SERVICE MANUAL

DishDrawer

Phase 9.5

CONNECTED

DD60, DD24

AA GB EU SG US BI

FISHER & PAYKEL

FEATURED PRODUCT & CONTACT ADDRESSES

BRAND	MODEL	DESCRIPTION	CA	CA (CONNECTED)	MARKET
Fisher & Paykel	DD60DAW9	Double white model	81584	82309	AA
Fisher & Paykel	DD60DAX9	Double stainless steel model	81585	82310	AA
Fisher & Paykel	DD60DCW9	Double classic white model	81586	82311	AA
Fisher & Paykel	DD60DCX9	Double classic stainless steel model	81587	82312	AA
Fisher & Paykel	DD60SAW9	Single white model	81588	82313	AA
Fisher & Paykel	DD60SAX9	Single stainless steel model	81589	82314	AA
Fisher & Paykel	DD60SCW9	Single classic white model	81590	82315	AA
Fisher & Paykel	DD60SCX9	Single classic stainless steel model	81591	82316	AA
Fisher & Paykel	DD60SCTW9	Single classic tall tub white model	81592	82317	AA
Fisher & Paykel	DD60SCTX9	Single classic tall tub stainless steel model	81593	82318	AA
Fisher & Paykel	DD60DI9	Double integrated	81209	82319	AA
Fisher & Paykel	DD60STI9	Single tall tub integrated	81210	82320	AA
Fisher & Paykel	DD60SI9	Single integrated	81211	82321	AA
Fisher & Paykel	DD60SLI9	Single commerical integrated	81212	82322	AA
Fisher & Paykel	DD60DDFX9	Double designer flat handle stainless steel	81213	82323	AA
Fisher & Paykel	DD60SDFTX9	Single designer flat handle tall tub stainless steel	81214	82324	AA
Fisher & Paykel	DD60SDFX9	Single designer flat handle stainless steel	81215	82325	AA
Fisher & Paykel	DD60DDFB9	Double designer flat handle black	81833	82326	AA
Fisher & Paykel	DD60SDFTB9	Single designer flat handle tall tub black	82143	82327	AA
Fisher & Paykel	DD24DAX9	Double value stainless steel	81596	82328	US
Fisher & Paykel	DD24DCTW9	Double classic tall tub white	81597	82329	US
Fisher & Paykel	DD24DCTB9	Double classic tall tub black	81598	82330	US
Fisher & Paykel	DD24DCTX9	Double classic tall tub stainless steel	81599	82331	US
Fisher & Paykel	DD24DCHTX9	Double classic water softener tall tub stainless steel	81600	82332	US
Fisher& Paykel	DD24SAX9	Single value stainless steel	81603	82333	US
Fisher & Paykel	DD24SCTW9	Single classic tall tub white	81604	82334	US
Fisher & Paykel	DD24SCTB9	Single classic tall tub black	81605	82335	US
Fisher & Paykel	DD24SCTX9	Single classic tall tub stainless steel	81606	82336	US
Fisher & Paykel	DD24DHTI9	Double water softener tall tub integrated	81216	82337	US
Fisher & Paykel	DD24DTI9	Double tall tub integrated	81217	82338	US
Fisher & Paykel	DD24DI9	Double integrated	81218	82339	US
Fisher & Paykel	DD24SHTI9	Single water softener tall tub integrated	81219	82340	US
Fisher & Paykel	DD24STI9	Single tall tub integrated	81220	82341	US
Fisher & Paykel	DD24SI9	Single integrated	81221	82342	US
Fisher & Paykel	DD24DDFTX9	Double designer flat handle tall tub stainless steel	81222	82343	US
Fisher & Paykel	DD24SDFTX9	Single designer flat handle tall tub stainless steel	81223	82344	US
Fisher & Paykel	DD24DV2T9	Double version 2 tall tub	82756	82345	US
Fisher & Paykel	DD24SV2T9	Single version 2 tall tub	82757	82346	US
Fisher & Paykel	DD24DDFTB9	Double designer flat handle tall tub black	81834	82347	US
Fisher & Paykel	DD60DCHX9	Double classic water softener stainless steel	81613	82348	BI
Fisher & Paykel	DD60SCTHX9	Single classic tall tub water softener stainless steel	81615	82349	BI
Fisher & Paykel	DD60SCHX9	Single classic water softener stainless steel	81944	82350	BI
Fisher & Paykel	DD60DHI9	Double water softener integrated	81234	82351	BI

FEATURED PRODUCT & CONTACT ADDRESSES

BRAND	MODEL	DESCRIPTION	CA	CA (CONNECTED)	MARKET
Fisher & Paykel	DD60SHTI9	Single water softener tall tub integrated	81237	82352	BI
Fisher & Paykel	DD60SHI9	Single water softener integrated	81665	82353	BI
Fisher & Paykel	DD60DDFHX9	Double designer flat handle water softener stainless steel	81235	82354	BI
Fisher & Paykel	DD60SDFHTX9	Single designer flat handle water softener tall tub stainless steel	81259	82355	BI
Fisher & Paykel	DD60SDFHX9	Single designer flat handle water softener stainless steel	81258	82356	BI
Fisher & Paykel	DD60DDFHB9	Double designer flat handle water softener black	81835	82357	BI
Fisher & Paykel	DD60DCHX9	Double classic water softener stainless steel	81616	82358	EU
Fisher & Paykel	DD60SCHX9	Single classic water softener stainless steel	81618	82359	EU
Fisher & Paykel	DD60DHI9	Double wtaer softener integrated	81241	82360	EU
Fisher & Paykel	DD60SHTI9	Single wtaer softener tall tub integrated	81244	82361	EU
Fisher & Paykel	DD60SHI9	Single water softener integrated	81667	82362	EU
Fisher & Paykel	DD60DDFHB9	Double designer flat handle water softener black	81943	82363	EU
Fisher & Paykel	DD60DCX9	Double classic stainless steel	81624	82364	SG
Fisher & Paykel	DD60SCTX9	Single classic tall tub stainless steel	81625	82365	SG
Fisher & Paykel	DD60SCX9	Single classic stainless steel	81626	82366	SG
Fisher & Paykel	DD60DI9	Double integrated	81238	82367	SG
Fisher & Paykel	DD60STI9	Single tall tub integrated	81260	82368	SG
Fisher & Paykel	DD60SI9	Single integrated	81240	82369	SG

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IMPORTANT !
PLEASE RETAIN THIS MANUAL FOR FUTURE REFERENCE.
When servicing the Dishwasher, health and safety issues must be considered at all times.

1.1 Health & Safety

Note: Specific safety issues are listed below with their appropriate icon. These are illustrated throughout the service information.

1.1.1 Electrical Safety

Ensure the mains power has been disconnected before servicing the DishDrawer™. If the mains supply is required to be on to service the DishDrawer™, make sure it is turned off when removing any electrical component or connection to avoid electrical shock.

1.1.2 Electrostatic Discharge

An anti-static strap is to be used as electrical static discharge (ESD) protection when servicing electronic components.

1.1.3 Good Working Practices

Ensure the work area is in a tidy and orderly condition at all times so as not to cause a hazard while service work is being completed. Always clean and tidy the DishDrawer™ and work area after service is completed.

1.1.4 Isolate Water Supply

Turn off the water connection tap before servicing.

1.1.5 Water Leak Check

Check for water leaks as part of the testing after the service has been completed.

1.1.6 Insulation Test

Megger test to check insulation.
Warning: Short together the phase and neutral pins on the plug so as not to damage any electronic circuitry.

1.1.7 Solvent and Excessive Heat Damage

Solvents and excessive heat can damage plastic surfaces.

1.1.8 Sheet Metal Edges

When working around cut sheet metal edges use appropriate gloves or protection to eliminate the chance of receiving a laceration.

1.1.9 Diagnostics

D

While in diagnostics some safety devices are bypassed. Ensure you do not run components unattended.
They may overheat, flood or burn out or cause water damage.

1.2 Specialised Tools

For servicing this product, some specialist tools are required.

1.2.1 Static Strap

An anti static strap is required to prevent ESD (electrocstatic discharge) when handling electronic components.

1.3 Training Videos

In section 8, Service Procedures, you will find web links to take you through to training videos on specific service procedures. These training videos are also available on the service website Cool Blue World.

2 SPECIFICATIONS

2.1 Electrical Specifications

MARKET	VOLTAGE (V)	FREQUENCY (HZ)	CURRENT (A)
AA GB EU DK PF SG	220/240	50	10
US TW	120	60	10

2.2 Component Specifications

COMPONENT		SPECIFICATION
Controller	AA/GB/EU/DK/PF/SG	240V
	US/TW	120V
Water inlet valve		24v DC 65 +- 10 Ohms per coil
		2.5L per minute
Dispenser coil		24V DC 65 +- 10 Ohms
Rinse aid tanks	AA/GB/EU/DK/PF/SG	50 mls (approx 25 washes)
	US/TW	3.05 cubic inches
Motor	 Drain speed Wash speed	80V DC 3 phase brushless 5000rpm 2200 - 2800rpm
Stator		8 Ohms per winding 16 Ohms phase to phase
Heater	AA/GB/EU/DK/PF/SG	230V - 920W
		55 - 60 Ohm
	US/TW	120V -570W
		24-27 Ohm
	Thermal cut out temp	120 Deg C +- 6.5 Deg C 248 Deg F +- 42 Deg F
Temperature sensor		12000 Ω @ 20 °C (68 °F) 8300 Ω @ 30 °C (86°F) 3000 Ω @ 60 °C (140°F)
Water inlet hose	Pressure rating Length from chassis edge (view from front)	1MPa (145psi) max 1650mm (64 3/4") LH side 1250mm (49") RH side
Water pressure	Incoming water Pressure ratings	1MPa (145psi) max 0.03 MPa (4.3psi) min
Drain hose		2000mm (78 1/2") from LH side 1800mm (70 1/2") from RH side
Power cord	AA/GB/EU/DK/PF/SG	1650mm
	US/TW	29 1/2"
Drying fan		24V brushless DC motor 0.27A
Lid actuator		24V DC
User display		One per product, runs both tubs via a selector switch

2.3 Wash Profiles

AA market

Incoming @ 20°C

Wash Cycle		D	F	Pre Wash	D	F	Main Wash	D	F	Post Rinse 1	D	F	Post Rinse 2	D	F	Final Rinse	D	Pause (Vented)	Dry	D	Time (min)	Time Vented	Water (L)	Fan Run on	Fan Run on Vented
Heavy @2200-2500rpm	Time (min)	1	1	31	3	1	24	3	1	20	3				1	22	3	35	15	1	130	165	10	20	120
	Temp (°C)			60			65									60									
	Fill (L)			2.7			2.7			2.3						2.3									
Heavy Extra Dry @2200-2500rpm	Time (min)	1	1	31	3	1	24	3	1	20	3				1	27	3	41	40	1	160	201	10	20	120
	Temp (°C)			60			65									70									
	Fill (L)			2.7			2.7			2.3						2.3									
Heavy Quick @2200-2500rpm	Time (min)	1	1	26	3	1	24	3	1	10	3				1	23	3	35	0	1	101	136	10.5	20	120
	Temp (°C)			60			65									60									
	Fill (L)			2.7			2.7			2.6						2.5									
Heavy Santise @2600rpm	Time (min)	1				1	57	3	1	15	3	1	10	3	1	25	3	41	20	1	145	186	11.3	20	120
	Temp (°C)						70			65						70									
	Fill (L)						2.7 0.5			2.7			2.7			2.7									
Medium @2200rpm	Time (min)	1	1	16	3	1	21	3	1	20	3				1	25	3	35	15	1	115	150	9.4	20	120
	Temp (°C)			40			50									60									
	Fill (L)			2.5			2.3			2.3						2.3									
Medium Extra Dry @2200rpm	Time (min)	1	1	16	3	1	21	3	1	20	3				1	30	3	40	40	1	145	185	9.4	20	120
	Temp (°C)			40			50									68									
	Fill (L)			2.5			2.3			2.3						2.3									
Medium Quick @2200rpm	Time (min)	1	1	11	3	1	19	3	1	6	3				1	26	3	35	0	1	80	115	9.8	20	120
	Temp (°C)			40			50									60									
	Fill (L)			2.5			2.3			2.5						2.5									
Medium Santise @2600rpm	Time (min)	1				1	47	3	1	25	3				1	25	3	41	20	1	131	172	9.1	20	120
	Temp (°C)						65			65						70									
	Fill (L)						2.7 0.5 0.5			2.7						2.7									
Fast/Light @2200rpm	Time (min)	1				1	17	2	1	3	2				1	4	3	0	0	0	35	35	6.8	20	120
	Temp (°C)						48									40									
	Fill (L)						2.4			2.20						2.20									
Fast/Light Extra Dry @2200rpm	Time (min)	1				1	17	2	1	2	2				1	7	3	27	30	1	68	94	6.8	20	120
	Temp (°C)						48									45									
	Fill (L)						2.4			2.20						2.20									
60min* @2200rpm	Time (min)	1				1	26	3	1	4	2	1	4	2	1	11	3	0	0	0	60	60	9	20	120
	Temp (°C)						60									53									
	Fill (L)						2.4			2.2			2.2			2.2									
60min Extra Dry* @2200rpm	Time (min)	1				1	26	3	1	3	2	1	4	2	1	16	3	0	30	1	95	95	9	20	120
	Temp (°C)						60									60									
	Fill (L)						2.4			2.2			2.2			2.2									
Eco @2000rpm	Time (min)	1				1	63	3	1	30	3				1	25	3	0	70	1	202		6.80	30	30
	Temp (°C)						40									42									
	Fill (L)						2.3 0.4			2.05						2.05									
Vented Eco @2000rpm	Time (min)	1				1	63	3	1	30	3				1	25	3	0	70	1		202	6.80	30	30
	Temp (°C)						39									43									
	Fill (L)						2.3 0.4			2.05						2.05									
Delicate/Glassware @2100rpm	Time (min)	1		18	1	1	20	3	1	10	3	1	6	3	1	14	3	35	20	1	107	142	9.9	20	120
	Temp (°C)			45			50									55									
	Fill (L)			2.4			0.9			2.2			2.2			2.2									
Delicate/Glassware Extra Dry @2100rpm	Time (min)	1		18	1	1	20	3	1	10	3	1	6	3	1	20	3	35	40	1	133	168	9.9	20	120
	Temp (°C)			45			50									60									
	Fill (L)			2.4			0.9			2.2			2.2			2.2									
Delicate Quick** @2100rpm	Time (min)	1		13	1	1	18	3	1	5	3	1	5	3	1	14	3	32	0	1	74	106	9.9	20	120
	Temp (°C)			45			50									55									
	Fill (L)			2.4			0.9			2.2			2.2			2.2									
Rinse @2300rpm	Time (min)	1				1	10	3													15		2.6		
	Temp (°C)																								
	Fill (L)						2.6																		

* Recessed handle front user interface models only

**Not available on recessed handle front user interface models

EU market

Incoming @ 15°C

Wash Cycle		D	F	Pre Wash	D	F	Main Wash	D	F	Post Rinse 1	D	F	Post Rinse 2	D	F	Final Rinse	D	Pause (Vented)	Dry	D	Time (min)	Time Vented	Water (L)	Fan Run on	Fan Run on Vented
Heavy @2200-2500rpm	Time (min)	1	1	32	3	1	35	3	1	30	3				1	25	3	38	20	1	160	198	10	20	120
	Temp (°C)			60			65									65									
	Fill (L)			2.7			2.7			2.3						2.3									
Heavy Extra Dry @2200-2500rpm	Time (min)	1	1	32	3	1	35	3	1	30	3				1	30	3	41	40	1	185	226	10	20	120
	Temp (°C)			60			65									70									
	Fill (L)			2.7			2.7			2.3						2.3									
Heavy Quick @2200-2500rpm	Time (min)	1	1	27	3	1	30	3	1	20	3				1	25	3	38	5	1	125	163	10.5	20	120
	Temp (°C)			60			65									65									
	Fill (L)			2.7			2.7			2.6						2.5									
Heavy Santise @2600rpm	Time (min)	1				1	54	3	1	10	3	1	10	3	1	25	3	41	15	1	132	173	11.8	120	120
	Temp (°C)						70									70									
	Fill (L)						2.7 0.5 0.5			2.7			2.7			2.7									
Medium @2200-2300rpm	Time (min)	1				1	56	3	1	25	3				1	25	3	35	30	1	150	185	8.3	20	120
	Temp (°C)						30/55									60									
	Fill (L)						2.5 1.0			2.5						2.3									
Medium Extra Dry @2200-2300rpm	Time (min)	1				1	56	3	1	25	3				1	30	3	40	40	1	165	205	8.3	20	120
	Temp (°C)						30/55									68									
	Fill (L)						2.5 1.0			2.5						2.3									
Medium Quick @2200-2300rpm	Time (min)	1				1	37	3	1	7	3				1	22	3	35	0	1	80	115	8.7	20	120
	Temp (°C)						30/55									60									
	Fill (L)						2.5 1.0			2.7						2.5									
Medium Santise @2300-2600rpm	Time (min)	1				1	61	3	1	10	3				1	25	3	41	20	1	130	171	9.1	120	120
	Temp (°C)						70									70									
	Fill (L)						2.7 0.5 0.5			2.7						2.7									
Fast/Light @2200rpm	Time (min)	1				1	17	2	1	3	2				1	4	3	0	0	0	35	35	6.8	20	120
	Temp (°C)						48									40									
	Fill (L)						2.4			2.20						2.20									
Fast/Light Extra Dry @2200rpm	Time (min)	1				1	17	2	1	2	2				1	7	3	27	30	1	68	95	6.8	20	120
	Temp (°C)						48									45									
	Fill (L)						2.4			2.20						2.20									
60min* @2200rpm	Time (min)	1				1	26	3	1	4	2	1	4	2	1	11	3	0	0	0	60	60	9	20	120
	Temp (°C)						56									53									
	Fill (L)						2.4			2.2			2.2			2.2									
60min Extra Dry* @2200rpm	Time (min)	1				1	26	3	1	3	2	1	4	2	1	16	3	0	30	1	95	95	9	20	120
	Temp (°C)						56									60									
	Fill (L)						2.4			2.2			2.2			2.2									
Eco @2000rpm	Time (min)	1				1	81	3	1	40	3				1	18	3	0	90	1	243		7.8	30	30
	Temp (°C)						50									51									
	Fill (L)						2.4 0.9			2.35						2.15									
Vented Eco @2000rpm	Time (min)	1				1	78	3	1	40	3				1	23	3	35	90	1		280	7.8	30	30
	Temp (°C)						48									59									
	Fill (L)						2.4 0.9			2.35						2.15									
Delicate/Glassware @2100rpm	Time (min)	1		22	1	1	20	3	1	10	3	1	6	3	1	18	3	35	20	1	115	150	9.9	20	120
	Temp (°C)			45			50									55									
	Fill (L)			2.4			0.9			2.2			2.2			2.2									
Delicate/Glassware Extra Dry @2100rpm	Time (min)	1		22	1	1	20	3	1	10	3	1	3	3	1	26	3	35	40	1	140	175	9.9	20	120
	Temp (°C)			45			50									60									
	Fill (L)			2.4			0.9			2.2			2.2			2.2									
Delicate Quick** @2100rpm	Time (min)	1		17	1	1	20	3	1	5	3	1	6	3	1	16	3	32	0	1	83	115	9.9	20	120
	Temp (°C)			45			50									55									
	Fill (L)			2.4			0.9			2.2			2.2			2.2									
Rinse @2300rpm	Time (min)	1				1	10	3													15		2.6		
	Temp (°C)																								
	Fill (L)						2.6																		

* Recessed handle front user interface models only

**Not available on recessed handle front user interface models

US market

Incoming @ 49°C

Wash Cycle		D	F	Main Wash	D	F	Post Rinse 1	D	F	Post Rinse 2	D	F	Final Rinse	D	Pause (Vented)	Dry	D	Time (min)	Time Vented (min)	Water (L)	Fan Run on (min)	Fan Run on Vented (min)
Heavy @2200-2500rpm	Time (min)	1	1	62	3	1	20	3	1	10	3	1	20	3	38	15	1	145	183	11.3	20	120
	Temp (°C)			65									65									
	Fill (L)			2.7 1.0			2.6			2.5			2.5									
Heavy Extra Dry @2200-2500rpm	Time (min)	1	1	62	3	1	20	3	1	10	3	1	25	3	41	40	1	175	216	11.3	20	120
	Temp (°C)			65									70									
	Fill (L)			2.7 1.0			2.6			2.5			2.5									
Heavy Quick @2200-2500rpm	Time (min)	1	1	52	3	1	15	3	1	10	3	1	21	3	38	0	1	116	154	11.3	20	120
	Temp (°C)			65									65									
	Fill (L)			2.7 1.0			2.6			2.5			2.5									
Heavy Santise @2300-2600rpm	Time (min)	1	1	48	3	1	10	3	1	10	3	1	25	3	41	30	1	141	182	11.3	20	120
	Temp (°C)			65									70									
	Fill (L)			2.7 0.5			2.7			2.7			2.7									
Medium @2200-2400rpm	Time (min)	1	1	58	3	1	15	3	1	10	3	1	19	3	35	15	1	135	170	10.5	20	120
	Temp (°C)			55									60									
	Fill (L)			2.5 1.0			2.4			2.3			2.3									
Medium Extra Dry @2200-2400rpm	Time (min)	1	1	58	3	1	15	3	1	10	3	1	29	3	40	40	1	170	210	10.5	20	120
	Temp (°C)			55									68									
	Fill (L)			2.5 1.0			2.4			2.3			2.3									
Medium Quick @2200-2400rpm	Time (min)	1	1	31	3	1	7	3	1	5	3	1	19	3	35	0	1	80	115	10.6	20	120
	Temp (°C)			55									60									
	Fill (L)			2.5 1.0			2.4			2.4			2.3									
Medium Santise @2300-2600rpm	Time (min)	1	1	48	3	1	10	3	1	10	3	1	25	3	41	20	1	131	172	11.3	20	120
	Temp (°C)			65									70									
	Fill (L)			2.7 0.5			2.7			2.7			2.7									
Fast/Light @2200rpm	Time (min)	1	1	17	2	1	3	2				1	4	3	0	0	0	35	35	6.8	20	120
	Temp (°C)			48									47									
	Fill (L)			2.4			2.2						2.2									
Fast/Light Extra Dry @2200rpm	Time (min)	1	1	17	2	1	2	2				1	7	3	27	30	1	68	95	6.8	20	120
	Temp (°C)			48									53									
	Fill (L)			2.4			2.2						2.2									
60min* @2200rpm	Time (min)	1	1	26	3	1	4	2	1	4	2	1	11	3	0	0	0	60	60	9	20	120
	Temp (°C)			55									53									
	Fill (L)			2.4			2.2			2.2			2.2									
60min Extra Dry* @2200rpm	Time (min)	1	1	26	3	1	3	2	1	4	2	1	16	3	27	30	1	95	122	9	20	120
	Temp (°C)			55									60									
	Fill (L)			2.4			2.2			2.2			2.2									
Eco/Eco Vented @1850rpm	Time (min)	1	1	40	3	1	20	3				1	16	3	32	30	1	120	152	6.30	20	20
	Temp (°C)			45									54									
	Fill (L)			2.30			2.00						2.00									
Delicate/Glassware @2100rpm	Time (min)	1	1	55	3	1	10	3	1	3	3	1	11	3	35	20	1	117	152	9.9	20	120
	Temp (°C)			50									55									
	Fill (L)			2.4 0.9			2.2			2.2			2.2									
Delicate/Glassware Extra Dry @2100rpm	Time (min)	1	1	55	3	1	10	3	1	3	3	1	15	3	35	40	1	141	176	9.9	20	120
	Temp (°C)			50									60									
	Fill (L)			2.4 0.9			2.2			2.2			2.2									
Delicate Quick** @2100rpm	Time (min)	1	1	45	3	1	5	3	1	3	3	1	13	3	35	0	1	84	119	9.9	20	120
	Temp (°C)			50									55									
	Fill (L)			2.4 0.9			2.2			2.2			2.2									
Rinse @2300rpm	Time (min)	1	1	10	3													15		2.6		
	Temp (°C)																					
	Fill (L)			2.6																		

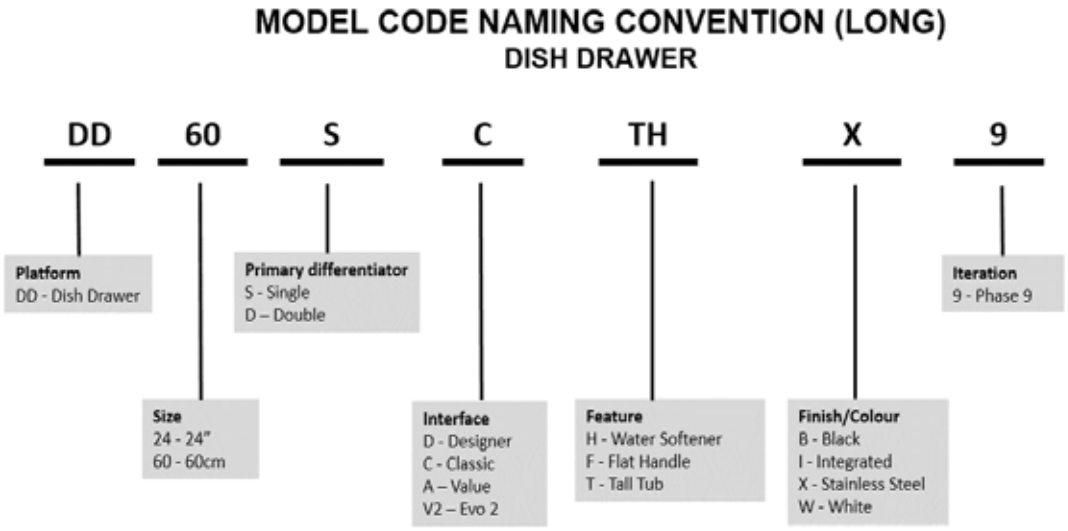
* Recessed handle front user interface models only

**Not available on recessed handle front user interface models

3.1 Model Number & Product Code

The model number and product code is shown on the product data plate, which is located on the front of the chassis trim. The product code is a specific code relating to that product, which if ordering spare parts, you need to use the product code to ensure you get the correct parts manual, as some parts for the Phase 9 DD are specific for this model.

The model number shows the product type, as follows:



3.2 Serial Number

The serial number consists of three letters and six digits and contains the information shown in the following example:

R I G 123456

Sequential serial number

Manufacturing plant code

FISHERPAYKEL code indicating month of manufacture

CUMBERLAND code indicating year of manufacture

Cumberland code

Letter	C	U	M	B	E	R	L	A	N	D
Year	1	2	3	4	5	6	7	8	9	0

Fisherpaykul code

Letter	F	I	S	H	E	R	P	A	Y	K	U	L
Month	1	2	3	4	5	6	7	8	9	10	11	12

Manufacturing Plant Codes

Code	Factory	Country
Refrigeration	B	New Zealand
Manufacturing	G	Thailand
Manufacturing	P	Mexico

In the example above, the appliance was manufactured in the sixth month (Feb) of 2016 in the Thailand factory.

4.1 Chassis

The DishDrawer chassis is one complete assembly composed of 5 steel metal components locked together by a proprietary riveting process. The chassis exterior is made of a lacquered electro-galvanised material.

4.2 Drawer Fronts

Prefinished drawer fronts are formed from steel blanks. The drawer fronts are attached to the tub by means of formed hooks and two square pins that are inserted through either side of the tub.

4.3 Electronics

The electronics system is made up of 2 separate boards, the wash controller and the motor controller. Each tub has 1 wash controller, and in the base of the product is a motor controller, which both tub wash controllers are connected to.

The wash controller is the main control. This board controls the wash program selected on the LED display. It monitors the water temperature, tells the motor controller to activate the lid actuators, wash motor and fill valves as required. The wash controller also controls the drying fan, detergent dispenser and water softener (if fitted).

The display LED is also connected to the wash controller, and depending on model, may control the tub it is connected to, or control both upper and lower tubs. There are no secondary touch switches shown on the tub. All cycles are selected through the display.

The power supply to the wash controller is isolated, but it is still recommended that the power be disconnected from the main supply before any servicing is carried out.

The motor controller is situated in the base of the chassis, and is connected to the 2 wash controllers by way of a harness.

The motor controller controls the wash motors, fill valves, lid motors and elements on both tubs. It has two 24V rails, one of the 24V power supplies is used for the loads that the motor controller runs, this supply is not isolated and must be treated as live at all times.

The other 24V supply is isolated and is fed up to the wash controllers to allow them to run their loads.

The motor controller requires several conditions to be met before it will run certain loads. For example, in order to prevent accidental flooding it won't run the motor in the wash direction unless the tub is closed and the lids are down.

In addition, except in diagnostic mode, it won't turn on an element unless the wash motor has prime, which requires the tub to be closed and the lid to be down.

Unlike previous versions of the DishDrawer, the element is now switched by a double pole relay. This protects against certain element fault conditions which can occur. The element is further protected by two non resettable thermal limiters.

4.3.1 Wash Controller

Wash controller, one situated in each tub.

Outputs: Dispenser
Water Softener
Drying fan

Inputs: Rinse Dispenser coil
Motor Controller
Flange UI
User Interface
Thermistor
WiFi module

4.3.2 Motor Controller

Motor controller situated in the base panel area.
There are 2 types of motor controller:

NZ, AU, GB, EU, DK, SG	230V
US, CA, TW	110V

Outputs: Lids Motors
Wash Motor
Fill valve
Heating Elements
Wash Controllers

Inputs: Flood Sensor

4.4 Drying Fan

Immediately after water from the final hot rinse has been drained from the tub, the drying cycle begins.

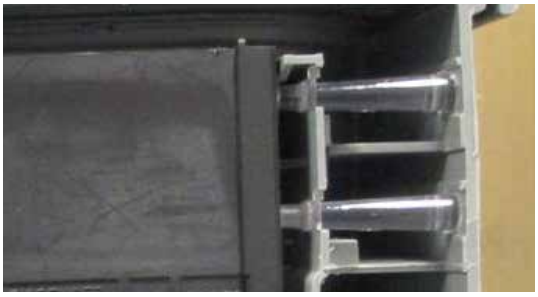
The drying fan draws air through the vent in the rear into the tub where it absorbs water from the dish load. The moisture-laden air is then mixed with a larger quantity of ambient air (drawn from the kitchen), to minimise the amount of vapour visible when air is exiting from the bottom of the drawer front.

A flap valve is located in the fan housing. This is closed to prevent moist air from entering the space behind the door panel during the wash. The fan runs continuously during the drying cycle for various times depending on the program selected, and will restart if the tub is opened and closed again.

After the wash program is complete, the lid drives up, and the fan continues to run for anything up to 120 minutes depending on the program.

4.5 Tub Home Sensor

The tub home sensor determines when the tub is closed. The tub home sensor consists of an infrared transmitter and receiver mounted on the right side of wash controller. When the tub is fully closed, infrared light is transmitted from the sender through a light pipe on the side of the tub, through a prism mounted in the chassis trim, then back through the other light pipe to the receiver. If the tub is not fully closed, the circuit is not complete and the appliance will not operate.



4.6 Motor

The motor is a fully electronically controlled 80V, 60w, 3 phase, 6 pole brushless DC motor, running on wash at between 2200 - 2800 rpm depending on the cycle selected, and at approximately 5000 rpm on drain.

4.7 Motor Rotor

The rotor is a four-pole permanent magnet rotor with a graphite bearing at each end of the vertical shaft. At the lower end of the rotor shaft is the drain impellor and at the upper end is the wash impellor.

4.8 Spray Arm

The spray arm is shaped for most efficient water flow. The holes are positioned for best penetration into the wash load, with the water jets angled to ensure the spray arm rotates at the most efficient speed. There are 2 sluicing jets located at the bottom of the spray arm to direct soils into the drain filter.

4.9 Filter Plate

The filter plate is positioned below the dish rack and spray arm.
The filter plate has a rubber over mould around the edge and centre to reduce soil re-depositing.
These improvements will ensure a better wash performance.
The drain filter fits tightly into the filter plate, due to the rubber over mould around the edge.

4.10 Drain Filter

The drain filter is a combination of a large catchment area for solid food pieces and a fine mesh for straining wash water, it is designed to minimise soils re-depositing on the wash load.

The Drain filter assembly can be separated into 2 pieces for fine cleaning, but we recommend rinsing out as one piece. If reassembling use guide arrows to orientate and ensure they click together snuggly.

4.11 Lid System

The lid is a single piece of polymer plastic with a diaphragm/seal co-injection moulded into it. The centre of the lid can move relative to the seal. Each side of the lid is clipped into a yoke, which is in turn connected to a worm drive lid actuator assembly containing a small brushed DC 24 volt motor.
When the product is first plugged in and switched on at the wall, the lid motors are powered up to ensure that the lid is fully raised.

4.11.1 When Activated

At the beginning of the wash cycle, both lid motors are powered up to pull the lid down onto the tub flange in approx 2 -3 seconds. The lid remains down for the duration of the wash and is only lifted when the DishDrawer beeps to signal the end of the cycle, or if the cycle is paused to gain access to the tub.

4.11.2 During a Power Failure

If power to the DishDrawer™ fails with the lid down, the tub can still be forced open manually if access is required. It is very difficult however to close the tub again without raising the lid. The lid actuators can be wound up manually with the tub fully removed. Failure to raise the lid before closing the drawer can result in the lid seal being damaged.

4.12 Filling with Water

The wash tubs of the DishDrawer fill by a single water inlet hose. Hot water connection is recommended for the USA market only, while cold water connection recommended for the AU & NZ markets.

From the connection to the water supply tap in the kitchen, the inlet hose enters the cabinet of the dishwasher at the base, into a dual water valve.

Each tub is supplied water independently via one of the dual valve coils and a fill hose that runs through a customised link assembly at the back of each tub and travels along the base of the tub under the wiring cover to the front.
At the front of the tub, the fill hose connects to the water softener (if fitted) then to the detergent dispenser which directs water into the tub.

The controller allows only one inlet valve coil to operate at a time, and the top tub always has priority on fill.

4.12.1 Dispensing Detergent and Rinse Aid

The dispenser is mounted in the front of the wash tub, and is held in place with 2 brackets and 6 T10 torx screws.

The dispenser consists of 2 separate detergent chambers, the large one is the main wash bucket, the smaller one is utilised for any extra detergent required for hard water areas.

The detergent dispenser door is opened manually to fill the detergent buckets, and is then closed manually.

There is a positive displacement pump unit and storage tank incorporated within the dispenser to dispense rinse aid.

The rinse aid volume dispensed is adjusted through the user preference options, refer to section 5.
When the rinse aid tank is empty, a glowing red light on the tank filler cap will alert the customer to refill the rinse aid tank.

4.12.2 Amount of Water

The tub fills with approximately 2.8 litres (3/4 gallon) of water.

The phase 9 model uses a new HYBRID filling system. This new filling system works slightly differently to the older dynamic filling system by looking for a good consistent prime over a LONGER time period (about 15 secs) and looks for this over a 40 sec period.

The initial fill will have up to THREE attempts to find this prime, so the product will start and stop while filling, and will initially look overfilled, as water will be up to the bottom of the spray arm (this is normal).
If this prime is found then some EXTRA water is added depending on which cycle was chosen and washing starts. If not there is now a series of small fills to CREEP up on the Prime to make the same decision.
This series of small fills gradually increases till this prime is found, this is how LOW PRESSURE (which is low fill rate) will accurately find prime as well.

So the series of short fills IS NOT a fault, but a more robust detection process and will ensure the product does not get any large overfills.

4.12.3 Flood Protection

A flood sensor is mounted in the base of the product. It is housed in the plastic housing. The flood sensor detects any water spillage and will alert the customer to the flood by showing an E1 on the display panel and will beep. The drain pump will also run continously.

4.13 Heating

4.13.1 Heating Element

The heating element is a small circular sheathed element with a stainless steel flat plate on the wet side.
There are 2 thermal limiters to detect an element over heat situation. These limiters are non servicable and the element would need to be replaced should they fail.

The element is held in place by by a cover and 3 torx screws.

4.13.2 Heating the Water

The heater plate is situated below the water duct cover. The water is passed over the heating element during the wash cycle via the duct. The heated water is then picked up by the motor rotor and distributed to the wash load via the spray arm.

4.13.3 Maintaining the Temperature

The water temperature is monitored by a thermistor situated in the base of the tub.

It is connected to the wash controller, which monitors the water temperature.

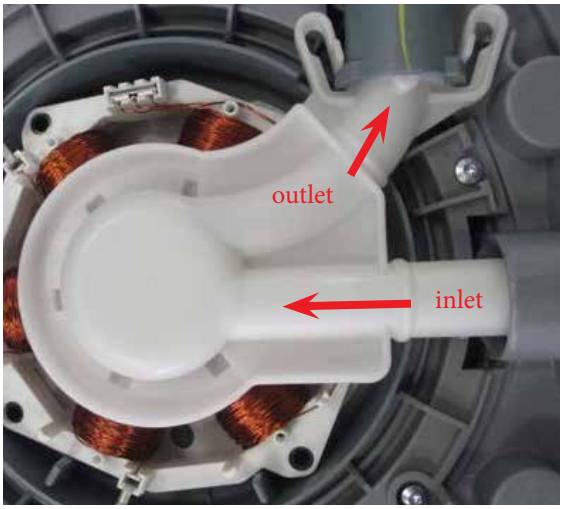
4.14 Drain Cycle

The drain pump is a self priming centrifugal pump that only pumps when the motor is rotating in the drain direction (anti-clockwise). It has a 5 blade impellor pushed onto a spline on the lower end of the rotor shaft.

The drain pump housing, which incorporates an inlet and outlet pipe, is welded to the motor housing, hence captivating the motor.

The inlet pipe plugs straight into the drain sump in the tub, and is sealed by a small o-ring.

The outlet pipe has a non-return valve to prevent soiled water returning to the tub.
The drain hose is an extruded blow moulded hose that is routed through the link assembly and exits out the base of the product and is connected to the domestic drain.

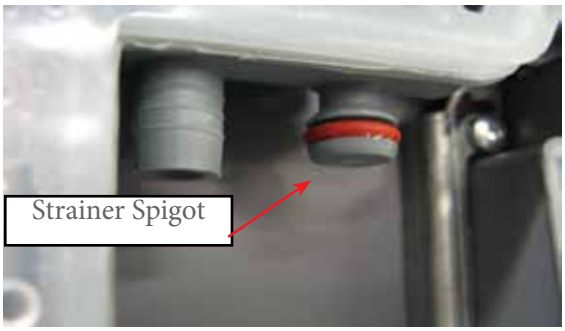


The drain speed during the drain cycle is approx 5000 rpm. In the hardware output diagnostic mode, it is set at the same speed as drain, to help diagnose drain problems.

4.15 Water Softener (some markets only)

The Water Softener uses a softening material (resin) to prevent most of the elements that cause hard water from being present in the wash water. The resin can only treat a limited amount of water before it needs to be regenerated. Regeneration is achieved by pumping salty water (brine) through the resin, and flushing away the hard elements to the drain. The process of delivering softened water, and regeneration of the resin is controlled by the electronic controller.

Delivering Softened Water: - Supply water arrives from the inlet valve then through an inline Strainer to remove large deposits. The strainer is attached to the water softener by an inlet spigot.



In the water softener the water passes through an air break and a diverter valve. It is then either directed through the resin to the dispenseras softened water, or directly to the dispenser, then into the tub.
The electronic controller measures the volume of water treated soft water, and adds an appropriate amount of non-treated hard water, to deliver a mix that is at the required hardness according to a pre-determined schedule. Water is treated according to its supply hardness. The customer is able to select one of 5 supply hardness settings in option adjustment mode.

Regeneration:- Regeneration is triggered when the amount of water that has been treated since the last regeneration nears the capacity of the water softener. The quantities treatable for each of the five settings of supply hardness have been predetermined, and are stored in the electronic controller. When triggered, immediately after filling for the main wash, the brine pump is activated and delivers a volume of salty water into the resin, at an amount appropriate to the hardness setting. The frequency of the pump is 3 Hz, and makes a slight rattling sound. Later in the wash cycle, the resin is flushed with supply water, and the by-products of regeneration are delivered into the wash water, and drained with it away to waste. During the flush the fill valve turns on and off alternately for 5 seconds for a number of times depending on the hardness setting. Normal treatment of incoming water then resumes.

Salt:- The customer is required to fill the salt tank with dishwashing salt from time to time. Salt is used in the water softener by mixing it with water to produce the salty water (brine) used in regeneration. When the salt level is low, a salt level detector causes a glowing red light to appear in the salt bung, and a “Salt” symbol appears in the LCD if one is fitted. When this happens, the customer should remove the salt bung, and using the salt container provided, pour salt into the salt reservoir until salt can be seen at the opening. The “Salt” symbol on the LCD will disappear and the red light will not be visible when the salt tank bung is replaced. In areas where the supply water is moderately hard, 21 dH (degrees of hardness) or 375 parts per million, water softener setting 3) the salt reservoir will need to be filled about once a month, and in harder areas more frequently. Delivery of treated water from one fill of the salt reservoir:

240 litres (63 gallons) at 30 – 100 ppm from 375 ppm supply water (setting 3)
144 litres (38 gallons) at 30 – 100 ppm from 625 ppm supply water (setting 5)

4.16 WiFi Module

Ph9 is Wi-Fi capable. It has a Wi-Fi module integrated to the bottom of the top tub.

The Wi-Fi module enables the product to be controlled using a phone App (Smart HQ).

The app provides the following functionalities:
- Select a cycle
- Select a modifier
- Start/Pause or cancel a cycle
- Set the following user settings
  - o UI lock
  - o Sabbath mode
  - o Sound on/Off
- Door status
- Notifications and warnings the product may report

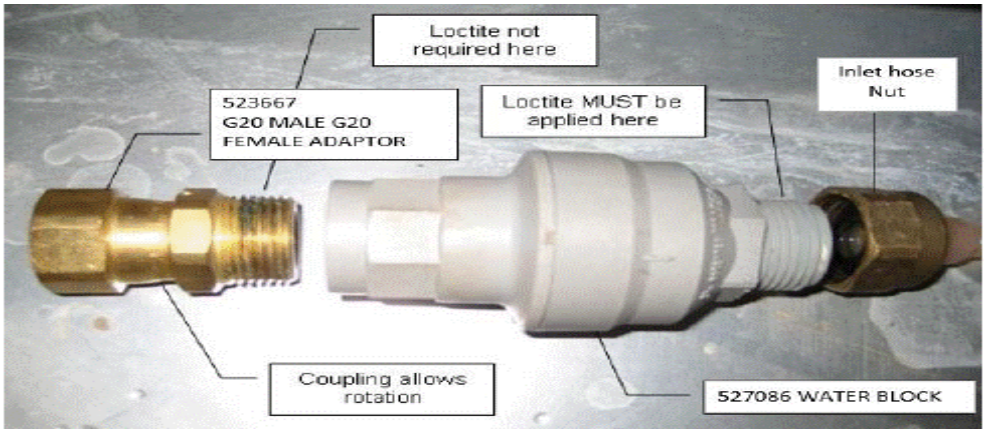
4.17 Knock to Pause Sensor

The integrated model has no interface on the door panel for the customer to interact with the operation.
The integrated model now has a knock sensor attached to the inside of the door panel and connected to the wash controller .
To pause, the customer knocks two times on the door outer, and the product will now pause and allow the tub to be opened.
NOTE: Important this sensor is fitted in the correct orientation to the rearof the integrated panel and correctly secured for it to operate correctly.

-Adjusting the Knock Sensitivity on Integrated Models-

NOTE: It is important to ensure the knock sensor is correctly fitted in the right orintation and
secured correctly to the rear of the intergrated door panel to ensure it operates correctly.
This knock sensor can be adjusted if it is not pausing correctly, or is too sensitive, and adjustment
level is found in the user preference settings, but this feature is hidden to the customer.
1 To adjust, get into the user preference menu as shown above.
2 While in the user preference settings, hold both the START and MODIFIER buttons until the QUICK
and SANITIZE LED's are lit.
3 The knock sensor level is shown as a bar graph on the wash cycle LED's. (4 is the factory setting).
4 To adjust the sensitivity, use the >>CYCLE button, then to save the setting press the START button, and the product will save and return to the idle display.

4.18 Water Block (EU and BI markets only)



The Eltek Water Block valve is a mechanical anti-flooding device that controls the maximum water consumption between 5 and 50 litres. For DishDrawer product, it is preset to maximum of 10 litres from of factory (arrow pointing at no “2”).
It offers protection from flooding, burst pipes, loose joint, inlet valves jammed open.
The waterblock is screwed with Loctite onto the inlet hose so that it is ‘permanently connected’ to the product. It is supplied into the EU / BI to allow us to meet the compliance requirements in those markets.
If amount of water passed through the valve exceeds the preset limit, the Eltek Water Block automatically blocks the flow of water and is closed until user intervention.

Picture 2 Left: not activated, red cylinder in down position.
Right: activated, red cylinder is extended up.

Once it is activated, user requires to unfasten the inlet hose nut to detach the inlet hose (it will be tight as there is Loctite applied), exposing the bottom of the Waterblock. You will see a red cylinder extended up. Reset by pressing the red cylinder down for it to work again.

5.1 WiFi Connection and Remote mode

Your appliance can be connected to your home wireless network and operated remotely using the app.

Getting started

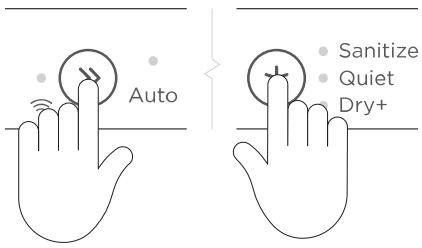
- Ensure your home WiFi network is turned on.
- You will be given step by step guidance on both your appliance and mobile device.
- It may take up to 10 minutes to connect your appliance.
- For further guidance and troubleshooting, please refer to the app.

On your mobile device:

① Download the app from www.fisherpaykel.com/connect
② Register and create an account.
③ Add your appliance and set up the WiFi connection.

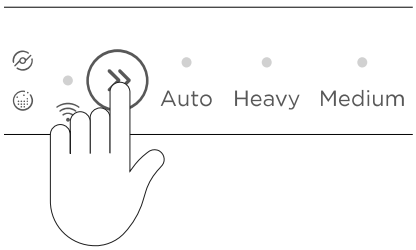
Connecting to your home WiFi

1



Ensure there is no wash in progress, then open the drawer. Press and hold » and ✶ together for four seconds.

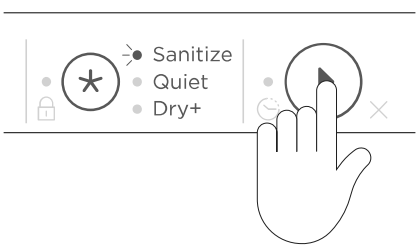
2



Press » to connect to the WiFi network.

Alternatively press ✶ to scroll to the WiFi menu and » to connect. When ᯤ flashes, follow the prompts within the app to complete set-up.

3

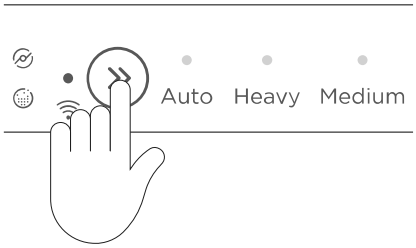


Press ▶ to save and leave the menu after WiFi is connected. If at any time, you want to exit the menu, press and hold ▶ to cancel.

WIFI CONNECTION AND REMOTE MODE

Enabling remote mode

1



With your DishDrawer™ Dishwasher connected to your WiFi network, press and hold » for four seconds.

2

While ᯤ is flashing, close the drawer to enable **REMOTE MODE**.

If the drawer is not closed within 7 seconds, while ᯤ is flashing, **REMOTE MODE** will not be enabled.

Disabling remote mode

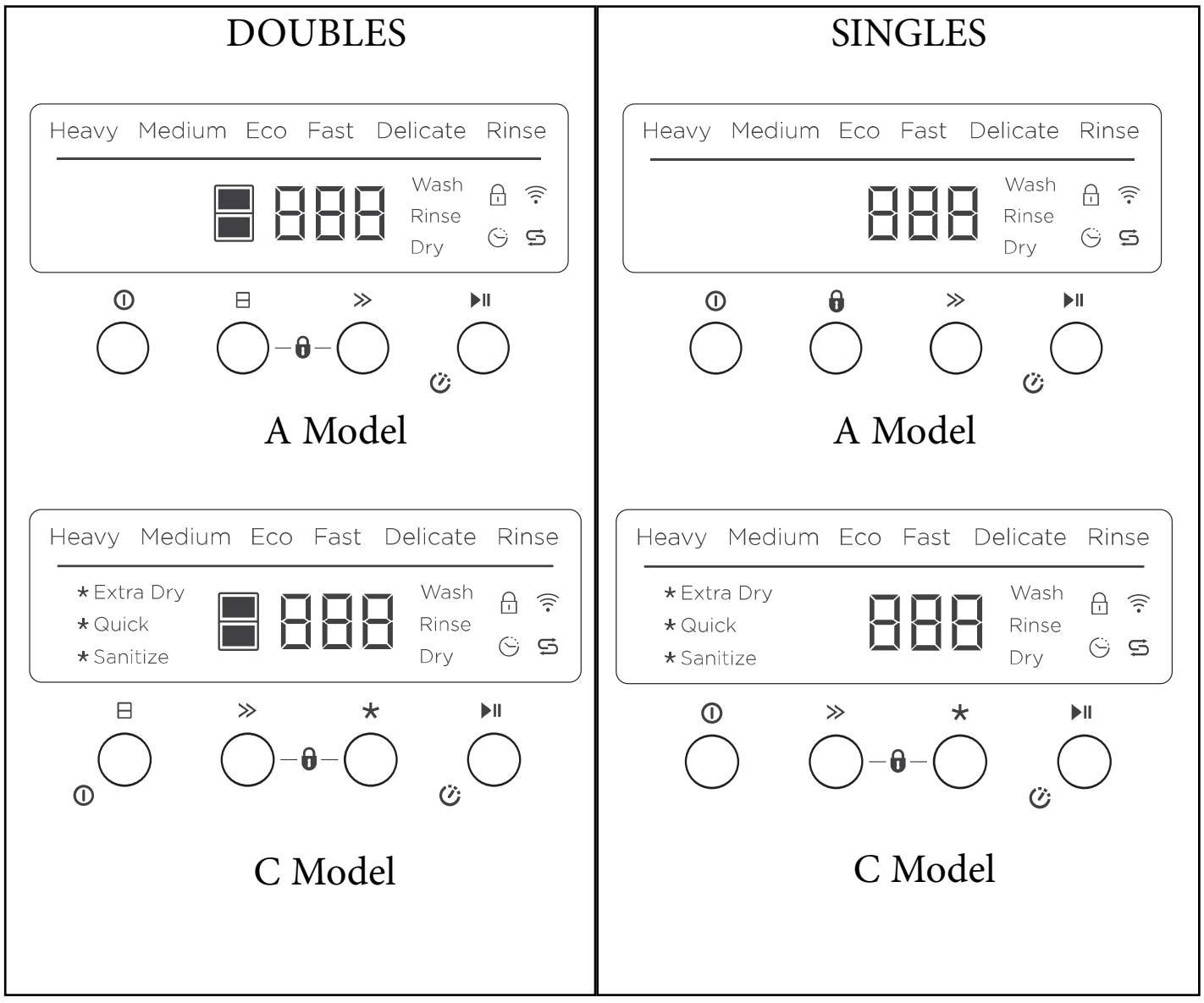
REMOTE MODE will automatically be disabled after 72 hours or if a fault occurs. Opening the drawer will also disable **REMOTE MODE.**

6 DIAGNOSTICS

6.1 Entering Diagnostics with front of door Display

1 To enter diagnostic mode, ensure there is nothing showing on the LED display, (power off at the display), then press and hold the START/PAUSE ⏯ and POWER ⏻ buttons simultaneously for 5 seconds, making sure that the START/PAUSE ⏯ button is pressed slightly ahead of the POWER ⏻ button. (The two outside buttons)

2 In Diagnostics mode, the display sub mode (dP) is initially activated. Step through the sub modes using the WASH SELECTOR ⏩ button. Press POWER ⏻ button to exit diagnostics mode. Press START/PAUSE ⏯ button to enter any sub mode.



Display (‘dP ’)/Saved Faults

1 Press START/PAUSE ⏯ button and all the LEDs on the display light up.

2 From here, START/PAUSE ⏯ button toggles between “Recent fault mode” and “Saved fault mode”.

3 Pressing the START/PAUSE ⏯ button initially enters “Recent Fault mode” and displays the most 34rrxg zv®recent fault. The tub indicator shows which tub the fault was displayed on. “0” is displayed if no fault is recorded.

4 Pressing the WASH SELECTOR ⏩ button when in “Recent fault mode” clears the most recent fault and moves it to previously saved.

5 “Saved fault mode” shows previous saved fault. Delayed Start icon illuminates.

6 Pressing the WASH SELECTOR ⏩ button when in previous fault clears the previously saved fault.

7 POWER ⏻ button exits back to diagnostics mode (dP).

8 Press the POWER ⏻ button again to exit diagnostic mode completely, or press WASH SELECTOR ⏩

9 button to go to the next sub mode menu.

Hardware Output ('HO ')
1 The WASH SELECTOR ⏩ button scrolls through various outputs.

Output	Display Code
Element relay (ensure there is water in the tub before running the element)	Er
Lid down or up	Ld
Detergent diverter	dd
Fill valve	FU
Wash motor direction	P1
Drain motor direction	P2
Rinse aid pump	rd
Drying fan	dF
Rinse aid LED	LE
Water softener bypass valve	C1
Water softener brine pump	C2
Water softener brine value	C3
Rinse aid pump	A1
Temperature in tub	0 °C

Table 1: Hardware output sub mode options

2 Use the Tub Select ⊟ button to choose what tub to run the output on.
3 Press START/PAUSE ⏯ to turn load each on or off. The last character on the display changes from "-" to "o" when an output is running.
4 If the output does not work, a long descending tone is played.
5 Press POWER ⏻ to exit HO sub-mode back to 'dP' sub mode, press POWER ⏻ button again to exit completely.

Fast Cycle ('FC ')
1 The test Fast Cycle wash program is NOT the same as a normal fast wash program.
2 Press Tub Select ⊟ to choose the tub.
3 Press START/PAUSE ⏯ button again to start the Fast Cycle.
4 Press START/PAUSE ⏯ button again to pause the Fast Cycle.
5 Press POWER ⏻ button to exit FC sub-mode to "Power off" mode.

Continuous Cycle ('CC ')
1 This sub mode is only used in the factory and is NOT required for servicing in the field.
2 Use the WASH SELECTOR ⏩ button to go to the next sub-mode.

High Heat Cycle ('HH ')
1 This sub mode is only used in the factory and is NOT required for servicing in the field.
2 Use the WASH SELECTOR ⏩ button to go to the next sub-mode.

Show Room Mode ('SH ')
1 In this mode, the user can press all the buttons. However, the user won't be able to start a cycle.
2 This sub mode has a 30 second timeout after which it resets to "Heavy" and goes through displaying each of the cycles.
3 Show room mode can be exited by turning the power button off on the display , then pressing and holding the POWER ⏻ and START/PAUSE ⏯ button for 5 seconds.

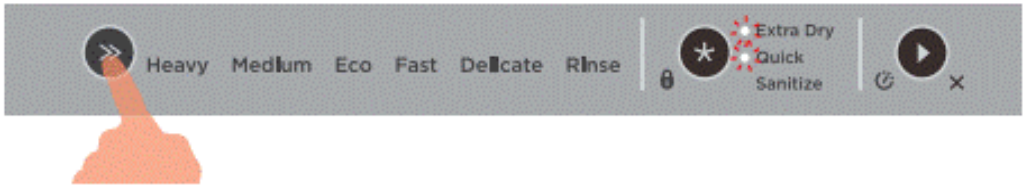
NOTE: The showroom mode will survive a power off at the wall socket, and needs to be manually removed to operate correctly.

6.2 Entering Diagnostics with top of door UI

① To enter diagnostics, open the tub and wait until the user flange display turns off, this will take approx. 30 seconds. Press and hold the **START** and **>>CYCLE** button for 5 seconds, the **START** button must be touched first. (note: the flange touch buttons operate on button release, not on initial touch). To exit at any time press and hold the START button.
② When first entering the diagnostics mode, the display sub mode (dP) is initially activated as the first sub menu. This is indicated by the **EXTRA DRY** & **QUICK** wash modifier LED's being lit.
③ Press the **START** button to enter the sub mode, and all the lights will illuminate and stay lit (display menu 1), Press **START** button again to view the most recent fault on the flange display. Press the **START** button again to view the previous fault display, and to highlight the previous fault the delay indicator LED will be illuminated (display menu 2)

Press and hold >> and START. Start must be pressed first

Display diagnostic



>> scrolls through the diagnostics sub menus

Start toggles the mode

DISPLAY MENU 1

All lights on,

DISPLAY MENU 2

Fault codes. Two entry fault stack, refer to binary fault. Illuminated delayed start LED refers to oldest of the two.

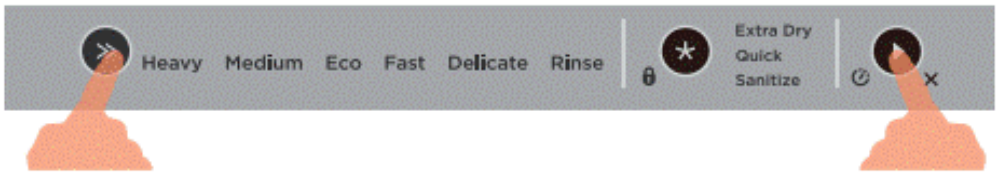
④ To clear the fault codes, touch the **>> CYCLE** button for 2 seconds.
⑤ To scroll to the next sub menu (HO) touch the **>>CYCLE** button.

Hardware Output Mode (HO)

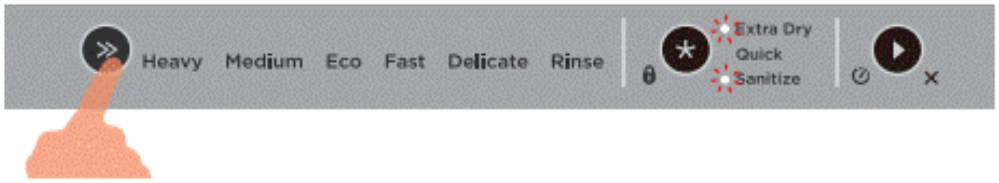
① Once in hardware output mode, the **EXTRA DRY** & **SANITIZE** wash modifiers will be lit.
② Press the **>>START** button to enter the sub mode.
③ The **>> CYCLE** button will scoll through the outputs which are highlighted on the following page.
④ The hidden **WiFi** LED will illuminate red to show the output is on if selected.

Step through to hardware output.

6.3 Getting into Hardware output Mode (HO)



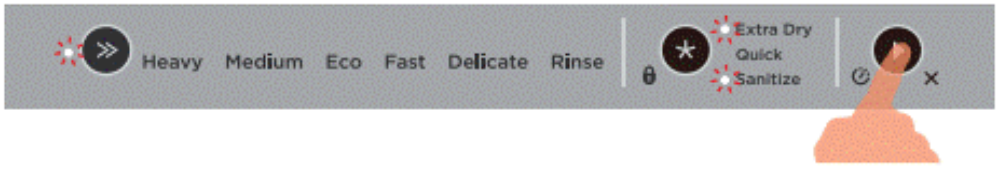
Press and hold >> and * simultaneously



Step through to hardware output.

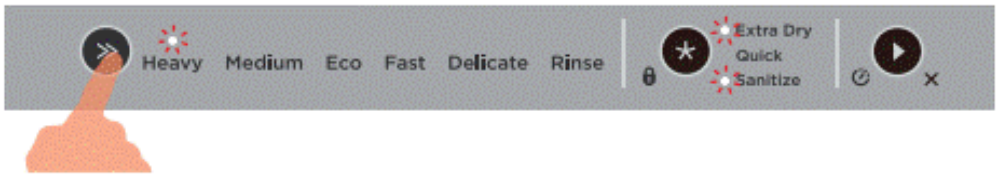
Select hardware output sub menu

TOGGLE ON OFF LED = WiFi



Toggle on / off with start button.

CYCLE THROUGH HARWARE OUTPUT

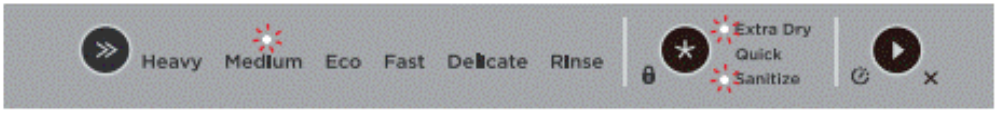


Scroll menus with modifier

DISPLAY MENU 1

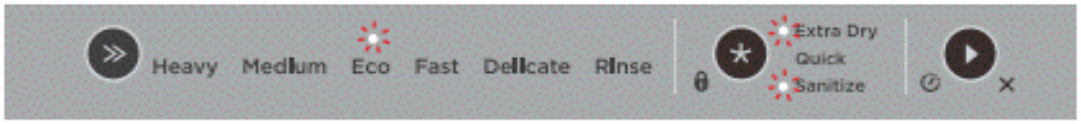
ELEMENT_RELAY

DISPLAY MENU 2



LID

DISPLAY MENU 3



DET_DIVERT

DISPLAY MENU 4

FILL_VALVE

DISPLAY MENU 5

MOTOR_WASH

DISPLAY MENU 6

MOTOR_DRAIN

DISPLAY MENU 7

RA_PUMP

DISPLAY MENU 8

FAN

DISPLAY MENU 9

RA_LED

DISPLAY MENU 10

WS_DIVERT

DISPLAY MENU 11

WS_BRINE_PUMP

DISPLAY MENU 12

BRINE_VALVE

6.4 Getting into Fast Test Cycle

① Enter diagnostic mode.
② Press the **>> CYCLE** button twice. The **EXTRA DRY**, **QUICK** and **SANITIZE** modifier LED's will be lit.
③ Press **START** button to run the fast cycle, and the **Heavy**, **Eco** and **Rinse** LED's will be lit.
④ Close the tub within the time frame to allow the cycle to start, 4 seconds for US market, 7 seconds for all other markets.
⑤ If you are too slow closing the tub, it will time out, and you will need to press ther **START** button again and close the tub within the given timeframe.

Getting into Continuous Cycle

① Enter diagnostics mode.
② Press the **>> CYCLE** button 3 times to get into the continous cycle mode. The **QUICK** and **SANITIZE** LED's will be lit.
③ Press the **START** button to enter the menu, the selected cycle will flash. To select the cycle you want to run continously press the **>>CYCLE** button until the LED is lit.
④ Press the **START** button and close the tub in the time frame required, 4 seconds for US market, 7 seconds for the other markets.

6.5 Demo Mode

Key combo to enter Diagnostics Mode:

STEP 1
Touch and Hold >> and Start (Start must be touched first)

STEP 2
Modifiers will display Extra Dry and Quick

STEP 3
Touch Cycle button until all modifiers start flashing

STEP 4
Touch Start button to toggle Demo Mode

Demo mode enabled = Fast flashing
Demo mode disabled = Slow flashing

STEP 5
Touch and hold Start button to exit diagnostics menu

Demo mode will remain on the previously set state

When a cycle is started with demo mode enabled,

-Start (i.e. close the lid
-Pause for 1 minute
-Increment the cycle process LEDs
-Pause for 1 minute
-Increment the cycle process LEDs
-Pause for 1 minute
-End (i.e. open the lid, play end of cycle beeps)

This cycle will run for a total of 3 minutes

7 FAULT DIAGNOSTICS

7.1 Troubleshooting

PROBLEM	POSSIBLE CAUSE	WHAT TO DO
Unclean dishes	Wash program unsuitable for the load	Heavily soiled items may need soaked before washing, and use the ehavy cycle.
	Spray arm unable to rotate	Ensure no items are obstructing the spray arm path. Make sure the spray arm is mounted correct on the rotor and is free to rotate around.
	Drawer overloaded/incorrectly loaded.	Dishes stacked incorrectly can not get water flow to wash correctly, ensure that the customer is not stacking dishes above other dishes.
	Filter plate/drain filter is incorrectly inserted.	Check the drain filter is correctly located to ensure correct filtration.
	Detergent put in the wrong compartment of the dispenser.	Ensure the correct amount of detergent is sued and is placed in the large dispenser bucket.
	Excess food not removed from the dinnerware prior to loading.	Ensure customer is removing large food scraps from plates before washing.
	Unsuitable detergent	Ensure only detergents suitable for automatic dishwashers are used.
	Not enough detergent.	Heavy soiled load will need sufficent detergent to clean, get customer to check detergent quantities highlighted in the user guide.
	Spray arm holes are blocked.	Remove the spray arm and clean under running water, ensure all the spray holes are free from obstruction.
Hard water		Ensure the product is clean of all lime scale/ calcium build up. This can be done by using a dishwasher cleaner or running a normal cycle with a cup of vinegar added.
		Ensure the customer is using a suitable dishwasher detergent for a hard water area, detergent levels will vary depending on water hardness. F&P does recommend a tablet type detergent in very hard water areas. An additive such as citric acid may also need to be added to help improve wash performance.
		Increase the rinse aid setting.
		Models with a built in water softener (H models only), increase the water softener setting, refer to page 37
		Models without a built in water softener: As an option, in extreme hard water areas, the customer could consult a local plumber on installation of a household water softener. This can help poor wash quality for both dishwashing and laundry product.

PROBLEM	POSSIBLE CAUSE	WHAT TO DO
Foaming	Wrong type of detergent used	Ensure the customer is only using detergents designed for automatic dishwashers.
	Incorrect amount of detergent.	Ensure the customer is following the directions in the user guide for detergent quantities.
	Too much egg in the wash load.	Increase the amount of detergent being used.
	Rinse aid setting too high.	Decrease the rinse aid setting.
	Rinse aid dispenser plug not closed properly	Ensure that the rinse aid plug is closed tight, with it's hand grip pointing vertically.
Water Leaking	Drain hose disconnected from waste pipe	Check the drian hose for fitment and ensure it is not leaking.
	Water inlet hose not properly connected.	Ensure the inlet hose is correctly fitted to the tap/ or is not leaking at the valve connection.
	Other leaks	Ensure the customer has used the correct dishwashing detergent.
		Check for lid sealing and lid actuator operation.
		Check for leaks around the heater plate or motor seals.
		Check the rinse aid plug is closed tight, with the hand grip pointing vertically.
Drawer will not open (no beeping, no wash underway)	Childlock feature is turned on.	Turn the child lock off
	Closed drawer auto lock is on.	Press any button to power on, ask customer if they need this feature enabled, turn off if not required.
Power failure during cycle	power outage in the area.	Once power resumes, the cycle will restart in the same wash program.
Continous beeping with A/F code in the display	a fault has occurred	Refer to section 7.2 for full fault code references.
Intermittent beeping	dishwash is in pause mode	Close the dishwasher and press the Start/Pause button to resume the program.
Dishwasher will not start	Power supply is not connected	Check electrical supply to the product.
	the drawer is not closed properly	Check the drawer is closing, check the tub latches are not holding the drawer open.
	keylock feature is on	Turn keylock feature off and test
	Start/Pause button not pressed	Press the Start/Pause to start the program.
	Dishwasher is in showroom mode	Get into diagnostics and turn off showroom mode.
Fan noise coming from the dishwasher after a wash program has finished.	This is normal, the drying fan stays on for a set period of time after the program has finished to aid with drying.	No action required.

7 FAULT DIAGNOSTICS

PROBLEM	POSSIBLE CAUSE	WHAT TO DO
Fan noise starts when drawer is closed	This is normal, the drying fan will run whenever the drawer is closed for a set period of time after the program has finished.	No action required, normal operation.
No powered detergent dispensed	Detergent dispenser was wet when detergent was added.	Ensure the dispenser is dry beofre adding detergent
The wash system has finished, but the product is idle and the drawer can not be opened.	The wash cycle has not finished. It is in a quiet phase needed to ensure the best wash results.	No action required.
Water pooling on the inner rim of the drawer after a wash	This is normal condensation.	Customer just needs to wipe dry.
Water under the drain filter.	This is normal.	No action required.
Excess water in the drawer.	Drain hose(s) bent or kinked.	Check the drain hoses are free from kinks and routed correctly to the drain.
	Blocked filter	Ensure the filter plate/drain filter is cleaned regularly.
Water marks on the dishes.	rinse aid run out	Ensure the customer is filling the rinse aid dispenser when required.
	Rinse aid setting too low	Increase rinse aid setting to required level.
	Rinse aid turned off	Turn on the rinse aid, and set to correct level
	Dishwasher overloaded or incorrectly loaded.	Explain to the customer to the correct loading pattern.
Drawer interior is stained	Some foods, like tomato based products may stain the inside of the drawer	Advise customers to pre-rinse dishes before placing them in the drawer. Alternatively using the rinse program after adding the dishes may minimise staining.
Dishes did not dry	Incorrect loading	Ensure the dishes did not nest together.
	Dishes were left in the drawer for several hours after the cycle has finished.	Dishes left too long in the drawer may accumulate condensation from moisture left in the bottom of the drain filter area. Also check rinse aid is full or is set at the correct setting.
	Rinse aid depleted	Refill the rinse aid dispenser
	Rinse aid setting too low	Increase the rinse aid setting
	Normal ECO program used?	Advise the customer to use a standard wash program based on soil level.
	Some items require a longer drying time, like plastic utensils and containers.	DD**C models only: The customer can select a wash program with an extra dry feature.
Excessive motor noise	No water in the wash motor area	This is normal on installation, or if the dishwasher has not been used for a long period of time. Pour 3 cups of water into the drawer before running a wash program.
	Obstruction in motor area	Check for obstructions in the motor area.

7.2 Fault Codes FOD

If there is a fault, the LED display will be displaying either a fault code or a user warning. Fault codes begin with the letter "F", user warnings begin with the letter "A", the fault code is shown with a number which corresponds to that particular fault.

e.g. F25 (motor loss of phase)

Some faults may lock the lid, in which case the tub must be opened by force. This should not cause damage, however do not attempt to close the tub with force.

The following section is intended to provide information on the cause of faults in order of likelihood. After each step in the process, the following procedure should be followed:

- Cycle the power to the device.
- Run any hardware device that has been replaced in "Hardware Output Mode"(refer to page 42 & 43) for at least 10 seconds. A long low tone played indicates a fault with the component (high pitch beeping from solenoids is normal and expected)
- If the original fault or another fault occurs while performing steps 1 & 2, move on to the next step of the process for that particular fault code.

WARNING! Before attempting any servicing to the product ensure the power is isolated. If replacing or removing components or harnesses always treat the product as live to earth. Ensure all earth wires removed during servicing are correctly reattached.

A1: Water Supply		Yes	No
1	Is the water supply hose connected and the tap turned on?	>>2	>>A
2	If there is no water in the tub, enter the hardware output mode and run the fill valve. If water enters the tub then the water supply is connected, however the incoming water pressure may still be too low for correct operation.	>>4	>>3
3	Check the hose filters are not blocked, or replace the fill valve if required. Did this clear the fault?	>>A	>>4
4	Check that the incoming water pressure and flow rate are adequate. For installations where the water pressure or flow is low, the DishDrawer may need to be run at a separate time to other appliances which use water, like washing machines. Min water pressure for non water softer models: 0.03MPa (4.3 psi). Min water pressure for water softener models: 0.1MPa (14.5psi)	>>A	>>5
5	Check that the motor rotor is undamaged, replace the motor rotor if damaged, does this clear the fault?	>>A	>>6
6	Make sure there is no foam in the tub. If there is foam try to determine the cause i.e. is liquid detergent being used, or has rinse aid been spilt into the tub.	>>A	

A3: Tub Cannot Drain		Yes	No
1	Is there water in the tub?	>>2	>>3
2	Using the diagnostic hardware output mode, start the drain direction (P2), does the product drain?. Is the drain hose blocked?	>>A	>>3
3	Is there any damage to the rotor? is there an obstruction caught in the motor rotor?	>>A	

A6: No Spray Arm		Yes	No
1	Is the spray arm correctly located on the motor rotor? and is the motor rotor correctly installed? Check that the wash impellor is not loose on the rotor shaft.	>>2	>>A
2	Using the diagnostic hardware output mode, start the fill valve, is it operating correctly? If not replace the valve.	>>3	>>A
3	Check that the water pressure and flow rate are adequate. For installations where water pressure or flow is low, the DishDrawer may need to be run at a separate time to other appliances which use water, such as washing machines.	>>A	

A7: Auto Recover Cycle		Yes	No
1	The product has detected excess foam in the wash tub, let the auto recovery program run until it is complete. The wash program will resume when the auto recovery program has completed.	>>A	

F1: Flood Detected		Yes	No
1	Remove the bottom tub, this will require some force to pull it open, is there water in the base of the chassis?	>>2	>>9
2	Was there anything in the tubs which obstructed the lid from closing? like large uten-sils?	>>3	>>9
3	Make sure the lid system is free from obstructions. Check that the lid system is operating correctly by entering diagnostic hardware output mode and actuating the lid motors (Ld). If either of the lid motors fails to actuate correctly, check that the side installation tab is not obstructing the lid yoke. If there are no obstructions, replace the lid actuator.	>>A	>>4
4	Did the tub overfill? If so check the fill valve in diagnostic hardware output mode to en-sure it can turn the water supply on and off.	>>A	>>5
5	Is there any foam in the tub? If there is foam, try and determine the cause, i.e. has liquid detergent been used, or has the customer spilt rinse aid into the tub. Remove as much foam as possible from the tub and clear the chassis base of water, does this clear the fault?	>>A	>>6
6	Is the motor rotor jammed? can it be turned freely? or is the wash impellor loose on the motor rotor shaft?	>>A	>>7
7	Check for other leak sources. Possible leak sites are the lid seal, seals around the heater and the wash motor, damaged fill or drain hose or a damaged O-ring where the drain cuff connects to the motor housing. Are any of these damaged or leaking?	>>A	>>8
8	Remove the excess water from the chassis base, especially around the flood sensor area and run the product and check for leaks.	>>A	>>9
9	No water in the chassis base, check for corrosion around the flood sensor and ensure that the flood sensor is correctly positioned and not touching the chassis base.	>>A	>>10
10	Replace the main motor controller.	>>A	

F2X: Motor Faults		Yes	No
1	Is the harness connected correctly?	>>2	>>A
2	Do the harness connections at the motor and motor controller show signs of water dam-age, corrosion or arcing? If so replace the damaged harness. Does this clear the fault?	>>A	>>3
3	Check the resistance of the motor coils (8 Ω) 16 Ω phase to phase, are these OK?	>>7	>>A
F21: Bridge Over Temperature			
4	Is the motor rotor free to turn by hand and is not jammed? If it is jammed remove and check for obstructions, reassemble and test. Does this clear the fault?	>>A	>>9
F24: Motor Stalled/Stopped/Overload			
5	Is the motor rotor clear of foreign objects? If not clear the obstruction and test. Does this clear the fault?	>>A	>>9
F25: Motor Loss of Phase			
6	Is the motor rotor correctly installed?	>>A	>>7
7	Replace the motor rotor and run the wash motor in hardware output mode for at least 10 seconds. Does it operate correctly?	>>A	>>8
8	Replace the motor stator assembly and then run the motor rotor again in the wash direc-tion in hardware output mode. Does it now operate correctly?	>>A	>>9
9	Replace the motor controller.	>>A	

F3X: Over-Temperature Faults		Yes	No
F30 fault: Invalid Temperature			
1	Is the thermistor damaged or disconnected?	>>A	>>2
2	Measure the resistance of the thermistor (between pins 1 & 2 of the TEMP connector on the wash controller). It should be approx 10k Ω at 25 °C (77 °F), is it within spec?	>>5	>>3
3	Replace the thermistor. Is the fault still present?	>>5	>>A
F31 Fault: Over Temperature			
4	Is the incoming water temperature too hot, over 85 °C (185 °F) ?	>>A	>>2
5	Check the heating element resistance on the tub faulting. Is the heating element out of spec? (refer section 2.5)	>>A	>>6
6	Check the element operation in hardware output mode in diagnostics, fill the tub with 2 litres (1/2 gallon) of water before switching on the element. Is it working OK?	>>A	>>7
7	If the fault is still occurring replace the wash controller for the tub faulting.	>>A	

F4: Heater Plate Fault		Yes	No
1	Do the harness connections at the heater plate show any signs of water damage, corrosion or arcing? If so replace the damaged harness.	>>A	>>2
2	Check the resistance of the heating element. Is it outside the spec (refer to section 2.5). If so replace the heating element, does the fault still occur?	>>3	>>A
3	If the fault is still occurring replace the motor controller.	>>A	

F5X: Lid Faults		Yes	No
F51: Lid Motor Not Turning/F54: Lid Motor Not Stalling			
1	Are there any obstructions within the tub? especially around the edge of the tub where the lid seals. Tall utensils placed in the utensil basket can also stop the lid from closing. Are all the yoke clips securely fastened to the lid?	>>A	>>2
2	Is the lid system physically damaged or disconnected. Check for foreign objects that can cause the lid to jam. Check the side securing tabs are not pushed through the chassis fouling on the lid yokes.	>>A	>>3
3	Check the resistance of each lid motor, only replace a lid motor if it is open or short circuit. Did this fix the fault?	>>A	>>4
4	Do the lids move in both upwards and downwards direction in hardware output diagnostic test mode. This can be done with the drawer open for visibility.	>>A	>>5
5	Did this clear the fault and are the lids now operating?	>>A	>>8
F52: Lid Motor Undercurrent			
6	Is the lid motor harness securely and correctly connected? Do the harness connections at the lid motor show signs of any water damage, corrosion or arcing?	>>A	>>7
7	Replace the harness. Does this clear the fault?	>>A	>>8
8	Replace the motor controller.	>>A	

F7X: Fill Valve Faults		Yes	No
F70: Fill Valve High Current/F71: Fill Valve Low Current			
1	Do the harness connections at the fill valve and motor controller show any signs of water damage, corrosion or arcing. Replace the harness if damaged. Ensure that the harness is correctly and securely connected. Did this fix the fault?	>>A	>>2
2	Can you run the fill valve in diagnostic hardware output mode?	>>A	>>3
3	Replace water valve. Does the fault still occur?	>>4	>>A
4	Replace the motor controller.	>>A	

F8X: Motor Controller Faults		Yes	No
F82 fault: Motor Controller ADC Check Failure		>>1	
F84 fault: Fill Valve Drive Failure		>>1	
F85 fault: Bridge Temperature Sensor		>>1	
F86 fault: Motor Bridge Failure		>>1	
F87 fault: Motor Controller Current Sense Error		>>1	
1	Replace the motor controller	>>A	

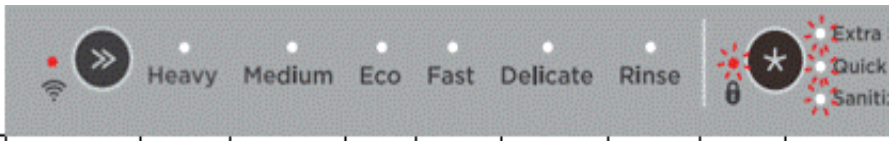
F9X: Wash Controller Faults		Yes	No
F95 fault: Fan Control Failure			
1	Replace the drying fan and wash controller in the tub faulting	>>A	
F96 fault: Detergent Diverter Control Failure			
1	The detergent diverter component is drawing current when turned off. Replace the wash controller in the tub faulting.	>>A	
F97 fault: Rinse Aid Pump Control Failure			
1	This fault indicates that a component is drawing current when the product is turned off. Replace the wash controller in the tub faulting.	>>A	
F98 fault: Water Softener Brine Pump (water softener models only)			
1	This fault indicates that the component is not off. Replace the wash controller in the tub faulting.	>>A	
F99 fault: Water Softener Bypass Valve (water softener models only)			
1	The fault indicates that the component is not off. Replace the wash controller in the tub faulting.	>>A	

FCX: Communication Faults		Yes	No
FC0 fault: Motor Controller COMMS Fault			
FC1 fault: Wash Controller COMMS Fault.			
1	Run a rinse cycle on both tubs. Does the product operate correctly?	>>A	>>2
2	Is the harness between the wash controller & motor controller damaged?	>>3	>>4
3	Replace the damaged harness. Does this clear the fault?	>>A	>>4
4	Change the wash controller. Does this clear the fault?	>>A	>>5
5	Replace the motor controller.	>>A	

FCx: Communication Faults		Yes	No
FC3 fault: Inter - Wash Controller COMMS Fault.			
	This fault indicates that the top tub wash controller cannot communicate with the bottom tub.		
1	Is the bottom tub wash controller harness damaged or disconnected?	>>A	>>2
2	Replace the bottom tub wash controller	>>A	

Err fault: Inter-Wash Controller COMMS Fault		Yes	No
	This fault indicates that the top tub wash controller cannot communicate with the bottom tub.		
1	Is the bottom tub wash controller harness damaged or disconnected?	>>A	>>2
2	Replace the bottom tub wash controller	>>A	

7.3 Fault Codes TOD Table



Description	Error Messa	Binary	Wifi	Heavy	Medium	Eco	Fast	Delicate	Rinse	Lock	Extra dry Quick Sanitize
Tub Opened During Cycle	A0	0000000									Flashing
Water Supply	A1	0000001							•		Flashing
Tub Cannot Drain	A3	0000011						•	•		Flashing
No Spray Arm	A6	0000110					•	•			Flashing
Auto Recovery	A7	0000111					•	•	•		Flashing
Sanitize Cycle has not met Temperature	A09	0001001				•			•		Flashing
Foam Detect During Fill	A90	1011010	•		•	•		•			Flashing
Foam Detect During Wash	A91	1011011	•		•	•		•	•		Flashing
Flood Detected	F1	0000001							•	Flashing	Flashing
Heater Plate Fault	F4	0000100					•			Flashing	Flashing
Motor Bridge Overtemperature	F21	0010101			•		•		•	Flashing	Flashing
Motor Stalled/Stopped/Overload	F24	0011000			•	•				Flashing	Flashing
Motor Loss of Phase	F25	0011001			•	•			•	Flashing	Flashing
Invalid Temperature	F30	0011110			•	•	•	•		Flashing	Flashing
Over Temperature	F31	0011111			•	•	•	•	•	Flashing	Flashing
Cycle Heating Timeout	F41	0101001		•		•			•	Flashing	Flashing
Lid Motor Not Turning	F51	0110011		•	•			•	•	Flashing	Flashing
Lid Motor Undercurrent	F52	0110100		•	•		•			Flashing	Flashing
Lid Motor Not Stalling	F54	0110110		•	•		•	•		Flashing	Flashing
Fan Over-current	F60	0111100		•	•	•	•			Flashing	Flashing
Fan Under-current	F61	0111101		•	•	•	•		•	Flashing	Flashing
Detergent Diverter Over-current	F62	0111110		•	•	•	•	•		Flashing	Flashing
Detergent Diverter Under-current	F63	0111111		•	•	•	•	•	•	Flashing	Flashing
Rinse-Aid Over-Current	F64	1000000	•							Flashing	Flashing
Rinse-Aid Under-Current	F65	1000001	•						•	Flashing	Flashing
Brine Pump Over-Current	F66	1000010	•					•		Flashing	Flashing
Brine Pump Under-Current	F67	1000011	•					•	•	Flashing	Flashing
Water Softener Valve Over-current	F68	1000100	•				•			Flashing	Flashing
Water Softener Valve Underr-current	F69	1000101	•				•		•	Flashing	Flashing
Fill Valve High Current	F70	1000110	•				•	•		Flashing	Flashing
Fill Valve Low Current	F71	1000111	•				•	•	•	Flashing	Flashing
MC Hardware Watchdog Reset	F80	1010000	•		•					Flashing	Flashing
MC ROM Check Error	F81	1010001	•		•				•	Flashing	Flashing
MC ADC Check Error	F82	1010010	•		•			•		Flashing	Flashing
MC Stack Check Error	F83	1010011	•		•			•	•	Flashing	Flashing
MC Fill Valve Driver Error	F84	1010100	•		•		•			Flashing	Flashing
MC Bridge Temp Too High	F85	1010101	•		•		•		•	Flashing	Flashing
MC Motor Overcurrent	F86	1010110	•		•		•	•		Flashing	Flashing
MC Motor Current Sense Error	F87	1010111	•		•		•	•	•	Flashing	Flashing
MC HVDC Too High/Low	F88	1011000	•		•	•				Flashing	Flashing
WC Hardware Watchdog Reset	F90	1011010	•		•	•		•		Flashing	Flashing
WC RAM Check Fail	F91	1011011	•		•	•		•	•	Flashing	Flashing
WC ADC Check Fail	F92	1011100	•		•	•	•			Flashing	Flashing
WC Resource Manager Fault	F93	1011101	•		•	•	•		•	Flashing	Flashing
WC EEPROM Fault	F94	1011110	•		•	•	•	•		Flashing	Flashing
WC Fan Control Failure	F95	1011111	•		•	•	•	•	•	Flashing	Flashing
WC Detergent Diverter Control Failure	F96	1100000	•	•						Flashing	Flashing
WC Rinse Aid Pump Control Failure	F97	1100001	•	•					•	Flashing	Flashing
WC Brine Pump Control Failure	F98	1100010	•	•				•		Flashing	Flashing
WC Water Softener Valve Control Failure	F99	1100011	•	•				•	•	Flashing	Flashing
Motor Controller COMMS Fault	FC0	1110000	•	•	•					Flashing	Flashing
Wash Controller COMMS Fault	FC1	1110001	•	•	•				•	Flashing	Flashing
Inter - Wash Controller COMMS Fault	FC3	1110011	•	•	•			•	•	Flashing	Flashing

7.4 Fault Codes TOD

1. Fault codes are broken down into 2 categories: A faults which are user faults, and an F fault is a product fault.

2. For A faults, the product will display a fault code on the user interface flange using a 7 bit binary code, and the wash modifiers will be lit and flashing.

3. For F fault codes, the product will display a fault code on the user display flange using 7 bit binary code, and the wash modifiers and lock indicator will be flashing.

4. In Diagnostics mode, when first entered, will initially display the display sub mode menu (dp) as the first sub menu. This is indicated by the EXTRA DRY & QUICK wash modifier LED's being lit.

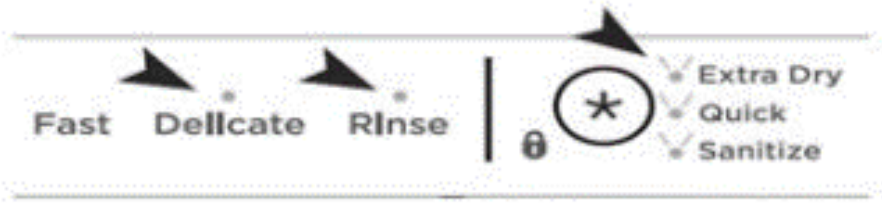
5. Press the START button to enter the sub mode, and all the lights will illuminate and stay lit (display menu 1), then will start alternating into the most recent fault display, then change into the previous fault display, and to highlight the previous fault the delay indicator LED will be illuminated (display menu 2)

6. For a sanitize wash failure (A09) the product has advised it has not met the required wash temperature to sanitize the dishes. The product will sound a fault beep, and when the tub is opened the base wash (cycle selected) and the sanitize indicator will flash.

7. To clear the A09 fault, press the START button once to cancel the beep, then once again to clear the fault.

8. Run the sanitize cycle again.

A1: Water Supply 		Yes	No
1	Is the water supply hose connected and the tap turned on?	>>2	>>A
2	If there is no water in the tub, enter the hardware output mode and run the fill valve. If water enters the tub then the water supply is connected, however the incoming water pressure may still be too low for correct operation.	>>4	>>3
3	Check the hose filters are not blocked, or replace the fill valve if required. Did this clear the fault?	>>A	>>4
4	Check that the incoming water pressure and flow rate are adequate. For installations where the water pressure or flow is low, the DishDrawer may need to be run at a separate time to other appliances which use water, like washing machines. Min water pressure for non water softer models: 0.03MPa (4.3 psi). Min water pressure for water softener models: 0.1MPa (14.5psi)	>>A	>>5
5	Check that the motor rotor is undamaged, replace the motor rotor if damaged, does this clear the fault?	>>A	>>6
6	Make sure there is no foam in the tub. If there is foam try to determine the cause i.e. is liquid detergent being used, or has rinse aid been spilt into the tub.	>>A	

A3: Tub Cannot Drain 		Yes	No
1	Is there water in the tub?	>>2	>>3
2	Using the diagnostic hardware output mode, start the drain direction (P2), does the product drain?. Is the drain hose blocked?	>>A	>>3
3	Is there any damage to the motor rotor? is there an obstruction caught in the motor rotor?	>>A	

A6: No Spray Arm 		Yes	No
1	Is the spray arm correctly located on the motor rotor? and is the motor rotor correctly installed? Check that the wash impellor is not loose on the rotor shaft.	>>2	>>A
2	Using the diagnostic hardware output mode, start the fill valve, is it operating correctly? If not replace the valve.	>>3	>>A
3	Check that the water pressure and flow rate are adequate. For installations where water pressure or flow is low, the DishDrawer may need to be run at a separate time to other appliances which use water, such as washing machines.	>>A	

A7: Auto Recovery 		Yes	No
1	The product has detected excess foam in the drawer.	>>2	
2	Let the auto recovery program run until it is complete. The wash program will resume when the auto recovery program has completed.	>>A	
3	Check the customer is using the correct type of detergent suitable for a dishwasher.	>>A	

A09: Sanitize Cycle has not met Temperature 		Yes	No
1	Check the water supply has not been turned off or the cycle interrupted.	>>A	>>2
2	Press the START button once to stop the beeping, then then again to clear the fault.	>>A	>>3
3	Restart the sanitize cycle.	>>A	

F1: Flood Detected 		Yes	No
1	Remove the bottom tub, this will require some force to pull it open, is there water in the base of the chassis?	>>2	>>9
2	Was there anything in the tubs which obstructed the lid from closing? like large utensils?	>>3	>>9
3	Make sure the lid system is free from obstructions. Check that the lid system is operating correctly by entering diagnostic hardware output mode and actuating the lid motors (Ld). If either of the lid motors fails to actuate correctly, check that the side installation tab is not obstructing the lid yoke. If there are no obstructions, replace the lid actuator.	>>A	>>4
4	Did the tub overfill? If so check the fill valve in diagnostic hardware output mode to ensure it can turn the water supply on and off.	>>A	>>5
5	Is there any foam in the tub? If there is foam, try and determine the cause, i.e. has liquid detergent been used, or has the customer spilt rinse aid into the tub. Remove as much foam as possible from the tub and clear the chassis base of water, does this clear the fault?	>>A	>>6
6	Is the motor rotor jammed? can it be turned freely? or is the wash impellor loose on the motor rotor shaft?	>>A	>>7
7	Check for other leak sources. Possible leak sites are the lid seal, seals around the heater and the wash motor, damaged fill or drain hose or a damaged O-ring where the drain cuff connects to the motor housing. Are any of these damaged or leaking?	>>A	>>8
8	Remove the excess water from the chassis base, especially around the flood sensor area and run the product and check for leaks.	>>A	>>9
9	No water in the chassis base, check for corrosion around the flood sensor and ensure that the flood sensor is correctly positioned and not touching the chassis base.	>>A	>>10
10	Replace the main motor controller.	>>A	

	F2X: Motor Faults	Yes	No
1	Is the harness connected correctly?	>>2	>>A
2	Do the harness connections at the motor and motor controller show signs of water damage, corrosion or arcing? If so replace the damaged harness. Does this clear the fault?	>>A	>>3
3	Check the resistance of the motor coils (8 Ω) 16 Ω phase to phase, are these OK?	>>7	>>A
	F21: Bridge Over Temperature 		
4	Is the motor rotor free to turn by hand and is not jammed? If it is jammed remove and check for obstructions, reassemble and test. Does this clear the fault?	>>A	>>9
	F24: Motor Stalled/Stopped/Overload 		
5	Is the motor rotor clear of foreign objects? If not clear the obstruction and test. Does this clear the fault?	>>A	>>9
	F25: Motor Loss of Phase 		
6	Is the motor rotor correctly installed?	>>A	>>7
7	Replace the motor rotor and run the wash motor in hardware output mode for at least 10 seconds. Does it operate correctly?	>>A	>>8
8	Replace the motor stator assembly and then run the motor rotor again in the wash direction in hardware output mode. Does it now operate correctly?	>>A	>>9
9	Replace the motor controller.	>>A	

F3X: Over-Temperature Faults		Yes	No
F30 fault: Invalid Temperature 			
1	Is the thermistor damaged or disconnected?	>>A	>>2
2	Measure the resistance of the thermistor (between pins 1 & 2 of the TEMP connector on the wash controller). It should be approx 10k Ω at 25 ℃ , is it within spec?	>>5	>>3
3	Replace the thermistor. Is the fault still present?	>>5	>>A
F31 Fault: Over Temperature 			
4	Is the incoming water temperature too hot, over 85 ℃ ?	>>A	>>2
5	Check the heating element resistance on the tub faulting. Is the heating element out of spec? (refer section 2.5)	>>A	>>6
6	Check the element operation in hardware output mode in diagnostics, fill the tub with 2 litres (of water before switching on the element. Is it working OK?	>>A	>>7
7	If the fault is still occurring replace the wash controller for the tub faulting.	>>A	

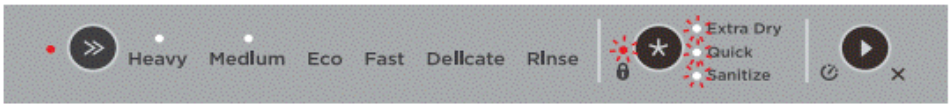
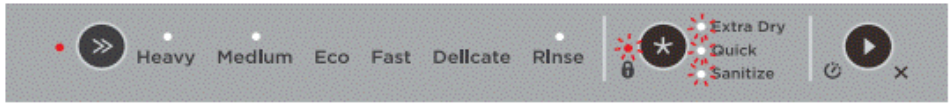
F4: Heater Plate Fault 		Yes	No
1	Do the harness connections at the heater plate show any signs of water damage, corrosion or arcing? If so replace the damaged harness.	>>A	>>2
2	Check the resistance of the heating element. Is it outside the spec (refer to section 2.5). If so replace the heating element, does the fault still occur?	>>3	>>A
3	If the fault is still occurring replace the motor controller.	>>A	

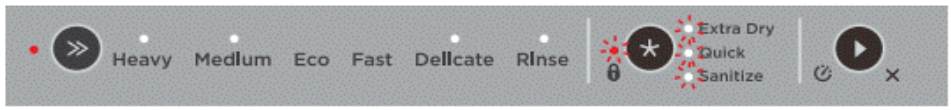
F5X: Lid Faults		Yes	No
F51: Lid Motor Not Turning/F54: Lid Motor Not Stalling 			
1	Are there any obstructions within the tub? especially around the edge of the tub where the lid seals. Tall utensils placed in the utensil basket can also stop the lid from closing. Are all the yoke clips securely fastened to the lid?	>>A	>>2
2	Is the lid system physically damaged or disconnected. Check for foreign objects that can cause the lid to jam. Check the side securing tabs are not pushed through the chassis fouling on the lid yokes.	>>A	>>3
3	Check the resistance of each lid motor, only replace a lid motor if it is open or short circuit. Did this fix the fault?	>>A	>>4
4	Do the lids move in both upwards and downwards direction in hardware output diagnostic test mode. This can be done with the drawer open for visibility.	>>A	>>5
5	Did this clear the fault and are the lids now operating?	>>A	>>8
F52: Lid Motor Undercurrent 			
6	Is the lid motor harness securely and correctly connected? Do the harness connections at the lid motor show signs of any water damage, corrosion or arcing?	>>A	>>7
7	Replace the harness. Does this clear the fault?	>>A	>>8
8	Replace the motor controller.	>>A	

F7X: Fill Valve Faults		Yes	No
F70: Fill Valve High Current/F71: Fill Valve Low Current 			
1	Do the harness connections at the fill valve and motor controller show any signs of water damage, corrosion or arcing. Replace the harness if damaged. Ensure that the harness is correctly and securely connected. Did this fix the fault?	>>A	>>2
2	Can you run the fill valve in diagnostic hardware output mode?	>>A	>>3
3	Replace water valve. Does the fault still occur?	>>4	>>A
4	Replace the motor controller.	>>A	

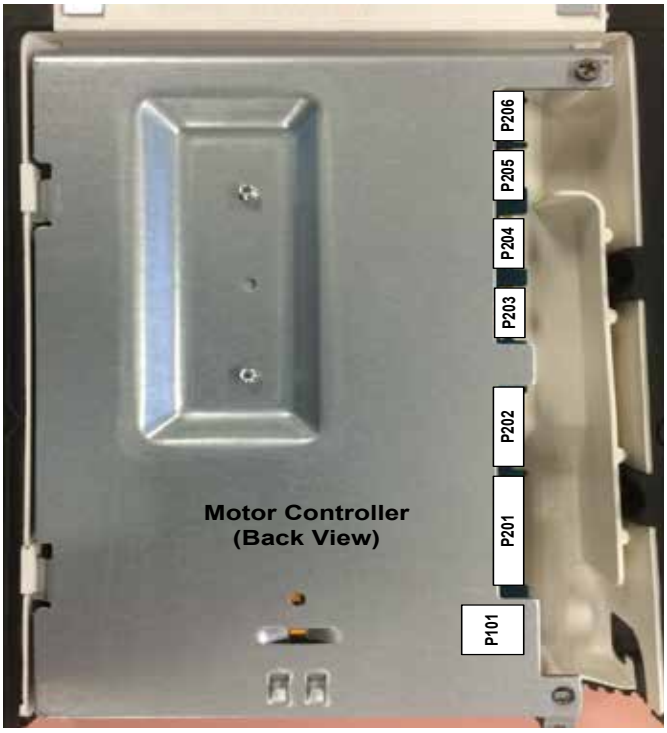
F8X: Motor Controller Faults		Yes	No
F82 fault: Motor Controller ADC Check Failure 		>>1	
F84 fault: Fill Valve Drive Failure 		>>1	
F85 fault: Bridge Temperature Sensor 		>>1	
F86 fault: Motor Bridge Failure 		>>1	
F87 fault: Motor Controller Current Sense Error 		>>1	
1	Replace the motor controller	>>A	

F9X: Wash Controller Faults		Yes	No
F95 fault: Fan Control Failure 			
1	Replace the drying fan and wash controller in the tub faulting	>>A	
F97 fault: Rinse Aid Pump Control Failure 			
1	This fault indicates that a component is drawing current when the product is turned off. Replace the wash controller in the tub faulting.	>>A	

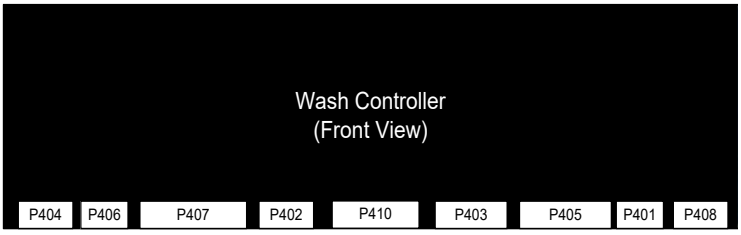
FCX: Communication Faults		Yes	No
FC0 fault: Motor Controller COMMS Fault 			
FC1 fault: Wash Controller COMMS Fault. 			
1	Run a rinse cycle on both tubs. Does the product operate correctly?	>>A	>>2
2	Is the harness between the wash controller & motor controller damaged?	>>3	>>4
3	Replace the damaged harness. Does this clear the fault?	>>A	>>4
4	Change the wash controller. Does this clear the fault?	>>A	>>5
5	Replace the motor controller.	>>A	

FCx: Communication Faults		Yes	No
FC3 fault: Inter - Wash Controller COMMS Fault. 			
	This fault indicates that the top tub wash controller cannot communicate with the bottom tub.		
1	Is the bottom tub wash controller harness damaged or disconnected?	>>A	>>2
2	Replace the bottom tub wash controller	>>A	

7.5 Component Testing



Note: motor controller is situated on the inside rear chassis panel behind bottom tub



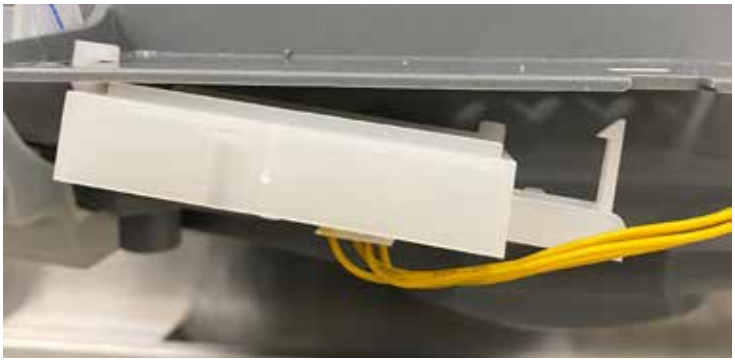
Connector	Device	Pins	Description
Motor Controller (pin numbers on the connectors go from Top to Bottom)			
P101	Power	1-2	240 Vac AA, GB, DK, EU, PF, SG
			120 Vac US, TW
P201	Bottom tub motor phases	1&2,2&3, 1&3	8.0 ± 5 Ω (per winding) 16 Ω phase to phase
	Bottom tub element	4-5	55-60 ± 3 Ω AA, GB, DK, EU, PF, SG
			24-27 ± 3 Ω US, TW
P202	Top tub motor phases	1&2,2&3, 1&3	8.0 ± 5 Ω (per winding) 16 Ω phase to phase
	Bottom tub element	4-5	50 ± 3 Ω AA, GB, DK, EU, PF, SG
			24-27 ± 3 Ω (US,TW)
P203	Bottom tub fill valve	1-2	65 ± 10 Ω
	Bottom tub lid motors	3-6	Check between pin 3 & 4, 5 & 6 if open or short circuit
P204	Top tub fill valve	1-2	65 ± 10 Ω
	Top tub lid motors	3-6	Check between pin 3 & 4, 5 & 6 if open or short circuit
Wash Controller (pin numbers on the connectors go from Right to Left)			
P401	Power	1-2	24+-5V
P402	Temperature sensor	1-2	12000 Ω @ 20 °C (68 °F) 8300 Ω @ 30 °C (86°F) 3000 Ω @ 60 °C (140°F)
P405	Rinse aid coil	1-2	65 ± 10Ω
	Drying fan	5-6	Check if open or short circuit Note: Run in diagnostics and check fan torque
	detergent diverter	7-8	65 ± 10Ω (not used in PH8 model)
P407	water softener bypass valve	1-2	65 ± 10Ω (not used in PH8 model)
	Water softener brine pump	3-4	65 ± 10Ω (not used in PH8 model)
P408	Power	1-2	24+-5V

8.1 Removal of UI and PCB board for servicing

1 Remove the door front
2 Remove wash controller
3 Use slotted screw driver, poke the head into gaps 2 vertical marks indicate and pop out the PCB and Tray
4 When finished, align the PCB with 2 pins on Tray
5 Align clips on Tray with UI housing, push up slightly to get clipped

8.2 Removal of WiFi Module/Housing

1 Remove the draw front
2 Dissconnect the harness from the wash controller
3 Looking at the draw, carefully release the tab on the left hand side, pulling the module/housing upwardsand slightly slidding it to the right will release it from the tub



Caution! When servicing the DishDrawer, ensure the electrical supply is turned off before attempting to service or adjust any part of this appliance. Ensure all earth wires that are removed while servicing are reattached correctly.

8.3 Removal of Drawer Front

1 Open the drawer, using long nose pliers, remove the two square door pins, one on either side of the tub.
2 Pull the drawer front out slightly at the base and in a downwards motion.
3 The door outer will release from the tub.
4 Remove the earth terminal from the door.

8.4 Dissassembly of Inner Door Panel

1 Remove the drawer front (refer section 8.1) and disconnect the display harness from the wash controller.
2 Lay the door panel on a flat padded surface to stop any damage to the door outer.
3 Remove all the screws down each side of the inner door panel, which includes the brackets, and the centre screws at the top of the panel. (Fig 1)
4 Remove the plastic rivet inserts at the base of the door panel. (Fig 2)
5 To remove the inner panel, press down on the side panel area close to the side bracket and slide the panel down to release. If the panel is tight to remove you can use a small flat blade screwdrive to help free the panel, but take care not to damage the door panel. (Fig 3)

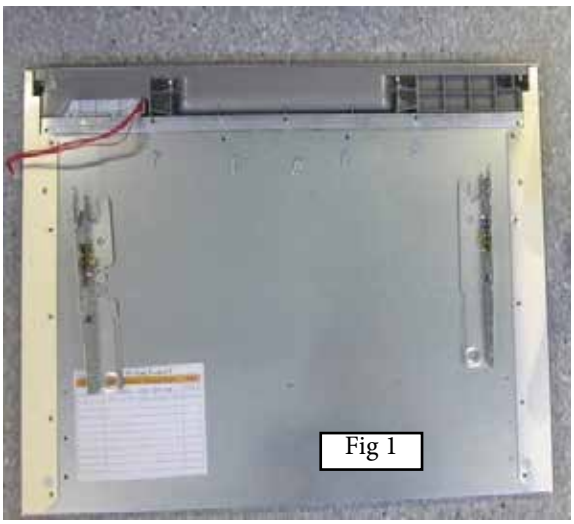


Fig 1

Fig 2

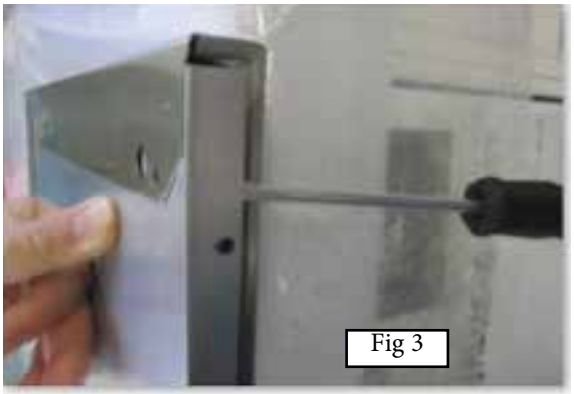


Fig 3

8.5 Removal of UI Display

1 Remove the insulation foam from the inner door. (Fig 1)
2 Remove the aluminium brace by sliding one side down to remove it. (Fig 2)
3 To remove the user interface display module, remove the wedge by pulling downwards to release the locks. (Fig 3)
4 Lift the display slightly to remove from the door and slide out. (Fig 4 & 5)

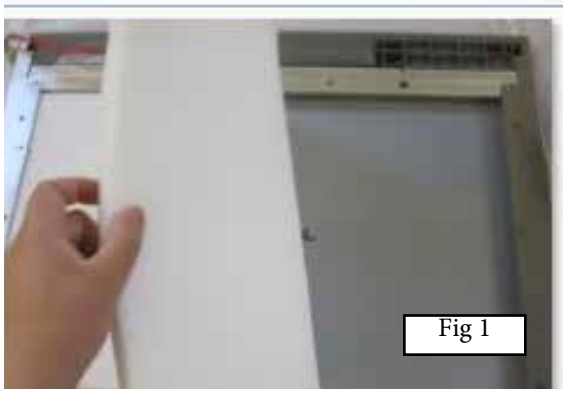


Fig 1

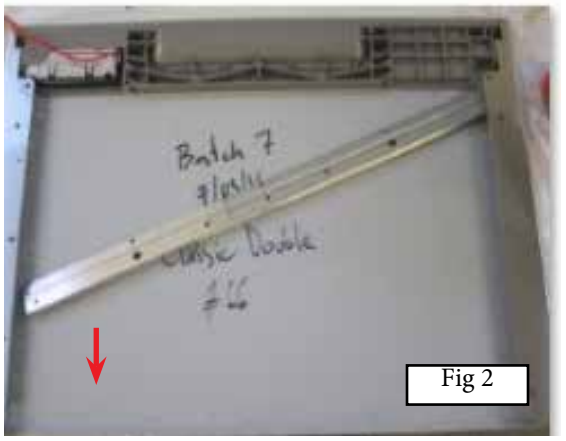


Fig 2

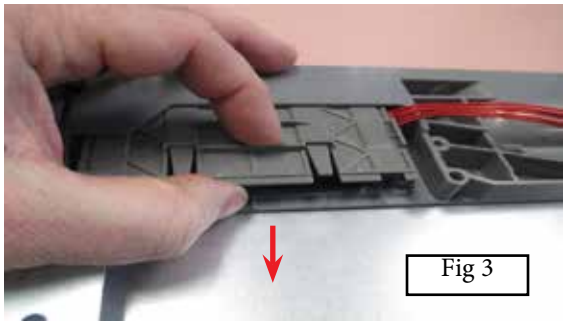


Fig 3

Fig 4


Fig 5

8.6 Removal of the Top Cap

1 Remove the drawer front, refer section 8.1.
2 To remove the stainless steel top cap, remove the 4 clips from the studs along the top of the door. (Fig 1 & 2)
3 The top cap is also held in place with tape, so may require a sharp knife to cut the tape as you life the cap off the door. Shown in fig 3.
4 To remove the plastic top cap on some models, use a pair of long nose pliers, squeeze the pins together to release. (Fig 9)

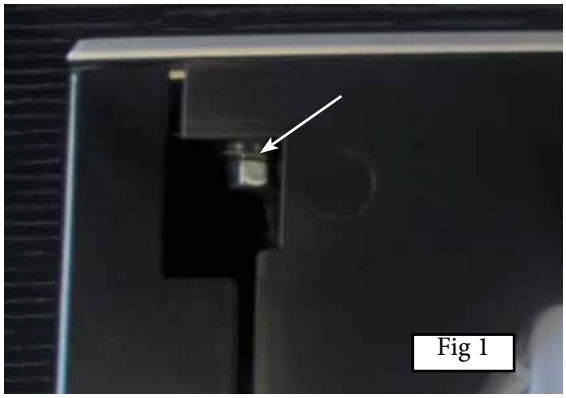


Fig 1


Fig 2

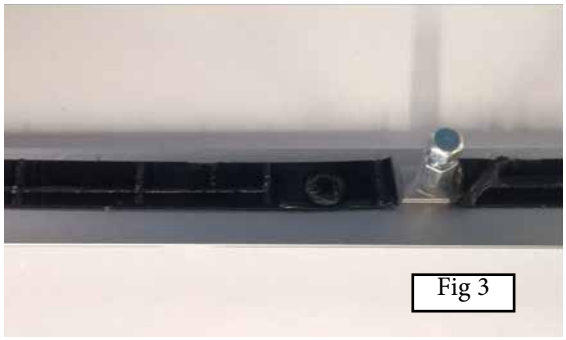


Fig 3

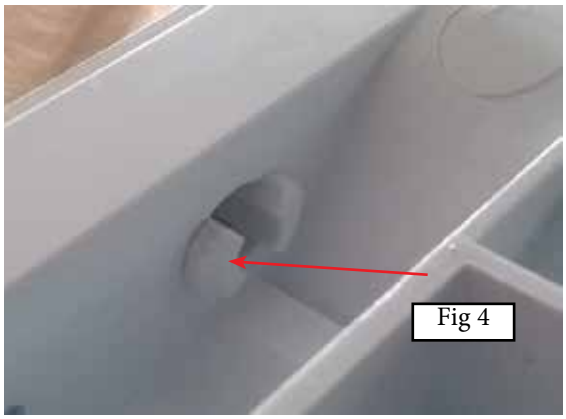


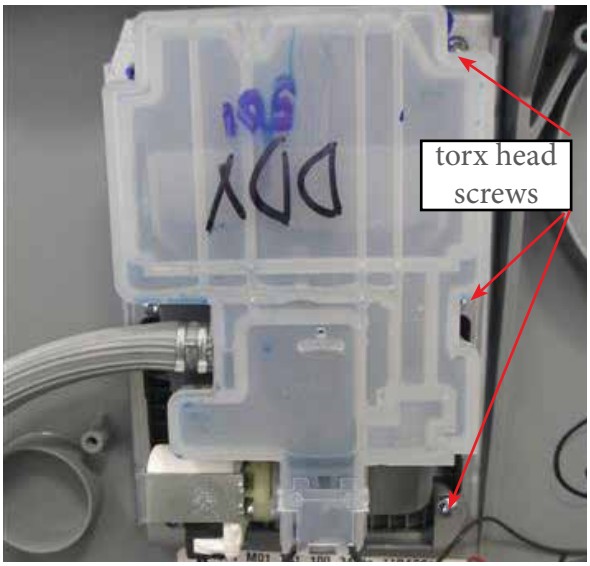
Fig 4

8.7 Removing the Wash Controller

1 Remove the drawer front from the tub, refer 8.1.
2 Remove the torx head screw on the left hand side of the wash controller.
3 Pull the module forward on the left hand side, and the wash controller will release from the locating pin on the tub.
4 When reassembling the wash controller into the tub, angle the wash controller and slide the locating pin on the right hand side into the tub , push the controller forward and secure with the torx head screw.

8.8 Removing the Dispenser

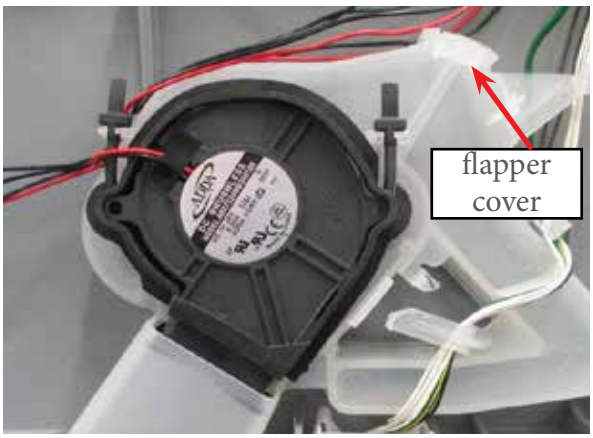
1 Remove the drawer front, refer to 8.1.
2 Remove the hose clamp and remove the hose from dispenser.
3 Remove the wiring harness to the rinse aid coil, and with a small flat blade screwdriver, carefully unclip the rinse aid indicator LED cover.
4 Remove the LED and harness from the dispenser.
5 Remove the 6 torx head screws retaining the 2 side brackets.
6 The dispenser can now be removed from the inside of the tub.
7 Reassemble in reverse order.



8.9 Removing the Drying Fan & Flap Valve

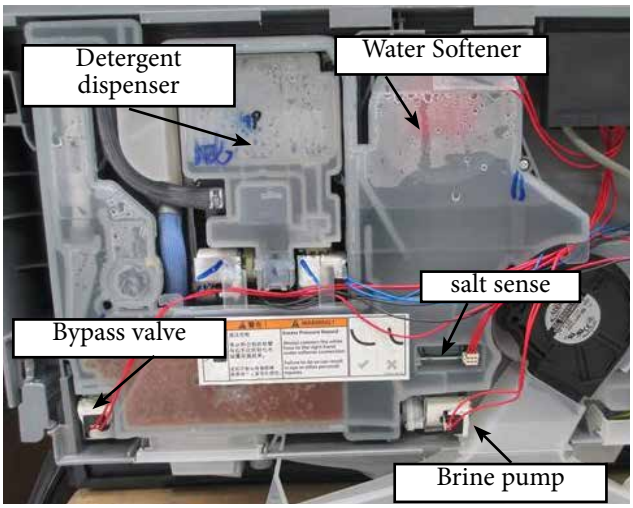
1 Remove the drawer front, refer 8.1.
2 With a small flat blade screwdriver, carefully release the small plastic clips holding the rinse aid indication LED in the dispenser and remove the LED harness.
3 Disconnect the fan harness from the wash controller.
4 Release the rubber tabs holding the fan in place.
5 The fan will now come free.

Note: The fan housing flapper can be replaced by removing the cover and lifting the flapper out of the housing.
To remove the cover, use a small screwdriver to depress the 2 clips at the rear, and slide it forward to release.



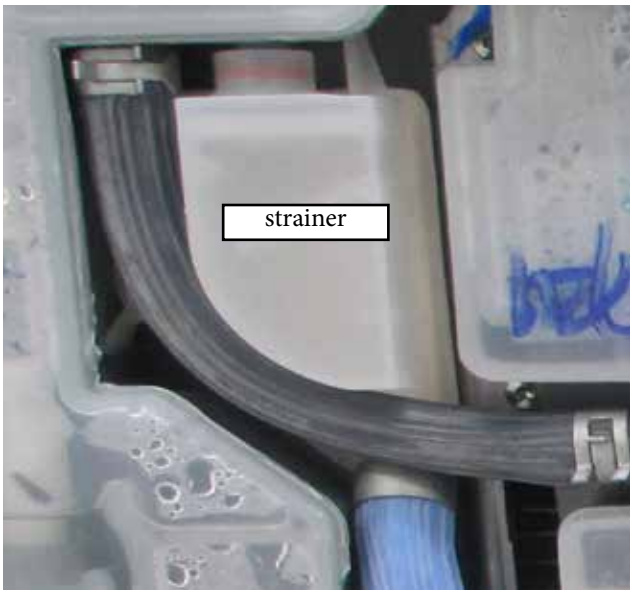
8.10 Removing the Water Softener (some models only)

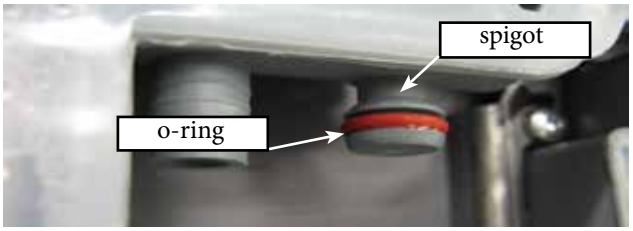
1 Remove the drawer front (refer section 8.1).
2 Disconnect the wiring loom connections to the water softener diverter valve, brine pump and salt level detector, and remove the dispenser wiring loom connection to electronic controller.
3 Use a flat blade screwdriver to open the salt level indicator LED cover, and remove the LED from the water softener.
4 Unclip the fill hose to the strainer and remove the dispenser hose from the water softener.
5 Remove the four T10 torx drive screws securing the water softener to the tub. The water softener can now be removed from the product.
6 To refit, place the overflow 'O' ring on the water softener and lubricate the tub overflow with a water soluble lubricant e.g. Glycerol or similar.
7 Place the salt tank 'O' ring in the tub. Lubricate the salt tank flange on the water softener. Pass the dispenser wiring loom through the water softener and plug it into the electronic controller.
8 Place the water softener into the tub and apply enough pressure to seat the 'O' rings.
9 The overflow should sit almost flush with the inside of the tub. The salt tank should be recessed by approx 1mm from the inside of the tub.
!0 Refit the screws, strainer, hoses, harness connectors and LED.



8.11 Removing the Strainer (some models only)

1 Remove the water softener hose from the detergent dispenser spigot.
2 Place screwdriver under the clip and use a lever action to disengage the clip.
3 When the clip is disengaged, the strainer can be pushed down off the water softener spigot.
4 After removing the hose clamp, the strainer can be removed form the tub.
5 Fit the new strainer and position the hose clamp. manoeuvre the strainer into place.
6 Slide the strainer onto the spigot using a force applied in an upwards movement. Lock into place and ensure correct fitting, then fit the hose to the detergent dispenser spigot.



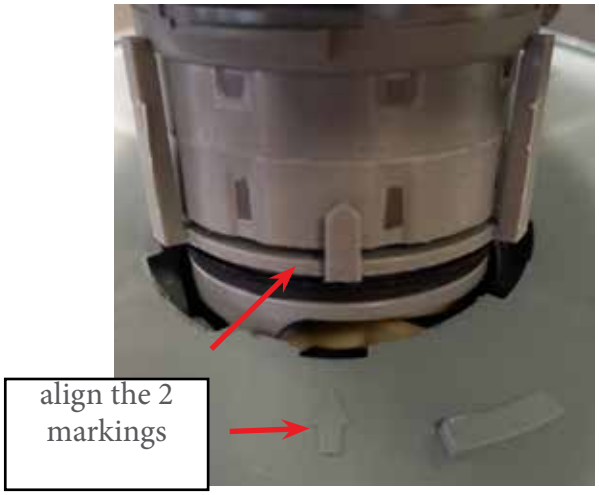


8.12 Removing the Filter Plate

1 Open the drawer and remove the cutlery basket, then open the trap door.
2 Lift the front of the fixed tine plate rack to unclip it from the base rack
3 Slide the fixed tine plate rack forward clear of the rear anchoring loop and lift out.
4 Remove the drain filter by turning it anticlockwise and lift upwards to release.
5 Lift the drain filter upwards to release.
6 Reassemble in reverse order.

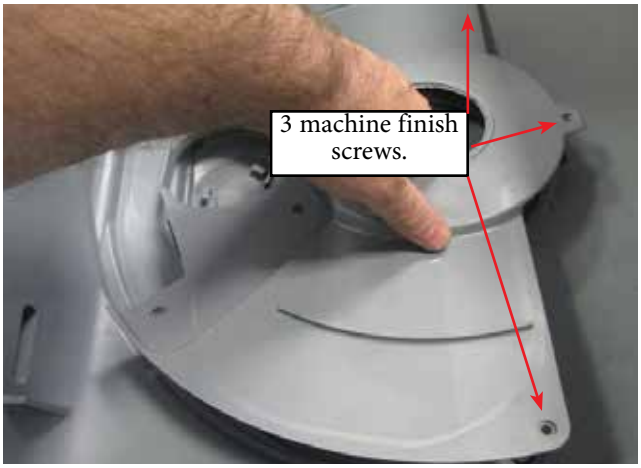
8.13 Removing the Motor Rotor

1 Open the drawer and remove the base rack by lifting it up at the back first.
2 Lift the spray arm off the motor rotor.
3 Using the 3 prongs on the motor rotor, rotate it anticlockwise to release (can be very tight).
4 Lift the motor rotor upwards from the housing.
5 To reassemble, ensure the O-ring is correctly seated and is not damaged, align the marking on the rotor, to the marking on the housing.
6 The rotor will now locate down into the housing, and to lock, rotate the rotor clockwise.
7 The 3 prongs of the rotor should align with the pointing arrow markings on the cover.



8.14 Removing the Pump Cap Cover

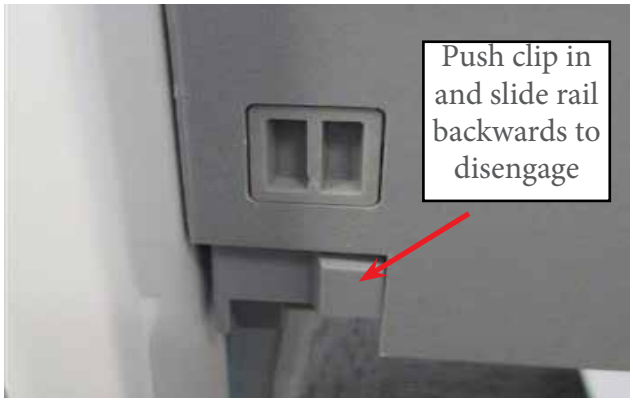
1 Remove the lower base rack by lifting it up at the back first.
2 Remove the filter plate (8.10) then remove the motor rotor (8.11).
3 Remove the 7 torx head screws securing the pump cap cover to the wash tub.
4 Pull the cover up to release, as the base of the cap has a rubber seal which sits into a set channel to seal the cap.
5 When reassembling, ensure the correct screws are used in the correct location, the 3 machined finished screws are used on the top of the housing.



8.15 Removing the Tub

Before removing a tub from the chassis, remove the lower basket and spray arm.
A good suggestion is to also remove the door panel and handle assembly to stop any damage.
Push the side clip inwards and push the rail back to disengage.

1 Top tub : depress the right hand tub clip and push it back about 30mm. Repeat for the left hand side.
2 Bottom tub: remove the kickstrip (refer section 8.11) and lower tub cowling (refer section 8.15), both optional.
3 If the cowling has not been removed, then the tub clips need to be pushed back about 130mm so the slide clears the cowling when the tub is lifted.
4 Lift the tub off the slides and push the runners back into the product.
5 Releasing the wire from the centre clip on the link assembly allows the tub to be moved further from the chassis (optional).
6 If the tub is being turned over for servicing, rotate it counter clockwise, remembering to remove the baskets first. Removing the handle will prevent it from being damaged (optional).
7 If replacing the tub, all hoses and wiring harnesses will need to be disconnected in order to remove tub fully from the chassis.
8 Refit in reverse manner.



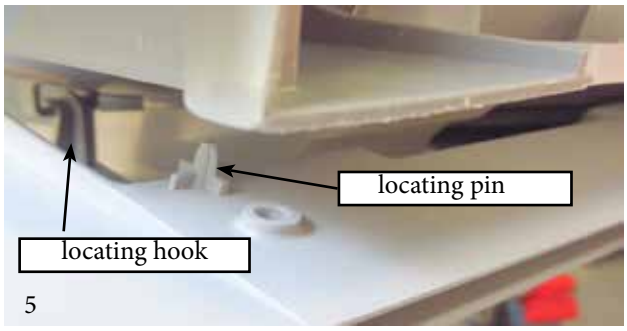
8.16 Removing the Kickstrip

1 Pull the bottom drawer open to gain access to the side pins, 2 on each side.
2 Using a small pair of needle nose pliers, squeeze the sides of the pin legs together and push the pin back out of the hole. Trying to remove the pins with a flat blade screwdriver risks breaking the pins.

8.17 Removing the Lower Cowling

1 Remove the lower door outer, refer to 8.1 and kickstrip, 8.14.
2 Remove the torx screw on the right hand side of the lower tub flange. (Image 1)
3 On the left hand side of the lower tub flange, remove the plastic rivet by inserting a small flat screwdriver and lift the head of the plastic rivet.This rivet will be able to be removed from the base flange. (Image 2 & 3)
4 The lower cowling will now drop down and pull slightly forward to release the rear locating tabs.
5 To reassemble, locate the rear hooks, lift cowling into place and ensure locating pin is aligned, fit the plastic rivet and secure by pushing the rivet head down. (image 5 on following page)
6 if replacing the cowling, remember to change over the plastic insert.

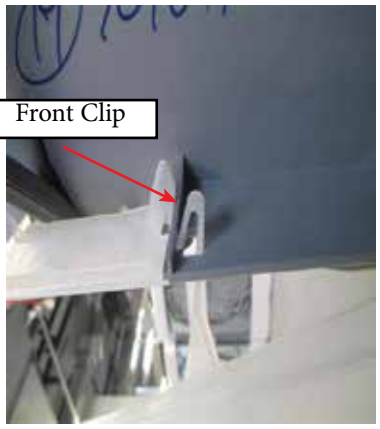
7 Refit the torx screws and reassemble the drawer front.



5

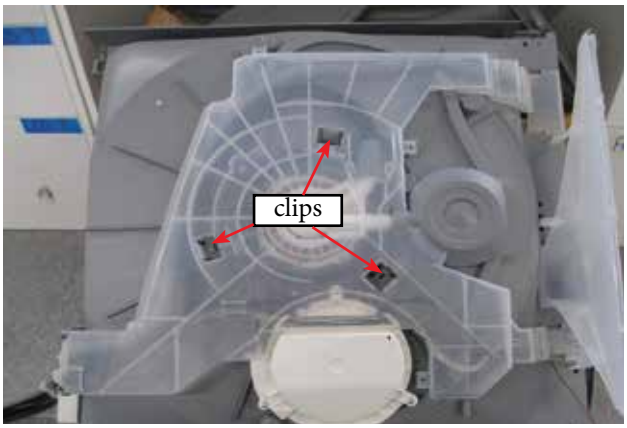
8.18 Removing the Wiring Cover

1 On the top tub, this can be done with the tub in place, or with the tub removed.
2 The bottom tub will require to be removed from the chassis to gain access to the securing screws and clips.



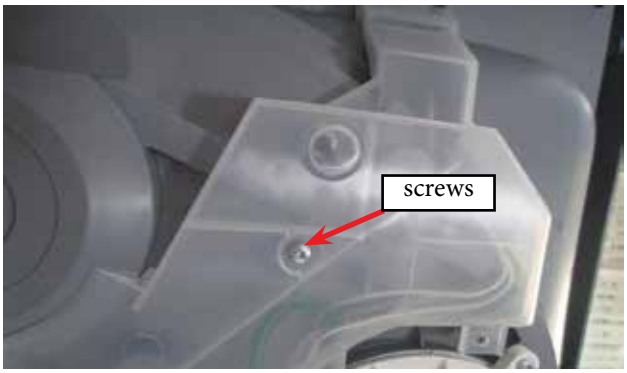
8.18.1 With the Tub removed:

1 Remove the tub as per instruction in section 8.13.
2 Remove the two torx screws retaining the wiring cover to the tub.
3 Carefully release the four wiring cover front clips, two on each side, from under the front lower section of the tub. Take care not to damage them.
4 Release the three clips on the underside of the tub that attaches the wiring cover to the motor assembly.
5 Lift the wiring cover up and pull forward to disengage the rear locating pins.
6 To reassemble, first ensure that the wiring harness, drain hoses and fill hose are located in their correct positions
7 Refit cover in reverse manner.



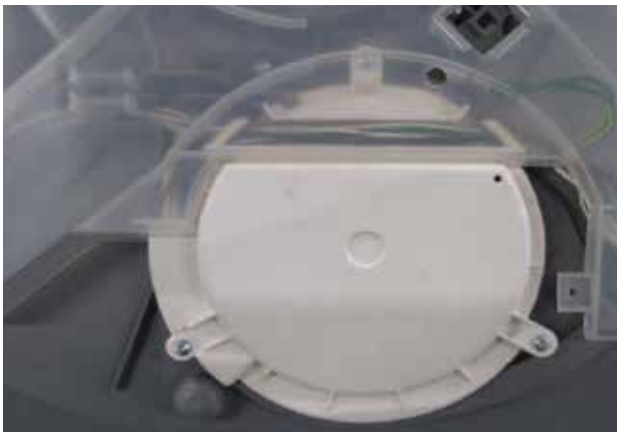
8.18.2 With the Tub in place:

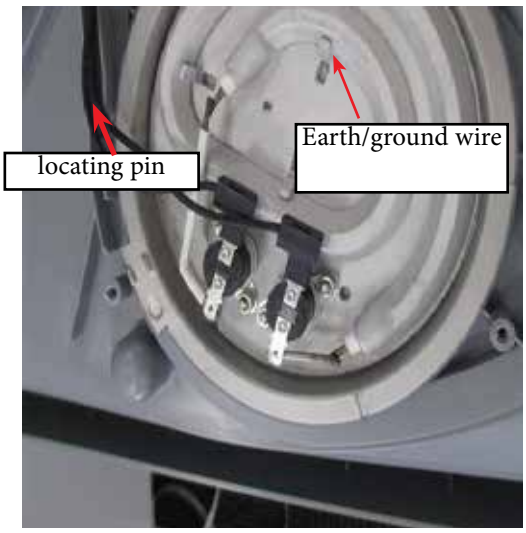
1 To remove the wiring cover with the tub in place, first remove the drawer front.
2 Carefully release the four wiring cover front clips, two on each side, from under the front lower section of the tub. Take care not to damage them.
3 Release the three clips on the underside of the tub that attaches the wiring cover to the motor assembly.
4 The wiring cover may now be carefully moved forward and downward to release it from the rear of the tub.
5 To reassemble, first ensure that the wiring harness, drain hoses and fill hose are located in their correct positions.
6 Then refit cover in reverse manner.



8.19 Removing the Heater

1 Remove the tub as per section 8.13.
2 Remove the wiring cover as per section 8.16.
3 Remove the element cover by removing the three T10 torx screws and unclip the wiring harness from the element cover.
4 Remove the two wires from the element thermal limiters.
5 Remove the earth wire (there is a securing tab you will need to depress to release)
6 The element will now pull out of the housing, you can use the earth tab to pull the heater out, or use a flat blade screwdriver to lever the heater out of the tub, but take care not to damage the seal.
7 When reassembling, ensure the gasket is correctly fitted to the element, and align the locating pin.
8 Push the element evenly around the edge to push fit into the housing,
9 Reattach the limiter wiring and ensure the earth wire is reattached to the element, then reassemble the wiring cover.





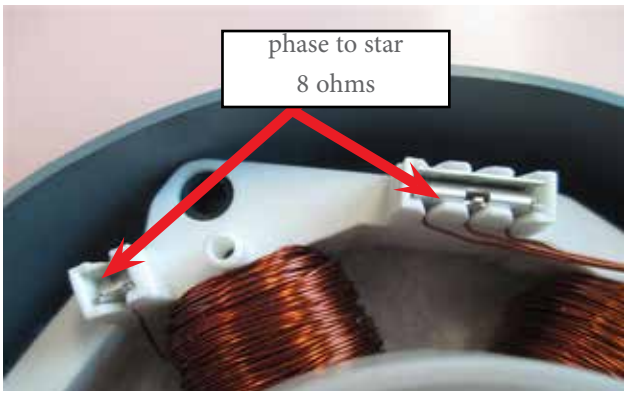
IMPORTANT!
Ensure the earth (ground) wire is attached to the element when reassembled.

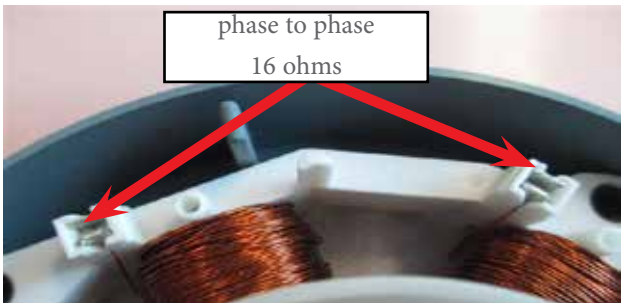
An earth bond test can be done between the heater earth and mains plug earth.

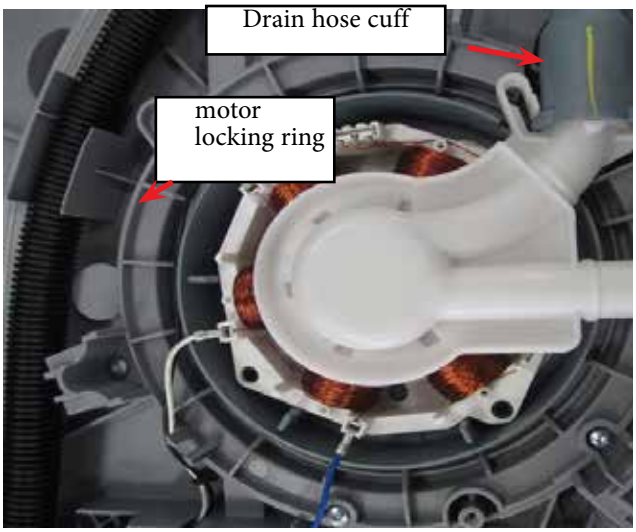
There is a hole in the wiring cover above the heater earth to enable this to be done.

8.20 Replacing the Motor

1 Remove the tub as per section 8.13
2 Remove the wiring cover as per 8.16
3 Remove the wiring harness to the stator, you will need to depress the clips to remove the small spade terminal.
4 First check the windings are OK, this can be done from coil to star and should read approx 8 ohms.Phase to phase connection should read approx 16 ohms.
5 To remove the motor assembly from the tub, unclip the drain hose cuff.
6 Remove the 6 torx screws securing the motor locking ring assembly to the tub.
7 Lift the assembly and pull it from the sump to release the drain spigot outlet.
8 To reassemble, ensure the motor stator has the gasket correctly fitted, fit the motor locking ring to the upper side of the assembly, locate the spigot to the sump and push forward to seat the o-ring.
9 Gently push the motor down into place and secure with the locking ring, ensure all 6 torx screws are fitted and tight, refit the drain hose and wiring and reassemble the wiring cover.







8.21 Replacing a Fill Hose, Drain Hose or Wiring Harness

1 Remove the tub and turn it over by rotating it anticlockwise (refer section 8.13).
2 Remove the wiring cover, refer section 8.16.
3 Disconnect the component you need to replace (e.g. fill hose, drain hose, wiring harness) from the tub.
4 Remove the tub rib clip at the rear of the tub by pushing it up and out against the snap barb with either your finger or a flat blade screwdriver to release (Fig 1, 2, 3)
5 Open the tub rib clip by flicking up the snap barb on the side of the clip. (Fig 4)
6 Remove the link support clip from the link support rod as shown on following page. (Fig 5). to open the link support clip, twist the thinner arm backwards to unclip and remove the component to be replaced.
7 Open and remove both chassis link clips, by pressing the snap barbs inwards with two fingers, as shown on the following page. (Fig 6)
8 For the top tub only, open the top link mount by inserting a flat blade screwdriver into the snap barb and twisting, then remove the link component being replaced. (Fig 7)
9 To gain access to the lower chassis mounts, remove the chassis module cover shown on the following page (Fig 8). To open the chassis mount , insert a screwdriver into the snap barb and twist. Remove the component to be replaced. (Fig 9)
!0 Unattach the link component (drain hose, fill hose or harness) from it's connection point at the chassis module and remove.
!1 Attach the new link component at the tub end and route the new link component under the tub and through the tub rib clip.
!2 Ensure all the marks on the link components match up to the top of the clip when the clip is closed, as shown. (Fig 10)
!3 Insert the tub rib clip back into the rear tub ribs, and ensure the clip is securely clipped into the rib. (Fig 11)
!4 Ensure the harness is sitting flat in the clips, then reinstall the link support clips at the marked points on the link components.(fig 12)
!5 Push the link components back into the chassis mount at the marked points and close by pressing firmly. (fig 13 & 14)
!6 Refit the chassis module cover, ensure the clips are located correctly.
!7 Ensure there is no twist in the link betwen the tub and the link support. (Fig 15)
!8 Fit the chassis side clips to the link assembly, the rear should be approx 250mm from link support clip, the front should be 160mm from link support clip. (Fig 16 & 17)
!9 Place the tub back on the slides, making sure the link is not twisted, and ensure the tub closes correctly. (Fig 18 & 19)

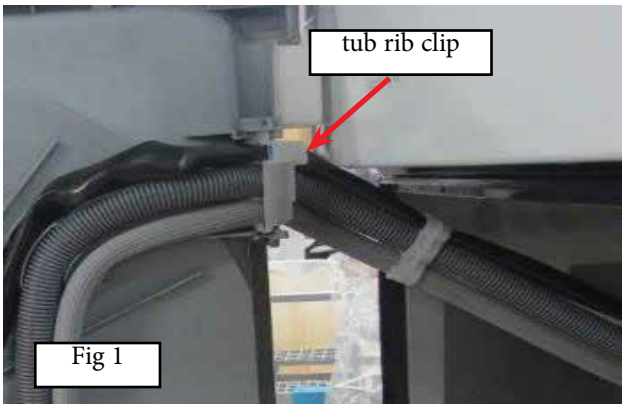


Fig 1

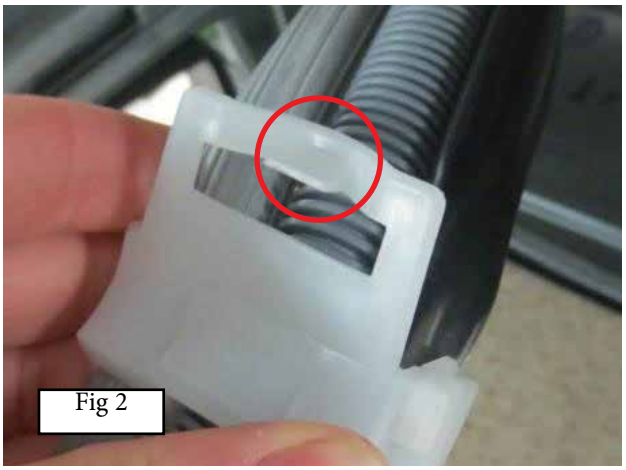


Fig 2

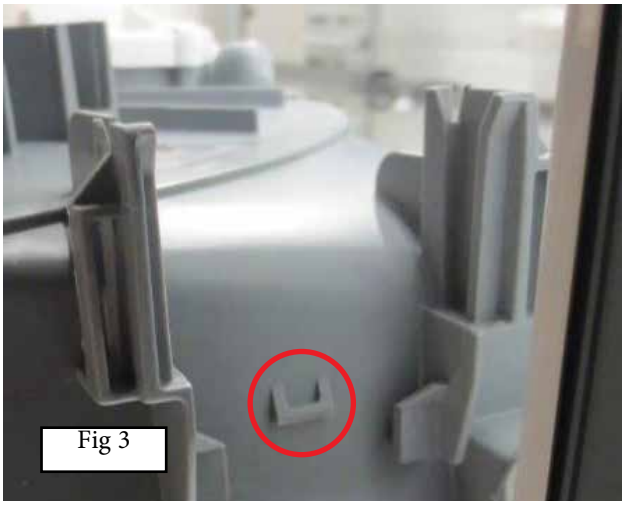


Fig 3

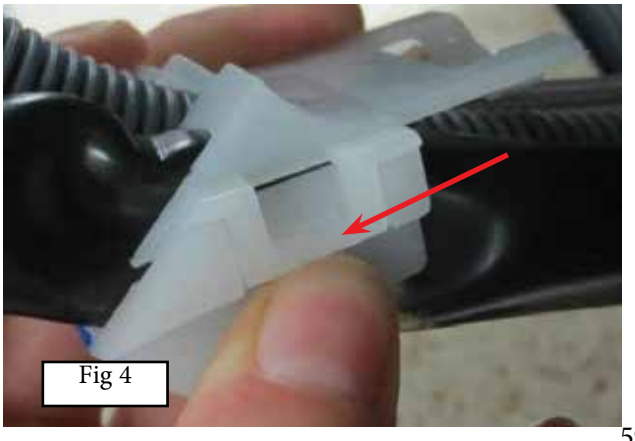


Fig 4


Fig 5

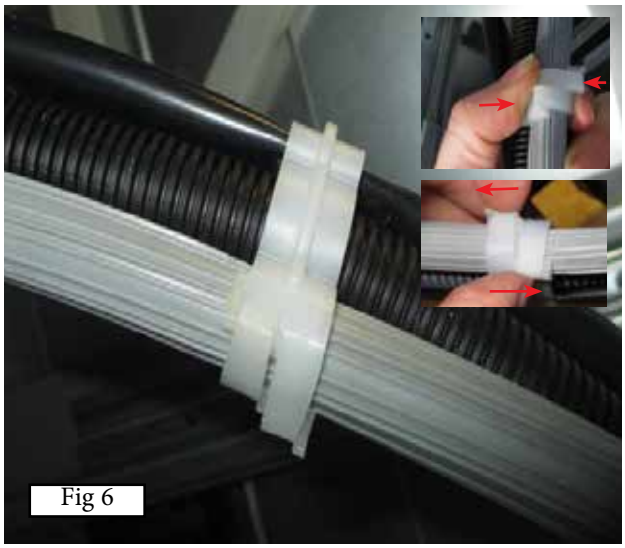


Fig 6

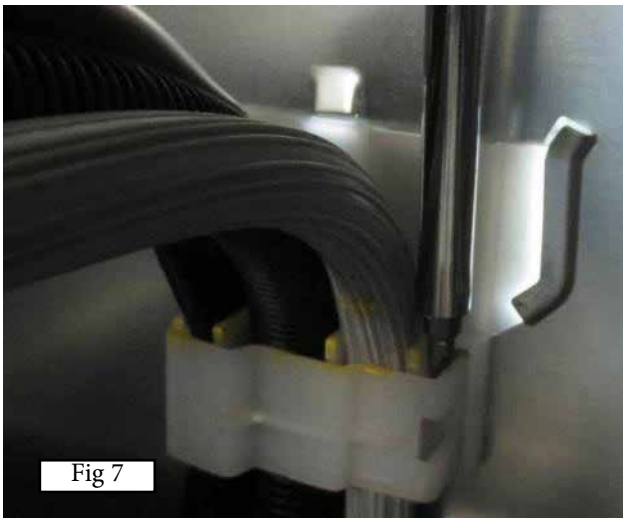


Fig 7

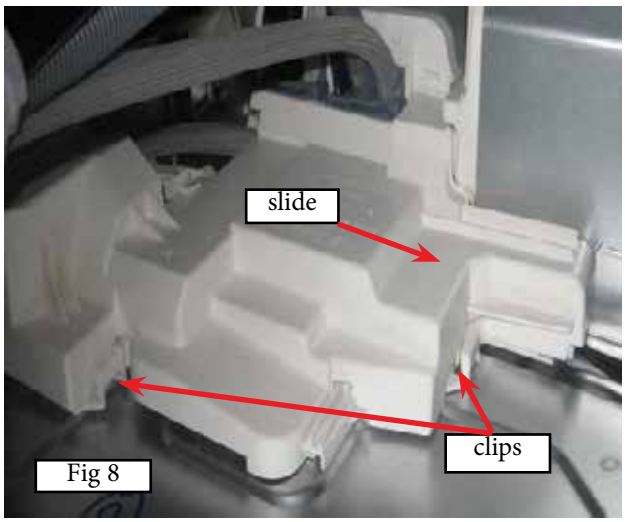


Fig 8

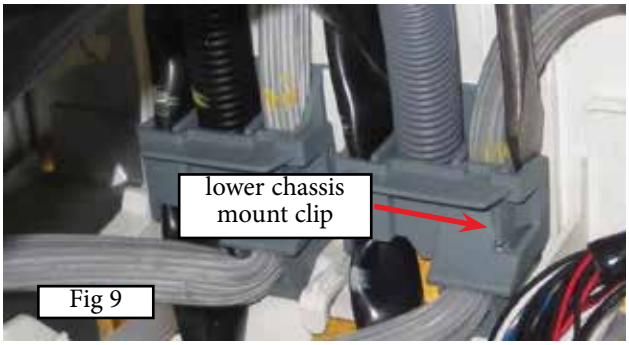


Fig 9

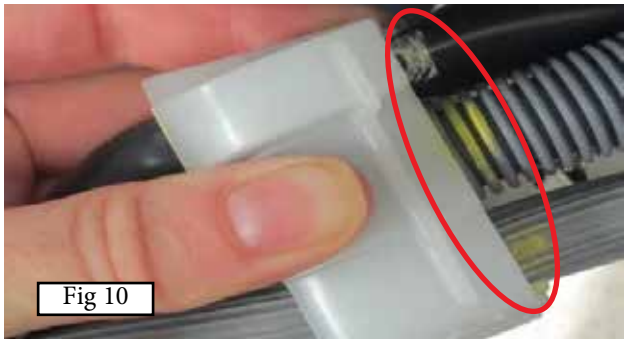


Fig 10

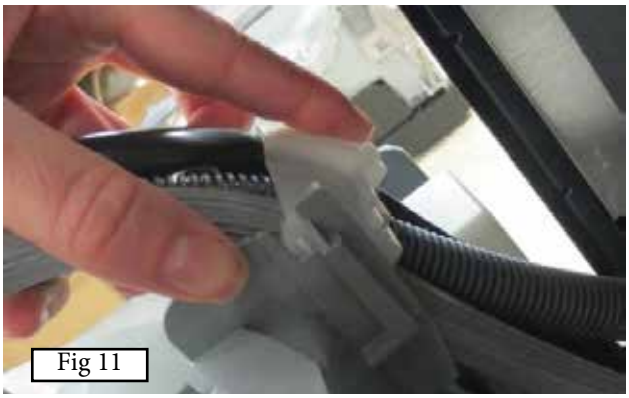


Fig 11

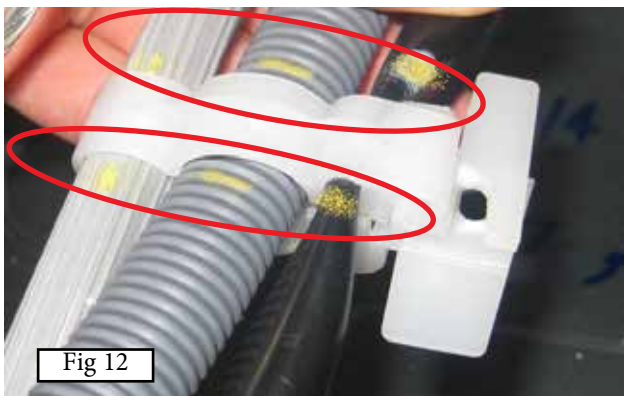


Fig 12


Fig 13


Fig 14


Fig 15

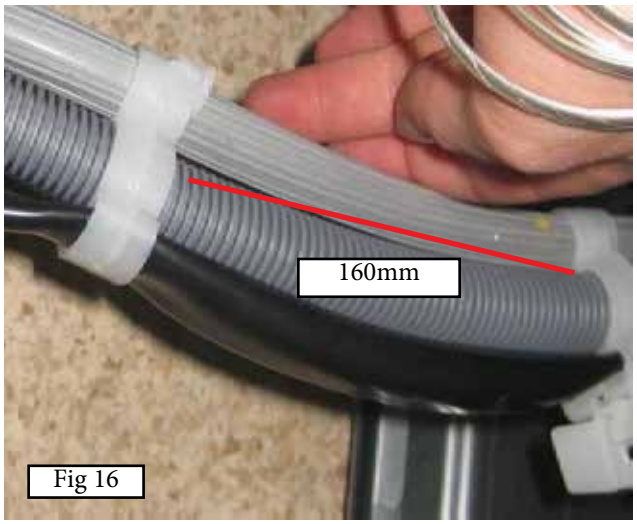


Fig 16

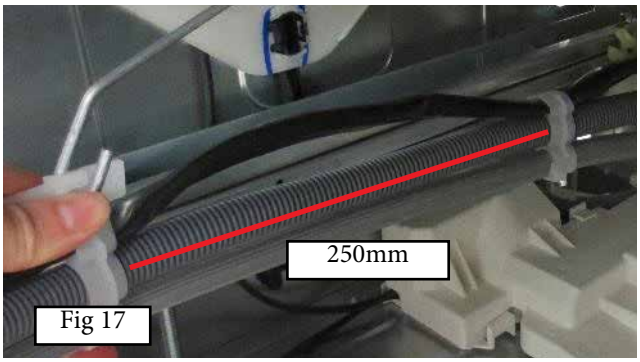


Fig 17


Fig 18

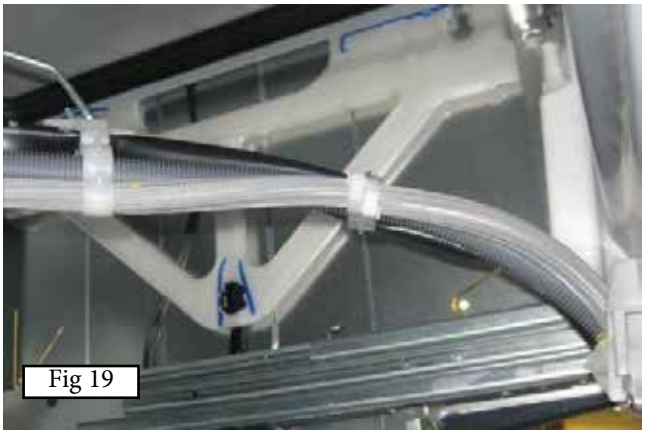


Fig 19

8.22 Replacing the Motor Controller

1 Remove the bottom tub, refer section 8.13.
2 Unclip the link support rod, as this allows the tub to be moved slightly further to the left to gain access to the controller housing.
3 Remove the chassis module cover to gain access to the screw retaining the motor controller housing. (Fig 1)
4 Remove the screw retaining the cover to the rear chassis. Pull the module downwards to release the top of the controller housing from the rear panel. (Fig 2 & 3)
5 When assembling the PCB harness into the motor controller assembly, ensure the connector plugs are the correct way round and the harness is correctly located. Mains wires down the main channel, the LV wires down the other. (Fig 4 & 5)

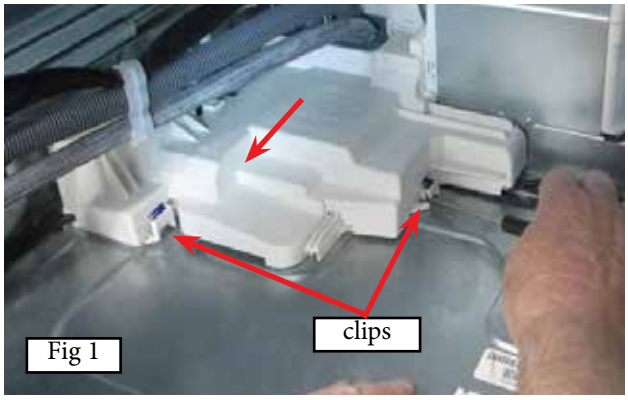


Fig 1


Fig 2


Fig 3

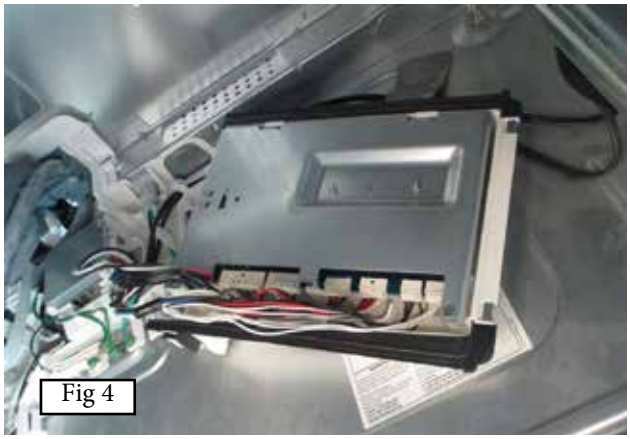


Fig 4

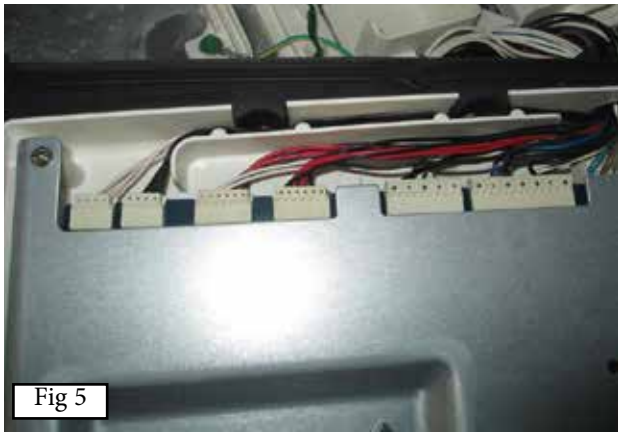
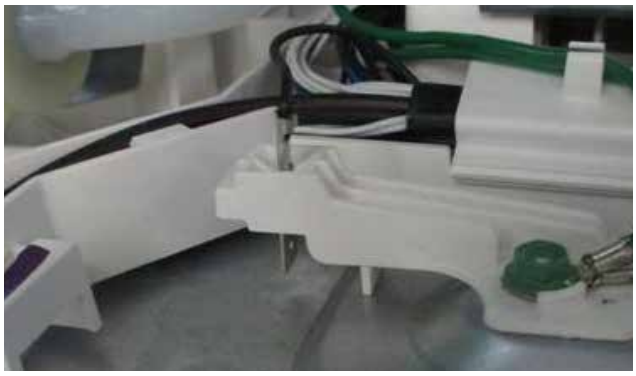


Fig 5

8.23 Replacing the Flood Sensor Harness



1 Remove the bottom tub, refer section 8.13.
2 Remove the chassis module cover by releasing the 2 clips, and slide forward to release.
3 Use a small flat blade to release the harness.
4 You can check continuity of the sensor wire from controller connector P201.
5 When refitting, ensure the wire is correctly located in the assembly, there should be approx 4mm gap to the base pan.

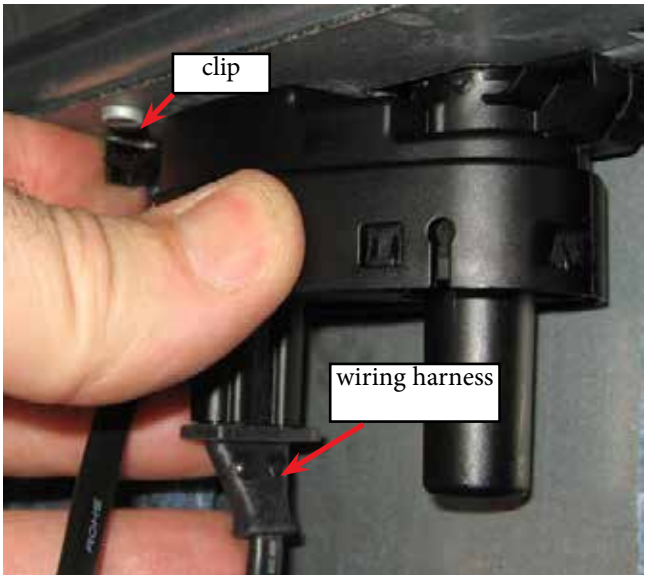
8.24 Replacing the Water Valve

1 Remove the lower tub, refer section 8.13.
2 Remove the chassis module cover by releasing the 2 clips, and slide forward to release.
3 Partially lift the inlet valve up out of the housing.
4 Disconnect the water inlet hose connection, CAUTION - water will drip.
5 The water valve can now be removed up and out of the housing.
6 Remove the wire harnesses, and mark which fill hose goes to the top tub. Unclip the hose clips by pushing the ends apart sideways, then remove the hoses from the valve.
7 Refit in reverse manner, and check the inlet hose does not leak.

NOTE: The PH8 water valve has a green body and is a 4L/min valve, do not fit this valve to a standard PH7 product, unless fitting it for low water pressure issues.
The 4L valve can not be fitted to water softener PH7 models.

8.25 Replacing the Lid Actuator

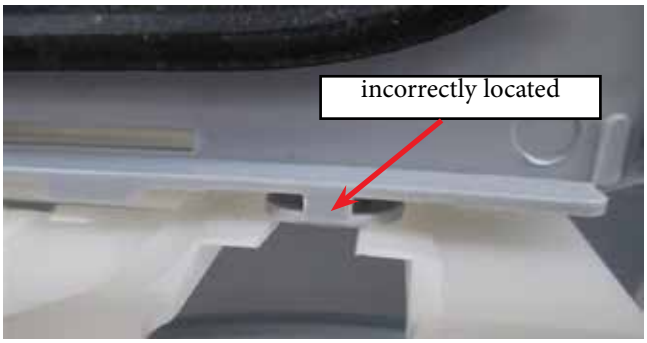
1 Remove the tub, refer section 8.13.
2 Remove the lid actuator harness plug by releasing the clip on the lid actuator.
3 Release the lid actuator from the bottom of the yoke by pressing with your thumb against one of the locking tabs.
4 For the right hand actuator, carefully release the clip at the rear of the lid actuator and slide the lid actuator towards the rear of the chassis to release it from the slide rail.
5 For the left hand actuator, the clip is in front of the lid actuator, and once it is released, the lid actuator will slide towards the front of the chassis to release it from the slide rail.
6 The lid actuator can now be removed by dropping it down through the slot in the middle of the mounting bracket.
7 When reconnecting the lid actuator to a yoke, ensure the lid and yoke assemblies are in the fully raised position. To line up the lid actuator connecting arm with the yoke, it may need to be wound up or down manually.



NOTE: It is important that all the clips on the lid actuator case are done up and that none are broken.

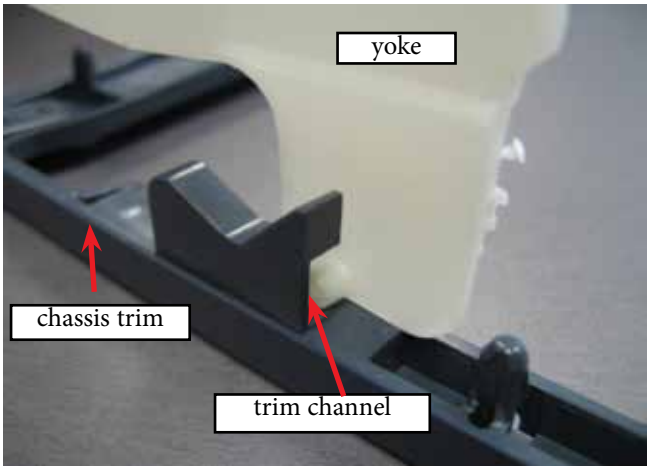
8.26 Replacing the Lid Assembly

1 Remove the tub as per section 8.13
2 On the right hand side of the lid, insert a flat blade screwdriver into the yoke slots between the lid flange and the yoke, there is one at the front of the lid and one at the rear.
3 Twist the screwdriver while pulling down on the lid to disengage the clip. Repeat for each clip on both yoke.zzzzzz
NOTE: Do not pull down on the lid seal.
4 Pull the lid down 10mm (3/8”) on one side. Pull the opposite side of the lid down until it is clear of the yoke. The high side of the lid can then be pulled to the bottom of the yoke slots. The lid is now free to be removed from the chassis on an angle as shown.
5 To reassemble the lid, angle the lid into the chassis, ensure the lid is the correct way round, the words “ FRONT” are printed on the top of the lid and should be at the front of the product.
6 Engage the T-Rib on the high side of the lid into the bottom of the yoke slots. Swing the opposite side of the lid past the yoke until it sits into the bottom of the yoke slots.
NOTE: The T-Ribs make the lid wider, so some force is required to push past the yoke.
7 Clip the lid into place. Start by pushing one corner of the lid up until it clicks. Next clip the diagonal corner up. The lid is now assembled and should look like the bottom image on the following page.



8.27 Replacing the Yoke

1 Remove the lid, refer section 8.24
2 Release the lid actuator from the bottom of the yoke by pushing with your thumb against one of the locking tabs.
3 Slide the front of the yoke downwards at an angle until it moves out of the track in the rear of the trim, and is clear of the chassis flange as shown.
4 Refit in reverse manner taking care that the yoke is the correct way round.
NOTE: There are both left hand and right hand yokes.
5 Do not bend the yoke when refitting it. Locate the rear end below the chassis tab at the rear of the chassis first, then slide the front up in behind the trim to ensure the front yoke peg locates correctly in the track behind it.



8.28 Replacing the Side Rail

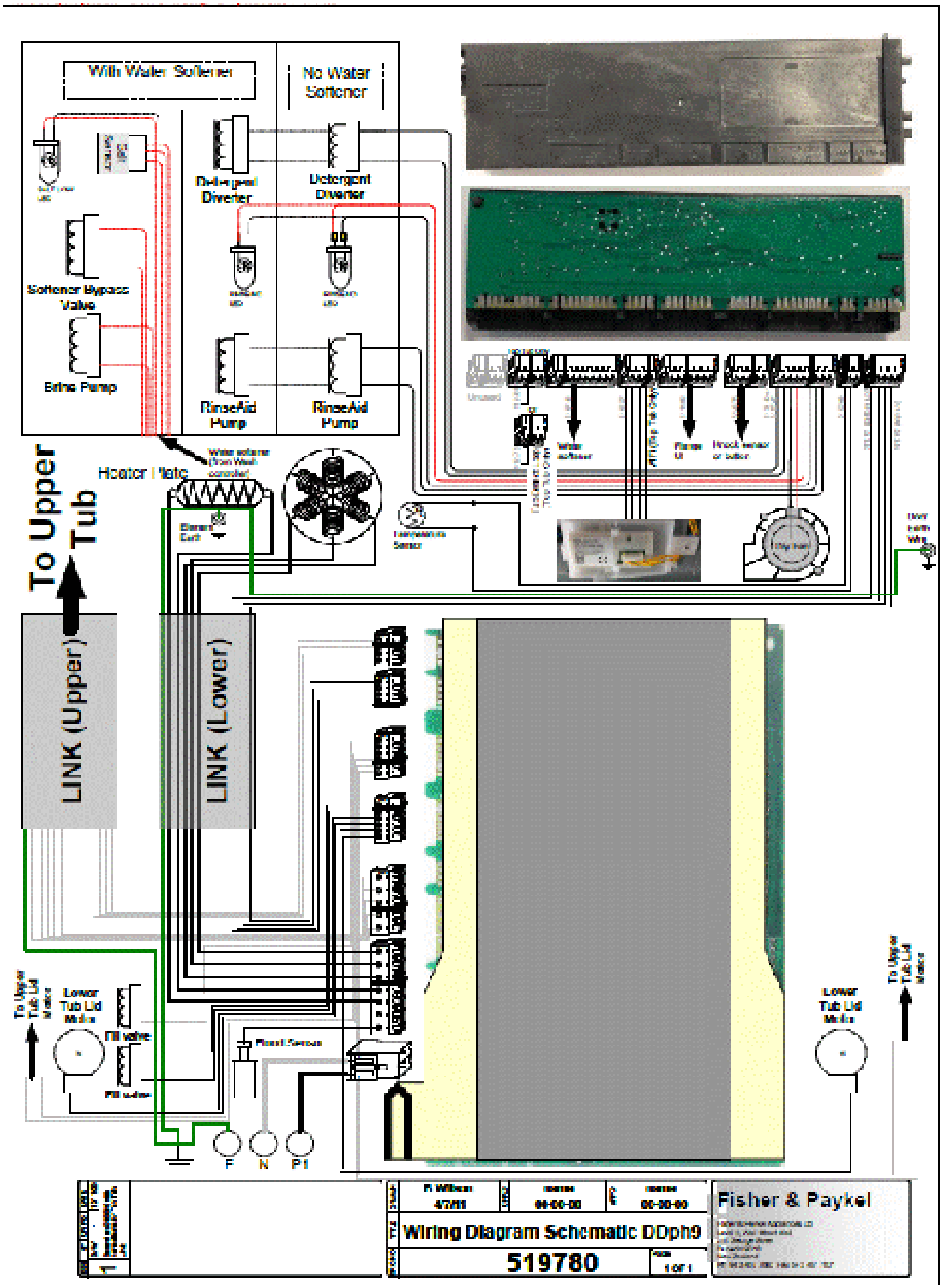
1 Remove the tub, refer section 8.13
2 Remove the required lid actuator from the slide rail being replaced, refer section 8.23.
3 Remove the appropriate chassis trim (refer section 8.27) to gain access to the screws of the rail being replaced.
4 Remove the 2 hex drive screws securing the rail to the chassis.
5 Tap the slide rails from underneath at the front to free from it's location in the chassis.
6 Pull forward to release the rear locating tabs.
7 Refit in reverse order, take care that the chassis is square before tightening the screws.

8.29 Replacing the Chassis Trim

1 Bottom tub only - Remove the kickstrip, refer section 8.14, and the bottom cowling, refer section 8.15.
2 Remove the drawer front, refer section 8.1, and the tub, refer section 8.13.
3 Remove both the left hand and right hand yokes, refer section 8.25. This is to prevent damaging the locating tab at the front of each yoke where it slides up into the rear of the chassis trim.
4 Remove the trim by releasing the trim clips with long nose pliers, and pull trim forward to release from the chassis.
5 Refit in reverse manner.

8.30 Replacing the Temperature Sensor

1 Remove the drawer front, refer section 8.1.
2 Remove the wiring cover, refer section 8.16.
3 The sensor is a push fit into the tub, so requires some force to pull it out.
4 Remove the sensor wiring harness from the wash controller.
5 When reassembling the new sensor, pays to lubricate the rubber grommet which helps the grommet locate into the tub.
6 You can use a flat blade screwdriver to help push the grommet in, but care should be taken not to damage it, otherwise it can leak.
7 Connect the harness to the wash controller.
8 Reassemble the wiring cover and drawer front.


With Water Softener
No Water Softener
Detergent Diverter
Softener Bypass Valve
Brine Pump
RinseAid Pump
RinseAid Pump
To Upper Tub
Heater / Element
LINK (Upper)
LINK (Lower)
Lower Tub Lid Motor
Fill valve
Float Sensor
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