



CONVERSIONS

MODELS: **29200-0120**
ELECTRIC CONVERSION,
12 VOLT

29200-0240
ELECTRIC CONVERSION,
24 VOLT

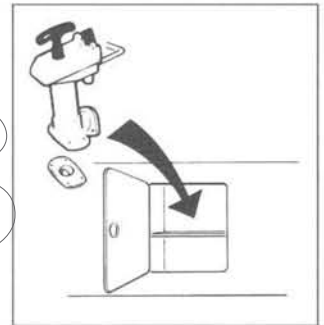
FEATURES

- Directly replaces manual pump assembly
- Easy to install
- Simple to operate
- Dual action control allows water level to be varied
- Fits all Jabsco and Par 29090 and 29120 standard and large bowl toilets. Adaptors are available (see below) to fit many other makes
- Suitable for use in above or below waterline installations.
- Built in macerator
- Meets EN50081-2 for Electro Magnetic Compatibility (EMC)
- Meets ISO 8846 MARINE and USCG 183.410 for ignition protection.
- Self priming up to 0.6m (2ft)
- Waste pump discharges over an anti syphon loop up to 1.8m (6ft) and out of a through hull fitting down to 0.9m (3ft) below the surface
- Typical power consumption is less than 1.0 amp hour (12 volt) or 0.5 amp hour (24 volt) per day

Be ready to mop-up any water that may come out of the system. Keep all screws and hose clips, which will be re-used to fit the Conversion.

Disconnect the 19mm (3/4") inlet hose and the pump to bowl link hose from the pump. Detach the discharge elbow, flange and joker valve assembly from the pump cylinder. Leave the discharge elbow connected to the discharge pipework and do not remove any anti syphon loop or 38mm (1 1/2") vented loop fitting. Remove the screws (key 11) that secure the pump to the discharge flange and base. Lift off the manual pump and gasket.

Should your power supply fail, you can change your toilet back to manual operation in a few minutes. Just keep the old pump to bowl link hose and bottom flap valve gasket aboard, together with the manual pump, and you will have all that you need to put your toilet back in commission.



ADAPTORS AVAILABLE

- **29060-0000 Adaptor** for Brydon Boy and PAR 59128, RM69, Simpson Lawrence 444, Mansfield and Sealand 751
- **29080-0000 Adaptor** for Groco HE and Groco HF
- **29110-0000 Adaptor** for Raritan Compact, Raritan PH & PHII, and Sealand 752
- **29128-0000 Adaptor** for Wilcox Crittendon Headmate 1640, and Winner R4042C.

INSTALLATION INSTRUCTIONS



Flood hazard. Close inlet and outlet seacocks prior to disassembling toilet. Failure to do so can result in flooding which can cause loss of property and life

Your Jabsco Electric Conversion is designed to be installed by the user; and no special skills or tools are needed.

Flush the existing toilet in the usual way, and ensure that all waste has left the discharge pipework, and that the bowl is empty.

SHUT BOTH SEACOCKS (inlet and outlet).

FITTING AN ADAPTOR

If you have purchased one of our Adaptors because your existing toilet is not a Jabsco 29090/29120 series, then you should replace the standard macerator housing with the Adaptor *before* you start to fit the Conversion.

Make a pencil mark across the joint between the motor assembly (key 2) and the waste pump body (key 5) that will enable you to realign them later.

Remove the 4 long screws (key 13) that secure the macerator housing (key 15) to the waste pump body (key 5) and notice that the screws are of 2 different lengths. The chopper (key 10) will retain the waste pump body (key 5) on the motor shaft.

If you can remove the macerator housing (key 15) without damaging the upper paper gasket (key 7) that lies between the stainless steel wearplate (key 8) and the waste pump body (key 5), you will not need to remove the chopper.

Grasp the stainless steel wearplate (key 8) to the waste pump body (key 5) while gently removing the macerator housing (key 15). You may tap the flange with a mallet if necessary.

Remove the 'O' ring (key 14) and keep it.

Remove the exposed, lower paper gasket (key 7) and throw it away.

If you have damaged the upper paper gasket (key 7), insert a blunt rod into the discharge hole in the macerator housing (key 15) and



INSTALLATION INSTRUCTIONS

push it against the impeller to prevent the motor shaft from turning.

Unscrew the chopper (key 10), and remove the stainless steel wearplate (key 8) and the upper paper gasket (key 7).

Clean off any residue from the paper gaskets that may have stuck to the waste pump body (key 5) or the stainless steel wearplate (key 8).

Fit one or both of the new paper gaskets (key 7) so that there is one gasket only on either side of the stainless steel wearplate (key 8).

If you have removed the chopper (key 10), replace it by screwing it onto the shaft as tightly as you can by hand.

Refit the 'O' ring (key 14) to the waste pump body (key 5), lubricate it with petroleum jelly and push on the Adaptor.

Using the shorter of the 4 screws (key 13), secure the Adaptor to the waste pump body (key 5).

Align the waste pump assembly to the motor assembly (key 2) using your mark, so that the discharge flange is on the same side of the motor as the red and black wires, before using the 2 longer screws (key 13) to secure the waste pump assembly to the motor assembly.

Your adaptor kit includes its own matching, black rubber base gasket. Use it instead of the base gasket (key 12) that is supplied with the Conversion.

FITTING ELECTRIC CONVERSION SYSTEM

Check that the top of any anti-syphon loop in the discharge hose is not more than 1.8m (6ft) above the base of the toilet. If it is, cut the discharge hose as necessary both to shorten it and to reposition any vented loop fitting so that the vent is at the top of the anti-syphon loop.

Ensure that there are no alternate rises and falls in the discharge pipework, except for the anti-syphon loop.

Ensure that the joker valve (key 29) is in good condition, and that it is still in place in the discharge elbow.

Using the original screws (key 11), secure the Conversion to the discharge flange **before** you secure it to the base.

CAUTION: Failure to follow this procedure may result in leaks between the discharge elbow and the macerator housing (key 15).

In below waterline installations with the discharge connected to a through hull fitting the hose must be connected via a vented loop positioned a minimum of 200mm (8") above the waterline at all levels of heel or trim. The maximum height of the discharge hose must not exceed 1.8m (6ft).

Locate the new bottom gasket (key 12) on its pegs on the base. Note that the new gasket does **not** have a flap valve.

Using the original screws (key 11), secure the Jabsco Electric Conversion to the base.

Connect the inlet seacock to the flushing pump inlet hosedtail by the shortest possible route, **WITHOUT** any anti-syphon loop or vented loop fitting.

Cut and shorten the inlet hose as necessary, whether you are re-using an existing inlet hose, an altered inlet hose, or a replacement hose. Do not connect the pump inlet to a pressurised water system.

Ensure that there are no alternate rises and falls in the inlet pipework, which will create airlocks. The Jabsco Pumpguard supplied must be installed in the inlet hose, in a position where it can be easily inspected and cleaned.

If the level of the toilet base is above the waterline, the inlet hose MUST NOT be more than 3m (10ft) long. Failure to observe this caution may prevent the electric pump from priming, which may damage the Conversion.

Take the new white flushing hose provided and shorten it as necessary so that it will form a smooth curve, without kinking, between the flushing pump outlet hose tail and the elbow at the back of the bowl.

In some installations there may be recirculation of waste via the inlet pump. In this instance fit a large length of hose between the pump and bowl, rising in a straight line to the same height as any loops in the discharge hose.

Secure the ends of all hose tails with stainless steel worm-drive hose-clips, ensuring that all inlet connections are airtight and that all outlet connections are watertight.

If it is difficult to fit the hoses on to the hose tails, soften the hose by dipping the end of it in hot water.

CAUTION: Do NOT apply flame to the hoses. Do NOT apply flame or any heat to the plastic hose tails on the toilet. Do NOT apply sealing compounds to any hose connections.

ELECTRICAL CONNECTIONS

The Conversion should be connected to the power source with an electrical circuit independent of all other accessories. Do not connect via existing distribution boards unless they are suitable for high amp draws.

The total length of wire should be kept to a minimum and the wire should be sized in accordance with the chart below. The wires, if not run through conduit should be supported every 450mm (18") with non-metallic clips.

CAUTION: Inadequate wire size will result in voltage drop, and will impair performance, and may damage the Conversion.

Protect your new wiring circuit by selecting the correct size of fuseholder or circuit breaker from the Electrical Specifications below, and install your choice in the positive power lead, **within 170mm (7") of the battery.**

Retain the fuseholder supplied with the Conversion to protect the unit.

Connect the Positive wire to the Red (positive) motor lead, and connect the Negative wire to the Black (negative) motor lead.

CAUTION: Correct motor Polarity (Red to Positive, Black to Negative) is essential. Incorrect Polarity will damage the Conversion.

Make all joints with appropriately rated terminal blocks, or crimp-on terminals.

Fit fuse (supplied loose) into fuseholder.

ON COMPLETION OF INSTALLATION - SHUT BOTH SEACOCKS.

ELECTRICAL SPECIFICATIONS

Voltage	Amp draw	Fuse size (Amps)	Wire size mm ² (AWG) per metre (foot) of run*			
			0.4m (0-13ft)	4-6m (14-20ft)	6-12m (21-40ft)	12-18m (40-60ft)
12	25	25	4.0mm ² (# 10)	6.0mm ² (# 12)	8.0mm ² (# 6)	19.00mm ² (# 4)
24	13	15	2.5mm ² (# 14)	4.0mm ² (# 12)	6.0mm ² (# 10)	8.0mm ² (# 8)

*Wire run is the total length of cable from the power source to the Conversion and back to the power source (i.e. both positive and negative cables)



OPERATING INSTRUCTIONS



Whenever the toilet is not in use both inlet and discharge seacocks must be closed - even if secondary valves are fitted. Failure to do so may result in flooding which can cause loss of property or life

Ensure that ALL users understand how to operate the toilet system correctly and safely - including seacocks or secondary valves.

Take special care to instruct children, the elderly, and visitors

The toilet is one of the most used pieces of equipment on your boat. Correct operation of the electric toilet is essential for the safety and comfort of your crew and your craft.


WARNING: NEVER RUN DRY! If you run the pumps without water for lubrication, you may damage the Conversion. Therefore, before every usage, both seacocks (and secondary valves if fitted) **MUST** be open.

The Conversion has two electric pumps which require continuous water lubrication. On delivery, the flushing pump is specially lubricated to permit one period of ten seconds dry running.

In everyday use, the flushing pump and the base are designed to retain sufficient water to lubricate the pumps. But after long periods without use, water may evaporate from the base. If the water in the base does not reach the joint with the bowl, then:-

Open inlet and outlet seacocks (and secondary valves if fitted).

Half-fill the bowl with fresh water.


Turn the Control Knob (key 17) to the Flush & Discharge position () and hold it there. The pump will start to discharge water from the bowl, and flushing water should appear from the rim of the bowl within 10 seconds.


Release the Control Knob (key 17), which will return automatically to the Off position.

WARNING! If flushing water does not appear within 10 seconds, release the Control Knob (key 17). Do NOT run the pumps again until you have manually primed the flushing pump.



NORMAL USE

OPEN INLET AND OUTLET SEACOCKS (and secondary valves if fitted).

Before use, ensure that there is some water in the bowl to prevent the toilet paper becoming compacted at the bottom of the bowl. If the bowl is empty, turn the Control Knob (key 17) to the **Flush & Discharge** position () so that some flushing water is pumped in.

During use, you may turn the Control Knob (key 17) to the **Discharge Only** position () so that some waste is pumped out as necessary to keep the contents of the bowl low enough for comfort.

Use good quality hard or soft household toilet paper, but do not use more than is necessary.

After use, turn the Control Knob (key 17) to the **Discharge Only** position () and hold until the bowl is almost empty. Then turn the Control Knob to the **Flush & Discharge** position () and hold until all waste in the discharge pipework has either left the boat, or reached the holding tank (allow 3 seconds per metre (yard) length of pipework). Lastly turn the Control Knob back to the

Discharge Only position () and hold it there until the bowl is empty.

Always leave the bowl empty to minimise odour and spillage.

SHUT INLET AND OUTLET SEACOCKS

CAUTION: Do not put anything in the toilet unless you have eaten it first, except the toilet paper. Do NOT put in: Sanitary Towels, Wet Strength Tissues, Cotton Wool, Cigarettes, Matches, Chewing Gum or any solid objects, Petrol, Diesel, Oil, Solvents of any kind or water more than hand hot.

CLEANING

Regular flushing with clean sea water is one of the most effective methods of keeping the toilet clean and sweet smelling.

To clean the bowl, use any liquid or cream ceramic cleaner.

To clean the rest of the toilet, including the seat and lid, use a non abrasive liquid cleaner. Polish with a dry cloth only.

CAUTION: Do not use abrasive pads on any part of the toilet and do not use abrasive cleaners except for the bowl.

To disinfect the toilet, use a liquid disinfectant diluted in accordance with the manufacturer's instructions. You may apply it to all parts of the toilet using a sponge or soft brush as necessary.

CAUTION: Do not use thick liquid toilet cleaners or neat bleach. They may damage the valves, gaskets and seals.

After applying any cleaning or disinfectant agent, always flush well.

CAUTION: Do not allow these agents to stand in the system.

WINTERISATION

CLOSE BOTH SEACOCKS

Drain the complete system both as a protection against frost damage and to discourage the growth in the pipework of anaerobic bacteria that cause unpleasant smells.


CAUTION: The use of anti-freeze is NOT RECOMMENDED, as it is difficult to ensure that it penetrates the complete toilet system. If, for any reason, anti-freeze is used, it MUST be glycol based.

Open any secondary valves.

Remove the base drain plug.

Disconnect the discharge flange from the Conversion, (avoiding the need to remove the outlet hose from the discharge elbow).

Loosen hose clips and disconnect the other hoses from the flushing pump inlet hose tail, the seacocks and secondary valves, if fitted. Do NOT remove the bleed hose (key 30).

Turn the Control Knob (key 17) to the **Flush & Discharge** position () for **3-5 seconds**.

CAUTION: If you run the pumps for longer than 5 seconds, you may damage the Conversion.

Ensure that all water is drained from the toilet system.

Reconnect the discharge flange to the Conversion.

Reconnect all hose ends and secure them with their hose clips.

Replace the base drain plug securely.

Disconnect the electrical supply.

Fasten down the seat and lid to prevent use, and attach a warning notice.

SERVICING

WARNINGS

If the pump is operated accidentally when any part of your fingers are in the macerator chamber the chopper may cause injury.

If the toilet is connected to ANY through-hull fittings, and if the toilet or the pipework develops a minor leak, it can suddenly become a major leak that allows water to flood in, causing the craft to sink, which may result in Loss of Life.

If you leave the toilet dis-assembled, and if the seacocks are opened when the craft is afloat, water will flood in and may cause the craft to sink, which may result in Loss of Life.

You will need a Jabsco Service Kit part number 29101-0000, which contains all wearing parts - refer to PARTS LIST for details.

CAUTION: For the safety of your crew and your craft, use only genuine Jabsco replacement parts.

CLOSE BOTH INLET AND OUTLET SEACOCKS

REMOVE FUSE, and disconnect the electrical supply.

Remove the Conversion as follows:-

- Loosen hose clips, disconnect the inlet pipework and the flushing hose (key 27) from the flush pump housing (key 24).
- Remove the 2 screws (key 11) that secure the discharge flange to the macerator housing (key 15).
- Remove the 4 screws (key 11) that secure the macerator housing (key 15) to the base.
- Lift off the Conversion, and pick up the base gasket (key 12) and the joker valve (key 29).

DO NOT remove the bowl from the base.

The flushing pump and the waste pump may be serviced independently if necessary, but are most easily serviced together.

Dis-assemble the flushing pump assembly as follows:

- Remove the short screw (key 16) that secures the Control Knob (key 17), and gently lever off the knob.
- Remove the 7 long screws (key 18) that secure the flush pump cover assembly (key 19), and lift it off together with the cork gasket (key 20).
- Lift out the brass wearplate (key 22) and the flushing pump impeller (key 6).
- Lift out the switch and switch spring (key 25) and gently disconnect the red positive wires.
- Push the control valve assembly (key 21) up and out, using a blunt instrument inserted up the inlet hose tail.
- Pull the bleed hose (key 30) off the flush pump body (key 24).
- Remove the 2 screws (key 23) that secure the flush pump body (key 24) to the motor (key 2) and lift off the body.
- Push out the seal (key 4) using a blunt instrument, taking care NOT to damage the seal seat area in the body.

Dis-assemble the waste pump assembly as follows:

- Pull the bleed hose (key 30) off the waste pump body (key 5).
- Make a pencil mark across the joint between the motor assembly (key 2) and the waste pump body (key 5) that will enable you to realign them later.
- Remove the 4 long screws (key 13) that secure the macerator housing (key 15) to the waste pump body (key 5) and notice that the screws are of 2 different lengths.
- Pull the macerator housing (key 15) off the waste pump body (key 5) and remove the O ring (key 14).
- Grip the flat on the exposed top drive shaft of the motor, and unscrew the chopper (key 10) counter-clockwise, together with the spring washer (key 10).

- Pull the waste pump body (key 5) off the motor shaft, and remove the 2 paper gaskets (key 7), stainless steel wearplate (key 8) and the waste impeller (key 6).
- Push out the seal (key 4(a)) using a blunt instrument, taking care NOT to damage the seal seat area in the body.

Clean and disinfect all parts.

Flush through the bleed hose (key 30) to remove any scale or debris, and ensure that the two hosedetails to which it fits on the flush pump and waste pump bodies are also cleared of any scale or debris.

Remove any traces of the cork (key 20) or paper (key 7) gaskets that may remain on the parts that they seal together.

Inspect the joker valve and replace it if it is stiff, damaged or covered with scale (key 29).

Ensure that the control valve assembly (key 21) is clear of debris, and is operating freely.

Check the switch and switch spring (key 25) and replace them if they are corroded or damaged in any way.

Automatically renew the 2 seals (keys 4(a) + 4(b)), and the O ring (key 14), the 2 impellers (key 6(a) + 6(b)), the 2 paper gaskets (key 7) and the cork gasket (key 20). Use the other parts in the kit as necessary.

Re-assemble the waste pump assembly as follows:

- Press the new U-cup seal (key 4(a)) into the waste pump body (key 5) with the open side of the seal facing into the impeller chamber.

- Lubricate the motor shaft, the sides and bottom of the waste pump impeller chamber with petroleum jelly, before pushing the waste pump body (key 5) onto the motor shaft.

- Fit the new impeller (key 6(a)) by rotating it **COUNTER-CLOCKWISE** to engage the flat on the motor shaft, and continue to rotate it as you push it to the bottom of the impeller chamber.

- Fit one new paper gasket (key 7), then refit the stainless steel wearplate (key 8) and then fit the other new paper gasket (key 7).

- Grip the flat on the exposed top drive shaft of the motor, position the lock washer (key 10) on the bottom drive shaft and screw on the chopper (key 10).

- Fit the new O ring (key 14) to the waste pump body (key 5), lubricate it with petroleum jelly and push on the macerator housing (key 15).

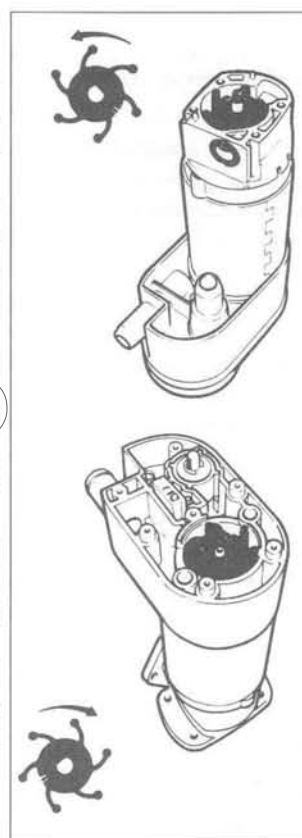
- Using the shorter 2 of the 4 screws (key 13), secure the macerator housing (key 15) to the waste pump body (key 5). Rotate the waste pump assembly so that the discharge flange is on the same side of the motor as the label on the motor, before using the 2 longer screws to secure the waste pump assembly to the motor (key 2).

- Push the bleed hose (key 30) onto its hose tail on the waste pump body (key 5).

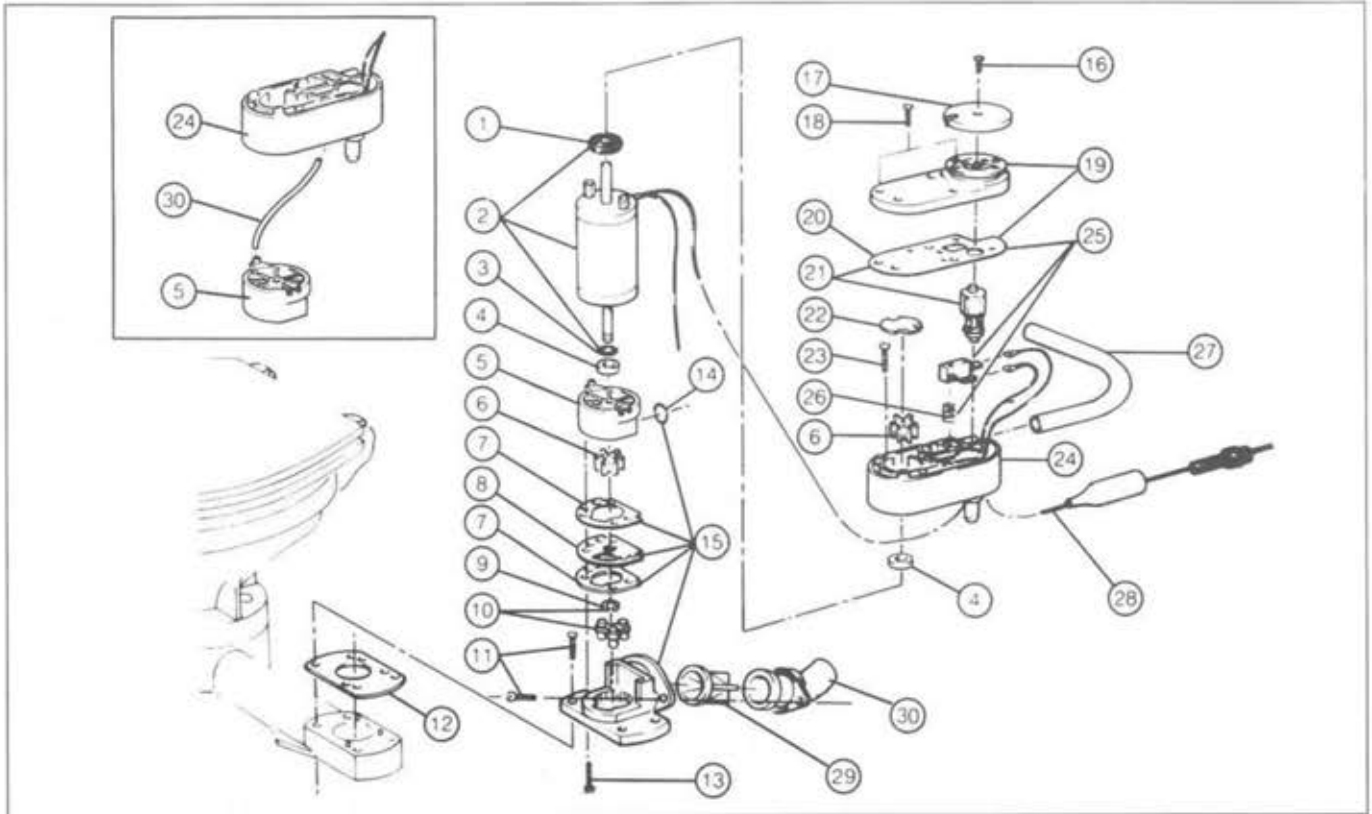
Re-assemble the flushing pump assembly as follows:

- Press the new U-cup seal (key 4(b)) into the flush pump body (key 24) with the open side of the seal facing into the impeller chamber.

- Lubricate the motor shaft, the sides and the bottom of the flushing pump impeller chamber with petroleum jelly. Pushing the flush pump body (key 24) onto the motor shaft, using its



EXPLODED VIEW AND PARTS LIST



REPAIR KITS AVAILABLE

KIT	PART NO:	DESCRIPTION
A	29101-0000	SERVICE KIT
B	29109-0000	HARDWARE KIT
C	29116-1000	WASTE & FLUSH PUMP BODIES

KEY	DESCRIPTION	QTY PER TOILET	PART NO:	QTY PER REPAIR KIT		
				A	B	C
1	SLINGER (LARGE)	1				
2	MOTOR 12V	1	29108-0120			
	ASSEMBLY 24V	1	29108-0240			
3	SLINGER (SMALL)	1		1		
4	SEAL	2		2	2	
5	WASTE PUMP BODY	1				1
6	IMPELLER	2		2		
7	GASKET (PAPER)	2		2	2	2
8	WEARPLATE (STAINLESS STEEL)	1			1	
9	SPRING WASHER	1		1		
10	CHOPPER + SPRING WASHER	1	29102-1000			
11	MOUNTING SCREW (PAIR)	-		1		1
12	BASE GASKET (RUBBER)	1	29072-1000			
13	SCREW (WASTE PUMP)	4			4	
14	O-RING	1		1		1
15	MACERATOR HOUSING	1	29071-1000			

KEY	DESCRIPTION	QTY PER TOILET	PART NO:	QTY PER REPAIR KIT		
				A	B	C
16	SCREW (CONTROL KNOB)	1		1	1	1
17	CONTROL KNOB	1	29077-1000			
18	SCREW (FLUSH PUMP COVER)	7		1	7	1
19	FLUSH PUMP COVER ASSY	1	29081-1000			
20	FLUSH PUMP GASKET (CORK)	1	29075-1000	1		1
21	CONTROL VALVE ASSY	1	29083-1000			
22	WEARPLATE (BRASS)	1			1	
23	SCREW (FLUSH PUMP)	2		1	2	1
24	FLUSH PUMP BODY	1				1
25	SWITCH ASSY	1	29103-1000	1		
26	SWITCH SPRING	1				1
27	HOSE (ALL TOILETS)	1	29035-1000			
28	CABLE ASSY (WITHOUT FUSE)	1	29106-1000			
29	JOKER VALVE	1	29092-0000			
30	BLEED HOSE	1	29019-1010	1		1
31	PUMPGUARD (NOT SHOWN)	1	36220-0000			

Jabsco

USA

1485 Dale Way, Costa Mesa,
CA 92628-2158, U.S.A.
Tel: +1-714 545 8251
Fax: +1-714 957 0609

UK

Bingley Road, Hoddesdon,
Hertfordshire, EN11 0BU, UK.
Tel: +44-(0)1992 450145
Fax: +44-(0)1992 467132

CANADA

55 Royal Road, Guelph,
Ontario N1H 1T1, Canada.
Tel: +1-519 821 1900
Fax: +1-519 821 2569

JAPAN

NHK Jabsco Co Ltd
3-21-10, Shin-Yokohama,
Kohoku-ku, Yokohama 222, Japan.
Tel: +81-(0)45 475 8906
Fax: +81-(0)45 475 8908

GERMANY

MINTEC GmbH
Oststrasse 28
22844 Norderstedt, Germany
Tel: +49 (0)40 53 53 73 0
Fax: +49 (0)40 53 53 73 11