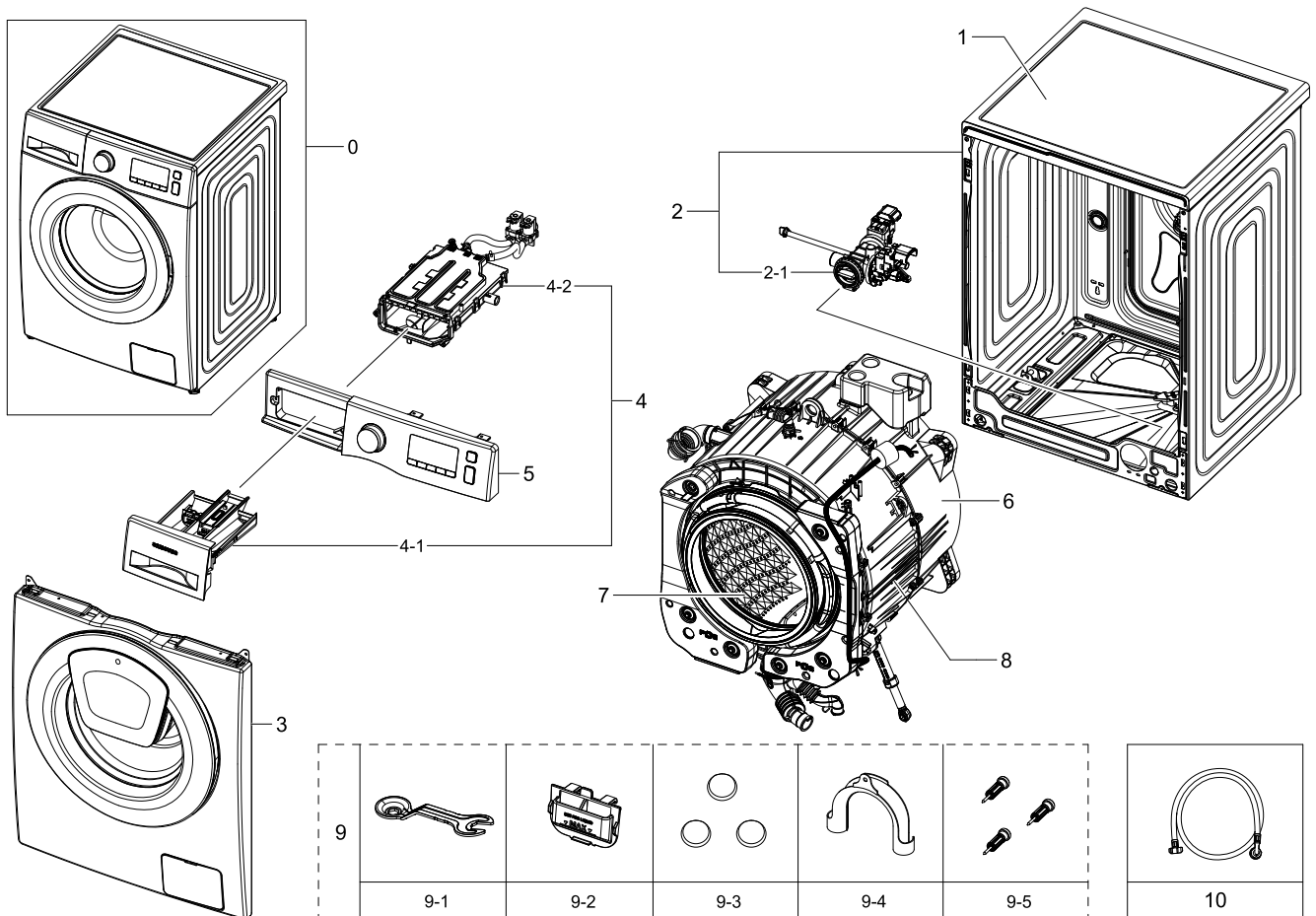


1. WW90K5410WW/EC

Exploded View



Parts List

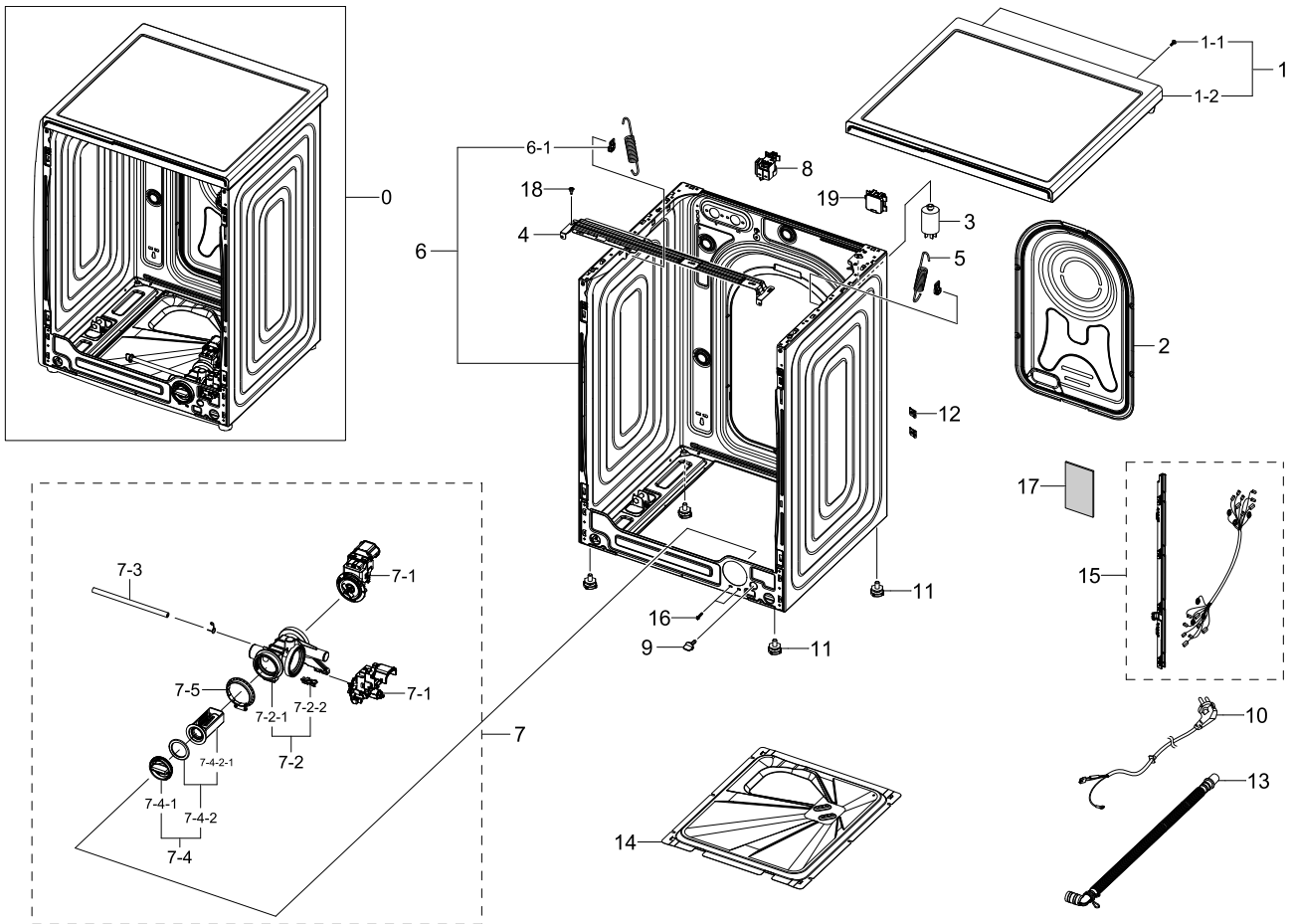
No.	Lvl.	Loc.	Material Code	Description & Specification	SNA	Qty.
1	1	W0183	DC90-22244A	ASSY COVER TOP; F500E,J3 9kg	SNA	1
2	1	W0506	DC90-22804A	ASSY FRAME; WW5500K,WW80K5410UW/EU	SNA	1
2-1	2	W0194	DC97-17336C	ASSY PUMP DRAIN; WW6500K,WW80K6414QW,AL-P	SA	1
3	1		DC90-21913A	ASSY FRONT; white frame-front + white doo	SNA	1
4	1	W0216	DC90-12367A	ASSY DRAWER; F500E,WF80F5E5U4W/EF	SNA	1
4-1	2	W0216	DC97-17310A	ASSY DRAWER; F500E,WF80F50FU4W,8kg, DA WH	SA	1
4-2	2	W0163	DC97-17311A	ASSY HOUSING DRAWER; F500E,WF80F50FU4W,PP	SA	1
5	1		DC90-23770A	ASSY PANEL CONTROL PARTS; WW5500K,WW90K54	SNA	1
6	1		DC90-24434A	ASSY TUB BACK PARTS; WW6500,DIM,NTR,OPTIB	SNA	1
7	1	W0165	DC90-12363A	ASSY DRUM; F500E,WF80F5E5U4W/EF	SNA	1

Exploded Views and Parts List

No.	Lvl.	Loc.	Material Code	Description & Specification	SNA	Qty.
8	1	G0048	DC90-12369A	ASSY TUB FRONT; F500E,Bubble,Polyone TPE	SNA	1
9	1	W0718	DC90-12364A	ASSY ACCESSORY; F500E,WF80F5E5U4W/EF	SNA	1
9-1	2	WJ5077	DC60-40146A	BOLT SPANER; CR-SPCC,T2.5	SA	1
9-2	2		DC61-03510A	GUIDE LIQUID; WF-F500E,PP,MT43,Honesty BI	SA	1
9-3	2	W0614	DC67-00307A	CAP-FIXER; WF438AAC/XAA,PP,T1.5,RECYCLE,B	SC	3
9-4	2	W0626	DC67-00357A	HOSE-HANGER; SEM,PP,ID24.13,-,T2.0,-,GRY,	SNA	1
9-5	2	W0603	DC97-14653C	ASSY FIXER TUB; SCOUT,WF0804Y8E/XEF	SA	3
10	2	W0757	DC97-17845A	ASSY HOSE WATER; COLD,ALL MODEL	SA	1

2. Frame&Cover Parts

Exploded View



Parts List

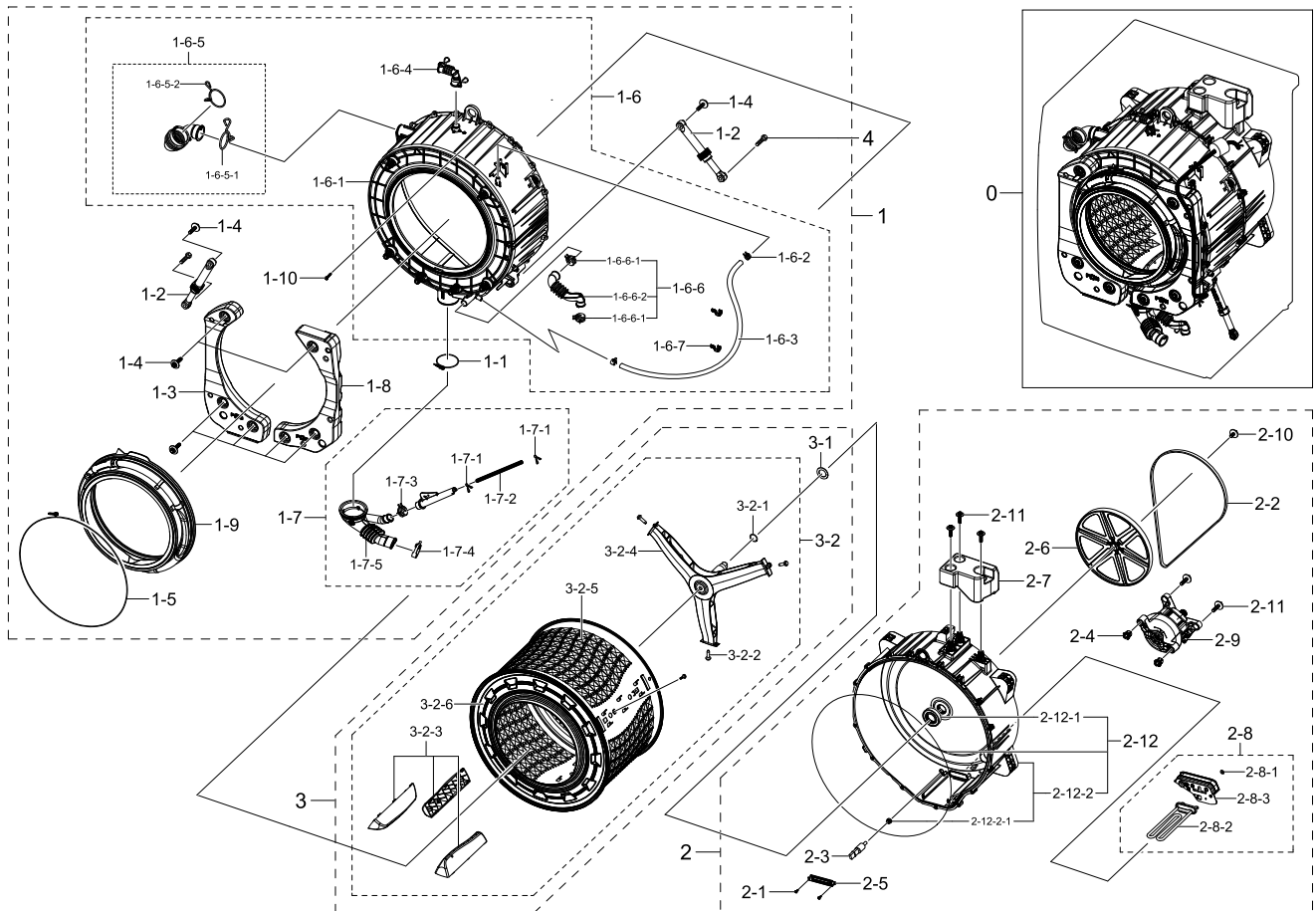
No.	Lvl.	Loc.	Material Code	Description & Specification	SNA	Qty.
1	1	W0183	DC90-22244A	ASSY COVER TOP; F500E,J3 9kg	SNA	1
1-1	2	G0412	6002-000613	SCREW-TAPPING; TH,+,-2,M5,L16,ZPC(WHT),S	SNA	2
1-2	2	W0183	DC97-17254F	ASSY COVER TOP; F500,DA WHITE, 8kg	SA	1
2	2		DC63-01034C	COVER BACK; GI-SGCC,T0.35	SA	1
3	2	W0620	DC29-00015G	FILTER EMI; LFT-215G,300Khz,VDE, KS,6.5mH	SA	1
4	2	W0248	DC61-03467A	FRAME PLATE-UP; WF-F500E,GI-SGCC,-,-,T1.0	SA	1
5	2	W0630	DC61-02146B	SPRING ETC-HANGER; F500E PJT,HSWR,CD3.5,O	SA	2
6	2	W0506	DC97-17325E	ASSY FRAME; F500E,DA WHITE,COLD,UNI	SA	1
6-1	3	WI0266	DC61-02065A	GUIDE SPRING; WF448AAG/XXA,POM,T4,W24,L36	SA	2
7	2	W0194	DC97-17336C	ASSY PUMP DRAIN; WW6500K,WW80K6414QW,AL-P	SA	1

Exploded Views and Parts List

No.	Lvl.	Loc.	Material Code	Description & Specification	SNA	Qty.
7-1	3		DC31-00181A	MOTOR AC PUMP; B15-6A/S3019/S3032/PX2025-	SA	2
7-2	3	W0514	DC97-19376A	ASSY CASE FILTER; F500E,WF80F5E5U4W/EF,BU	SA	1
7-2-1	4	W0479	DC61-02271B	CASE PUMP; WF0804Y8E/XEF,PP,T2.5,W153.6,L	SA	1
7-2-2	4	WO0031	DC63-00905A	CUSHION PUMP; WF8802DPF/XET,NBR,-,W37.6,L	SA	1
7-3	3	U2015	DC67-00244C	HOSE DRAIN; WF0804Y8E,EPDM,ID6,OD11,T2.5,	SA	1
7-4	3	G0050	DC97-15695A	ASSY FILTER; GRIFFIN-PJT,WF9804RWE,PP+EPD	SA	1
7-4-1	4	WI0357	DC64-01317A	HANDLE FILTER; PP,FC2210,NTR/BLACK	SA	1
7-4-2	4		DC97-19203A	ASSY SEMI FILTER; F500/400, WW6000/3000,B	SNA	1
7-4-2-1	5	W0633	DC63-00998A	FILTER PUMP; SCOUT-PJT,PP,-,NEAT WHITE,BU	SA	1
7-5	3		DC69-01128A	PACKING-PUMP; WF8804DP,IIR,BUTYL,T2.5,HEB	SA	1
8	2	H2050	DC96-01703G	SENSOR PRESSURE; Air,5,-,400mmH20,-	SA	1
9	2	WI0107	DC61-10673A	CAP DRAIN; -,PP,-,-,-,-,CNTK-P-101,-,-,	SA	1
10	2	W0467	DC96-00146H	CBF-POWER CORD; AT,EUROPE,EU3F,Gray,1500,	SA	1
11	2	W0606	DC97-00920U	ASSY LEG; F500E,WF80F5E5U4W/EF,H33.5,P1.5	SA	4
12	2		DD61-00140A	BRACKET-TAPPING; SDW-T120B,SK5,T0.6,BLK,C	SNA	2
13	2	W0604	DC97-16240B	ASSY HOSE DRAIN(O); F500E,WF80F5E5,ASSY,L	SA	1
14	2	W0462	DC61-03478A	COVER-BOTTOM; WF-F500E,GI-SGCC,T0.4	SA	1
15	2		DC93-00619A	ASSY WIRE HARNESS-MAIN; DRUM-M,N,2PUMP,N,	SA	1
16	2	M0030	DC97-14006A	ASSY SCREW; WF203,M4/L16	SA	2
17	2	W0663	DC63-10008B	SPONGE HARNESS; F500E,PE FOAM,T10,W50,L10	SNA	2
18	2	W0102	6009-001240	SCREW-SPECIAL; TH,+,M5,L13.5,ZPC(WHT),SWR	SA	2
19	2		DC63-01964A	COVER CONNECTOR; PP,T2.5,HB,NATURAL,HASS	SA	1

3. Assy Tub&drum

Exploded View



Parts List

No.	Lvl.	Loc.	Material Code	Description & Specification	SNA	Qty.
1	1	G0048	DC90-12369A	ASSY TUB FRONT; F500E,Bubble,Polyone TPE	SNA	1
1-1	2	W0744	DC65-00021A	CLAMPER HOSE-JOINT; HEBA PJT,HSWR-SWRH,ID	SA	1
1-2	2	W0618	DC66-00531C	DAMPER SHOCK; HEBA,PP,WHITE,8020N,LONG	SA	2
1-3	2	W0233	DC67-00682A	WEIGHT BALANCER-LEFT; F500,CONCRETE,NATUR	SA	1
1-4	2	W0601	DC97-14263A	ASSY BOLT; MOTOR/BOLT(M8)+WASHER(OD27.5),	SA	13
1-5	2	M0038	DC97-14618A	ASSY CLAMP DIAPHRAGM; WF8804DP,OD2.0/L124	SA	1
1-6	2	W0636	DC97-17327A	ASSY SEMI TUB FRONT; F500E,WF80F5E5U4W/EF	SNA	1
1-6-1	3	W0632	DC61-03453A	TUB FRONT; F500,FRPP,OD 546.1,NTR,BUBBLE	SA	1

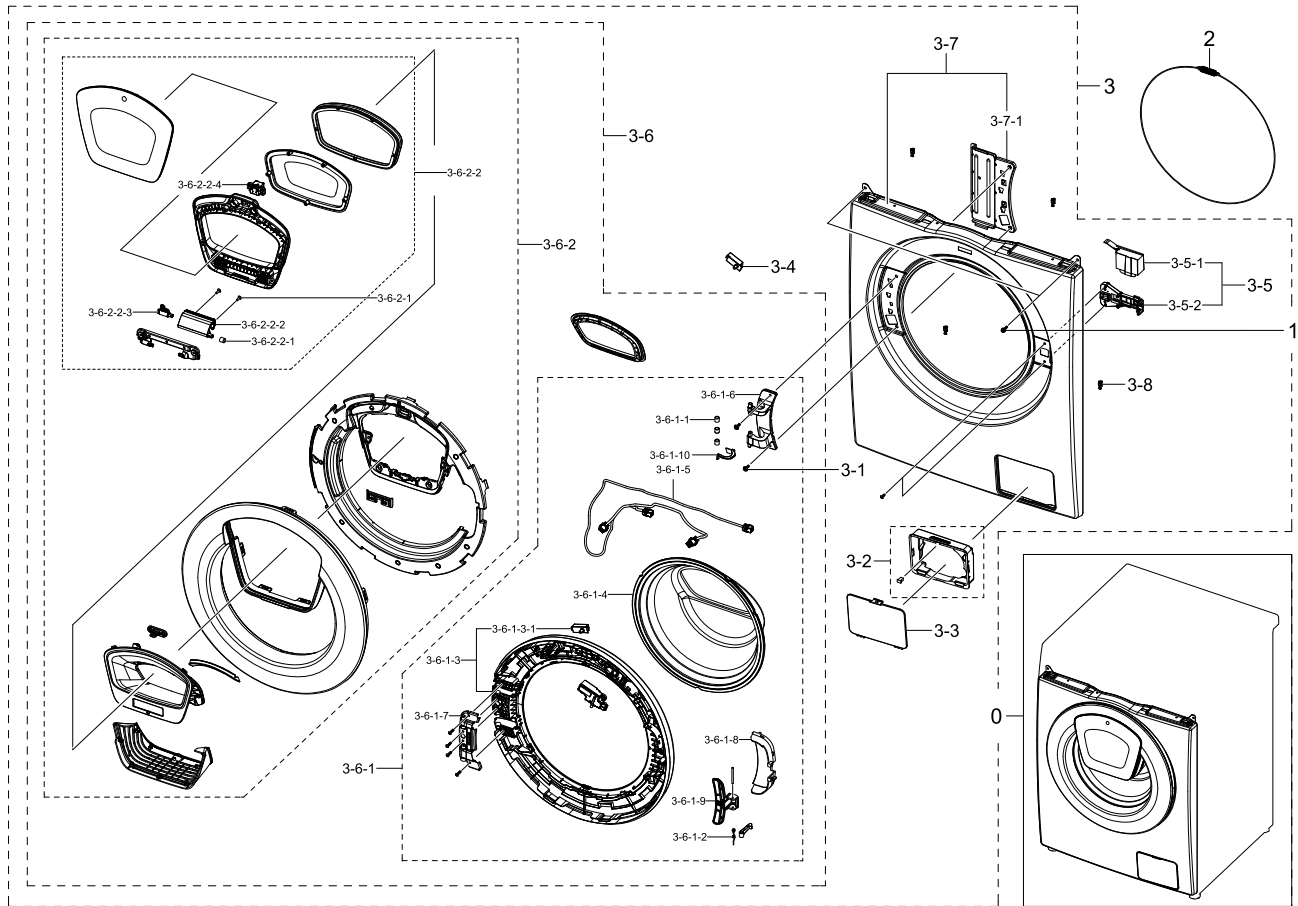
Exploded Views and Parts List

No.	Lvl.	Loc.	Material Code	Description & Specification	SNA	Qty.
1-6-2	3	W0615	DC65-00008A	CLAMPER HOSE; SEW-DR605,SK5,-,ID14.2/T0.9	SA	6
1-6-3	3	G0052	DC67-00471E	HOSE CIRCULATION; F500E,EPDM,ID9.0,BLK	SA	1
1-6-4	3	G0422	DC97-14873C	ASSY HOSE AIR; F500,WF80F5E5U4W	SA	1
1-6-5	3	G0043	DC97-14874F	ASSY HOSE DRAWER; F500E,ALL	SA	1
1-6-5-1	4		DC61-04117A	CLIP RING; HSWR,T3.0	SA	1
1-6-5-2	4	WJ0027	DC72-00001G	CLIP RING; HEBA-PJT,HSWR,T3.0,ID49.5,W18,	SA	1
1-6-6	3		DC97-17339A	ASSY HOSE AIR-TUB; F500E,WF80F5E5U4W/EF,B	SA	1
1-6-6-1	4	W0615	DC61-00158A	CLAMPER HOSE; SW65ASP,SK5,ID23,T0.8,-	SA	2
1-6-6-2	4	G0053	DC67-00671A	HOSE AIR TUB; F500,EPDM,19.3,29,T2.5,50,B	SA	1
1-6-7	3	G0415	DC61-02646A	GUIDE HOSE; WF0804Y8E,PP,T2.0,W9.8,L36.6,	SA	2
1-7	2	W0605	DC97-17330A	ASSY HOSE PRESSURE; F500E,WF80F5E5U4W/EF	SA	1
1-7-1	3	WP0165	DC61-70029C	CLIP RING; SEW-HW125,HSWR,WHITE	SA	2
1-7-2	3	W0725	DC67-00230E	HOSE WATER; WD8704,TPE,ID4.5	SA	1
1-7-3	3	W0615	DC61-00219M	CLAMPER HOSE; SK5,WHITE	SNA	1
1-7-4	3	W0615	DC61-00219C	CLAMPER HOSE; -,SK5,WSLS1100A,ID35,-,ZPC2	SA	1
1-7-5	3	W0625	DC67-00551A	HOSE FILTER TUB; VOLGA,EPDM,ID64.5,OD70,T	SNA	1
1-8	2	W0232	DC67-00681A	WEIGHT BALANCER-RIGHT; F500,CONCRETE,NATU	SA	1
1-9	2	W0234	DC64-02750A	DOOR DIAPHRAGM; HEBA,SCOUT,GRIFFIN-PJT,TP	SA	1
1-10	2	G0049	6009-001367	BOLT-HEX; M6.5,L32,ZPC(WHT),SWRCH18A,HWH	SA	15
2	1		DC90-24434A	ASSY TUB BACK PARTS; WW6500,DIM,NTR,OPTIB	SNA	1
2-1	2	W0105	6002-000473	SCREW-TAPPING; TH,+,NO,1,M4,L14,PASS,STS3	SA	2
2-2	2	W0209	6602-003939	BELT-TIMING GEAR; RUBBER,T3.2,W11.7,L1270	SNA	1
2-3	2	M0487	DC32-00010C	THERMISTOR; WASHER,-10~100,5,5,3.243k	SA	1
2-4	2	WS0064	DC61-02549A	BUSH MOTOR; HEBA BIGBANG,PA66+GF15%,NATUR	SA	2
2-5	2	W0230	DC61-02874A	BRACKET HEATER; WD0704CQR,STS430,T0.5	SA	1
2-6	2	W0434	DC66-00767A	PULLEY MOTOR; F500,PA66,-,AF216V60(PA66+G	SA	1
2-7	2	W0231	DC67-00670A	WEIGHT BALANCER-UP; F500,CONCRETE,-,4.0KG	SA	1
2-8	2	G0420	DC93-00355A	ASSY HEATER; SEPM,230V,2000W,NTR	SNA	1
2-8-1	3	W0110	6031-001531	WASHER-PLAIN; CR,ID7,OD14,T1.2,ZPC2,ACE-P	SA	1

No.	Lvl.	Loc.	Material Code	Description & Specification	SNA	Qty.
2-8-2	3	W0237	DC47-00033B	HEATER WASH; AC230V,2000W,SUS316L,728mm,N	SA	1
2-8-3	3	W0235	DC63-01553A	COVER HEATER; F500 PJT,ABS+PC,W77,L168.1,	SA	1
2-9	2		DC93-00586A	ASSY MOTOR BLDC; F3 35mm Press Housng Ty	SA	1
2-10	2	W0601	DC97-06080C	ASSY BOLT; BOLT+WASHER(OD38),,,,,,	SA	1
2-11	2	W0601	DC97-14263A	ASSY BOLT; MOTOR/BOLT(M8)+WASHER(OD27.5),	SA	13
2-12	2	W0501	DC97-17334A	ASSY TUB BACK; F500E,WF80F5E5U4W/EF	SA	1
2-12-1	3	WS0119	DC62-00008A	SEAL OIL; NBR,BLACK,-,NBU	SA	1
2-12-2	3	G0029	DC97-17329A	ASSY SEMI TUB BACK; F500E,WF80F5E5U4W/EF	SNA	1
2-12-2-1	4	M0028	DC69-00824A	PACKING-THERMISTOR; GW-PJT,EPDM,-,-,W17,H	SA	1
3	1	W0165	DC90-12363A	ASSY DRUM; F500E,WF80F5E5U4W/EF	SNA	1
3-1	2	WS0131	DC60-00069A	SPACER; WR-HA139WA,STS304	SA	1
3-2	2	W0165	DC97-17231A	ASSY DRUM; F500 PJT	SA	1
3-2-1	3		6044-002157	RING-OG; ID28,OD32.2,T2.1,BLK,NBR	SA	1
3-2-2	3	WJ5081	DC60-40137A	BOLT HEX; MARS-PJT,STS430,M8,P1.25,L30,HE	SA	3
3-2-3	3	W0619	DC66-00759A	DRUM LIFTER; F500 PJT,PP,W52,H45.8,L246,-	SA	3
3-2-4	3	W0164	DC97-17234A	ASSY FLANGE SHAFT; F500 PJT	SA	1
3-2-5	3		DC66-00757A	DRUM WRAPPER; F500 PJT,STS430,ID503,T0.5	SNA	1
3-2-6	3	W0748	DC66-00756A	DRUM FRONT; F500 PJT,STS430,ID311,OD525,T	SNA	1
4	2	G0049	DC60-40144A	BOLT HEX; SM10C,L35,ZPC2(YEL),M10,ZPC2(YE	SA	2

4. Assy Front

Exploded View



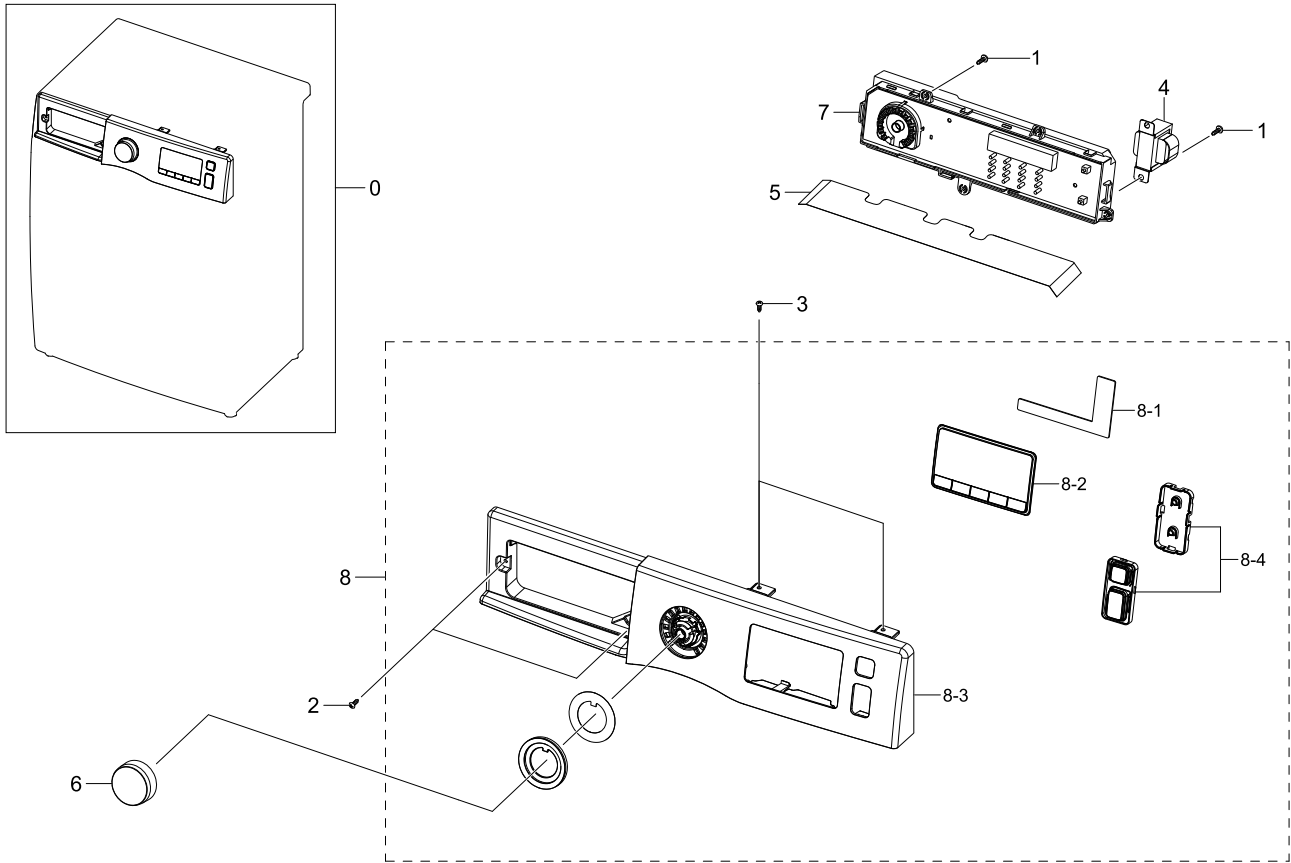
Parts List

No.	Lvl.	Loc.	Material Code	Description & Specification	SNA	Qty.
0	1		DC90-21913A	ASSY FRONT; white frame-front + white doo	SNA	1
1	2	W0105	6002-001438	SCREW-TAPPING; HWH,+ ,NO,1,M5,L12,ZPC(WHT)	SA	2
2	2	W0608	DC91-12078D	ASSY WIRE DIAPHRAGM; HEBA-PJT,-,-,-,-,-	SA	1
3	2	W0253	DC97-19356B	ASSY FRAME FRONT; WW5500K,ASSY DOOR(DA WH	SNA	1
3-1	3	G0425	6009-001522	SCREW-HEX; HWH,+ ,M5,L16,PASS,STS430,FP,SE	SA	2
3-2	3		DC97-20168A	ASSY FILTER GUIDE; F500,WW5,WW6,WF80F5E5U	SA	1
3-3	3		DC63-00920M	COVER FILTER; ADD WASH,ABS,T2.5,DA WHITE,	SA	1
3-4	3		DC64-00828G	SWITCH DOOR; AC125/250V,1.5/0.75,1BUTTON,	SA	1
3-5	3		DC97-19086A	ASSY COVER DOOR SWITCH; F500	SNA	1

No.	Lvl.	Loc.	Material Code	Description & Specification	SNA	Qty.
3-5-1	4	WE0059	DC63-00967A	COVER DOOR SWITCH; AEGIS-PJT/ WF8500NHWP	SA	1
3-5-2	4	WE0067	DC64-01538A	SWITCH DOOR LOCK; AC250V,16,BIMETAL	SA	1
3-6	3	W0459	DC97-19357B	ASSY DOOR; WW5500K,Main,ASSY COVER DOOR(D	SA	1
3-6-1	4	W0454	DC97-19347B	ASSY HOLDER GLASS; WW5500K,HOLDER GLASS (SNA	1
3-6-1-1	5	WD0090	DC61-00891A	GUIDE HINGE; HAUZEN(DOM),POM,NTR(WHT),HIN	SA	3
3-6-1-2	5	WD0130	DC61-02027A	SPRING ETC LEVER; STS304,CD1.2,L10.6	SA	1
3-6-1-3	5	W0454	DC97-19471B	ASSY HOLDER GLASS; WW5500K,HOLDER GLASS+S	SNA	1
3-6-1-3-16			DC64-00828G	SWITCH DOOR; AC125/250V,1.5/0.75,1BUTTON,	SA	1
3-6-1-4	5	W0448	DC64-03390A	DOOR-GLASS; WW6500K,GLASS,T5.0,TRANSPAREN	SNA	1
3-6-1-5	5		DC93-00620A	ASSY WIRE HARNESS-SUB; DRUM-M,SUB ADD WAS	SNA	1
3-6-1-6	5		DC61-04131A	HINGE DOOR; WW6/5500K,ALDC,T5.0	SNA	1
3-6-1-7	5		DC61-04134A	BRACKET HOLDER; WW6/5500K,GI-SGCC,T1.2	SNA	1
3-6-1-8	5	G0428	DC63-01541A	COVER HANDLE; WF-F500E,ABS,-,-,DA WHITE,H	SNA	1
3-6-1-9	5	W0722	DC64-02852A	HANDLE DOOR; WF-F500E,ABS,T2.0,HG-0760GP,	SNA	1
3-6-1-10	5		DC63-01934A	COVER HINGE; WW6/5500K,PP,T2.0,DARK HOLDE	SNA	1
3-6-2	4	W0457	DC97-19358B	ASSY COVER DOOR; WW5500K,DA WHITE	SNA	1
3-6-2-1	5	G0425	6009-001522	SCREW-HEX; HWH,+M5,L16,PASS,STS430,FP,SE	SA	2
3-6-2-2	5	W0459	DC97-19352D	ASSY DOOR; WW5500K,2nd DOOR,DA WHITE	SNA	1
3-6-2-2-16		WD0090	DC61-00891A	GUIDE HINGE; HAUZEN(DOM),POM,NTR(WHT),HIN	SA	1
3-6-2-2-26			DC61-04133D	HINGE DOOR; ALDC,T5.0,INOX GRAY Spray D	SA	1
3-6-2-2-36			DC66-00878A	DAMPER SHOCK-AXIS; WD9500JK,POM,NATURAL	SA	1
3-6-2-2-46			DC97-19401A	ASSY LATCH; WW8500K	SA	1
3-7	3		DC97-19359C	ASSY FRAME FRONT-SEMI; WW5500,WW70K5210UW	SNA	1
3-7-1	4	W0226	DC61-02584A	BRACKET HINGE; GI-SGCC,T1.4,-	SA	1
3-8	3		DC61-02577B	GUIDE FRAME FRONT; WF1802XEC,POM,L19.4,NT	SA	4

5. Assy Panel Control

Exploded View



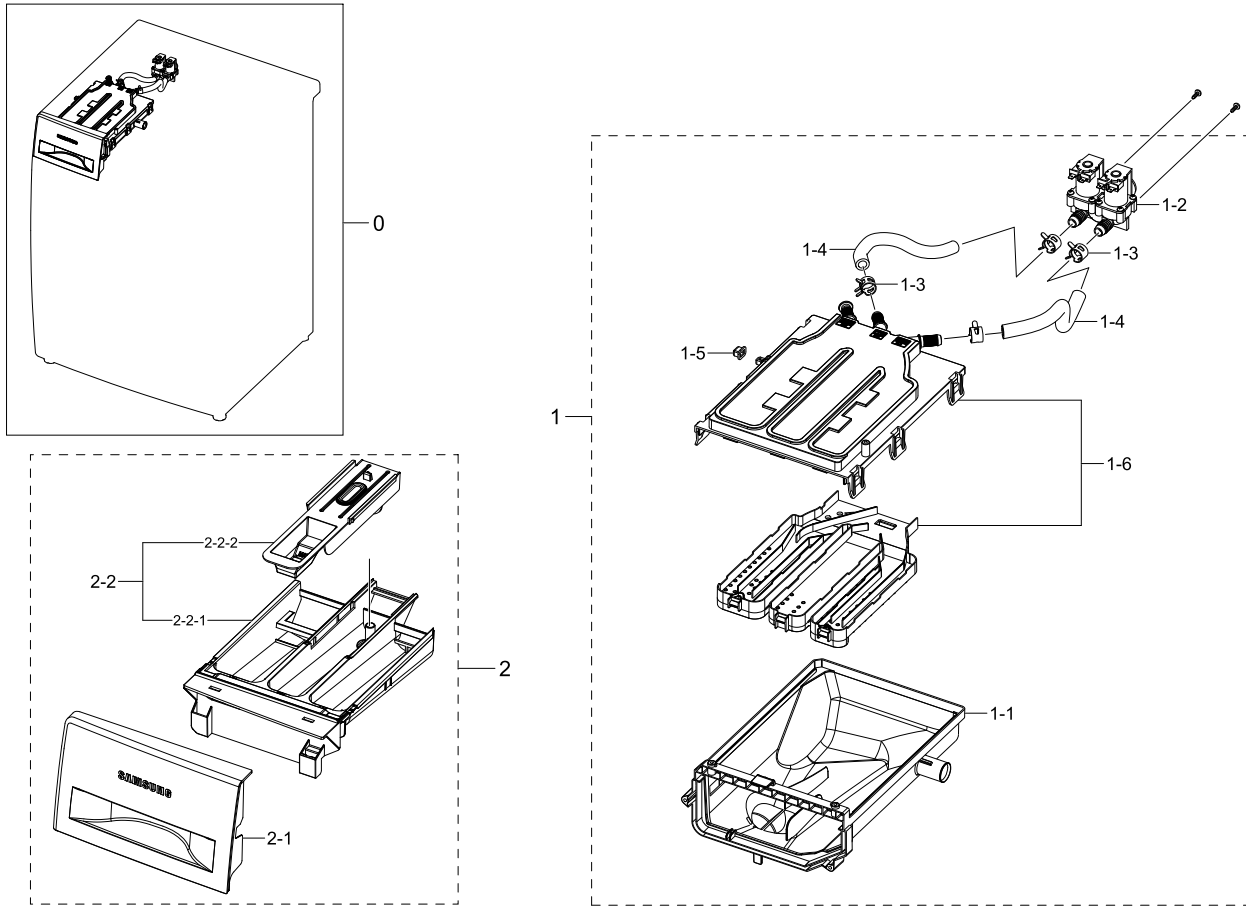
Parts List

No.	Lvl.	Loc.	Material Code	Description & Specification	SNA	Qty.
0	1		DC90-23770A	ASSY PANEL CONTROL PARTS; WW5500K,WW90K54	SNA	1
1	2	WX0412	6002-000213	SCREW-TAPPING; TH,+,1,M4,L12,ZPC(WHT),SWR	SNA	5
2	2	W0105	6002-000445	SCREW-TAPPING; TH,+,NO,2S,M4,L18,PASS,STS	SNA	2
3	2	WX0441	6002-000520	SCREW-TAPPING; TH,+,-,2,M4,L12,ZPC(WHT),S	SNA	14
4	2		DC27-00012A	COIL HARMONIC; 4.5mH,40*69*39,3A	SA	1
5	2		DC63-01829B	SHEET PCB; WW3000~6000,PC,T0.2,HB,3022R,B	SNA	1
6	2		DC64-03312A	KNOB ENCODER; F500E,ABS+PMMA,WT0035, TP00	SA	1
7	2		DC94-06481D	ASSY PCB EEPROM; 0403,WW5500K,SEPM, F500,	SA	1

No.	Lvl.	Loc.	Material Code	Description & Specification	SNA	Qty.
8	2	W0478	DC97-19616D	ASSY PANEL CONTROL; WW5500K,WW90K5410WW/E	SA	1
8-1	3	W0897	DC93-00540A	ASSY SENSOR; F500 IML BEST,5V,7-BUTTON,TO	SA	1
8-2	3		DC64-03402K	WINDOW PANEL; WW80K5410UW/EC,PMMA,TF-0930	SNA	1
8-3	3	W0180	DC64-02853E	PANEL CONTROL; WW3000,7kg,ABS,HG-0760GP,D	SNA	1
8-4	3	G0431	DC97-17392A	ASSY BUTTON; WF80F50FU4W/EF	SNA	1

6. Assy Drawer

Exploded View



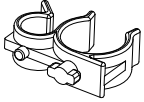
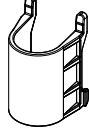


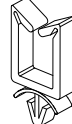




Parts List

No.	Lvl.	Loc.	Material Code	Description & Specification	SNA	Qty.
0	1	W0216	DC90-12367A	ASSY DRAWER; F500E,WF80F5E5U4W/EF	SNA	1
1	2	W0163	DC97-17311A	ASSY HOUSING DRAWER; F500E,WF80F50FU4W,PP	SA	1
1-1	3	W0372	DC61-03473A	HOUSING DRAWER-LOW; WF-F500E,PP,-, WHITE,-	SA	1
1-2	3	W0078	DC62-00024M	VALVE WATER; AC220-240V,Bracket,1in 2out,	SC	1
1-3	3	W0615	DC65-00008A	CLAMPER HOSE; SEW-DR605,SK5,-,ID14.2/T0.9	SA	6
1-4	3	W0151	DC67-00051T	HOSE DRAWER; F500E,EPDM,ID9.0,OD14.5,L230	SA	2
1-5	3		DC67-00327A	CAP DRAWER HOOK; HEBA-PJT,EPDM,T1.1,W13.9	SA	1
1-6	3	W0497	DC97-17347A	ASSY S.HOUSING DRAWER; F500E,WF80F5E5U4W	SA	1
2	2	W0216	DC97-17310A	ASSY DRAWER; F500E,WF80F50FU4W,8kg, DA WH	SA	1

No.	Lvl.	Loc.	Material Code	Description & Specification	SNA	Qty.
2-1	3	W0112	DC64-02858A	PANEL DRAWER; F500E,ABS,-,HG-0760GP,DA WH	SA	1
2-2	3	W0216	DC97-19194A	ASSY DRAWER; F500E,Body Drawer+Cap Rinse	SA	1
2-2-1	4	W0156	DC61-03480A	BODY DRAWER; WF-F500E,PP,DA WHITE,WT0035,	SA	1
2-2-2	4	W0215	DC67-00452A	CAP RINSE; WF0800NCE,PP,MT43, PTN960,HONE	SA	1

7. Small Parts

Exploded View

				
1	2	3	4	5
				
6	7	8	9	

Parts List

No.	Lvl.	Loc.	Material Code	Description & Specification	SNA	Qty.
1	2	W0616	DC61-00133A	CLAMPER HOSE-FIX; P1291,PP,-,HOSE+PLUG,BJ	SA	2
2	2		DC61-04251A	GUIDE HOSE; F500E,PP,RM60,BLACK	SNA	1
3	2	WI0293	DC61-40081A	HOLDER WIRE; DAWH-2NC,PA66,-,NATURAL,-	SA	3
4	2	W0623	DC61-40083A	HOLDER WIRE; DAWH-3ND,PA66,NTR(PI24.4)/NY	SA	2
5	2	M0001	DC61-00553B	CABLE CLAMP; DAWS-3NE,PA66,NTR	SA	3
6	2	WI0293	DC61-00995C	HOLDER WIRE; HEBA-PJT,PA,-,NATURAL,-,2110	SA	1
7	2		DC65-20010A	CABLE CLAMP; DA-9N-1,NYLON66,NTR	SNA	1
8	2		6502-000127	CABLE CLAMP; DAWH-18NB,PA66,NTR	SA	1
9	2	WI0295	DC61-60074A	HOLDER WIRE; PA,-,NATURAL,-,101F,rectangl	SA	3