

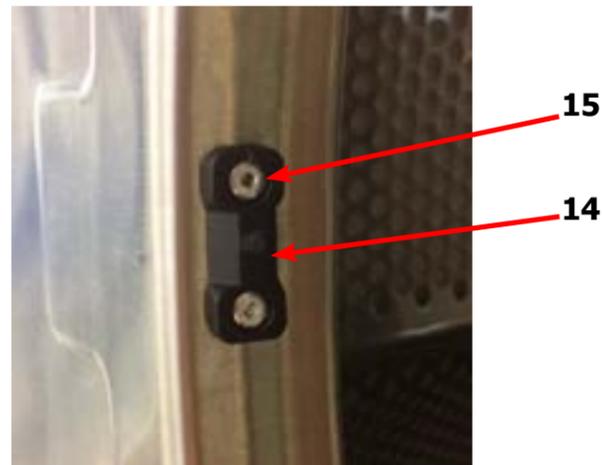
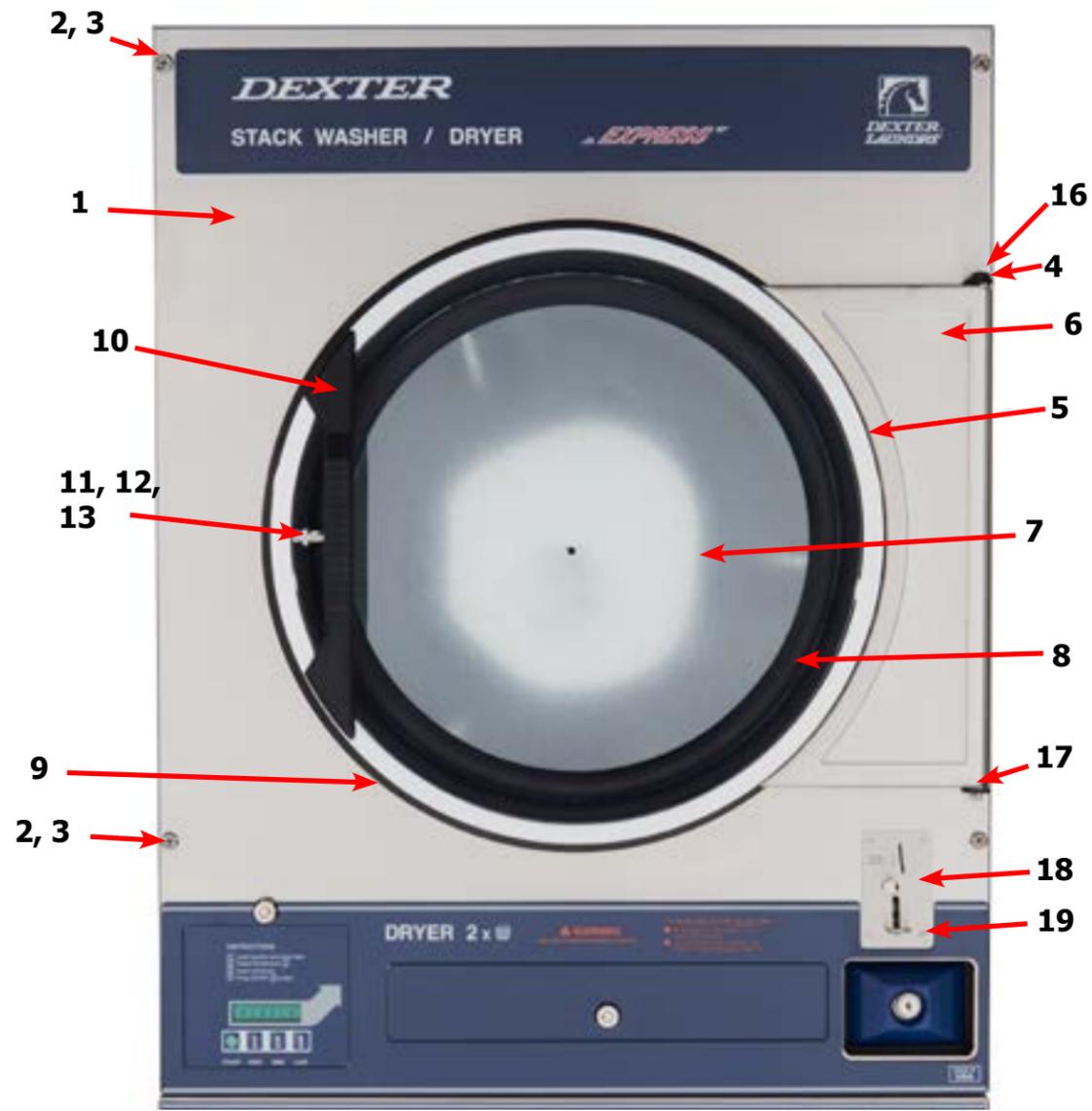
Kits, Assemblies, & Common Parts

Description	Part Number
SWD Makeup Air Kit	9732-332-001
Cleanout Duct Assembly 8"	9973-034-001
Temperature Probe	9501-006-001
Controls Blue	9857-199-002
Controls Black	9857-199-004
Coin Drop	9021-094-001
Optical Switch	9801-099-001
Coin Drop Screws	9545-053-002
Ignition Control Box	9857-182-001
Electrode Assembly	9875-002-003
Hi-Limit Thermostat	9576-203-002
Overtemp Thermostat	9576-207-006
Fuseholder	9200-001-002
Fuse	8636-018-001
Relay	5192-299-002
Transformer	8711-007-002
Lint Screen without Front	9805-037-001
Airflow Switch	9539-461-009
Door Switch	9539-487-001
Motor Belt	9040-076-012
Tumbler Belt	9040-073-013
Tension Arm Complete Assembly	9861-022-001
Spider/Trunnion	9568-018-001
Door Handle	9244-092-001

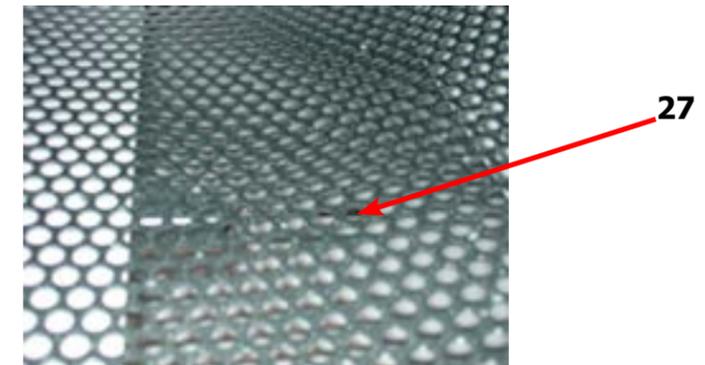
Dryer Cabinet Group

	Description	T-20 SWD	QTY
1	Panel Assy., Front- Upper (SS)	9989-591-001	1
*	Insulation Front Panel, half moon (top)	9277-064-001	1
*	Insulation Front Panel, half moon (bottom)	9277-064-002	1
2	Screw, FLHDCR, 10B x 1 3/4	9545-008-014	4
3	Washer, Finish, #10	8641-585-001	4
*	Nut, Spring	8640-399-001	4
*	Hinge ,Backup Plate	9982-392-001	1
*	Screw, Countersink, 10-32X 1/2	9545-012-003	2
4	Strap, Hinge (SS/Black)	9544-074-002	2
*	Screw, Hinge to Panel	9545-012-028	4
*	Door Assy., Loading Complete-Chrome/BLK/SS	9960-315-002	1
5	Door Assy., Loading-Chrome(ring only)	9960-314-003	1
6	Plate Assy., Hinge (SS)	9982-393-001	1
*	Screw, Hinge to Door	9545-012-015	4
*	Nut, Hinge to Door	8640-413-002	4
*	Cover, Hinge Plate	9074-377-002	1
*	Screw, Phillips-10B x 3/8	9545-008-010	2
7	Glass, Door	9212-002-005	1
8	Gasket, Glass Black	9206-413-003	1
*	Support, Door Glass	9548-117-000	1
*	Tool Install Dryer Door Gasket	8545-064-001	1
9	Gasket, Outer Rim Black	9206-420-006	1
10	Handle, Loading Door	9244-092-001	1
*	Screw, Handle 1/4-20 x 3/8	9545-018-017	2
11	Stud, Door Catch, 7/8	9531-033-002	1
12	Nut, Hex	8640-413-001	1
13	Nut, Acorn	8640-413-003	1
14	Catch, Loading Door	9086-015-002	1
15	Pop Rivet for mtg. catch	8638-190-009	2
16	Screw, Door to Hinge Strap (Special Black Type)	9545-052-001	1
17	Washer, Fiber	8641-436-003	1
18	Acceptor, Coin	9021-094-001	1
*	Retainer, Coin Acceptor	9486-145-001	2
19	Screw, 4Bx5/8ss, T10	9545-053-002	4
*	Switch, Optical	9801-099-001	1
*	Cabinet Touch Up Paint (White)	9472-001-013	1

Cabinet Group



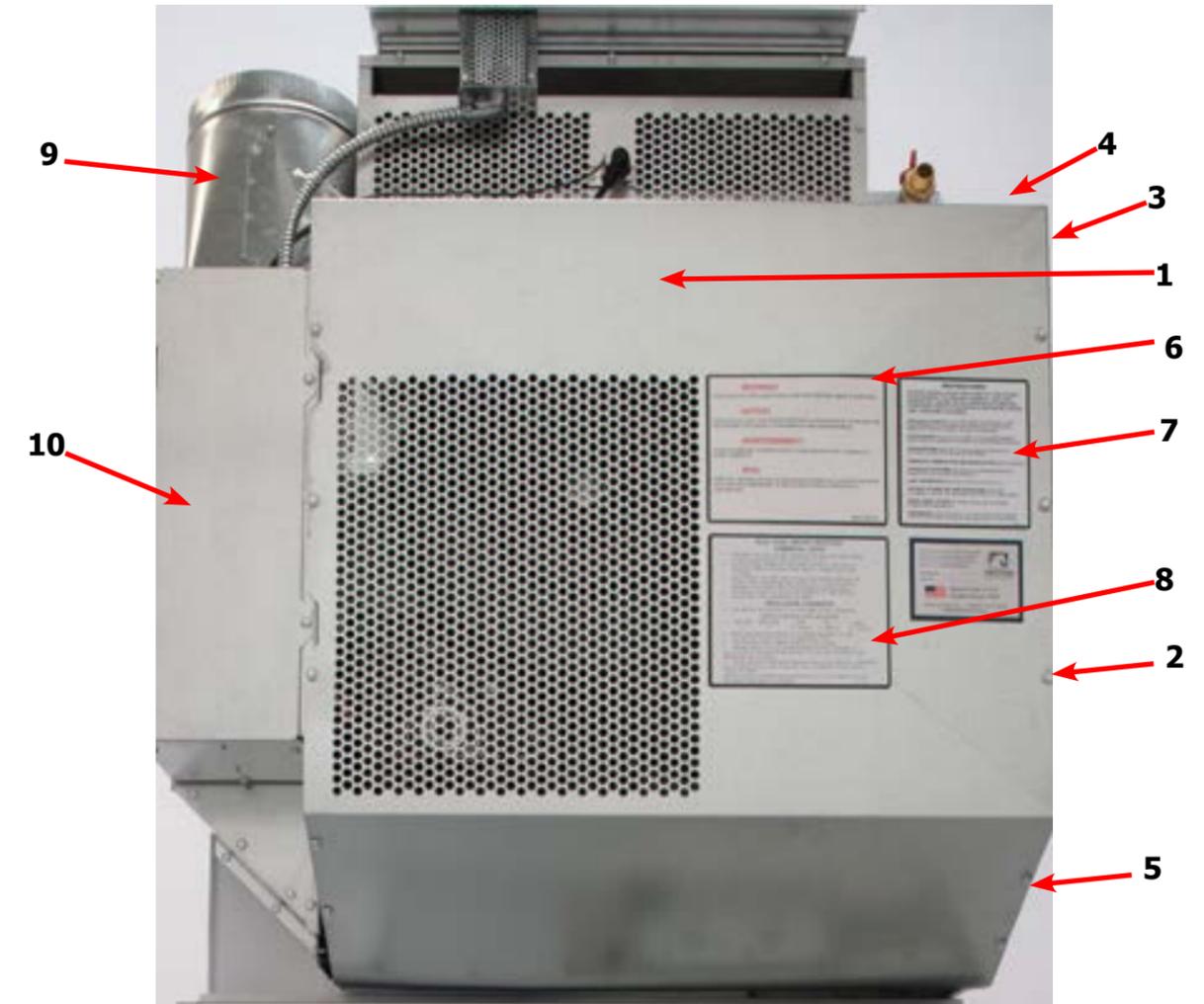
Dryer Cabinet Group



Cabinet Group Continued

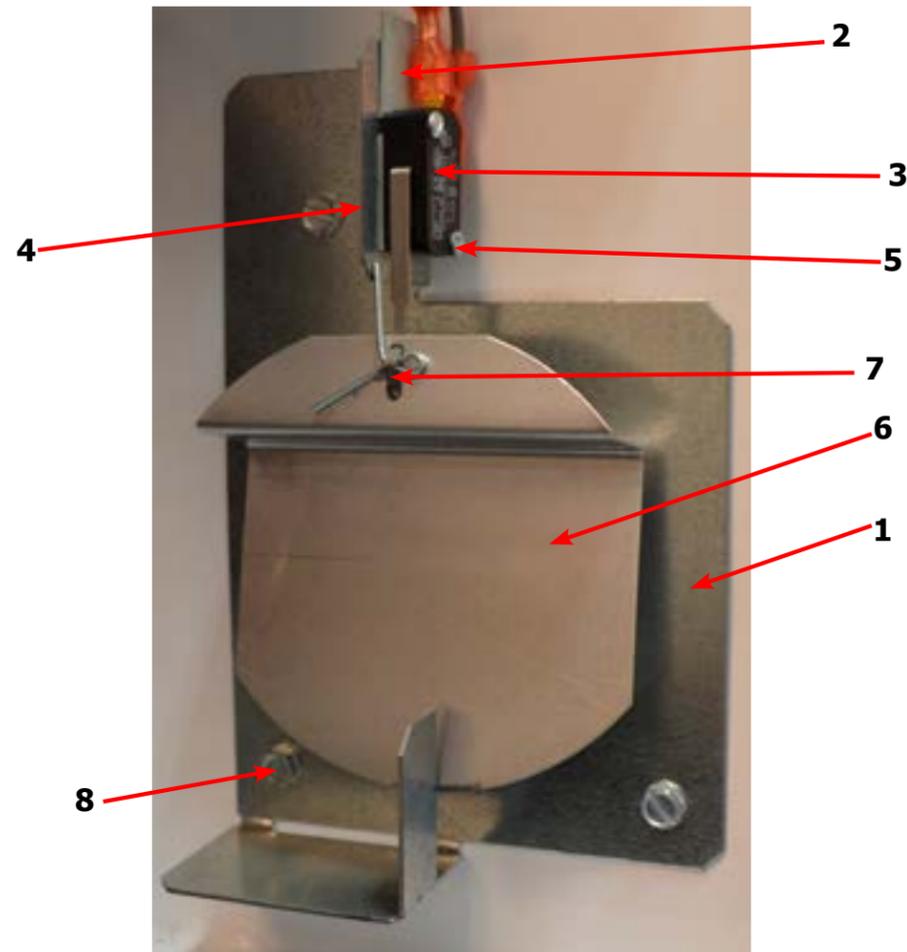
Key	Description	T-30 SWD	QTY
20	Escutcheon, SWD, Dryer Coin	9994-038-001	1
21	Trim, Overlay Blue	9435-051-002	1
21	Trim, Overlay Black	9435-051-001	1
*	Screw, #4-40 x 3/16	9545-020-009	13
22	Nameplate Stack Dryer Express Blue	9412-240-002	1
22	Nameplate Stack Dryer Express Black	9412-240-001	1
*	Lint Drawer Assembly Blue	9866-008-001	1
*	Lint Drawer Assembly Black	9866-008-003	1
*	Drawer, Front	9974-016-002	1
*	Washer, Flat, #10	8641-581-006	2
*	Washer, Curved-Spring	8641-569-004	2
*	Nut, 10-32	8640-413-007	2
23	Overlay Trim, Lint Drwr-Blue	9435-053-002	1
23	Overlay Trim, Lint Drwr-Black	9435-053-001	1
*	Felt Seal (back of lint screen assembly)	9532-142-001	1
*	Lint Screen Assembly ONLY (no front)	9805-037-001	1
*	Replaceable Lint Screen Only	9555-057-011	1
24	Lock and Key, Lint Drawer	8650-012-004	1
*	Key 6101 only	6292-006-010	1
*	Cam, Lock	9095-043-001	1
*	Lint Screen Strap Hold Down Screws 10Bx 1/4	9545-008-001	12
25	Controls Assy, 24VAC, Blue	9857-199-002	1
25	Controls Assy, 24VAC, Black	9857-199-004	1
*	Harness, Electronic Control	9627-913-004	1
26	Lock and Key, Control	8650-012-003	1
*	Cam, Lock	9095-041-001	1
*	Washer-flat,shim	8641-581-010	2
*	Washer-flat	8641-581-041	1
*	Key only 6324	6292-006-007	1
27	Sensor Temp Control	9501-006-001	1
*	Harness, Main	9627-913-004	1
*	Wire Nut Connector Grey	8640-276-002	2
*	Cover, Cabinet (Top)	9074-374-001	1
*	Insulation Cabinet Cover	9277-041-028	1
*	Insulation-side Panel	9277-041-027	2
*	Stack Dryer Trunnion Puller	9732-243-002	1
*	Vault, Coin Box	9942-028-005	1
*	Screws, Mounting-Coin Vault	9545-008-024	2
28	Coin Box Assy, Small Blue	9807-099-001	1
28	Coin Box Assy, Small Black	9807-099-003	1
*	Nut, Elastic Stop	8640-413-004	*

Dryer Back Panels and Guards



Key	Description	Part Number	Qty
1	Guard, Drive	9208-133-001	1
2	Screw, 10AB x 3/8	9545-008-024	20
3	Panel, Drive Guard,	9208-131-001	1
4	Guard-Small, upper	9208-134-001	1
5	Guard-side,lower	9208-132-001	1
6	Warning, Label	8502-763-001	1
7	Label, Instructions	8502-645-001	1
8	Lighting and Clearance, Label	8527-112-001	1
9	Duct, Transition	9109-127-001	1
10	Door, Cover-Control Box	9108-141-001	1
*	Cabinet, Cover	9074-374-001	1
*	Insulation	9277-041-028	1
*	Wiring Diagram & Schematic	9506-808-001	1
*	6" Slide Open Clean Out Duct (Optional)	9973-035-001	1

Air Flow Switch Assembly



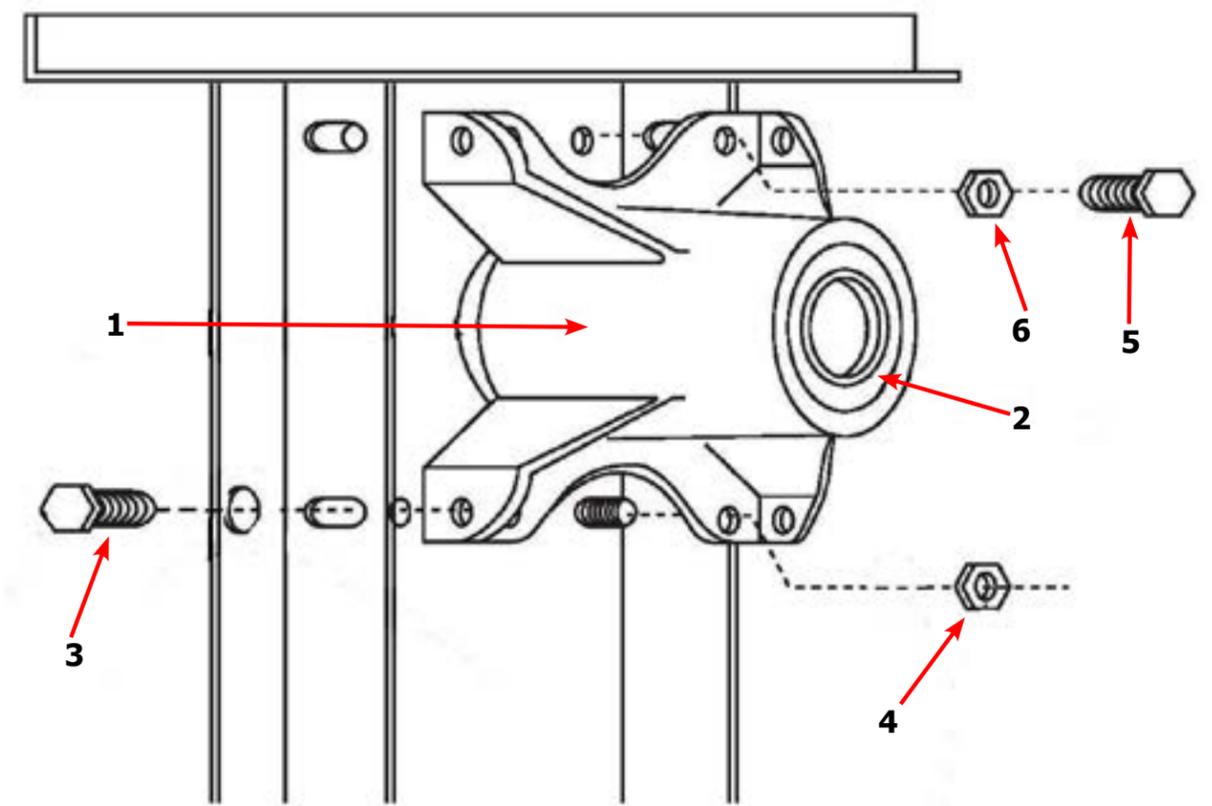
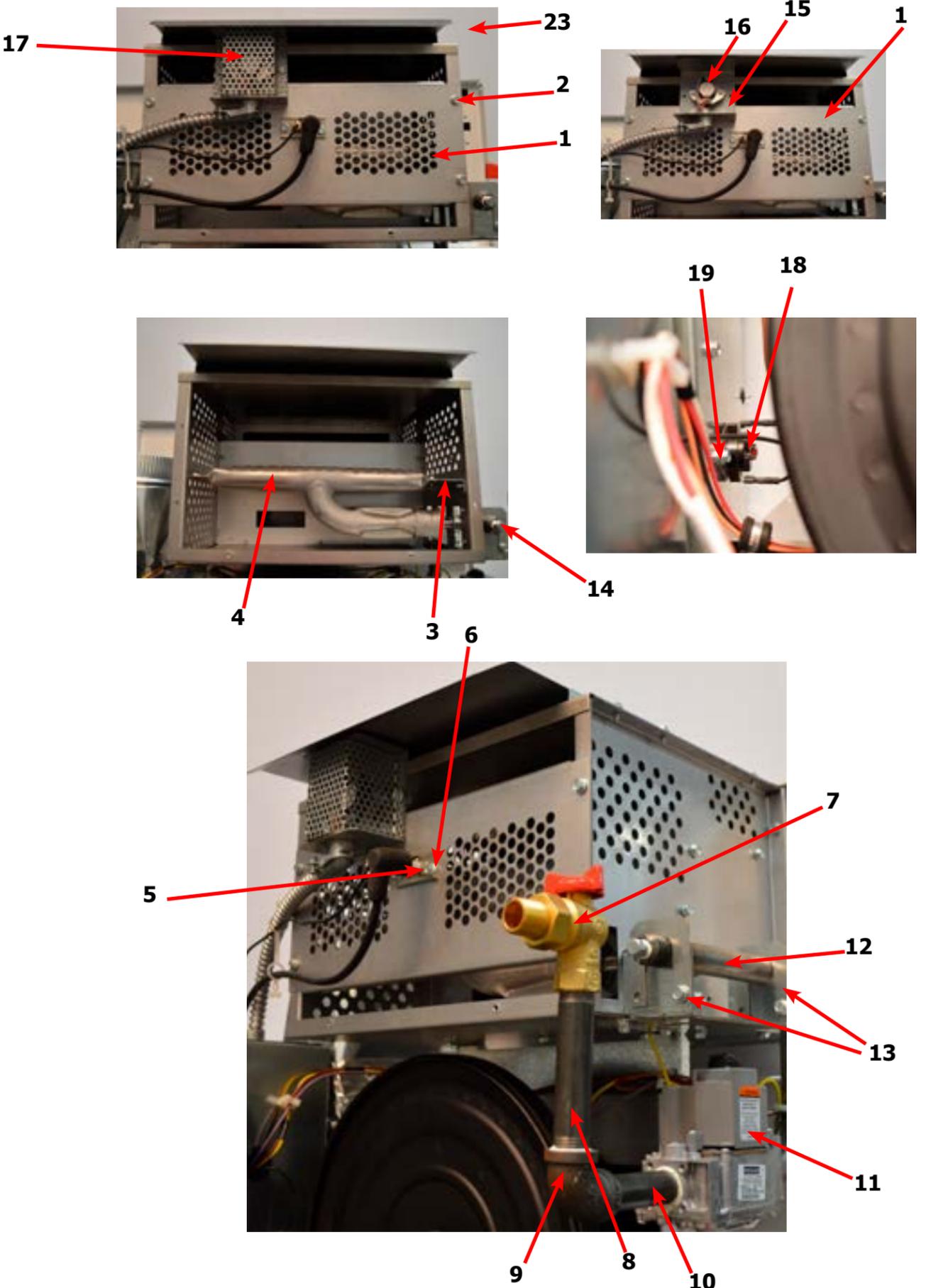
Key	Description	T-20 SWD	QTY
*	Air Flow switch Assy	9801-095-001	2
1	Bracket-Airflow switch	9029-174-001	2
2	Shield-Switch	9550-169-003	2
3	Switch-Micro	9539-461-009	2
4	Nut-Twin, 4-40	8640-401-001	2
5	Screw-.625, 4-40	9545-020-001	2
6	Actuator-Air Flow Switch	9008-007-001	2
7	Pin-Cotter, .09375x.75	9451-169-002	2
8	Screw, 10AB x 1/4	9545-008-001	3
*	Wireasy-brn,#13,34"	8220-063-032	1
*	Wireasy-org,#14,24"	8220-095-040	1
*	Wireasy-vio,54"	8220-103-001	1

Dryer Burner Housing Group

Key	Description	T-20 SWD	QTY
*	Housing Assembly, Burner (All sheet metal parts not listed)	9803-228-003	1
1	Panel, Back Burner Housing	9454-990-001	1
2	Screw, 10B X 1/4"	9545-008-001	4
3	Angle, Burner Support	9003-220-001	1
*	Screw, 10B x 3/8"	9545-008-006	2
4	Burner, Main	9048-023-001	2
*	Screw 10AB x 3/8"	9545-008-006	2
5	Electrode-ignition	9875-002-003	1
6	Screw, Electrode Mtg 8B x 1/4"	9545-045-001	2
7	Valve, Gas Shut Off (Optional)	9379-196-001	1
8	Pipe Nipple, 1/2 x 4 1/2, BLK	8655-073-008	1
9	Elbow, 1/2 x 90, BLK	8615-104-037	1
10	Pipe Nipple, 1/2 x 3 1/2, BLK	8655-073-047	1
11	Control Assy, Gas	9857-192-001	1
*	Wireasy-yel,47/8"	8220-001-466	1
12	Manifold, Assy	9381-012-001	1
*	Orifice, Burner-Natural #40	9425-069-030	2
*	Orifice, Burner-LP #54	9425-069-031	2
13	Bracket, Manifold	9029-175-001	2
14	Pipe Plug in end of Burner Manifold	8615-104-038	1
*	Screw, 10AB x 3/8"	9545-008-006	2
15	Bracket, High Limit Thermostat	9029-192-001	1
16	Thermostat, Hi-Limit	9576-203-002	1
*	Spacer, Hi-Limit	9538-142-001	2
*	Screw 8B x 3/4"	9545-045-007	2
17	Cover, Hi-Limit Stat	9074-329-001	1
*	Screw, 10AB x 3/8"	9545-008-006	2
18	Thermostat, Safety Shutoff	9576-207-006	1
19	Screw, 10AB x 3/8"	9545-008-006	2
*	Control, Ignition Fenwall (3 trybox)	9857-182-001	1
*	Kit, LP Conversion 20Lb Stack Kit	9732-102-034	1

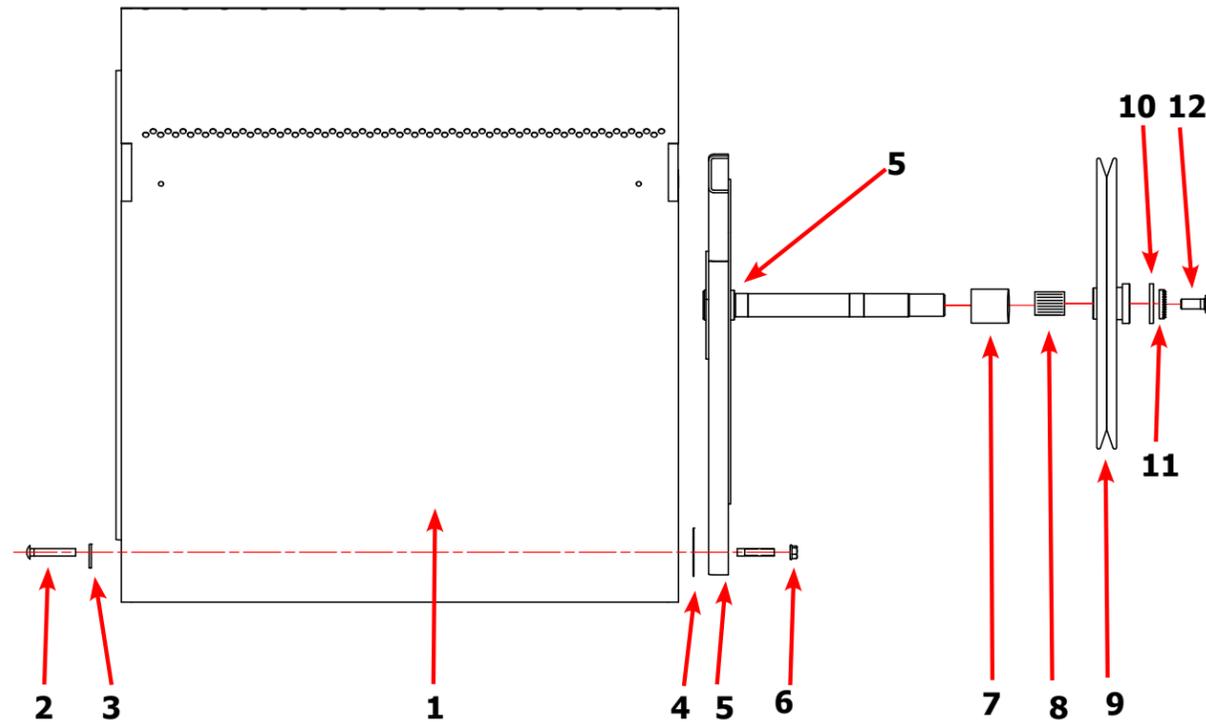
Bearing Housing Group

Key	Description	T-20 SWD	QTY
	Bearing Housing Complete Assy (Includes bearings & Spacer)	9803-160-003	1
1	Housing, Bearing	9241-161-002	1
*	Spacer, Bearing	9538-139-002	1
2	Bearing, Ball, Front & Rear	9036-130-001	2
3	Screw-Wizlock, 3/8-24x3/4	9545-049-002	4
4	Nut, 5/16-18	8640-400-002	4
5	Screw, 3/8-24x1	9545-049-001	2
6	Nut, 3/8-24	8640-415-002	2



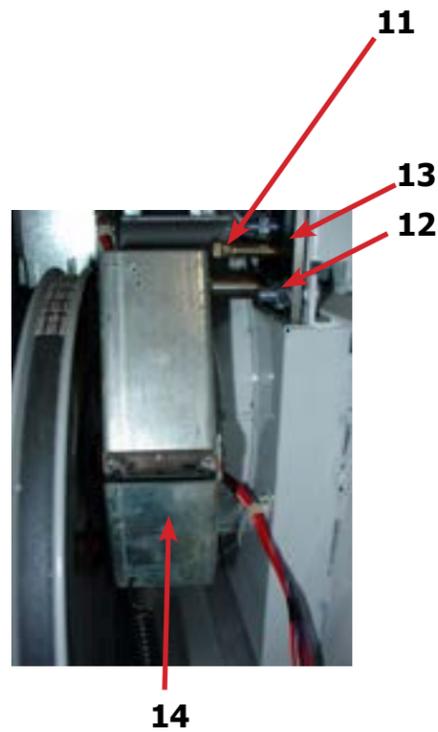
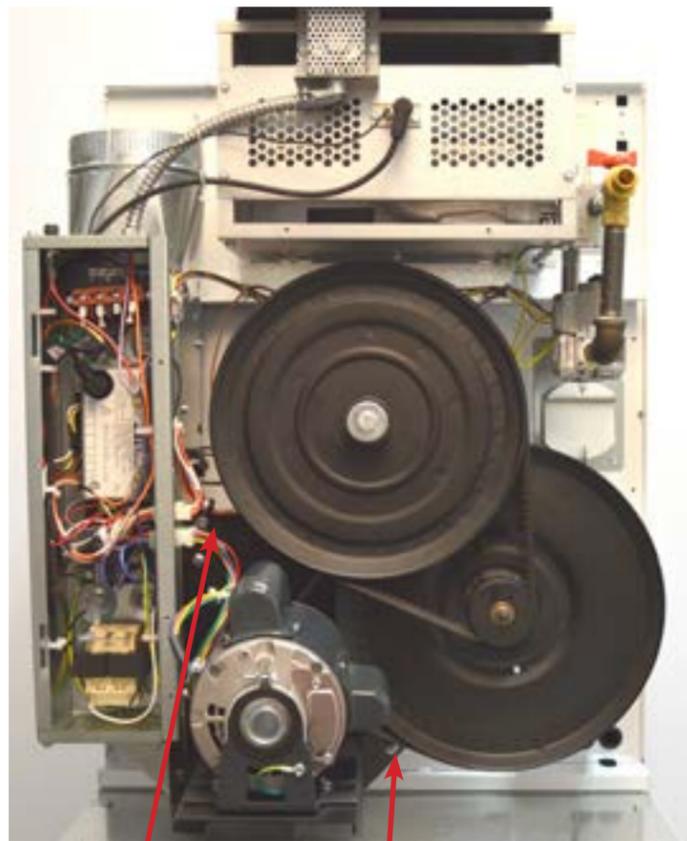
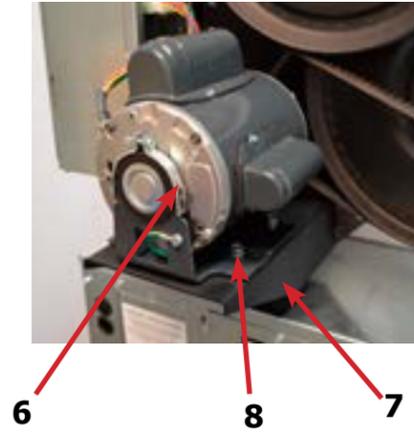
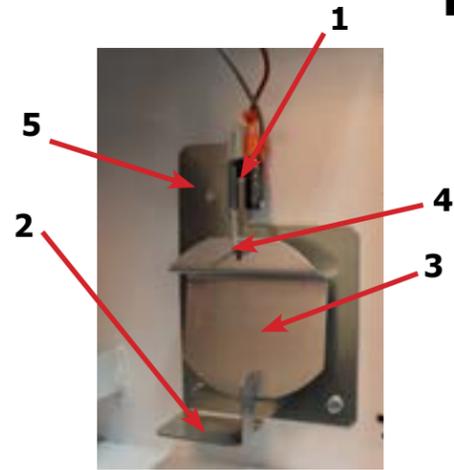
Tumbler Group

Key	Description	T-20 SWD	QTY
*	Tumbler Assy Complete W/Spider (GALV)	9848-156-001	1
1	Tumbler Assy (Galvanized)	9848-155-001	1
*	Tumbler Assy Complete W/Spider (SS & Galv front)	9848-156-002	1
1	Tumbler Assy (Stainless Galvanized front)	9848-155-002	1
2	Rod, Tumbler	9497-019-004	3
3	Washer, Special	8641-554-001	3
4	Shim	9552-013-003	AR
5	Spider Assy	9568-018-001	1
6	Nut, Wiz Lock	8640-415-004	3
7	Spacer-Shaft	9538-164-001	1
8	Tolerance Ring	9487-234-005	1
9	Pulley, Driven	9908-052-002	1
10	Washer -Flat 1/2	8641-581-026	1
11	LockWasher - IntTooth, 1"	8641-582-016	1
12	Screw, 1/2-13x1 1/4	9545-017-009	1
*	Belt, Drive	9040-073-013	2



	Description	T-20 SWD	QTY
*	Switch Assy, Air Flow	9801-095-001	1
1	Switch, Air Flow	9539-461-009	1
2	Bracket, Switch- Air Flow	9029-174-001	1
3	Actuator, Switch	9008-007-001	1
4	Pin, Cotter	9451-169-002	1
5	Screw 4-40 x 5/8"	9545-020-001	2
*	Nut, Special Twin .#4-40	8640-401-001	1
*	Shield, Switch	9550-169-003	1
*	Screw 10 Bx 1/4"	9545-008-001	3
6	Motor, Drive	9376-332-001	1
*	Tumble Capacitor	5191-108-005	1
*	Start Capacitor	5191-109-005	1
*	Pulley-motor,60hz	9453-185-001	1
*	Screw-set,5/16-18x1/2	9545-028-013	1
7	Plate, Motor Mtg	9982-390-002	1
*	Bolt 3/8" - 16 x 3/4"	9545-029-008	1
*	Lockwash Spring 3/8	8641-582-003	1
8	Screw, Motor to Plate Screw-hxflgwhzlk,5/16-18x5/8	9545-014-004	4
*	Nut-hextwinwhzlk,5/16-18	8640-400-003	4
9	Nut 1/4x20 Motor Plate to Cabinet	8640-414-007	7
10	Clamp-cable,3/4	8654-125-004	2
*	Screw-hxhdsltdmach,12abx1/2	9545-048-001	2
11	SupportAssy, Intermed. Pulley	9991-053-002	1
12	Bolt, Rd Hd 3/8-16 x 1 1/4	9545-029-010	3
13	Bolt, 3/8-16 x 1 1/2	9545-029-012	1
12	Nut Flange Wizioc 3/8" - 16	8640-415-004	3
*	Washer, Flat	8641-581-035	1
14	Arm Assy-Tension, Complete	9861-022-001	1
*	Washer, Flat	8641-581-035	1

Rear View Photos

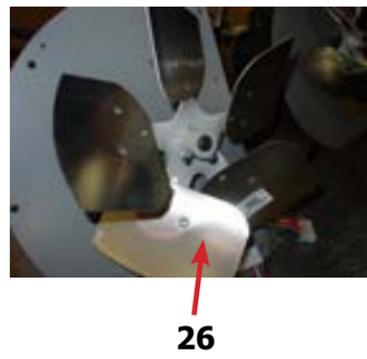
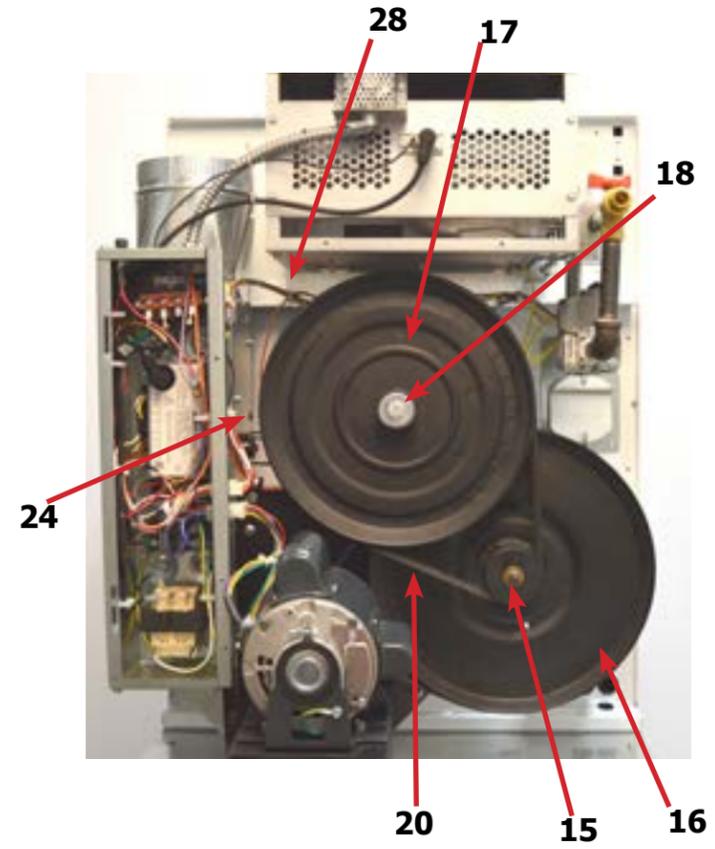
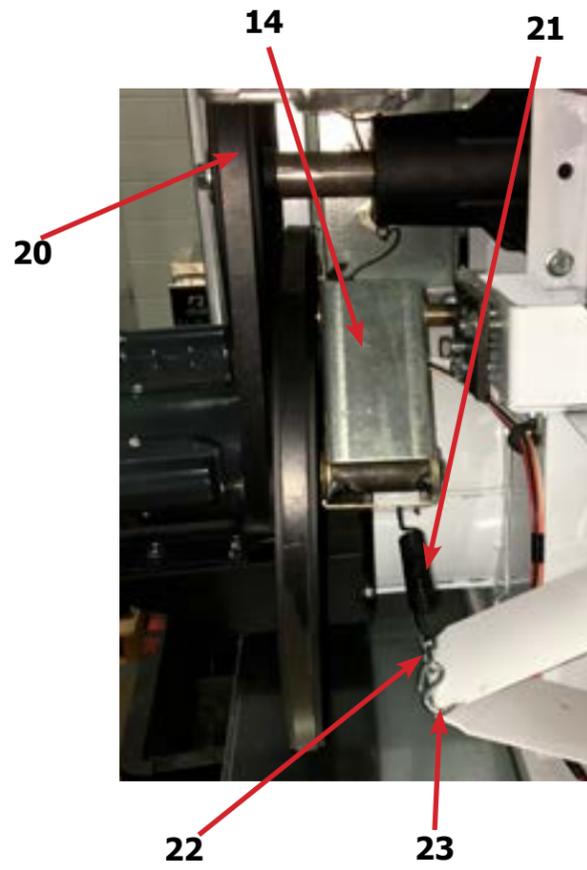


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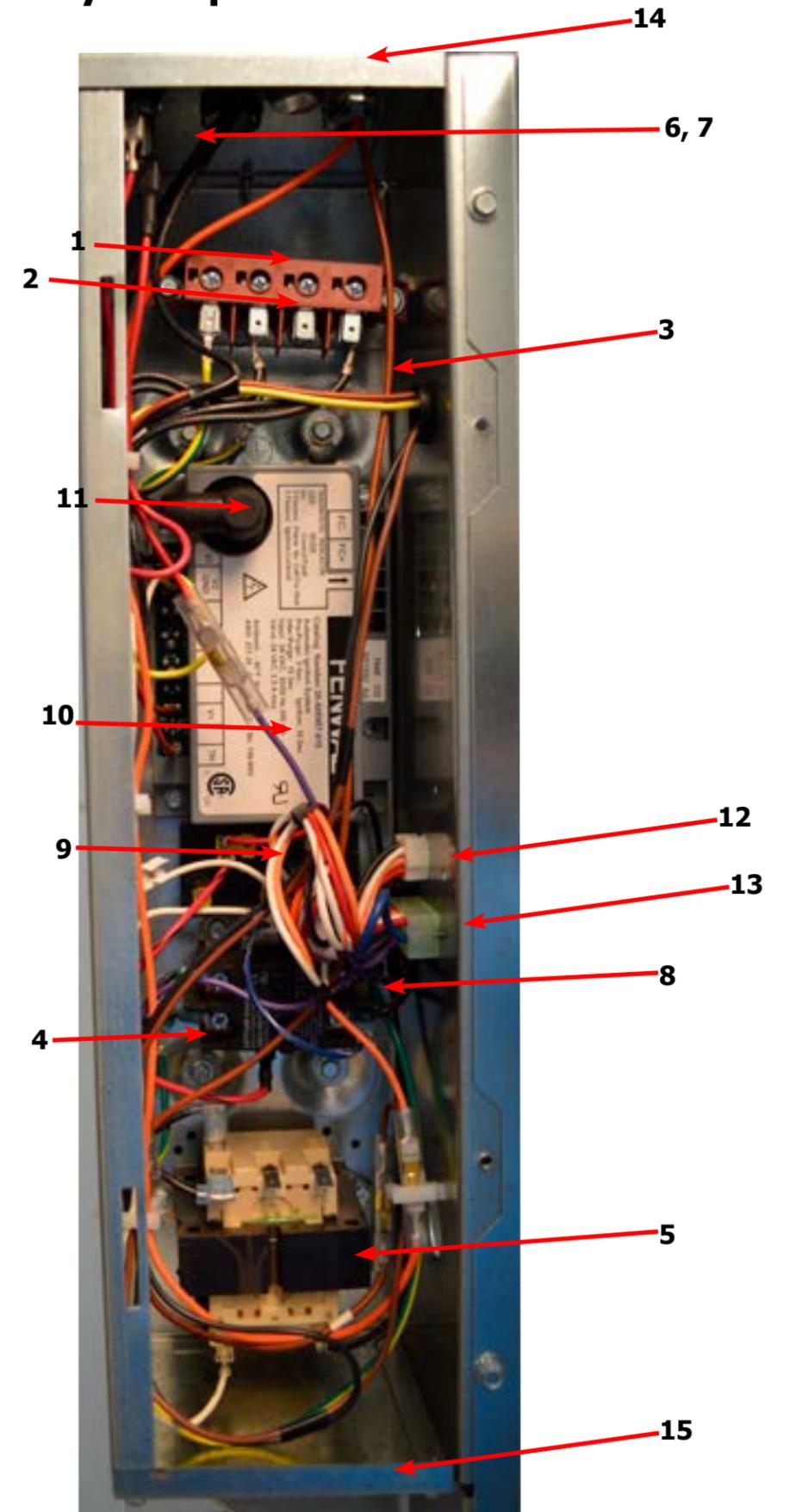
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	Description	T-20 SWD	QTY
14	Arm Assy-Tension, Complete	9861-022-001	1
*	Washer, Flat	8641-581-035	1
15	Ring-Retaining	9487-200-003	1
16	Pulley Assy, Intermediate with bronze flange bearing	9908-053-003	1
*	Bearing - Bronze Flange	9036-145-002	1
*	Spacer-Shaft (See Tumbler Group for Expanded View)	9538-164-001	1
*	Tolerance Ring	9487-234-005	1
17	Pulley, Driven	9908-052-002	1
18	Washer -Flat	8641-581-026	1
18	LockWasher - IntTooth, 1/2"	8641-582-016	1
18	Screw, 1/2-13x1 1/4	9545-017-009	1
19	Belt, Drive- Motor	9040-076-012	1
20	Belt, Drive- Tumbler	9040-073-013	1
21	Spring, Tension	9534-319-002	1
22	Chain, Tension	9099-012-011	1
23	Hook, Tension	9248-022-002	1
*	Damper Inside Duct Exhaust	9125-009-001	1
24	Pin, Damper Hinge	9451-146-007	1
*	Box-duct.lower	9041-113-001	1
*	Nut, Spring	8520-141-000	2
*	Screw #10B x 1/2	9545-008-026	3
*	Cover Duct Upper	9074-372-001	1
*	Base Duct	9047-121-001	1
*	Screw 10ABx 3/8"	9545-008-024	40
26	Impeller, W/Set Screws	9278-045-001	1
27	Pulley, Motor	9453-185-001	1
28	Bracket for Wire Harness Under Burner Housing	9029-305-001	1

Rear View Photos



Control Assembly Group

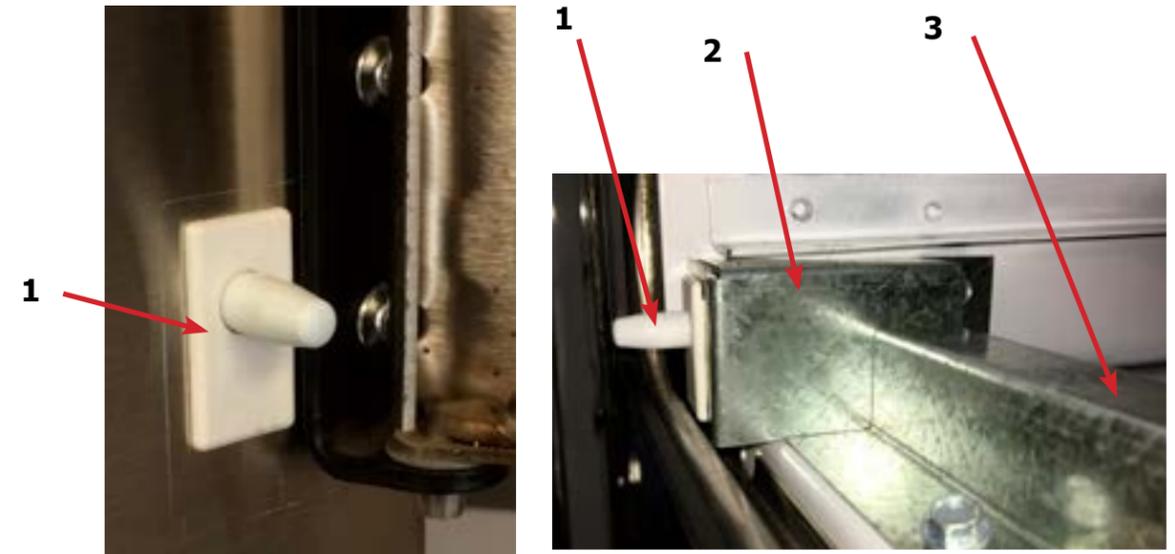


Control Assembly Group

Key	Description	T-20 SWD	QTY
*	Control, Rear	9857-229-001	1
*	Bracket, Terminal Block Power	9029-202-001	1
1	Strip, Terminal Marker	9558-029-003	1
2	Terminal-Block, Power, 4 Pole	9897-035-001	1
*	Screw, 10AB x 3/8"	9545-008-024	6
3	Harness Assembly-Power Main Fork, Upper	9627-859-007	1
4	Wire Assembly-Ground, GRN/YEL, 7"	8220-137-002	1
*	Lock Washer, Ext tooth #10	8641-582-006	1
*	Screw, 10-32 x 1/2"	9545-008-027	1
5	Transformer, 208/240/60Hz. 24/120VA	8711-007-002	1
*	Screw, 10AB x 3/8"	9545-008-024	2
6	Fuse Holder Assembly	9200-001-002	1
7	Fuse, 1.5Amp/250V-Fast Acting	8636-018-001	1
8	Relay, Motor, 30Amp 24VAC	5192-299-002	1
*	Screw, Phillips, 8AB x 1/2"	9545-045-012	2
9	Terminal Block, Power	9897-026-001	1
*	Screw, Phillips, 8AB x 1/2"	9545-045-012	2
*	Harness-Assembly, Low Voltage, Upper	9627-867-011	1
10	Ignition Module	9857-182-001	1
*	Screw, 10AB x 3/4"	9545-008-018	2
11	Wire Assembly, High Voltage	9631-403-009	1
*	Door-Control Box	9108-141-001	1
*	Screw, 10AB x 3/8"	9545-008-024	3
12	Harness, Main (Internal Box)	9627-863-003	1
*	Harness Main Extension (External Box)	9627-913-004	1
13	Harness Motor	9627-864-007	1
14	Control Box Panel Upper	9454-943-001	1
15	Control Box Panel Lower	9454-944-001	1
*	Control Box Wrapper	9636-216-001	1
*	Wire Red/Black 8"	8220-062-047	1
*	Wire White #11, 14"	8220-062-038	1
*	Wire-Blue/White 5.5"	8220-062-026	1
*	Wire Black/Red #9 9"	8220-146-001	1

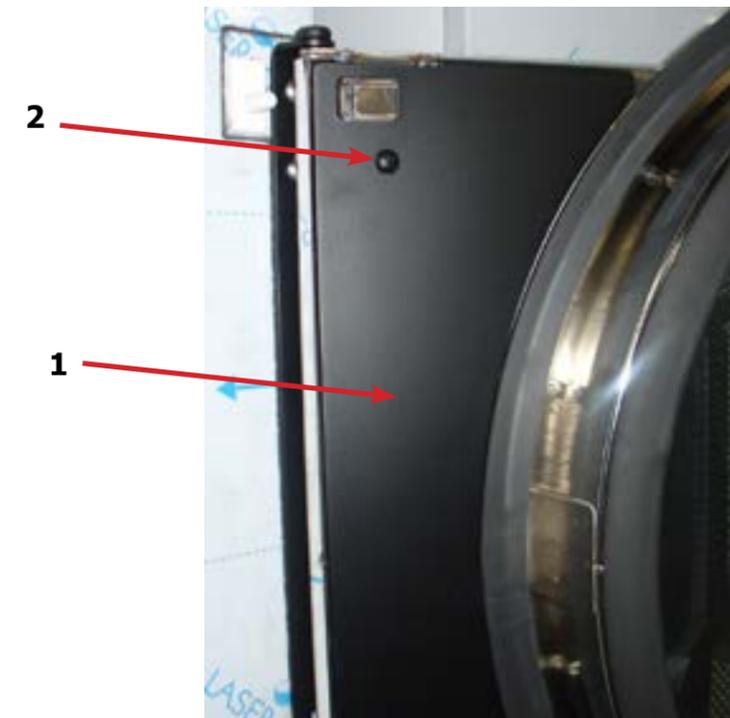
Door Switch Group

Key	Description	T-20 SWD	QTY
1	Door Switches	9539-487-001	2
2	Bracket-Mounting lint tray switch	9029-297-001	1
3	Conduit-Wire	6068-049-001	1
*	Grommet Wire 1/2 i.d.	9029-089-001	1

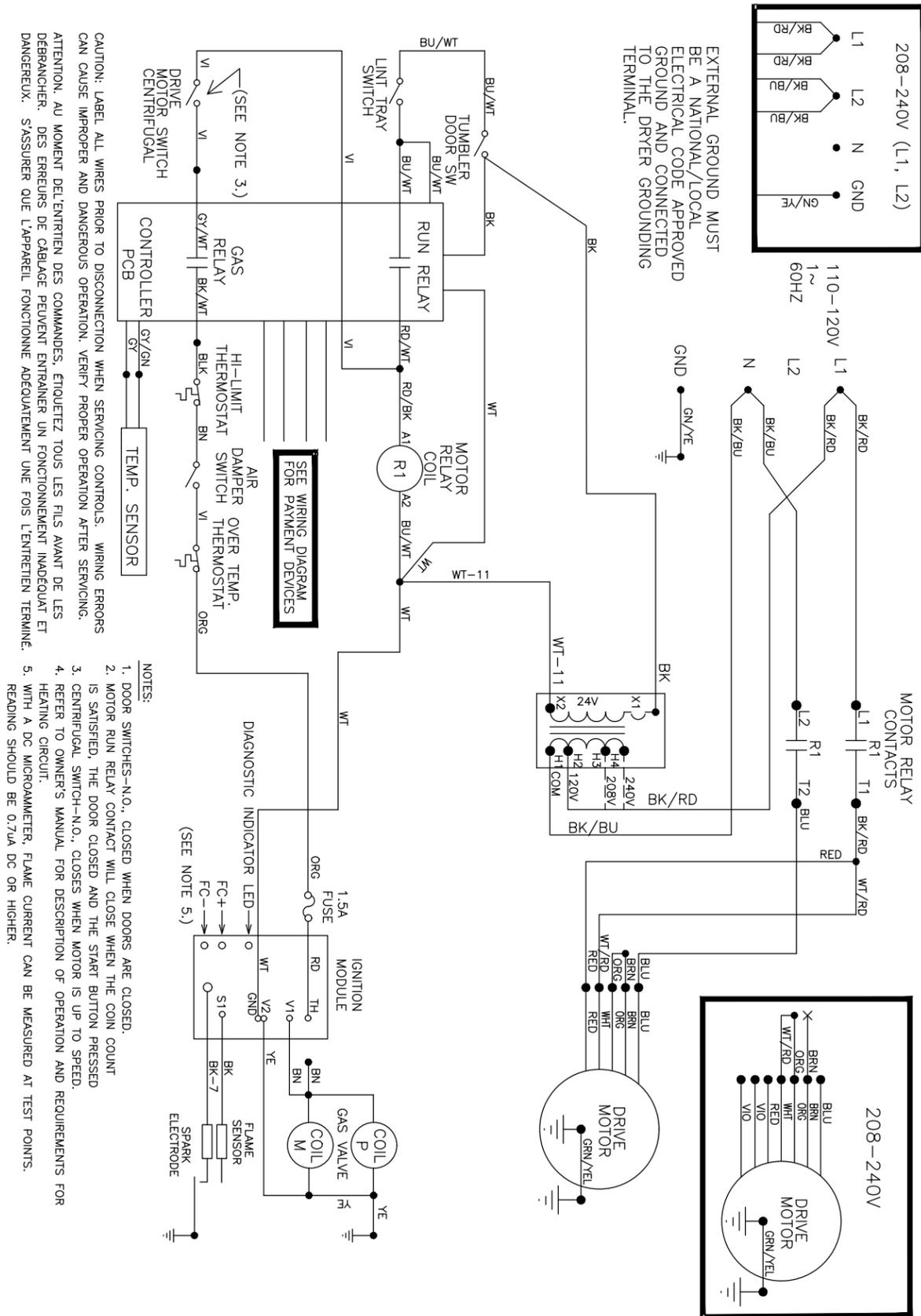


Hinge Plate Cover

Key	Description	T-20 SWD	QTY
1	Cover-Hinge, Black	9074-377-002	1
2	Screw-TRHDCR, 10B x 3/8, Black	9545-008-010	2



Wiring Schematic 60 Hz



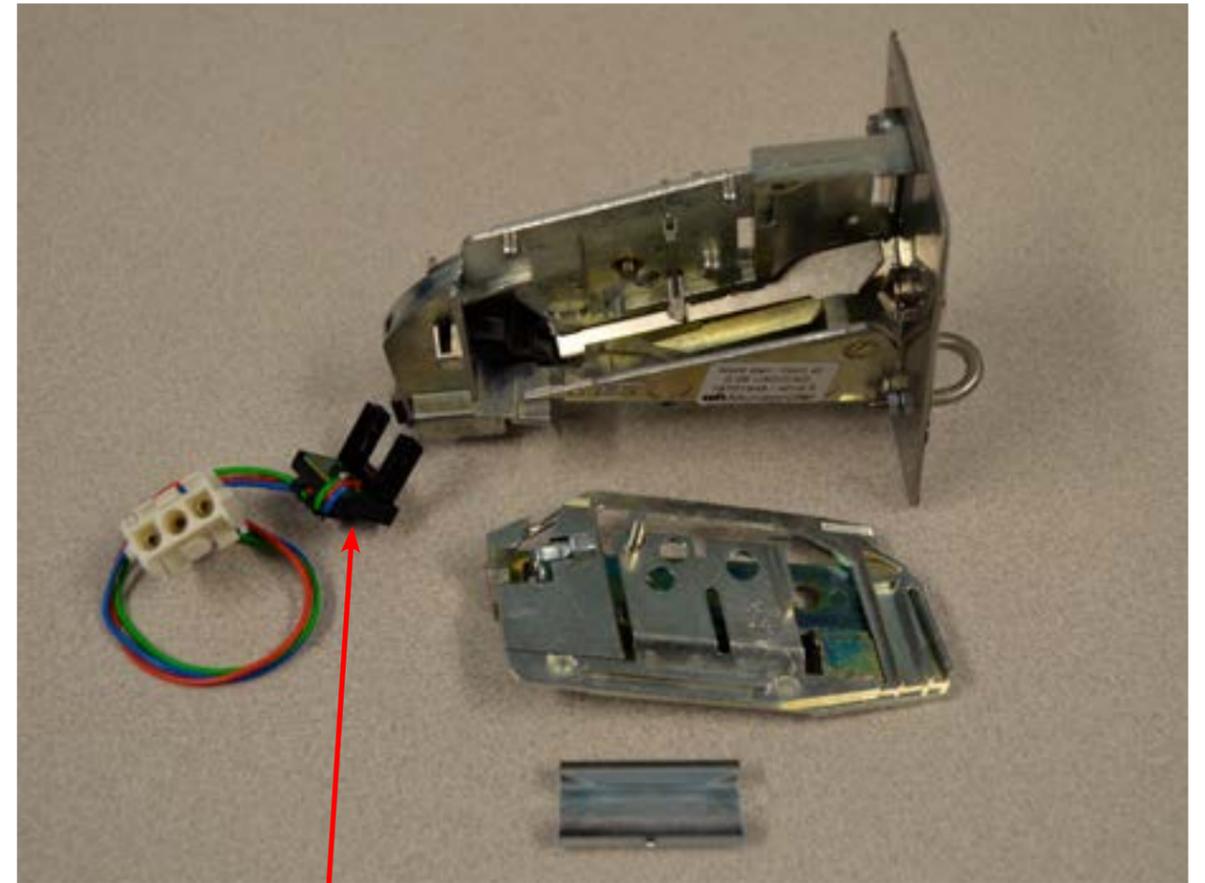
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Coin Handling Group

Key	Description	Part Number	Qty
	Coin Acceptor, Optical, SWD, US Quarter	9021-094-001	1
*	Harness-Extention ,Control to Acceptor, Optical Dryer	9627-916-003	1
*	Retainer, Coin Acceptor	9486-145-001	1
*	Screw, Torx	9545-053-002	4
1	Switch Assembly, Optical Sensor, SWD	9801-099-003	1
*	Screw-Height Bar, 3mm	9545-039-002	2
	Below not included		
*	Harness, Acceptor Mechanical (Control to Acceptor)	9627-783-003	1
*	Coin Vault	9942-028-005	1
*	Screw, 10AB X 3/8	9545-008-024	2
*	Bracket-mounting,coinvault	9029-293-001	1



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-39 T-20 SWD 50 Hz Parts

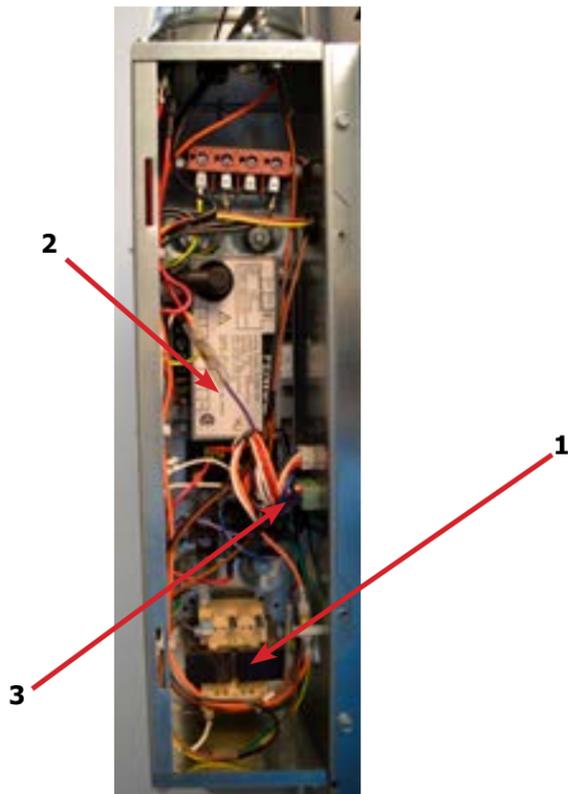
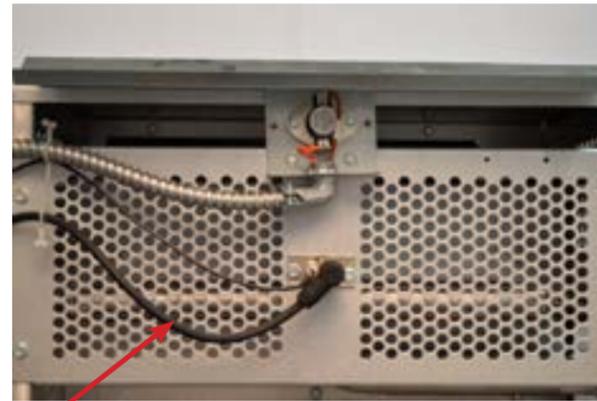
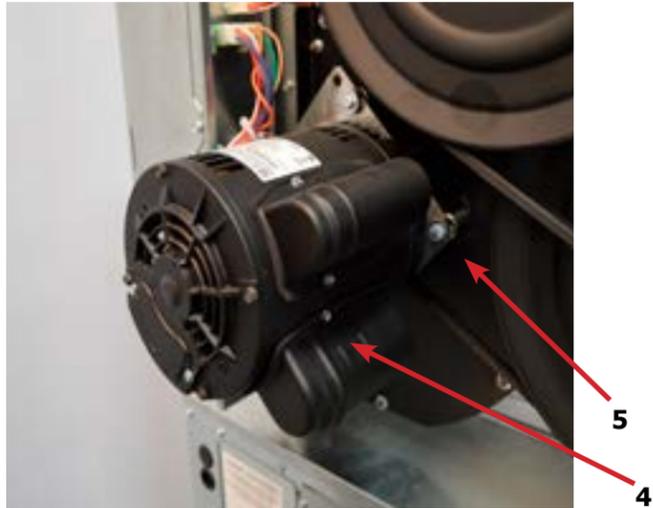
Key	Description	Part Number	Qty
*	Strip, Terminal Marker -39 Models	9558-029-004	1
1	Transformer	8711-007-002	1
*	Instructions, Transformer Connect	8507-230-003	1
2	Ignition Control -39 Models	9857-182-001	1
*	Harness-Ignition Control,	9627-867-011	1
3	Wire Assembly High Voltage	9631-403-009	1
4	Motor	9376-332-001	1
5	Pulley, Motor Drive	9453-185-002	1
6	Harness Motor Extension	9627-864-007	1
*	Wiring Label Schematic/Diagram -39 models	9506-819-001	1
*	Owner's Manual	8514-280-001	1
*	Lint Drawer Assembly -39 Models	9866-008-002	1

Section 6: 50 Hz Gas Dryer

Dryer Models

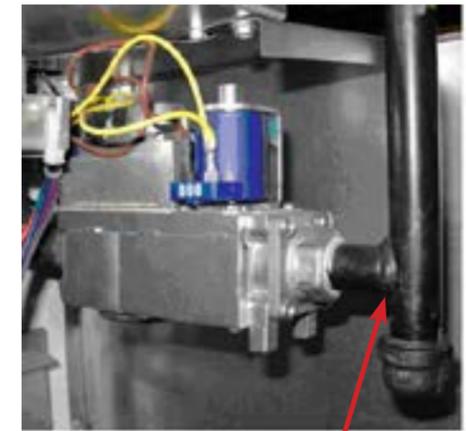
Parts in this section used only in these models. All other parts are same as standard 60 Hz pages.

Rear View Photos

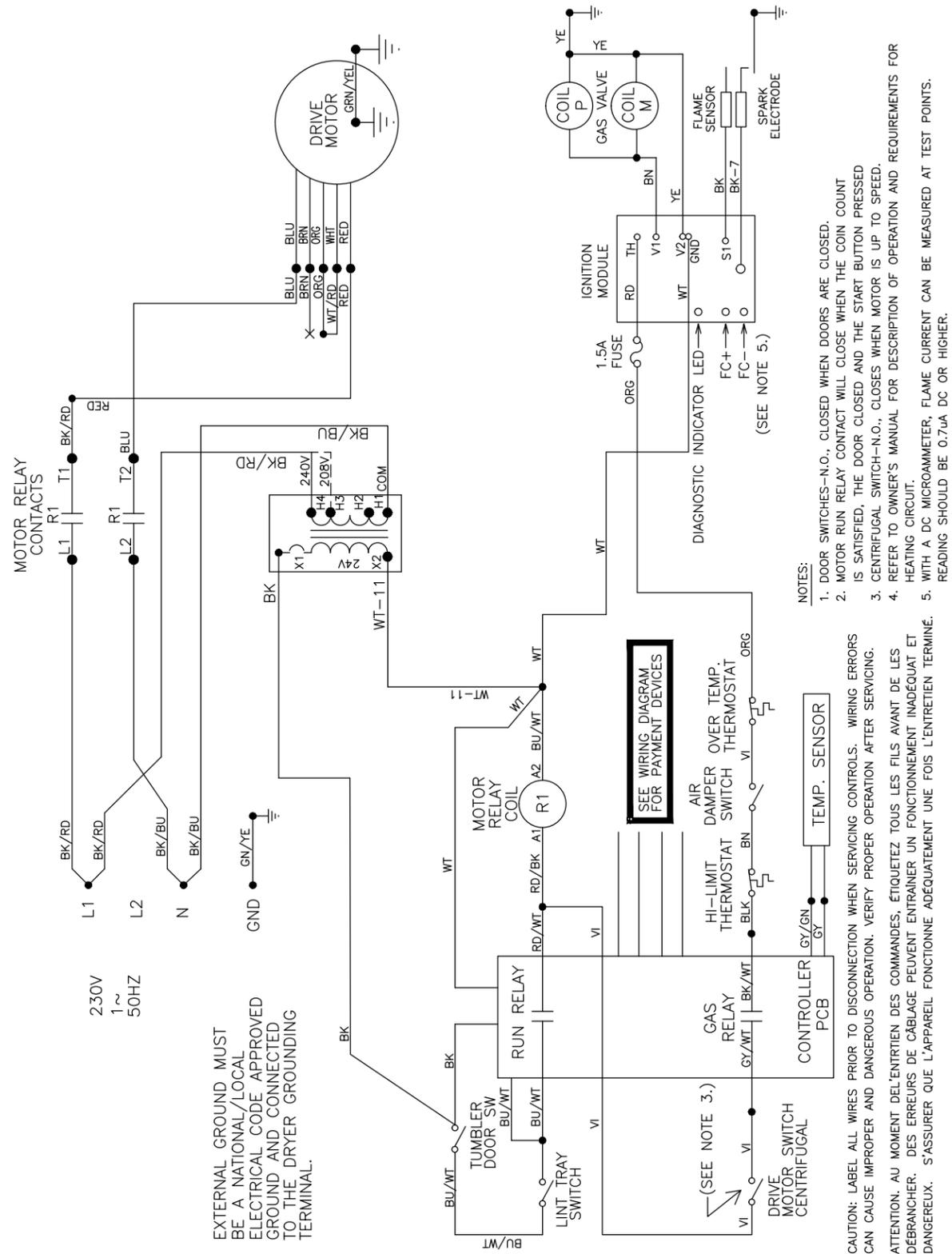


T-20 SWD -39 Gas Control Parts

Key	Description	Part Number	Qty
1	Kit-Honeywell VR86 Valve Flange	9732-162-001	1
*	Orifice, Main Burner #43	9425-069-025	2
2	Gas Control Valve	9857-132-004	1



Wiring Schematic for Dryer 50hz 230V -21CR

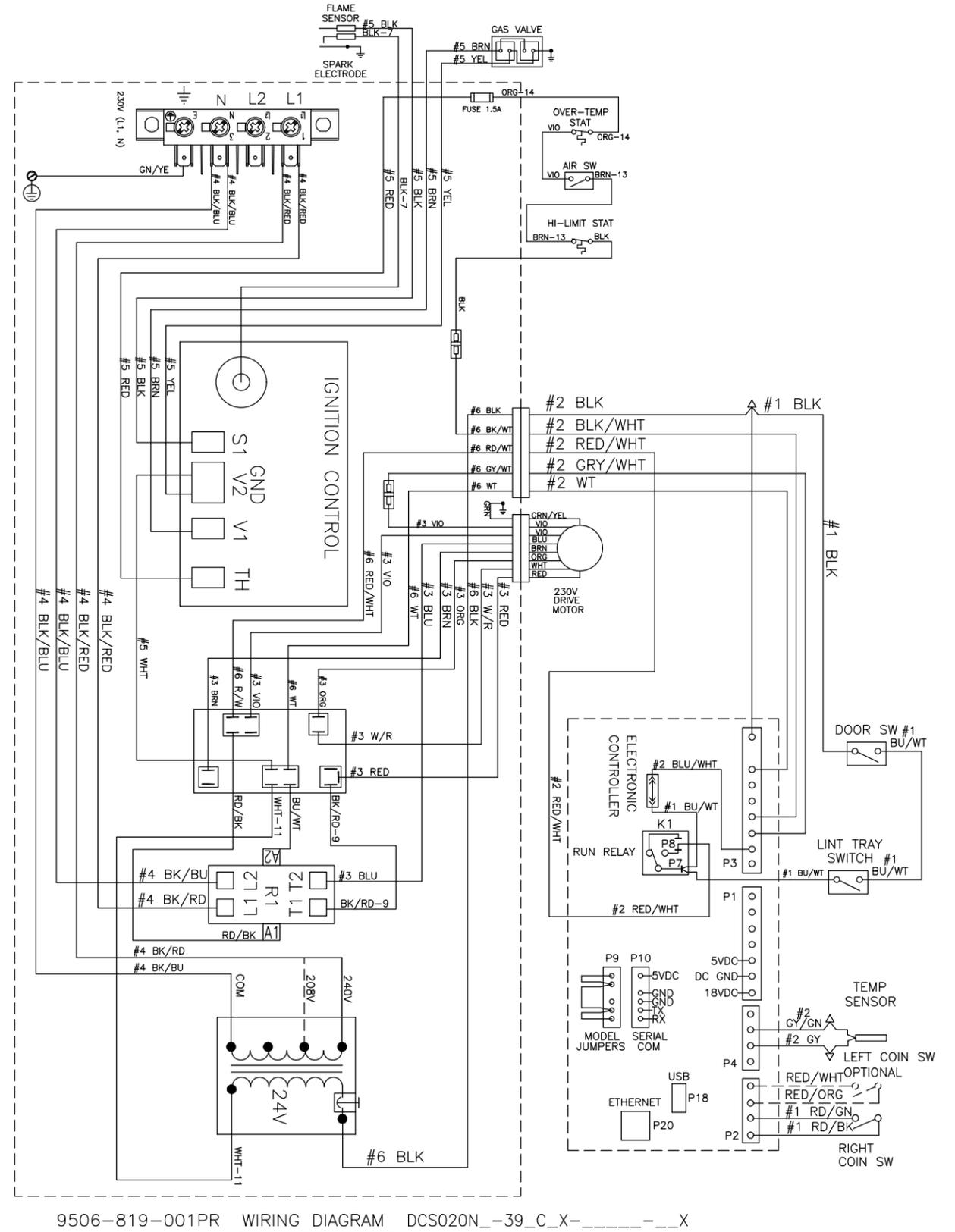


9506-819-001PR

SCHEMATIC

DCS020N_-39_C_X-_-X

Wiring Diagram for Dryer 50hz 230V -39CR



Section 7:

Washer Service and Trouble Shooting

Electronic Acceptor Coin Drop (Original Design)

Setting the electronic coin acceptor switches

Some washer models come equipped with an electronic coin acceptor. Follow the instructions below for setting the switches for the desired country and currencies.

1. The electronic coin acceptor has switch settings depending on the coins and country. See the table below for available values of the left and right coin inputs for the available countries.

WARNING: turn power off before and leave power off when changing the switches of the electronic coin acceptor.

2. Turn power back on and test coins to ensure proper operation.

Acceptor P/N	Country	Left Coin	Right Coin	SWs 1-8	SWs 9-16
9021-010-001	Canada	25¢		↓↑↑↑↑↑↓	↓↑↑↑↑↑↓
	Canada		\$1	↑↑↓↑↑↑↓	↓↑↑↑↑↑↓
	Canada		\$2	↑↑↑↑↓↑↓	↓↑↑↑↑↑↓
	Japan	100¥		↓↑↑↑↑↑↓	↑↓↑↑↑↑↓
	Japan		500¥	↑↑↓↑↑↓↓	↑↓↑↑↑↑↓
	Taiwan	10NT		↓↑↑↑↑↑↓	↑↑↓↑↑↑↓
	Taiwan		50NT	↑↑↓↑↑↓↓	↑↑↓↑↑↑↓
	Korea	500W		↓↑↑↑↑↑↓	↑↑↑↓↑↑↓
		Greenwald 118-1 Token		↑↑↑↑↑↑↓	↑↑↑↑↓↑↓
		Greenwald 118-5 Token		↑↑↑↑↑↑↓	↑↑↑↑↓↑↓
	U.S.A.	25¢		↓↑↑↑↑↑↓	↑↑↑↑↑↑↓
	U.S.A.		\$1	↑↑↓↑↑↑↓	↑↑↑↑↑↑↓
9021-011-001	Australia	10¢		↓↑↑↑↑↑↓	↑↓↑↑↑↑↓
	Australia	20¢		↑↑↓↑↑↑↓	↑↓↑↑↑↑↓
	Australia		\$1	↑↑↑↑↓↑↓	↑↑↓↑↑↑↓
	Australia		\$2	↑↑↑↑↑↓↓	↓↑↓↑↑↑↓
	New Zealand	10¢		↓↑↑↑↑↑↓	↑↓↑↑↑↑↓
	New Zealand	20¢		↑↑↓↑↑↑↓	↑↓↑↑↑↑↓
	New Zealand		\$1	↑↑↑↑↓↑↓	↑↑↑↓↑↑↓
	New Zealand		\$2	↑↑↑↑↑↓↓	↓↑↓↑↑↑↓
	Hong Kong	\$5		↓↓↓↑↑↑↓	↑↑↑↑↓↑↓
	Hong Kong		\$10	↑↑↑↑↓↑↓	↑↑↑↑↓↑↓
		Greenwald 118-1 Token		↑↑↑↑↑↑↓	↑↑↑↑↓↑↓
		Greenwald 118-5 Token		↑↑↑↑↑↑↓	↑↑↑↑↑↑↓

NOTE: Coins and tokens in the left coin column will result in one pulse to the left coin input.

NOTE: The \$1, 500¥, 50NT, and \$10 coins in the right coin column will result in one pulse to the right coin input, while the \$2 coins will result in two pulses to the right coin input.

NOTE: Acceptance of multiple coins per country and multiple tokens is allowed. Only the down/off setting for each coin and token is required to accept that coin or token.

Maintenance Instructions -Electronic Acceptor (Original Design)

1. Instructions to open the flap of the coin selector



Original situation



Move spring downwards to free the catch.

NOTE:

- Do not lift the spring
 - Do not over bend the spring in any direction.
- Open the flap of the coin selector.

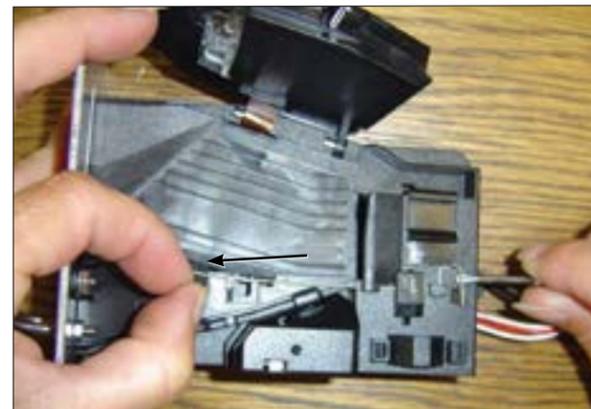


2. Assembly instructions to change a spring

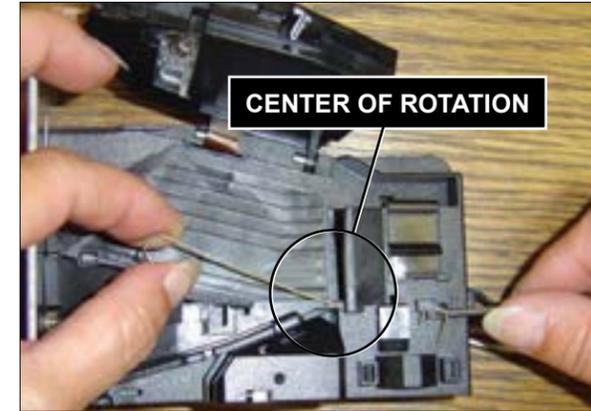
Lift the right end of the spring by means of a screw driver.



Pull the spring approximately 3 mm to the left.



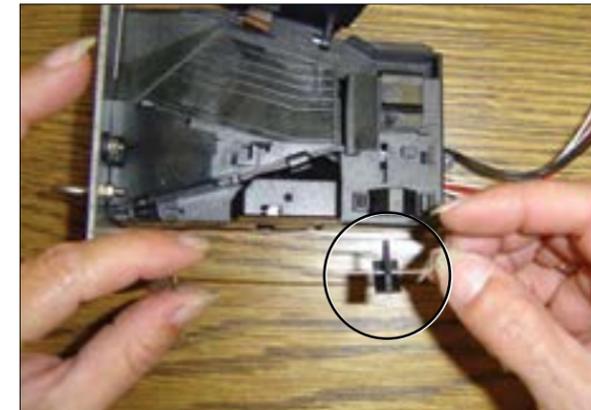
Maintenance Instructions -Electronic Acceptor (Original Design)



Rotate the spring clockwise for about 40 to 60 degrees until it becomes free of the protrusion. Lift off the spring with the attached plastic part.



3. Assembly of a new spring



Attach the plastic part to the new spring.



Push the spring below the protrusion by means of a small screw driver. Push the spring lateral to the right until its snaps into its proper position.

Place the plastic part in its position (slot).



Maintenance Instructions -Electronic Acceptor (Original Design)

4. Close the coin selector
To shut the coin selector follow pictures 1 to 3 in reverse order.



5. Cleaning the electronic coin selector
The EMP 500 v4 is an extraordinarily robust coin selector and operates relatively maintenance free. However, it

should be cleaned at regular intervals (minimum once a year) especially if it is operating in an environment with high levels of dust, smoke, or nicotine. The cleaning intervals are of course dependent on the level of air borne contaminants.

Clean the coin path with a soft brush and wipe the exposed surfaces. Use an alcohol moistened cloth.



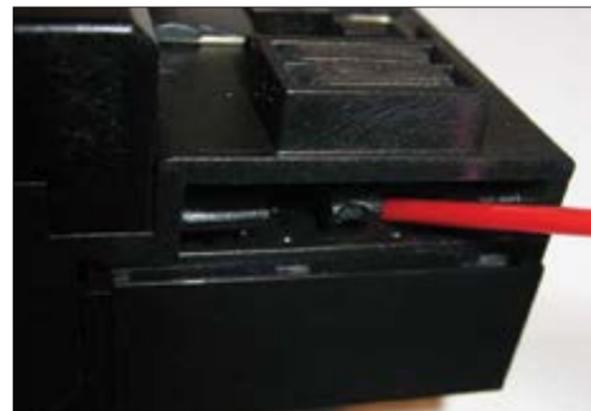
If you find solid residues stuck to the coin rail (patina) remove it with an alcohol moistened cloth.



Optical sensors may be cleaned with a soft brush or very carefully with an air spray duster.



Location of the optical sensor within coin outlet.



6. Adding the bolt #4036
A bolt can be added to the EMP 500 v4 to reduce attempts of vandalism or to protect the unit from improper

Maintenance Instructions -Electronic Acceptor (Original Design)

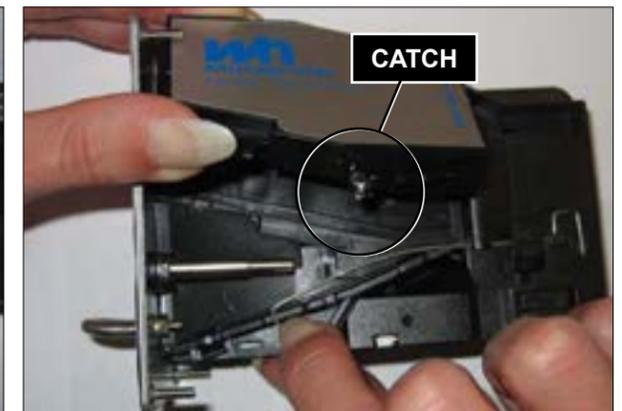
use. **NOTE:** that some front plates/cashboxes might not allow mounting this additional device. **The bolt (part number 4036) should be mounted with the help of a screw driver. Screw the bolt onto the existing stud weld on top of the nut which fixes the reject bracket.**



Once the bolt is fixed, please verify the position of the spring as indicated in the picture.



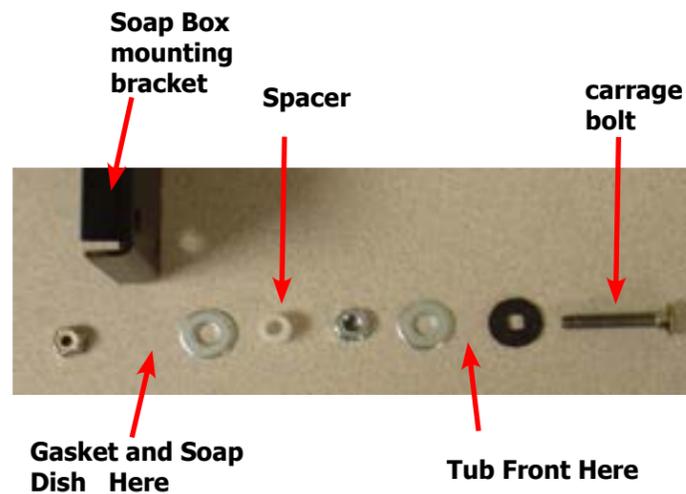
To open the selector move spring downwards to free the catch.



Front Soap Box removal

- Step 1:** Remove front Panel
Step 2: Remove the six 3/8 nuts and remove Soap Box mounting bracket and Soap Box, followed by removing gasket.
Step 3: Reassemble reverse operation.

NOTE: Be sure to note position of washers and spacers behind mounting bracket.



Optical Acceptor

Optical Coin Drop Acceptor

The drop style coin acceptor contains a coin sensor that is actuated by each good coin that is accepted.

Removal

The coin acceptor is removed by loosening the four Torx T-10 machine screws on the corners of the acceptor. (#T-10 Torx driver, Dexter Pt. No. 8545-051-003). Sliding the acceptor to the up will remove it from the slots in the front panel. This gives access to the coin switch and acceptor for adjustments.

Front Panel Removal

- Step 1:** Remove the screws from front panel.
Step 2: Remove the harness connections from the control boards on the back of the front panel.
Step 3: Pull back the front panel and set it aside.

Back Panel Removal

- Step 1:** Remove all screws holding back panel in position except the bottom row.
Step 2: The bottom row of screws are slotted and only need to be loosened and to lift off panel.

NOTE: The back panel is not only a safety requirement but also contributes to the rigidity of the cabinet.

Drain Valve Access

For access to drain valve, remove the front panel. The drain valve is a ball type and is powered closed by the drain valve motor. It is mounted under the washer tub on the left side. It is spring loaded open. If power is interrupted to the washer, the motor releases the sealing ball, allowing the drive spring to open the valve. With the valve open, all water in the washer will drain out.

Drain Valve Cleaning

- Step 1:** Loosen the clamp on the tub hose at the drain valve end and remove the hose from the drain valve.
Step 2: Loosen the drain hose clamp on the back of the drain valve. Remove two drain valve mounting bracket screws from the frame of the washer.
Step 3: Remove the drain valve and bracket assembly. Unplug the wiring after the drain valve is removed from the washer.

Door Locking Gear Motor Assembly

The door locking gear motor is rotated shut with control voltage to lock the door and releases when voltage is removed. It is located in the left front corner of the washer.

Thermoactuators

The thermoactuators are a safety device that keeps the door from immediately unlocking if power is lost while the machine is operating. They are mounted above the door locking gear motor.

Lock Thermoactuator

Control voltage is applied to the lock thermoactuator at the beginning of the cycle making it extend and block the door locking gear motor. This keeps the door locked for approximately two minutes after a power failure occurs. The lock thermoactuator does not delay the door opening at the end of a normal cycle.

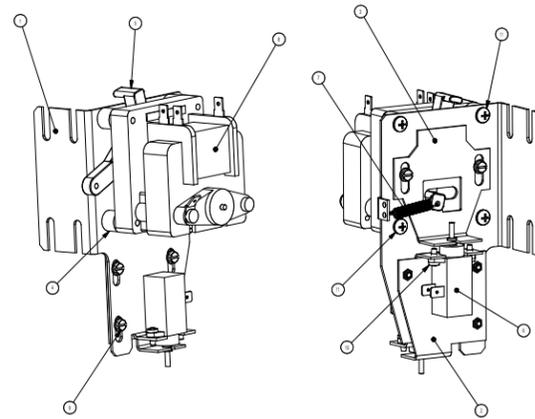
Unlock Thermoactuator

To insure that the lock thermoactuator has retracted by the end of the cycle, one minute prior to the end of the cycle, the unlock thermoactuator is powered with control voltage making it extend and unblock the door locking gear motor.

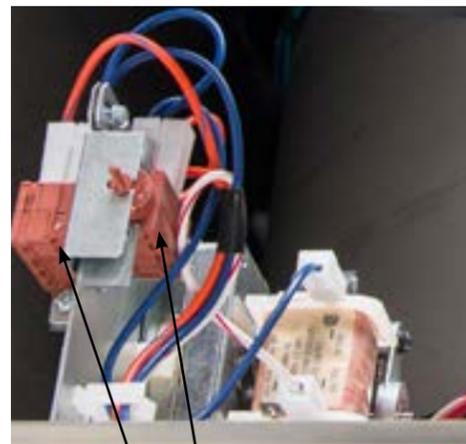
Drive Belt Removal

Turn the drive pulley while applying pressure to the drive belt until it rolls off of the basket pulley first and then remove from the motor pulley. Be cautious not to drop the motor which could unhook the tension assembly.

Reverse this procedure for installation.



Door Lock Gear Motor



Thermoactuators



Drive Belt

Detergent Dispenser

The detergent dispenser is located at the top of the front panel. It is fed water from the vacuum breaker assembly at the rear of the machine to flush the soap with hot water during the wash bath and the fabric softener with cold water during the rinse bath.

Vacuum Breaker (also called an air gap)

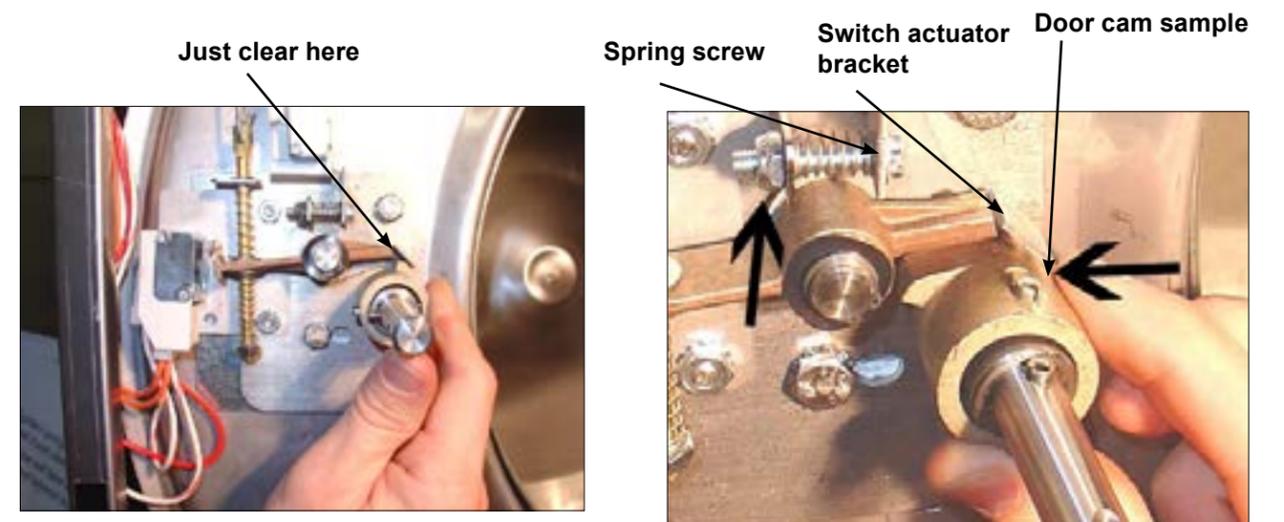
In the left rear of the cabinet is the vacuum breaker. It guides the water to the tub and dispenser and prevents a back flow of water.

Water Valves

Remove panel to access water valves at rear. The two dual outlet water valves are mounted to this plate. Always check inlet screens to be sure that they are clean. Disassembly of valve requires the removal of two solenoid screws and three valve body screws. Inside the solenoid coil is a solenoid guide, armature, armature spring, and diaphragm. All valve parts are available individually or as a complete unit.

Door Lock Assembly Operation

After loading the clothing, the door should be closed and latched. The locking cam on the door contacts the latching switch actuator which closes the latching switch. The specified number of coins should now be added to start the washer. The gear motor pulls up on the locking pawl by use of a linkage rod. The locking pawl has two jobs. The first is to lock the door. This is accomplished by blocking the locking cam on the door so that it can't rotate to unlock. The second job is to close the two piggyback lock sensing switches. These switches control power to all of the controls. If the door unlocks for any reason, these two switches will stop the machine. When the door handle is 1/4 to 1/2 of an inch from its fully closed position, the latching switch should close. The two piggyback lock sensing switches should be open when the door is unlocked and should be closed when the door is locked.

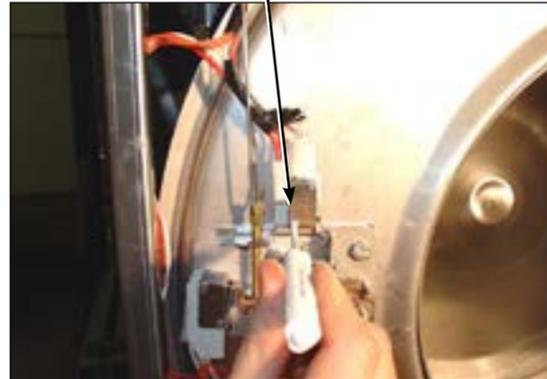


Step 1: Set door cam over pin. Here you can see the door cam away from the door lock assembly.

Step 2: Tighten spring screw on switch actuator bracket arm until it just clears cam OD. at base of door lock assembly.

Adjustment to this bracket usually is not necessary as next step is used more in field.

Flat blade screw on door switch latching



Step 3: With switch actuator bracket adjusted you will now need to adjust single switch by loosening 2 flat blade screws and allowing swivel of switch. Move switch towards above bracket until it actuates. Now tighten flat blade screws. Use a .040 thickness gauge to insert between bracket and switch and the switch should close and open again upon removal of thickness gauge.

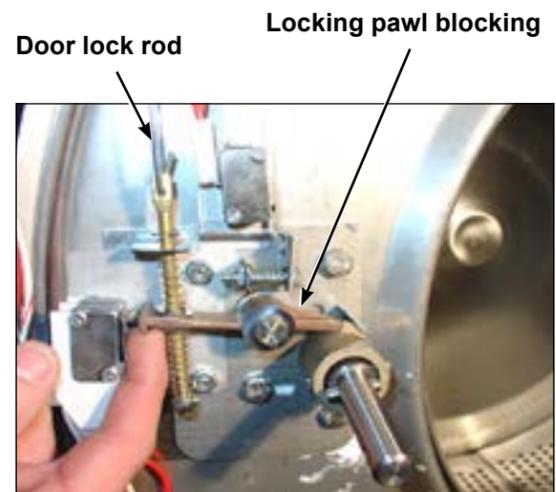
Door cam check position



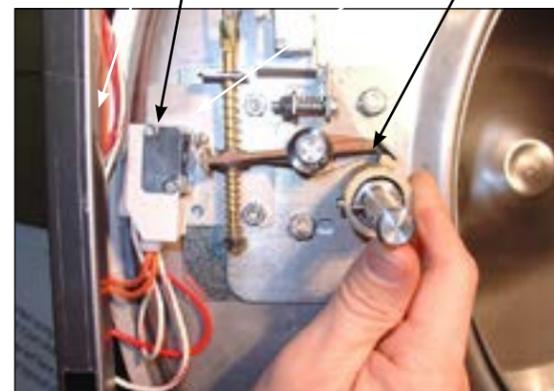
Step 4: Check for switch actuation at partial turn of cam as in operation above. Door handle goes from horizontal to six o'clock vertical.

Adjustment screw for (piggyback switches)

Top of flat end of locking pawl.



Step 5: Check that lock pawl arm swings to cam lobe to lock position.



Step 6: The lock stacked switches (piggyback) must be adjusted as door lock gear motor pulls up on door rod and locking pawl is now blocking door cam from turning and is in full up position. The stacked switches (piggyback) have a single actuator arm and it must actuate when single actuator roller wheel rolls to flat side of locking pawl. You will also notice a .040 gap between actuator arm and switch bodies.

NOTE: Both stacked switches must operate together!

Adjusting the Loading Door

The door can be adjusted by changing the number of shims behind the door hinge and the door lock assembly. The vertical fit of the door to the tub can be altered by loosening the door hinge bolts and raising or lowering the door before retightening. It is important for the door to be centered on the tub front. By chalking the front of the tub and closing the door to transfer that line to the gasket, the centering can be evaluated. It is also important for door pressure to be similar around the door perimeter. Door pressure can be evaluated by inserting a dollar bill in several positions and tugging on it. See Parts Section for kit to increase door sealing pressure.

Loading Door Removal



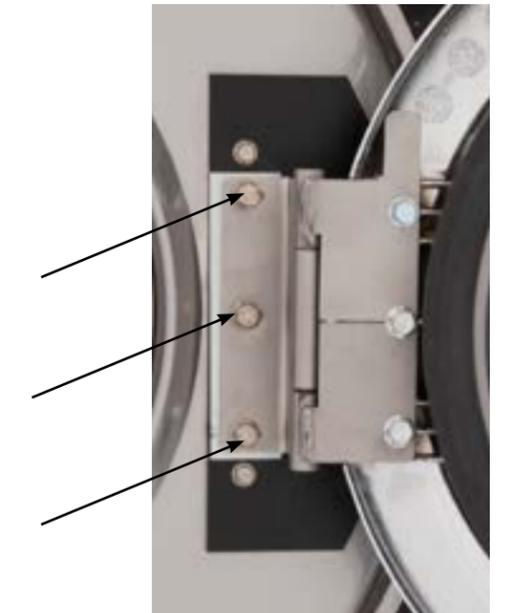
Step 1: Support door to prevent dropping.



Step 2: Remove the bottom 2 bolts holding the lower leaf hinge and then remove it. The door can now be lifted from the upper post of the hinge assembly.

Loading Door Hinge Removal

Step 1: First remove loading door and front panel.



Step 2: Remove 3 screws holding door hinge. Shims may be present between hinge and tub front. The number may be increased or decreased to adjust right side door pressure.

NOTE: Door hinge mounting bolts penetrate tub front and require silicone sealer applied to holes when reinstalling.

Loading Door Reassembly

Step 1: Lay the door ring face down on a flat surface. Start the glass into one side of the door gasket.

Step 2: Use one hand underneath to push the gasket out and the other hand on the top pulling the gasket in place.

Step 3: The front lip of the door gasket should be checked for proper seating.

Control Panel Name Plate Decal

The name plate on washer front is adhesive backed.

Control Panel Name Plate Removal

The name plate may be removed by simply peeling it off.

Re-Installation of Name Plate

Step 1: Remove any remaining glue from the control panel.

Step 2: Before removing the paper backing from the name plate, check fit to the control panel. The program push buttons are the locating guides.

Step 3: Remove the paper backing from the right side of the name plate, position it on the panel and press right end into place. Peel the backing from the left end and press into place.

Tub Back, Bearing and Cylinder Assembly

Removing the Washer Tub Assembly from the Washer Frame

Step 1: Remove the left and right lower front panel screws that retain the panel to the chassis.

Step 2: Remove the Drain Hose from the bottom of tub assembly.

Step 3: Remove Overflow and Tub vent hoses at rear tub back.

Step 4: Remove the pressure switch hose from the bottom of the switch.

Step 5: Disconnect the door lock wires from all switches and the door lock gear motor. The following illustration of their locations should be consulted.

Step 6: Disconnect pull rod between gear motor and door lock assembly.

Step 7: Disconnect the wires to the drain valve at the bottom of the machine.

Step 8: Remove 4 (four) bolts at outer tub ring and slide complete assembly out front . (Note: very heavy, use appropriate devices)



Tub Back, Bearing, and Cylinder Assembly

Removal

Step 1: Remove the tub and cylinder as described previously

Step 2: Remove the overflow hose, tub fill hose, and pressure switch hose from the back of the tub.

Step 3: Mark the tub back and bearing assembly for ease in assembly later. (see picture)

Step 4: Remove the 12 bolts and nuts from the perimeter of the tub back clamp ring. (Two of the twelve bolts are longer and go through the thicker part of the brace where it connects to the frame.)

Step 5: Remove the 2 bolts that fasten the clamp ring to the frame.

Step 6: The entire tub back and cylinder assembly may be lifted out of the tub (it may be necessary to break the adhesion of the silicone that seals the tub back to the tub). Blocks should be placed under the edges of the cylinder before setting it down to prevent damage to the cylinder flange.



Reassembly

Reverse the procedures to the left paying attention to the following areas

Step 1: Lay the tub and cylinder on its front. **NOTE:** Put a thick pad across the front of the washer, above the door, to protect the tub front

Step 2: Make sure the bearing housing weep holes are located at 12 o'clock and 6 o'clock.

Step 3: Clean the silicone rubber from the back of the outer tub and the perimeter of the tub back where the two meet. There is no gasket in this area.

Step 4: Apply a new bead of silicone rubber around the back of the outer tub. (see picture)

Step 5: Lower the tub back, bearing and cylinder assembly into the washer outer tub.

Step 6: Torque all bolts according to the following charts.

Step 7: Use a puller to remove the pulley from the shaft.

Basket Pulley, Bearing Housing, Water Seals, and Tub Back

The cast iron basket pulley is retained by a bolt, locking washer, and a flat washer.

Removal



- Step 1:** Insert a large screw driver or punch through a spoke in the pulley into the bearing housing support. This keeps the pulley from turning.
- Step 2:** Remove the retaining bolt, lockwasher, and flat washer and reinstall just the bolt
- Step 3:** Use a puller to remove the pulley from the shaft. Watch for tolerance ring.

Reassembly

- Step 1:** Make sure that the tolerance ring is in place inside the pulley.
- Step 2:** The shoulder inside the pulley that holds the tolerance ring should face the back of the washer when installed correctly.
- Step 3:** Use a stack of flat washers and a longer bolt to press the pulley onto the basket shaft.
- Step 4:** Reinstall the retaining bolt, lock washer and, flat washer. The shaft end bolt with washer should be installed with a torque value listed in charts in this manual.

Removal of Bearing Housing From Basket Shaft, Bearings, and Water Seals



- Step 1:** To remove the tub back assembly, the 6 bolts attaching it to the bearing housing must be removed.
- Step 2:** Remove water seals from the seal mounting plate on the cylinder shaft. These are removed with your fingers.
- Step 3:** The retaining ring next to the front bearing must also be removed.
- Step 4:** The bearings are pressed into the housing and must be pressed back out.

Reinstallation onto Basket Shaft

- Step 1:** Carefully set the assembly over the shaft engaging the bearings and bearing spacer.
- Step 2:** The tolerance ring that fits inside the pulley should be placed in position (see Basket Pulley Reassembly for correct positioning).
- Step 3:** The pulley should then be started onto the shaft. A stack of flat washers and a longer pulley bolt will be required to pull the basket shaft through the bearings and pulley.
- Step 4:** Install the shaft end bolt with washers and torque to specifications in Bolt Torque Chart.
- Step 5:** See Tub Back, Bearing, and Cylinder Assembly for installation of complete assembly back into washer.

Reassembly

- Step 1:** When installing new bearings into a bearing housing, first press the front (large) bearing into the housing until it bottoms. With the bearing spacer in place, press the rear bearing in until the spacer is snug between the two bearings. Be sure and reinstall the retaining ring in front of the front bearing (see picture).
- Step 2:** The tub back assembly should be reattached to the bearing housing with the 6 mounting bolts and torqued according to the torque chart.
NOTE: The bead of silicone that seals each bolt to the tub back. This must be cleaned and replaced upon reassembly (see picture).
If the 6 support assemblies have been removed from the bearing housing, the 6 rear bearing housing bolts should be torqued according to the chart also.
- Step 3:** The primary and secondary seals that mount on the sealing ring may be slid over the shaft and seated on the metal sealing ring. In the unlikely event that the metal ring that mounts these sealing rings were to be damaged or moved, a new one would need to be pressed on the ring must be pushed against the stop on the shaft. Before installing the new sealing ring, a bead of silicone should be put on the basket shaft (see picture). After installing the seals, lubricate the faces of the seals with silicone grease (see picture).



Removal

- Step 1:** Remove the drive belt as explained in previous instructions.
- Step 2:** Remove the tension spring and bracket.
- Step 3:** Disconnect the motor wires in the control area at the top of the machine. The motor wire retaining clamp should be removed and reused. There is a diagram showing where each motor wire plugs in so there is no need to mark them.
- Step 4:** Loosen the set screws on the motor support shaft.
- Step 5:** Remove the retaining bolt from the front of the support shaft.
- Step 6:** Remove the motor support shaft.
- Step 7:** Lift motor out of machine. **NOTE:** On larger washers it is advisable to put a board under the motor and slide it out rather than lifting it.

Bolt Torque Chart

Bolt Size	Where Used	Torque
1/2"x 1 1/4" bolt	Tub End of Bearing Hsing. 9545-017-009	70-110 ft/lbs
5/8"x 1 1/2" bolt	Tub End of Bearing Hsing. 9545-060-001	120-150 ft/lbs
1/2"x 1 1/4" bolt	Mtg. of Tub to Cradle Asy. 9545-017-009	70-110 ft/lbs
5/8"x 2 1/2" bolt	Mtg. of Tub to Cradle Asy. 9545-060-001	120-150 ft/lbs
3/8"x 1 1/2" bolt	Tub Back Ring to Tub Back 9545-029-003	45-80 ft/lbs

Control Mounting Trough

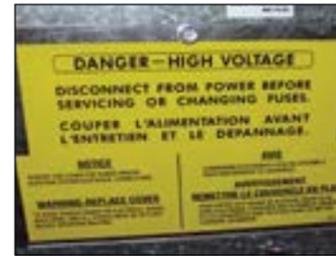
Remove rear panel to access control trough. It sets on the right side of the machine and holds the control PCB's, transformers, and pressure switch.

Main Data Communication Cable

Goes between front PCB board and Variable Frequency Drive unit mounted center rear of machine. It has telephone type connectors at each end and is inserted at Controller PCB and the Variable Frequency Drive.

Circuit Breaker/Fuse

The fuse (optional circuit breaker) mounts to the rear channel. It carries all of the controls in the machine but does not include the motor and VFD. To reset the circuit breaker just push in the button. If you have a fuse then remove fuseholder and fuse and replace with a 1.5 amp fast blow type fuse.



Fuse Location

Main Control Printed Circuit Board

Please be sure to be grounded to machine before removal of this board from machine. PC board mounted behind front control panel. Remove hold down nuts in 4 corners and 1 at bottom center.

Controls Transformer

This transformer is mounted at the back of the control trough and steps a range of 208 to 240 volts down to 24 volts for the controls. There are two terminals on the controls transformer for incoming power. One terminal tap is marked for 208 volts use this tap for measured voltage of 200 volts - 215 volts. and the other tap is marked 230 volts for 216 volts - 240 volts.

NOTE: All washers have a controls transformer. Always check the incoming voltage and use the appropriate transformer terminal when installing ALL washers.

Main Relay Printed Circuit Board

Please be sure to be grounded to machine before removal of this board. PCB mounting in control trough towards top left of control trough. Remove 4 mounting nuts.

Emergency Stop Button Switch Assembly

The stop button is mounted on right side of machine. Remove the top and access the rear of button. Remove the plastic retainer by unthreading CCW. The switch assembly will have to be removed by pressing down on the plastic clip while pulling the switch body away from the stop button.



Temperature and Start Display



Stop Button Switch Assembly

Power Connection Terminal Block

This terminal block sets at the very back of the machine. Incoming power to the washer should connect here. (See Electrical under Installation and Operation Section for exact connections)

Switch Positions:

Depth (in):	Pos 1	Pos 2	Pos 3	Pos 4	Pos 5	Pos 6
5.00						
5.25	on					
5.50		on				
5.75	on	on				
6.00			on			
6.25	on		on			
6.50		on	on			
6.75	on	on	on			
7.00				on		
7.25	on			on		
7.50		on		on		
7.75	on	on		on		
8.00			on	on		
8.25	on		on	on		
8.50		on	on	on		
8.75	on	on	on	on		
9.00					on	
9.25	on				on	
9.50		on			on	
9.75	on	on			on	
10.00			on		on	
10.25	on		on		on	
10.50		on	on		on	
10.75	on	on	on		on	
11.00				on	on	
11.25	on			on	on	
11.50		on		on	on	
11.75	on	on		on	on	
12.00			on	on	on	
12.25	on		on	on	on	
12.50		on	on	on	on	
12.75	on	on	on	on	on	
13.00						on
13.25	on					on
13.50		on				on
13.75	on	on				on
14.00			on			on
14.25	on		on			on
14.50		on	on			on
14.75	on	on	on			on
15.00				on		on

Delta Variable Frequency Drive:

Main power is connected to terminals L1, L2, and L3 on the Delta drive. If the washer is connected to a three phase source, there should be voltage present on all three terminals. If the washer is connected to single phase power, there should be voltage present on terminals L1 and L2.

The voltage should measure 208 Volts to 240 Volts A.C. between phases. There is a tolerance of + 10% on the mains voltage (187 Volts to 264 Volts).

Delta VFD Motor Leads:

The wires from the motor are connected to terminals T1, T2, and T3. Since this drive uses pulse width modulation, an accurate current or voltage reading is not possible. Although an accurate current reading is not possible, a balanced current reading should be present while the motor is running.

Delta VFD Dynamic Braking Resistors:

Two 160 Ohm braking resistors are connected in parallel and attached to the drive at terminals B1 and B2. These resistors allow voltage, which is generated by the motor when decelerating, to be dissipated. They will become hot while the motor is slowing down, so care should be taken so as not to come in contact with them. This will prevent an electrical shock and/or a physical burn.

Delta VFD Cooling Fan:

There is a cooling fan attached to the bottom of the Delta drive. This fan will operate when the internal temperature of the drive reaches a predetermined level, the same way the radiator fan in a newer car operates. THE FAN CAN OPERATE ANYTIME POWER IS APPLIED TO THE DRIVE! Remove power to the drive if work is required around the fan.

Common Washer Troubleshooting Solutions

Symptom	Probable Cause	Suggested Remedy
Machine doesn't start	Power Supply	Check these areas: Circuit breakers, Voltage, Power leads, Power connections. Is front display LED showing a dollar amount.
	Door Switch	Check for continuity through door switch when door is closed. If no continuity, adjust or replace door switch.
	Control Breaker Or Fuse	Check 1.5 amp breaker or fuse for continuity. If no continuity, replace breaker or fuse.
	Control Transformer	Check voltage output from control transformer for 24VAC. If voltage is incorrect, replace transformer.
	Coin Acceptor	Check coin switch to make sure coins trip switch and give continuity across switch when closed. If no continuity, adjust or replace switch.
	Check PCB Board	Check all wire connections for sure contacts.
	Check Wiring Between PCB	Check data cable phone type connectors unplug and VFD and replug with power removed.
	Check Relay PCB	Check all wire connections for sure contact.
	Check Door Gear Motor	Check that 24VAC power is at Gear Motor after start button is pushed.
Machine will not accept and count coins	Coin Acceptor	Check coin acceptor switch for any type of blockage or damage. Clean, adjust, or replace the acceptor.
	Power Supply	Check these areas: Circuit breakers, Voltage, Power leads, Power connection
	Door Closed Safety Switch	Check door closed switch at door hinge for proper operation.
	Door Handle Closed Switch	Check single door closed switch at left side of door handle to close when handle is vertical.
	Control Breaker Or Fuse	Check 1.5 amp breaker or fuse for continuity. If no continuity, replace breaker.
	Main PCB	Replace
Door does not lock	Check Display For Fault Code	Does "DOOR LOCK ERROR" show on the front of display. If yes follow tests described in fault code section.
	Door Locking Gear Motor	Check to insure that gear motor is receiving 24VAC from main relay PCB. If it is, replace gear motor.
	Door Switch	Check for continuity through door latch switch when door closed. If no continuity, adjust or replace door switch.
Door will not open	Thermoactuator	Check to see if thermoactuator(s) and/or its mechanism is stuck or binding and not allowing the door lock gear motor to open. Check to be sure that the locking thermoactuator is not receiving 24VAC during the last 1 1/2 minutes of the cycle. Also check to see that the unlocking thermoactuator is receiving 24VAC during the last minute of the cycle. If the thermoactuators do not receive voltage at the correct times, change the PCB. If the timing and voltage are correct, replace the thermoactuator.

Symptom	Probable Cause	Suggested Remedy
Door will not open	Door Rod	Check to see that door rod from gear motor to lock assemble is long enough to allow lock assemble to disengage. If not, adjust rod.
	Door Lock Gear Motor	Check that door lock gear motor is not stuck closed. If stuck, replace gear motor.
No hot water in detergent dispenser	Water Valve Coil	Check coil continuity at terminals and replace if no continuity. 24 VAC power only on for 20 second in wash bath.
	Water Inlet	Check water inlet screens for blockage and clean screens if necessary.
	Water	Check to insure that water is turned on and operating.
	P-20 Wire Harness	Check black & white harness.
Hot water does not enter tub in wash	Water Valve Coil	Check coil continuity at terminals and replace if no continuity. Check for 24 VAC power from main relay PCB.
	Water Inlet	Check water inlet screens for blockage and clean if necessary screens
	Water	Check to insure that water is turned on and operating.
	Black Or White Wire At Main Controller	Check black or white wires at Molex plug on PCB at main controller and at relay PCB.
	Pressure Switch	Check pressure switch continuity between terminals . If no continuity, check pressure switch hose for obstruction. If hose okay, change pressure switch.
No cold water to tub in wash	Water Valve Coil	Check coil continuity at terminals and replace if no continuity.
	Water Inlet Screens	Check water inlet screens for blockage and clean if necessary.
	Water	Check to insure that water is turned on and operating.
	Black Or White Wire At Controller And Main Relay PCB	Check black or white wires at Molex plug on PCB at main controller and at relay PCB.
	Pressure Switch	Check pressure switch continuity between terminal contacts. If no continuity, check pressure switch hose for obstruction. If hose okay, change pressure switch.
Water comes in but level does not rise	Drain Valve (Open)	Check these areas • Drain valve blockage • Drain valve motor and gear train. If power but drain valve does not close, replace valve. • Power to the drain valve. If no power to drain valve, check (brown/yellow) circuit for power.
	Black Or White Wire At Controller	Check black and white wires at molex plug on main PCB controller and at main relay PCB
Water does not flush softener compartment.	Water Valve Coil	Check coil continuity at terminals and replace if no continuity.
	Water Inlet Screens	Check water inlet screens for blockage and clean if necessary.
	Water	Check to insure that water is turned on and operating.

Common Washer Troubleshooting Solutions

Symptom	Probable Cause	Suggested Remedy
Water does not flush softener compartment.	Pressure Switch	Check pressure switch continuity between terminals. If no continuity, check pressure switch hose for obstruction. If hose okay, change pressure switch.
Water level too high	Pressure Switch	Check for blockage in pressure switch hose. Check for pressure switch opening circuit across terminals. Replace switch if contacts do not open.
Water drains slowly	Drain System	Check hoses and drain valve for blockage. Clean if necessary. Check building drains for blockage
Machine does not turn	VFD	Check VFD by removing inspection panel and record any numbers or letters displayed. If no display turn power off to machine at breaker for 2 minutes and turn power back on to reset. If still no display replace VFD.
Machine tumbles in one direction	VFD	Remove inspection cover at rear and record in only numbers or letters displayed. See fault code section for more info.
	VFD	Inspect yellow enable wires from main relay PCB and at VFD
Excessive vibration	Mounting System	Check these areas: • Strength of mounting structure, concrete, or base. • Mounting bolts may be loose and need tightening.
	Drive Belt	Worn drive belt can cause vibration and noise.
	Loading	NOTE: Small loads contribute to out of balance loading and increase vibration.
Machine does not spin	Pressure Switch	Check pressure switch for continuity across terminals #21 & #22 indicating pressure switch has reset to the empty position. If no continuity, change pressure switch.
Machine starts and does not operate	VFD	Check yellow enable wires from relay PCB P13 & motor P14 to VFD advances through cycle are connected. Check fault code on VFD before removing power from the drive. Check orange P-15 wire for signal from door switches.
Machine does not stop	Main PCB	Main PCB controls time cycle at end of cycle
	Braking Resistors	Check braking resistors for continuity. Verify ohms resistance by Molex.
Water leakage around loading door	Door Adjustment	Door may need adjustment due to abuse or wear. Check tightness around perimeter using a dollar bill. Adjust left to right tightness by shims at door lock or hinge side. It is important to center gasket to tub opening before tightening door to hinge bolts. Chalk may be used on tub front to show point of contact with tub. If gasket is deformed, worn, or damaged, replace. Refer to parts section for door gasket expander kit.

Troubleshooting Machine Fault Errors

Displayed on front of washer

The following pages are a description of fault codes that will appear on the front of the washer. There is a chart format that shows what fault code that will be displayed at washer front. These codes displayed may stop machine operation or may not stop machine. Please check chart before removing power to reset. **PLEASE NOTE: CHECK DRIVE FAULT CODE BEFORE POWERING MACHINE DOWN!**

Fault	Description	Customer Action	
DOOR LOCK ERROR	The Door Failed To Close And Lock Or The Door Failed To Remain Locked During The Cycle.	Condition	This error is when the Door Locked signal is not received within one second after the start of the cycle. After three attempts to start the washer.
		Delay	Immediate
		Action	When the error occurs, the Door Lock Gear Motor will be turned off; all other outputs will be turned off.
		Solution	Check VFD fault light. Check to hear if door motor engaged. Turn off the power to the washer. Check wire connections to door/lock switches. Check wire connections from switches to controller. Check P-4 Door/Lock wire connections at PCB controller. Adjust the door lock mechanism. (See online service manual or video)
SLOW FILL ERROR	Slow Fill Error	Condition	This error is when the water level is not reach within 7 minutes.
		Delay	Immediate
		Action	The washer cycle will continue
		Solution	Turn off the power to the washer. Check the operation of the water valves. Check the incoming water pressure. Check for blocked or restricted water flow. Check to ensure the drain valve is functioning properly.
MEMORY ERROR	Checksum Or Out Of Range Error	Condition	Memory error in the controller. The memory checksum is wrong or a parameter value is out of range.
		Delay	Immediate
		Action	Stop the washer and turn off all the outputs.
		Solution	Check VFD fault light before turning off power. Try a soft Reset of the controller with the white button. If problem persist replace PCB controller.

Fault	Description	Customer Action	
COMM ERROR 1	I2C Bus Error	Condition	Washer controller communication error on the I2C bus. Both the main slave micro and the master micro can be in this error state. The slave micro error is recoverable at any time, if I2C communication resumes. The master micro error is permanent.
		Delay	The main slave starts displaying this error after 6 seconds of no (valid) I2C activity. The master micro goes into this permanent error state after 8 seconds of no (valid) I2C activity
		Action	Stop the washer and turn off all outputs.
		Solution	Check VFD fault light before turning off power. Try the data cable first. Move around cable and remove any side loading tension from data cable connector ends. Check connection P23 to P15. Turn power back on to the washer. If the problem returns, replace the PCB washer controller.
COMM ERROR 2	Wrong Washer Size Jumper Configuration	Condition	Invalid washer size jumper (harness) configuration.
		Delay	Immediate (after the wrong size jumper configuration is read). Washer size/type inputs are read only at power up, before starting a cycle, once every 24 hours, and in factory test mode.
		Action	Stop the washer.
		Solution	Check VFD fault light before turning off power. If the controller was installed in a different size machine before being installed in this machine, a problem can occur. If someone has been doing repairs on the washer, check for the correct size drive. It can also be caused by pressure switch harness. Check to ensure the correct harness is installed. The control can be reset by holding program button on controller during startup (soft reset). Check orange wire at Molex connector on controller coming from pressure switch or replace pressure switch harness.
COMM ERROR 3	Washer Size Or Type Changed	Condition	The washer size or washer type configuration has changed.
		Delay	Immediate (after the size jumper configuration is read). Washer size/type inputs are read only at power up, before starting a cycle, once every 24 hours, and in factory test mode.
		Action	Stop the washer.
		Solution	Check VFD fault light before turning off power. Check to ensure all the harnesses are properly connected to the controller. Check to ensure the VFD drive horsepower is proper for this size of washer. The control can be reset by holding program button on controller during startup (soft reset). Check orange wires at Molex connector on controller coming from pressure switch.

Fault	Description	Customer Action	
COMM ERROR 4	VFD Non Existent Or Communication Fault	Condition	This error is when the washer controller cannot communicate with the drive.
		Delay	Delay time is 2 seconds
		Action	Stop the machine and clear the cycle. Keep the door locked until the machine has stopped moving and then unlock the door.
		Solution	Check the data communication cable between the washer computer and the variable frequency drive (VFD). Step 1: Make sure the cable did not become unplugged during operation. Step 2: Make sure that the cable is not being pulled sideways at either the washer controller, or the VFD, plug end. If both ends of the communications cable are plugged in the washer computer and VFD and there is no tension on the communications cable pulling it from side to side, then replace the cable. Step 3: Inspect both female connection points at PCB controller and at VFD. These may need replacement if they cannot be reset.
COMM ERROR 5	VFD Communication Fault	Condition	This error is a data error on communications between the controller and the VF drive
		Delay	Delay time is 12 seconds.
		Action	Stop the machine and clear the cycle. Keep the door locked until the machine has stopped moving and then unlock the door.
		Solution	The CE errors are communications errors. Data Cable noise can cause the majority of these errors. Check VFD fault light before turning off power. Check the data cable between the controller and the drive. Replace data cable if it appears damaged and fault appears again. Please note that this fault will occur if you turned main power off and on to quickly.
COMM ERROR 6	VFD Communication Fault	Condition	This error indicates that a VFD exception error is set
		Delay	Occurs following the "DELAY" error (see corresponding detail)
		Action	Stop the machine and clear the cycle. Keep the door locked until the machine has stopped moving and then unlock the door.
		Solution	The washer will not restart until the power is removed and re-applied.

Troubleshooting Machine Fault Errors

Fault	Description	Customer Action
COMM ERROR 7	Communication Bus Error	Condition If a state-of-health message reply is not seen by the master microprocessor from the UC3 microprocessor after 10 minutes, the master will reset the UC3 and restart the 10 minute timer. Again, after 10 minutes, if a state-of-health message is not received by the master, it will reset the UC3 a second time. After 10 minutes, the master will reset the UC3 a final time and post a COMM ERROR 7. NOTE: When the master resets the UC3, the control will disconnect from the network. If the first reset is not successful, the control will not be able to reconnect to the network, USB or card reader functions.
		Delay 3 cycles of 10 minutes (see above)
		Action Stop the machine and clear the cycle. Keep the door locked until the machine has stopped moving and then unlock the door.
		Solution The washer will not restart until the power is removed and re-applied.
COMM ERROR 8	VFD Communication Fault	Condition This error is caused when the VFD reports a frequency value that is out of range
		Delay Delay time is 35 seconds
		Action Stop the machine and clear the cycle. Keep the door locked until the machine has stopped moving and then unlock the door.
		Solution The washer will not restart until the power is removed and re-applied.
PCB ERROR1	Controller Internal Fault	Condition This error is an internal failure of the washer controller electronics.
		Delay Immediate
		Action Stop the machine and clear the cycle. Keep the door locked until the machine has stopped moving and then unlock the door.
		Solution Check VFD fault light before turning off power. Try a soft reset of the controller with the white button. If problem. Replace PCB controller.
PCB ERROR 2	Controller Internal Fault	Condition This error is an internal failure of the washer controller related to inputs being matched between the master and slave micros
		Delay Immediate
		Action Stop the machine and clear the cycle. Keep the door locked until the machine has stopped moving and then unlock the door.
		Solution The washer will not restart until the power is removed and re-applied.

Troubleshooting Machine Fault Errors

Fault	Description	Customer Action
SLOW DRAIN ERROR	Drain Error	Condition This error is when an empty water level is not reach within 7 minutes.
		Delay Immediate
		Action The washer cycle will continue. Do not spin the tumbler with out reaching an empty water level. If empty water level is not reached, agitate during the normal spin time.
		Solution Check VFD fault light before turning off power. Check to ensure the drain valve is operating properly (slow drain has potential to cause this code). Check to ensure the pressure switch tube is clear of any blockage, and the pressure switch is operating properly. Check the pressure switch harness.
SPIN STOP ERROR	Stop Error	Condition This error is when the washer does not stop spinning within 150 seconds after receiving the command.
		Delay Immediate
		Action Keep the door locked until the machine has stopped moving and then unlock the door.
		Solution Check VFD fault light before turning off power. Inspect the braking resistors and measure the resistance. Check connecting wiring from braking resistor to the drive mounted in the top of the washer. Reset the drive and try again. Possibly incorrectly programmed drive.
DRIVE ERROR 1	Washer Size/ VFD Size Mismatch	Condition This error is when the drive size does not match the washer size.
		Delay Immediate. (after the size jumper configuration is read). Washer size/type inputs are read only at power up, before starting a cycle, once every 24 hours and in factory test mode
		Action Stop the machine and clear the cycle. Keep the door locked until the machine has stopped moving and then unlock the door
		Solution Check VFD fault light before turning off power. If the controller was installed in a different size machine before being installed in this machine, a problem can occur. If someone has been doing repairs on the washer, check for the correct size drive. It can also be caused by pressure switch harness. Check to ensure the correct harness is installed. The control can be reset by holding program button on controller during startup (soft reset). Check orange wire at Molex connector on controller coming from pressure switch or replace pressure switch harness.

Troubleshooting Machine Fault Errors

Fault	Description	Customer Action	
DRIVE OC	VFD Over-Current Fault	Condition	This error is an over-current on the VF drive
		Delay	Delay time is 35 seconds
		Action	Stop the machine and clear the cycle. Keep the door locked until the machine has stopped moving and then unlock the door.
		Solution	Step 1: Check to make sure the washer cylinder turns freely by hand. If it turns freely, continue to step 2. If it does not, remove the belt and see if the motor turns freely by hand. If the motor turns freely, then check for obstructions in the cylinder or check the bearings. If the motor does not turn freely, replace the motor. Step 2: Check the motor wires for a short circuit between leads. If there are motor leads that have conductors touching, separate them and insulate them. If the wires are broken, splice them together or replace the motor. Step 3: Check braking resistors to see if they measure the correct resistance. If a resistor does not measure the proper value, replace it.
DRIVE OV	VFD Over-Voltage Fault	Condition	This error is over-voltage on the VF drive
		Delay	Delay time is 35 seconds.
		Action	Stop the machine and clear the cycle. Keep the door locked until the machine has stopped moving and then unlock the door.
		Solution	Step 1: Measure the supply voltage to the VFD on the L1, L2 (or N), and L3 (if connected to three phase power). the supply voltage should be from 187 to 264 VAC or 108 to 132 VAC for a 120 VAC VFD. Also make sure the supply wires on L1, L2 (or N), and L3 (if connected to three phase power) are securely connected. Step 2: Check the braking resistor connections at the VFD. The terminal screws should be tight. Once of the braking resistor wires should be connected to terminal B2. Step 3: Measure each braking resistor separately to make sure they are the correct resistance. (200 for 1 and 2 Hp VFD and 160 for 3 Hp VFD). Step 4: If you have a 240 VAC, high leg voltage supply, try disconnecting the high leg. If this cures the problem, either leave the high leg disconnected, connect a transient voltage surge suppressor (with some form of filtering) at the voltage supply panel, connect a line choke on the high leg or install a VFD filter.

Troubleshooting Machine Fault Errors

Fault	Description	Customer Action	
DRIVE OH	VFD Overheat Fault	Condition	This error is over-heating on the VF drive
		Delay	Occurs following the "DELAY" error (see corresponding detail)
		Action	Stop the machine and clear the cycle. Keep the door locked until the machine has stopped moving and then unlock the door.
		Solution	The washer will not restart until the power is removed and re-applied.
DRIVE OL	VFD Overload Fault	Condition	This error is overload on the VF drive
		Delay	Occurs following the "DELAY" error (see corresponding detail)
		Action	"DRIVE OL"
		Solution	The washer will not restart until the power is removed and re-applied.
DRIVE GFI	VFD Ground Fault	Condition	This error is a ground fault interruption on the VF drive
		Delay	Occurs following the "DELAY" error (see corresponding detail)
		Action	Stop the machine and clear the cycle. Keep the door locked until the machine has stopped moving and then unlock the door.
		Solution	The washer will not restart until the power is removed and re-applied.
DRIVE LV	VFD Low Voltage	Condition	This error is low voltage on the VF drive
		Delay	Occurs following the "DELAY" error (see corresponding detail)
		Action	Stop the machine and clear the cycle. Keep the door locked until the machine has stopped moving and then unlock the door.
		Solution	The washer will not restart until the power is removed and re-applied.
DRIVE IF	VFD Internal Fault	Condition	This error is an internal VF drive error
		Delay	Occurs following the "DELAY" error (see corresponding detail)
		Action	Stop the machine and clear the cycle. Keep the door locked until the machine has stopped moving and then unlock the door.
		Solution	The washer will not restart until the power is removed and re-applied.

Troubleshooting Machine Fault Errors

Fault	Description	Customer Action	
INVALID DRIVE	Drive Is Not The Correct Dexter Version Of The Delta E-drive	Condition	The error indicates the VF drive is not a Dexter version of the Delta E-drive.
		Delay	Immediate (after the Dexter indication value is read from drive). Drive indication value is read only at power up, before starting a cycle, once every 24 hours, and in factory test mode.
		Action	Stop the machine and clear the cycle. Keep the door locked until the machine has stopped moving and then unlock the door.
		Solution	The washer will not restart until the power is removed and re-applied.
SECONDARY FUSE ERROR	Factory Program Error	Condition	This error occurs when the fuse settings for the Slave/Secondary microprocessor have not been set correctly during factory programming
		Delay	None
		Action	When detected, the washer control shall not be operational.
		Solution	The control must be re-programmed with the factory programming tool.
MAIN FUSE ERROR	Factory Program Error	Condition	This error occurs when the fuse settings for the Master/Main microprocessor have not been set correctly during factory programming
		Delay	None
		Action	When detected, the washer control shall not be operational.
		Solution	The control must be re-programmed with the factory programming tool.
DELAY	Communication Loss	Condition	This is an intermediate error code that displays as the control is attempting to re-establish communications with the variable frequency drive. It is a condition of other specified Error Codes (for example Comm Error 6).
		Delay	4 cycles of 10 seconds if during tumble portion of cycle
			4 cycles of 2 minutes if during spin portion of cycle
		Action	Prompt is displayed during each of the specified 10 second or 2 minute periods. Error condition (such as Comm Error4) occurs, but Delay is shown instead of specific Error Code. Action during this time is dependent on the specific error code that caused it.
Solution	No exit strategy. Either communication is re-established or the specific Error Code eventually occurs.		

Troubleshooting Machine Fault Errors

Fault	Description	Customer Action	
CRC ERROR	Firmware corrupted	Condition	This error occurs the washer control firmware fails a CRC check.
		Delay	None
		Action	When detected, the dryer control shall not be operational.
		Solution	The error is fatal. The control must be replaced.

Section 8:

Washer Electrical Wiring Diagrams & Schematics

Electrical Path Circuit Schematics

Start Circuit

Power travels into the machine on L1, L2, (L3, if 3 phase used). L1 and L2 provide 208- 240VAC to the controls transformer which steps the voltage down to 24VAC for the controls. (The L1 connection at the controls transformer must be checked at start-up to coincide with machine operating voltage) The 24VAC travels out from the transformer on X-1 black/red wire to terminal block and then through the red wire to the 7 amp circuit breaker. The controls transformer also creates a neutral on the X-2 black/blue wire that connects to terminal block. From the circuit breaker, 24VAC travels on the red wire to the terminal block.

24VAC (red wires) to the P-7 power connection on the main controller PCB. With the main control PCB now powered, 5VDC will be present between the (2) yellow wires and also the (2) brown wires for the coin switches. Both pairs will now be ready to count coins through the P-2 connection at the control PCB. 26.8 VDC goes out on the black wire of the P-4 connection from the main control PCB to the S5 door closed switch which mounted on the hinge side of the front panel. Closing the door will engage the door closed switch, sending the voltage to the red wire on the S1 door latched switch. Turning the door handle to the vertical latched position closes the S1 door latched switch, returning the voltage to the main control PCB on the white/red wire at the P-4 connection. 26.8VDC is now present at the S2 and S3 door locked switches.

26.8VDC is also at the black and white wires between P-21 at the main control PCB and the P-20 of the relay PCB. This voltage signals the relay PCB that the door is closed and latched making 24VAC available to the relays controlling the door lock gear motor, drain valve, and water valves. A continuous 5VDC is sent on the red wire from the P-1 connector on the main control PCB, through the (normally closed) emergency stop button switch and returns on the second red wire back to the P-1 connector. Payment is added and the display counts down on the main control PCB display until the vend price is satisfied. The display will change to read PRESS START and the green light over the start button will flash. Pressing the start button on the front of the main control PCB signals the relay PCB to lock the door and 24VAC will go to the door lock gear motor on the white/red wire from the P17 connector of the relay PCB. The door lock gear motor engages and pulls up on the door locking rod, locking the door, and closing the S2 and S3 door locking switches.

The S2 locking switch is a backup to the S1 latching switch so that once the cycle starts the S1 isn't critical. The S3 locking switch provides 26.8VDC on the orange wire back to P4 connector at the main control PCB and the P15 connector at the relay PCB. This signals that the loading door is closed, locked, and safe to continue wash operations. This activates the P-13 and P-14 yellow enable wires to the inverter drive to allow motion. If there is no signal on P-15 (orange wire) their will be no motion of the tub. S1, S2, S3, and S5 door switches are now closed. The green On LED and the door lock gear motor (discussed in start circuit) will remain on throughout the cycle.

Fill Circuit-Warm

The relay PCB supplies 24VAC to the brown/yellow wire from P-17 to the drain valve which closes the valve. The lock thermoactuator also receives 24VAC on orange/blue from P17 of the relay PCB. This device prevents the door lock gear motor from dropping out and unlocking during the cycle in the event of a power loss. The 24VAC will cycle on and off keeping the lock thermoactuator engaged until 70 seconds before the end of the cycle. The main control PCB sends data commands to the VFD through the data cable connected at P-6. These commands control the wash basket which will tumble one direction for 12 seconds, pause, and then reverse direction for 12 seconds.

The prewash or wash LED will illuminate at this time, powered through the white wires from the P-3 con-

nection of the main control PCB to the LED printed circuit board. Using the factory preset cycle as an example: The washer fills the tub through the back of the machine with either one or both the C1 cold and H1 hot water valves. From the P19 connection of main relay PCB, 24VAC is sent out on the white/brown wire to the C1 cold water fill valve and the red wire to the H1 hot water fill valve depending on the temperature selected. After a 90 second delay from the beginning of the wash cycle bath only, the detergent dispenser flushes the detergent into the tub for 20 seconds. This is accomplished when 24VAC travels through the orange wire to the H2 hot water valve solenoid. During the machine fill, a 5VDC signal is sent on the red wire from the P5 connection of the main control PCB to the pressure switch contact and returns on the yellow and orange wires to the P5 connection of the main control PCB. When the water level in the basket reaches the preset level pressure, the switch moves the switch contacts to the full or open position. This causes the main control PCB to signal the relay PCB to shut off the water valve coils.

Wash Circuit

Once the machine has achieved it's water level, the wash basket will continue to tumble one direction for 12 seconds, pause, and then reverse direction for 12 seconds. The time on the front display will count down as the bath progresses. The time of the bath is programmable up to 15 minutes per bath.

NOTE: When programming cycles, the wash bath must be programmed for 3 minutes or more.

Drain

When the program bath time ends the main control PCB signals the relay PCB to remove 24 VAC power from brown/yellow wire at P17 going to the drain valve. The normally-open, spring-loaded drain valve opens allowing water to exit the machine. This resets the pressure switch back to an empty level and restores the 5VDC connection through the pressure switch from the red wires to the orange and yellow wires.

Rinse 1 & 2

For Rinse 1 & 2, the rinse LED will illuminate, the drain valve will receive 24VAC and close. The basket will fill and tumble the same as the wash bath for the programmed time. The rinse water temperatures are programmable and factory default is cold.

Final Rinse Circuit

The final rinse LED will illuminate, the drain valve will receive 24VAC and close. The basket will fill and tumble the same as the previous baths for the programmed time. The final rinse water temperatures are programmable. **NOTE:** When programming cycles, the final rinse bath must be programmed and cannot be set for less than 3 minutes. Also at the beginning of the final rinse bath, the main control PCB will signal the relay PCB to send 24V to the P-19 connector on the white/blue wire to the C2 cold water valve for 20 seconds to flush the fabric softener dispenser.

Spin Circuit

The spin LED will illuminate and the main control PCB sends a signal to the variable frequency drive via the data cable at P6 to VFD RJ-11. The rotation as viewed from front during spin will be counter-clockwise. The time of the spin cycle can be programmed.

NOTE: The final spin must be programmed into the final rinse bath and must be programmed for 1 minute or more.

Unlock Thermoactuator and Shake Out Circuit

70 seconds before the end of the cycle the main control PCB signals the relay PCB to remove 24VAC from the orange/blue wire at the P-17 connector on the lock thermoactuator. This allows the lock thermoactuator time to cool and retract by the end of the cycle. To insure that the lock thermoactuator has retracted by the end of the cycle, 1 minute prior the end of the cycle, the unlock thermoactuator is powered with 24VAC through the orange/red wire from the P-17 connector of relay PCB. The unlock thermoactuator moves the complete bracket assembly away from the white door lock actuator allowing it to drop at the end of the cycle, unlocking the door. The basket will come to a stop from spin speed with the assistance of dynamic braking resistors wired to the variable frequency drive. (See wiring diagrams for quantities and resistor ohm values). The washer will then tumble for 45 seconds to let the clothes shake loose from the basket and then stop.

End of Cycle and Door Open Circuit

Once the machine stopped, 3 things occur:

1. The enunciator will signal for 3 seconds letting the user know that it is the end of the cycle.
2. The Display of the Washer will scroll "CYCLE DONE THANK YOU".
3. The main control PCB signals the relay PCB to remove power from the white/red wire at P-17 which allows the door lock gear motor to unlock. When the loading door is opened, the S1,S2,S3 and S5 switches are opened. The machine is now ready to accept coins again.

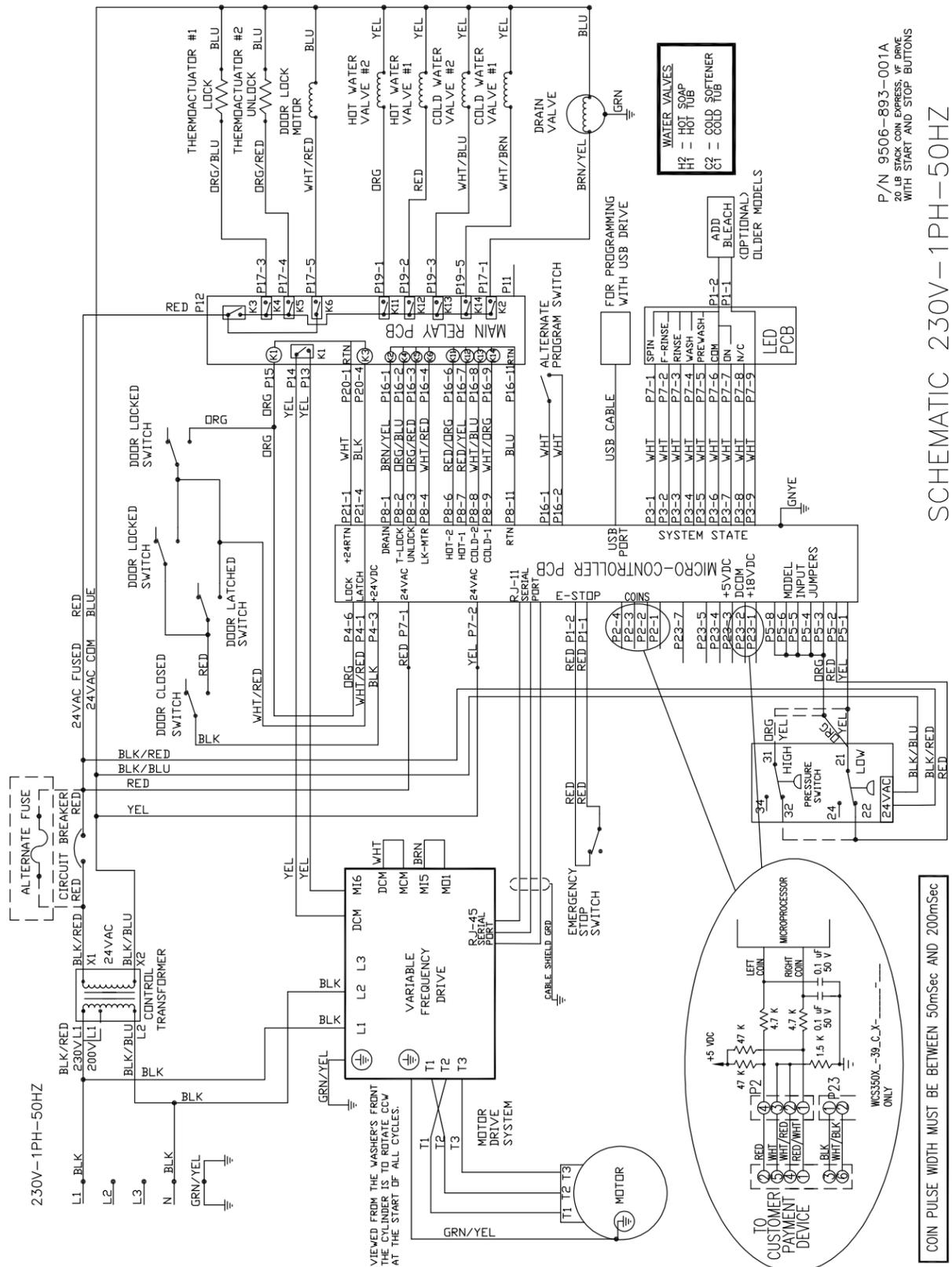
Vended Drive Motor Inverter Type Motor-Winding Resistance Chart

20lb C-Series Stack Washer

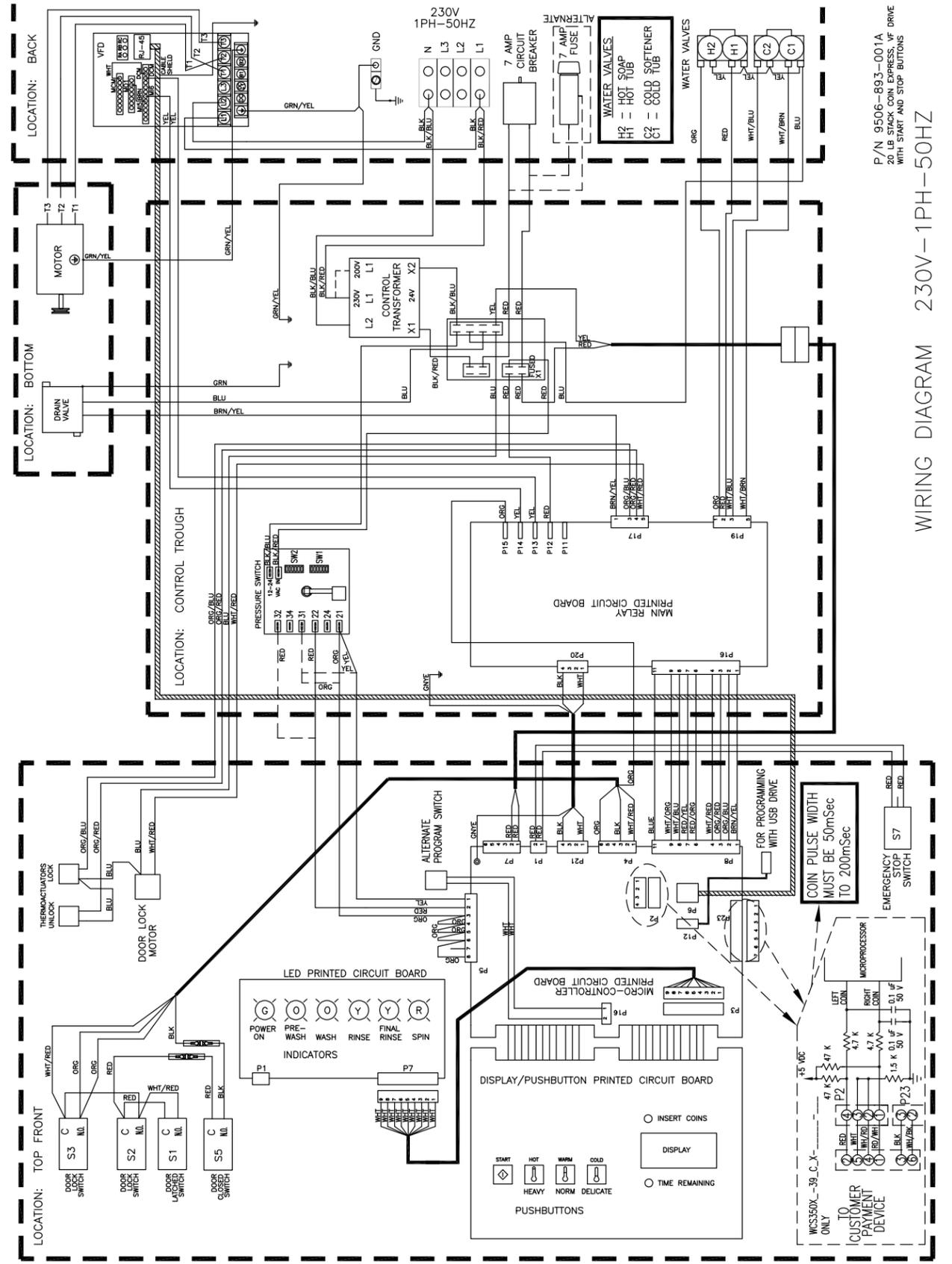
Motor	Winding	Wire #	Resistance	
			Minimum	Maximum
30lb 1ph or 3ph 60hzMain (wash & spin) Dexter #9376-307-001		T1 & T2	3.91	4.60
		T2 & T3	3.91	4.60
		T1 & T3	3.91	4.60

NOTE: Resistance values are measured at the stator. Values at the end of the motor wiring harness may be slightly higher.

Wiring Schematic for 60hz Coin Washer



Wiring Diagram for 60hz Coin Washer



Kits, Assemblies, & Common Parts

Description	Part Number
Kit - Door Lock Assy. & Cam, replaces 9885-024-001	9732-347-001
Kit - Door cam replacement	9732-346-002
Kit - Locking Pawl replacement	9732-346-001
Kit - 8650-012-003 Lock with spacer	9732-344-001
Drain Valve 2"	9379-199-002
Water Valve (Dual)	9379-183-013
Diaphragm	9118-049-003
Cylinder Plug (1.5" Plastic)	9456-041-007
Electronic Pressure Switch	9732-315-001
Breaking Resistor 200 Ohms	9483-004-002
Transformer	8711-004-004
Main Control Board	9473-010-001
Data Cable	9806-015-002
Door Lock Gear Motor Assembly	9922-017-002
Door Lock Latching Assembly	9885-024-001
Door Handle Only	9244-091-001
Door Switch	9539-492-001
5/16 Hex Screw	9545-008-026
Belt	9040-079-004
Door Glass Gasket	9206-411-002
MS300 VFD Display	9150-058-001



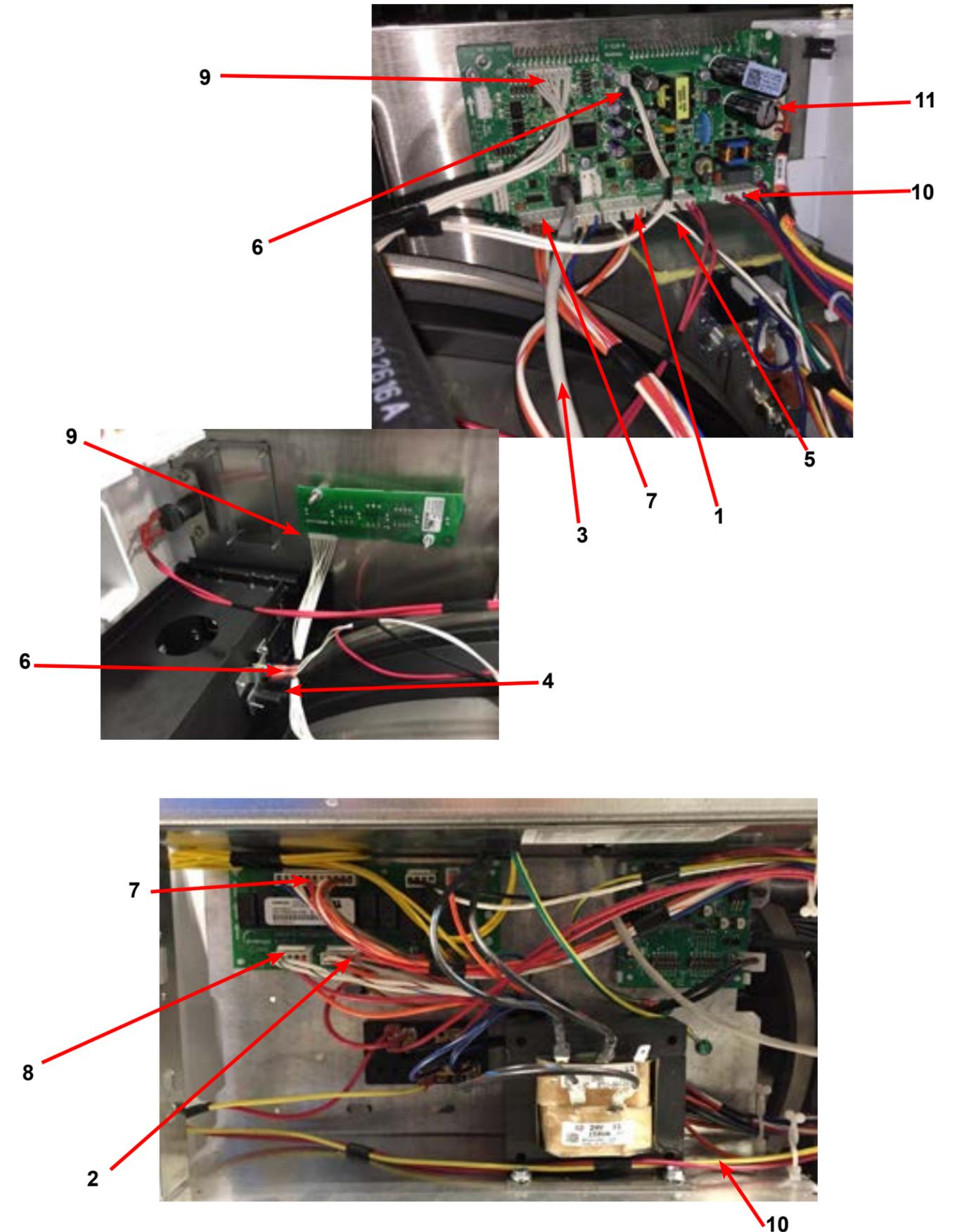
Section 9: Washer Parts

SWD C-Series Accessories T-350

Key	Description	Part Number	Qty
*	Hose, Water Supply 3/8" I.D.	9990-027-011	2
*	Washer, Inlet Hose (furnished)	8641-242-000	2
*	Strainer, Inlet Hose (furnished)	9565-003-001	2
*	Sealing compound	8538-151-002	1
*	TORX#20 Driver	8545-051-002	1
*	Special Tool For Removing Coin Acceptor Mounting Screws. (T-10 Torx)	8545-051-003	1
*	Flow Restrictors (in dispenser)	9475-002-003	3
*	Battery 3V Lithium (used on Control PCB)	8612-001-001	1
*	Coin Bearing & Seal Kit	9732-219-003	1
*	Mode Light Support	9635-022-001	1

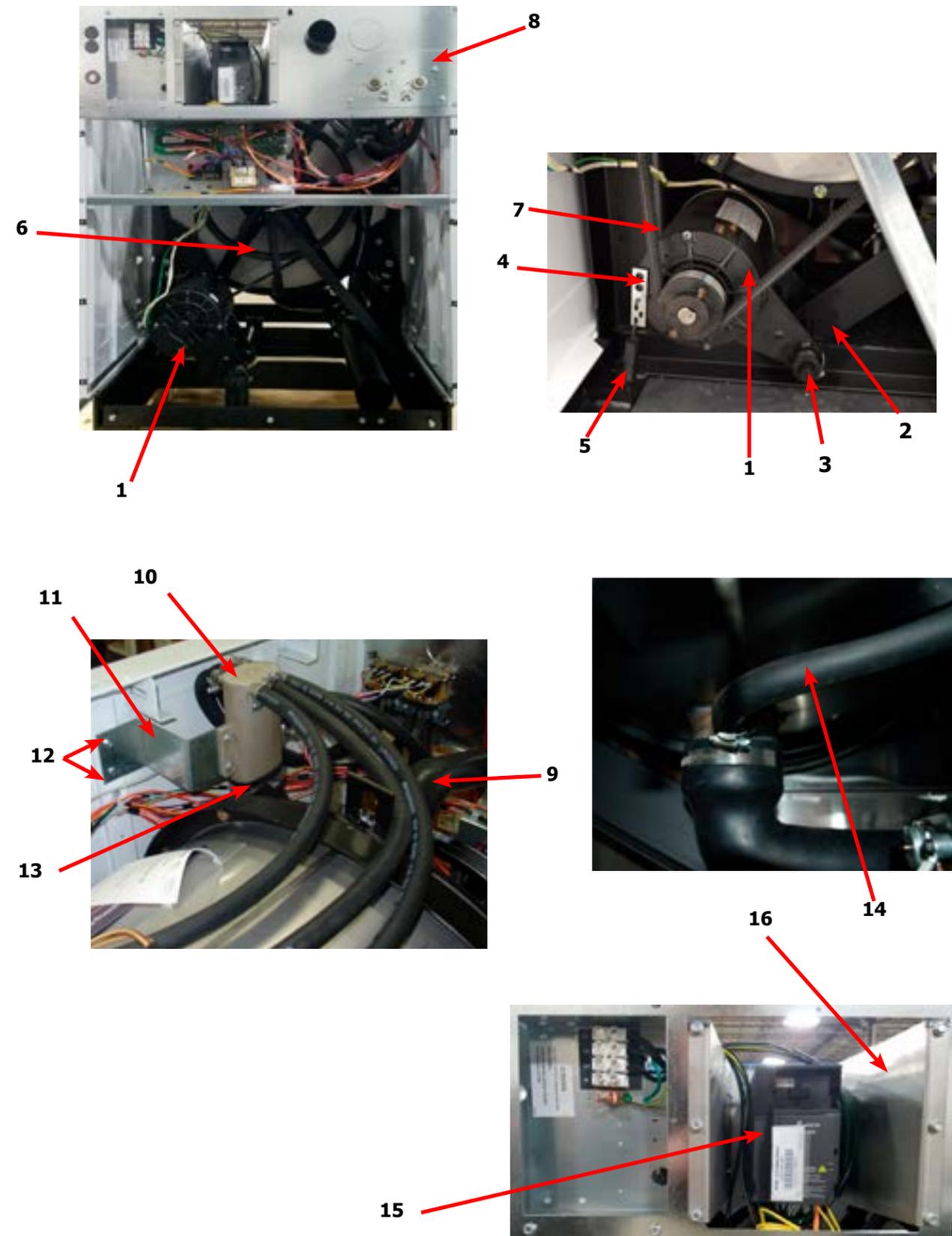
Wiring Harnesses Parts

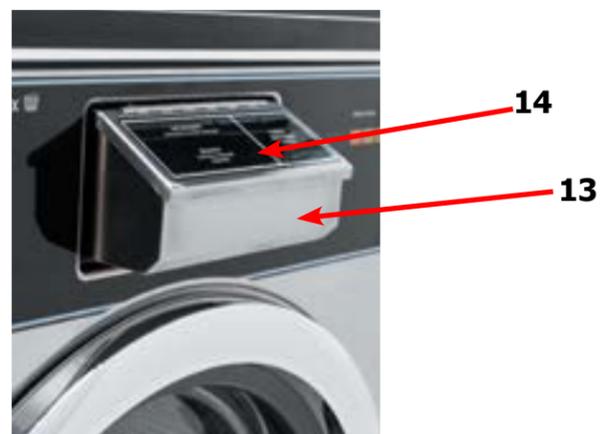
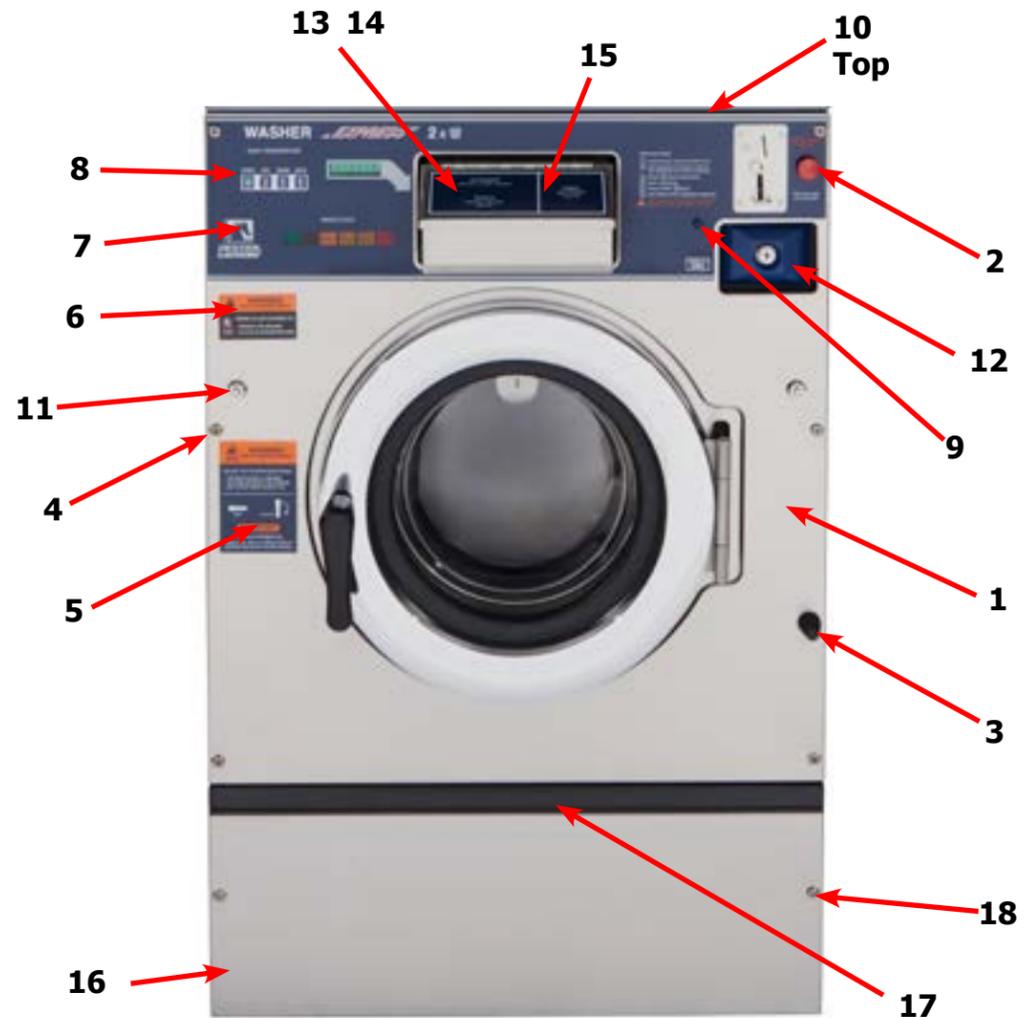
Key	Description	Part Number	Qty
1	Wiring Harness, Door Lock P15/P4	9627-816-002	1
*	Wiring Harness, Coin Drop	9627-916-001	1
2	Wiring Harness, Drain,Thermo,Door Gear Motor P17	9627-820-002	1
3	Data Cable	9806-015-002	1
4	Cableasy-USB	9806-022-001	1
*	Retainer-USB	9486-159-001	1
5	Wiring Harness P20/P21	9627-818-002	1
6	Wire Harness-program switch	9627-910-002	1
7	Wiring Harness P8/P16	9627-819-001	1
8	Wiring Harness Water Valve/P19	9627-795-004	1
9	Wiring Harness LED PCB	9627-797-001	1
*	Harness Power Terminal Block	9627-747-003	1
*	Wire Yellow Jumper (water valve)	8220-123-001	1
10	Harness-Extension, Transformer	9627-826-001	1
*	Wiring Harness -main	9627-914-002	1
11	Harness-P5/Pressure Switch	9627-908-015	1
*	Circuit Breaker 7 AMP	5198-211-002	1
*	Wiring label-schematic/diagram	9506-827-001	1



WCS350XA Rear View Access Parts Group

Key	Description	Part Number	Qty
1	Drive Motor, 3 Phase (Inverter duty)	9376-307-001	1
2	Rod, Motor Mtg	9497-222-002	1
3	Motor Bushing (Rubber)	9053-082-001	2
*	Clamp-Worm, 316SS, 1.5" (for Rubber bushing)	8654-117-019	2
4	Strap Bracket, Motor Tension	9029-206-001	1
*	Nut, Strap to Motor	8640-413-002	1
*	Washer	8641-581-006	1
5	Spring, Belt Tension	9534-319-002	1
*	Pulley, Motor	9453-180-001	1
*	Set Screw,Sq.Hd(motor pulley)	9545-028-015	2
*	Tolerance Ring	9487-234-001	1
6	Pulley, Driven	9453-168-005	1
*	Screw 1/2-13x1/4"	9545-017-009	1
*	Lockwasher 1/2"	8641-582-016	1
*	Washer, Flat 1/2x2 1/4"	8641-581-026	1
7	Drive Belt	9040-079-004	1
8	Channel, Rear	9081-182-001	1
*	Screw	9545-008-026	4
*	Nut, Spring	8640-399-007	4
*	Hose, Overflow to drain	9242-449-002	1
*	Clamp, Hose overflow to drain	8654-117-009	2
9	Hose, Overflow Vent Top	9242-463-005	1
*	Clamp, Hose Vent	8654-117-014	1
10	Vacuum Breaker ALL	9610-001-001	1
11	Bracket, Vacuum Breaker	9029-275-001	1
12	Screw, 10B x 1/2	9545-008-026	4
*	Vacuum Breaker Cap (Red)	0935-135-002	*
13	Hose, Vacuum Breaker to tub	9242-458-001	1
*	Plastic Plug 7/8" Electrical Connection	9456-041-006	1
*	Panel Assy., Back	9454-940-001	1
*	Screw Panel Mtg.#10Bx1/2"	9545-008-026	10
*	Nut, Spring	8640-399-001	6
14	Hose, Pressure Switch	9242-175-007	1
*	Clamp, Pressure Switch Hose	8654-117-015	1
15	VFD Delta "E" drive 208-240 volt	9375-034-004	1
*	VFD Cooling Fan	9189-015-001	1
*	Braking resistors (200 ohm)	9483-004-002	2
16	Bracket assembly (drive mounting)	9029-119-002	1



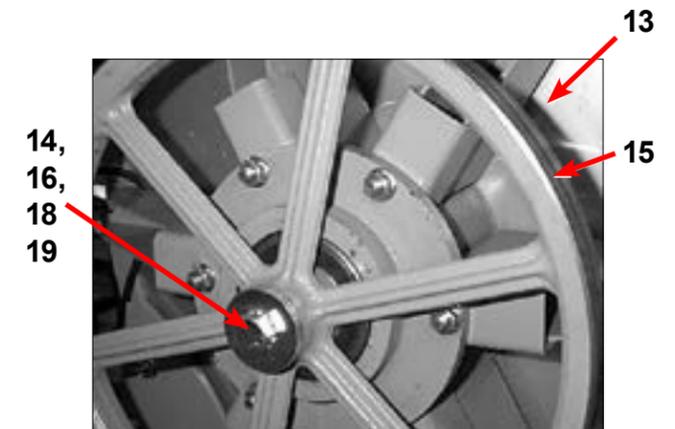
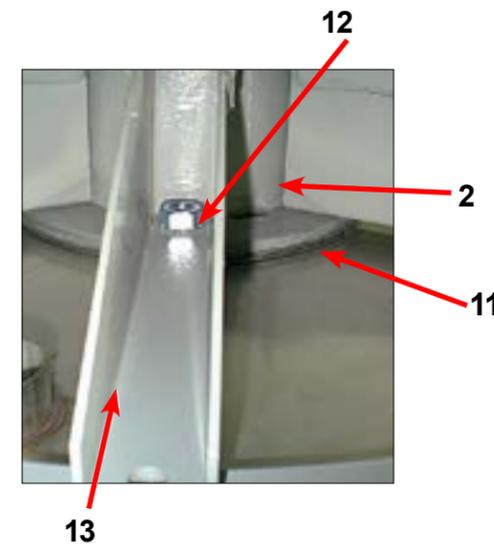
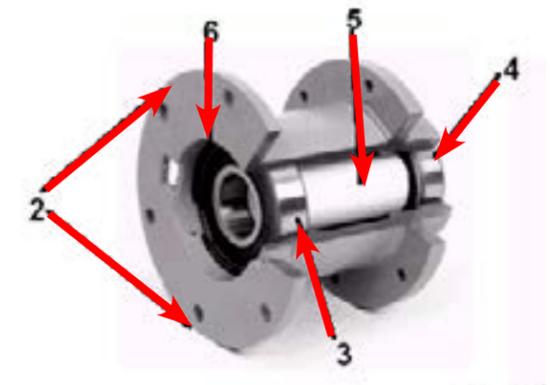
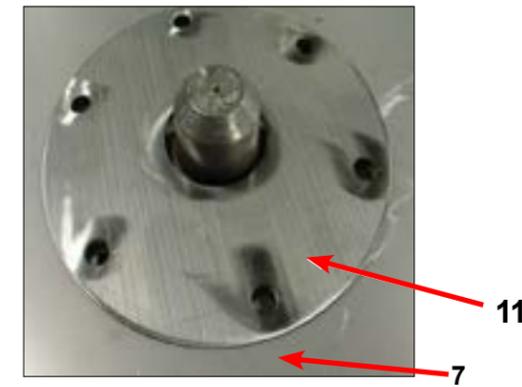
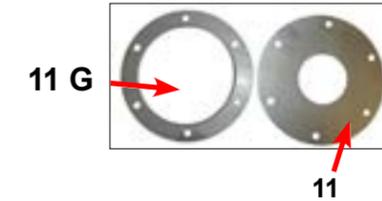
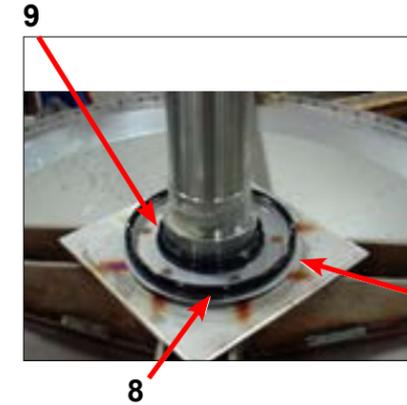
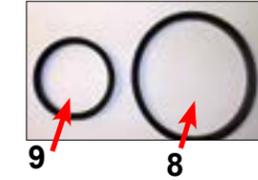
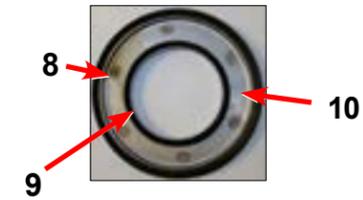


WSC350XA Cabinet and Front Panel Group

Key	Description	Part Number	Qty
*	Panel, Right Side-Painted	9989-586-002	1
*	Panel, Left Side - Painted	9989-587-002	1
*	Screw	9545-008-023	8
1	Panel Assy, Front	9989-620-002	1
*	Trim Edge Protector	9578-092-005	1
2	Switch Assembly, Stop Button Kit	9732-223-002	1
*	Stop Button Mounting Plate	9452-725-001	1
3	Bumper Loading Door	9051-055-001	1
*	Nut-hexelasticstop,1/4-20	8640-414-003	1
4	Screw-flhdcr,10bx13/4	9545-008-014	6
*	Nut, Spring-To Front Panel	8640-442-001	6
*	Washer-finish,#10	8641-585-001	6
5	Label, Door Opening, Blue	8502-757-002	1
5	Label, Door Opening, Black	8502-757-001	1
6	Label, Risk of Injury, Blue	8502-759-002	1
6	Label, Risk of Injury, Black	8502-759-001	1
7	Nameplate Decal, Control Panel, Blue	9412-238-002	1
7	Nameplate Decal, Control Panel, Black	9412-238-001	1
8	Button, Push Control, Blue	9035-062-001	1
8	Button, Push Control, Black	9035-062-002	1
9	Screw, Torx Head- 10AB x 3/4, Blue	9545-008-009	2
9	Screw, Torx Head- 10AB x 3/4, Black	9545-008-036	2
10	Panel top Front, Painted	9989-590-002	1
*	Screw, Hex, #10B x 1/2	9545-008-026	6
*	Panel Top Rear	9454-939-001	1
*	Screw, Hex, #10B x 1/2	9545-008-026	6
11	Lock, (w/Key)	8650-012-003	2
*	Key, - # 6324	6292-006-007	1
*	Cam, Lock-	9095-050-001	2
*	Nut, 9/32 - 28 Hex	8640-426-001	2
*	Washer Flat 5/16	8641-581-008	2
*	Coin Vault Assy, Coin	9942-028-003	1
12	Coin Box, Blue	9807-099-001	1
12	Coin Box, Black	9807-099-003	
13	Soap Dispenser Assembly, Complete (Does not include lid)	9807-087-001	1
*	Soap Box mounting Gasket	9206-425-001	1
14	Lid Assembly soap box	9987-104-001	1
*	Lid screws #10-32x1/2 SS	9545-012-017	2
*	Nut Hex Elasticstop #10-32 SS	8640-413-006	6
*	Bracket Soap box mounting	9029-122-002	1
*	Softener siphon tube (plastic)	9574-252-002	1
*	Flow restrictors	9475-002-003	1
15	Label, Dispenser Instructions, Blue	8502-756-002	1
15	Label, Dispenser Instructions, Black	8502-756-001	1
16	Door, Lower Service	9108-140-001	1
17	Handle, Lower Service Door	9244-086-006	1
18	Screw-flhdcr,10bx13/4	9545-008-014	2

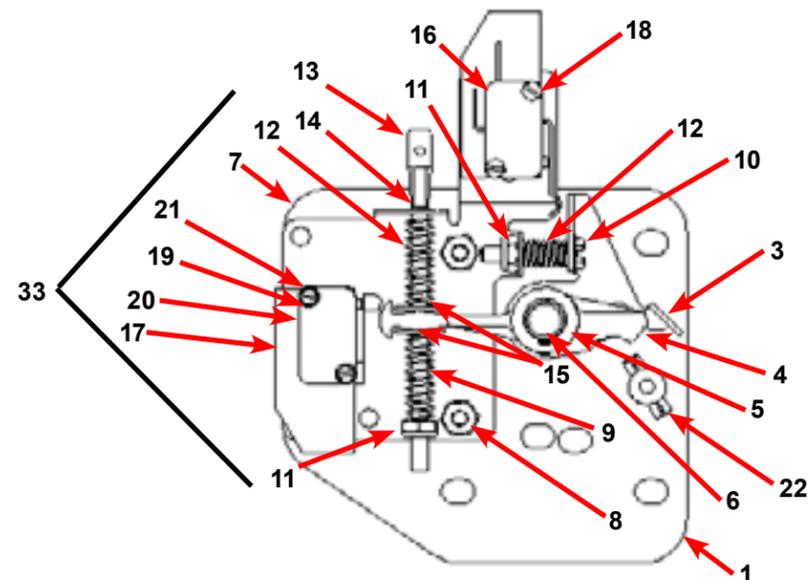
WSC350XA Cylinder, Seals & Bearings Part #'s

Description	Part Number	Qty
* Bearings and Seal Kit	9732-219-008	1
* Housing, Bearing- Assembly (items #2-#6)	9803-179-003	1
2 Housing, Bearing	9241-169-002	1
3 Bearing, Front (LARGE)	9036-159-008	1
4 Bearing, Rear (SMALL)	9036-159-009	1
5 Spacer, Bearing	9538-158-001	1
6 Ring, Bearing Retainer	9487-238-001	1
8 Seal, Large	9532-140-009	1
9 Seal, Small	9532-140-003	1
10 Ring, Seal Mounting	9950-042-001	1
11 Tub Back Mating Ring	9487-261-002	1
12 Bolt 1/2-13x1 1/4" Tub end of bearing Housing	9545-017-009	6
12 Nut 1/2-13	8640-417-005	6
13 Support Arm Assy, Bearing Housing	9991-057-001	6
14 Bolt Pulley end of bearing housing, 3/8-16x1 1/2"	9545-029-003	6
* Nut, Flange Locking 3/8"	8640-415-004	6
15 Pulley, Driven	9453-168-005	1
16 Ring, Tolerance	9487-234-001	1
17 Washer 1/2	8641-581-026	2
18 Bolt 1/2-13x1 1/4"	9545-017-009	1
19 Lockwasher 1/2 Ext. tooth	8641-582-016	1
* Cylinder Assy	9848-121-001	1
* Tub and Cylinder Assy.	9869-037-001	1
* Plastic Plug 1 1/2"-(inside cylinder)	9456-041-007	1

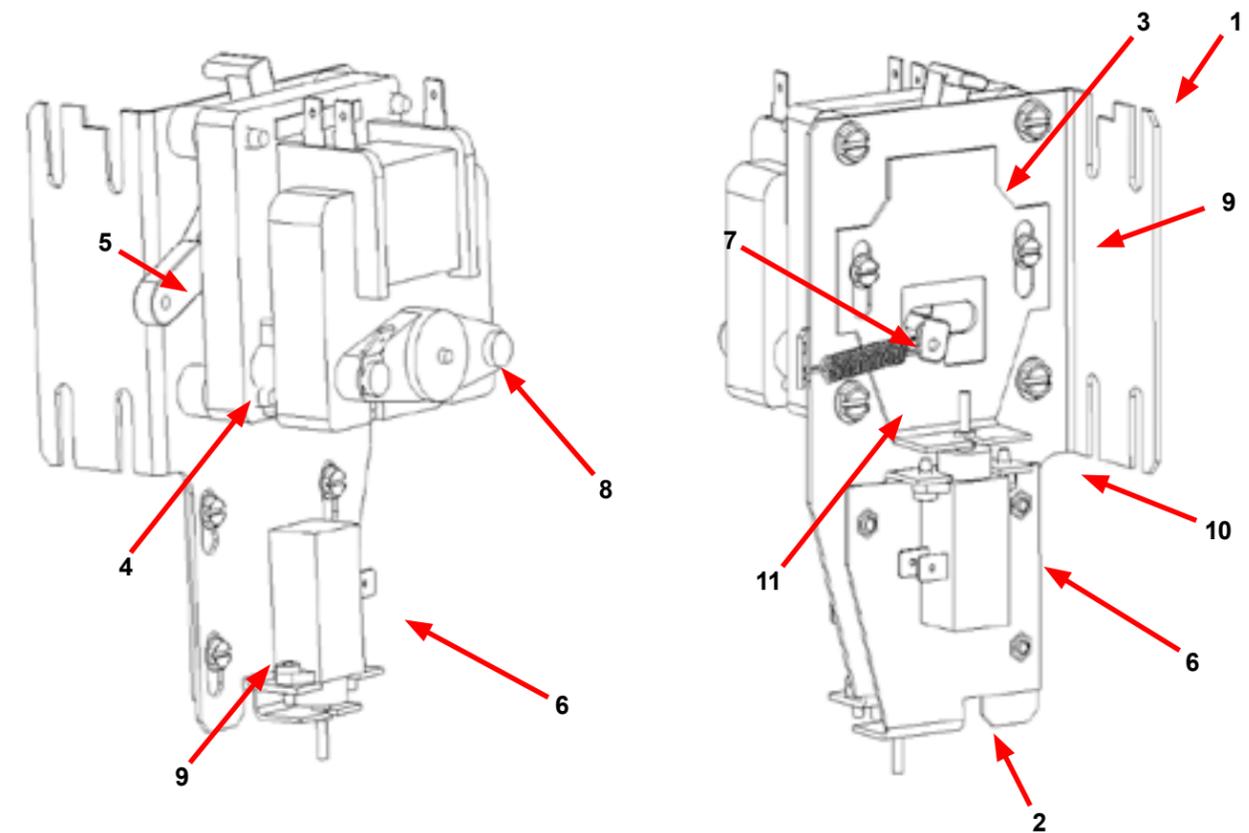


Door Lock Assembly (continued)

Key	Description	Part Number	Qty
33	Lock Assy, Complete (#1-22)(includes #1 thru #22)	9885-024-001	1
1	Plate Assy, Door Lock	9982-346-001	1
2	Washer, Flat	8641-581-030	1
3	Actuator, Latching Switch	9008-005-001	1
4	Pawl, Locking	9732-346-002	1
5	Washer, Spring	8641-569-003	1
6	Ring, Retaining	9487-200-004	1
7	Bracket Switch	9029-163-001	1
8	Nut, Hex 10-32 UNF	8640-413-002	2
9	Spring, Actuating	9534-364-002	1
10	Screw, Hx. 10-32 x 1"	9545-012-020	1
11	Nut, Elastic Stop 10-32	8640-413-004	2
12	Spring, Return	9534-364-001	2
13	Pin, Guide	9451-193-001	1
14	Ring, Retaining	9487-200-005	1
15	Washer	8641-581-031	1
16	Switch, Latching Sensing	9539-461-008	1
17	Shield, Switch	9550-169-003	3
18	Screw 4-40 x 5/8"	9545-020-001	2
18	Nut, Twin 4-40	8640-401-001	1
19	Switch, Locking Sensing	9539-461-007	2
20	Actuator, Switch Locking	9008-006-003	1
21	Screw 4-40 x 1 1/8"	9545-020-003	2
21	Nut, Twin 4-40	8640-401-001	1
*	Spacer Sensor	9538-182-001	*
*	Shim, Door Lock, Thin	9552-037-001	AR
*	Screw, Lock mtg 1/4"-20 x 3/4"	9545-018-014	3
*	Lockwasher 1/4" Ext tooth	8641-582-007	3



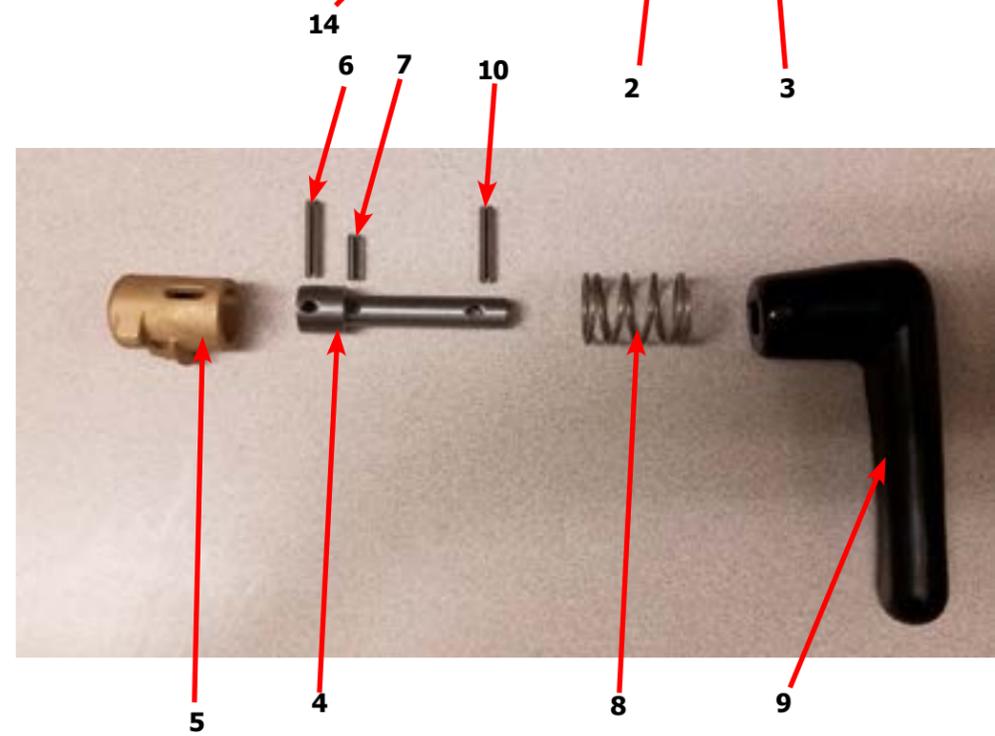
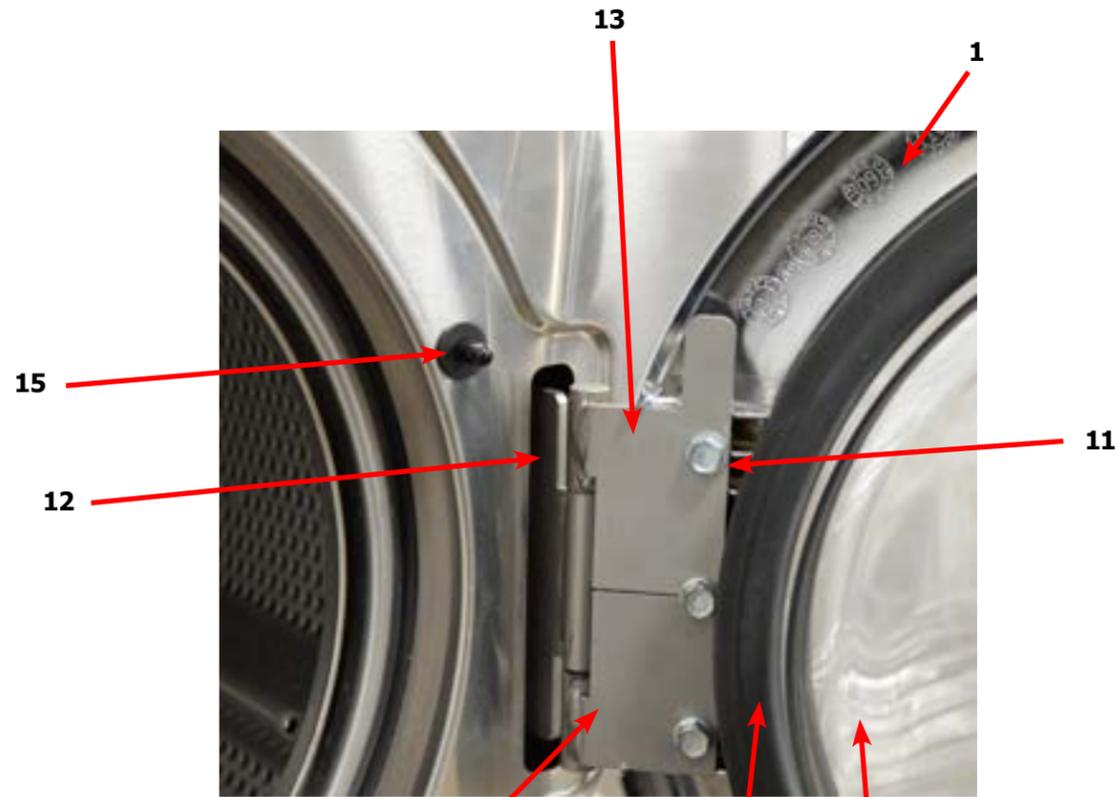
Gear Motor Door Lock Assembly



Key	Description	T-350	QTY
*	Actuator Assembly (Includes 1-10, Rod NOT included)	9892-017-002	1
1	Bracket Assy, Slide Lock Actuator	9985-199-001	1
2	Bracket Assy, Slide - Unlock	9985-196-001	1
3	Bracket Slide Lock	9029-278-001	1
4	Spacer, Plastic	9538-157-021	4
5	Arm - Door Lock	9001-063-001	1
6	Thermoactuator - Door Lock Relay 24VAC	9586-001-003	2
7	Spring - Extension	9534-350-001	1
8	Motor & Gear Assembly 24VAC	9914-137-014	1
9	Screw -Hxwshrdslsems, 6-32 x 3/16	9545-044-003	6
10	Cross Recessed PAN Hd Tapping screw	9545-031-011	4
11	Screw hxwsdhsi, 10-24 - 1.25f, ctd	9545-046-007	4
12	Standoff-Wire	9527-007-001	1
*	Rod, Door Lock	9497-225-018	1
*	Harness, Door Lock/Drain, P17	9627-820-002	1

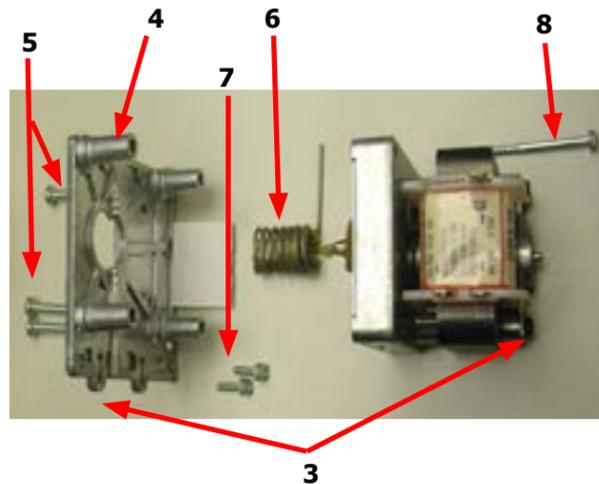
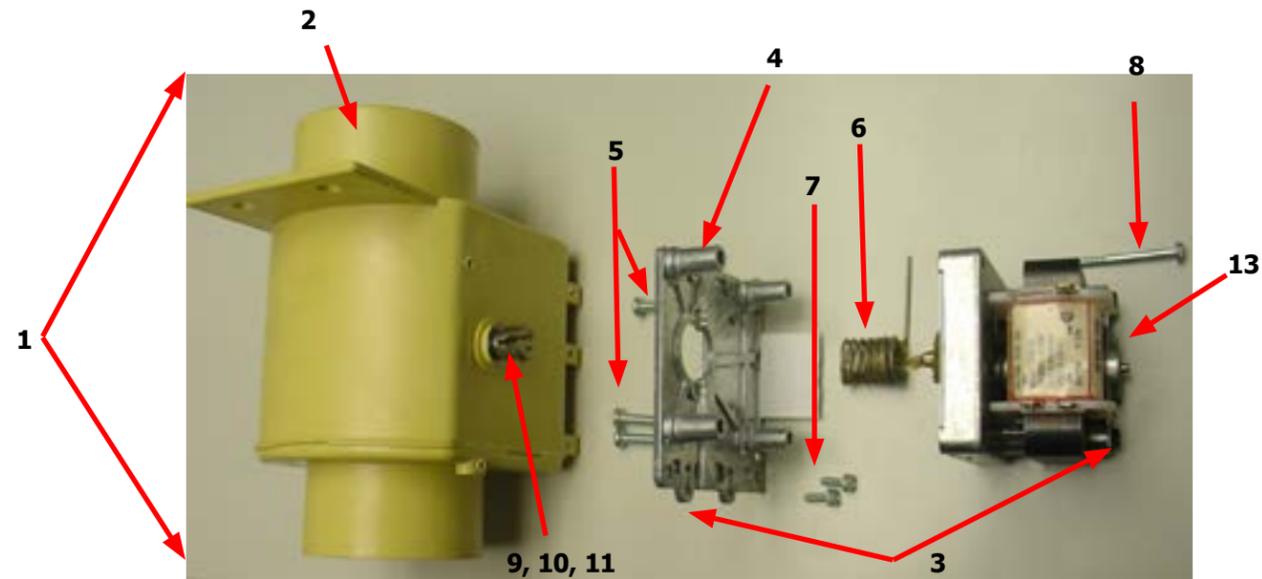
WCS350XA Loading Door Group Part

Key	Description	Part Number	Qty
	Loading Door, Complete #1-10	9960-308-001	1
1	Loading Door, Ring (180 Degrees)	9487-264-002	1
2	Gasket, Loading Door	9206-411-002	1
3	Window, Loading Door	9635-018-001	1
*	Shaft Assy, Locking (includes 4 thru 7)	9913-134-003	1
4	Shaft, Door Locking	9537-195-002	1
5	Cam, Locking	9095-051-001	1
6	Pin, Groove (1 1/4)	9451-181-005	1
7	Pin, Groove (3/4)	9451-181-004	1
8	Spring, Lock Cam	9534-360-002	1
9	Handle, Door	9244-091-001	1
10	Pin, Door Handle (groove)	9451-181-005	1
11	Screw, Loading Door Mtg (5/16" TF)	9545-056-002	3
*	Shim, Loading Door Hinge, Thin	9552-037-001	1
12	Door Hinge Assembly Mounts to Tub Front	9955-030-001	1
*	Screw, Hinge Mtg 5/16" -18x 3/4"	9545-014-009	3
*	Lockwasher 5/16" Ext tooth	8641-582-009	3
*	Wiring Harness doorlock safety Switch Assembly	9627-816-002	1
*	Wire Assembly Door Close Switch, Red 17"	8220-063-025	1
*	Wire Assembly Door Close Switch, BLK 17"	8220-063-026	1
13	Leaf assembly, Hinge Top	9845-008-001	1
14	Leaf assembly, Hinge Bottom	9845-005-002	1
15	Switch Door Closure	9539-492-001	1

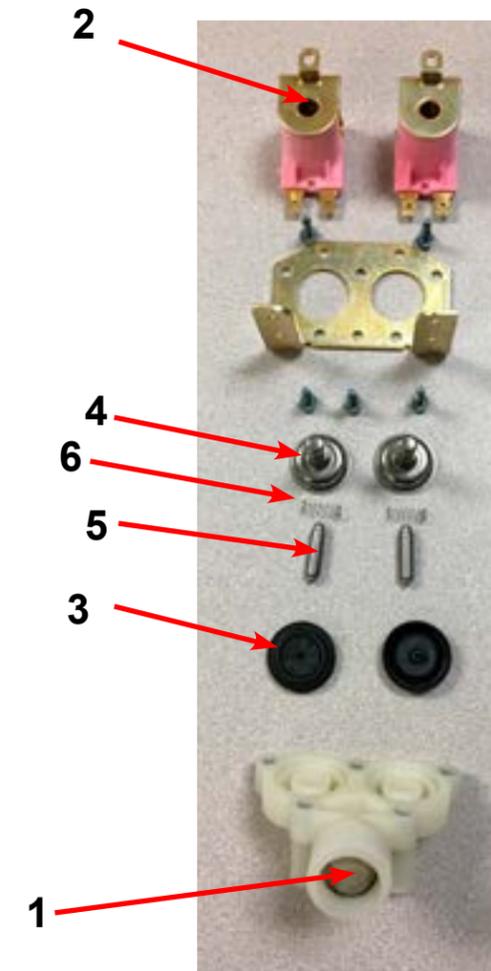


Drain Valve Group Part # by Model

Key	Description	Part Number	Qty
1	Valve, Drain (includes #2 thru #11)	9379-199-002	1
2	Body, Valve (w/ball)	9064-068-002	1
3	Motor & Gear Train (complete)	9914-137-019	1
4	Plate, Motor Mtg	9452-538-001	1
5	Screw	8639-994-001	1
6	Spring, Drive	9534-340-001	1
7	Screw	9545-054-001	1
8	Screw	9545-054-002	1
9	Seal, V Packer	9532-134-001	1
10	Washer	8641-584-001	1
11	Pin, Main Drive	9451-196-001	1
*	Plate (spacers needed for replacement motor mtg. plate)	9538-149-001	1



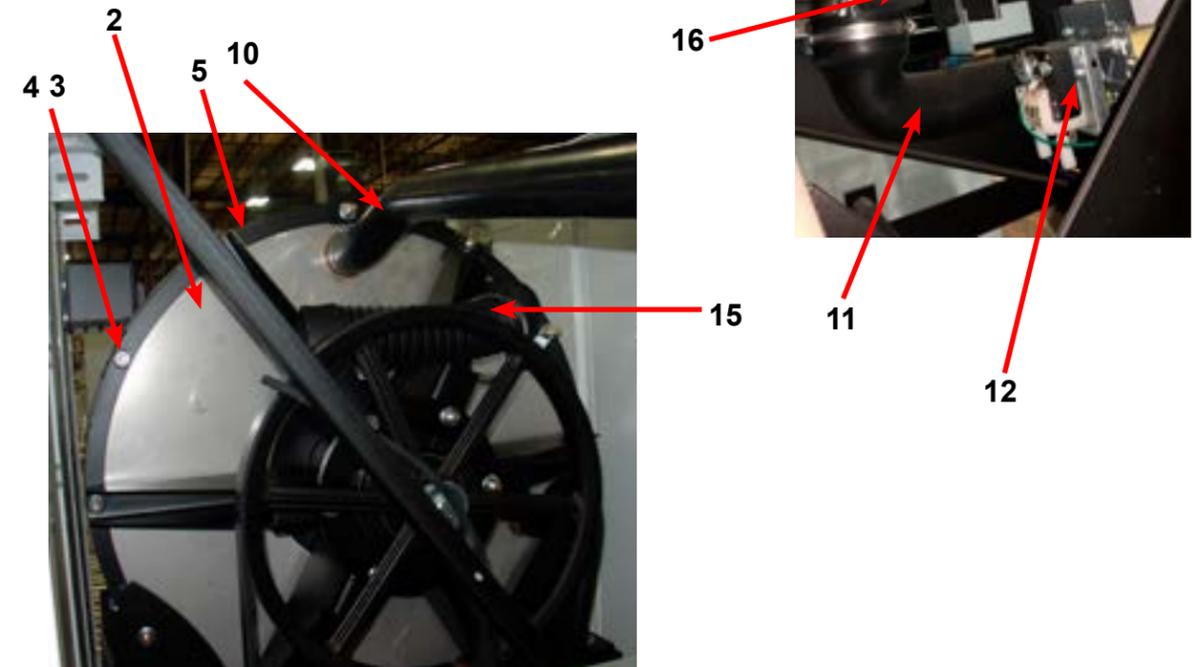
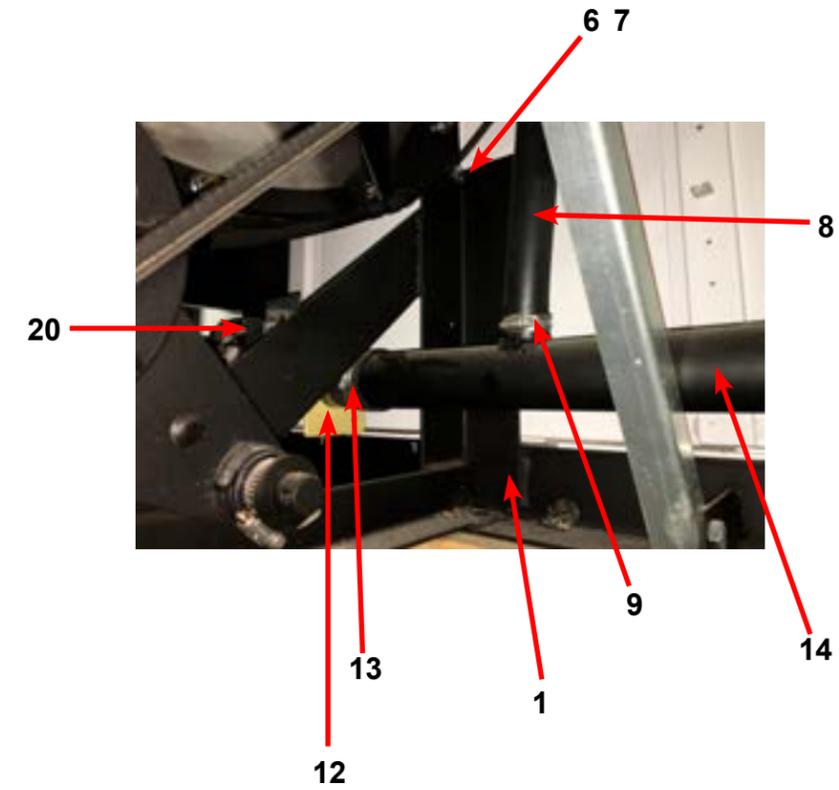
Water Inlet Valve Breakdown



Key	Description	Part Number	QTY
*	Valve, Water Inlet (includes 1 thru 6) - Invensys	9379-183-013	2
1	Screen, Inlet end of valve	9555-056-001	2
2	Coil Assy., 24 V Invensys	9089-017-004	2
3	Diaphragm Invensys (EPDM)	9118-049-003	2
4	Guide, Solenoid Invensys	9211-021-002	2
5	Armature Invensys	9015-008-001	2
6	Spring, Armature Invensys	9534-298-001	2

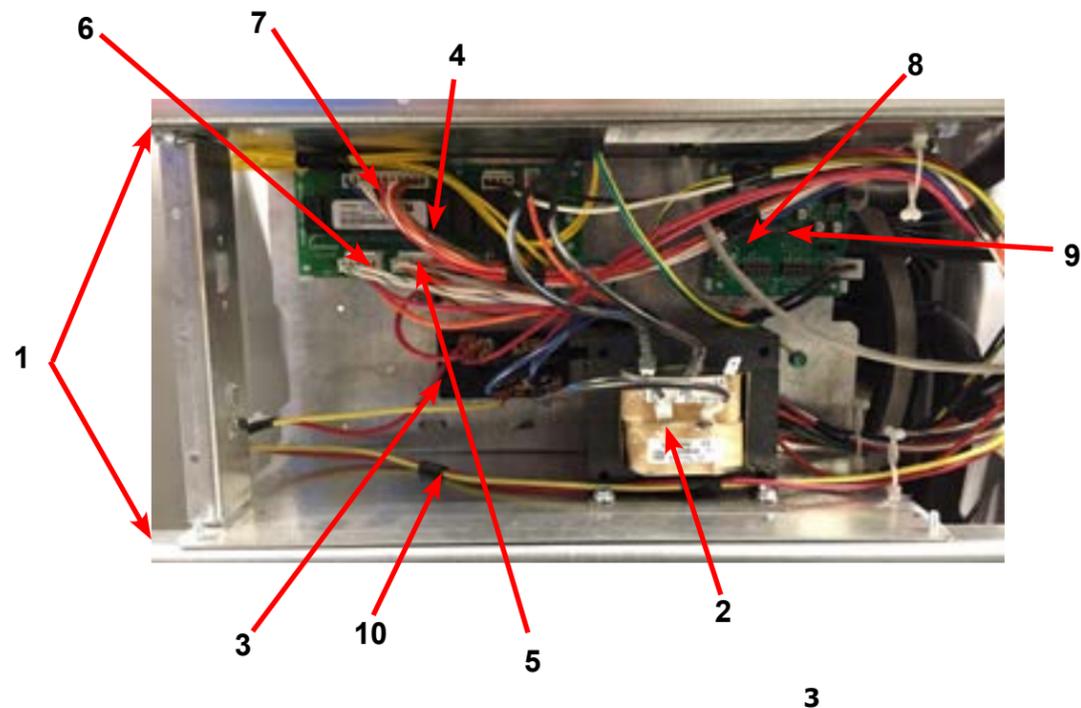
WCS350XA Chassis and Drain by Part

Key	Description	Part Number	Qty
1	Base Assy,Frame	9945-147-002	1
*	Outer Tub Assy	9930-176-001	1
*	Tub & Cylinder Assy	9869-043-001	1
*	Cylinder Assembly, (Includes Spider)	9848-121-001	1
2	Back Ass'y, Tub	9962-016-001	1
3	Bolt, 3/8-16" x 1 1/2" Tub Back to Tub	9545-029-003	16
4	Nut, Flange Lock	8640-415-004	18
*	Ring Assy, Tub Mtg-Front	9950-057-002	1
*	Bolt, Top Front Ring 1/2" -13 x 3"	9545-017-012	1
*	Nut 5/8"	8640-417-005	1
5	Ring Assy.Clamp Tub Mtg.- Rear	9950-046-001	1
6	Bolt, 1/2-13 x 1 1/4 Tub & Rings to Base, Front & Rear	9545-017-009	4
7	Nut, 1/2-13 Wizlok	8640-417-005	4
8	Hose, Overflow	9242-449-002	1
9	Clamp	8654-117-018	2
10	Tube, Over Suds	9242-463-005	1
*	Clamp	8654-117-014	1
11	Hose, Tub to Drain Valve	9242-468-001	1
12	Valve, Drain	9379-199-002	1
*	Screw, Valve to Bracket 1/4x3/4	9545-030-002	2
13	Hose, Drain Valve to Tube	9242-451-002	1
*	Clamp, Hose (Drain Valve to Tube) & (Drain Hose to Valve)	8654-117-009	2
*	Screw Tube (Bracket to Base 1/4B x 3/4)	9545-030-002	2
14	Tube Assy, Drain	9915-132-002	1
15	Hose, Vacuum Brkr. to Tub	9242-458-001	1
*	Clamp	8654-117-015	2



Electrical Components, Control Trough

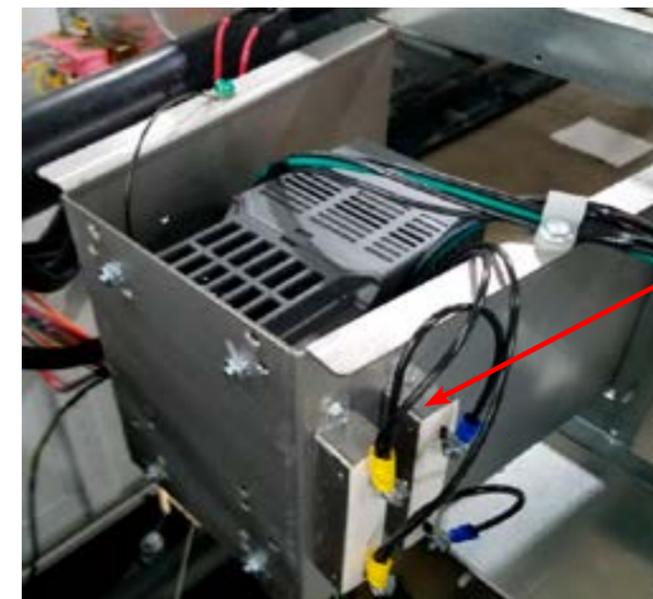
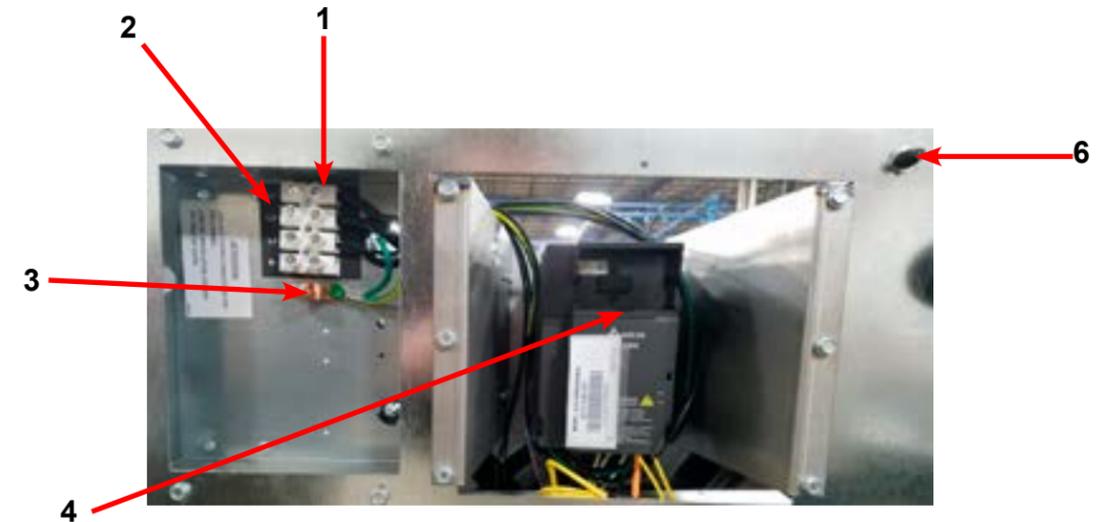
Key	Description	Part Number	Qty
1	Trough Assy,Controls 208-240 volt	9857-228-001	1
	Trough only	9839-018-001	1
2	Transformer, Control (208/230/60 Hz In 24 VAC Out Volts)	8711-004-004	1
*	Wire Assembly, Red 28"	8220-062-025	2
*	Screw, #10B x 1/2	9545-008-026	4
*	Lockwasher #10	8641-582-006	4
*	Wire Assembly, BLK/BLU	8220-001-231	1
*	Wire Assembly, BLK/RED	8220-001-230	1
3	Terminal Block Assy, POWER	9897-026-004	1
*	Screw, Mtg 8ABx1/2"	9545-045-012	2
*	Harness-extention, Transformer	9627-826-001	1
*	Screw, 8B x 1/4	9545-045-001	2
*	Lockwasher #10	8641-582-006	2
*	Wire Assembly, P12, Red 7"	9631-381-018	1
4	PCB assembly Relay Main	9473-006-001	1
*	PCB support 3/8 edge Holding	9548-285-001	10
*	Wiring Harness, Door Lock P15/P4	9627-816-002	1
*	Wiring Assembly Yel. 32" P14 & P13	8220-064-023	2
5	Wiring Harness, Drain,Thermo,Door LockP17	9627-820-002	1
6	Wiring Harness WaterValve/P19	9627-795-004	1
7	Wiring Harness P8/P16	9627-819-001	1
*	Wiring Harness P20/P21	9627-818-002	1
8	Sensor-Pressure Switch	9732-315-001	1
9	Harness Assembly, Pressure Switch	9627-908-015	1
10	Wiring Harness-Main	9627-914-002	1



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Electrical Components, Upper Channel Part

Key	Description	Part Number	Qty
1	Terminal Block Assy, POWER	9897-033-002	1
*	Screw, Mtg 6ABx3/4"	9495-031-010	2
2	Strip, Terminal Marker	9558-025-001	1
3	Terminal, Lug-Solderless (Ground)	8652-134-001	1
*	Screw, 10-32TTx1/2 Green (Control Trough)	9545-008-027	
*	Wiring Harness Power Terminal To VFD & Control Transformer and ground wire	9627-747-003	1
4	VFD Delta drive 208-240 volt	9375-034-004	1
*	Cable, Data Communication	9806-025-002	1
*	Wiring Assembly Yel. 32"	8220-064-023	2
5	Braking resistors (200 ohm)	9483-004-002	2
*	Wire Assembly-Jumper, BLK (Breaking Resistors)	8220-117-002	2
*	Label Fusing and Installation 7 amp Rear	8502-619-004	1
6	Circuit Breaker 7 AMP	5198-211-002	1
*	Plate Mouting water valves	9452-691-001	1



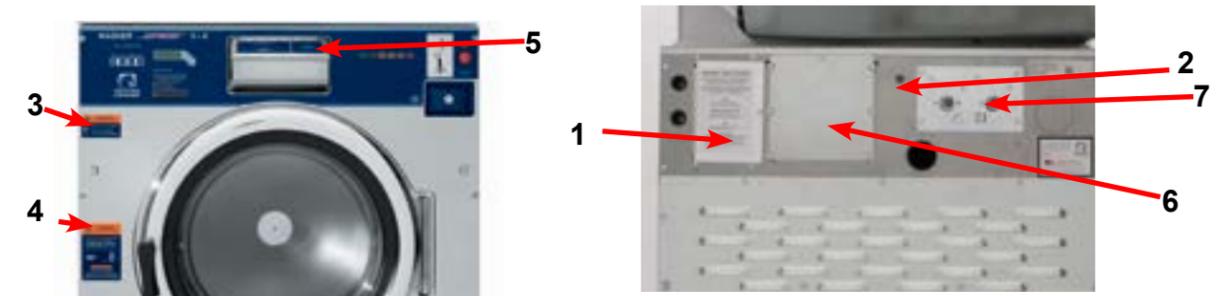
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Front Panel Control Group Part

Key	Description	Part Number	Qty
*	Nameplate,Control Panel Blue (one piece)	9412-238-002	1
*	Nameplate,Control Panel Black(one piece)	9412-238-001	1
1	PCB assembly Control /Display	9473-010-001	1
*	Spacer Pushbutton (Micro)	9538-192-001	1
*	Retainer Pushbutton (Micro)	9486-158-001	1
*	Nut Hexelasticstop #4-40	8640-424-002	2
*	Pushbutton Control (coin)	9035-062-001	1
*	Spacer Plastic #6x9/16	9538-157-018	5
*	Nut Elasticstop #6-32	8640-411-002	4
*	Nut-Hexkeps, #6-32	8640-411-003	1
2	Harness LEDPCB	9627-797-001	1
3	Harness Doorlock, Switches	9627-816-002	1
4	PCB assembly Mode lights	9473-005-001	1
*	Spacer Plastic #6x9/16	9537-157-018	2
*	Nut Hexkeps #6-32	8640-411-003	2
5	Switch Assembly Emergency Stop (includes Wire Harness)	9732-223-002	1
*	Spacer Plastic #8x5/16 E-Stop	9538-157-020	2
*	Nut HexKep #8-32 E-Stop	8640-412-005	2
*	Plate to mount e-stop button	9452-725-001	1
6	Door Locking Actuator 24 volts	9892-017-002	1
*	Hex Nuts (mounting gear motor to control)	8640-412-005	4
7	Battery	8612-001-001	1
8	Program-switch	9539-495-001	1
*	Wiring Harness program switch	9627-910-002	1
*	Bracket-Program switch	9029-267-001	1

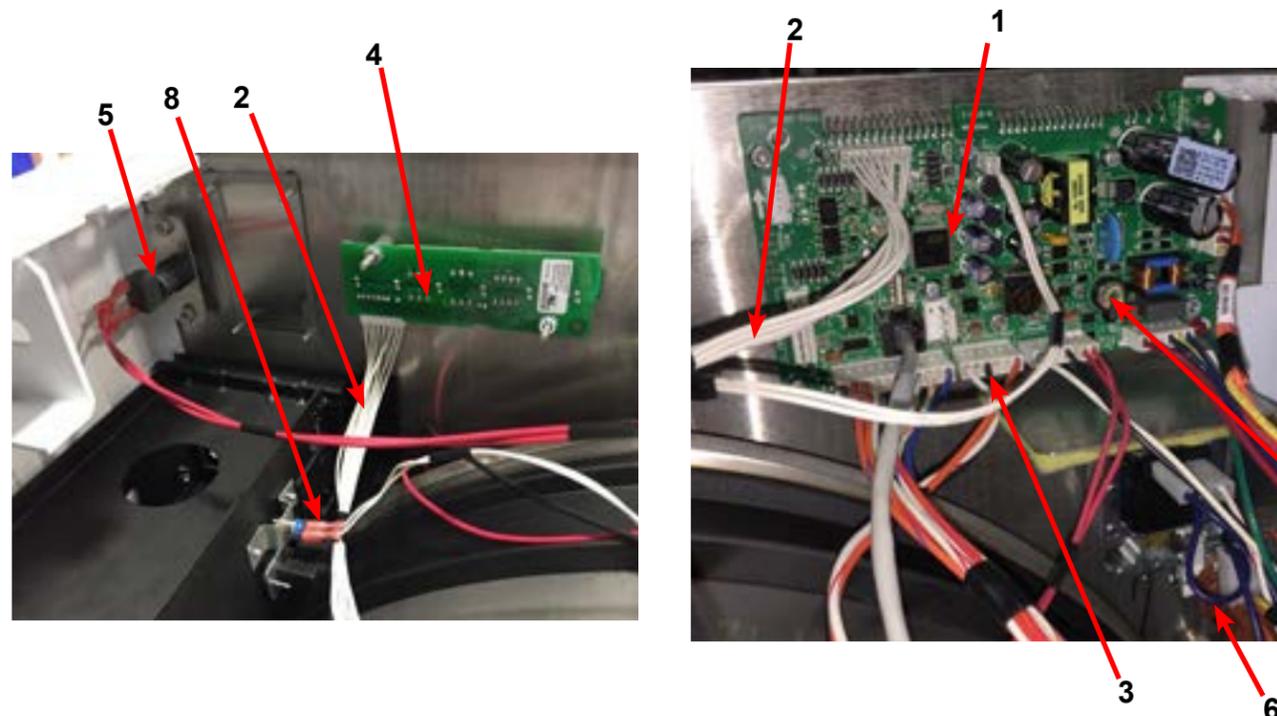
Labels and Diagrams by Part

Key	Description	Part Number	Qty
*	Wiring Diagram, Coin	9506-809-001	1
1	Label High Voltage Warning	8502-614-004	1
*	Cover controls	9074-267-001	1
2	Label Fusing & Installation	8502-619-004	1
3	Label Warning Risk of Injury Blue	8502-759-002	1
*	Label Warning Risk of Injury Black	8502-759-001	1
4	Label Warning Door Opening Blue	8502-757-002	1
*	Label Warning Door Opening Black	8502-757-001	1
*	Booklet Owners	8514-281-001	1
5	Label, Dispenser Instructions, Blue	8502-756-002	1
*	Label, Dispenser Instructions, Black	8502-756-001	1
6	Cover-Motor Control	9074-268-001	1

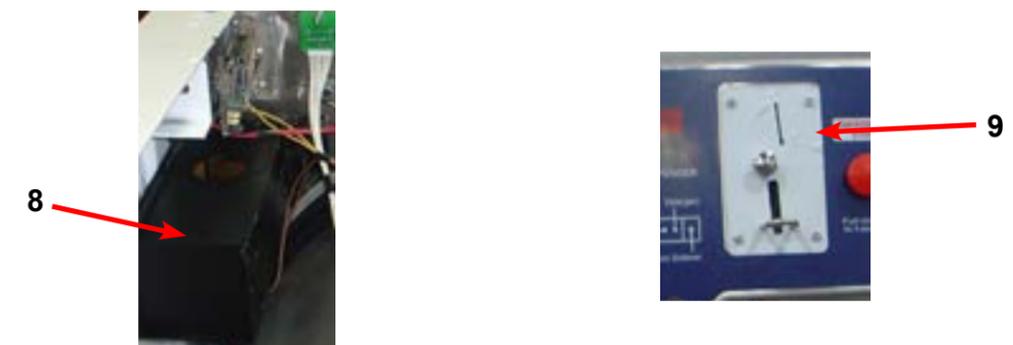


Coin Handling by Part

Key	Description	Part Number	Qty
8	Vault, Assy	9942-028-003	1
*	Screw, 10B x 1/2" Vault Mtg	9545-008-026	4
9	Coin Acceptor Complete (Optical Switch)	9021-094-001	1
*	Screw, Acceptor Mtg	9545-053-002	4
*	Retainer-coinacceptor	9486-145-001	1
*	Harness Coin Switch	9627-916-001	1



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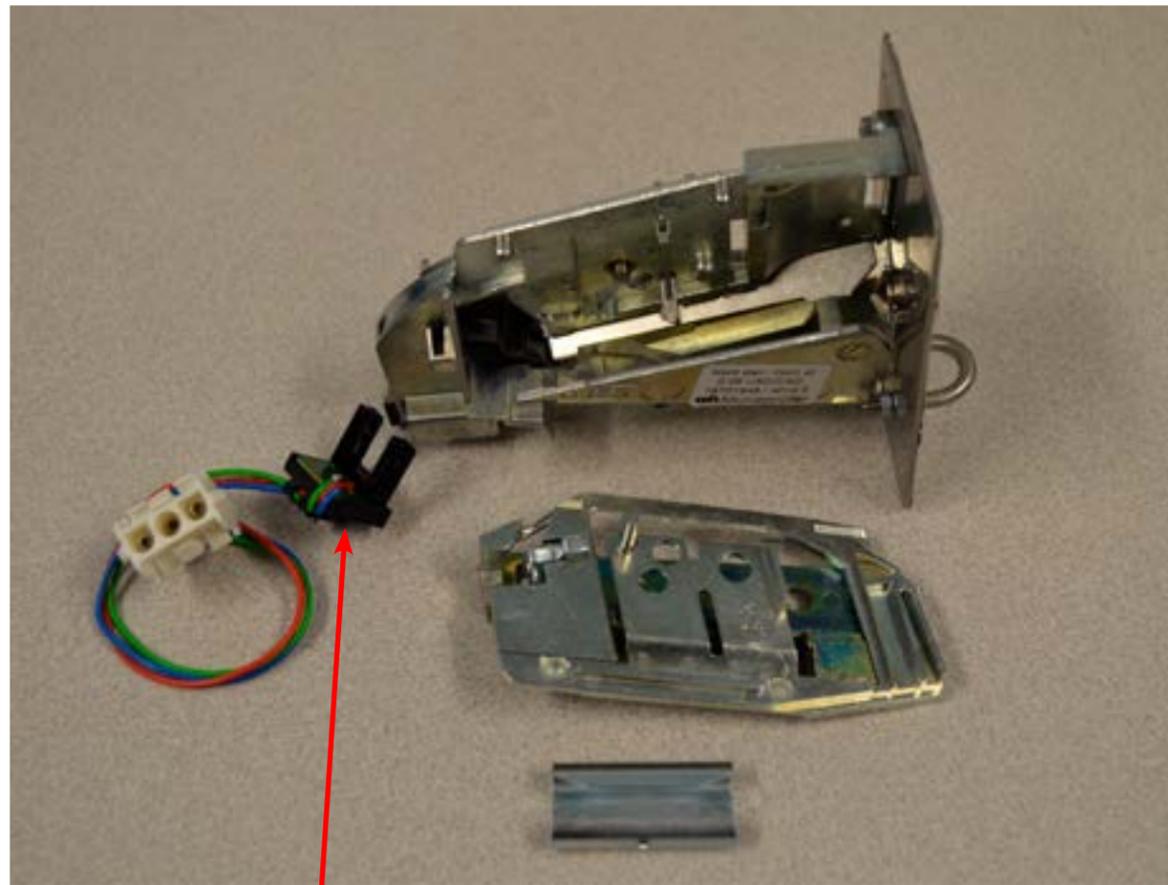


Coin Handling Group

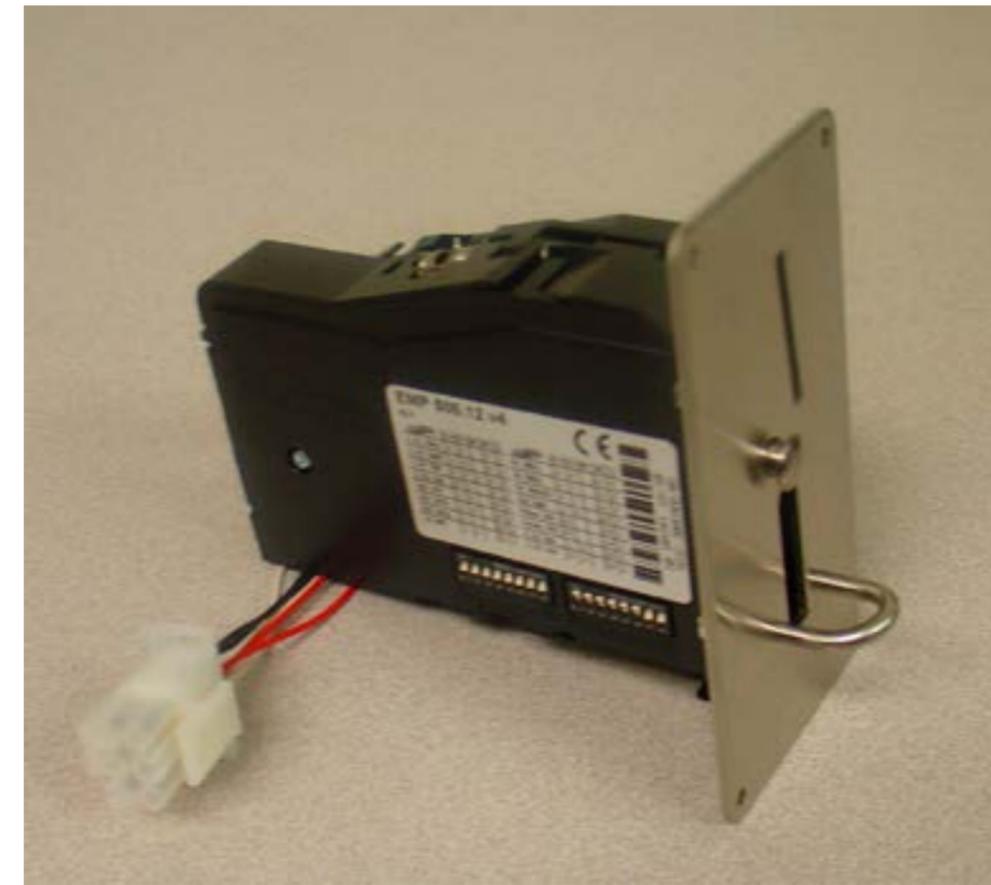
Key	Description	Part Number	Qty
	Coin Acceptor, Optical, SWD, US Quarter	9021-094-001	1
*	Harness-Extension ,Control to Acceptor, Optical Dryer	9627-916-001	1
*	Retainer, Coin Acceptor	9486-145-001	1
*	Screw, Torx	9545-053-002	4
1	Switch Assembly, Optical Sensor, SWD	9801-099-003	1
*	Screw-Height Bar, 3mm	9545-039-002	2
	Below not included		
*	Harness, Acceptor Mechanical (Control to Acceptor)	9627-783-003	1
*	Coin Vault	9942-028-003	1
	Screw, 10AB X 1/2	9545-008-024	2

Coin Handling Group Electronic

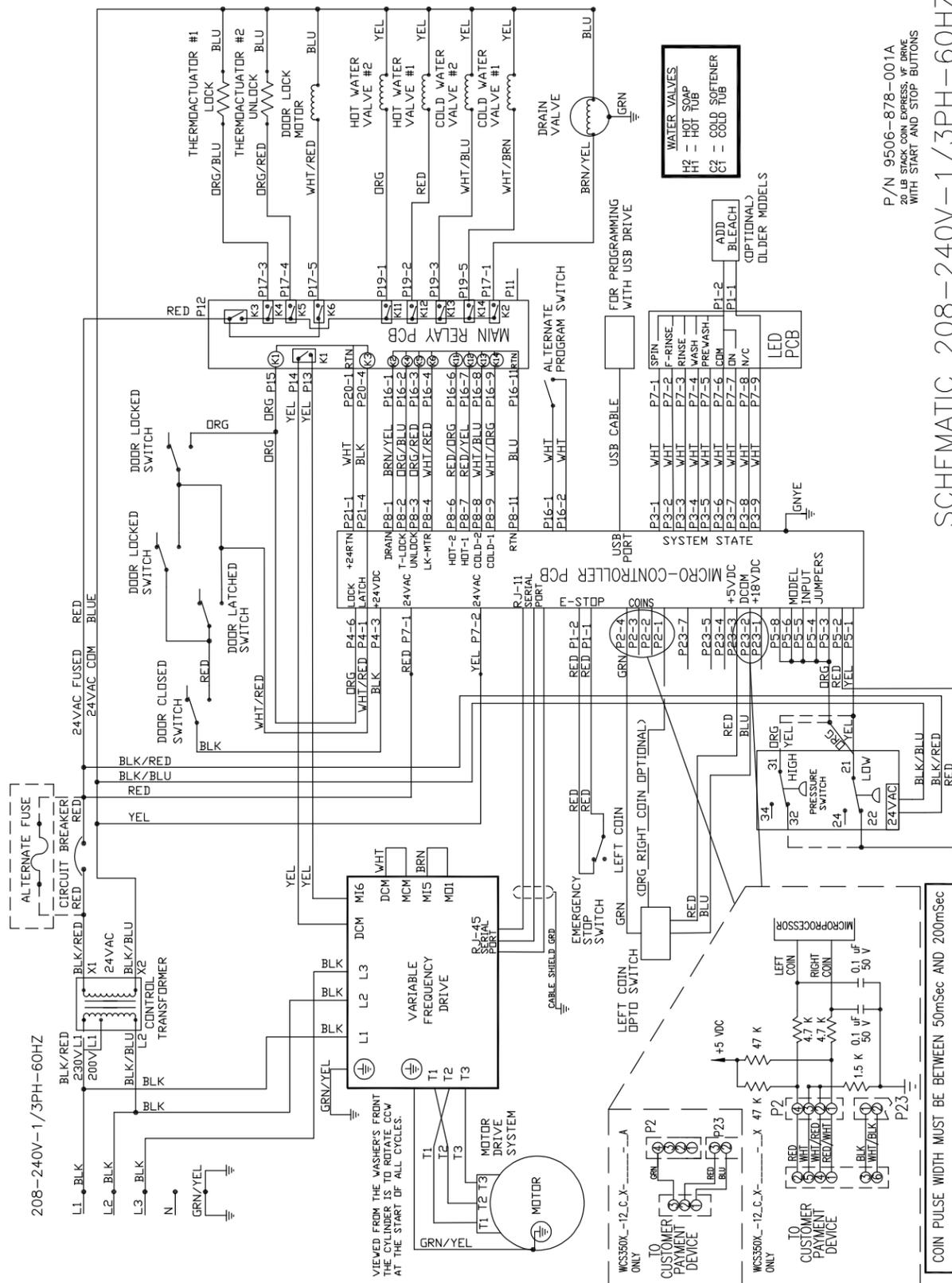
Key	Description	Part Number	Qty
	Kit, Electronic Coin Acceptor	9732-303-004	1
	Acceptor-Electronic, US/CA	9021-054-001	1
	Harness, Control to Acceptor, Dryer	9627-909-003	1
	Harness, Control to Acceptor, Washer	9627-909-002	1
	Label-Wiring, Electronic Acceptor	8502-730-001	1
	Retainer Coin Acceptor, Electronic	9486-155-001	2
	Screw, 4B x 5/8 ss, Torx T-10	9545-053-002	4
	Below not included		
	Harness, Adaptor Electronic to Mechanical switch	9627-901-001	



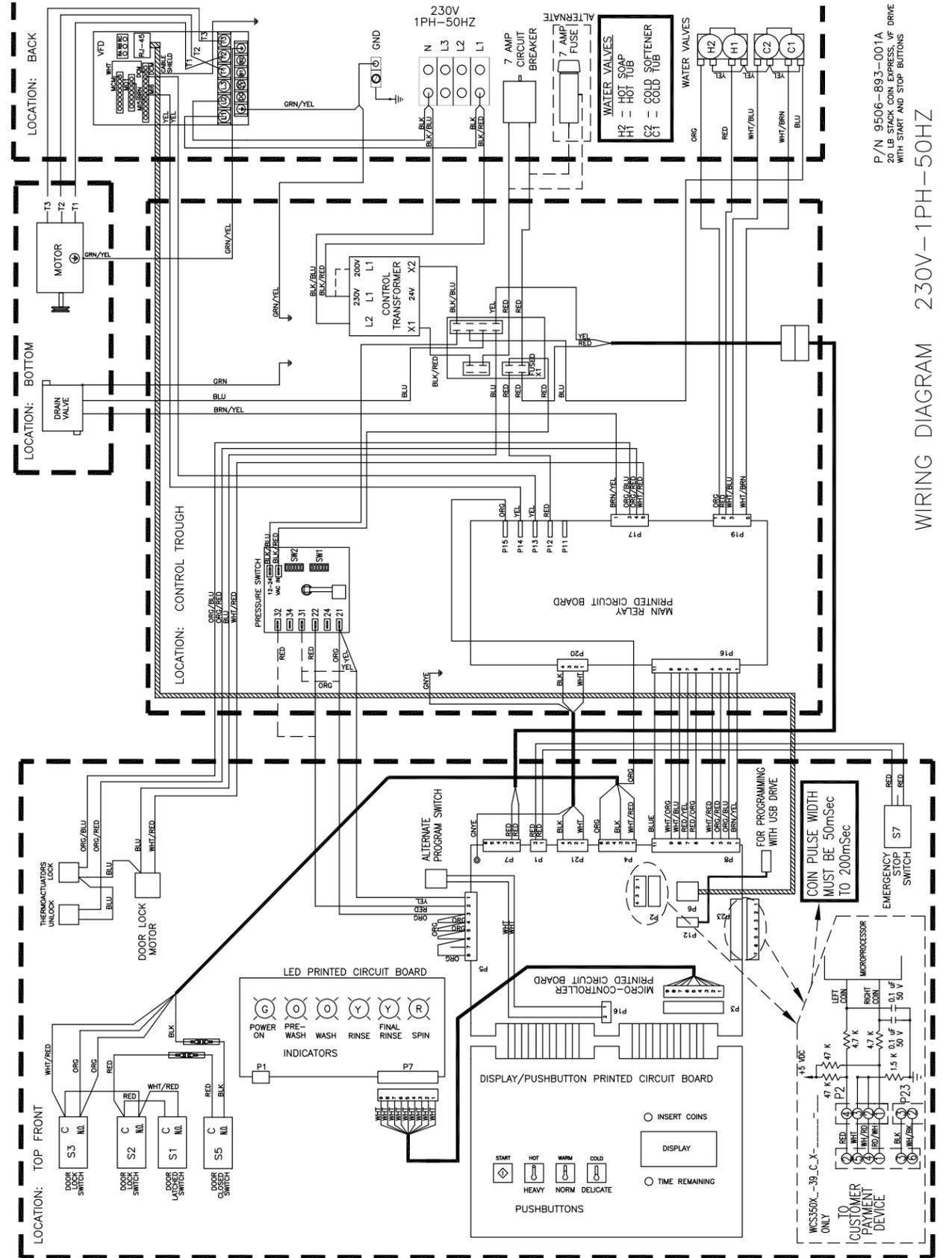
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Wiring Schematic for 60hz Coin Washer



Wiring Diagram for 60hz Coin Washer



Coin Handling

KEY	Part Description		QTY
*	Wiringlabel-Diagram/Schematic -39	9506-820-001	1
*	Wiringlabel-Diagram/Schematic -12	9506-809-001	1
1	Elect. Acceptor for C series SWD, Malaysia, Singapore, Thailand	9732-303-001	
	Elect. Acceptor for C series SWD, Swiss, Euro	9732-303-002	
	Elect. Acceptor for C series SWD, Chile, Mexico	9732-303-003	
	Elect. Acceptor for C series SWD, US, CAN	9732-303-004	
	Elect. Acceptor for C series SWD, Japan, Taiwan, Korea	9732-303-005	

Notes



