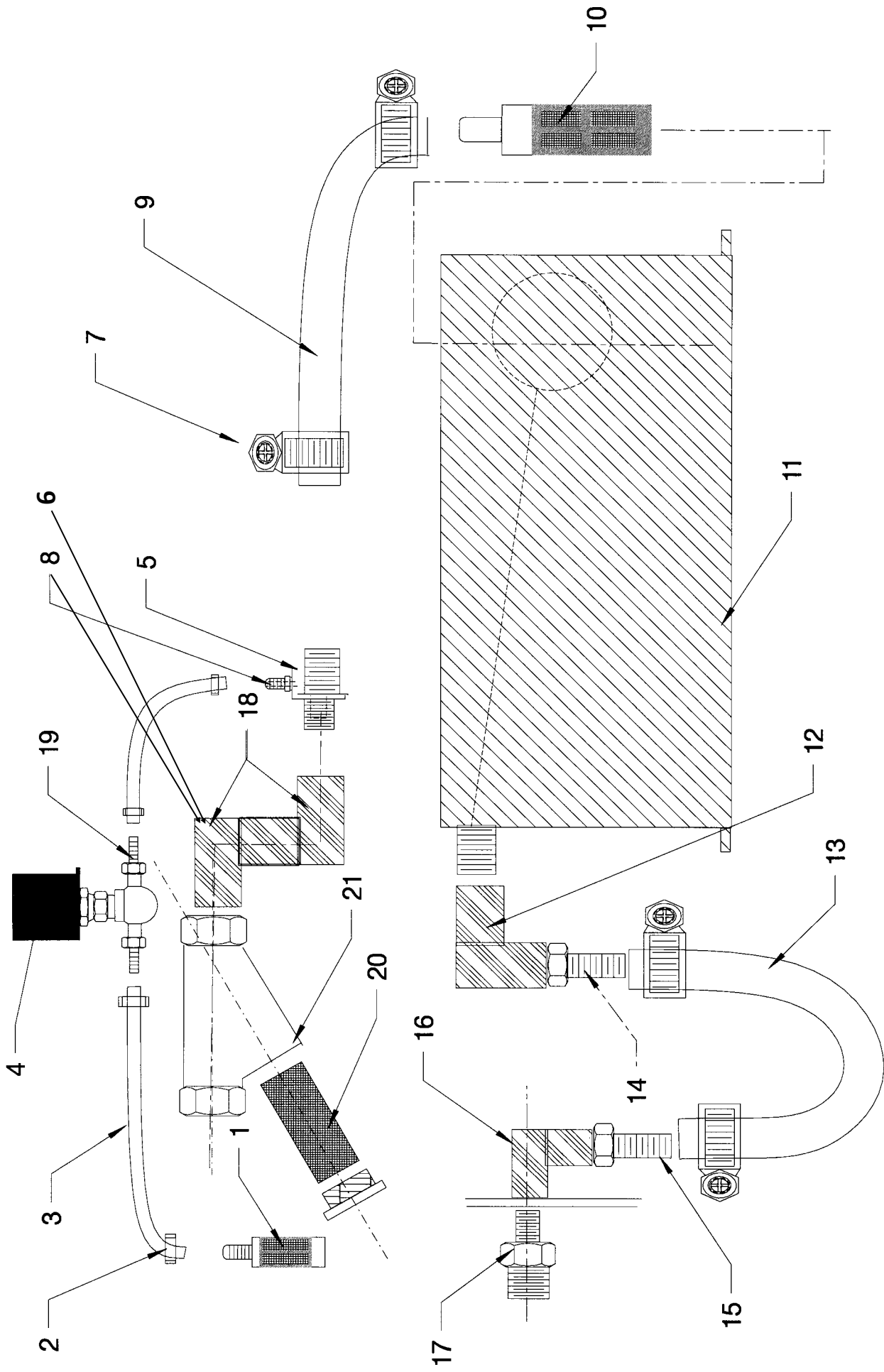
Running the machine for two minutes with the boiler switched off will increase the life of the boiler.

Maintaining the boiler regularly will also lead to increased efficiency and fewer breakdowns.

Flow Switch - MV00380



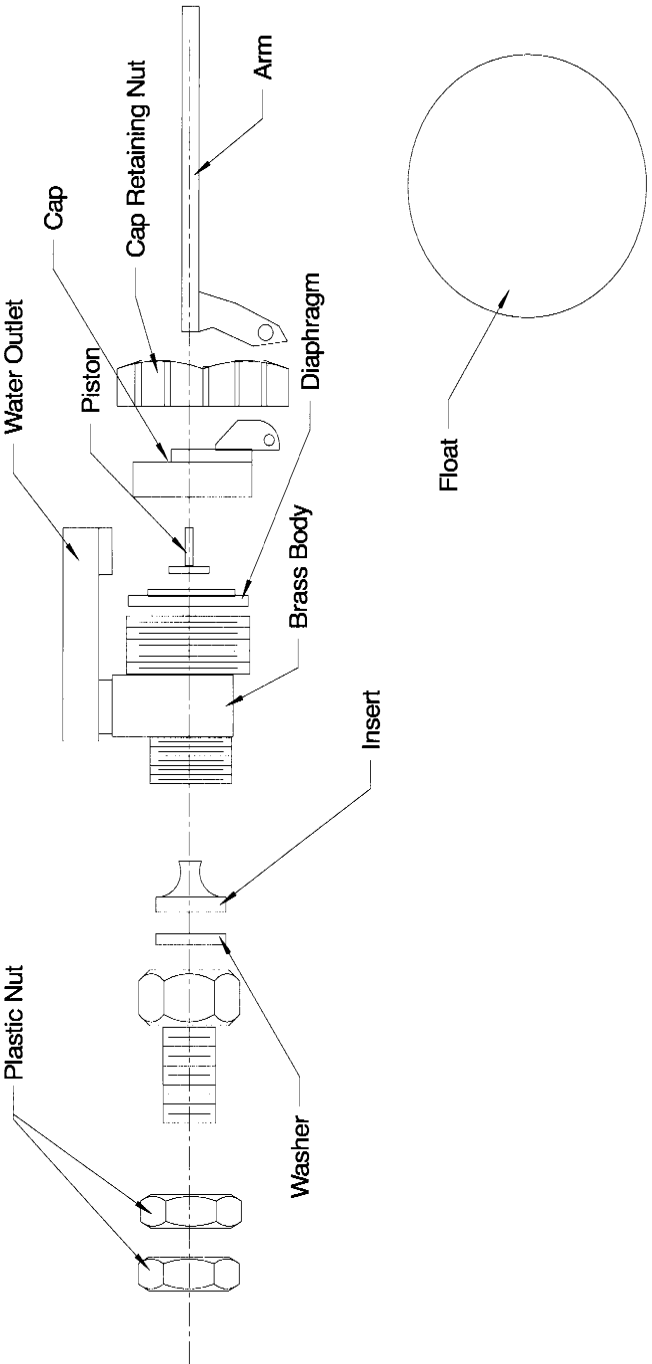
Chemical and Water Circuits



Fuel System Part List			
No	Part No	Description	Qty
1	DEM10400	Fuel Tank Complete	1
2	DEM10420	Fuel Tank Cap	1
3	DEM20450	Fuel Pickup Pipe	1
5	DEM20440	Elbow for Fuel Tank M/F 90 1/4 BSP	3
5a		Nuts	
6	DEM20402	1/4 Hose Barb x 5/16 9mm	3
7	DEM20502	One Eared Clamp 15.3mm	6
8	DB002520	Fuel Pipe—Tank to Filter	1
9	MTM87100	Fuel Filter - clear bowl type	1
10	DB002515	Fuel Pipe—Filter to Filter	1
11	DB002500	Fuel Filter	1
12	DB002510	Fuel Pipe-Filter to Pump	1
13	DEM20401	1/8 Hose Barb x 5/16 (9mm)	1
14	DB000156	Elbow 1/8 male x 1/8 female	1
15	DB002300/2301/2305/2306	Fuel Pump (Pick 1 option)	1
16	DB00240	Copper fuel pipe	1

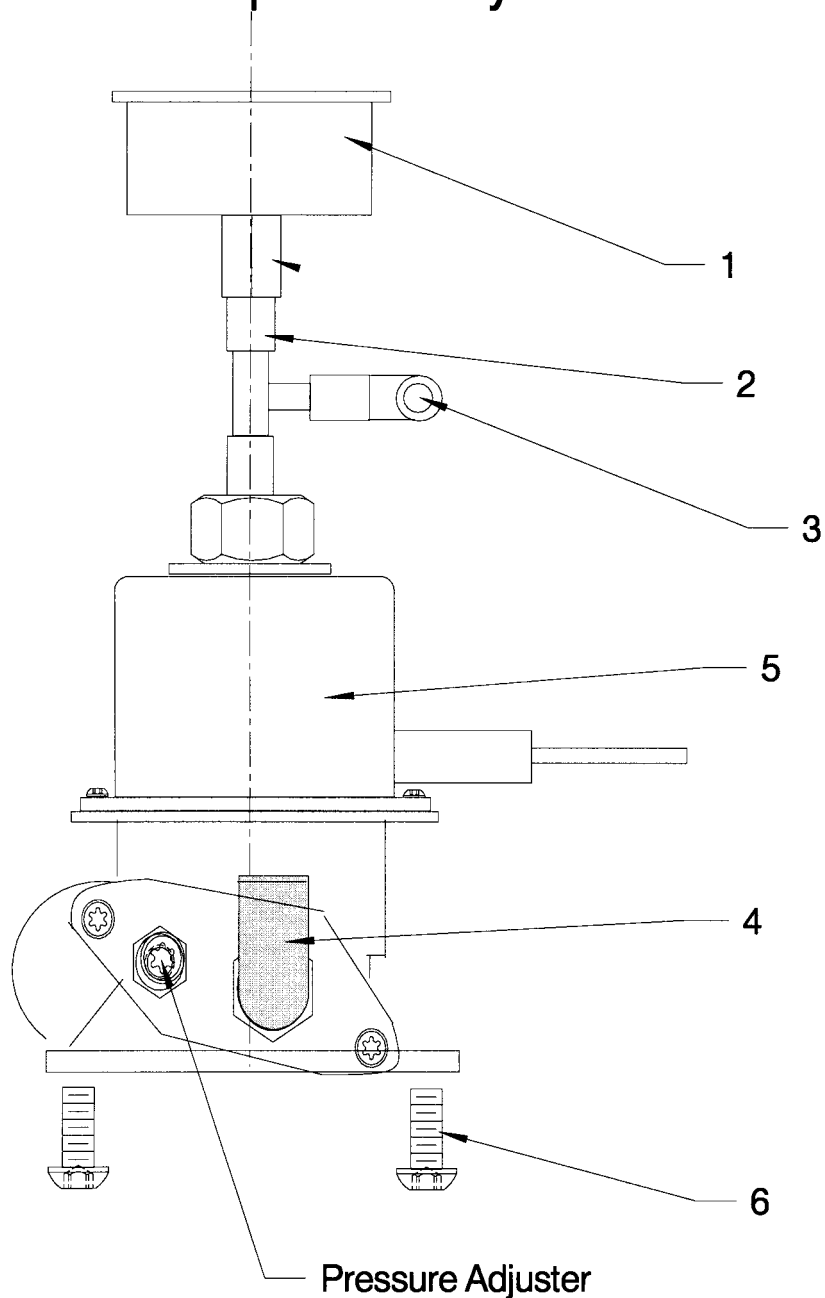
Chemical & Water Circuits			
No	Part No	Description	Qty
1	MTM86010	Chemical Filter	1
2	DEM20500	Hose Clips	4
3	DEM10115	Detergent Pipe	2
4	MTM25801	Chemical Valve	1
5	DEM20442	Barb	1
6	DB000310	1/8 Elbow Male & Female	1
7	DEM20500	Jubilee Clip	4
8	DEM20401	1/8 Barb	1
9	HH0053	Inlet pipe	1
10	MTM85002	Water Filter	1
11	DEM10435	Water Tank	1
12	MTM0012FF03	Brass Elbow	1
13	HH0053	Pipe	1
14	DEM10310	Hose tail	1
15	DEM10300	Hose tail	1
16	MTM0012FF02	Brass Elbow	1
17	DEM20255	Adaptor	1
18	MTM0012FM03	Brass Elbow	2
19	DEM204110	Hose tail	2
20	MTM89011B	Mesh Insert / Y strainer	1
21	MTM89011	Brass Filter	1

Float Valve Assembly



Part Number	Description	Qty
DEM10450	Brass Float Arm	1
DEM10449	Ball For Float Arm	1
DEM10445	HP Insert White7 to 20bar	1
DEM10446	MP Insert Red3 to 7bar	1
DEM10447	LP Insert 0 to 3bar	1
No other Parts available		

Fuel Pump Assembly



Pressure Adjuster

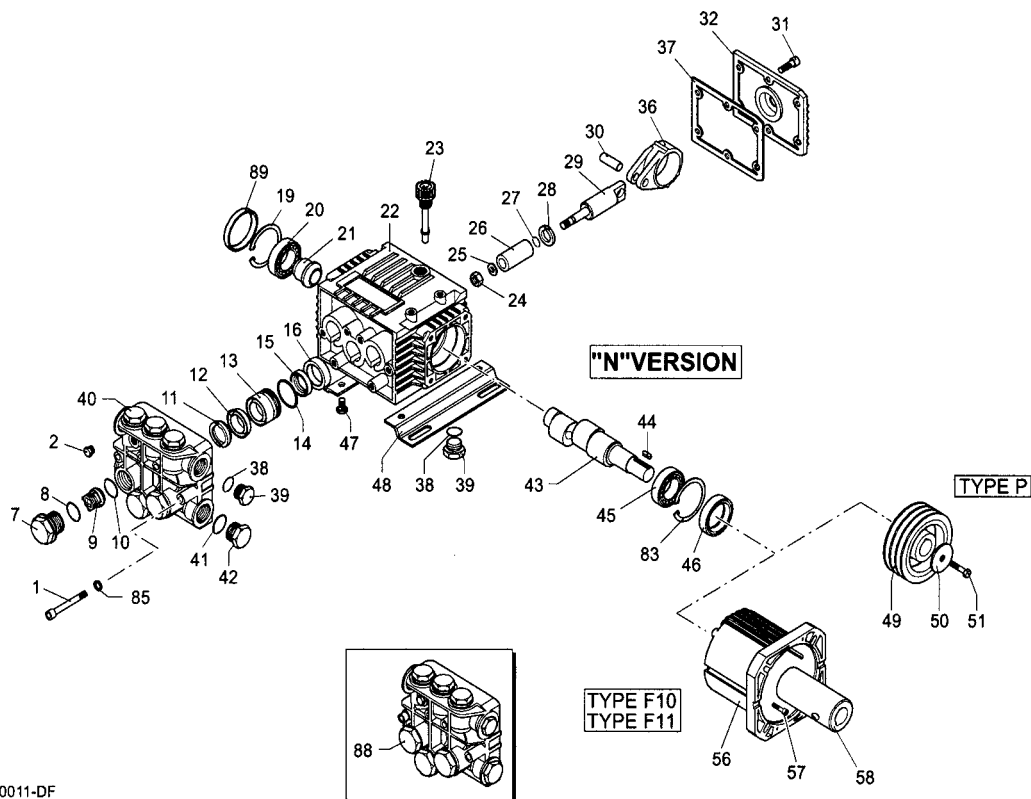
Item	Description	Part Number	Quantity
1	Fuel Pressure Gauge	DEM20630	1
2	Tee	DB000155	1
3	Adaptor	DB000135	1
4	Adaptor	DB000145	1
5	Fuel Pump Complete 110V	DB002305	1
	Fuel Pump Complete 230V	DB002300	1
6	Screw	AR1260470	2

Note: Pump available in 230V or 110V only, fuel pump has no sevicable parts, when fitting new pump do not shorten leads, pressure set to 110psi (7.5 bar).

Pump for Tempest 1 and Tempest 3

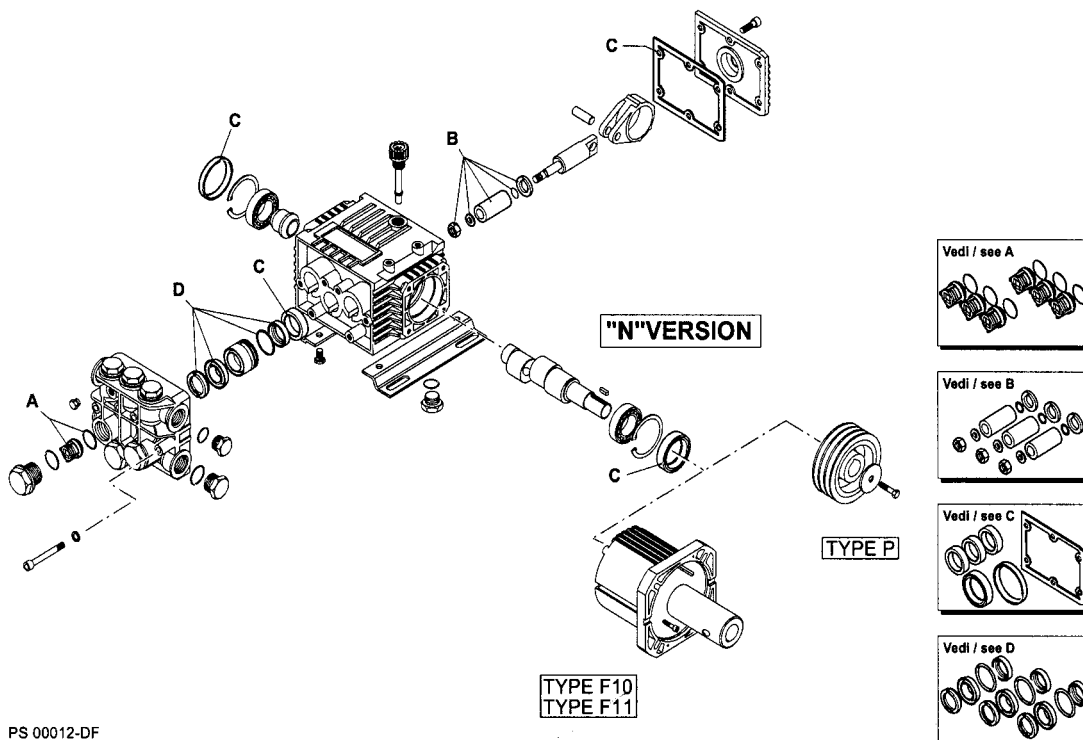
XT

VERSION **N 1450** RPM



PS 00011-DF

KIT RICAMBI / PART KITS



PS 00012-DF

XT 1450				For XT11-14 / XT13-12 / XT13-15			
Pos	Code No	Description	Qty	Pos	Code No	Description	Qty
1	AR680570	Screw	6	40	AR1320020	Pump Head	1
2	AR620301	Plug	1	41	AR180101	O Ring	1
7	AR1260162	Plug	6	42	AR820361	Plug	1
8	AR960160	O Ring	6	43	AR1260200	Crankshaft	1
9	AR1269050	Complete Valve	6	43	AR1320260	Crankshaft	1
10	AR880830	O Ring	6	44	AR1380520	Key	1
11	AR1320340	Support Ring	3	45	AR1320370	Bearing	1
12	AR1260220	Gasket	3	46	AR1260750	Seal	1
13	AR1320351	Piston Guide	3	47	AR1260470	Screw	4
14	AR1260420	O Ring	3	48	AR1263890	Base	2
15	AR1260450	Gasket	3	83	AR1260790	Circlip	1
16	AR1260460	Seal	3	85	AR1381550	Washer	6
19	AR1260790	Circlip	1	88	AR1269222	Pump Head pre-ass	1
20	AR1320370	Bearing	1	89	AR1266740	Cap	1
21	AR1320330	Bushing	1				
22	AR1320010	Pump Housing	1				
23	AR880130	Oil Plug	1				
24	AR1260110	Nut	3				
25	AR1260100	Washer	3				
26	AR1260210	Piston	3				
27	AR480480	O Ring	3				
28	AR1260091	Spacer	3				
29	AR1260070	Guiding Piston	3				
30	AR1260080	Piston Pin	3				
31	AR1260760	Screw	6				
32	AR1269101	Complete Cover	1				
32	AR1320910	Complete Cover	1				
36	AR1260060	Con Road	3				
36	AR1320140	Con Road	3				
37	AR1260040	Gasket	1				
38	AR740290	O Ring	2				
39	AR1980740	Plug	2				

ARKIT1864		ARKIT2629		ARKIT1872	
Valve Kit		Piston Kit		Oil Seal Kit	
Pos	Qty	Pos	Qty	Pos	Qty
9	6	24	3	16	3
10	6	25	3	37	1
		26	3	46	1
		27	3	89	1
		28	3		

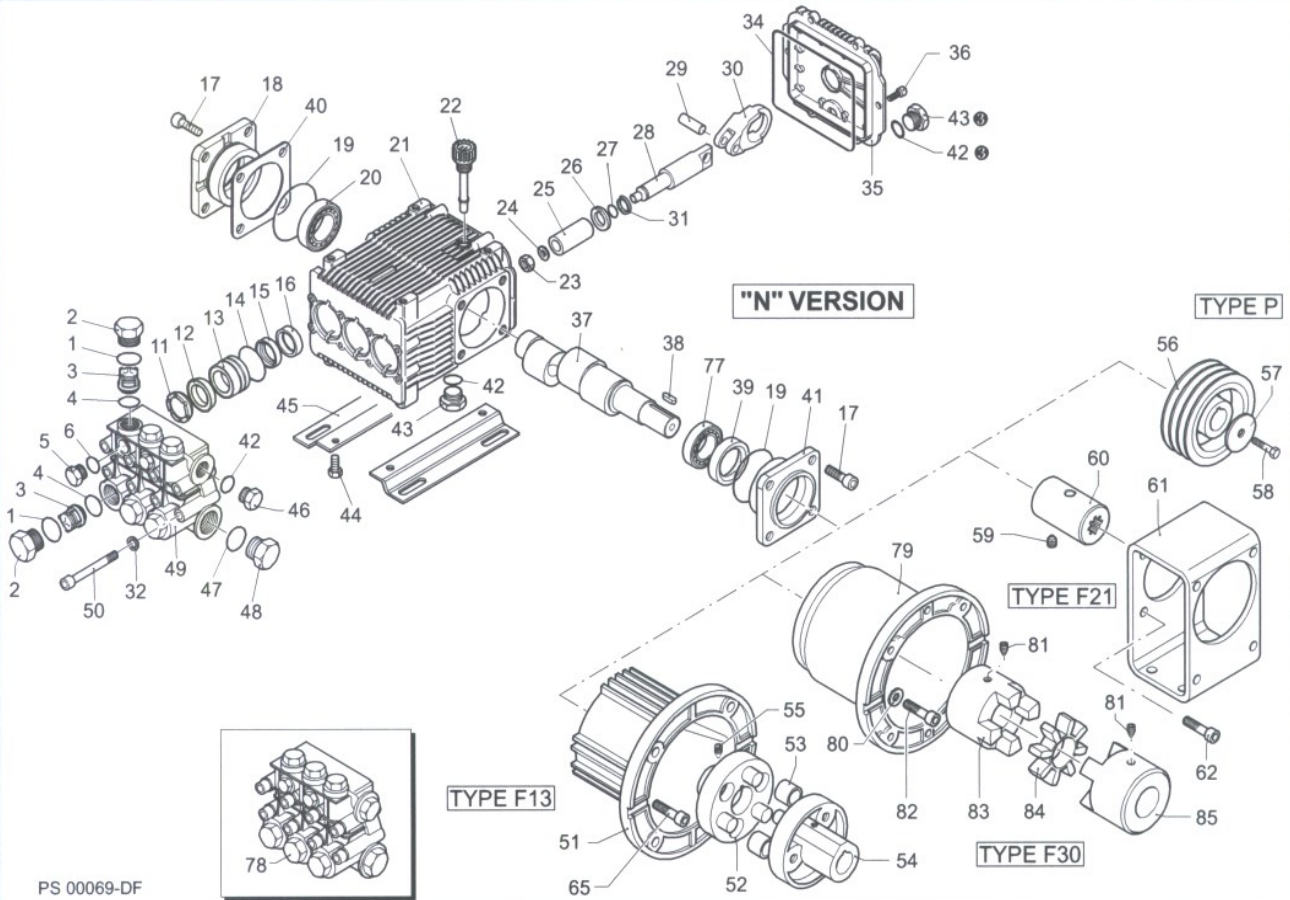
ARKIT1874	
Water Seals	
11	3
12	3
14	3
15	3

RK

VERSION

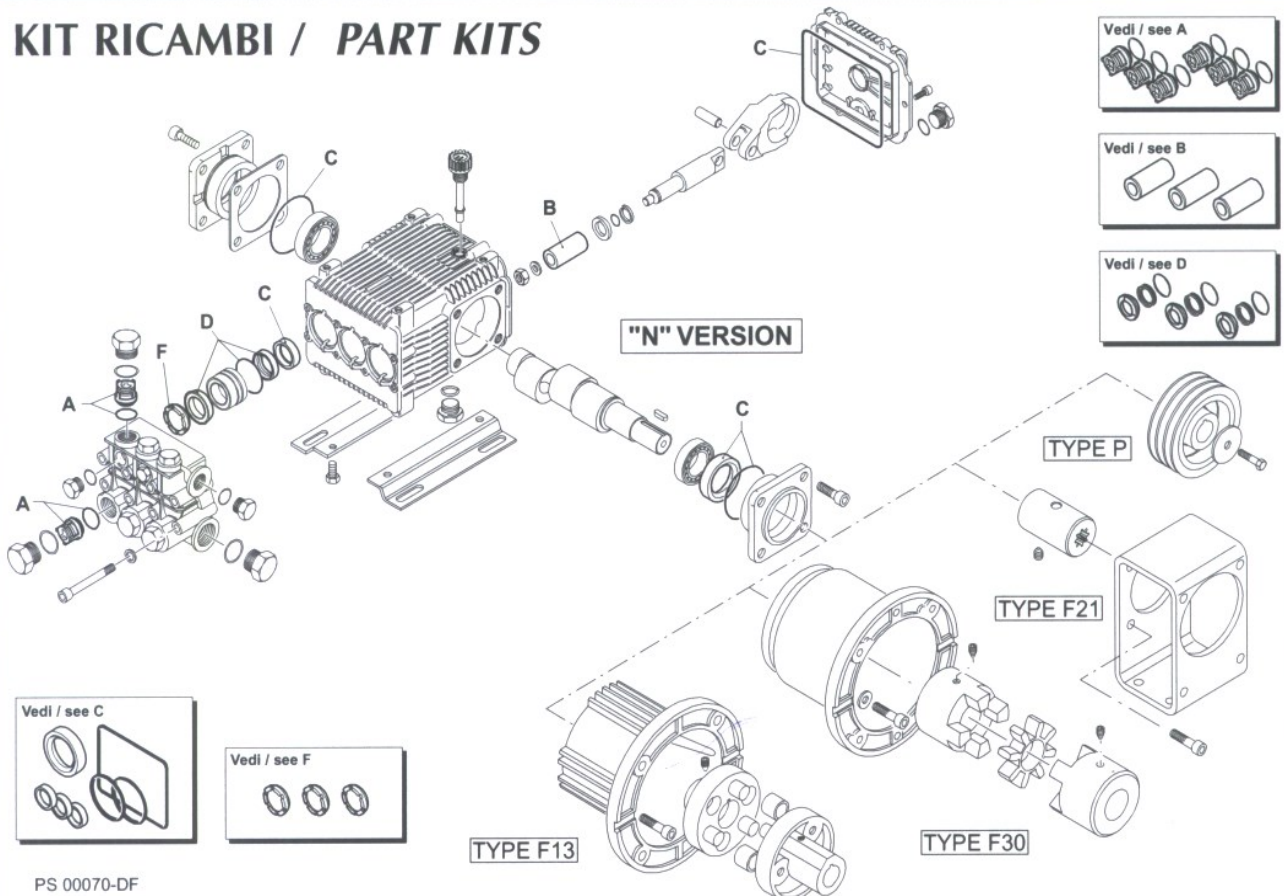
N 1450

RPM



PS 00069-DF

KIT RICAMBI / PART KITS



PS 00070-DF

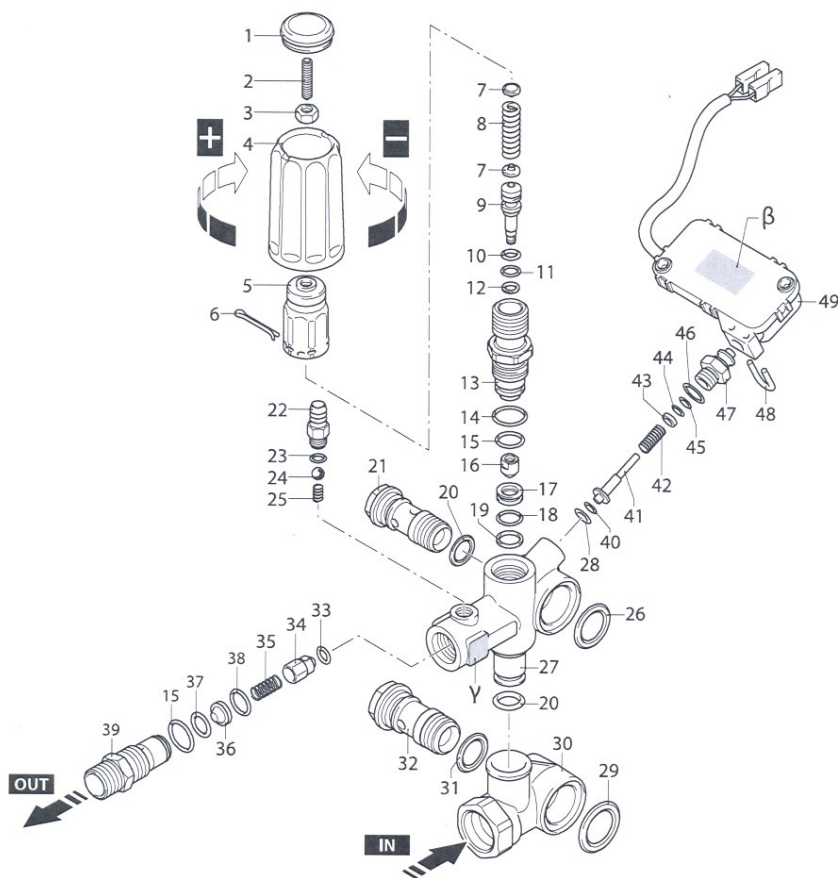
RK MODEL: 15.20H							
Pos	Part No	Description	Qty	Pos	Part No	Description	Qty
1	AR960160	O Ring	6	36	AR1343510	Screw	6
2	AR960090	Plug	6	40	AR1380120	0.10mm shim	1÷3
2	AR1380740	Plug	6	40	AR1380130	0.20mm shim	1÷3
3	AR1389051	Complete Valve	6	40	AR1380530	0.25mm shim	1÷3
4	AR880830	O Ring	6	40	AR1382810	0.05mm shim	1÷3
5	AR880581	Plug	2	42	AR740290	O ring	3
6	AR820510	O Ring	2	43	AR1980740	³ / ₈ G plug	2
11	AR960110	Support Ring	3	44	AR1260470	Screw	4
12	AR880320	Gasket	3	45	AR1380141	Base	2
13	AR1380090	Piston Guide	3	46	AR1980740	³ / ₈ G Plug	1
14	AR961240	O Ring	3	46	AR1981180	³ / ₈ G Plug	1
15	AR880330	Gasket	3	47	AR180101	O Ring	1
16	AR138130	Seal	3	48	AR820361	Plug	1
17	AR850370	Screw	8	48	AR960870	Plug	1
18	AR1380050	Closed Bearing sup	1	49	AR1381071	Pump head	1
19	AR640030	O Ring	1	50	AR820150	Screw	8
20	AR2280240	Bearing	1	60	AR1380320	Bearing	1
21	AR1382770	Pump Housing	1	61	AR621170	Seal	1
22	AR880130	Oil Cap	1	62	AR1380220	O Ring	1
23	AR962010	Nut	3	63	AR1380210	Shaft cover	1
24	AR962000	Washer	3	66	AR2280180	Hollow Shaft 28mm	1
24	AR1380940	Ceramic Piston	3	66	AR2280170	Hollow Shaft 028mm	1
26	AR1380950	Spacer	3	66	AR2280160	Hollow Shaft 028mm	1
27	AR600180	O ring	3	66	AR2280150	Hollow Shaft 028mm	1
28	AR1380920	Guiding Piston	3	67	AR1380370	El Motor flange	1
29	AR1380060	Piston Pin	3	76	AR620610	Screw	4
30	AR1383050	Aluminium con-rod	3	86	AR1260250	Oil Indicator	1
31	AR1080401	Ring	3	87	AR1260430	Snap Ring	1
32	AR1381850	Washer	8	88	AR1780690	Disc	1
34	AR1780510	O Ring	1	89	AR1140450	O Ring	1
35	AR1789010	Complete cover	1				

Valve Kit		Piston Kit		Oil Seal Kit	
ARKIT1828		ARKIT2757		ARKIT1856	
Pos	Qty	Pos	Qty	Pos	Qty
3	6	25	3	16	3
4	6			19	1
				34	1
				61	1
				62	1

Water Seal		Support Ring	
ARKIT1857		ARKIT1829	
Pos	Qty	Pos	Qty
12	3	11	3
14	3		
15	3		

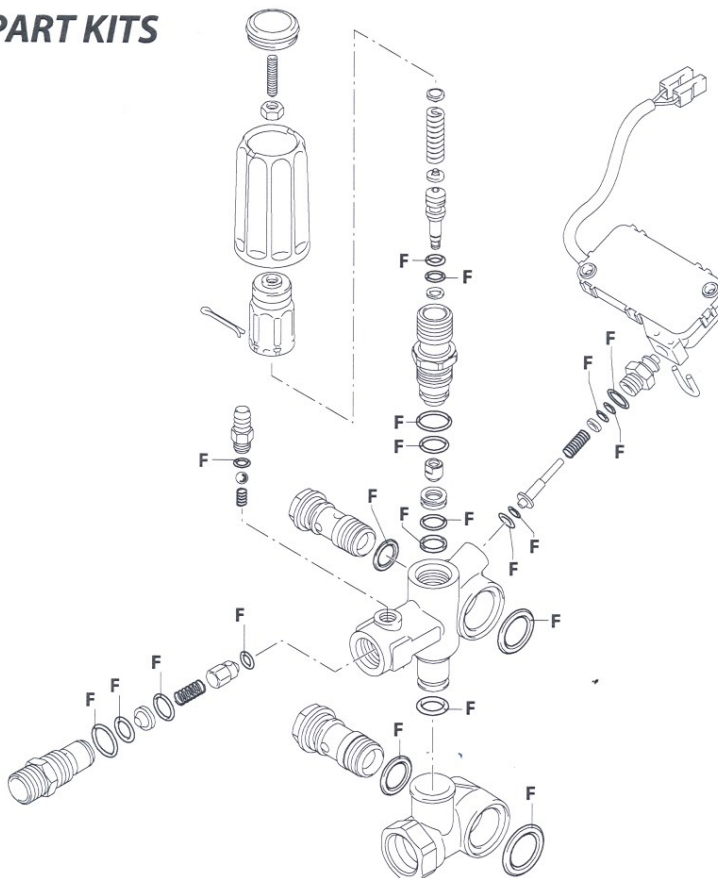
VRZ TSS + ID

200 bar



UN003611-JP

KIT RICAMBI / PART KITS



(3748600)

UN003612-AS

VRZ TSS

POS	Part No	Description	Qty	Pos	Part No	Description	Qty
1	AR3200500	Plug	1	40	AR2260480	Ring	1
2	AR2840970	Screw	1	41	AR2260470	Pin	1
3	AR1060120	Nut	1	42	AR2260460	Spring	1
4	AR3740030	Knob	1	43	AR2021650	Washer	1
5	AR2500540	Insert	1	44	AR1260821	O-ring	1
6	AR2500550	Split pin	1	45	AR3740050	Ring	1
7	AR1980220	Wobble plate	2	46	AR600180	O-ring	1
8	AR2760410	Spring	1	47	AR3740040	Fitting	1
9	AR2760400	Piston	1	48	AR2022201	Fork	1
10	AR2260100	O-ring	1	49	AR2029752	TSS box assembly	1
11	AR660190	O-ring	1	50	AR2029752A	Micro switch	1
12	AR2760210	Ring	1				
13	AR2760570	Guide	1				
14	AR1200690	O-ring	1				
15	AR394280	O-ring	5				
16	AR2260070	Shutter	1				
17	AR2760980	Seat	1				
18	AR770140	O-ring	1				
19	AR2760640	Ring	1				
20	AR390080	O-ring	2				
21	AR1540272	Screw	1				
22	AR1982520	Hose tail	1				
23	AR480480	O-ring	1				
24	AR1250280	Ball	1				
25	AR1560520	Spring	1				
26	AR2260190	O-ring	1				
27	AR3740010	Valve body	1				
28	AR1120681	O-ring	1				
29	AR1540630	O-ring	1				
30	AR3740020	Body	1				
31	AR880270	O-ring	1				
32	AR2260420	Screw	1				
33	AR2101770	O-ring	1				
34	AR2760131	Shutter	1				
35	AR2760200	Spring	1				
36	AR2760120	Insert	1				
37	AR1470210	O-ring	1				
38	AR2760270	O-ring	1				
39	AR2760230	Injector	1				

F= Kit42780 O-Rings					
Pos	Qty	Pos	Qty	Pos	Qty
10	1	23	2	38	1
11	1	26	1	44	1
14	1	28	1	45	1
15	5	29	1	46	1
18	1	31	1		
19	1	33	1		
20	2	37	1		

ARKIT 2223 VRZ Auto Repair Kit			
Pos	Qty	Pos	Qty
28	1	44	1
40	1	45	1
41	1	46	1
42	1	47	1
43	1	50	1



Step by Step Guide to...

Operating a Tempest

1 PUMP OIL
Unlock bonnet clips, lift the lid and check the pump oil. Replenish as required



FUEL
Check fuel level and replenish as required



2

3 POWER
Unwind the power lead and plug into RCD. Do not plug into an extension lead.



4 WATER
Connect to mains water by pulling back the inlet and pushing the hose on.



4

5 HOSE
Connect MVG high pressure hose. Push on MVG nipple & tighten nut



6 TRIGGER
Connect hose to trigger - ensure the correct lance for hot water is used



6

7 WATER
Turn on the mains water and the tank will begin to fill inside the machine



8 TURN ON
Shut the lid & press the C button to turn pump on and get cold water



8

9 WATER
For hot water push the H button and hot water will filter through



CHEMICAL
For detergent put the detergent pipe into the chemical drum



10

NB - the longer you wait the hotter the water will become to a max temp of 93°C



Step by Step Guide to...

Operating a Tempest

11 Valve

Adjust the detergent valve accordingly



NB -when you have finished with the detergent ensure valve is turned off so that air isnt being sucked into the machine



OFF

When finished turn off the hot water and run the machine until water is cold

12

NB -switch the mains water off. Run machine until it is empty of water so water cannot freeze in minus temperatures.

13 OFF
Release any pressure in hose by squeezing the trigger and disconnect



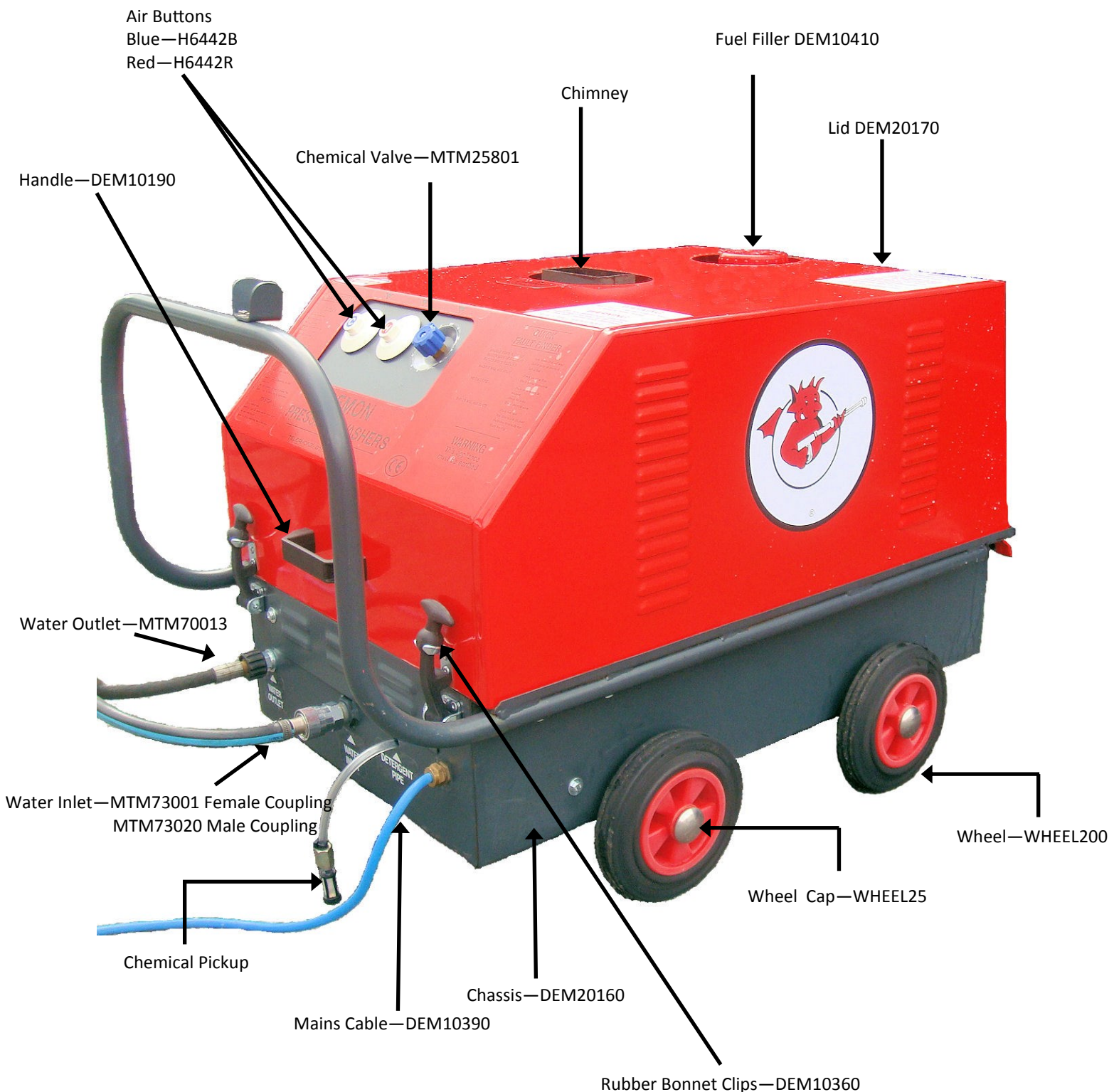
OFF

Unplug & rewind electrical cable around handle, reconnect bonnet clips

14

NB - If you come across a fault refer to the instruction panel on the front right of the machine prior to calling for technical assistance

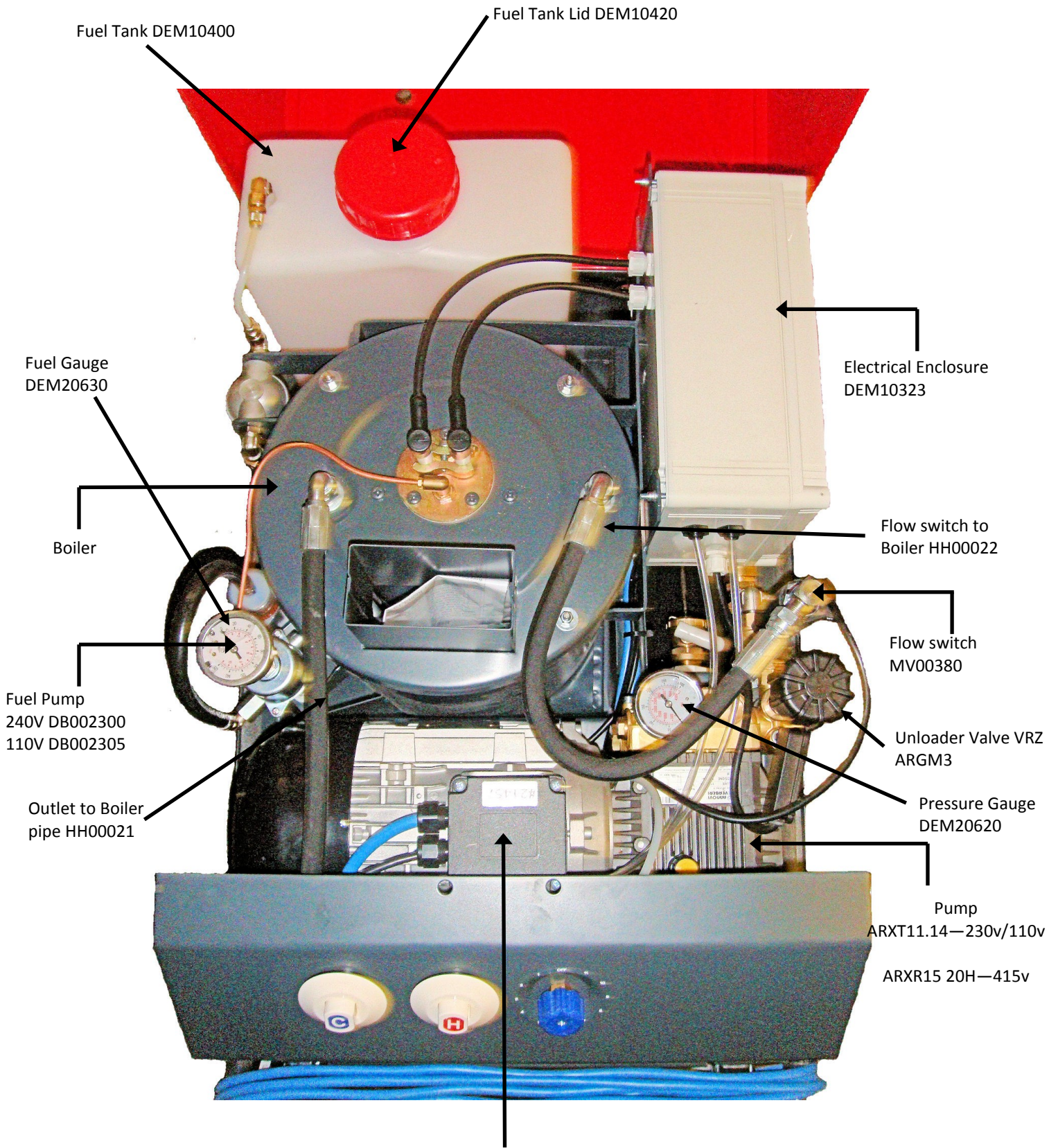
Tempest Range General Arrangement



Machine Labels:

- Front Panel LAB170
- Large Demon LAB140
- Warning LAB120
- Freezing Protection LAB291

Tempest Range General Arrangement



Fuel Tank DEM10400

Fuel Tank Lid DEM10420

Fuel Gauge DEM20630

Electrical Enclosure DEM10323

Boiler

Flow switch to Boiler HH00022

Fuel Pump 240V DB002300 110V DB002305

Flow switch MV00380

Outlet to Boiler pipe HH00021

Unloader Valve VRZ ARGM3

Pressure Gauge DEM20620

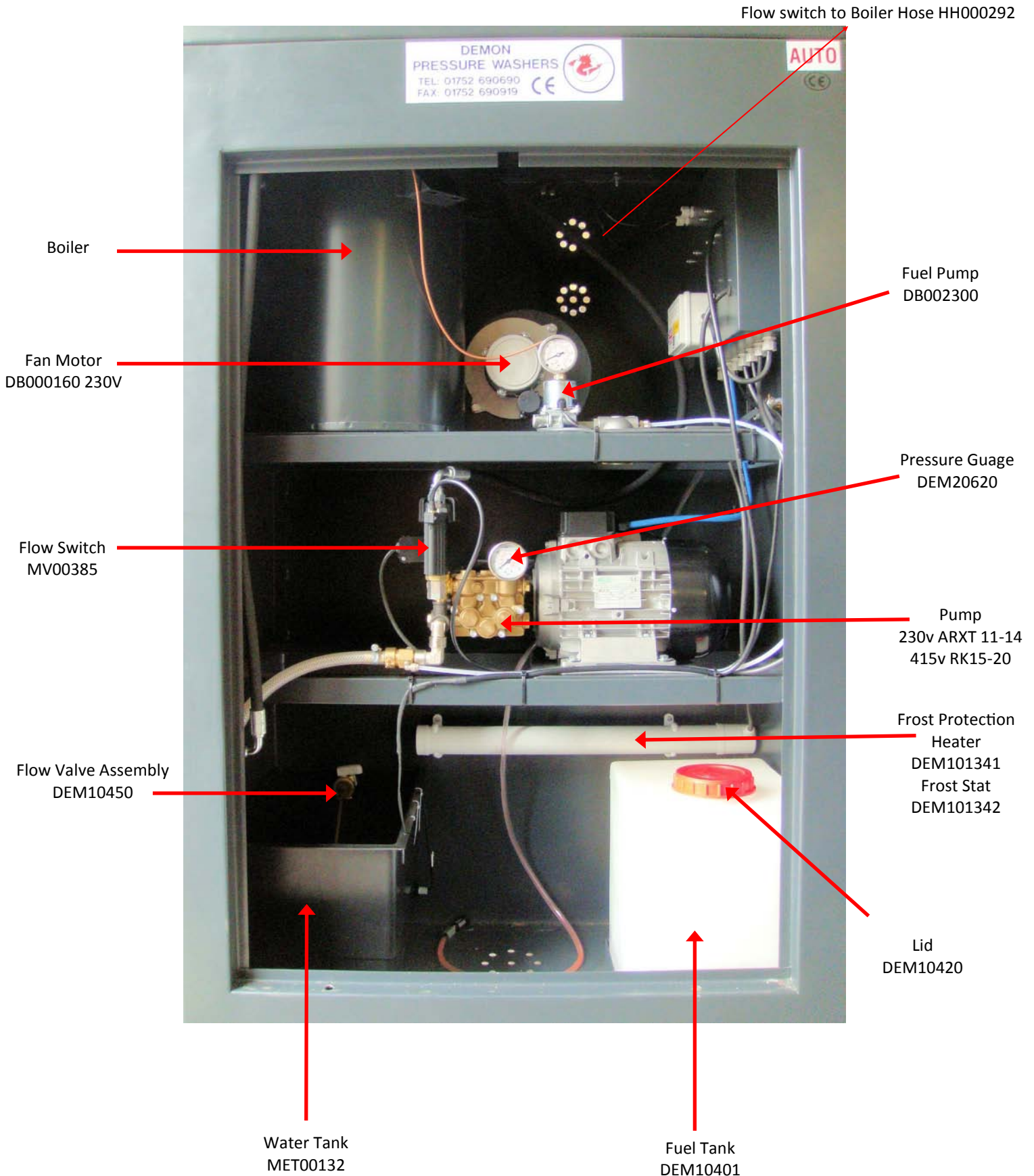
Pump ARXT11.14—230v/110v

ARXR15 20H—415v

240V Motor MTR00100
 110v Motor MTR00301
 415V Motor MTR00220
 Trip switch DEM10175

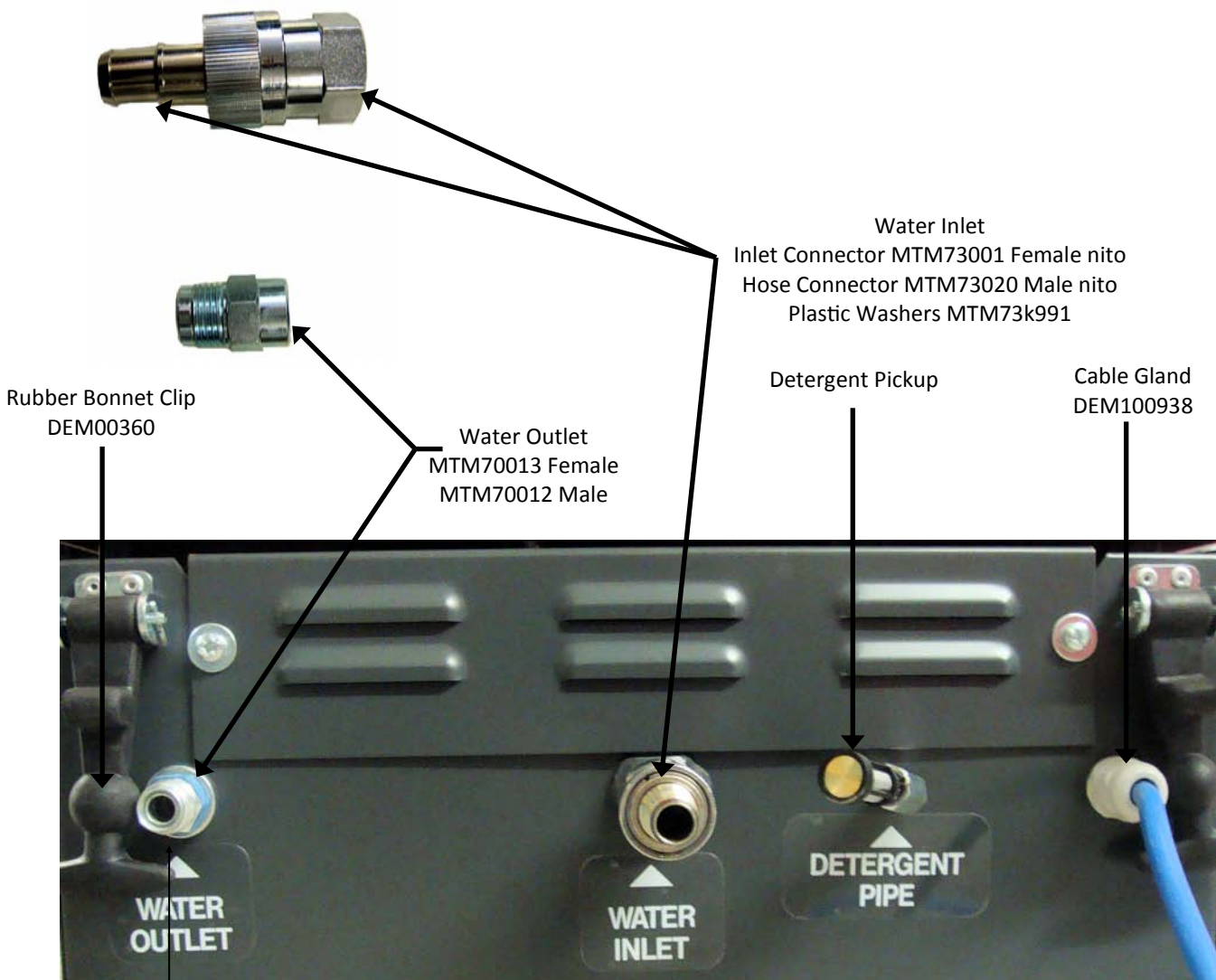
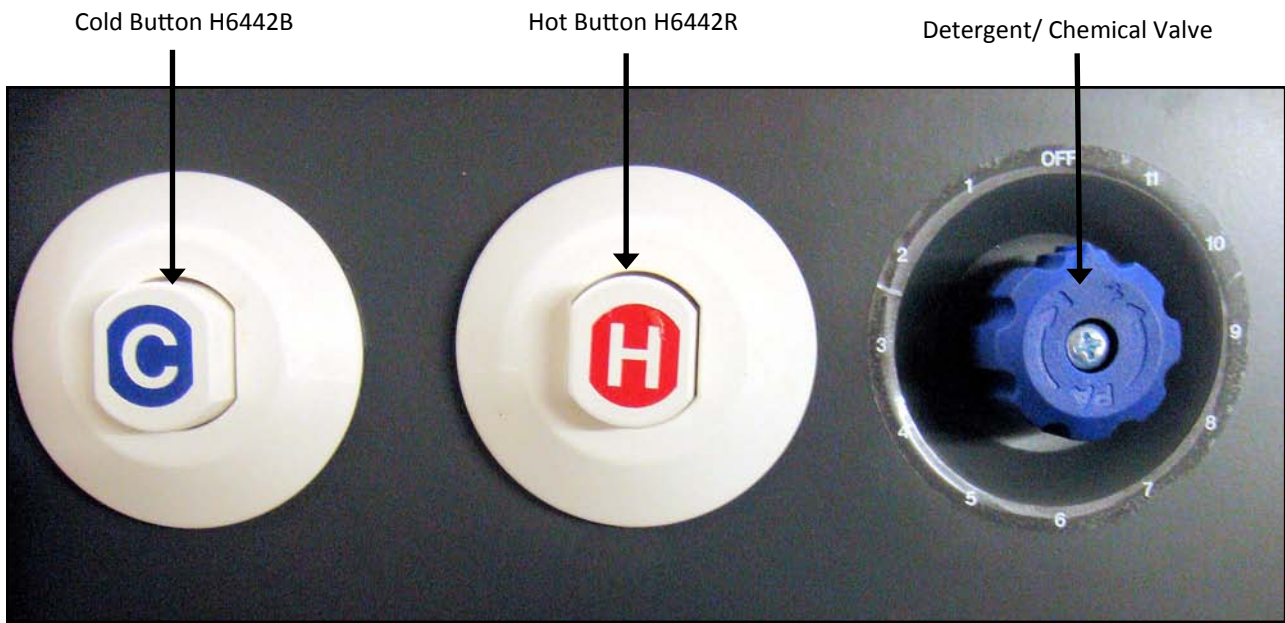
Note: Not visible Capacitor
 230v—1 x 65 μ capacitor
 110v—2 x 65 μ capacitor

Tempest Cabinet General Arrangement



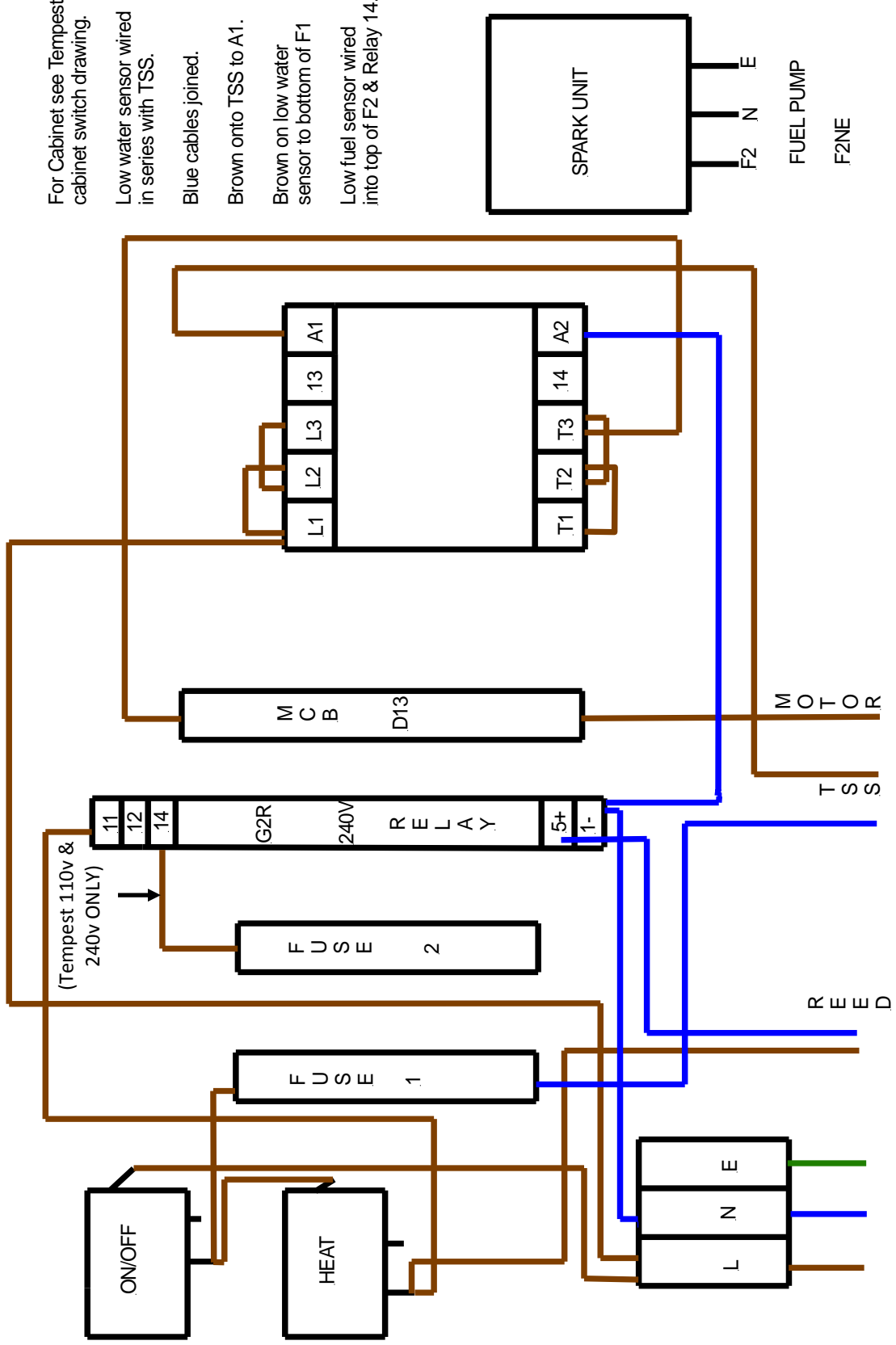
Locking Handle for Cabinet DEM101361
Please retain key number

Control & Front Panel

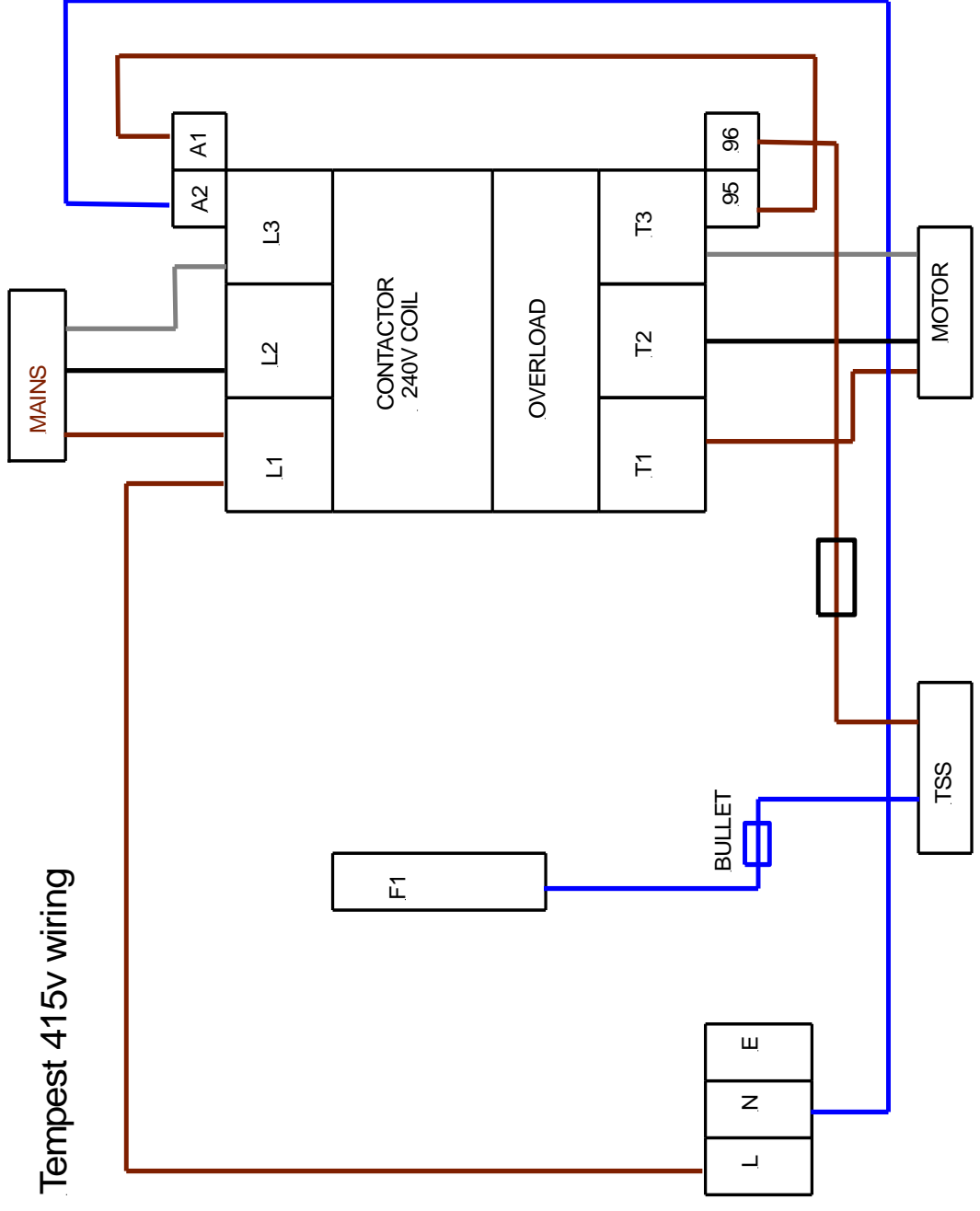


Brass 3/8 T Behind water Outlet MTM0013FFM2

Tempest 110v and 240v and Tempest Cabinet Wiring



Tempest 415v wiring



For Tempest Cabinet see Tempest cabinet switch drawing.

Low water sensor wired in series with TSS & sensor.

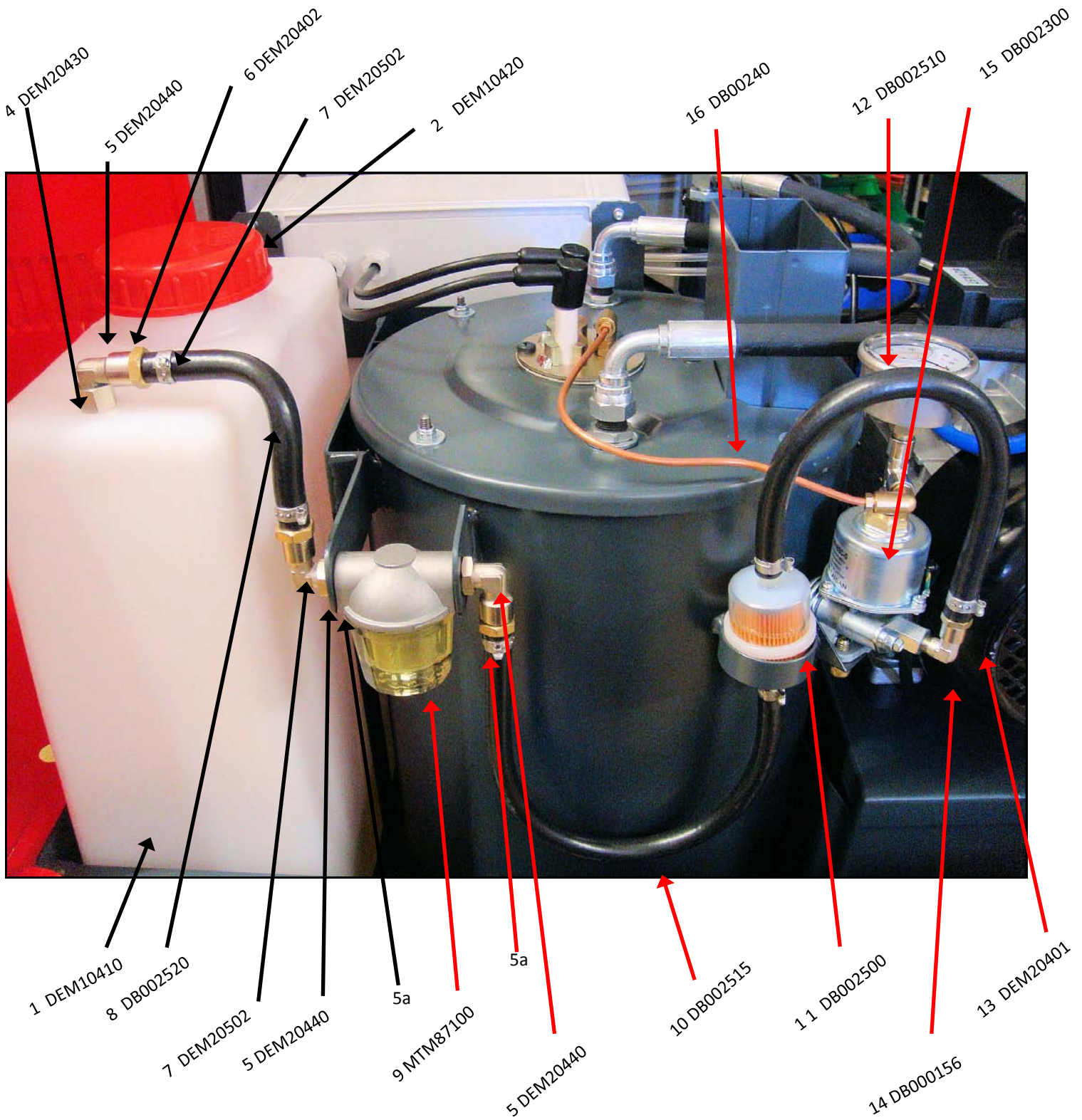
Blue cables joined.

Brown on TSS to 96.

Brown on low water sensor to bottom of F1.

Low fuel sensor wired between top of F2 & top of relay 14.

Tempest Fuel Tank General Arrangement



Please note that part no 3 is not visible as its inside the fuel tank.

EC Declaration of Conformity

We **Demon International Ltd**

Of **Abbots Close, Lee Mill Industrial Estate, Ivybridge, Devon PL21 9GA**

Declare that:

Equipment **High Pressure Water Jet Machines**

Model name/number

Serial number

Conforms to the relevant safety and health related requirements of the appropriate EC Directives. This declaration shall cease to be valid if modifications are made to the machine without our approval.

In accordance with the following EU Directives:

73/23/EEC **The Low Voltage Directive** – and its amending directives

89/336/EEC **The Electromagnetic Compatibility Directive** – and its amending directives

98/37/EEC **The Machinery Directive** – and its amending directives

2000/14/EC **Noise Directive**

Harmonised Standards Applied:

EN 292-1 & EN292-2 (now ISO:12100), EN 60335-2-79, EN55014-1, EN55014-2, EN 61000-3-2

Applied national standards and technical specifications:

DS EN 60335-2-79

Applied conformity evaluation method

Appendix V

Sound power level dB(A):

	Tempest 1	Tempest 3	Tempest 4	Tempest 1 Cabinet	Tempest 4 Cabinet
Measured	80	79	84	80	84
Guaranteed	81	80	85	81	85

HAV – All triggers and lances have vibration levels below 2.5 m/s/s²

I hereby declare that the equipment named above has been designed to comply with the relevant sections of the above referenced specifications. The unit complies with all essential requirements of the Directives.

Signed: 

Martyn Walke

Authority: *Technical Director*

Date:

Technical Documentation Address: Abbots Close, Lee Mill Industrial Estate, Ivybridge, Devon PL21 9GA