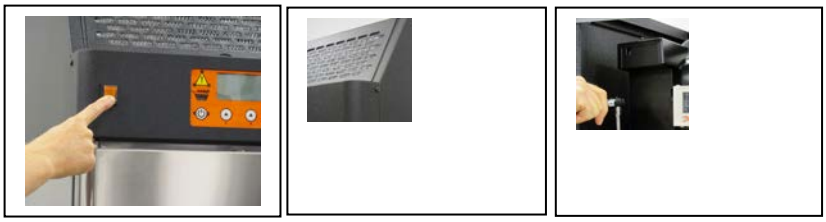
F3D3 Dual and Single Lane Versions Frozen French Fry Dispenser

Service Manual



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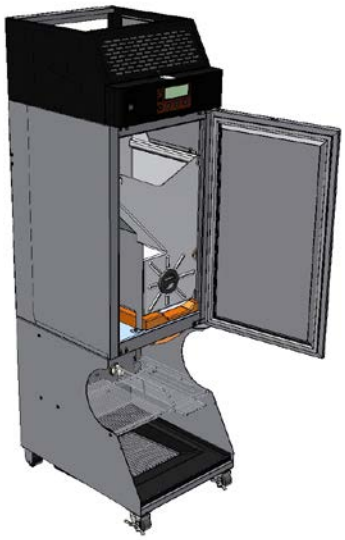
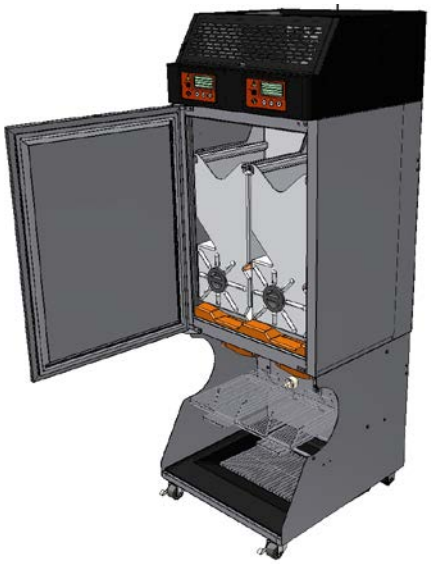
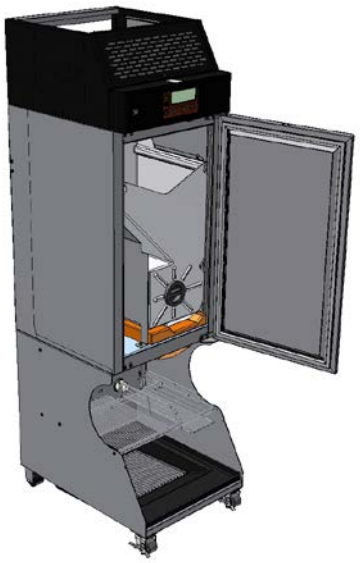
Model Identification Guide

Model F3D3 (Shown Hinged-Left)		**Model F3D3S** (Shown Hinged-Right)	
			
Lanes & Controls:	Two Lanes	**Lanes & Controls:**	Single Lane
Unit Width:	711 mm (28”)	**Unit Width:**	559 mm (22”)
Refrigerant Type	R-404A	**Refrigerant Type**	R-404A

Model F3D3P (Shown Hinged-Left)		**Model F3D3SP** (Shown Hinged-Right)	
			
Lanes & Controls:	Two Lanes	**Lanes & Controls:**	Single Lane
Unit Width:	711 mm (28”)	**Unit Width:**	559 mm (22”)
Refrigerant Type	R-290 **PROPANE**	**Refrigerant Type**	R-290 **PROPANE**

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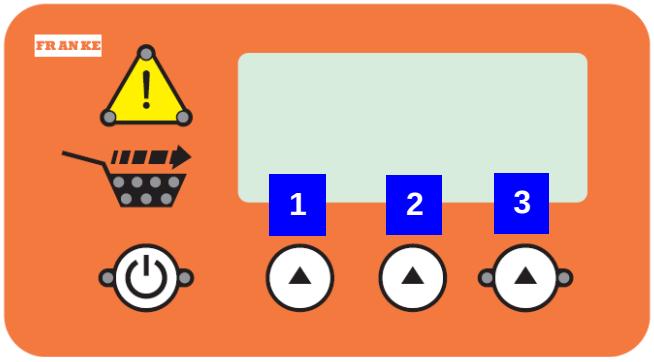
Setup Access & Resetting

F3D3 Series Fries Dispensers have easy access to Factory-Level (1) setup and resetting, using the lane operator interface touch panel & display. To access:

1) Leave unit plugged in.
2) Turn Main Power Switch **ON**.
3) Lane power must be **OFF**. Display will show current freezer temperature.



***NOTE:** All programming is done using the three choice buttons labeled: 1, 2 and 3 above.*

To Access Factory Level 1 Setup Parameters:		
Step	**Action Required** →	**Resulting Display**
1	From Standby condition use 3rd touchpad to enter: **3 3 3 3**. [The Entry Code]	Special Mode Select Cust Fact Exit
2	Press touchpad 2 = Fact(ory)	Factory Access Level Lev1 Lev3 Exit
3	Press touchpad 1 = Lev1	Low Level Reset ? Restores all NUM *[numbers]* Yes No Exit
4	Press touchpad 1 = Yes	Setup = US *[or actual setup]* Inc Dec Exit
5	Press touchpad 1 = Inc [to scroll through]: Press touchpad 2 = Dec [to go back up list]: **NOTE:** If you press 1 = Inc on Setup = APMEA, nothing changes. [Press 2 = Dec - to go back up list.]	Setup = Europe *or* Setup = Japan *or* Setup = Latin AM [America] *or* Setup = Canada *or* Setup = APMEA Inc Dec OK
6	When you press touchpad 3 = OK, screen goes to:	* Setting Country * * Specific Params * then:
		Setup Complete Config = US *[setup chosen]* then:
		Calibrate Menu Begin ? OK Exit
7A or	Press touchpad 3 = Exit	**Shut** *[appears then screen goes blank]*
7B	Press touchpad 1 = OK [to initiate calibration]	Calibrate Menu Loadcell = 00**XX** *[Tar Value]* All Clear ? OK Exit
8	Press touchpad 1 = OK **NOTE: See SM Section LCC** for Load Cell Calibration Instructions.	

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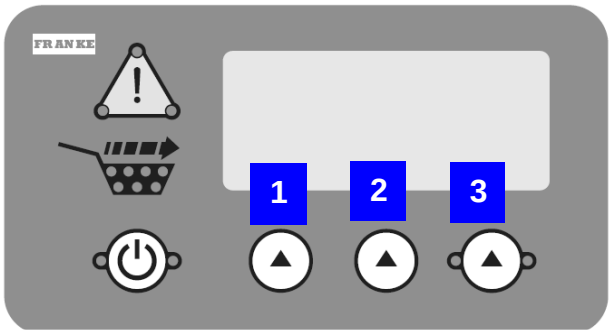
Parameter Access & Software Version

F3D3 Series Fries Dispensers provide easy access to Factory Level operating and service diagnostic parameters using the front operator interface touch panel & display. To access:

1) Leave unit plugged in.
2) Turn Main Power Switch **ON***.
3) Lane power must be **OFF**. Display will be blank or show current freezer temperature, depending on the model and lane.



***NOTE:** All programming is done using the three choice buttons labeled: 1, 2 and 3 above.*

For To Access Factory Level 3 Parameters:		
Step	**Action Required** →	**Resulting Display**
1	From Standby condition use 3rd touchpad to enter: **3 3 3 3**. [The Entry Code]	Special Mode Select Cust Fact Exit
2	Press touchpad 2 = Fact(ory)	Factory Access Level Lev1 Lev3 Exit
3	Press touchpad 2 = Lev3	Password ?? Enter Password **0** _ _ _ Inc OK Exit
4A	Press touchpad 2 = OK [Icon will move right to next digit]	Password ?? Enter Password **0 0** _ _ Inc OK Exit
4B	Press touchpad 2 = OK [Icon will move right to next digit]	Password ?? Enter Password **0 0 0** _ Inc OK Exit
4C	Press touchpad 2 = OK [Icon will move right to last digit], then:	Password ?? Enter Password **0 0 0 0** Inc OK Exit
4D	Press touchpad 1 = Inc once, to raise to 1, then:	Password ?? Enter Password **0 0 0 1** Inc OK Exit
5	Press touchpad 2 = OK	Language [first Parameter] P01 = English ++ -- ->

For F3D3 Software Version	To ID Version:	Use Table:
Software Version BL 2.00; APP 2.12a	On Lane Display	Parameter Table **1.11.1**
Software Version: **H47C1**	On Chip Label*	Parameter Table **1.11.2**
Software Version: **H46P9**	On Chip Label*	Parameter Table **1.11.3**

* **NOTE:** The chip version is also displayed briefly **during the startup sequence** (after Calibration Values), when the Main POWER-ON switch is first turned ON. It appears as: Firmware = H47C1, etc. on the second line.

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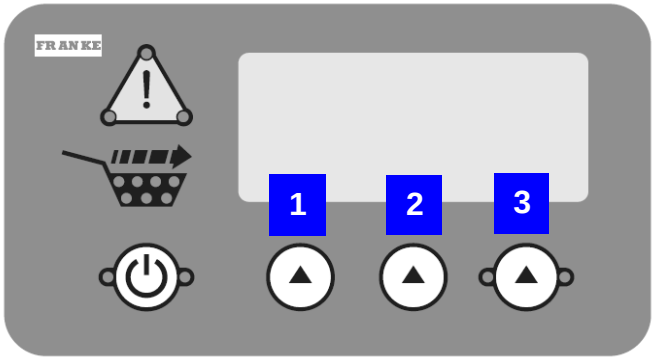
Parameter Access & Programming

F3D3 Series Fries Dispensers provide easy access to Factory Level operating and service diagnostic parameters using the front operator interface touch panel & display. To access:

1) Leave unit plugged in.
2) Turn Main Power Switch **ON**.
3) Lane power must be **OFF**. Display will be blank or show current freezer temperature, depending on the lane.



***NOTE:** All programming is done using the three choice buttons labeled: 1, 2 and 3 above.*

To Access Factory Level 3 Parameters:		
Step	**Action Required** →	**Resulting Display**
1	From Standby condition use 3rd touchpad to enter: **3 3 3 3**. [The Entry Code]	Special Mode Select Cust Fact Exit
2	Press touchpad 2 = Fact(ory)	Factory Access Level Lev1 Lev3 Exit
3	Press touchpad 2 = Lev3	Password ?? Enter Password **0** _ _ _ Inc OK Exit
4A	Press touchpad 2 = OK [Icon will move right to next digit]	Password ?? Enter Password **0 0** _ _ Inc OK Exit
4B	Press touchpad 2 = OK [Icon will move right to next digit]	Password ?? Enter Password **0 0 0** _ Inc OK Exit
4C	Press touchpad 2 = OK [Icon will move right to last digit], then:	Password ?? Enter Password **0 0 0 0** Inc OK Exit
4D	Press touchpad 1 = Inc once, to raise to 1, then:	Password ?? Enter Password **0 0 0 1** Inc OK Exit
5	Press touchpad 2 = OK	Language [first Parameter] P01 = English **++ -- ->**
See Parameter Spreadsheet for P-numbers, functions & default settings. NOTE Software Codes and exceptions that apply.		
Notes:	**Command Key: ++** to scroll up; **--** to scroll down; **->** to move flashing underscore __ under next value; **==** to accept or OK value or setting	
P02 Set Point Example:	Press 1 = **++** to increase temp. value [-000**4**] Press 2 = **--** to decrease temp. value [- 000**6**] Press 3 = **==** to accept (new) setting	Set Point [Refrigerator temp.] P02 = -000**5** F **++ -- ==**

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[For Latest Models with BL 2.00; APP 2.12a Chip Software[1)]]

Parameter		Range					Country Exceptions						GM Exceptions				
No.	Name	Low	High	Unit[3)]	Factory Default	Notes	US	EU	JP	LA	CN	AP	EU-B	US-GM	CAN-GM	Other-GM	EU-Y
P01	Language	1	5		1	1=English, 2=Deutsch, 3=Espanola, 4=Francais, 5=French/English (Canada)	1	1	1	1	5	1	1	1	5	1	1
P02	Set Point	-50	20	Deg F	-5	Temperature set point											
P03	Offset	-30	30	Deg F	8	Temperature offset from sensor											
P04	High Alarm Set Point	-100	50	Deg F	40	Temperature that triggers a high alarm (LON Models only)											
P05	High Alarm (Start Up) Delay	1	300	(M) minutes	100	Time to wait after high alarm signal, until message appears											
P06	High Alarm Dwell	1	300	(M) minutes	60	Temperature must remain (dwell) for this time											
P07	Hysteresis	0.5	5	Deg F	1.0	Used in temperature control											
P09	Compressor Off Time	1	200	(S) seconds	120	Minimum time the compressor must be off before restarting.											
P10	Down Shift LM	1	19 20=off	(M) minutes	4	Time for a size downshift from large to medium. 20 = Off	4	7	4	4	4	4	Off	Off	Off	Off	10
P11	Down Shift M1S	1	19 (20= off)	(M) minutes	20 (off)	Time for an initial size downshift from medium to small. 20 = Off	Off	3	Off	Off	Off	Off	Off	Off	Off	Off	5
P12	Down Shift M2S	1	19 (20= off)	(M) minutes	20 (off)	Time for subsequent size downshift from medium to small. 20 = Off	Off	7	Off	Off	Off	Off	Off	Off	Off	Off	10
P13	Drum (Motor) Torq(ue) Thres(hold)	10	1500		750	Motor stops if threshold exceeded. Approx 250 counts/amp of motor current.											
P14	Door (Motor) Torq(ue) Thres(hold)	10	1500		750	Motor stops if threshold exceeded. Approx 250 counts/amp of motor current.											
P15	Lift (Motor) Torq(ue) Thres(hold)	10	1500		750	Motor stops if threshold exceeded. Approx 250 counts/motor current.											
P16	Basket In Time	10	1500	mS	150	Time the basket must remain in to trigger a dispense cycle	150	350	150	150	150	150	150	150	150	150	150

NOTES: 1) No Main Board Chip Label. Software Vers(ion): **BL 2.00; APP 2.12a** appears on Lane Display.

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[For Latest Models with BL 2.00; APP 2.12a Chip Software[1)]]

		Range					Country Exceptions[2)]						GM Exceptions				
No.	**Name**	**Low**	**High**	**Unit[3)]**	**Factory Default**	**Notes**	**US**	**EU**	**JP**	**LA**	**CN**	**AP**	**EU-B**	**US-GM**	**CAN-GM**	**Other-GM**	**EU-Y**
P17	Basket Out Time	10	1500	mS	50	Time the basket must remain out before enabling dispense											
P18	Low Product Enable	Off	On		On	Prevents Low Product Warning being displayed.											
P19	Hi Accuracy Enable	Off	On		Off	Enables high accuracy (but slower) dispense for Japan.	Off	Off	On	Off	Off	Off	Off	Off	Off	Off	Off
P21	Large Fill Pct	50	100	%	90	**Reserved - Do not adjust.**											
P22	Medium Fill Pct	50	100	%	89	**Reserved - Do not adjust.**											
P23	Small Fill Pct	50	100	%	88	**Reserved - Do not adjust.**											
P26	Dual Language Toggle Rate	1	4		3	If Dual Language is enabled, this sets toggle rate: (1 = Off, 2 = Slow, 3 = Med, 4 = Fast)											
P27	Display Units	C	F		F	Temperature Display Units Celsius or Fahrenheit	F	C	C	C	C	C	C	F	C	C	C
P28	Backdoor Type	English	Numeric		English	Displays numeric codes with English or numeric codes only											
P29	Medium (Load) Factor	25	100	%	67	Weight of medium load as percent of large load	67	67	67	67	67	67	80	67	67	67	75
P30	Small (Load) Factor	25	100	%	50	Weight of small load as percent of large load	50	50	50	50	50	50	67	50	50	50	34
P31	Part Number	15 characters maximum. 1st must be 0-9 or F. 2nd must be 0-9, S, '.' or '-'. All others: 0-9, '-' or '.'															
P32	Serial Number	15 characters maximum. All characters: 0-9 or '-'															
P99	Exit					Exits Level 3, if Entered											

NOTES: 1) No Main Board Chip Label. Software Vers(ion): **BL 2.00; APP 2.12a** appears on Lane Display. [How is this called up?]

2) **Country Exceptions Abbreviations:** US = North America; EU = Europe; JP = Japan; LA = Latin America (South & Central); CN = Canada; AP = Asia, Pacific, Middle East & Australia

3) **Unit Abbreviation:** mS = Milliseconds

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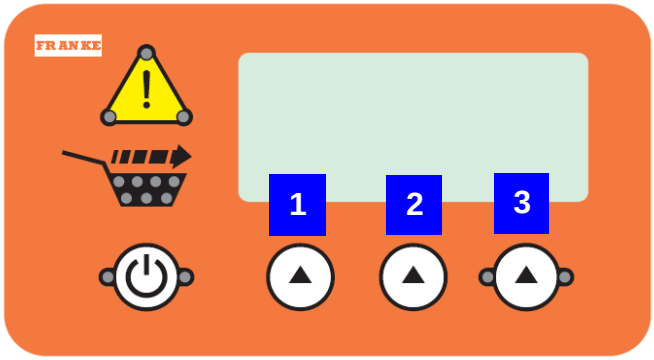
Parameter Access & Programming

F3D3 Series Fries Dispensers provide easy access to Factory Level operating and service diagnostic parameters using the front operator interface touch panel & display. To access:

1) Leave unit plugged in.
2) Turn Main Power Switch **ON**.
3) Lane power must be **OFF**. Display will be blank or show current freezer temperature, depending on the lane.



***NOTE:** All programming is done using the three choice buttons labeled: 1, 2 and 3 above.*

To Access Factory Level 3 Parameters:		
Step	**Action Required** →	**Resulting Display**
1	From Standby condition use 3rd touchpad to enter: **3 3 3 3**. [The Entry Code]	Special Mode Select Cust Fact Exit
2	Press touchpad 2 = Fact(ory)	Factory Access Level Lev1 Lev3 Exit
3	Press touchpad 2 = Lev3	Password ?? Enter Password **0** _ _ _ Inc OK Exit
4A	Press touchpad 2 = OK [Icon will move right to next digit]	Password ?? Enter Password **0 0** _ _ Inc OK Exit
4B	Press touchpad 2 = OK [Icon will move right to next digit]	Password ?? Enter Password **0 0 0** _ Inc OK Exit
4C	Press touchpad 2 = OK [Icon will move right to last digit], then:	Password ?? Enter Password **0 0 0 0** Inc OK Exit
4D	Press touchpad 1 = Inc once, to raise to 1, then:	Password ?? Enter Password **0 0 0 1** Inc OK Exit
5	Press touchpad 2 = OK	Language [first Parameter] P01 = English **++ -- ->**
See Parameter Spreadsheet for P-numbers, functions & default settings. NOTE Software Codes and exceptions that apply.		
Notes:	**Command Key: ++** to scroll up; **--** to scroll down; **->** to move flashing underscore __ under next value; **==** to accept or OK value or setting	
P02 Set Point Example:	Press 1 = **++** to increase temp. value [-000**4**] Press 2 = **--** to decrease temp. value [- 000**6**] Press 3 = **==** to accept (new) setting	Set Point [Refrigerator temp.] P02 = -000**5** F **++ -- ==**

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[For Models with firmware version F3D3 Main H47C1 ONLY [1)]]

Parameter		Range					Country Exceptions						GM Exceptions			
No.	Name	Low	High	Unit[3)]	Factory Default	Notes	US	EU	JP	LA	CN	AP	EU-B	US-GM	CAN-GM	Other-GM
P01	Language	1	5		1	1=English, 2=Deutsch, 3=Espanola, 4=Francais, 5=French/English (Canada)	1	1	1	1	5	1	1	1	5	1
P02	Set Point	-50	20	Deg F	-5	Temperature set point										
P03	Offset	-30	30	Deg F	8	Temperature offset from sensor										
P04	High Alarm Set Point	-100	50	Deg F	40	Temperature that triggers a high alarm (LON Models only)										
P05	High Alarm (Start Up) Delay	1	300	(M) minutes	100	Time to wait after high alarm signal, until message appears										
P06	High Alarm Dwell	1	300	(M) minutes	60	Temperature must remain (dwell) for this time										
P07	Hysteresis	0.5	5	Deg F	1.0	Used in temperature control										
P08	Ticks / Sec	1	100		60	Used to correct onboard time keeping.										
P09	Compressor Off Time	1	200	(S) seconds	120	Minimum time the compressor must be off before restarting.										
P10	Down Shift LM	1	19 20=off	(M) minutes	4	Time for a size downshift from large to medium. 20 = Off	4	7	4	4	4	4	20	20	20	20
P11	Down Shift M1S	1	19 (20= off)	(M) minutes	20 (off)	Time for an initial size downshift from medium to small. 20 = Off	20	3	20	20	20	20	20	20	20	20
P12	Down Shift M2S	1	19 (20= off)	(M) minutes	20 (off)	Time for subsequent size downshift from medium to small. 20 = Off	20	7	20	20	20	20	20	20	20	20
P13	Drum (Motor) Torq(ue) Thres(hold)	10	1500		750	Motor stops if threshold exceeded. Approx 250 counts/amp of motor current.										
P14	Door (Motor) Torq(ue) Thres(hold)	10	1500		750	Motor stops if threshold exceeded. Approx 250 counts/amp of motor current.										
P15	Lift (Motor) Torq(ue) Thres(hold)	10	1500		750	Motor stops if threshold exceeded. Approx 250 counts/motor current.										

NOTES: 1) Software version is printed on label on Main Control Board Chip.

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Factory Level 3 - Parameter Guide – Page 2

[For Models with firmware version F3D3 Main H47C1 ONLY [1)]]

		Range					Country Exceptions[2)]						GM Exceptions			
No.	**Name**	**Low**	**High**	**Unit[3)]**	**Factory Default**	**Notes**	**US**	**EU**	**JP**	**LA**	**CN**	**AP**	**EU-B**	**US-GM**	**CAN-GM**	**Other-GM**
P16	Basket In Time	10	1500	mS	150	Time the basket must remain in to trigger a dispense cycle	150	350	150	150	150	150	150	150	150	150
P17	Basket Out Time	10	1500	mS	50	Time the basket must remain out before enabling dispense										
P18	Low Product Enable	Off	On		On	Prevents Low Product Warning being displayed.										
P19	Hi Accuracy Enable	Off	On		Off	Enables high accuracy (but slower) dispense for Japan.	Off	Off	On	Off	Off	Off	Off	Off	Off	Off
P20	Large Load Enable	Off	On		Off	Enables use of 1Kg load for calibration. (Off or On)										
P21	Large Fill Pct	50	100	%	90	**Reserved - Do not adjust.**										
P22	Medium Fill Pct	50	100	%	89	**Reserved - Do not adjust.**										
P23	Small Fill Pct	50	100	%	88	**Reserved - Do not adjust.**										
P26	Dual Language Toggle Rate	1	4		3	If Dual Language is enabled, this sets toggle rate: (1 = Off, 2 = Slow, 3 = Med, 4 = Fast)										
P27	Display Units	C	F		F	Temperature Display Units Celsius or Fahrenheit	F	C	C	C	C	C	C	F	C	C
P28	Backdoor Type	English	Numeric		English	Displays numeric codes with English or numeric codes only										
P29	Medium (Load) Factor	25	100	%	67	Weight of medium load as percent of large load	67	67	67	67	67	67	80	67	67	67
P30	Small (Load) Factor	25	100	%	50	Weight of small load as percent of large load	50	50	50	50	50	50	67	50	50	50
P31	Part Number	15 characters maximum. 1st must be 0-9 or F. 2nd must be 0-9, S, '.' or '-'. All others: 0-9, '-' or '.'														
P32	Serial Number	15 characters maximum. All characters: 0-9 or '-'														
P99	Exit					Exits Level 3, if Entered										

NOTES: 1) Software version is printed on label on Main Control Board Chip.

2) **Country Exceptions Abbreviations:** US = North America; EU = Europe; JP = Japan; LA = Latin America (South & Central); CN = Canada; AP = Asia, Pacific, Middle East & Australia

3) **Unit Abbreviation:** mS = Milliseconds

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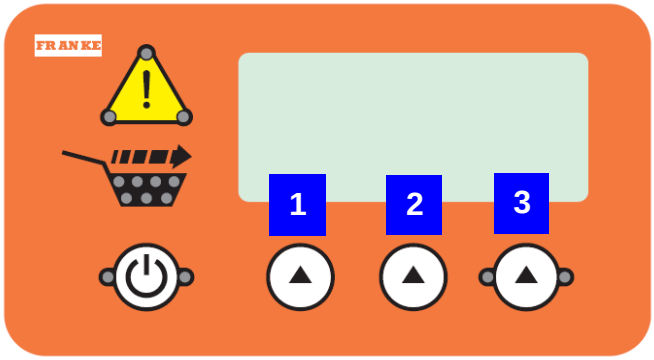
Parameter Access & Programming

F3D3 Series Fries Dispensers provide easy access to Factory Level operating and service diagnostic parameters using the front operator interface touch panel & display. To access:

1) Leave unit plugged in.
2) Turn Main Power Switch **ON**.
3) Lane power must be **OFF**. Display will be blank or show current freezer temperature, depending on the lane.



***NOTE:** All programming is done using the three choice buttons labeled: 1, 2 and 3 above.*

To Access Factory Level 3 Parameters:		
Step	**Action Required** →	**Resulting Display**
1	From Standby condition use 3rd touchpad to enter: **3 3 3 3**. [The Entry Code]	Special Mode Select Cust Fact Exit
2	Press touchpad 2 = Fact(ory)	Factory Access Level Lev1 Lev3 Exit
3	Press touchpad 2 = Lev3	Password ?? Enter Password **0** _ _ _ Inc OK Exit
4A	Press touchpad 2 = OK [Icon will move right to next digit]	Password ?? Enter Password **0 0** _ _ Inc OK Exit
4B	Press touchpad 2 = OK [Icon will move right to next digit]	Password ?? Enter Password **0 0 0** _ Inc OK Exit
4C	Press touchpad 2 = OK [Icon will move right to last digit], then:	Password ?? Enter Password **0 0 0 0** Inc OK Exit
4D	Press touchpad 1 = Inc once, to raise to 1, then:	Password ?? Enter Password **0 0 0 1** Inc OK Exit
5	Press touchpad 2 = OK	Language [first Parameter] P01 = English **++ -- ->**
See Parameter Spreadsheet for P-numbers, functions & default settings. NOTE Software Codes and exceptions that apply.		
Notes:	**Command Key: ++** to scroll up; **--** to scroll down; **->** to move flashing underscore __ under next value; **==** to accept or OK value or setting	
P02 Set Point Example:	Press 1 = **++** to increase temp. value [-000**4**] Press 2 = **--** to decrease temp. value [- 000**6**] Press 3 = **==** to accept (new) setting	Set Point [Refrigerator temp.] P02 = -000**5** F **++ -- ==**

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Factory Level 3 - Parameter Guide – Page 1

[For Models with firmware version F3D3 Main H46P9 ONLY [1)]]

Parameter		Range		Unit[3)]	Factory Default	Notes	Country Exceptions					
No.	Name	Low	High				US	EU	JP	LA	CN	AP
P01	Language	1	5		1	1=English, 2=Deutsch, 3=Espanola, 4=Francais, 5=French/English (Canada)	1	1	1	1	5	1
P02	Set Point	-50	20	Deg F	-5	Temperature set point						
P03	Offset	-30	30	Deg F	0	Temperature offset from sensor						
P04	High Alarm Set Point	-100	50	Deg F	40	Temperature that triggers a high alarm (LON Models only)						
P05	High Alarm (Start Up) Delay	1	300	(M) minutes	100	Time to wait after high alarm signal, until message appears						
P06	High Alarm Dwell	1	300	(M) minutes	60	Temperature must remain (dwell) for this time						
P07	Hysteresis	0.5	5	Deg F	1.0	Used in temperature control						
P08	Ticks / Sec	1	100		60	Used to correct onboard time keeping.						
P09	Compressor Off Time	1	200	(S) seconds	120	Minimum time the compressor must be off before restarting.						
P10	Down Shift LM	1	19 20=off	(M) minutes	4	Time for a size downshift from large to medium. 20 = Off	4	7	4	4	4	4
P11	Down Shift M1S	1	19 (20= off)	(M) minutes	20 (off)	Time for an initial size downshift from medium to small. 20 = Off	20	3	20	20	20	20
P12	Down Shift M2S	1	19 (20= off)	(M) minutes	20 (off)	Time for subsequent size downshift from medium to small. 20 = Off	20	7	20	20	20	20
P13	Drum (Motor) Torq(ue) Thres(hold)	10	1500		750	Motor stops if threshold exceeded. Approx 250 counts/amp of motor current.						
P14	Door (Motor) Torq(ue) Thres(hold)	10	1500		750	Motor stops if threshold exceeded. Approx 250 counts/amp of motor current.						
P15	Lift (Motor) Torq(ue) Thres(hold)	10	1500		750	Motor stops if threshold exceeded. Approx 250 counts/motor current.						

NOTES: 1) Software version is printed on label on Main Control Board Chip.

2) **Country Exceptions Abbreviations:** US = North America; EU = Europe; JP = Japan; LA = Latin America (South & Central); CN = Canada; AP = Asia, Pacific, Middle East & Australia

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Factory Level 3 - Parameter Guide – Page 2

[For Models with firmware version F3D3 Main H46P9 ONLY [1)]]

Parameter		Range			Factory		Country Exceptions[2)]					
No.	Name	Low	High	Unit[3)]	Default	Notes	US	EU	JP	LA	CN	AP
P16	Basket In Time	10	1500	mS	150	Time the basket must remain in to trigger a dispense cycle	150	350	150	150	150	150
P17	Basket Out Time	10	1500	mS	50	Time the basket must remain out before enabling dispense						
P18	Low Product Enable	Off	On		On	Prevents Low Product Warning being displayed.						
P19	Hi Accuracy Enable	Off	On		Off	Enables high accuracy (but slower) dispense for Japan.	Off	Off	On	Off	Off	Off
P20	Large Load Enable	Off	On		Off	Enables use of 1Kg load for calibration. (Off or On)						
P21	Large Fill Pct	50	100	%	90	**Reserved - Do not adjust.**						
P22	Medium Fill Pct	50	100	%	89	**Reserved - Do not adjust.**						
P23	Small Fill Pct	50	100	%	88	**Reserved - Do not adjust.**						
P26	Dual Language Toggle Rate	1	4		3	If Dual Language is enabled, this sets toggle rate: (1 = Off, 2 = Slow, 3 = Med, 4 = Fast)						
P27	Display Units	C	F		F	Temperature Display Units Celsius or Fahrenheit	F	C	C	C	C	C
P28	Backdoor Type	English	Numeric		English	Displays numeric codes with English or numeric codes only						
P99	Exit					Exits Level 3, if Entered						

NOTES: 1) Software version is printed on label on Main Control Board Chip.

2) **Country Exceptions Abbreviations:** US = North America; EU = Europe; JP = Japan; LA = Latin America (South & Central); CN = Canada; AP = Asia, Pacific, Middle East & Australia

3) **Unit Abbreviation:** mS = Milliseconds

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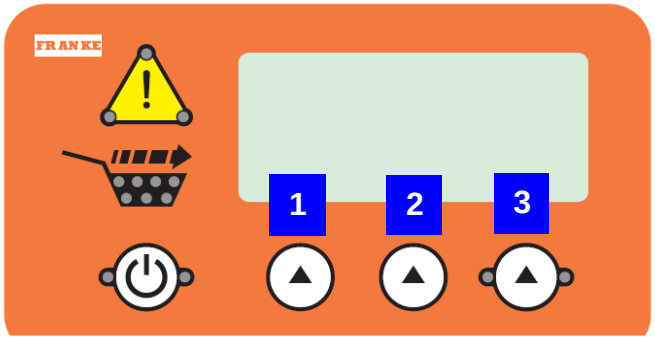
Parameter Access & Programming

The original F3D3 Models (with H46N Firmware) were programmed with Factory Level operating and service diagnostic parameters that required sequential bore-down through multiple levels, to check or make any changes. Using the front operator interface touch panel & display to access:

1) Leave unit plugged in.
2) Turn Main Power Switch **ON**.
3) Lane power must be **OFF**. Display will be blank or show current freezer temperature, depending on the lane.



NOTE: *All programming is done using the three choice buttons labeled: 1, 2 and 3 above.*

To Access Factory Level 3 Parameters:		
Step	**Action Required** →	**Resulting Display**
1	From Standby condition use 3rd touchpad to enter: **3 3 3 3**. [The Entry Code]	Special Mode Select Cust Fact Exit
2	Press touchpad 2 = Fact(ory)	Factory Access Level Lev1 Lev3 Exit
3	Press touchpad 2 = Lev3	Password ?? Enter Password **0** _ _ _ Inc OK Exit
4A	Press touchpad 2 = OK [Icon will move right to next digit]	Password ?? Enter Password **0 0** _ _ Inc OK Exit
4B	Press touchpad 2 = OK [Icon will move right to next digit]	Password ?? Enter Password **0 0 0** _ Inc OK Exit
4C	Press touchpad 2 = OK [Icon will move right to last digit], then:	Password ?? Enter Password **0 0 0 0** Inc OK Exit
4D	Press touchpad 1 = Inc once, to raise to 1, then:	Password ?? Enter Password **0 0 0 1** Inc OK Exit
5	Press touchpad 2 = OK	Special Mode Select (Go to Page 2)
Follow Flow Chart Diagram on pages 2-12 to access Parameters.		

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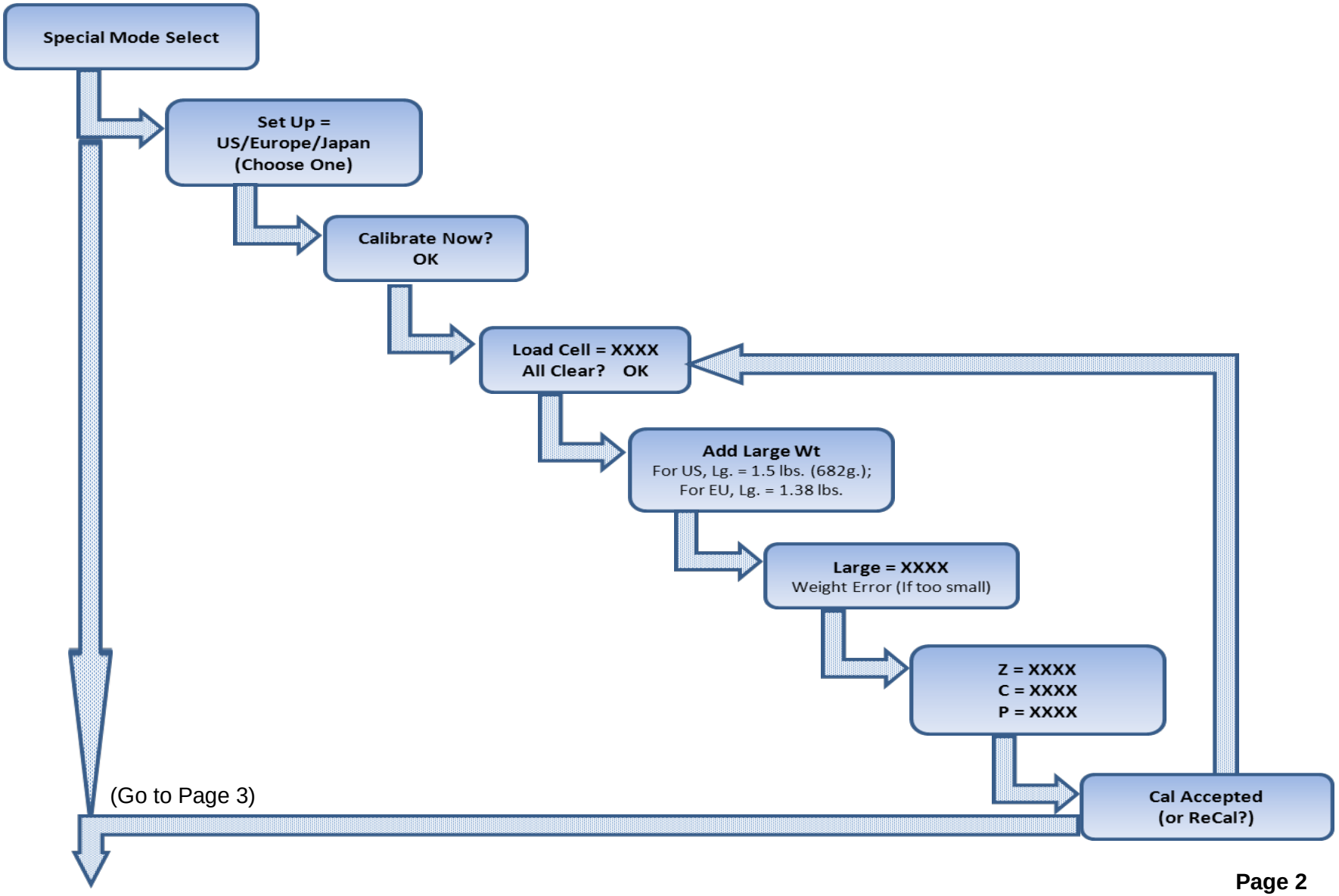
For Models with Firmware F3D3 Main Version: H46N ONLY



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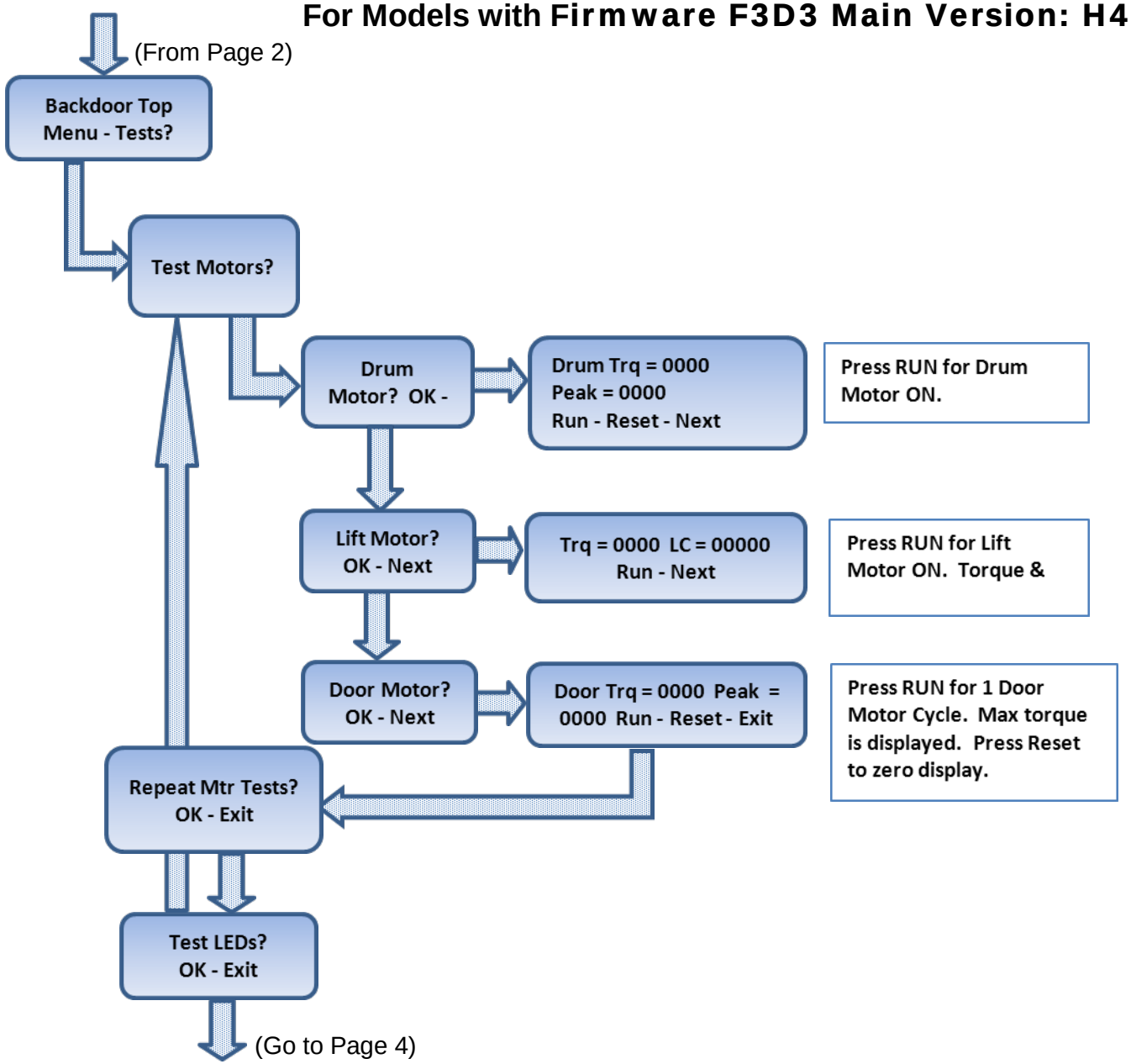
For Models with Firmware F3D3 Main Version: H46N ONLY



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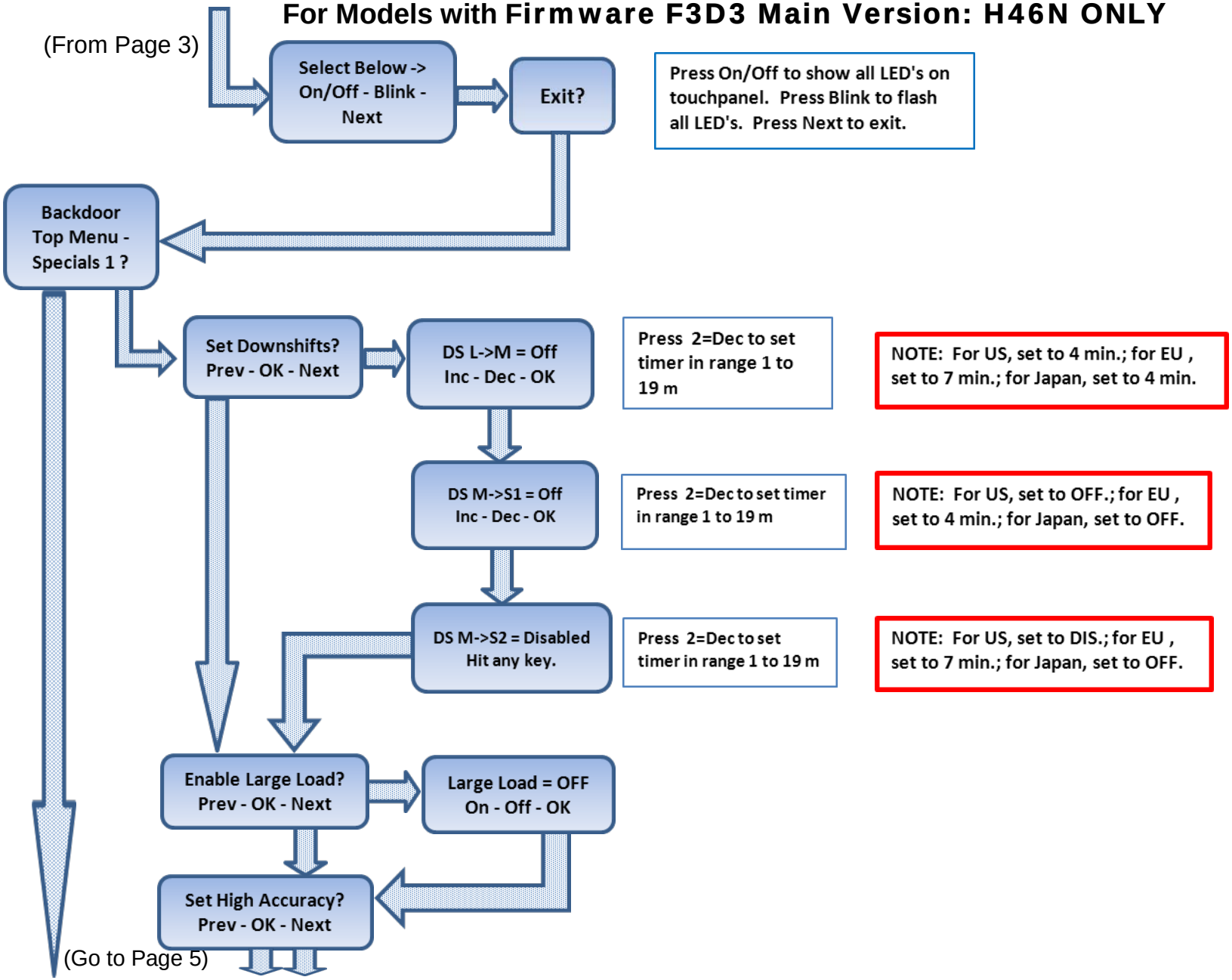
For Models with Firmware F3D3 Main Version: H46N ONLY



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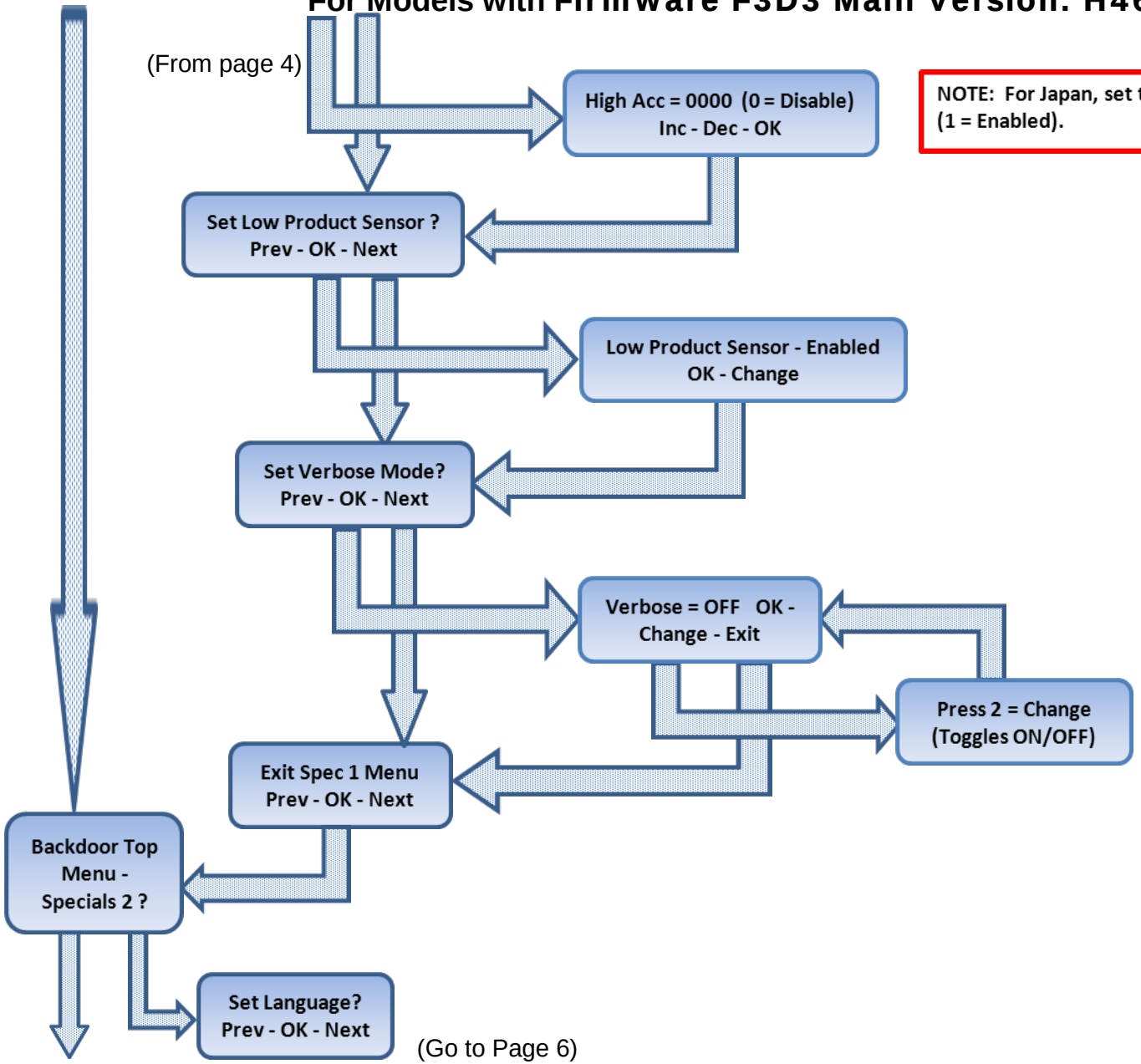
For Models with Firmware F3D3 Main Version: H46N ONLY



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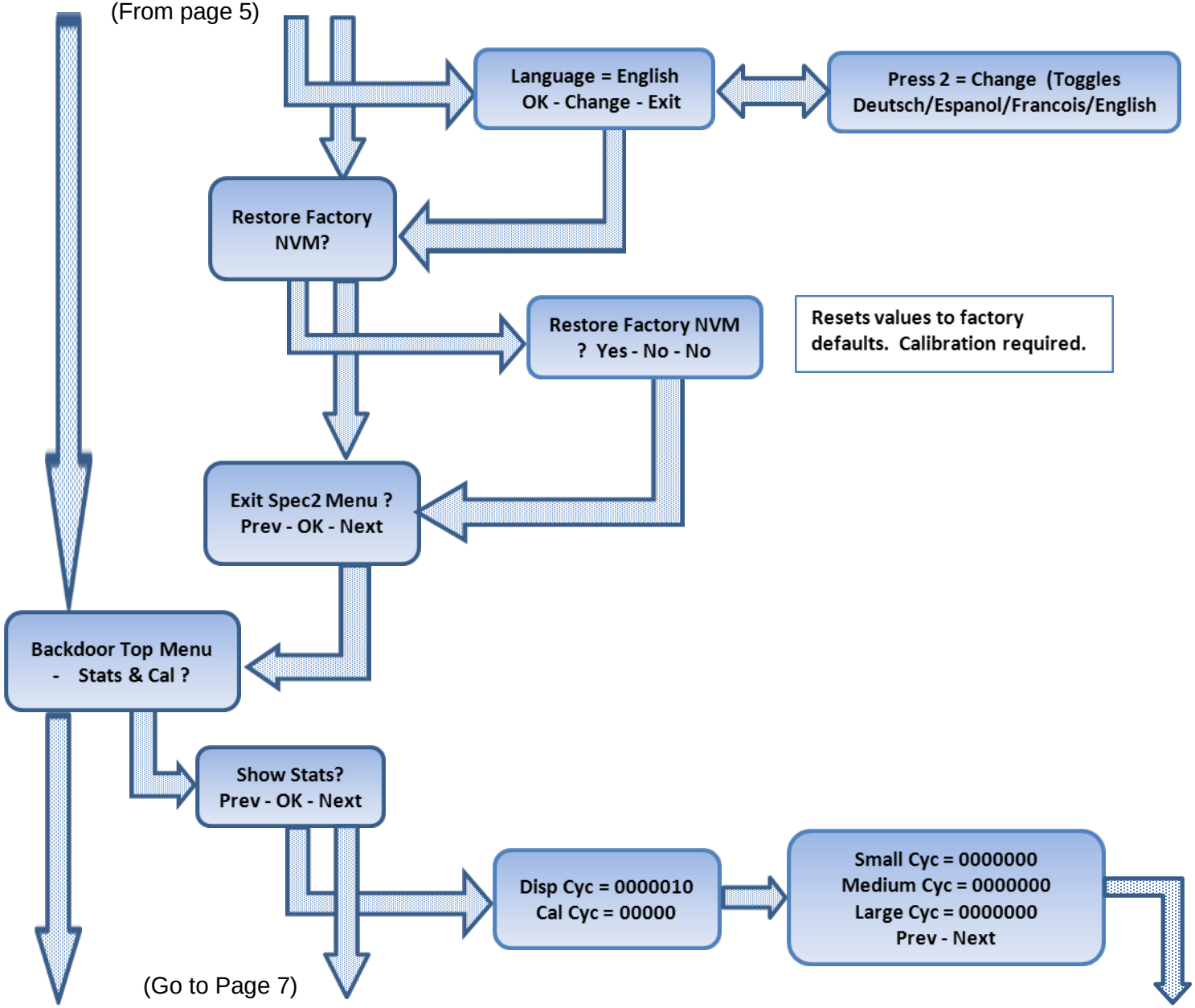
For Models with Firmware F3D3 Main Version: H46N ONLY

(From page 5)



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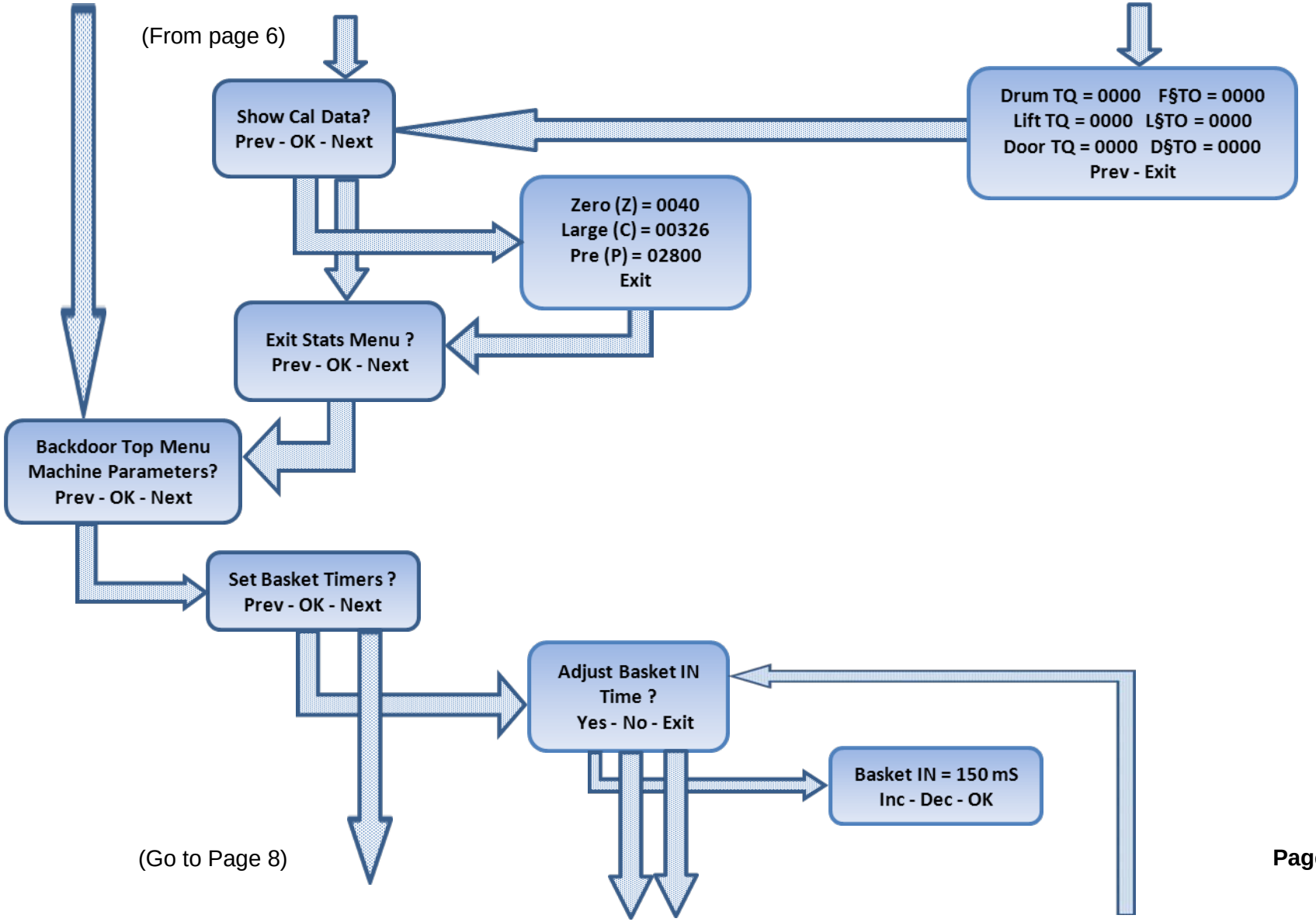
For Models with Firmware F3D3 Main Version: H46N ONLY



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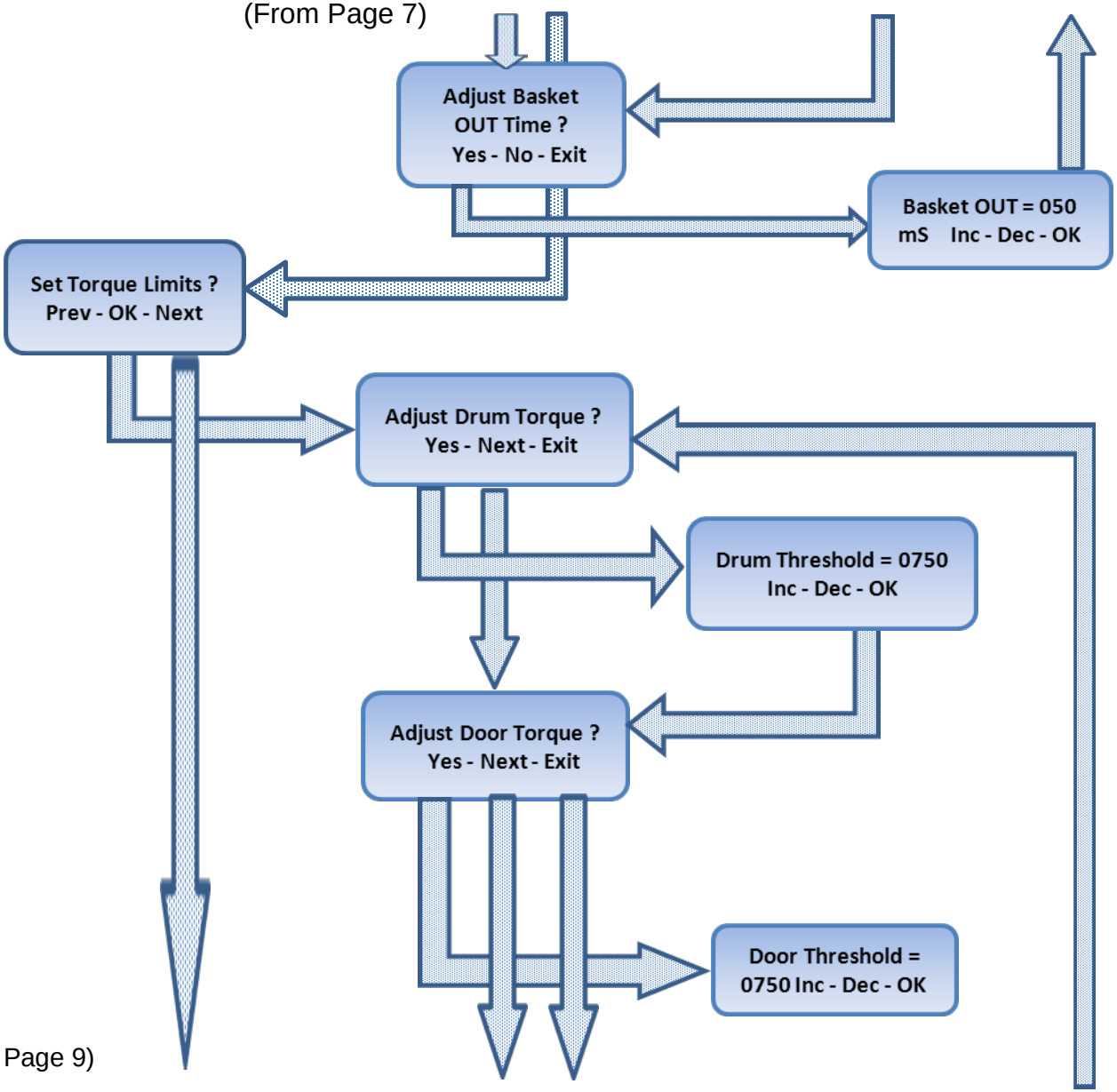
For Models with Firmware F3D3 Main Version: H46N ONLY

(From Page 7)



(Go to Page 9)

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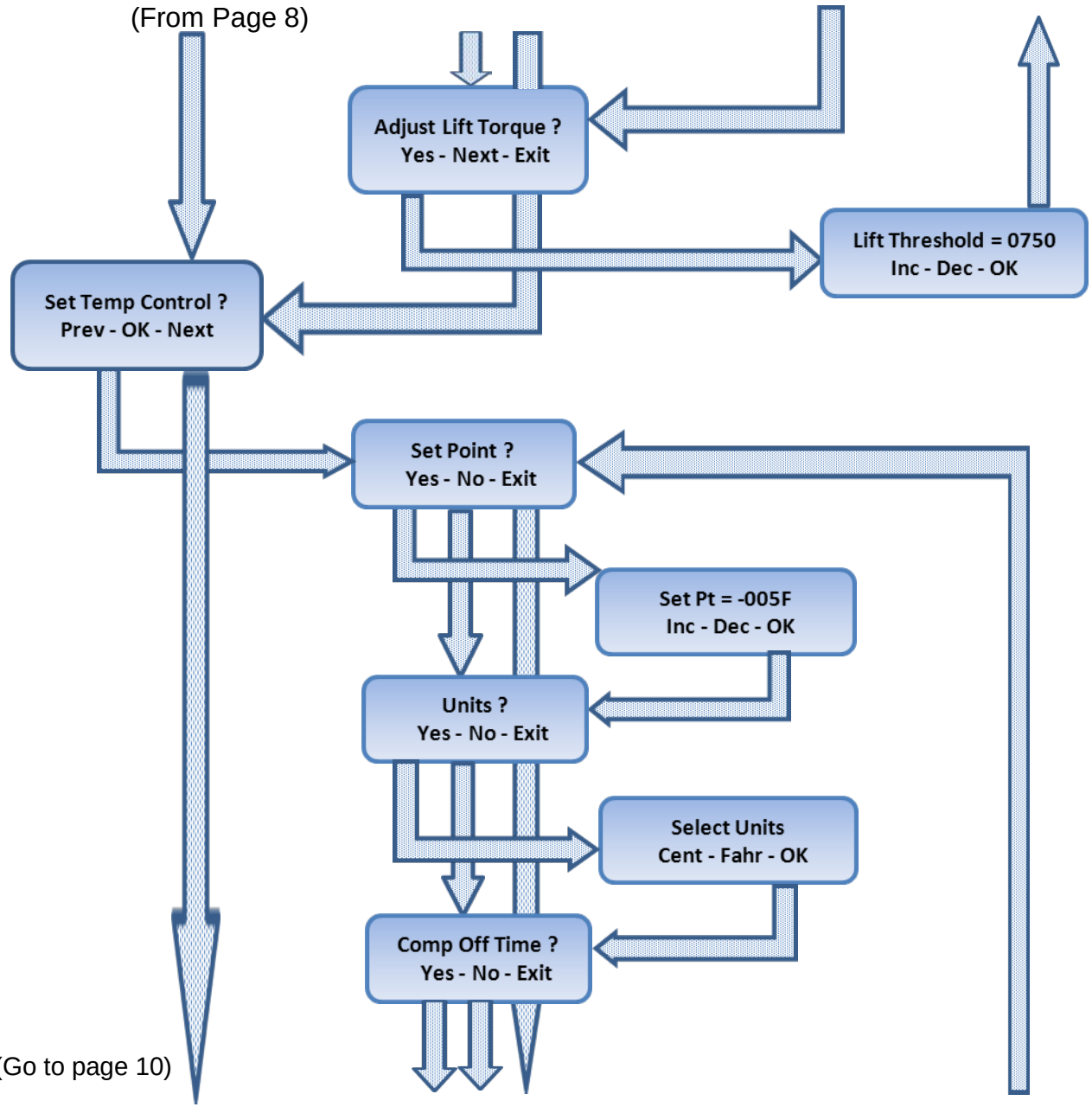
For Models with Firmware F3D3 Main Version: H46N ONLY

(From Page 8)



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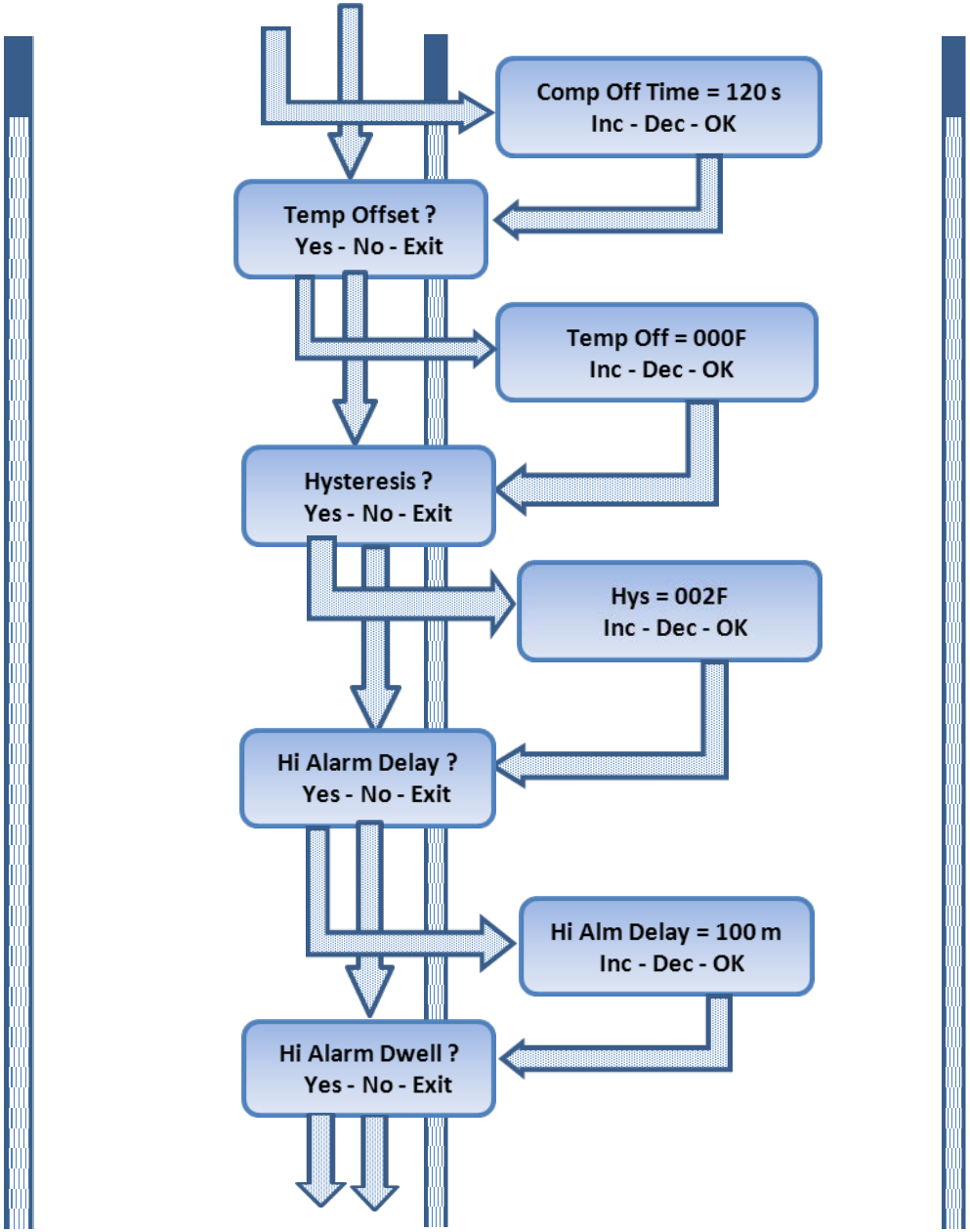
For Models with Firmware F3D3 Main Version: H46N ONLY

(From Page 9)



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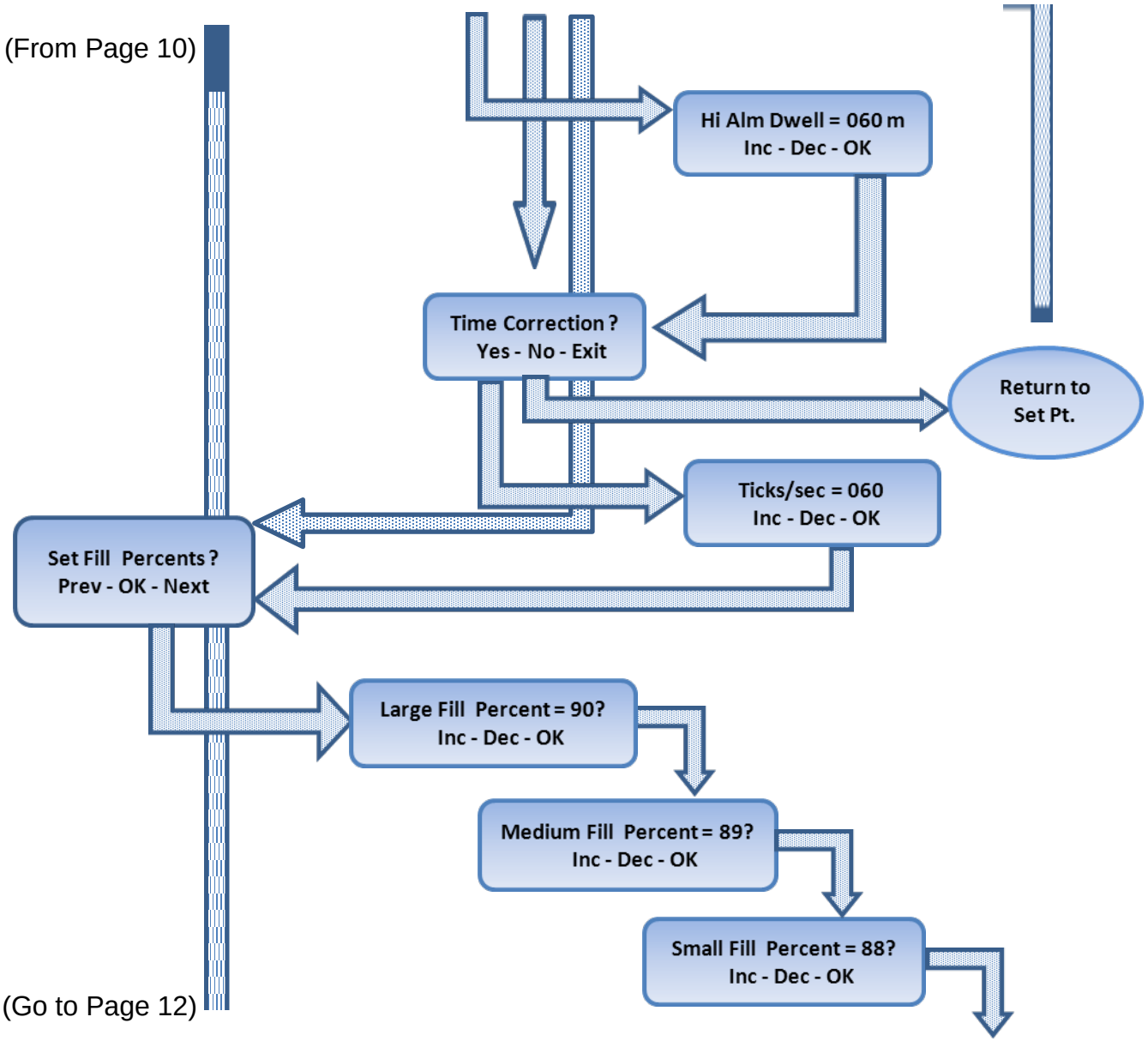
For Models with Firmware F3D3 Main Version: H46N ONLY



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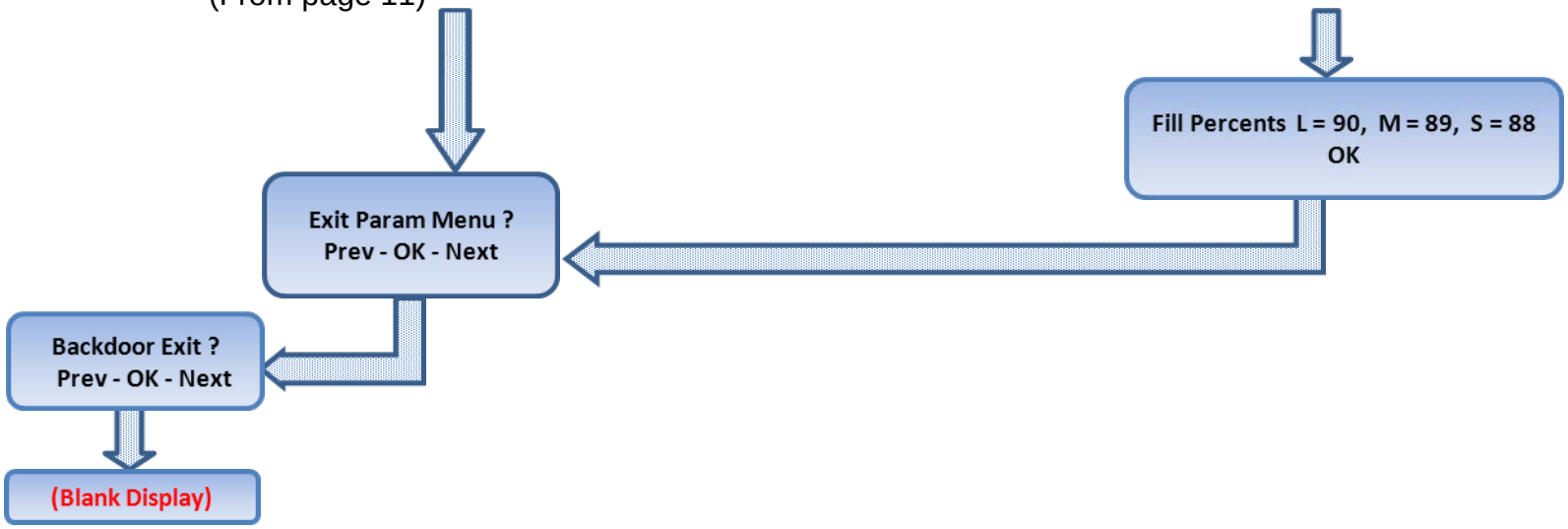
For Models with Firmware F3D3 Main Version: H46N ONLY

(From page 11)



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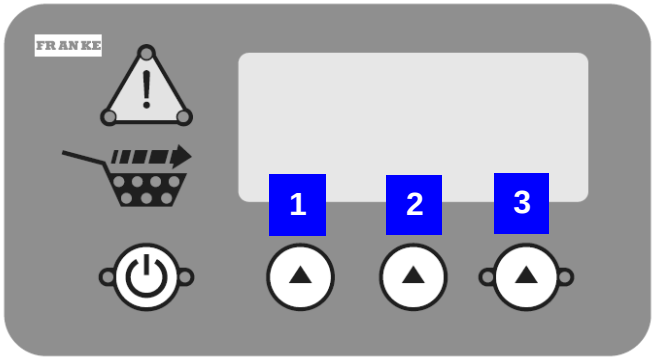
Parameter Access & Programming

F3D3 Series Fries Dispensers provide easy access to Factory Level operating and service diagnostic parameters using the front operator interface touch panel & display. To access:

1) Leave unit plugged in.
2) Turn Main Power Switch **ON**.
3) Lane power must be **OFF**. Display will be blank or show current freezer temperature, depending on the lane.



***NOTE:** All programming is done using the three choice buttons labeled: 1, 2 and 3 above.*

To Access Factory Level 3 Parameters:		
Step	**Action Required** →	**Resulting Display**
1	From Standby condition use 3rd touchpad to enter: **3 3 3 3**. [The Entry Code]	Special Mode Select Cust Fact Exit
2	Press touchpad 2 = Fact(ory)	Factory Access Level Lev1 Lev3 Exit
3	Press touchpad 2 = Lev3	Password ?? Enter Password **0** _ _ _ Inc OK Exit
4A	Press touchpad 2 = OK [Icon will move right to next digit]	Password ?? Enter Password **0 0** _ _ Inc OK Exit
4B	Press touchpad 2 = OK [Icon will move right to next digit]	Password ?? Enter Password **0 0 0** _ Inc OK Exit
4C	Press touchpad 2 = OK [Icon will move right to last digit], then:	Password ?? Enter Password **0 0 0 0** Inc OK Exit
4D	Press touchpad 1 = Inc once, to raise to 1, then:	Password ?? Enter Password **0 0 0 1** Inc OK Exit
5	Press touchpad 2 = OK	Language [first Parameter] P01 = English **++ -- ->**
See Parameter Spreadsheet for P-numbers, functions & default settings. NOTE Software Codes and exceptions that apply.		
Notes:	**Command Key: ++** to scroll up; **--** to scroll down; **->** to move flashing underscore __ under next value; **==** to accept or OK value or setting	
P02 Set Point Example:	Press 1 = **++** to increase temp. value [-000**4**] Press 2 = **--** to decrease temp. value [- 000**6**] Press 3 = **==** to accept (new) setting	Set Point [Refrigerator temp.] P02 = -000**5** F **++ -- ==**

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Factory Level 3 - Parameter Guide – Page 1

[For Latest Models with BL 2.00; APP 2.12a Chip Software[1)]]

Parameter		Range					Country Exceptions						GM Exceptions				
No.	Name	Low	High	Unit[3)]	Factory Default	Notes	US	EU	JP	LA	CN	AP	EU-B	US-GM	CAN-GM	Other-GM	EU-Y
P01	Language	1	5		1	1=English, 2=Deutsch, 3=Espanola, 4=Francais, 5=French/English (Canada)	1	1	1	1	5	1	1	1	5	1	1
P02	Set Point	-50	20	Deg F	-5	Temperature set point											
P03	Offset	-30	30	Deg F	8	Temperature offset from sensor											
P04	High Alarm Set Point	-100	50	Deg F	40	Temperature that triggers a high alarm (LON Models only)											
P05	High Alarm (Start Up) Delay	1	300	(M) minutes	100	Time to wait after high alarm signal, until message appears											
P06	High Alarm Dwell	1	300	(M) minutes	60	Temperature must remain (dwell) for this time											
P07	Hysteresis	0.5	5	Deg F	1.0	Used in temperature control											
P09	Compressor Off Time	1	200	(S) seconds	120	Minimum time the compressor must be off before restarting.											
P10	Down Shift LM	1	19 20=off	(M) minutes	4	Time for a size downshift from large to medium. 20 = Off	4	7	4	4	4	4	Off	Off	Off	Off	10
P11	Down Shift M1S	1	19 (20= off)	(M) minutes	20 (off)	Time for an initial size downshift from medium to small. 20 = Off	Off	3	Off	Off	Off	Off	Off	Off	Off	Off	5
P12	Down Shift M2S	1	19 (20= off)	(M) minutes	20 (off)	Time for subsequent size downshift from medium to small. 20 = Off	Off	7	Off	Off	Off	Off	Off	Off	Off	Off	10
P13	Drum (Motor) Torq(ue) Thres(hold)	10	1500		750	Motor stops if threshold exceeded. Approx 250 counts/amp of motor current.											
P14	Door (Motor) Torq(ue) Thres(hold)	10	1500		750	Motor stops if threshold exceeded. Approx 250 counts/amp of motor current.											
P15	Lift (Motor) Torq(ue) Thres(hold)	10	1500		750	Motor stops if threshold exceeded. Approx 250 counts/motor current.											
P16	Basket In Time	10	1500	mS	150	Time the basket must remain in to trigger a dispense cycle	150	350	150	150	150	150	150	150	150	150	150

NOTES: 1) No Main Board Chip Label. Software Vers(ion): **BL 2.00; APP 2.12a** appears on Lane Display.

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Factory Level 3 - Parameter Guide – Page 2

[For Latest Models with BL 2.00; APP 2.12a Chip Software[1)]]

		Range					Country Exceptions[2)]						GM Exceptions				
No.	**Name**	**Low**	**High**	**Unit[3)]**	**Factory Default**	**Notes**	**US**	**EU**	**JP**	**LA**	**CN**	**AP**	**EU-B**	**US-GM**	**CAN-GM**	**Other-GM**	**EU-Y**
P17	Basket Out Time	10	1500	mS	50	Time the basket must remain out before enabling dispense											
P18	Low Product Enable	Off	On		On	Prevents Low Product Warning being displayed.											
P19	Hi Accuracy Enable	Off	On		Off	Enables high accuracy (but slower) dispense for Japan.	Off	Off	On	Off	Off	Off	Off	Off	Off	Off	Off
P21	Large Fill Pct	50	100	%	90	**Reserved - Do not adjust.**											
P22	Medium Fill Pct	50	100	%	89	**Reserved - Do not adjust.**											
P23	Small Fill Pct	50	100	%	88	**Reserved - Do not adjust.**											
P26	Dual Language Toggle Rate	1	4		3	If Dual Language is enabled, this sets toggle rate: (1 = Off, 2 = Slow, 3 = Med, 4 = Fast)											
P27	Display Units	C	F		F	Temperature Display Units Celsius or Fahrenheit	F	C	C	C	C	C	C	F	C	C	C
P28	Backdoor Type	English	Numeric		English	Displays numeric codes with English or numeric codes only											
P29	Medium (Load) Factor	25	100	%	67	Weight of medium load as percent of large load	67	67	67	67	67	67	80	67	67	67	75
P30	Small (Load) Factor	25	100	%	50	Weight of small load as percent of large load	50	50	50	50	50	50	67	50	50	50	34
P31	Part Number	15 characters maximum. 1st must be 0-9 or F. 2nd must be 0-9, S, '.' or '-'. All others: 0-9, '-' or '.'															
P32	Serial Number	15 characters maximum. All characters: 0-9 or '-'															
P99	Exit					Exits Level 3, if Entered											

NOTES: 1) No Main Board Chip Label. Software Vers(ion): **BL 2.00; APP 2.12a** appears on Lane Display. [How is this called up?]

2) **Country Exceptions Abbreviations:** US = North America; EU = Europe; JP = Japan; LA = Latin America (South & Central); CN = Canada; AP = Asia, Pacific, Middle East & Australia

3) **Unit Abbreviation:** mS = Milliseconds

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Franke New Equipment Limited Warranty

Franke Foodservice Systems provides new equipment parts and labor warranties to the original purchaser, which are equal to or exceed typical foodservice equipment manufacturers. Special (extended) warranty coverage may be negotiated with the customer. Extended compressor warranties may also apply.

To determine if a Franke Frozen French Fry Dispenser is “in warranty”, contact: **Franke Technical Services** at the numbers listed in Section 1.2.2 - Service Commitment & Contact Information. Be prepared to **provide the Model and Serial Number** from the Manufacturers Data Plate located under the louvered condenser filter access panel (F3D3 & F3D3S) or the upper right side of the freezer on (F3D3P & F3D3PS) propane models.

On F3D3 & F3D3S Models

On F3D3P & F3D3SP Models

Warranty Exclusions: Certain Franke parts that are expendable by nature and need to be replaced frequently may not be covered. In addition, Franke is not liable for repairs or damages due to improper operation, attempted repairs or installation by unauthorized persons, alterations, poor water quality, owner/operator abuse, fire, flood or acts of God. Fry basket storage racks and drip trays are not covered by this warranty.

In Addition, this warranty may be voided in the case of:

- Failure to follow Franke instructions for use, care or maintenance
- Removal, alteration or defacing of the Franke-affixed serial number
- Service by a non-authorized service company

Warranty coverage is conditional upon Franke receiving notice of any defect subject to warranty within thirty (30) days of its original discovery by the Buyer.

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The Franke Service Commitment

Franke Foodservice Systems' Technical Support Department and its third-party Service Network are committed to meeting the unique service needs of restaurant operators worldwide. Accordingly, we strive to provide the following response times to service requests for Franke-manufactured equipment:

1. Provide contact with the customer:
   - Within 30 minutes of request for service during normal business hours
   - Within 90 minutes after normal business hours (including weekends)
2. Perform service visit:
   - The same day for emergency service*
   - Within 24 hours for standard service
3. Target a 90% "first trip" fix rate
4. Provide 90-day warranty on the service performed

   **An "emergency" is defined as an equipment operating condition that poses an immediate risk to the safety of restaurant workers or customers.*

This response time breakdown applies throughout the week and weekend. Due to varying customer locations, and varying service agent locations and schedules, response rates may occasionally be extended. In these situations, Franke Technical Support will work directly with the customer to find mutually acceptable options. Franke reserves the right to use service agents outside of the Service Network, as needed.

Contact Information - Americas:

Franke Technical Services
Franke Foodservice Systems
800 Aviation Parkway
Smyrna, TN 37167
United States of America
1-800-5FRANKE (1-800-537-2653); select 5
or visit: **FS-TS.US@Franke.com**

Contact Information- Europe:

Franke Technical Services
Franke Foodservice Systems GmbH
Jurastrasse 3
79713 Bad Saeckingen
Germany
Switchboard: +49 7761 52 400
Fax: +49 7761 52 408

Contact Information- Asia, Pacific, Middle East & Africa:

Franke Technical Services
Franke Foodservice Systems China Co. Ltd.
318 Yinglang Industrial Zone
Shaping Town, Heshan City
Guangdong Provence, PRC – Postal Code: 529700
Phone: +86 750 841 8476
Fax: +86 750 841 5845

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Use the following **Sequence of Operation Questions** to help diagnose common service problems.

The Question!	Answer!	What To Check or Do
1. Can the unit be turned ON?	NO!	Check Breaker. OK? Yes = Continue ⬇ No = Call electrician
		Power Outlet OK? Yes = Continue ⬇ No = Call electrician
		Power Cord OK? Yes = Continue ⬇ No = Replace Power Cord per ***Section 2.23***
		Check power at Power Switch. OK? Yes = Continue to Question 2 No = Replace Power-ON Switch per ***Section 2.16***
	Yes!	**Go to Question 2!**
2. Do the Lane controls light up?	NO!	No power to <u>one</u> lane only? "Push & Hold" touch pad for 4 seconds (required) to turn on each lane. Is word **Ready** in displays? Yes = Test & return unit to service; No = Continue⬇
		Check 24-Volt AC Power Supply; OK? Yes = Continue ⬇ No = Replace Power Supply for that lane per ***Section 2.20***
		Ribbon Cable OK? Yes = Continue⬇ No = Replace Ribbon Cable – **Contact Franke Technical Support** for P/N & Instructions
		Operator's Touchpad Panel OK? Yes = Return unit to service No = Replace Operator Touchpad Panel per ***Section 2.15***
		PC Control Board OK? Yes = Continue⬇ No = Replace Control Board per ***Section 2.20***
	Yes!	**Go to Question 3!**
3. Does the compartment temperature appear in left lane display?	NO!	For two lane (F3D3 or F3D3P) Models, See ***Section 3.6*** for Backup Temperature Display jumper re-cabling instructions
		For single lane (F3D3S or F3D3SP) Models, Check Temperature Controller Sensor Cable; OK? Yes = Continue No = Replace Sensor Cable per ***Section 2.17***
	Yes!	**Go to Question 4!**
4. Does the Refrigeration System start in two minutes or less? **Warning:** *For F3D3P & F3D3SP Propane Models, attempt NO Condenser System Service!* ***Call Franke.***	NO!	Is Compressor plugged into terminal box? Yes = Continue ⬇ No = Plug it in! Verify Compressor starts.
		Check Compressor Relay. OK? Yes = Continue ⬇ No = Replace Relay per ***Section 4.3***
		Check Compressor Capacitor. OK? Yes = Continue ⬇ No = Replace Capacitor per ***Section 4.3***
		Check refrigeration system for leak per **Sections: 4.4, 4.4A & 4.4B**. Yes = Repair leak per **Section 4.5**. No = Continue ⬇
		Check Compressor. OK? Yes = Continue ⬇ No = Replace Condenser Unit per ***Section 4.7***
	Yes!	**Go to Question 5!**
5. Does the Machine try to dispense a load of fries?	Yes!	Check for French fries in hopper? Yes = Continue ⬇ No = Add fries to Hopper and attempt to dispense again.
		Check for fries bridge inside Hopper? Yes = Clear/disrupt fries bridge and attempt to dispense again. No = Continue ⬇
		Is Drum Rotor binding inside Hopper? No = Continue ⬇ Yes = Adjust Drum Rotor Motor per ***Section 3.4*** <u>or</u> Adjust Fry Hopper Alignment per ***Section 3.5***
		Check Drum Rotor Motor. Does it rotate freely? Yes = Continue ⬇ No = Replace Drum Rotor Motor per ***Section 2.5***

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	NO!	**Go to Question 6!**
The Question!	**Answer!**	**What To Check or Do**
6. Can you simulate a load by pulling down on the product door frame while it is running the door?	NO!	Check Load Cell calibration per ***Section 1.9*** instructions. OK? Yes = Continue ⬇ No = Replace Load Cell per ***Section 2.10***
	Yes!	**Go to Question 7!**
7. Can you dispense a load by pushing the bump switch?	NO!	Does Control Panel indicate **Load Ready**? Yes = Continue ⬇ No = Press and hold LANE OFF/ON button for four seconds. Did **Ready** appear in display and basket lights come on within 20 seconds? Yes = Continue ⬇ No = reassemble Hopper, Drum & Baffle
		Check wiring harness from Bump Switch to PC Control Board OK? Yes =Continue ⬇ No = connect or replace harness. **Contact Franke Technical Support** for P/N & Instructions
		Check Bump Switch. OK? Yes = Continue ⬇ No = Replace Basket Fill Plunger Switch per ***Section 2.13***
	Yes!	The darn thing works. Don't bother us!

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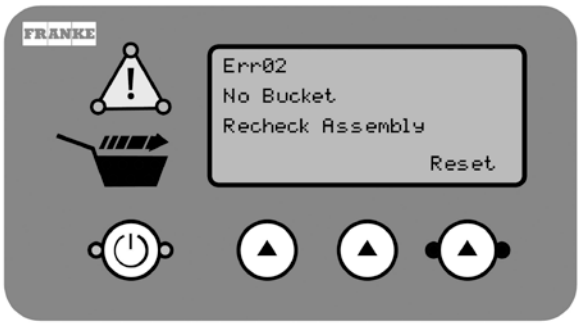
All F3D3 Series Frozen French Fries Dispensers have lane control panels that display unit status and common Error Messages. The following table lists all Error Messages and the lane condition or action required to correct the problem.



Error Code	Display Window Message	Error Description	Action Required
---	**Ready** **Low Fry Level** **Small**	Low Product Warning	Add fries to hopper. Continue dispensing until Err04A Message appears.
01	**Err01** **Load Cell Error** **Call for Service** **Reset**	Tare Time Out	See Advanced Troubleshooting Section 1.3. See Load Cell Calibration Section LCC.
02	**Err02** **No Bucket** **Recheck Assembly** **Reset**	No Bucket	Check rubber dispense bucket and loading doors. Press Reset (bottom-right) touchpad to reset.
03	**Err03** **Drum Stuck** **Empty Hopper & Refill** **Reset**	Drum Torque Error in Pre-Pulse Mode	Empty fries from Hopper and refill. Press Reset (bottom-right) touchpad to reset.
04A	**Err04** **Hopper Empty** **Add Fries** **Reset**	Fill Time Out (with Low Product Warning **ON***)	Add fries to hopper. Press Reset (bottom-right) touchpad to reset.
04B	**Err04** **Fry Bridge** **Clear Fry Bridge** **Reset**	Fill Time Out (with Low Product Warning **OFF***)	Clear any fry bridge in hopper. Press Reset (bottom-right) touchpad to reset.
05	**Err05** **Drum Stuck** **Empty Hopper** **Reset**	Drum Torque Error in Pulse Mode	Empty fries from Hopper. Test rotation of drum. Press Reset (bottom-right) touchpad to reset.
06	**Err06** **Bucket Lift Error** **Call for Service** **Reset**	Lift Torque Error	

* When Hopper Level is below Low Product Sensor, display flashes “Low Fry Level” and three LEDs around ‘!’ warning triangle illuminate.

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Continued…

Error Code	Display Window Message	Error Description	Action Required
07-1	**Err07-1** **Doors Stuck** **Clear Dispense Area** **Reset**	Sensor Unplugged	Check door-open sensor. If unplugged, plug it in. If faulty, replace sensor.
07-2	**Err07-2** **Doors Stuck** **Clear Dispense Area** **Reset**	Door Torque Error in Forward (**Open**) Direction	Clear dispense area. Press Reset (bottom-right) touchpad to reset.
07-3	**Err07-3** **Doors Stuck** **Clear Dispense Area** **Reset**	Door Motor Unplugged	Check 24-volt power to door motor or run Motor Test. (See SM Section CLPA – Customer Level Programming Access) If faulty, replace motor.
08	**Err08** **Doors Stuck** **Call for Service** **Reset**	Door Torque Error in Reverse (**Close**) Direction	Call for Service. Check door open motor for obstruction.
For Special Models with LON Works Smart Kitchen Package ONLY!			
09	**Err09** **Missing PN/SN** **Enter PN/SN** **Reset**	Complete PN/SN information not available for LON communications.	Enter PN/SN (part number/serial number) information, per LON Installation Instructions

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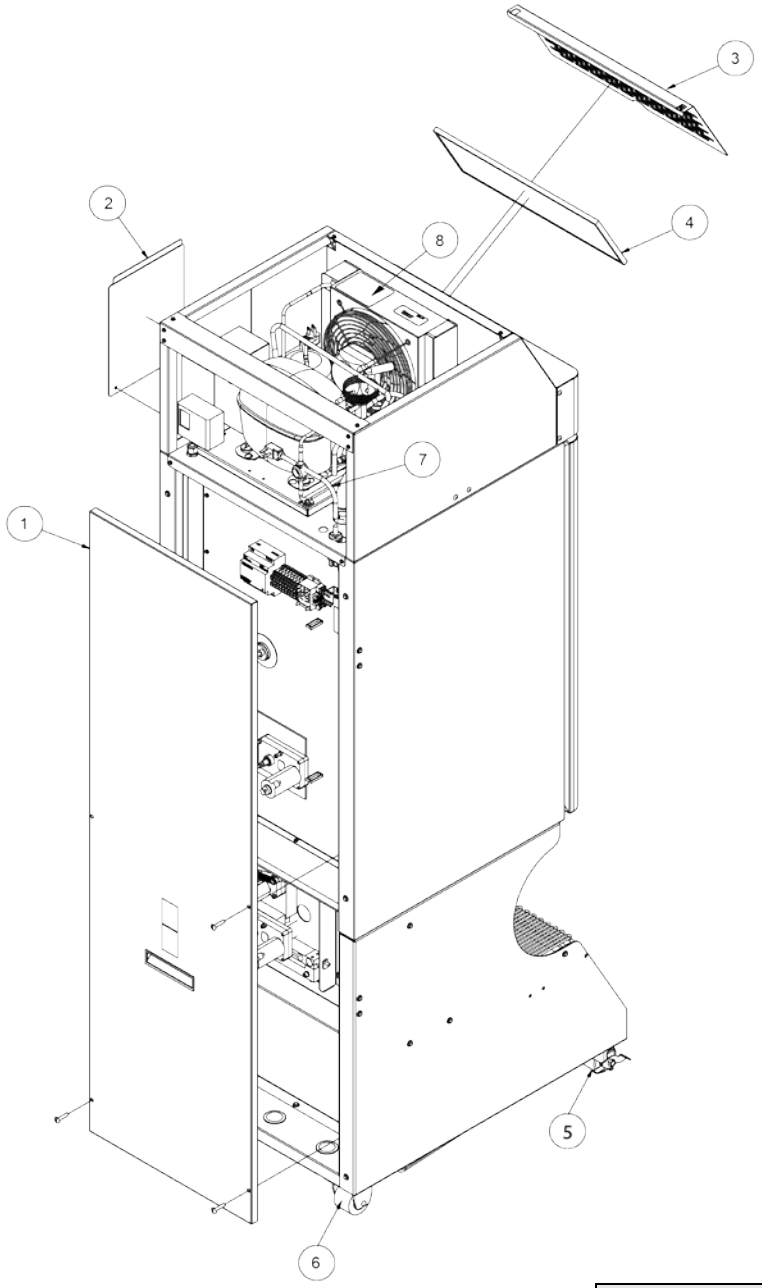
Access Panels, Filter & Casters (Single Lane Only)



			Part Numbers	
Key No.	**Quantity**	**Description**	**120-Volt/60 Hz**	**230-Volt/50 Hz**
1	1 ea.	Back Panel (Service Access)	18005391	18005391
2	1 ea.	Side Access Panel	19003067	19003067
3	1 ea.	Removable Air Inlet (Filter Access Panel)	19003751	19003751
4	1 ea.	Condenser Filter	19003756	19003756
5	2 ea.	Swivel Caster (front) with Brake	562501	562501
6	2 ea.	Swivel Caster (rear)	19000746	19000746
7	1 ea.	Cord Set	19000801	19000826

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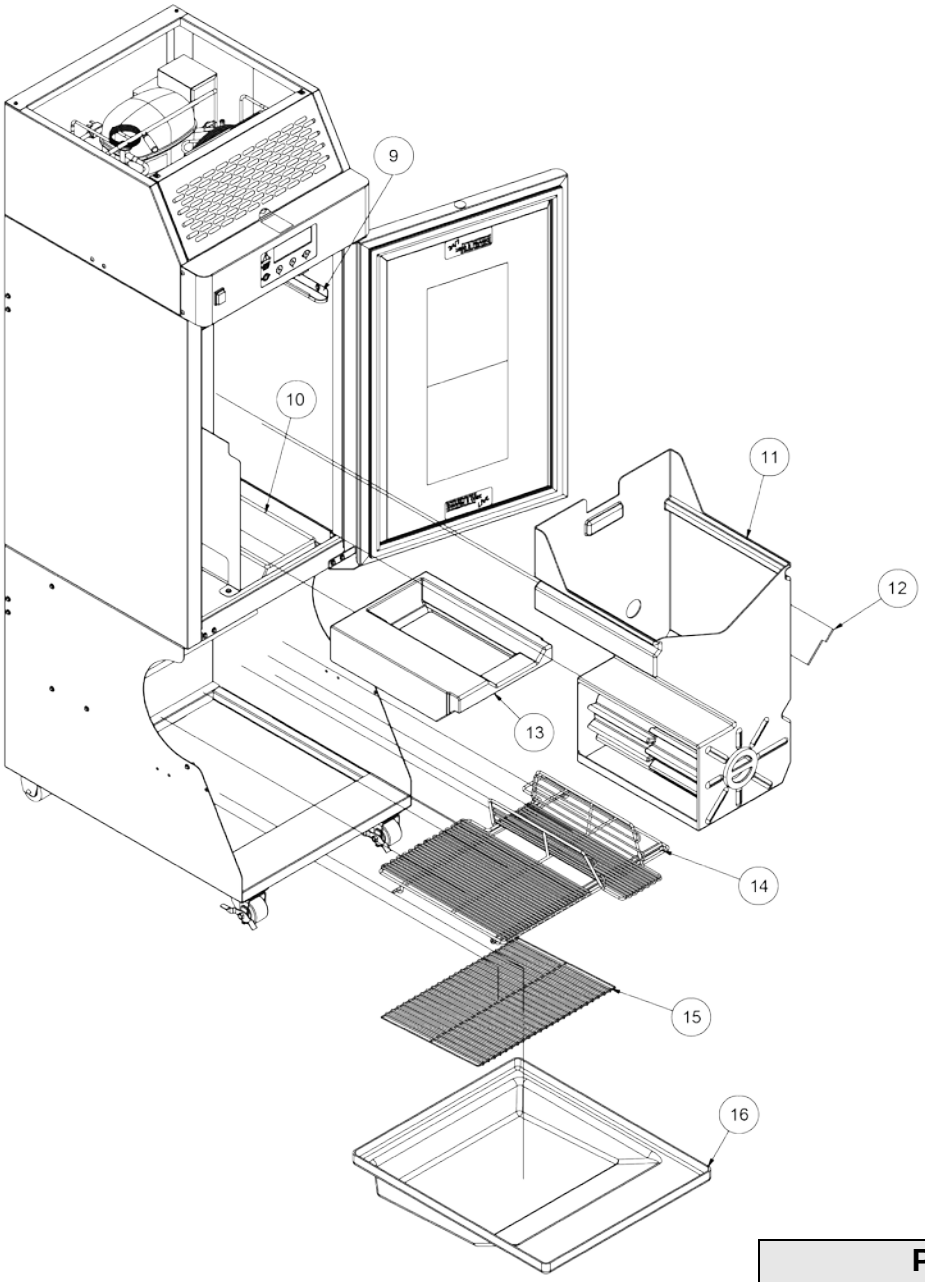
8	1 ea.	Condensing Unit w/cordset	19003221	19003222

Freezer & Dispensing Loose Component Parts (Single Lane Only)



			Part Numbers	
Key No.	**Quantity**	**Description**	**120-Volt/60 Hz**	**230-Volt/50 Hz**
9	2 ea.	End Rail (Hopper side support)	18003324	18003324
10	1 ea.	Bucket, Silicone (fries)	19002725	19002725
11	1 ea.	Hopper & Rotor Assembly	18004870	18004870
12	1 ea.	Baffle, Rubber (for Hopper)	19000247	19000247
13	1 ea.	Removable Bottom (red silicone rubber)	19003754	19003754
14	1 ea.	Wire-form Drip Tray (dispense lane guide)	19004013	19004013
15	1 ea.	Wire Rack, Bottom Fry Basket Support	19003757	19003757

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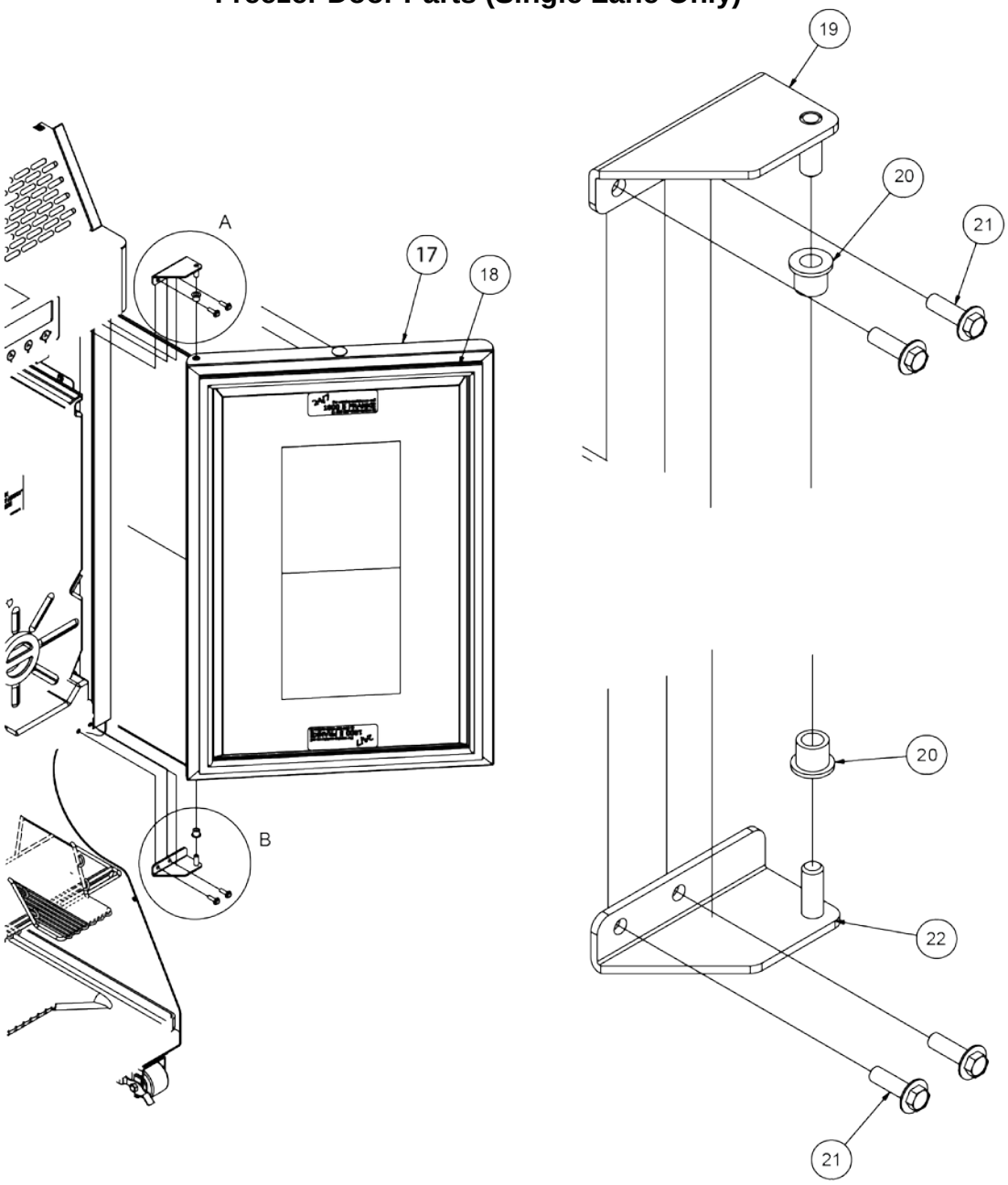
16	1 ea.	Bottom Drip Tray	19003753	19003753

Freezer Door Parts (Single Lane Only)



			Part Numbers	
Key No.	**Quantity**	**Description**	**120-Volt/60 Hz**	**230-Volt/50 Hz**
17	1 ea.	Freezer Door Assembly	18004866	18004866
18	1 ea.	Gasket, Freezer Door Case	19003748	19003748
19	1 ea.	Door Hinge, Top (RH)/Bottom (LH)	18002224	18002224
20	2 ea.	Door Bushing, Bronze	3700894	3700894
21	4 ea.	Screw, Flanged	19003057	19003057

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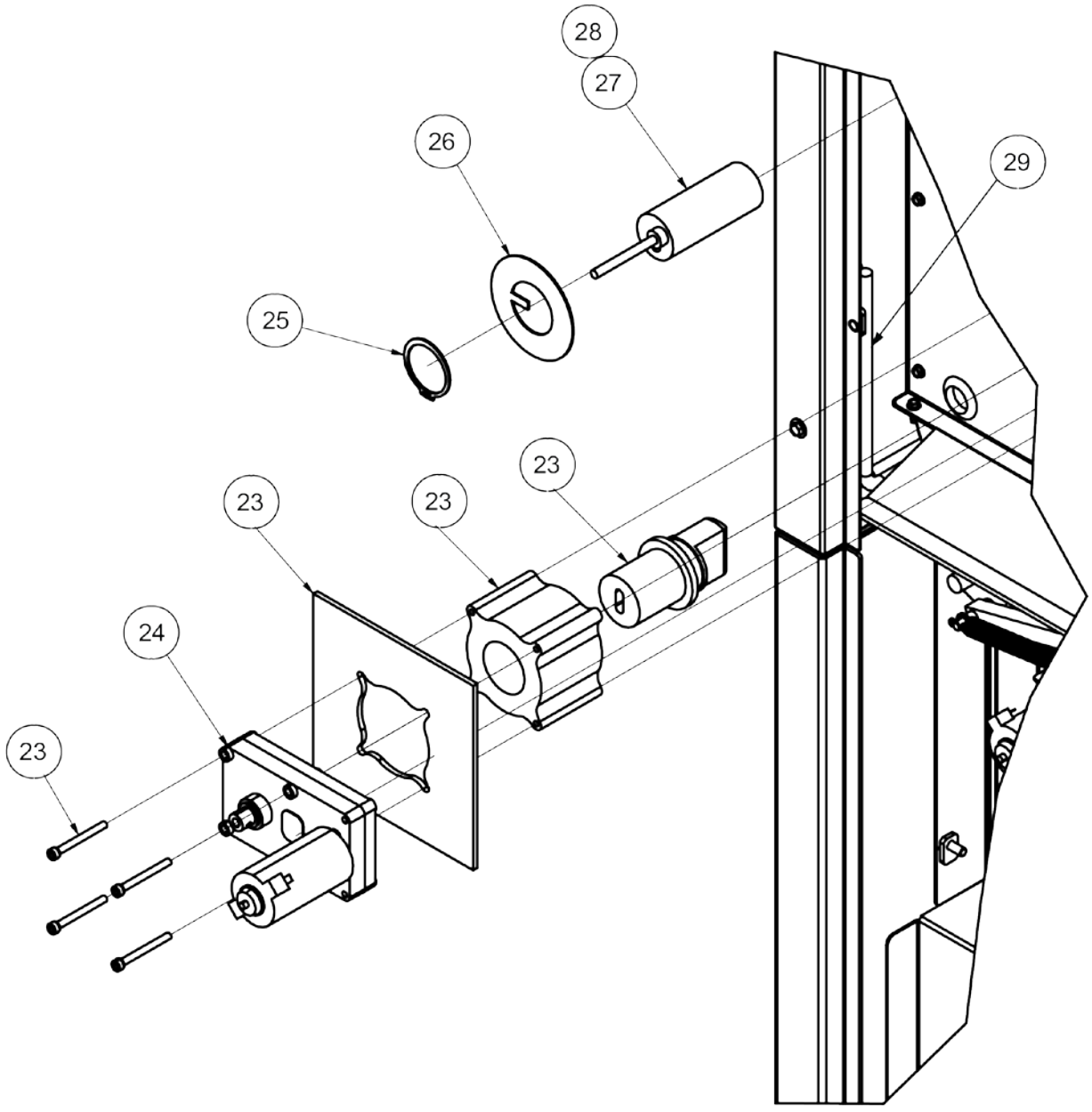
22	1 ea.	Door Hinge, Bottom (RH)/Top (LH)	18002225	18002225

Hopper Rotor Drive & Product Sensor (All F3D3 Versions)



			Part Numbers	
Key No.	**Quantity**	**Description**	**120-Volt/60 Hz**	**230-Volt/50 Hz**
23	1 ea.	Rotor Drive Sub-Assembly	18003285	18003285
24	1 ea.	Rotor Motor, Gear Reduction	19002708	19002708
25	1 ea.	Retaining Ring, External	19000238	19000238
26	1 ea.	Washer, Sensor Retaining	17002997	17002997
27	1 ea.	Product (present) Sensor	19000384	19000384

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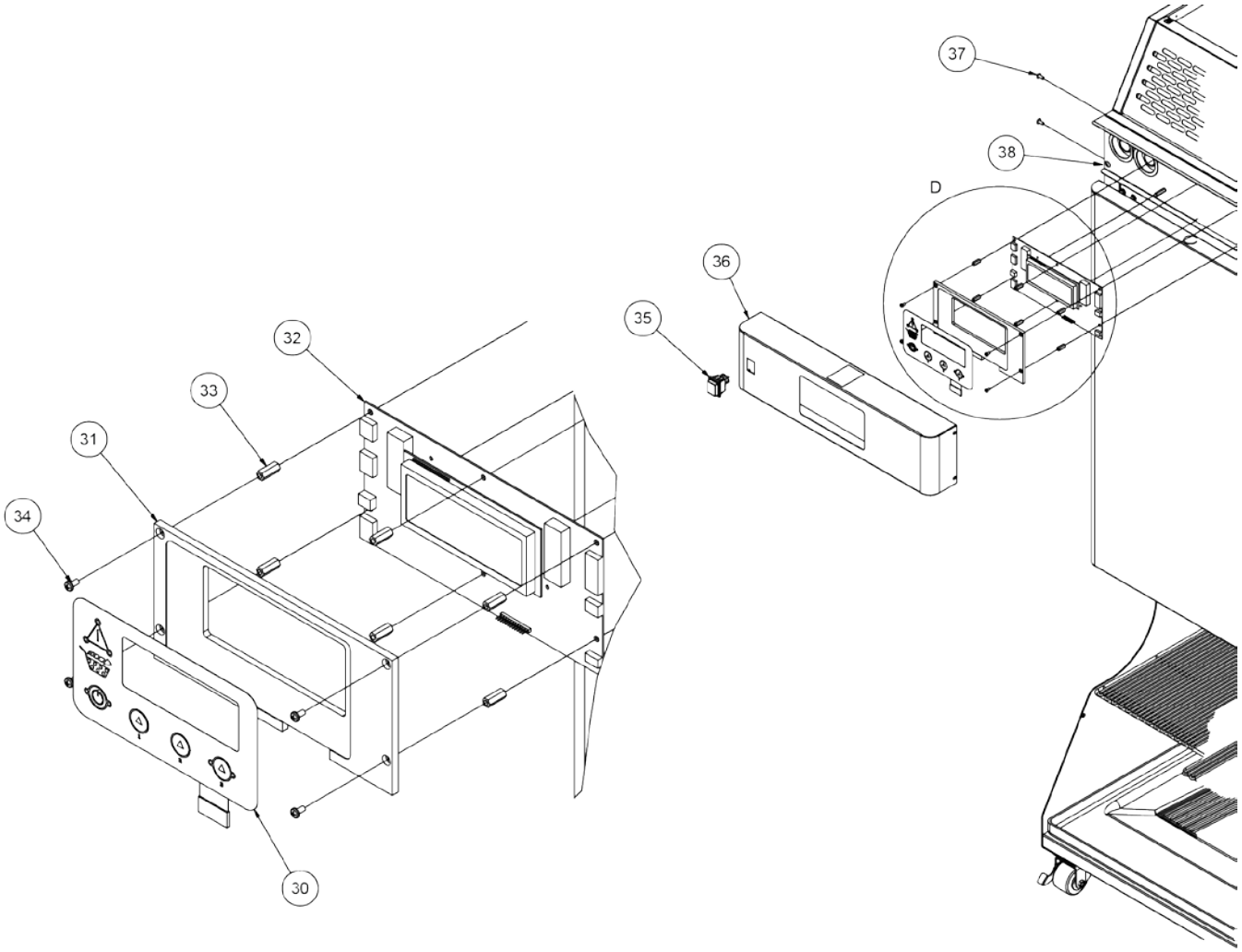
28	1 ea.	Sleeve, Product Sensor	19000383	19000383
29	1 ea.	Heat Wire, 1760 mm, 3 watts/ft.	19003973	19003975

Control Panel & Master Board (All F3D3 Versions)



			Part Numbers	
Key No.	**Quantity**	**Description**	**120-Volt/60 Hz**	**230-Volt/50 Hz**
30	1 ea.	Touch Pad Overlay	19003900	19003900
31	1 ea.	Backing Plate, Touch Pad Overlay	19003901	19003901
32	1 ea.	PCB Controller (Master Control Board)	19003899	19003899
33	6 ea.	Standoff, Overlay Mounting (M4 x 18)	19002776	19002776
34	4 ea.	Screw, Overlay Mounting (M4 x 8)	19002745	19002745
35	1 ea.	Rocker Switch, Main Power-ON/OFF	385.151	385.151
36	1 ea.	Front Bezel, Control Panel, w/studs	19004012	19004012

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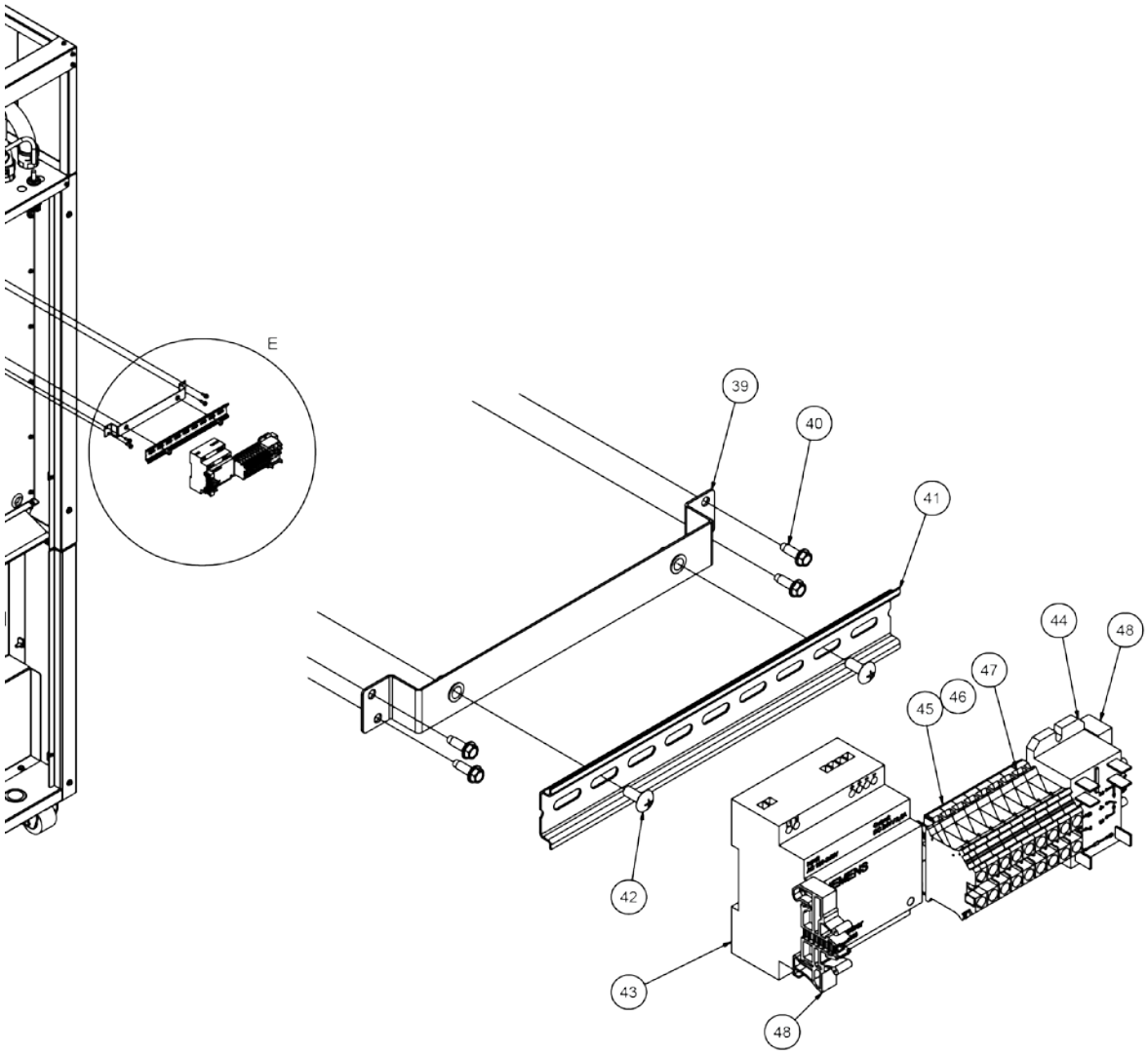
37	4 ea.	Screws, Front Bezel Mounting	19003058	19003058
38	1 ea.	Heat Wire, 2860 mm, 3 watts/ft.	19003972	19003974

DIN Rail & Mounted Electric Components (Electrical Components All F3D3 Versions)



			Part Numbers	
Key No.	Quantity	Description	120-Volt/60 Hz	230-Volt/50 Hz
39	1 ea.	DIN Rail Mounting Bracket	17017004	17017004
40	4 ea.	Screw, DIN Rail Mounting Bracket	3118101	3118101
41	1 ea.	DIN Rail (35 x 230 mm)	19000366	19000366
42	2 ea.	Screw, DIN Rain Mounting (to Bracket)	19002869	19002869
43	1 ea.	Power Supply, 24V DC SIEMENS	19003762	19003762
44	1 ea.	Relay, 30A/24V DC DPST - Schneider	19003558	19003558
45	2 ea.	Terminal Block Module	3588201	3588201
46	3 ea.	Terminal Block Module	3588202	3588202

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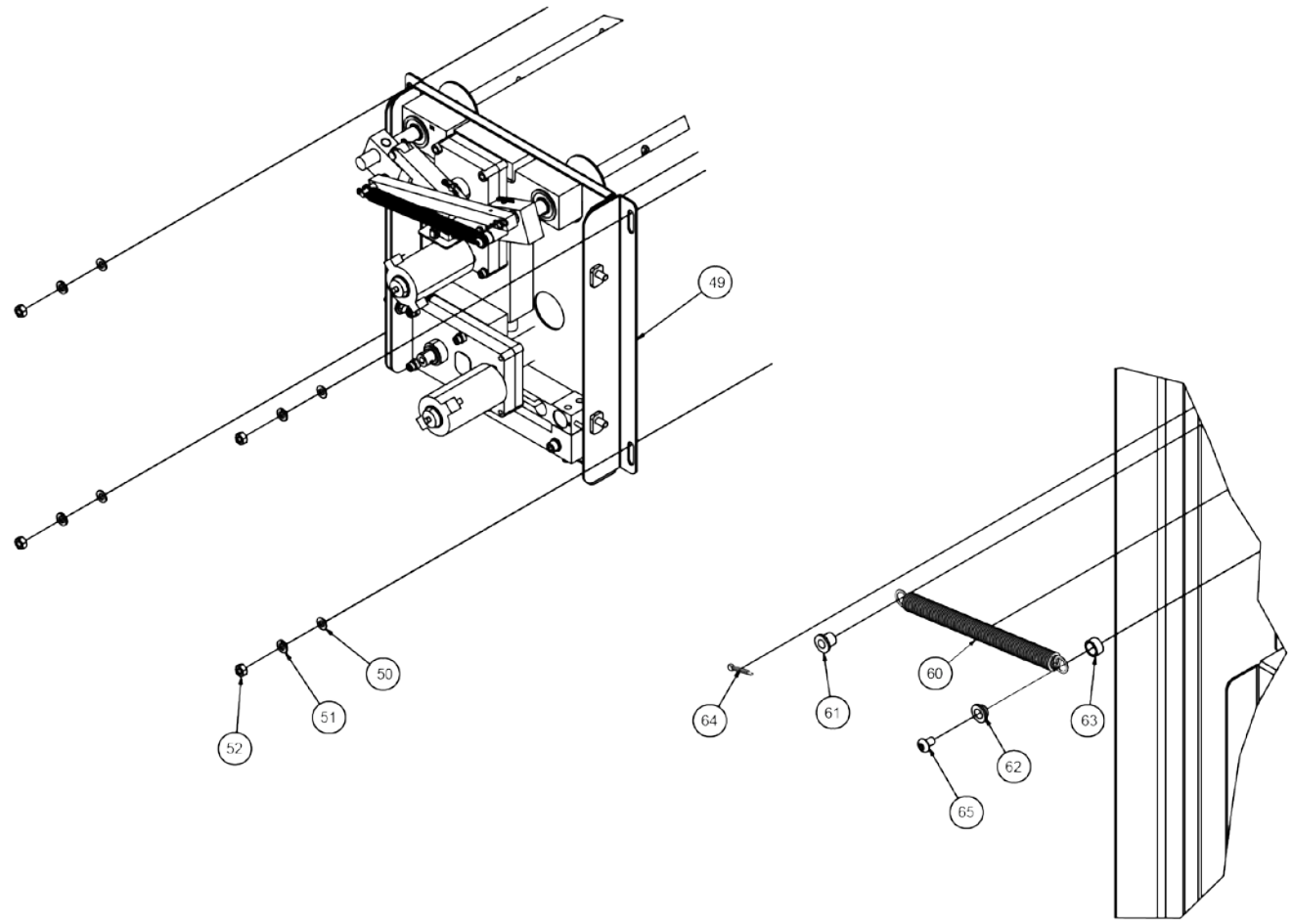
47	1 ea.	Terminal Block Module	3588203	3588203
48	2 ea.	End Stop Terminal Blocks	3588206	3588206

Automation Assembly & Door Spring Sub-Assembly (All F3D3 Versions)



			Part Numbers	
Key No.	**Quantity**	**Description**	**120-Volt/60 Hz**	**230-Volt/50 Hz**
49	1 ea.	Door Lift Assembly	18003834	18003834
50	4 ea.	Flat Washer, Stainless Steel (M6)	19001569	19001569
51	4 ea.	Lock Washer , Stainless Steel (M6)	19001570	19001570
52	4 ea.	Nut , Stainless Steel (M6)	19000492	19000492
60*	1 ea.	Spring, Extension	19000213	19000213
61	1 ea.	Bushing, Bronze (9.4 mm long)	19003681	19003681
62	1 ea.	Bushing, Bronze (6.3 mm long)	19003680	19003680
63	1 ea.	Bushing, Plastic (5.6 mm)	19003682	19003682
64	1 ea.	Cotter Pin, Brass	19002985	19002985

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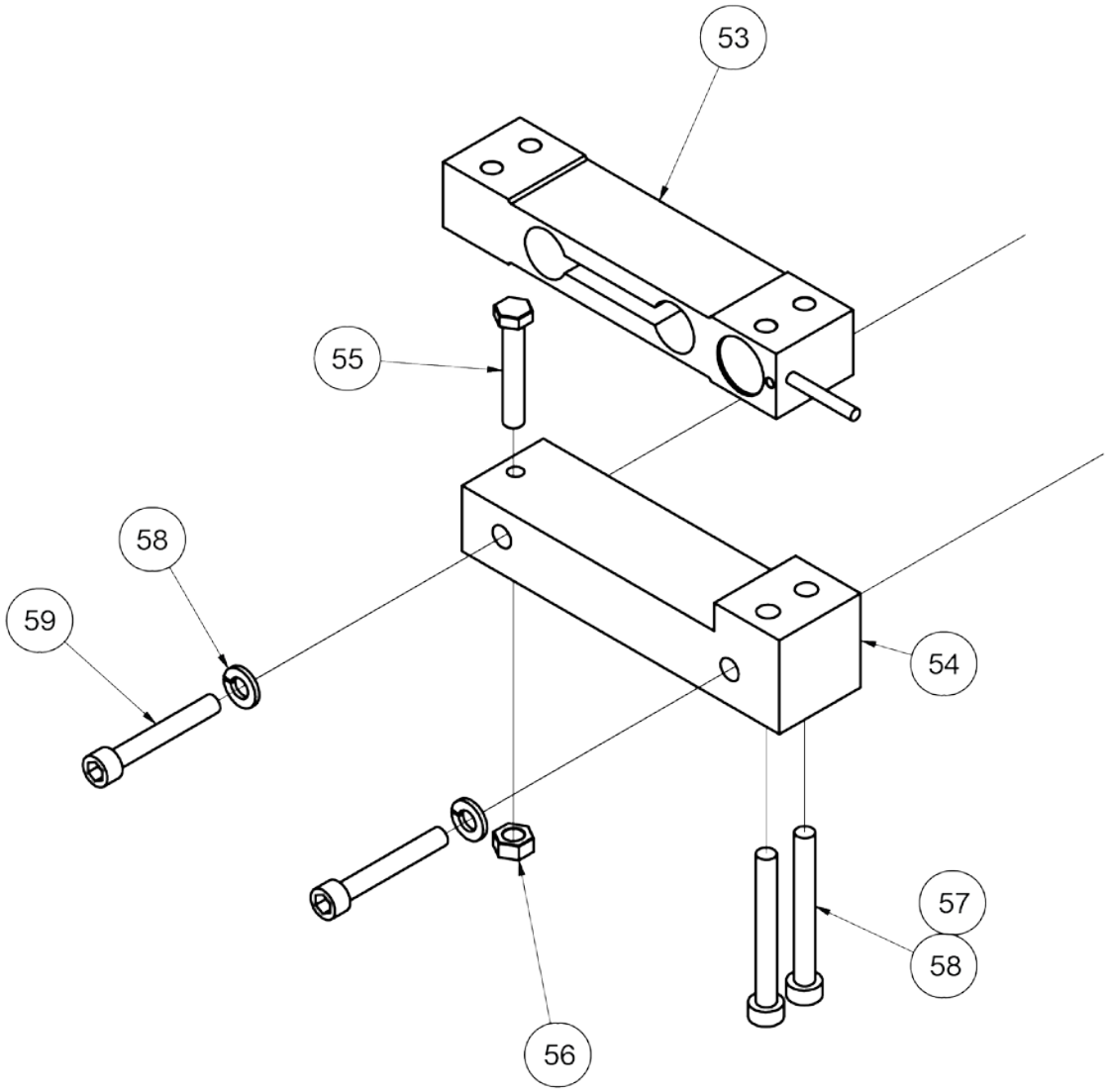
65	1 ea.	Screw, Stainless Steel (M5x8)	19001582	19001582

** Break in Key No. sequence is intentional. See Page 8 for Key Nos. 53-59.*

Load Cell Assembly (All F3D3 Versions)



			Part Numbers	
Key No.	**Quantity**	**Description**	**120-Volt/60 Hz**	**230-Volt/50 Hz**
53	1 ea.	Load Cell	19002732	19002732
54	1 ea.	Load Cell Base	19000187	19000187
55	1 ea.	Stop Bolt, Load Cell	19002767	19002767
56	1 ea.	Nut, Stop Bolt, Stainless Steel (M6)	19001576	19001576
57	2 ea.	Screw, Cell-to-Base (M6x50)	19001564	19001564
58	4 ea.	Lock Washers (M6)	19001570	19001570

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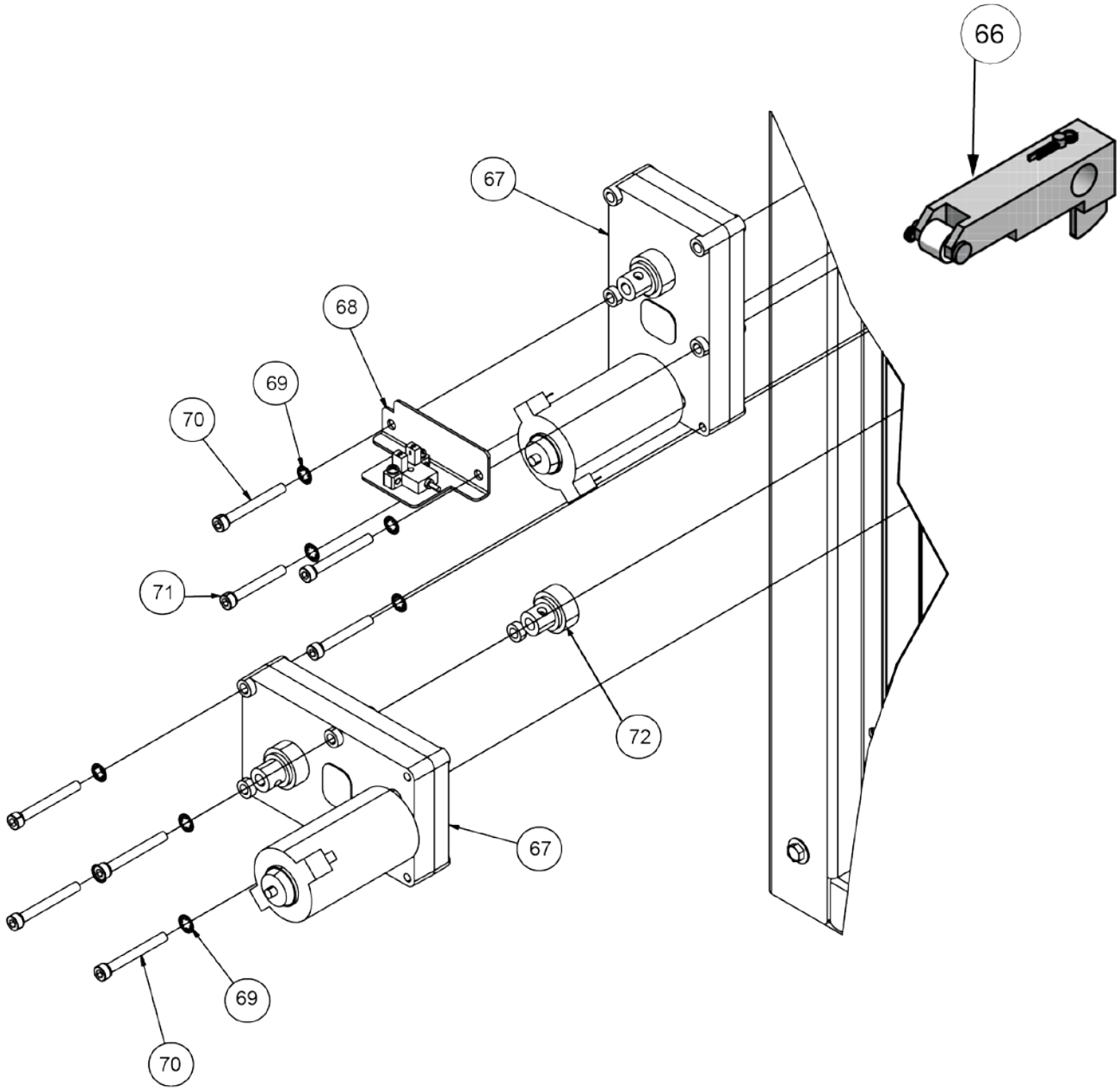
59	2 ea.	Screw, Load Cell Mounting (M6x40)	19001580	19001580

Door Open & Lift Motors (All F3D3 Versions)



			Part Numbers	
Key No.	**Quantity**	**Description**	**120-Volt/60 Hz**	**230-Volt/50 Hz**
66	1 ea.	Arm Cam with Internal Flag	18001855	18001855
67	2 ea.	Motor (for Door Open & Lift Motor)	19002708	19002708
68	1 ea.	Optical Sensor with Mounting Bracket	18002665	18002665
69	8 ea.	Lock Washer #10	5046	5046
70	6 ea.	Screw, Motor Mounting - M5 40 mm long	19002765	19002765

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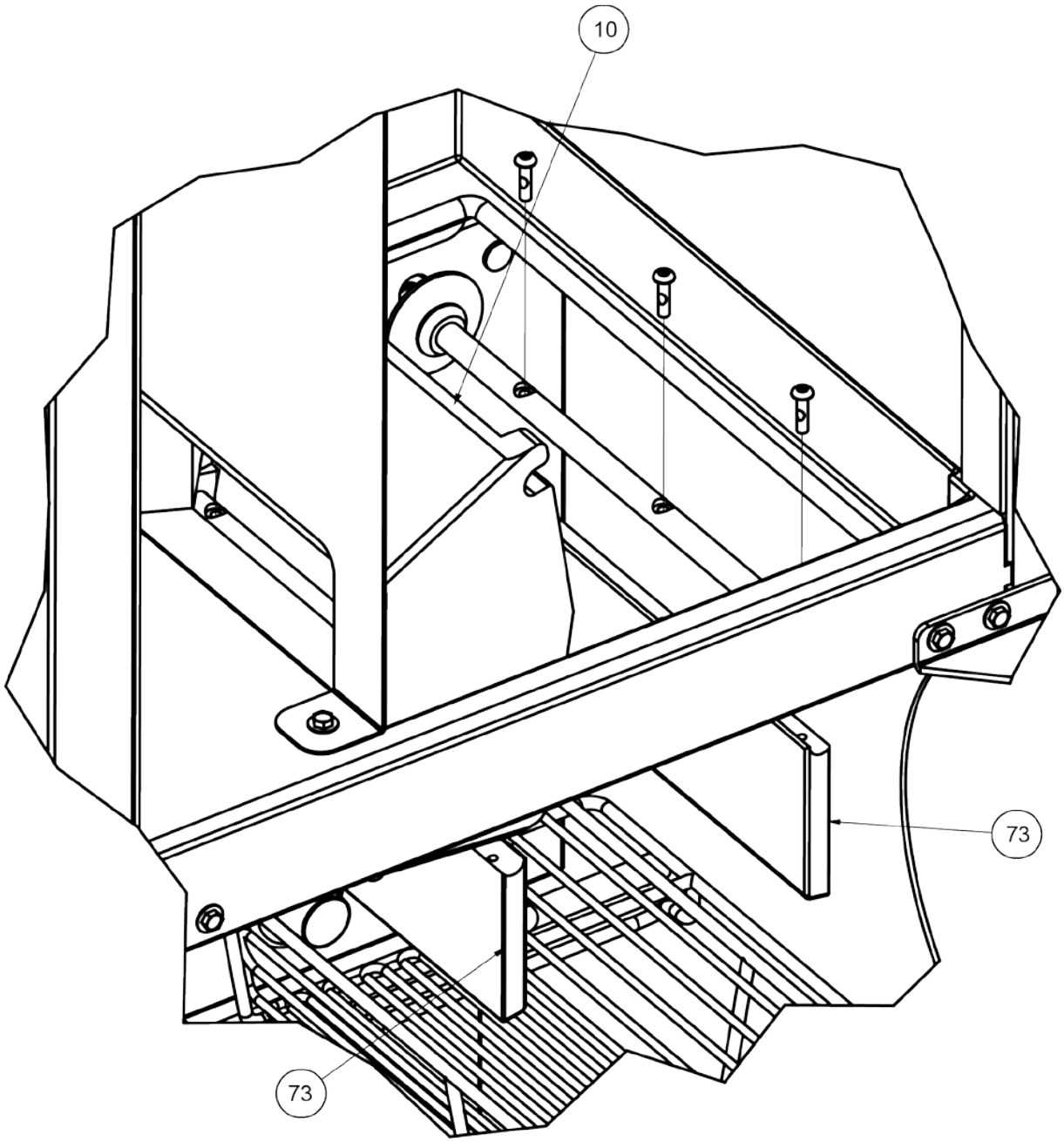
71	2 ea.	Screw, Motor Mounting – M5 35 mm long	19002766	19002766
72	1 ea.	Door Lift Shaft	19000198	19000198

Dispense Doors & Bucket (All F3D3 Versions)



			Part Numbers	
Key No.	**Quantity**	**Description**	**120-Volt/60 Hz**	**230-Volt/50 Hz**
10	1 ea.	Bucket, Silicone (fries)	19002725	19002725
73	2 ea.	Doors, Product Dispensing w/screws	19003534	19003534

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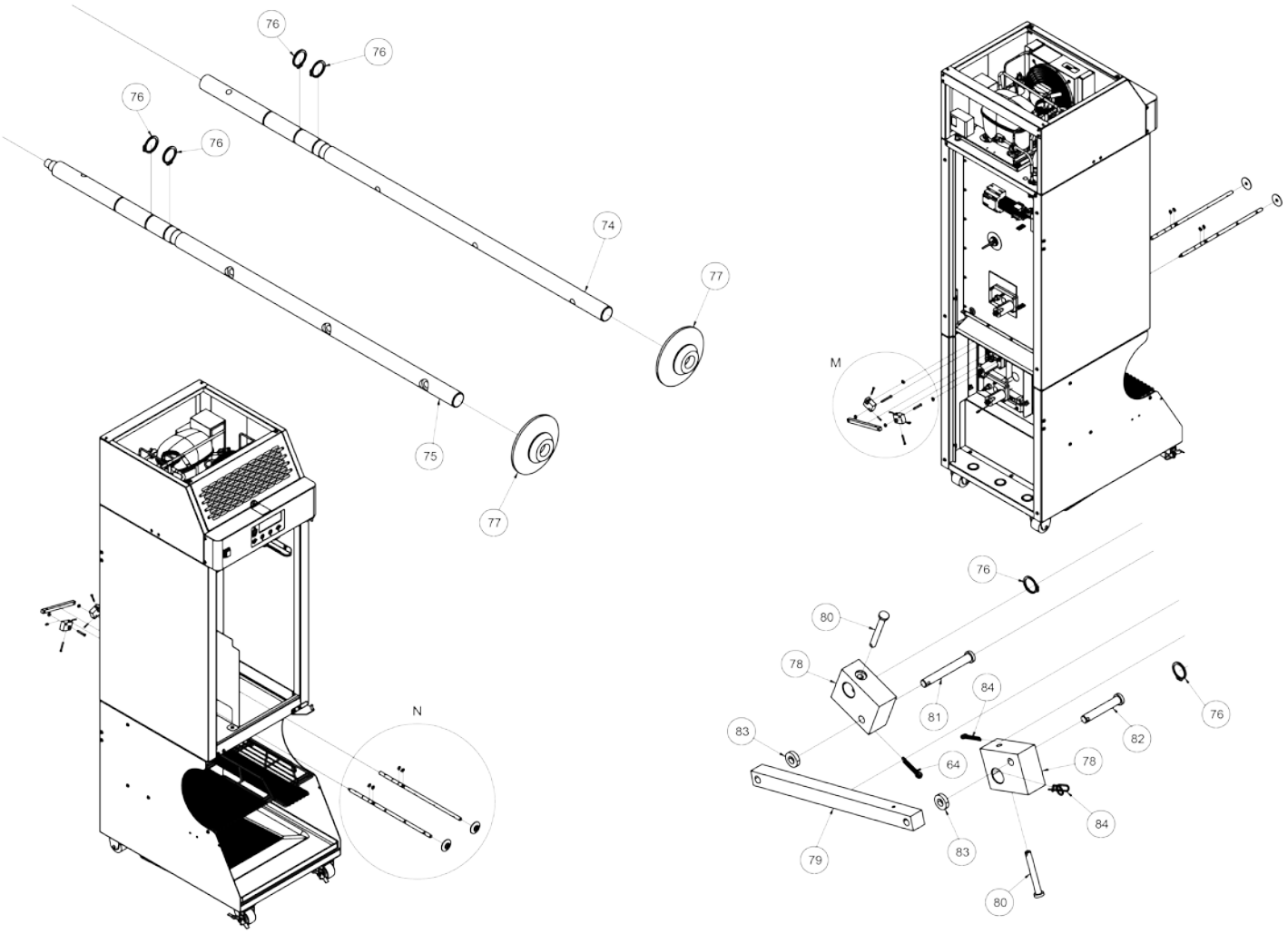
Door Shafts & Shaft Linkage (All F3D3 Versions)



			Part Numbers	
Key No.	**Quantity**	**Description**	**120-Volt/60 Hz**	**230-Volt/50 Hz**
74	1 ea.	Right Dispense Door Shaft	19002738	19002738
75	1 ea.	Left Dispense Door Shaft	19002737	19002737
76	6 ea.	Retaining Ring, external ½”	19000215	19000215
77	2 ea.	Seal, Door Shaft	19000891	19000891
78	2 ea.	Block , Door Rotation	19000193	19000193
79	1 ea.	Link, Door Actuator	19000194	19000194
80	2 ea.	Clevis Pin (4.55 x 38.1)	19000210	19000210
81	1 ea.	Clevis Pin (6.35 x 50.8)	19000211	19000211
82	1 ea.	Clevis Pin (6.35 x 38.1)	19000212	19000212

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83	2 ea.	Spacer	19000214	19000214
84	1 ea.	Cotter Pin, Ring Locking	19000170	19000170

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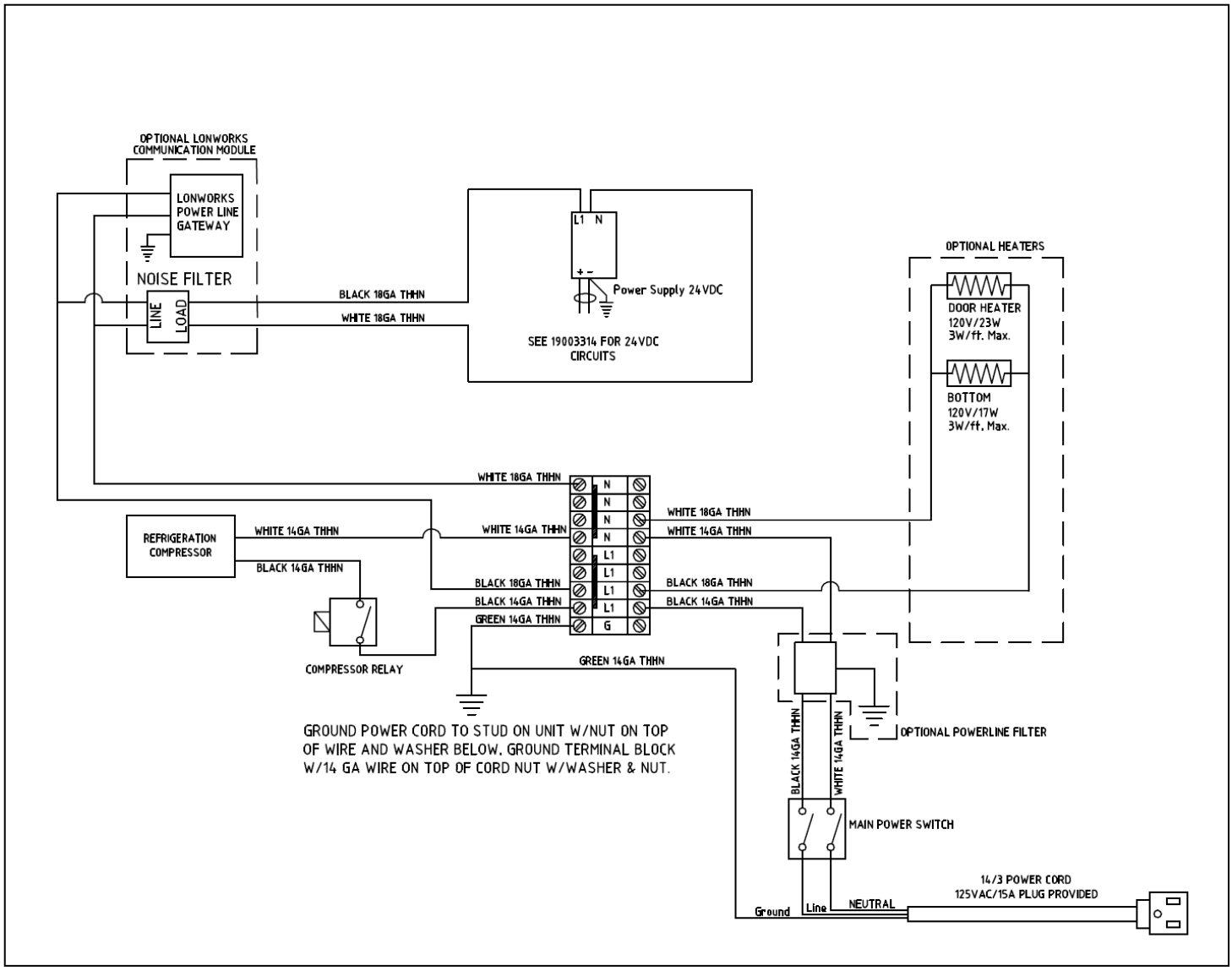
120-Volt Wiring Diagram



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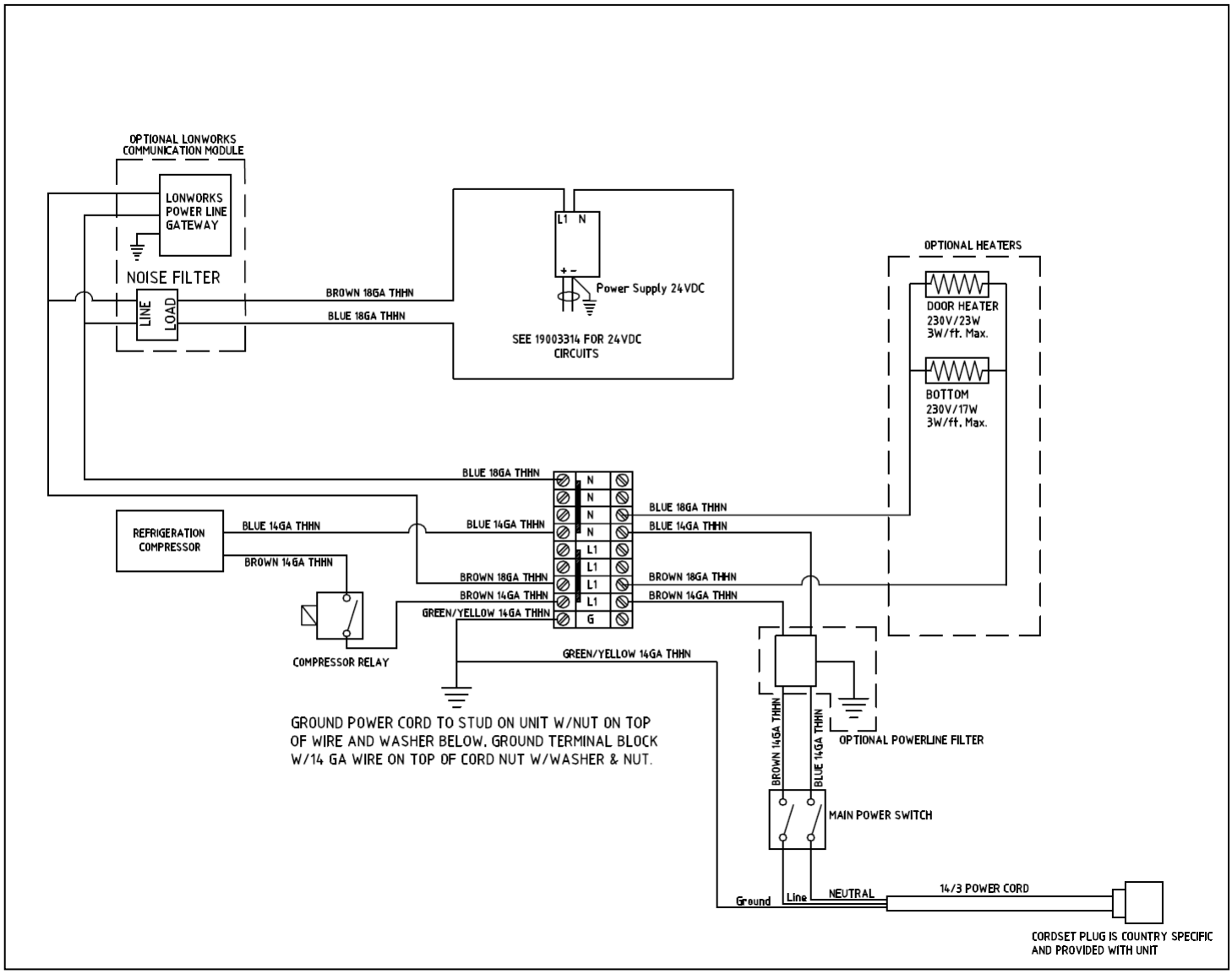
230-Volt Wiring Diagram



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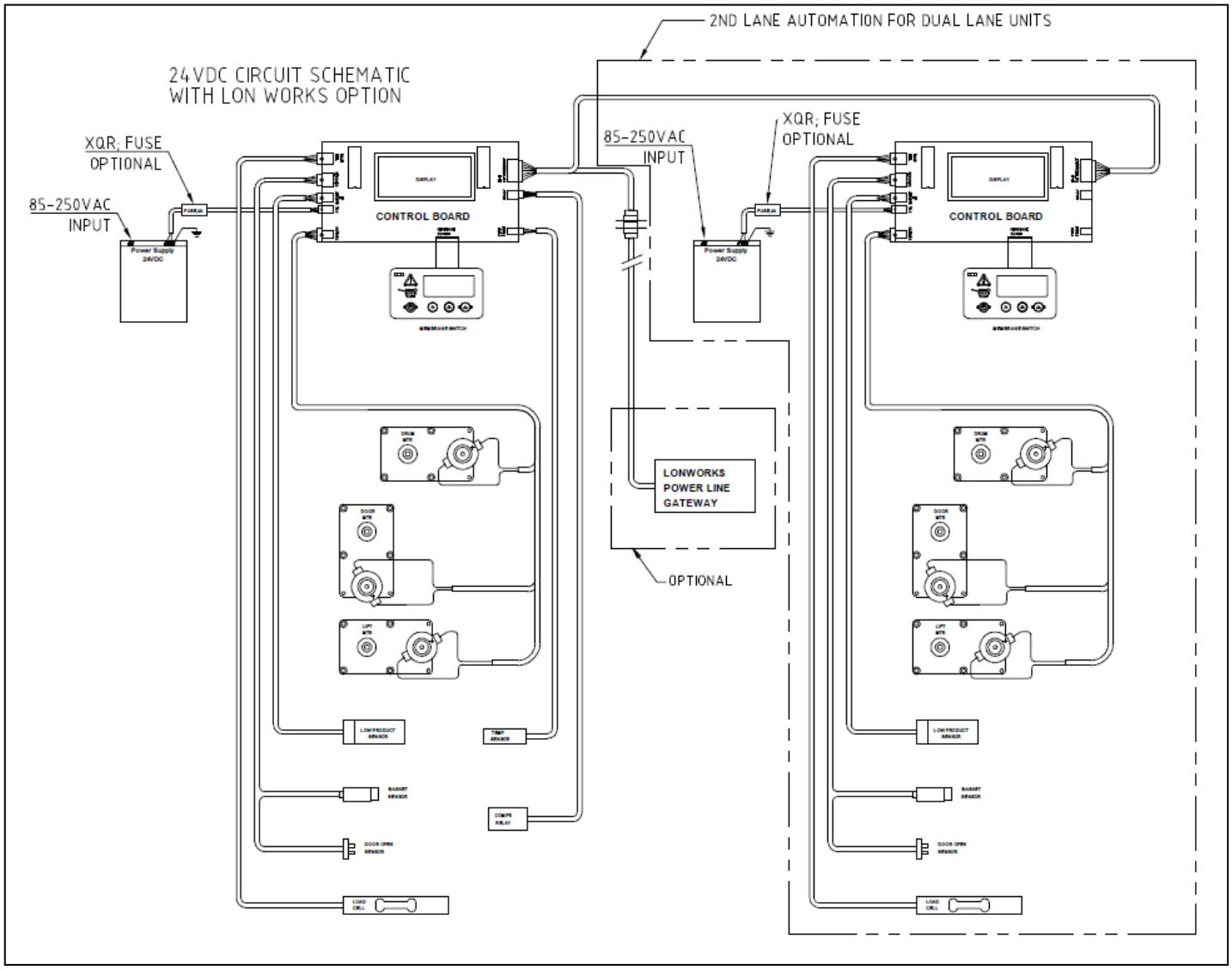
24-Volt Wiring Diagram (All F3D3S Models)

(Also Covers Dual Lane F3D3 Models)



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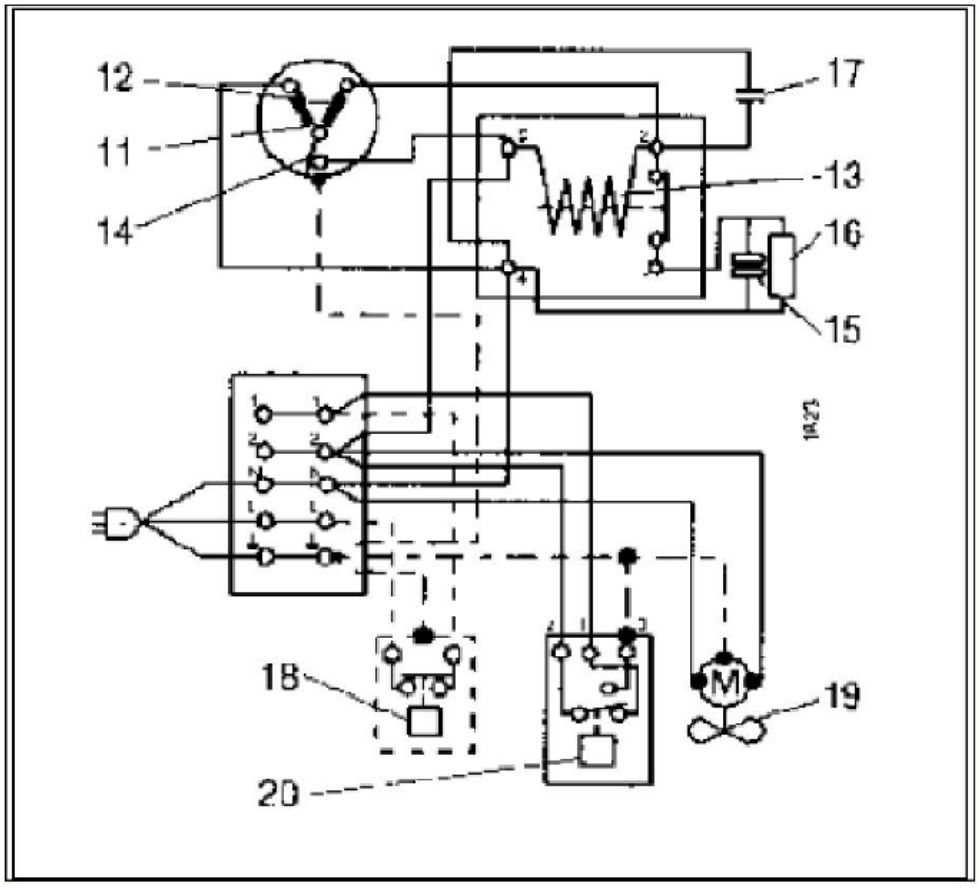
Danfoss Condensing Unit
Model LCHC0065RC____B Electric Schematic



11. MAIN WINDING
12. START WINDING
13. START RELAY
14. WINDING PROTECTOR
15. START CAPACITOR
16. BLEEDER RESISTANCE
17. RUN CAPACITOR
18. THERMOSTAT
19. FAN
20. PRESSURE CONTROL

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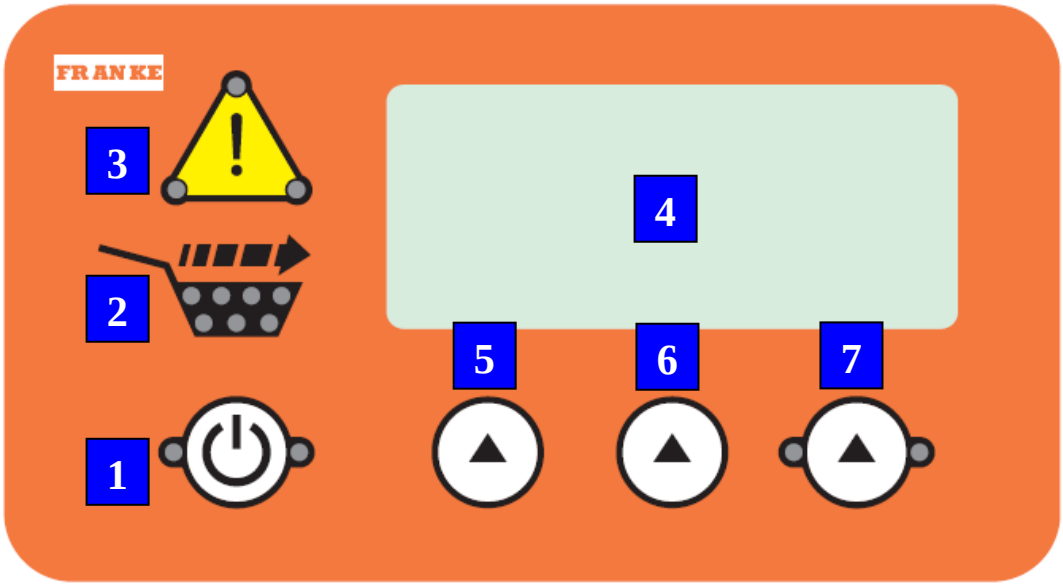
Control Panel Function *QUICK*-Guide:



Note: Newer lane control overlays are black.

F3D3 Series lane control panel overlays have the following touch pads, indicator lights and display:

1. **Lane POWER Touch Pad** (With green right & left LED Lights)
   Press to turn individual lane ON or OFF:
   - Press and Hold touch pad for 4 seconds to turn on. Lights will stay on.
   - Press and Hold touch pad for 4 seconds to turn off. Lights will turn off.

   NOTE: Do not turn ON until hopper is filled with fries.

2. **Load READY Graphic** (With 7 Green LED lights inside basket icon):
   When lights are on, the lane is ready to dispense into a fry basket.

3. **Attention/Warning Graphic** (With 3 LED Lights at corners):
   This symbol communicates lane status:
   - No lights on – Unit status OK
   - Lights ON – Getting low on frozen fries in hopper, but unit will continue to dispense.
   - Lights Flashing – Error condition. See display (**4**) for error message & SM Section 1.4.

4. **Message Display Window**
   - Displays current freezer operating temperature (in upper-right corner of left display)
   - Displays Error Messages (**Err04**, etc.)and possible causes and remedies
   - Displays unit Setup & Diagnostic Programs with possible actions or decision options.

5-7 **Program Decision or Action Touch Pads**
   Three touch pads are evenly spaced under the Display Screen, which displays options: **Inc** (increase) **Dec** (decrease) **OK** etc. Use the Action ▲ touch pad under the option (Inc/Dec/OK) to initiate that action.

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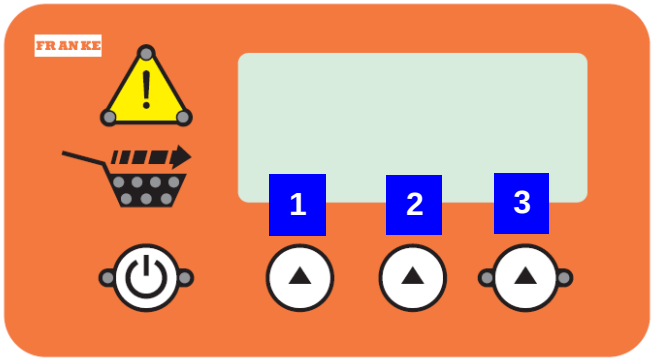
Customer Level Access

All F3D3 Series Fries Dispensers provide easy access to Customer-Level operating and diagnostic parameters, using the lane operator-interface touch panels & displays. For customer-level programming access:

1) Leave unit plugged in.
2) Turn Main Power Switch **ON**.
3) Lane power must be **OFF**. Display will show current freezer temperature.



***NOTE:** All programming is done using the three choice buttons labeled: 1, 2 and 3 above.*

To Access Customer Level Programming Functions:		
Step	**Action Required** →	**Resulting Display**
1	From Standby condition use 3rd touchpad and enter: **3-3-3-3**. [Entry code]	Special Mode Select Cust Fact Exit
2	Press touchpad 1 = Cust*[omer]* *See Page 2 Table for language options.*	Customer Access **Set Language ?** Prev OK Next
3A	Press touchpad 2 = OK [To change language] *or* Press touchpad 3 = Next [See next function]	Customer Access **Set Temp Cntrl ?** *[Control]* Prev OK Next
3B	Press touchpad 2 = OK [To change set temp] *or* Press touchpad 3 = Next [See next function]	Customer Access **Calibrate ?** Prev OK Next
3C	Press touchpad 2 = OK [To calibrate load cell] *or* Press touchpad 3 = Next [See next function]	Customer Access **Test Motors ?** Prev OK Next
3D	Press touchpad 2 = OK [To test motors] *or* Press touchpad 3 = Next [See next function]	Customer Access **View Statistics ?** Prev OK Next
3E	Press touchpad 2 = OK [To view statistics] *or* Press touchpad 3 = Next [See next function]	Customer Access **Exit ?** Prev OK Next
3F	Press touchpad 2 = OK [To exit] *or* Press touchpad 3 = Next [Goes back to Set Language]	
See Page 2 Customer Function Guide for Sub-Menus & Options		

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Customer Level Functions	Sub-Menu Functions	Display Values	Notes
Customer Access **Set Language ?** Prev OK Next	Lang = English		Press: OK Change or Exit
	Lang = Deutsch		Press: OK Change or Exit
	Lang = Espanol		Press: OK Change or Exit
	Lang = Francais		Press: OK Change or Exit
	Lang = Fr-Eng		Toggles between English-French-English, etc.
Customer Access **Set Temp Cntrl** (Control) **?** Prev OK Next	Set Point ? Yes Exit	SetPt = -05F Inc Dec OK	-05 F is the default temperature Press 1 = Inc – To increase one degree, etc
	Units ? Yes Exit	Select Units Cent Fahr	US default is Fahr [Fahrenheit] All others default is Cent [Centigrade]
Customer Access **Calibrate ?** Prev OK Next	Calibrate Menu Begin ? OK Exit	Calibrate Menu Load Cell = 00**00*** All Clear? OK Exit	* Two-digit Load Cell TAR (no-load) value. Will cycle within a narrow range.
Customer Access **Test Motors ?** Prev OK Next	Drum Motor ? OK Next	Drum Motor T = 0000 P = 0000 Run Reset Next	T = Motor Torque; P = Peak Torque Press 1 = Run - To run Drum Motor Press 2 = Reset - To zero P value Press 3 = Next - to go to Lift Motor Test
	Lift Motor ? OK Next	Lift Motor L = 00**00** T = 0000 Run Reset Next	L = Live Load Cell value; T = Motor Torque Press 1 = Run - To run the Lift Motor Press 2 = Reset - To zero T value Press 3 = Next - to go to Door Motor Tests
	Door Motor ? OK Next	Door Motor T = 0000 P = 0000 Run Reset Exit	T = Motor Torque; P = Peak Torque Press 1 = Run - To run Lift Motor Press 2 = Reset - To zero P value Press 3 = Exit - to repeat Motor Tests
Customer Access **View Statistics ?** Prev OK Next	Disp Cyc = 0000000 Cal Cyc = 00000 Next		Reports the number of dispense cycles and calibration cycles
	Small Cyc = 0000000 Medium Cyc = 0000000 Large Cyc = 0000000 Prev Next		Reports the number of Small, Medium and Large loads dispensed
	Drum TQ = 0000 F. TO=0000 Lft TQ = 0000 L. TO=0000 Dor TQ = 0000 D. TO 0000 Prev Next		Reports Drum, Lift and Door Motor over-torque events; plus fill time-outs (F. TO), lift time-outs (L. TO) and door time-outs (D. TO)
	Zero (Z) = 000**00** Large (C) = 00**000** Pre (P) = 0**0000** Prev Exit		Reports Load Cell Calibration values: Z Default is 40 C Default is 326 P (Pre-Load) Default is 2900

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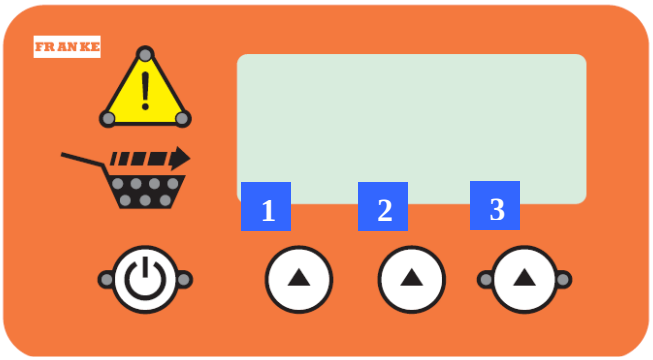
LCC - Load Cell Calibration

NOTE: A Load Cell is used to weigh and portion frozen French fries. They ship from the factory calibrated, but load cell replacement or repair of the automation assembly require recalibration, to ensure accurate dispense weights. Follow this procedure to calibrate a load cell.



***NOTE:** All programming is done using the three choice buttons labeled: 1, 2 and 3 above.*

1) Leave unit plugged in.
2) Product hopper should be removed and any remaining fries removed from rubber bucket before proceeding.
3) Turn Main Power Switch **ON**.
4) Press Lane Power-**ON** touchpad and wait for display to show: **Ready.**

Step	Action Required →	Resulting Display
5	From Standby condition press touchpads: **3-3-3-3**. [Entry code]	Special Mode Select Cust Fact Exit
6	Press touchpad 1 = Cust	Lev2 – Customer Access Set Language ? Prev OK Next
7	Press touchpad 3 = Next	Lev2 – Customer Access Set Temp Control ? Prev OK Next
8	Press touchpad 3 = Next	Lev2 – Customer Access Calibrate ? Prev OK Next
9	Press touchpad 2 = OK	Lev2 – Customer Access Calibrate Now ? OK Exit
10	Press touchpad 1 = OK	Lev2 – Customer Access Load Cell = XXXX All Clear? OK Exit
11	Press touchpad 1 = OK	Lev2 – Customer Access Zero = XXXX
		Lev2 – Customer Access Preload = XXXX
		Lev2 – Customer Access Add Large Wt [Weight] OK
12	Add Large Weight = 1.5 lb / 680 gm to product loading bucket... then Press touchpad 1 = OK	Lev2 – Customer Access Large = XXXX
		Lev2 – Customer Access Z = XXXX C = XXXX P = XXXX Recal Accept

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D3 Load Cell Calibration *Continued*:

13	Press 1 = Recal [if error occurs during Calibration Procedure]…**or**	[Returns to screen shown in Step 6 on page 1]
13A	Press 2 = Accept	Lev2 – Customer Access Accepted !!
		Lev2 – Customer Access Test Motors ? Prev OK Next
14	Press touchpad 3 = Next	Lev2 – Customer Access Exit Lev2 ? Prev OK Next
15	Press touchpad 2 = OK [to Exit]	**Shut…** [appears briefly, then display goes blank]

16) Remove calibration weight from the Product Loading Bucket.
17) Reinstall Product Hopper in freezer and fill it with 2 bags of frozen fries.
18) Power up the Lane being calibrated. Check LCD display to insure "**Ready**" is shown for Lane being refilled with fries.
19) Dispense several loads from this lane at each size: Small, Medium and Large, to verify calibration procedure has been completed successfully.

NOTES & Tips:

1. A US Calibration Weight 1.5 lb [680 gm] is available through Franke Technical Support Group.
2. If a US Calibration Weight is not available, use six frozen 4:1 hamburger patties. Place them in a clean bag or on aluminum foil. **IMPORTANT:** If hamburger patties are used, clean and sanitize the Product Chute to avoid any chance of cross contamination.

TIP: *If a calibrated 1.5 pound/680 gram weight is not available, use six 4:1 frozen hamburger patties. Clean Product Bucket after calibration.*

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2.1 Introduction To F3D3 Series Field Service

The Basics:

1) Technicians should be authorized to work on Franke Equipment and be qualified to diagnose and repair refrigeration equipment.

2) The F3D3 Series Freezer/Dispensers operate on 120VAC/60Hz or 230VAC/50Hz power and are provide with a grounded plug and 3-meter [10 foot] power cord.

WARNING!
Unplug unit from power source whenever servicing electrical components or removing the rear service access panel. Failure to unplug this unit may result in electric shock, burns or death.

3) **F3D3/S Models** refrigeration systems are charged with ozone-safe R404A refrigerant. Only use R404A refrigerant when recharging this unit.

4) **F3D3P/SP Models** refrigeration systems are charged with **R290 Propane** refrigerant. **It is strictly forbidden to test or repair the F3D3P Refrigeration System**.

WARNING!
PROPANE IS HIGHLY FLAMMABLE. In the event of refrigeration system problems, contact Franke Technical Support. If necessary, the F3D3P Fries Freezer Dispenser will be picked up and taken to a Franke authorized facility for repair.

5) Always verify proper removable component assembly, proper unit cleaning and correct use of controls by unit operators, before replacing or repairing components.

6) The F3D3 Series Compressor Package is top mounted; and may require use of a sturdy ladder to access components, check for leaks or replace compressor.

F3D3/S Unit Data Plates

F3D3/S Unit Serial Number is located on data sticker mounted left of condenser coil. Lift off vented panel & remove filter.

F3D3P/SP Unit Data Plate

F3D3P Unit Serial Number is located on data sticker mounted top-left on right side panel.

Rear Service Access Panel

After removing the four Phillips screws, lift panel up and out to provide access to rear-mounted components.

Right Service Access Panel

Service start relay & capacitor via right-side access panel

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Suggested [On-Truck] Repair Parts:
We suggest the following to ensure first-trip fix of F3D3 Units:

120V/60Hz	230V/50Hz	Description	Quantity
19003748	19003748	Freezer Door Gasket	1
19002708	19002708	Drum/Door-Lift/Door-Open Motors	2
19002732	19002732	Load Cell	1
19000192	19000192	Door-Open Sensor	1
19003900	19003900	Operator Touch Pad Control Panel	1
385.151	385.151	Main Power Switch	1
19003762	19003762	Siemens 24-Volt Power Supply	1
19003424	19003899	F3D3S Main Control Board	2
19000384	19000384	Low Product Sensor	1
19003042	19003042	SPST Sensor/Actuator Set	2
18003285	18003285	Kit, Drive Shaft Rotor Repair	2
18004999	18004999	Kit, Spring & Link Repair	2
19003534	18003534	Product Door	2
19000247	19000247	Product Baffle	2
19001253	19001086	Condenser Fan Motor	1
19001082	19001080	Start Relay	2
19001085	19001254	Motor Start Capacitor	2
19001190	19001190	Thermostatic Expansion Valve	1
19003221	19003222	Condenser/Compressor	1
19000801	19000826	Cord Set [10-foot]	1
19003756	19003756	Condenser Air Filter	1

NOTE: Part numbers are subject to change, as product improvements are implemented.

When In Doubt…
Call the Franke Technical Support Group for your area.

🛠Tools Required:
[For Mechanical Systems Repair]

- 10 mm [3/8”] flat screwdriver
- 6-7 mm [¼”] flat screwdriver
- 2 mm [1/16”] flat screwdriver
- Small & Medium Phillips screwdrivers
- 3 mm [1/8”] Allen/hex wrench
- 4 mm [5/32”] Allen/hex wrench
- 5 mm [3/16”] Allen/hex wrench
- 13 mm Allen/hex wrench
- 9 mm wrench or socket
- 11 mm [7/16”] box/socket wrench
- Razor knife
- Needle nose pliers
- ‘C’ ring pliers
- Small wire cutters
- Rubber mallet
- Feeler or Gap Gauge
- Plastic Wire Ties

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2.10 Load Cell Replacement

[See Section 1.5 for Part Number]

1) Roll the unit out to allow access to rear service panel.
2) Disconnect power at outlet. [Pull plug.]
3) Remove the screws securing rear service access panel. Lift panel up and off.
4) From front of unit - remove the four Phillips screws [two left side, two right side] securing front controls bezel.
5) Use Phillips screwdriver to remove the four screws that secure control panel to mounting posts. You can allow panel to (gently) hang from the ribbon cable.
6) Locate the Load Cell Cable connector lead on Lane Control Board. This five-wire connector is positioned top-left and identified on the broad. Depress retainer and pull off connector. [See arrow - Photo 3]
7) Tie or tape a string or fish tape to that cable connector.
8) From back of unit – cut any wire harness ties that bundle Load Cell Cable and pull control panel end out & through flexible plastic wiring conduit in condenser compartment.
9) Using a 5 mm [3/16”] Allen/hex wrench, remove the two Load Cell bracket screws and remove assembly.
10) Using that same wrench, separate the Load Cell from its Mounting Bracket by removing the right-side screw.
11) Re-attach the new Load Cell to the old bracket with the mounting screws just removed. **IMPORTANT** – when mounted on assembly, there must be clearance between the back of the load cell and assembly mounting plate.
12) Remount the Load Cell Assembly and tighten the mounting screw using your 5 mm [3/16”] Allen wrench. **NOTE:** Make sure arrow on upper-left end points down.
13) **IMPORTANT** – After installation, check the gap of the load cell [weighs basket contents] by inserting a .5 mm [.020”] feeler or gap gauge between set post on left [open] side of load cell. [See Photo 6, on page 2]
14) If load cell gap is larger or smaller than .5 mm, use a 10 mm [3/8”] open-end wrench to carefully adjust gap-set nut located below left side of load cell.
15) From front of unit - use your fish line/tape to pull the Load Cell cable lead back up to the Main Control Board.
16) Re-attach terminal to Lane Control board. Make sure five-wire terminal snaps in place.
17) While in front - reattach the control panel to its mounting posts using the four Phillips screws removed earlier.
18) Reposition front control bezel and secure with four Phillips screws removed earlier.

Continued…

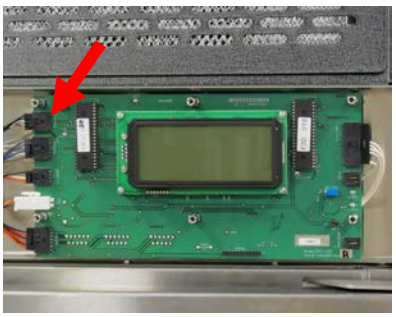
[Photo 1 - Model F3D3S]

Remove four screws that secure front controls bezel.

[Photo 2]
Remove four control touch panel

mounting screws. Allow panel to hang from ribbon connector.

[Photo 3] Touch panel removed



Disconnect Load Cell terminal from Lane Control Board.

[Photo 4] - From back of unit

Remove the two Load Cell Bracket mounting screws.

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2.10 **Load Cell Replacement** *Continued…*

19) Re-route and bundle cable replacing any plastic wire ties that were cut.
20) Plug in unit power cord to power supply.

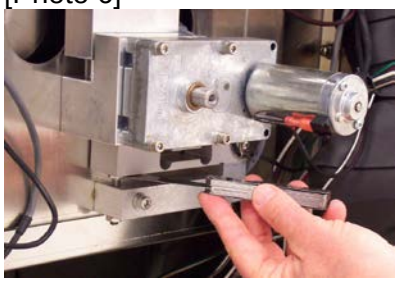
Test the replacement Load Cell as follows:

21) Turn on main power switch & pressing LANE-POWER touch pad on control overlay.
22) If word: **Ready** is in display and basket graphic lights are on, position empty fry basket under hopper and press it against basket bumper switch to initiate fry loading cycle.
23) If Lane properly dispenses fries, it is working properly.
24) **NOTE**: It may be necessary to recalibrate load cell using procedure provided with replacement unit. [or See SM Section 1.9 – Load Cell Calibration]
25) Re-hang and secure rear service access panel and return Dispenser to normal operating location.

[Photo 5]

Separate Load Cell from the mounting bracket by removing screw on right side of assembly.

[Photo 6]



After replacing Load Cell Assembly, check the gap on the load cell using a .50 mm [.020] feeler or gap gauge.

🛠Tools Required:

- Small & Medium Phillips screwdrivers
- 5 mm [3/16”] Allen/Hex Wrench
- 10 mm [3/8”] open end wrench
- Feeler or gap gauge
- Fish tape or string

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2.11 Door-Closing Spring Replacement [Kit Part No. 19003794]

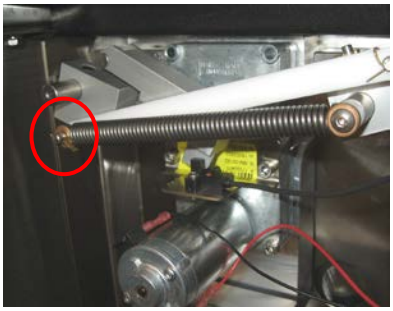
1) Roll the unit out to allow access to rear service panel.
2) Disconnect power at outlet. [Pull plug.]
3) Remove screws securing rear service access panel. Lift panel up and out.
4) Locate broken or weak/extended Door-Closing Spring.
5) Straighten and remove the cotter pin that secures the spring (with bronze or plastic bushing) to the (left) Door Rotation Block Pin.
6) Remove and discard partial, extended or broken spring.
7) Using a 3 mm [1/8”] Allen wrench, remove the right side spring mounting screw and discard remainder of spring and white plastic bushing.
8) Check replacement spring to see if bronze bushings are pressed into spring end loops. If they have fallen out, insert long [9.4 mm] and short [6.3 mm] bronze bushings in spring loops per Photos 3 and 4.
9) Insert new white plastic bushing over right Door Rotation Shaft.
10) Install the new Door Spring by sliding end with short [6.3 mm] bushing over the right Door Rotation Block Pin, replacing the right side retaining screw and tightening with the 3 mm [1/8”] Allen wrench. See Photos 2 and 3.
11) Carefully extend spring to the left Door Rotation Block Pin and slide the 9.3 mm end/bushing over the pin. Insert cotter pin through hole in pin and bend cotter pin legs around pin. See Photo 4.

Test the replacement Door-Closing Spring by:

12) Remove Fry Hopper and insulated freezer bottom.
13) Hinge silicone rubber hopper up and off right door shaft.
14) Manually rotate product doors down, against spring tension. Ensure both doors open in unison and rotate 90 degrees down to full open.
15) Hinge down rubber fries bucket and snap over right door shaft.
16) Plug in unit power cord to power supply.
17) Turn on main power switch & press LANE-POWER touch pad on lane control overlay.
18) If word: **Ready** is in display and ready lights are on in basket graphic, position empty fry basket under hopper and press against basket bumper switch to activate fry load cycle.

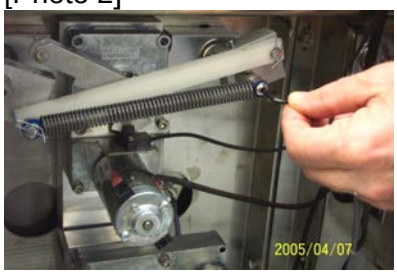
Continued…

[Photo 1] - From rear of unit



Straighten & remove the cotter pin from left side door rotation block pin & slide bushing off pin.

[Photo 2]



Use a 3 mm [1/8”] hex-wrench to remove and later tighten right side spring retaining screw.

[Photo 3] Left-Short Bushing
Ensure bushings are properly installed in spring ends.

[Photo 4] Right-Long Bushing
Ensure cotter pin legs are bent around pin.

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2.12 Door-Closing Spring Replacement [Kit Part No. 19003794] *Continued…*

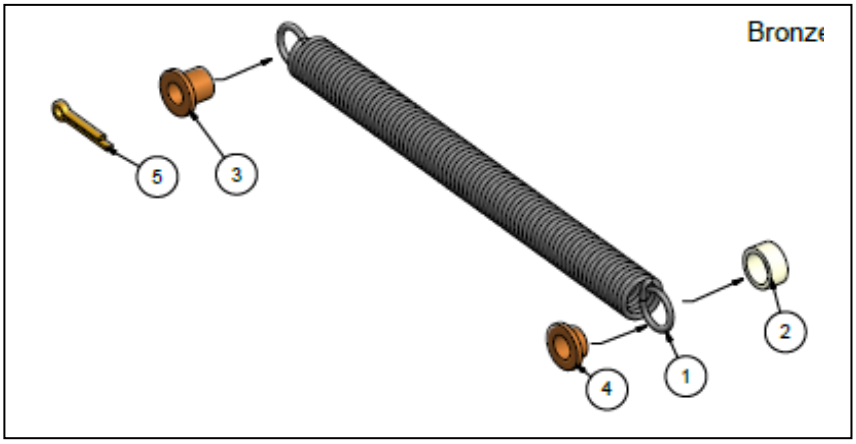
19) If unit properly dispenses fries, replacement spring is working properly.

20) Re-hang and secure rear service access panel and return Dispenser to normal operating position

[Photo 5] - From front

Test new spring by manually opening product doors against spring tension.

Replacement Spring Kit
[P/N: 19003794]



Key	Qty.	Part No.	Description
1	1	19000213	Spring, Extension 13 mm OD
2	1	19003682	Bushing, Plastic
3	1	19003681	Bushing, Bronze – 9.4 mm
4	1	19003680	Bushing, Bronze – 6.3 mm
5	1	19002985	Cotter Pin, Brass

🛠Tools Required:
- Medium Phillips screwdriver
- 8 mm [5/16”] box wrench or socket
- 3 mm [1/8”] Allen/Hex Wrench
- Needle-nose pliers

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2.12 Low Product Sensor Replacement

[See Section 1.5 for Part Number]

1) Roll the unit out to access to rear service panel.
2) Disconnect power at outlet. [Pull plug.]
3) Remove screws securing rear service access panel. Lift panel up and out.
4) Disconnect Low Product Sensor cable from harness.
5) Use a 'C' Ring pliers to remove the external 'C' Ring retainer from the Low Product Sensor Sleeve.
6) Remove the retaining washer with its bent tab retainer.
7) The Low Product Sensor slides out of the outer sleeve. **NOTE:** May need to be unscrewed (counterclockwise) to break sealant (front of the sensor) from outer sleeve.
8) Take new Low Product Sensor and apply a small amount of silicone sealant to the nose then slide it back into the plastic sensor sleeve. **NOTE:** This may require a helper to hold sleeve from inside freezer.
9) Replace the retaining washer over the sensor sleeve, with the bent tab in the slot on the plastic sleeve.
10) Re-insert the external 'C' Ring.
11) Reattach the Low Product Sensor cable to the harness.
12) Plug in unit power cord to power supply.

Adjust Low Product Sensor Sensitivity by:

13) Position the empty hopper in the freezer compartment.
14) Switch ON main power and press LANE-POWER touch pad on control overlay. **Tip:** Enlist help to view front panel overlay while you adjust sensor.
15) Open the small plastic plug on the back of the sensor with your fingertips or the small plastic screwdriver.
16) Using the small plastic screwdriver provided, slowly turn the adjustment screw on the sensor clockwise until the word: **Low Product** appears in lane touchpad display, then back that screw counterclockwise until that Low Product display warning goes **OFF**.

Test the Low Product Sensor by:

17) Fill hopper with fries to a level above Low Product Sensor or place your hand over sensor. If **Low Product** warning appears in display, repeat Sensor Sensitivity adjustment described in Step 16.
18) If this sensor adjustment corrects problem, replace small plastic plug in back of Low Product Sensor. **NOTE:** This plug must be closed to avoid water getting into sensor.
19) Re-hang and secure rear service access panel and return Dispenser to normal operating position.

[Photo 1]

Disconnect Low Product Sensor from harness terminal.

[Photo 2]
Remove the 'C' Ring & retaining ring and pull out the sensor.

[Photo 3] **Adjust Sensitivity:**
After removing the small plastic plug, use the plastic 2 mm [1/16"] screwdriver provided to adjust sensor sensitivity.

Tools Required:

- Medium Phillips screwdriver
- 2 mm [1/16"] flat blade screwdriver [Provided]
- 'C' ring pliers

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2.13 Basket-Fill Bump Switch Replacement

[See Section 1.5 for Part Number]

1) Roll the unit out to allow access to rear service panel.
2) Disconnect power at outlet. [Pull plug.]
3) Remove screws securing rear service access panel. Lift panel up and out.
4) Disconnect Basket-Fill Bump Switch cable where it connects to wiring harness, just below the load cell and lower motor(s). See Photo 2.
5) Use your Phillips screwdriver to remove the single screw that secures switch to dispense area back panel. It is just below-left of the load cell. See Photo 3.
6) From front of unit – turn bump-switch by hand clockwise 1/8th turn and pull out switch. Pull wire lead and terminal through hole in panel.
7) Insert new Basket-Fill Bump Switch connector and lead though center hole in panel.
8) Insert the switch locks through slots in panel and turn counterclockwise, to lock switch in place. Verify screw hole is in 6:00 o'clock position.
9) From back of unit – secure switch to backwall using Phillips screw removed earlier.
10) Reattach the switch wire lead to the wiring harness.
11) Plug in unit power cord to power supply.

Test the new Basket-Fill Switch by:

12) Filling the Lane Hopper with Fries to a level past the Low Product Sensor.
13) Turn ON main power switch and press LANE-POWER touch pad on front control overlay.
14) When word: **Ready** is in display and basket graphic lights are on, insert empty fry basket in fill chute and press against bump switch to initiate fries dispensing. If fries are dispensed, Basket-Fill Switch is functioning properly.

15) Re-hang and secure rear service access panel and return Dispenser to normal operating position.

🛠Tools Required:
- Medium Phillips screwdriver

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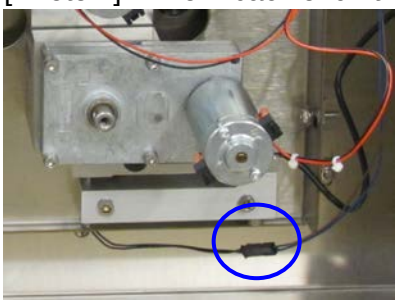
[Photo 1] – From unit front

Black plastic bump switches in each fill lane initiate the fill cycle.

[Photo 2] – From back of unit



Disconnect switch lead from harness.

[Photo 3]

Remove Phillips-head screw just below load cell to release switch.

[Photo 4] – From unit front

From front turn switch clockwise to remove switch from backwall.

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2.14 Door-Open Sensor Replacement

[See Section 1.5 for Part Number]

1) Roll the unit out to allow access to rear service panel.
2) Disconnect power at outlet. [Pull plug.]
3) Remove the screws securing rear service access panel. Lift panel up and out.
4) Disconnect Door-Open Sensor cable lead from the wiring harness. [See Photo 1]
5) Using the 4 mm [5/32”] Allen/hex wrench, remove the top two [Door Open] motor mounting screws only.
6) Remove the Door Open Sensor & Bracket from the motor assembly. Slide the sensor bracket to the right, clearing the sensor flag or fin.
7) Use small Phillips screwdriver (and pliers, as needed) to remove sensor from the bracket. There are two screws.
8) Position new Door Open Sensor on the mounting bracket and attach using the two screws just removed.
9) Position new sensor and bracket over motor mounting holes. Ensure actuating flag is spaced midway within sensor slot.
10) Replace and tighten the two upper motor mounting screws using the 4 mm [5/32”] Allen/hex wrench.
11) Reattach the new Door Open Sensor cable lead to the wiring harness.

Test the replacement Door-Open Sensor as follows:

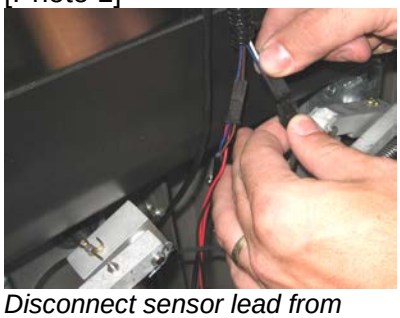
12) Plug in unit power cord to power supply.
13) Turn on main power switch and press LANE-POWER touch pad on control overlay.
14) If word: **Ready** is in display and ready lights are on in basket graphic, position empty fry basket under hopper and press against the basket bump-switch to initiate fry loading cycle.
15) If Lane properly dispenses fries, replacement Door-Open Sensor and dispensing assembly is working properly.

16) Re-hang and secure rear service access panel and return Dispenser to normal operating position.

🛠Tools Required:

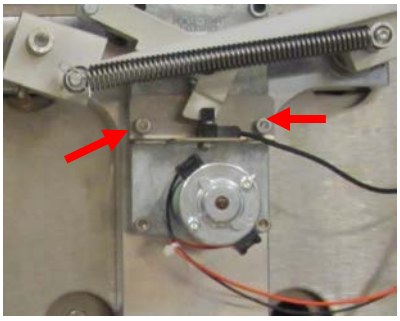
- Small & Medium Phillips screwdrivers
- Small pliers
- 4 mm [5/32”] Allen/Hex Wrench

[Photo 1]



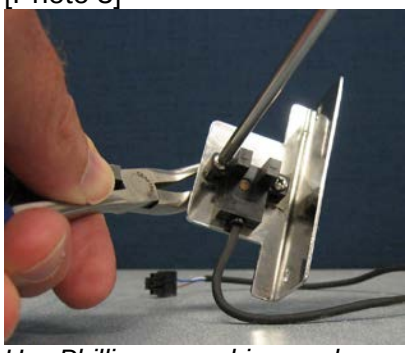
Disconnect sensor lead from Main Wiring Harness.

[Photo 2]



Use 4 mm [5.32”] Allen/hex wrench to remove upper [Basket Lift] motor mounting screws.

[Photo 3]



Use Phillips screwdriver and small pliers to remove sensor from bracket.

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2.15 Touch Pad Lane Controls Replacement

[See Section 1.5 for Part Number]

1) Disconnect power at outlet. [Pull plug.]
2) Use a medium Phillips screwdriver to remove the four (two-left, two-right) control panel mounting screws.
3) Pull panel cover/bezel up then straight out. It can hang from the switch leads and ribbon harness.
4) Use that screwdriver to remove the four screws that secure control overlay Plexi-panel to mounting posts.
5) Tilt overlay panel down and disconnect the ribbon harness at the main control broad terminal. **IMPORTANT:** The ribbon harness is fragile. Use care when removing and installing.
6) Remove packaging from new Plexi-mounted control panel overlay and attach its ribbon harness to main control board terminal. [See Photo 4]
7) Align four panel mounting holes with the standoff mounting posts on the main control board; and attach with the four Phillips screws provided. Position cover/bezel over lane touch pad, slide on and align with left and right side mounting holes.
8) Secure cover/bezel with the four screws removed earlier.
9) Plug in unit power cord to power supply.

Test the new Lane Touch Pad Controls by:

10) Fill that lane hopper with fries to a level above the Low Product Sensor.
11) Switch ON main power switch on the front control panel and press lane power-ON touch pad on new control overlay.
12) When word: **Ready** is in display and ready lights are on in basket graphic, position empty fries basket under hopper and press against the basket bump-switch to initiate fries loading cycle.
13) If unit properly dispenses fries, the new Touch Pad Controls are functioning properly.
14) Return Dispenser to normal operating position.

🛠Tools Required:

- Small & Medium Phillips screwdrivers

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[Photo 1] F3D3S Shown

Remove four front control panel cover/bezel screws.

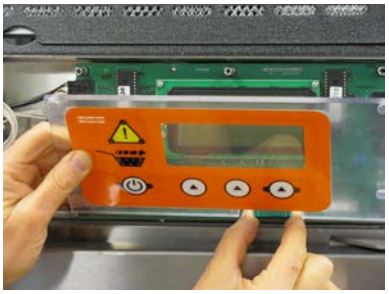
[Photo 2]

Pull front cover/bezel up-then-out. Can hang from switch leads

[Photo 3]

Remove the four Plex-panel mounting screws.

[Photo 4]



Detach panel ribbon harness from main control board.

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2.16 Main Power ON/OFF Switch Replacement

[See Section 1.5 for Part Number]

1) Disconnect power at outlet. [Pull plug.]
2) Use a flat blade screwdriver to pry under top and bottom of power ON/OFF switch bezel. Try to depress and release the plastic locking tabs. [See Photo 1]
3) When free, pull out switch to extent of harness and remove the four harness wire terminals. On 120-volt units: two are black and two are white. On 230-volt units: two are brown and two are blue (neutral). Note switch terminal positions.
4) Remove new Power ON/OFF Switch from packaging and attached two hot (black or brown) and two neutral (white or blue) harness leads to switch terminals marked **1A & 2A** and **4B & 5B**, respectively. Make sure harness terminals fully seat on switch bayonet connections.
5) Take switch and gently push harness wires back through hole, then push switch through that front panel opening until the top and bottom clips lock it in place. Switch bezel should be flush with the front panel.
6) Plug in unit power cord to power supply.

Test the new Power ON/OFF Switch by:

7) Switch **ON** the Main Power Switch. The integrated [red] pilot light should come on and you should hear the compressor come on, after a short delay.
8) Press the LANE POWER touch pad. If panel lights come on, the Main Power Switch is functioning properly.

9) Return Dispenser to normal operating position, if it was moved in the process.

(Verify Terminal Marking & Wire Color – ALL Models)

Voltage/Model:	120-volt	230-volt
For Switch Terminals:	1A & 2A	1A & 2A
Attach Wire Color:	black	brown
For Switch Terminals:	4B & 5B	4B & 5B
Attach Wire Color:	white	blue

🛠Tools Required:

- 6 mm [¼"] flat blade screwdriver
- Needle nose pliers

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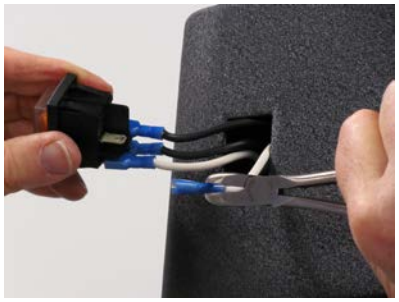
[Photo 1] **To Remove:**

Insert flat screwdriver to release top & bottom locking tabs.

[Photo 2]

Pull switch out to access terminals.

[Photo 3]



Remove harness connections from four switch terminals.

[Photo 4] **For Assembly:**

Push in new switch until locking tabs engage & bezel is flush.

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2.17 Freezer Temperature Sensor Cable Replacement *[See Section 1.5 for Part Number]*

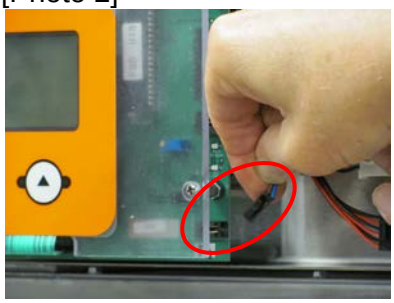
1) Roll the unit out to allow access to rear service panel.
2) Disconnect power at outlet. [Pull plug.]
3) Remove Phillips screws securing rear service access panel. Lift panel up and out.
4) From front of unit - remove the four Phillips screws [two left side, two right side] securing front controls bezel.
5) Locate the Temperature Sensor Cable connector on lane Master Control Board.
6) The two-wire sensor connector is positioned bottom-right and labeled: **TEMP PROBE**. Depress retainer and pull off connector. [See Photo 2]
7) Tie a string or fish tape to the connector end of the cable.
8) From inside freezer – remove hopper and locate white plastic bracket centered at top of rear wall. [See Photo 3]
9) Use an 8 mm socket to remove the two sensor bracket mounting bolts.
10) Slide sensor out of slot in sensor bracket.
11) From rear of unit - identify sensor cable penetration point into the freezer compartment. It is centered above the Power Supply. See Photo 6.
12) Follow the sensor cable as it comes out of the large flexible plastic harness tubing. Cut any plastic ties used to bundle sensor cable between tubing and sensor.
13) Remove the soft putty sealant and gently pull faulty sensor/cable out through hole.
14) Remove any packaging from new sensor and cable. Unroll the cable.
15) Attach connector end of new cable to string or fish tape.
16) From front of unit – gently pull the string then the sensor cable out from panel chase hole left of main control board.
17) Route sensor cable behind main control broad to right side then attach the cable connector to **TEMP PROBE** terminal.
18) Reposition front control bezel and secure with four Phillips screws removed earlier.
19) From rear of unit – insert probe through cabinet penetration.
20) From inside freezer – insert temperature sensor into slot machined in white plastic mounting bracket.
21) Secure sensor bracket flush to back of freezer using the two 8 mm bolts removed earlier.
22) Replace hopper in freezer.

Continued…

[Photo 1] F3D3S Model

Remove the four side-mounting screws & pull off front bezel.

[Photo 2]

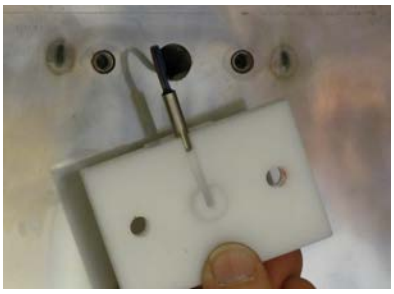


Remove connector from TEMP PROBE Control Board terminal.

[Photo 3] – Inside freezer

Remove two screws that secure temp. sensor to rear freezer wall.

[Photo 4] Back of bracket



Sensor slides into slot in mounting bracket.

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2.17 Freezer Temperature Sensor Cable Replacement *Continued…*

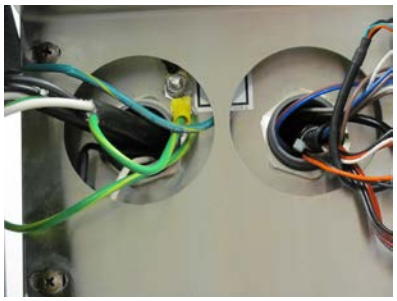
23) From rear - replace insulating putty around freezer compartment penetration.
24) Using plastic wire ties, route and secure sensor cable in low-voltage harness, as needed.

Test the new Sensor Replacement Cable by:
25) Plug in unit power cord to power supply.
26) Turn on main power switch.
27) Freezer compartment temperature should appear in upper-right corner of display.
28) Allow compressor to draw down unit to its normal operating temperature range, which should be -18 to -23° C [0 to -10° F]. A cool down time of 1-1/2 to two hours is normal.

29) If unit functions normally, position and secure rear service access panel and return fries dispenser to normal operating position.

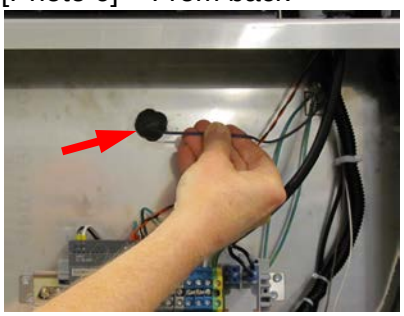
🛠Tools Required:
- Medium Phillips screwdriver
- 8 mm socket & wrench
- Plastic wire ties
- Electric tape
- String or fish tape

[Photo 5] Unit front



Pull sensor connector through plastic chase using fish & route under control broad to connect.

[Photo 6] – From back



Remove putty from penetration in freezer back panel to free & pull out sensor.

[Photo 7] **To Test**

When main power switch is ON the current compartment temp. appears in upper-right of display.

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2.18 24-Volt Power Supply Replacement

[1 ea. on F3D3S & F3D3SP; 2 ea. on F3D3 & F3D3P]

1) Roll the unit out to allow access to rear service panel.
2) Disconnect power at outlet. [Pull power cord plug.]
3) Remove Phillips screws securing rear service access panel. Lift panel up and out.
4) Use a medium Phillips screwdriver to remove the four (two-left, two-right) front control panel mounting screws.
5) Pull panel cover/bezel straight out and allow it to hang from power switch leads.
6) Locate 24-volt white plastic connector on left side of main control board, which is behind the standoff Plexi-panel mounted touchpad. It is labeled: **24v**. Release the locking tab and remove connector.
7) From rear of unit - locate the DIN rail mounted 24-volt power supply(ies).
8) Use a 3 mm [1/8"] flat blade screwdriver to disconnect the black & white [or brown & blue] high voltage wires.
9) Using that same screwdriver, disconnect the smaller gauge 24-volt red and black leads from power supply, plus the green/yellow ground wire. **NOTE:** Propane [**P**] models don't have a green/yellow ground wire here.
10) Using a ¼" [6-7 mm] flat blade screwdriver, depress or lever downward the plastic release tab, which is located below and in the center of the power supply. This will release the power supply from the bottom of DIN rail and allow you to remove the power supply. [See Photo 5, page 2]
11) Take new 24-volt power supply [P/N: 19003762] and position rear slot over upper edge of DIN rail and snap it down and into place. Make sure it is firmly seated.
12) Reconnect red and black leads on braided harness to the new power supply. Red = positive, Black = negative. Attach the green/yellow ground wire to negative (-) terminal. [No ground here on Propane Models.]
13) Reconnect high voltage wires: Black or Brown to **L1**, White or Blue to **N**.
14) From unit front – attach 24-volt white connector to main control board (labeled **24v**).
15) Position front cover/bezel over lane touch pads and align with left and right side mounting holes.
16) Secure cover/bezel with the four screws removed earlier.
17) Plug in power cord to power supply.

Test the new 24-volt Power Supply by:

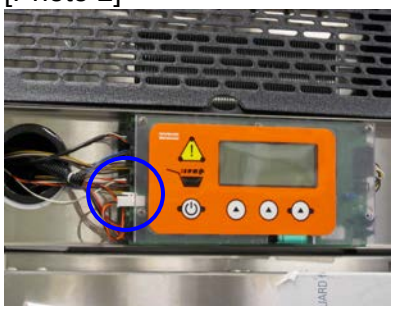
18) Switch ON Main Power Switch at the front control panel.

Continued…

[Photo 1] A F3D3S Model

Remove four front control panel cover/bezel screws.

[Photo 2]

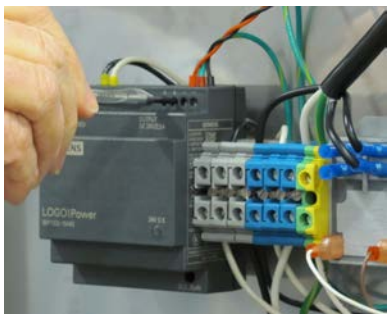


*Disconnect 24-volt power lead at Main Control Board [**24v**].*

[Photo 3] – From rear

The 24-Volt Power Supply is DIN rail mounted on back of unit.

[Photo 4]



Use small screwdriver to release high & low voltage wires from Power Supply.

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2.18 24-Volt Power Supply Replacement
Continued…

19) A small green LED will light on the power supply, indicating it is functioning properly. [You will also hear the compressor come on to begin freezer compartment chilling.]

20) Return Dispenser to normal operating position and lock front casters.

[Photo 5]

Use a flat blade screwdriver to depress the tab below the power supply bottom, to release it from the DIN mounting rail.

🛠Tools Required:
- Medium Phillips screwdriver
- 2-3 mm [1/8”] flat blade screwdriver
- 6-7 mm [1/4”] flat blade screwdriver

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2.19 Control Relay Replacement

[See Section 1.5 for Part Number]

1) Unlock front casters and roll the unit out to allow access to rear service panel.
2) Disconnect power at outlet. [Pull plug.]
3) Remove Phillips screws securing rear service access panel. Lift panel up and out.
4) Locate the DIN rail mounted 24-volt power supply and terminal block. The Control Relay mounts just right of the terminal block.
5) Use pliers to remove the wire terminals:

F3D3/S
Models
4-wires
(2 capped)

F3D3P/S
Models
6-wires

6) Release relay by pushing up on bottom, then tilt top off upper DIN rail flange.
7) Remove new Control Relay from any packaging.
8) Orient relay with four terminals on top, position rear slot over upper edge of DIN rail and snap it down and into place. Make sure it is firmly seated.
9) Reconnect the four wire terminals per terminal positions described in Step 5 and shown in inset photo at right:
10) Plug in unit power cord to power supply.

Test the new Control Relay by:

11) Switch ON Main Power Switch.
12) After a short time you should hear the compressor come on to begin freezer compartment chilling.

13) Replace and secure rear service access panel, return Dispenser to normal operating position and lock front casters.

🛠Tools Required:

- Medium Phillips screwdriver
- 6-7 mm [1/4”] flat blade screwdriver
- Needle nose pliers

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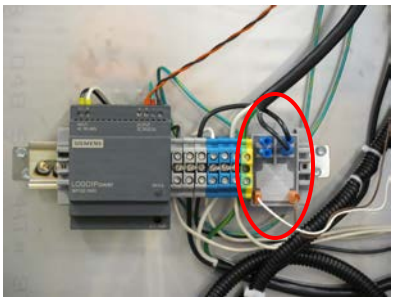
[Photo 1]

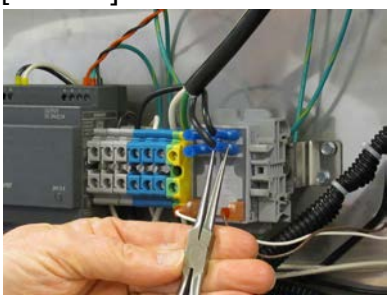
Remove four screws & lift off rear service access panel.

[Photo 2] A F3D3S Model



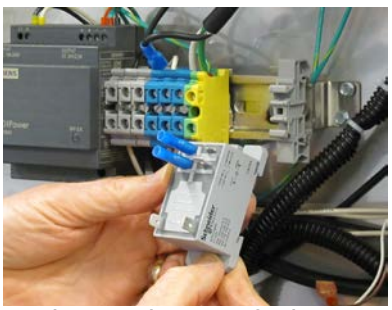
Relay is mounted right of DIN rail-mounted terminal block.

[Photo 3]



Remove wire terminals from Control Relay.

[Photo 4]



Push up on bottom of relay, angle top off upper rail flange to release.

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2.2 Freezer Door Gasket Replacement

[See Section 1.5 for Part Number]

1) F3D3 Series Dispensers should be OFF and the freezer compartment fully defrosted before proceeding.
2) Open freezer door and inspect the one-piece magnetic door gasket. If the gasket is torn or crushed so that it doesn't completely seal around the door perimeter, it should be replaced.
3) Remove top door hinge using a 9 mm box wrench or socket to remove the two M6 bolts, while supporting the weight of the door.
4) Lift door off bottom hinge pin and place it on a non-mar surface, with the gasket side facing up.
5) Carefully remove the one-piece gasket from the slotted plastic extrusion in the freezer door. [**NOTE:** Plastic extrusion can be easily damaged. Using a razor knife to separate the old gasket from its retaining tailpiece may facilitate this procedure. Carefully remove the separated tailpiece from the slot by pulling toward each corner using a small needle-nose pliers. [See Photos 2 and 3]
6) Take the new gasket and insert the tailpiece into the gasket-mounting slot. Align the corners and start at the top of the door. Continue around the door perimeter until completely seated. [**Tip**: Place the door on a cushioned surface and carefully hammer the new gasket tailpiece into the slot around the door perimeter.]
7) Re-install freezer door on bottom hinge with bushing, then mount the upper hinge. Be careful to align and square the door before tightening the two hinge mounting bolts.

Test the replacement of the Freezer Door Gasket by:

8) Close the door and visually check the door seal and fit.
9) Turn on main power switch. Allow compressor to draw down Freezer Compartment temperature. Check with your hand around the full door perimeter for any leaks of cold air.

🛠Tools Required:

- 9 mm wrench or socket
- Razor knife
- Needle-nose pliers
- Rubber mallet

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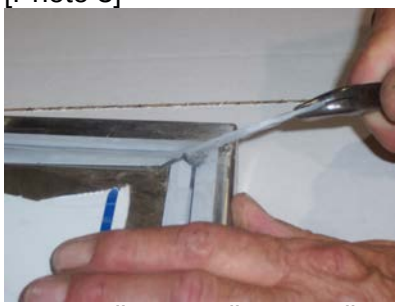
[Photo 1]

The freezer door is equipped with a one-piece magnetic door seal.

[Photo 2]

To speed replacement, just cut away the old door gasket from its tail piece.

[Photo 3]



Use needle nose pliers to pull gasket tailpiece from slot.

[Photo 4]

Align gasket tailpiece with door slot and hammer carefully into place around door perimeter.

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2.20 Main Control Board Replacement

[See Section 1.5 for Part Number]

1) Disconnect power at outlet. [Pull plug.]
2) Use a medium Phillips screwdriver to remove the four (two-left, two-right) front control panel mounting screws.
3) Pull panel cover/bezel up then out. It can hang from the power switch wires.
4) Use Phillips screwdriver to remove the four M5 screws that mount the control overlay Plexi-panel to the standoff posts on Main Control Board.
5) Disconnect overlay panel ribbon harness from bottom-right terminal on main control board, and set panel aside. **IMPORTANT:** The ribbon harness is fragile. Use care when disconnecting and connecting. See Photo 4.
6) Disconnect the remaining terminal connectors that plug into the Main Control Board, which are marked:

   Left side, from top down:

LOAD CELL	[Black – 5-pin connector]
SENSORS	[Black – 6-pin connector]
LP SENSOR	[Black – 4-pin connector]
24V (Volt)	[White – 2-pin connector]
MOTORS	[Black – 7-pin connector]

   Right side, from top down:

B-B / LON	[Black 12-pin connector]
RELAY	[Black 3-pin connector]
TEMP PROBE	[Black 2-pin connector]

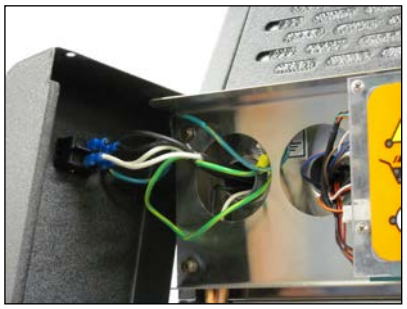
7) Use a 6 mm [1/4”] nut driver to remove the six board mounting-post screws.
8) Take new Main Control Board from its protective package, position and align with the six mounting holes.
9) Using the 6 mm [1/4”] nut driver, replace the six board mounting-post screws. **IMPORTANT:** Do not over-tighten these screws!
10) Reattach all left and right side harness and cable connections. Make sure terminals are fully engaged.
11) Attach touch panel overlay ribbon cable to main board.
12) Position control overlay Plexi-panel over standoff mounting posts and secure with four M5 screws removed earlier.
13) Position front cover/bezel over lane touch pads and align with left and right side mounting holes.
14) Secure cover/bezel with the four screws removed earlier.

Continued…

[Photo 1] Model F3D3S

Remove four front control panel cover/bezel screws.

[Photo 2]

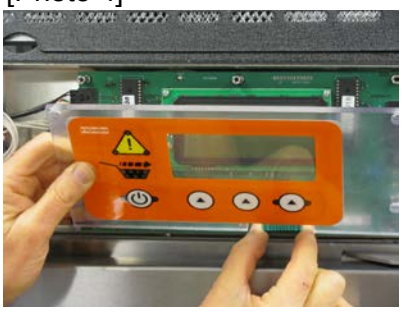


Pull front cover/bezel up-then-out. Can hang from switch wires

[Photo 3]

Remove four touch-panel post-mounting screws.

[Photo 4]



Disconnect the touchpad overlay ribbon harness from control board.

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2.20 Main Control Board Replacement
Continued…

15) Plug in unit power cord to power supply.

NOTE: Load Cell Calibration is required when the Main Control Board is replaced. **See Section 1.9 Load Cell Calibration** instructions.

Test the new Main Control Board by:

16) Switch ON the Main Power Switch.
17) Press LANE-POWER touch pad for that Lane.
18) If word: **Ready** appears in display and basket graphic lights come on, insert an empty fry basket under hopper and press against bump-switch, to initiate fries dispensing.
19) If Lane properly dispenses fries, it is working properly.

20) If Dispenser was moved to access power cord plug, return it to normal operating position and lock front casters.

🛠Tools Required:
- Medium Phillips screwdriver
- 6 mm [1/4”] nut driver

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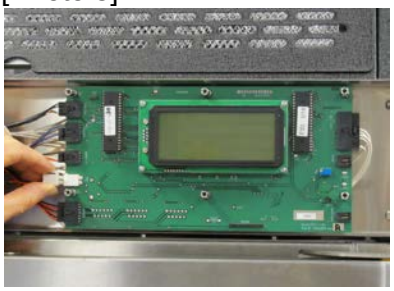
[Photo 5]



Remove all terminal connections from main control board.

[Photo 6]

Use 6 mm [¼”] nut driver to remove board from mounting posts.

[Photo 7]

Lift off main control broad.

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2.21 Control Board PC Chip Replacement

[See Section 1.5 for Part Number]

1) Disconnect power at outlet. [Pull plug.]
2) Use a medium Phillips screwdriver to remove the four (two-left, two-right) front control panel mounting screws.
3) Pull panel cover/bezel up then out. It can hang from the power switch wires.
4) Use your Phillips screwdriver to remove the four M5 screws that mount the control overlay Plexi-panel to the standoff posts on its Main Control Board.
5) Allow overlay panel to hang from ribbon connection. **IMPORTANT:** The ribbon harness is fragile. Use care when handling.
6) Locate main Process Controller (PC) Chip on control board, just **left of LCD** display.
7) Use a plastic chip replacement screwdriver or the blade of a small pocket knife to gently pry the chip from the multi-pin chip saddle. When loose, pull the chip straight out. See Photo 6, on page 2. **Tip:** Open freezer door.
8) Remove any protective packaging from the replacement chip and position it with the small notch aligned with the notch on the chip saddle. Gently align chip pins with saddle terminal holes and use gentle pressure to insert chip. **Tip:** Align left set of pins with the left saddle holes, then the right set of pins with the right set of holes in the saddle. Then carefully press the chip into place until it is fully seated. **IMPORTANT:** If you feel resistance, do not force in chip pins. They are fragile and will bend.
9) Position touchpad panel over standoff mounting posts and secure with four M5 screws removed earlier.
10) Position front cover/bezel over lane touch pad and align with left and right side mounting holes.
11) Secure cover/bezel with the four screws removed earlier.
12) Plug in unit power cord to power supply.

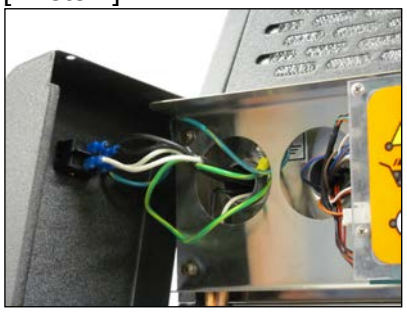
NOTE: Load Cell Calibration is required when the Control Board PC Chip is replaced. **See Section LCC for Load Cell Calibration** instructions.

Continued…

[Photo 1] F3D3S Model

Remove four front control panel cover/bezel screws.

[Photo 2]

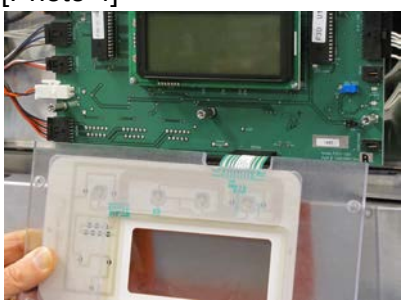


Pull front cover/bezel up-then-out. Can hang from switch wires

[Photo 3]

Remove four touch-panel post-mounting screws.

[Photo 4]



Allow touchpad to hang from overlay ribbon harness.

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2.21 Control Board PC Chip Replacement
Continued…

Test the new Main Control Board PC Chip by:

13) Switch ON Main Power Switch.
14) Press LANE-POWER touch pad for that Lane.
15) If word: **Ready** appears in display and basket graphic lights come on, insert an empty fry basket under hopper and press against bump-switch, to initiate fries dispensing.
16) If Lane properly dispenses fries, it is working properly.

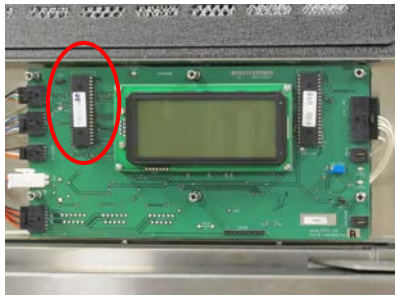
IMPORTANT: Follow any PC Chip test or diagnostic procedures that accompany the new chip.

17) If Dispenser was moved to access power cord plug, return it to normal operating position and lock front casters.

🛠Tools Required:

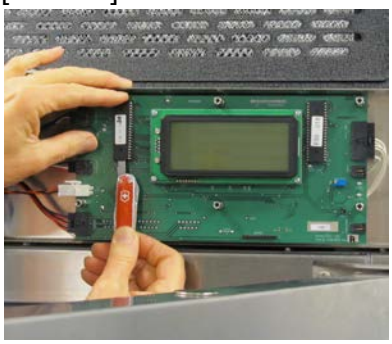
- Medium Phillips screwdriver
- Small plastic chip removal screwdriver or small pocket knife

[Photo 5]



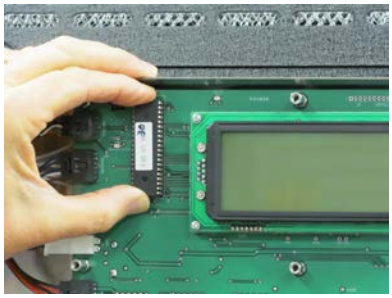
Locate the main PC chip left of LCD display.

[Photo 6]



Use a small knife blade to gently pry chip pins from chip saddle.

[Photo 7] When installing chip



Align notch in chip with notch in saddle. Align chip pins with holes & apply gentle pressure.

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2.22 Cable Heaters Replacement

NOTE: This freezer is equipped with two flexible cable-type heaters that warm the front door frame and freezer bottom perimeter, to help prevent ice buildup. Both are replaceable.

- **Door Perimeter Cable Heater - *[See Section 1.5 for Part Number]*** This asymmetric heater enters and exits the freezer door perimeter insulation void through a 10 mm [3/8"] copper tubing loop, with ends located behind left penetration in panel behind front control overlay. (See Photo 4)
- **Freezer Base Perimeter Cable Heater – *[See Section 1.5 for Part Number]*** This symmetrical heater enters the freezer bottom perimeter insulation through a similar 10 mm [3/8"] copper tubing loop, with ends located lower-right in rear mechanical systems compartment. (See Photo 6)

1) Pull out unit to gain access to rear service panel.
2) Disconnect power at outlet. [Pull plug.]
3) Remove Phillips screws securing rear service access panel. Lift panel up and out.
4) Locate the terminal block mounted on the DIN rail right of the two 24-volt power supplies.
5) Use a small flat blade screwdriver to disconnect the two appropriate heater wires from that terminal block. Note or mark those terminal locations.

To replace Door Perimeter Heater:

6) Use a medium Phillips screwdriver to remove the four (two-left, two-right) front control panel mounting screws.
7) Pull panel cover/bezel up then out. It can hang from the power switch wires. **NOTE:** You many need a ladder or sturdy work platform to see, access and pull this heater cable from above.
8) From rear of unit - free black and white (or brown and blue) heater wires from harness by cutting wire ties.
9) Securely tie or attach string or a fish tape to both wires.
10) From unit front (and above) – pull both heater wires out of flexible plastic wire chase/tubing.
11) Untie your string or fish tape but leave it running through wire chase tubing.
12) Obtain new Door Perimeter Cable Heater and remove any protective packaging and uncoil the cable and wire leads.

Continued…

[Photo 1] **For Either Heater**

Remove four screws and lift off rear service access panel.

[Photo 2] **For Either Heater**

Disconnect heater wires from terminal block right of power supplies. Note or mark positions.

[Photo 3] – **For Door Heater**

Remove four front control panel cover/bezel screws & pull off.

[Photo 4] – From front

Door heater copper tubing loop is located behind control panel.

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2.22 **Cable Heaters Replacement…***Continued*

14) Attach one end of new cable heater to bad cable heater either: black-to-white wire or white-to-black (or brown-to-blue or blue-to-brown) wire.
15) Pull opposite end of old heater (from attachment) out of copper tubing, drawing new heater down into tubing run.
16) When new heater is full inserted within tubing run, detach old heater and discard.
17) Take both wire ends of new heater and secure to your string or fish tape.
18) From rear of unit – pull your string or fish tape until both heater wires route to and reach the terminal block.
19) Remove string/fish tape and attach heater black/white leads to terminal block.
20) Use plastic ties to route and bundle wire heater leads.

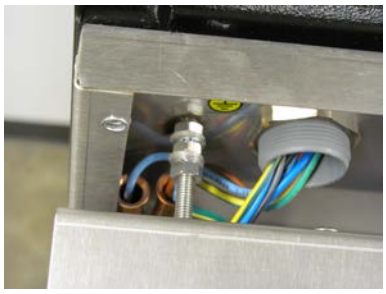
To Replace Freezer Base Perimeter Heater:

6) From back of unit - locate Base Heater copper tubing ends right of right lane hopper rotor motor. [See Photo 6]
7) Free the two white Base Heater wires from harness by cutting any plastic wire ties.
8) Obtain new Freezer Base Heater [P/N: 19003973 (120V) or 19003975 (230V)], remove any protective packaging and uncoil the cable.
9) Use electric tape to neatly secure either wire-end of new heater cable to the old heater cable.
10) Carefully pull the old heater out of the copper tubing, while feeding the new cable into the tubing.
IMPORTANT: Do not allow the new cable heater to kink.
11) When the new cable lead appears, remove the tape that connects the old heater cable and discard.
12) Center the new heater within the copper tubing run and extend wire leads up to terminal block.
13) Attach both white heater leads to terminal block per **electric schematic** in **SM Section 1.6**.
14) Use plastic ties to route and bundle wire heater leads.

Test Either New Cable Heater by:

1) Plug in unit to the power source.
2) Check the cable heater wires with your AMP Meter. It should be pulling .22 to .3 AMPs.
3) If reading is OK, replace and secure rear access panel; [If replacing Door Perimeter Heater, replace and secure front control bezel/cover]; and return F3D3S to normal operating position.

[Photo 5] - From above



Use string or fish to pull heater wires through from terminal. Use old heater to pull new heater though copper loop.

[Photo 6] **For Bottom Heater**

Use old heater to pull new heater though copper loop.

🛠Tools Required:

- Medium Phillips screwdriver
- Small flat blade screwdriver
- 2 meters of string or fish tape
- Electric tape
- AMP Meter

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2.23 Power Cord Replacement:

[See Section 1.5 for Part Number]

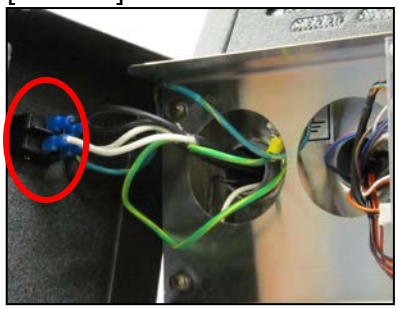
1) Unlock casters and pull out freezer to disconnect power at outlet. [Pull plug.]
2) Use a medium Phillips screwdriver to remove the four (two-left, two-right) front control panel mounting screws.
3) Pull panel cover/bezel up then out.
4) Locate the main Power-ON Switch mounted far-left on the panel cover and remove the hot and neutral leads from the power cord. **Tip:** Panel bezel can hang from the remaining leads.
5) Locate main ground post through left round cutout in back panel. [See Photos 2 & 3]
6) Remove the 10 mm [3/8"] nut and washer to power cord power ground. **NOTE: On F3D3S/P/SP Models**, power cord ground is the first-on (last off) of three grounds, each secured to post with their own nut.
7) From rear of unit – use channel locks or pliers to loosen power cord strain-relief nut that secures it to bottom of condenser compartment.
8) From below condenser compartment bottom, pull power cord out of flexible plastic harness tubing/chase.
9) From above the condenser compartment bottom, continue pulling that cord out of grommet and free of compartment bottom.
10) Remove any packaging from new Power Cord and uncoil it as needed.
11) From wire terminal end of power cord, slide on strain relief nut.
12) Push wire end of power cord down through grommet in condenser compartment bottom, leaving 3 meters of cord (with plug) extending beyond back of unit.
13) **Tip:** Fold over and tape the three end/attachment wires to the insulated cord section. Insert wire end of power cord up into right flexible plastic harness tubing. Feed in cord until it end exits near front panel and power switch.
14) From unit front - remove tape from black, white and green/yellow wire leads and pull out enough cord to reach Power-ON Switch.
15) Attach black (120-volt) or brown/black (230-volt) lead to terminal **1A** and white (120-volt) or blue (230-volt) lead to terminal **4B** on Power-ON Switch.
16) Attach ground wire ring terminal to ground post using its own washer and nut. Ensure connection is tight.
17) Reposition front control bezel and secure with four Phillips screws removed earlier.

Continued…

[Photo 1] F3D3S shown

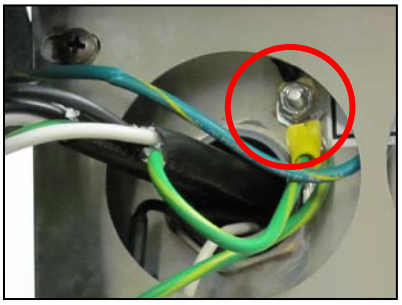
Remove four front control panel cover/bezel screws.

[Photo 2]



Remove black & white cord leads from Power Switch.

[Photo 3]



Remove top ground connection from main front ground post.

[Photo 4] – From rear of unit

Loosen and remove power cord strain relief nut.

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2.23 Power Cord Replacement…*Continued*

18) From rear of unit – slide strain relief down on to threaded grommet and tighten to secure power cord.
19) Position and secure rear service access panel and return Dispenser to normal operating position.

Test Operation of new Power Cord:
22) Plug new power cord into power source.
23) Turn ON main power switch. Pilot light should come on, and after a delay, the compressor should start and run.

[Photo 5]

Pull out power cord from right plastic tubing then up through grommet in condenser compartment bottom.

🛠Tools Required:
- Medium Phillips screwdriver
- Pliers or channel locks
- 10 mm [3/8”] wrench
- Electric tape

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2.24 Hopper Rotor Replacement

[See Section 1.5 for Part Number]

1) The Dispenser should be OFF and the freezer compartment fully defrosted before proceeding.
2) Open freezer door and remove the Hopper.
3) Remove the orange rubber deflector (baffle) from slot cut in right side of hopper.
4) Place hopper on its side, with the bottom rectangular opening for the rotor facing up.
5) Inspect rotor for damage or excessive wear. If the rotor does not turn easily by hand, it may need to be replaced.
6) The rotor front can be identified by the manual rotor handle molded into the rotation axle. The back support axle doesn't have this handle.
7) Remove the old rotor by gently prying out the plastic Hopper side closest to the manual rotation handle. When that handle clears the hole in the Hopper, pry out the rear side of hopper so that hub clears that hole. **NOTE:** the hopper plastic is thick and rigid. Take your time to avoid damaging the hopper.
8) Pull up and carefully remove the rotor from the hopper.
9) Install the new Rotor by reversing this process. Make sure the rotor end with the manual rotation handle faces the front (with V-cut) of the Fry Hopper.

10) **Test** the replacement Rotor by:
11) Manually turn or spin the Rotor Handle. The rotor should revolve easily, with little resistance.

12) Replace rubber deflector in cutout in right side of hopper.
13) Replace the Hopper in the freezer compartment and return the unit to service.

🛠Tools Required:
- Large Flat Screwdriver or small flat pry bar

[Photo 1] F3D3S shown

A finned rotor is mounted inside Hopper to gently move fries to the dispensing area.

[Photo 2]

Remove the orange rubber deflector from right side of hopper.

[Photo 3] Left side of hopper

When removing the Rotor, use a large screwdriver or flat pry bar to gently lever the sides of the Hopper enough to free the rotor hubs.

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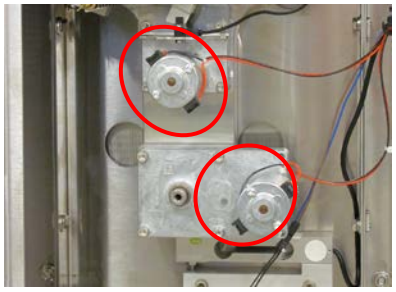
2.3 Automation Assembly Replacement

1) Roll the unit out to allow access to rear service panel.
2) Disconnect power at outlet. [Pull plug.]
3) Remove the screws securing rear service access panel. Lift panel up and off.
4) Disconnect motor harness power connections from the Door Open and Door Lift Motors.
5) Disconnect both Basket [Present] and Door Open Sensor leads at the Main Wiring Harness.
6) Remove the Hopper and plastic freezer bottom from the refrigeration compartment to provide access to the product dispensing doors.
7) Straighten, remove and save the cotter pin that secures the spring (with bushing) to the (left) Door Rotation Block Pin. Carefully release tension on spring, slide off bronze end bushing and allow spring to hang from the right side spring mounting screw.
8) Hinge rubber hopper up and out-of-the way, then rotate doors down to expose the shaft mounting screws.
9) Using a 3 mm [1/8”] Allen/hex wrench, remove the three screws that attach each door to its pivot shaft.
10) Distort and slide the rubber hopper off the door shaft.
11) Remove the rubber seal and hole cover from both door shafts.
12) Using a 10 mm box wrench or socket/wrench, remove the four [M6] Automation Assembly mounting nuts from the side mounting channels.
13) Carefully remove the complete Automation Assembly, including door shafts, from the unit.
14) Install new Automation Assembly [P/N 18003834]. Replace and tighten the mounting nuts using your 10 mm wrench. [**Tip**: Don’t fully tighten. Some mounting adjustment may be required. See SM Section 3.1]
15) Reinstall hole covers, gaskets, rubber hopper and doors on door shafts.
16) From rear of unit – extend spring to the Door Rotation Block Pin and slide end/bushing over the pin. Insert cotter pin through hole in pin and bend cotter pin legs around pin. Make sure bronze bushing remains in place.
17) Install freezer bottom for next adjustment.
18) Adjust Door Lift Assembly by minimal tightening the M6 bolts and then manually positioning the Door Lift Assembly front-to-back, so that the door frame is centered in the rectangular opening of freezer bottom.

…Continued

[Photo 1] From rear

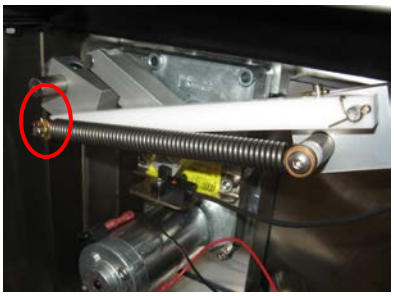


Disconnect black & red power leads from both motors.

[Photo 2] From rear

Disconnect the sensor leads from the Main Wiring Harness.

[Photo 3] From rear



Remove the cotter pin retainer from left side door rotation block pin & relieve spring tension.

[Photo 4] From front

Hinge up rubber hopper, open load doors and remove three shaft-mounting screws on each.

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2.3 Automation Assembly Replacement

Continued…[See Section 1.5 for Part Number]

19) With dispense doors in CLOSED position, adjust height of Door Lift Assembly so that rubber hopper just "kisses" the freezer bottom, to form a seal. [**NOTE**: Care should be taken to keep rubber hopper level and centered in rectangular opening.]
20) Tighten all M6 [10 mm] bolts securely and recheck rubber hopper-to-bottom "kiss" seal for uniform fit.
21) Reattach power service wires to both motors [Red = positive, black = negative] and sensor leads to Main Wiring Harness.
22) Plug in unit power cord to power supply.

Test Automation Assembly operation by:

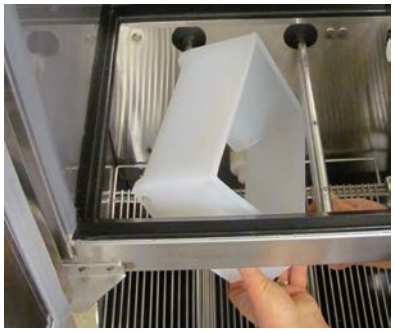
23) Turn on main power switch and press LANE-POWER touch pad on control overlay.
24) If word: **Ready** is in display and ready lights are on in basket graphic, position empty fry basket under hopper and press against basket bumper switch to activate a fry loading cycle.
25) If Lane dispenses fries, it is working properly.

26) Re-hang service access panel, replace screws and return Disperser to normal operating location.

🛠Tools Required:

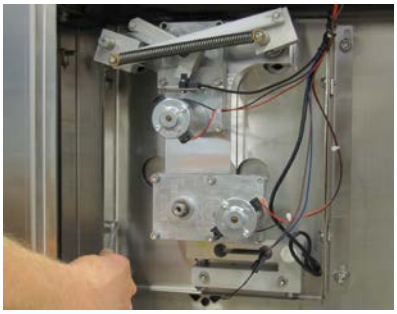
- Medium Phillips screwdriver
- 3 mm [1/8"] Allen wrench
- 10 mm box or socket wrench
- Needle-nose pliers

[Photo 5] From front



To remove, distort rubber hopper to clear freezer front bottom channel and pull off door shaft.

[Photo 6] From rear



Remove the four Automation Assembly mounting bolts.

[Photo 7] **To Test**

If Ready appears on display and green basket lights are on, place basket in loading lane and push against bumper switch.

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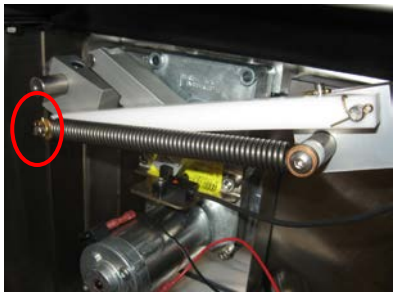
2.4 Door Lift Slide Replacement

1) Roll the unit out to allow access to rear service panel.
2) Disconnect power at outlet. [Pull plug.]
3) Remove the screws securing rear service access panel. Lift panel up and off.
4) Detach the Black and Red electric power connections from the Slide Lift and Door Open Motors.
5) Straighten, remove and save the cotter pin that secures the spring (with bushing) to the (left) Door Rotation Block Pin. Carefully release tension on spring, slide off bronze end bushing and allow spring to hang from the right side spring mounting screw.
6) Remove the retaining clip from the right side of the white plastic Door Cam Link. Remove that link.
7) From the front side - hinge up silicon rubber fries bucket, then rotate product doors down to expose the shaft mounting screws on both doors.
8) Using a 3 mm [1/8”] Allen/hex wrench, remove the three screws that attach each door to its pivot shaft.
9) Slide the rubber fries bucket off the left door shaft.
10) Remove the rubber seal cover from both Door Shafts.
11) Using a 4 mm [5/32”] Allen/hex wrench, remove the four Door Open Motor mounting screws. Removing the two top screws will separate the Door Open Sensor & Bracket from the motor assembly. It can hang down from cable. [**NOTE:** Top screws are 5 mm longer than bottom screws and should be kept separate until reinstalled.]
12) Using the 4 mm [5/32”] Allen/hex wrench, remove the four Door Lift Motor mounting screws. [Bottom motor]
13) Carefully remove the motor and gearbox assembly from the machined aluminum Door Slide Lift Assembly.
14) Remove the Door Lift Shaft from the Slide Bearing Assembly.
15) Using a 6 mm [¼”] Allen/hex wrench, remove the four Door Lift Slide mounting bolts.
16) Pull Door Lift Slide sub-assembly [with shafts] out of cabinet and place on a convenient work surface.
17) Using a ’C’ ring pliers, remove both retaining rings on the freezer side of each door mounting shaft. [**IMPORTANT:** Back retaining ring on each shaft should stay in place.]
18) Using a rubber mallet, tap door shafts out of Door Lift Slide bearings.
19) Take the replacement Door Lift Slide and use your rubber mallet to tap door shafts back into place.
20) Replace the two ‘C’ Rings on each shaft.

…Continued

[Photo 1] From Rear



Remove the cotter pin retainer from left side door rotation block pin then relieve spring tension.

[Photo 2] From front

Hinge up rubber hopper, open load doors and remove three shaft-mounting screws on each.

[Photo 3] From rear

Remove the four motor mounting screws from the Door Lift Motor.

🛠Tools Required:

- Medium Phillips screwdriver
- 3 mm [1/8”], 4 mm [5/32”] & 6 mm [¼”] Allen/hex wrenches
- ‘C’ ring pliers
- Rubber mallet
- Needle-nose pliers

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2.4 Door Lift Slide Replacement…*Continued*

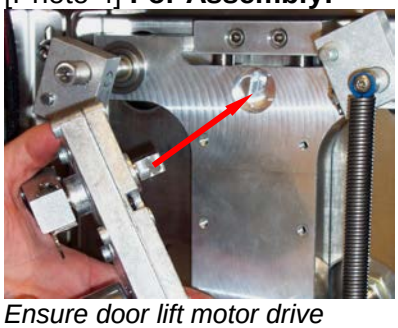
[See Section 1.5 for Part Number]

21) Reposition the sub-assembly back though the cabinet penetrations.
22) Align the assembly and reinstall the four mounting bolts.
23) Reinstall hole covers, gaskets, fries bucket and doors on door shafts.
24) Install Door Open Motor assembly starting with the two bottom [shorter] mounting screws. Remount Door Open Sensor & bracket using the two upper [longer] motor mount screws.
25) Reconnect the two motor electric power connections: [Red = positive; Black = negative].
26) Replace plastic Door Cam Link, with Stop Screw to the right side and attach retainer clip to right side Door Rotation Block pin.
28) From rear of unit – extend spring to the Door Rotation Block Pin and slide end/bushing over the pin. Insert cotter pin through hole in pin and bend cotter pin legs around pin. Make sure bronze bushing remains in place.
29) Position Door Lift Shaft in the Slide Bearing Assembly.
30) Reinstall the Door Lift Motor Assembly. Make sure the gear box output shaft fits into the slot in the lift cam.
31) Replace and tighten the four motor mounting screws using your 4 mm [5/32”] Allen wrench.
32) **IMPORTANT** - Check the gap of the load cell [weighs basket contents] under the motor by inserting a .50 mm [.020”] feeler or gap gauge between set post on left [open] side of load cell. [See Photo 6]
33) If load cell gap is larger or smaller than .50 mm/.020”, adjust gap set nut located below left side of load cell.
34) Attach power service wires to Door Lift Motor. [Red to positive, Black to negative]

Test the replacement Door Slide Lift as follows:

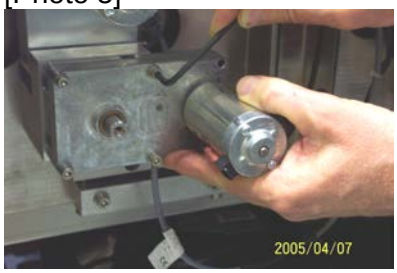
27) Plug in unit power cord to power supply.
28) Turn on main power switch and press LANE-POWER touch pad on front control overlay.
29) If word: **Ready** is in display and basket graphic lights are on, position empty fry basket under hopper and press against basket bumper switch to initiate fry loading. If Lane properly dispenses fries, the Automation Assembly is working properly.
30) Re-hang and secure rear service access panel and return Dispenser to normal operating location.

[Photo 4] **For Assembly:**



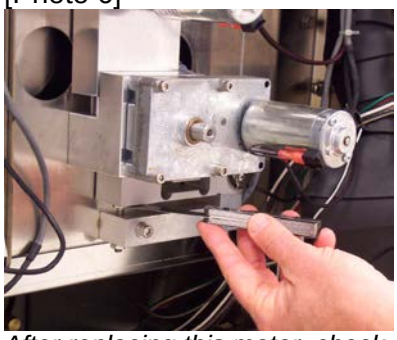
Ensure door lift motor drive aligns with the slot in the slide plate counter bore.

[Photo 5]



Insert & tighten the four (door lift) motor mounting screws.

[Photo 6]



After replacing this motor, check the gap on the load cell using a .50 mm [.020] feeler or gap gauge.

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2.5 Drum Rotor Motor Replacement

[See Section 1.5 for Part Number]

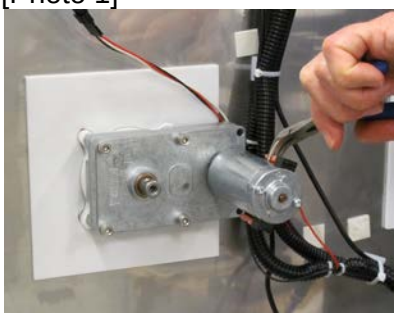
1) Roll unit out to allow access to rear service panel.
2) Disconnect power at outlet. [Pull plug.]
3) Remove screws securing rear service access panel. Lift panel up and off.
4) **NOTE:** The Drum Rotor Motor is the upper motor mounted on white insulating material. Disconnect both motor harness power connections.
5) Using a 4 mm [5/32”] Allen Wrench, remove the four motor mounting screws.
6) Remove motor by pulling straight out. Motor Rotor Block will remain in place.
7) Install new Drum Rotor Motor [P/N 19002708]. Ensure motor gear case drive shaft engages rectangular slot in plastic Rotor Drive Shaft.
8) Replace and tighten the four motor mounting screws using your 4 mm [5/32”] Allen Wrench.
9) Reattach power leads to motor: [Red to positive, Black to negative]
10) Reconnect unit to power supply.

Test for proper motor operation by:

11) Turning ON main power switch & pressing LANE-POWER touch pad on front control overlay.
12) If word: **Ready** is in display and basket graphic lights are on, position empty fry basket in fill chute and press against basket bumper switch to initiate fries loading.
13) If unit dispenses fries [if present] or if rotors turn smoothly in an attempt to dispense fries, the motor is working properly.

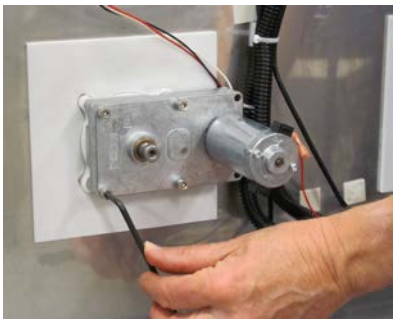
14) Re-hang and secure rear service access panel and return Dispenser to normal operating position.

[Photo 1]



Disconnect red & black motor power leads.

[Photo 2]



Remove the four motor mounting screws.

🛠Tools Required:

- Medium Phillips screwdriver
- 4 mm [5/32”] Allen/hex Wrench
- Needle nose pliers

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2.6 Drum Rotor/Motor Block Replacement

[See Kit Contents – See Page 2]

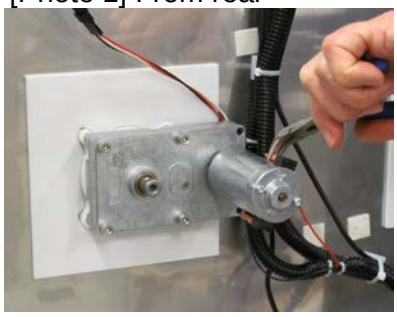
1) Roll unit out to allow access to rear service panel.
2) Disconnect power at outlet. [Pull plug.]
3) Remove screws securing rear service access panel. Lift panel up and off.
4) Disconnect both motor harness power connections.
5) Using a 4 mm [5/32”] Allen Wrench, remove and discard the four motor mounting screws.
6) Remove motor by pulling straight out. Motor rotor block will remain in place.
7) From front of unit - open freezer door and remove the fries hopper to provide more work room.
8) Using a flat blade screwdriver, pry off and discard the existing rubber shaft seal.
9) Using an 11 mm [7/16”] socket or box wrench, remove and discard the four block mounting bolts.
10) From rear of unit - remove and discard the old rotor block and shaft assembly.
11) Assemble new block and shaft assembly. **NOTE**: Motor notched end of shaft goes in block first. [See Photo 6]
12) Insert rotor block with shaft in freezer wall cutout.
13) From front of unit - insert and tighten the four M6 mounting bolts using 10 mm socket. [**NOTE**: If needed, have someone brace or hold the block from back of unit.]
14) If foam gasket is damaged, pull or scrape off old gasket and replace with new one from Kit. Remove paper from adhesive back, slide gasket over protruding block and stick to unit back panel. Gasket should be snug against contoured block. [See Kit Diagram on page 2]
15) Take new rubber shaft seal from kit and push over flattened hopper/rotor side of shaft until it seats in slot and is tight against rear of freezer compartment.
16) From rear of unit - install the Drum Rotor Motor using a 4 mm [5/32”] Allen Wrench and the four <u>new</u> bolts provided. Ensure motor gear case drive shaft engages rectangular slot in plastic Rotor Drive Shaft.
17) Reattach electric power leads to motor terminals: [Red to positive, Black to negative]
18) Return fries hopper to operating position inside freezer.
19) Reconnect unit to power supply.

Test for proper motor/shaft/rotor operation by:

20) Turning ON main power switch & pressing LANE-POWER touch pad on front control overlay.

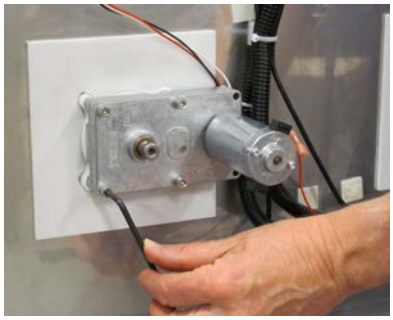
Continued…

[Photo 1] From rear



Disconnect both rotor motor power leads.

[Photo 2] From rear



Remove the four motor mounting screws.

[Photo 3] From unit front

Remove and discard the four block mounting bolts.

[Photo 4] From unit front

Cut or pry off old shaft gasket and discard.

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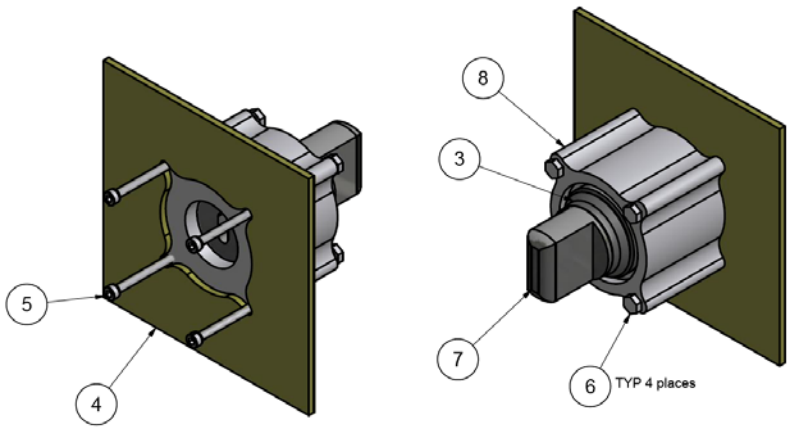
2.6 Drum Rotor/Motor Block Replacement
Continued

21) If word **Ready** is in display and ready lights are on in basket graphic, position empty fry basket under hopper and press against basket bumper switch to start fries loading cycle.
22) If lane dispenses fries [if present] or if rotor turns smoothly in an attempt to dispense fries, the motor, rotor block and shaft are working properly.
23) Re-hang and secure rear service access panel and return Dispenser to normal operating location.

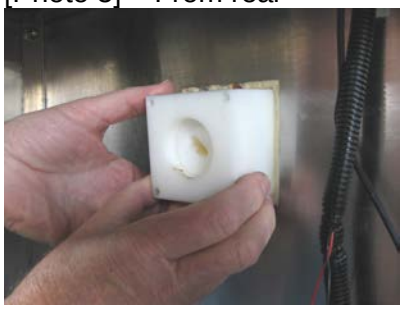
Replacement Kit Contents:

Key	Quantity	Description:
8	1	Motor Rotor Block
7	1	Rotor Drive Shaft
6	4	M6x12 Hex Head Screw [Block Mount]
5	4	M5x45 SHCS Screw [For Motor]
4	1	Foam Tape Gasket [3M]
3	1	Rubber Shaft Seal [38 mm diameter]



🛠 Tools Required:
- 10 mm [3/8”] **&** 11 mm [7/16”] socket or wrench
- 10 mm [3/8”] flat blade screwdriver
- Medium Phillips screwdriver
- 4 mm [5/32”] Allen Wrench

[Photo 5] – From rear

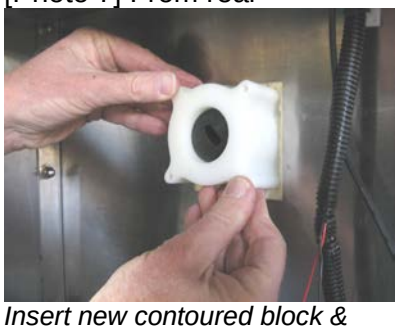


Remove old rotor block and shaft and discard.

[Photo 6] From rear

Insert new rotor/motor shaft in contoured rotor block.

[Photo 7] From rear



Insert new contoured block & shaft into mounting position.

[Photo 8] From unit front

Mount new block using four bolts provided. Press seal over shaft & tight against freezer wall.

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2.7 Door Lift Motor Replacement

[See Section 1.5 for Part Number]

1) Roll the unit out to allow access to rear service panel.
2) Disconnect power at outlet. [Pull power cord plug.]
3) Remove screws securing rear service access panel. Lift panel up and off.
4) Disconnect motor harness power connections from the [lower] Door Lift Motor.
5) Using a 4 mm [5/32”] Allen/hex wrench, remove the four motor mounting screws. [They are all the same length.]
6) Carefully remove the motor and gearbox assembly from the machined aluminum Slide Bearing Assembly.
7) Install the new Door Lift Motor Assembly. Make sure the gear box output shaft fits into the slot in the lift cam.
8) Replace and tighten the four mounting screws using your 4 mm [5/32”] Allen wrench.
9) **IMPORTANT:** Check the gap of the load cell [weighs basket contents] under the motor by inserting a .50 mm [.020”] feeler or gap gauge between set-post on left [open] side of load cell. [See Photo 3]
10) If load cell gap is larger or smaller than .50 mm [.020”], carefully adjust gap set nut, which is located below the left side of load cell. Use the 10 mm [3/8”] box wrench.
11) Attach power service wires to new Door Lift Motor. [Red to positive, Black to negative]
12) Plug in unit power cord to power supply.

Test the replacement Door Lift Motor as follows:

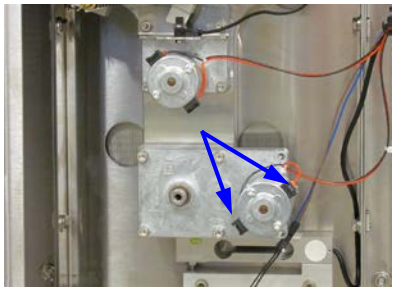
13) Turn on main power switch and press the LANE-POWER touch pad on control overlay.
14) If word: **Ready** is in display and basket graphic lights are on, position empty fry basket under hopper and press against basket bumper switch to initiate fry loading cycle.
15) If Lane properly dispenses fries, motor is working properly.

16) Re-hang and secure rear service access panel and return Dispenser to normal operating location.

🛠Tools Required:

- Medium Phillips Screwdriver
- 10 mm [3/8”] box wrench
- 4 mm [5/32”] Allen/Hex Wrench
- Feeler or Gap Gauge

[Photo 1]

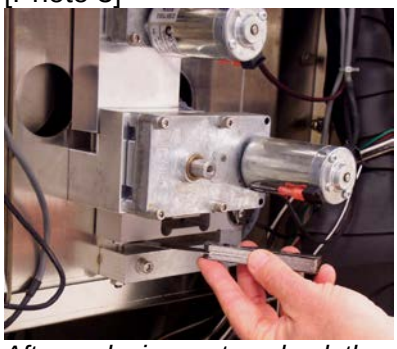


Disconnect power leads from [lower] Door Lift Motor.

[Photo 2]

Remove the four motor mounting screws.

[Photo 3]



After replacing motor, check the gap on the load cell using a .50 mm [.020”] feeler or gap gauge.

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2.8 Door (Open) Motor Replacement

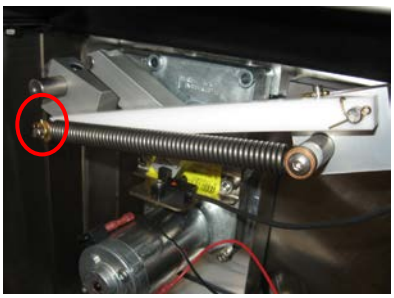
[See Section 1.5 for Part Number]

1) Roll the unit out to allow access to rear service panel.
2) Disconnect power at outlet. [Pull plug.]
3) Remove the Phillips screws securing rear service access panel. Lift panel up and off.
4) Straighten, remove and save the cotter pin that secures the spring (with bushing) to the (left) Door Rotation Block Pin. Carefully release tension on spring, slide off bronze end bushing and allow spring to hang from the right side spring mounting screw.
5) Remove the retaining clip from the right side of the white plastic Door Cam Link. Remove that link. [You don't need to remove the small plastic shaft spacers.]
6) Using the 4 mm [5/32"] Allen/hex wrench, remove the four motor mounting screws, beginning with the two TOP screws. [**NOTE:** Top screws are 5 mm longer than bottom screws and should be kept separate.]
7) Removing the longer top screws will separate the Door Open Sensor & Bracket from the motor assembly.
8) Detach the two motor electric power connections.
9) Install new motor assembly starting with the two [shorter] bottom mounting screws.
10) Remount Door Open Sensor & Bracket using the two [longer] upper motor mount screws.
11) Reconnect the two motor electric power connections: [Red to positive; Black to negative].
12) Replace white plastic Door Cam Link, with Stop Screw to the right side. [**NOTE**: Make sure bushings and spacers are on both left and right cam pins, before replacing link.]
13) Attach retainer clip to Door Rotation Block pin.
14) From rear of unit – extend spring to the Door Rotation Block Pin and slide end/bushing over the pin. Insert cotter pin through hole in pin and bend cotter pin legs around pin. Make sure bronze bushing remains in place.

Test the replacement Door [Open] Motor as follows:

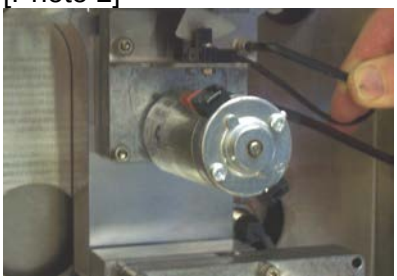
15) Plug in unit power cord to power supply.
16) Turn on main power switch and press the LANE-POWER touch pad on front control overlay.
17) If word: **Ready** is in display and basket graphic lights are on, position empty fry basket under hopper and press against basket bumper switch to initiate fry loading cycle.
18) If Lane properly dispenses fries, replacement Motor and dispensing assembly is working properly.
19) Re-hang and secure rear service access panel and return Dispenser to normal operating position.

[Photo 1]



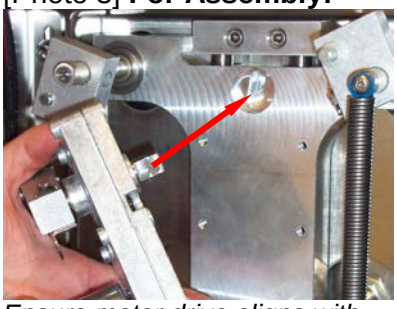
Remove the cotter pin retainer from left side door rotation block pin then relieve spring tension.

[Photo 2]



Remove the two upper motor mounting screws first.

[Photo 3] **For Assembly:**



Ensure motor drive aligns with the slot in the slide plate counter bore.

Tools Required:

- Medium Phillips Screwdriver
- 8 mm [5/16"] box wrench
- 4 mm [5/32"] Allen/Hex wrench
- Needle-nose pliers

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2.9 Product Door & Bucket Replacement

[See Section 1.5 for Part Number]

1) Roll the unit out to allow access to rear service panel.
2) Disconnect power at outlet. [Pull plug.]
3) Remove the screws securing rear service access panel. Lift panel up and off.
4) Straighten, remove and save the cotter pin that secures the spring (with bushing) to the (left) Door Rotation Block Pin. Carefully release tension on spring, slide off bronze end bushing and allow spring to hang from the right side spring mounting screw.
5) Remove the hopper and plastic freezer bottom from the refrigeration compartment to provide access to the product dispensing doors. [See Photo 2]

For Replacement of Product Doors:

6) Hinge silicone rubber bucket up and off right door shaft.
7) Rotate product doors down to expose the shaft mounting screws on both doors. [See Photo 4]
8) Using a 3 mm [1/8”] Allen/hex wrench, remove the three screws that attach each door to its pivot shaft.
9) If rubber fries bucket is OK, attach new doors [two ea. P/N: 19003534] to shafts using socket-head screws removed previously. **NOTE:** Both doors are the same and are rotated 180-degrees, for left or right installation – **but there is a top and bottom**. The ‘**V**’ groove should face the floor on both right and left door.

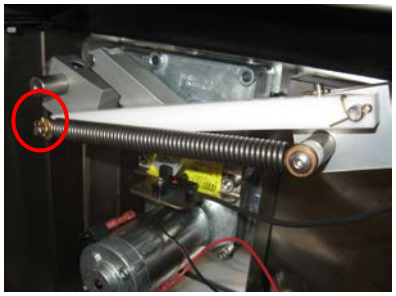
For Replacement of Product Bucket ONLY:

10) Hinge silicone rubber bucket up and off right door shaft.
11) Using a 3 mm [1/8”] Allen/hex wrench, remove the three screws that attach the left side door only.
12) Deform and slide the rubber fries bucket off the right/left door shaft.
13) Install the new rubber fries bucket [P/N: 19002725].
14) Replace the left door using the three M5 x 20 socket-head screws just removed.

With either Replacement:

15) Hinge rubber fries bucket down and snap over right door shaft. Bucket and doors should be square, without any gaps. [See Photo 2]

[Photo 1] – From rear

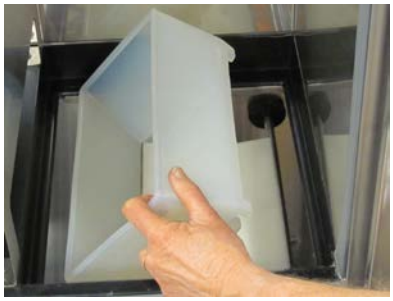


Remove the cotter pin retainer from left side door rotation block pin then relieve spring tension.

[Photo 2] – From unit front

Remove fries bin & freezer bottom to access bucket & doors.

[Photo 3]



Hinge bucket up & off right door mounting shaft.

[Photo 4] **– To remove door:**

Rotate door down & remove three mounting screws using 3 mm [1/8”] hex wrench.

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2.9 Product Door & Bucket Replacement
Continued…

16) Replace insulated plastic freezer bottom.
17) From rear of unit – extend spring to the Door Rotation Block Pin and slide end/bushing over the pin. Insert cotter pin through hole in pin and bend cotter pin legs around pin. Make sure bronze spring bushing remains in place.
18) Re-hang and secure rear service access panel.
19) Plug in unit power cord to power supply.

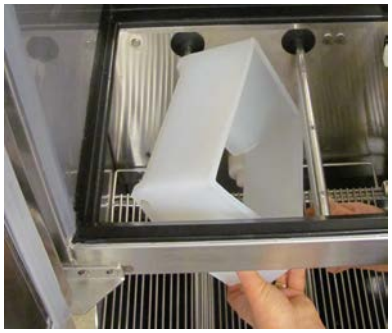
Test Fries Dispense Doors by:

20) Turn on main power switch and press lane power touch pad on control overlay.
21) If word: **Ready** is in display and ready lights are on in basket graphic, position an empty fry basket under hopper and press against basket bumper switch to activate fry loading cycle.
22) If lane dispenses fries [if present] or if doors open smoothly in an attempt to dispense fries, the unit is working properly.

23) Return Disperser to normal operating location.

🛠Tools Required:
- Medium Phillips screwdriver
- 8 mm [5/16”] box wrench or socket
- 3 mm [1/8”] Allen/hex wrench
- Needle-nose pliers

[Photo 5] **To remove bucket:**



Distort rubber bucket to clear freezer front bottom channel and pull off left door shaft.

[Photo 6] - **To Test**

If Ready *appears on display and green basket lights are on, place basket in loading lane and push against bumper switch.*

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3.1 Low Product Sensor Adjustment

[See Section 1.5 for Part Number]

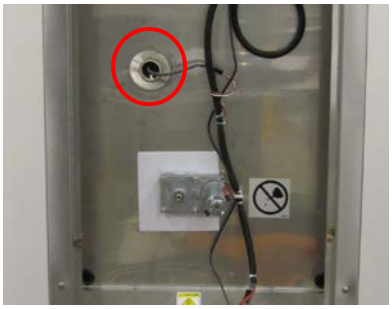
Problem: False **Low Product Warning** on Control Panel display, when product is present. [First, ensure product is present and there isn't a bridge or void in Hopper near the sensor.]

1) Thoroughly wash hands. With a clean hand, scoop fries completely away from the Low Product Sensor. [You may have to remove some fries to get below the sensor.]
2) Roll the unit out to allow access to rear service panel.
3) Leave unit connected to power source. Adjustments will be made to the 24-Volt control system only.
4) Remove the screws that secure the rear service panel. Lift panel up and out.
5) Locate the Low Product Sensor mounted through the refrigeration compartment, just left-of-center above Rotor Motor.
6) Locate the small rubber tethered plug on that sensor. You should be able to remove it by hand.
7) Using a small 2 mm [1/16"] flat bladed screwdriver to slowly turn the adjustment screw clockwise until the low product LED light on back of sensor comes **ON**, then back that screw counterclockwise until the LED light goes **OFF**.

8) **Test** Low Product Sensor Sensitivity as follows:
9) Check Front Panel, the [**!**] warning lights will be on and words: **Low Product Warning** should be in display.
10) With a clean hand, scoop fries so that they surround the sensor (or add fries to hopper if necessary). The [**!**] lights and warning text should turn off. Scoop the fries away, and the lights and warning should come back ON. If the lights and warning stays on, turn the sensor adjustment screw slightly counterclockwise and test again. Repeat until the light and text warning turns on and off correctly.
11) If repeated attempts to adjust Low Product Sensor fail to correct problem, see Part Replacement Section 2.12 and replace faulty or suspect sensor.
12) If sensor adjustment corrects problem, replace small plastic plug in back of Low Product Sensor. **IMPORTANT:** That plug seals out moisture.

13) Position and secure rear service access panel and return Dispenser to normal operating position.

[Photo 1] – Rear of F3D3S



A low product sensor is just left-of-center above rotor motor.

[Photo 2] – From rear of unit

After removing the small plastic plug, use a 2 mm [1/16"] screwdriver to adjust sensitivity.

[Photo 3]

Three LCDs at corners of warning triangle come on and text warning appears in display, when fries [or test object] are below sensor level in Hopper.

🛠Tools Required:

- Medium Phillips screwdriver
- 2 mm [1/16"] flat blade screwdriver

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3.2 Reverse Door Hinges/Door Swing

Problem: The freezer/dispenser ships from the factory hinged-right [in US, hinged left in EU], so the freezer door opens and swings right. This configuration works best when unit is positioned to the right of the fryer battery. If the unit is to be positioned to the left of the fryers, the door hinges should be reversed, so it opens left.

1) Dispenser should be OFF and the freezer compartment fully defrosted before proceeding.
2) Open the freezer door to access upper and lower mounting hinge brackets.
3) Using an 8 mm [5/16”] wrench or socket, loosen and remove the two upper hinge bracket-mounting bolts, while supporting the weight of the door. [**Tip:** If a second person is available, have them support the weight of the freezer door while you remove hinge brackets.]
4) Remove upper hinge bracket from the door bushing.
5) Lift the door up and off the lower hinge pin and set it aside, without scratching the door edge finish.
6) Remove the two mounting bolts from the lower hinge bracket and set it aside.
7) Locate the mirror image bracket mounting holes on the left side of the freezer cabinet frame.
8) Take the upper hinge-mounting bracket and reinstall it in the lower hinge position with the hinge pin up, using the same two mounting bolts.
9) Rotate the Freezer Door 180-degrees and place what was the upper hinge bushing on the lower hinge mounting bracket pin.
10) Position the remaining [former lower] hinge mounting bracket with the pin in the [now] upper door hinge bushing; and secure that bracket with the two remaining mounting bolts.

11) **Test** the function and alignment of the door. Door should open and close freely and seal completely against the freezer compartment front frame.

NOTE: Dispensers shipped to EU countries are hinged and open **left**. To reverse the door swing, just reverse these instructions: right-for-left; left-for-right.

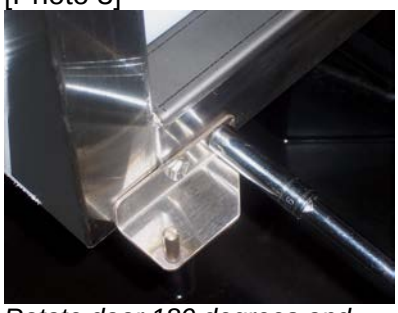
[Photo 1] F3D3S Shown

(US) F3D3 Series units ship with freezer door hinged right, to open and swing to the right.

[Photo 2]

Remove mounting bolts from the upper hinge-mounting bracket and lift door off lower hinge pin.

[Photo 3]



Rotate door 180 degrees and reverse hinges for left side mounting.

🛠Tools Required:

- 8 mm [5/16”] Box Wrench or Socket/Ratchet

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3.3 Adjusting Automation Assy. Alignment

Problem: Silicone rubber Product Dispense Bucket does not align with or seal against rectangular opening in the removable freezer compartment bottom.

1) The Dispenser should be OFF and the freezer compartment fully defrosted before proceeding.
2) If not already removed, open freezer compartment door and remove the Fry Hopper.
3) Roll the unit out to allow access to rear service panel.
4) Disconnect power at outlet. [Pull plug.]
5) Remove four Phillips screws securing back service access panel. Lift panel up and off.
6) Using a 10 mm box wrench, barely loosen all eight [M6] Automation Assembly mounting bolts. This assembly attaches to the rear frame with right and left '**L**' channels. Bolt holes in the 'L' channels are all slotted to provide in-out or up-down adjustment of the Automation Assembly.
7) Minimally tighten the four channel-to-Automation Assembly bolts and manually position and level assembly front-to-back, so the product loading doors and bucket are centered in freezer bottom opening. [**NOTE:** Check this alignment from front of unit.]
8) Minimally tighten the four 'L' channel-to-rear-frame mounting bolts and adjust height of the Automation Assembly so that the dispenser doors just "kiss" the freezer bottom. [Check this alignment from front of unit.]
9) Tighten all eight M6 bolts securely and recheck dispense door-to-freezer bottom seal and fit. If further adjustment is required, repeat steps 6 through 9.
10) Replace and secure rear service access panel.
11) Plug in unit power cord to power supply.
12) Move unit back into operating position and lock casters.
13) Re-install the Fry Hopper.

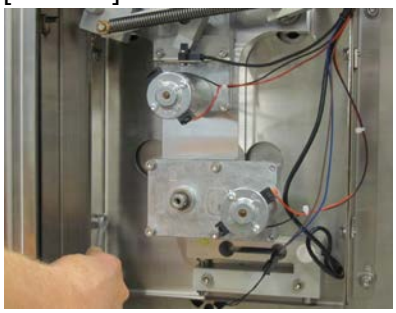
Test Automation Assembly alignment:

14) Turn ON main power switch and press Lane-POWER touch pad.
15) When word: **Ready** appears in display and basket graphic lights are on, position an empty fry basket in fill lane and press against basket bump-switch to initiate fries loading cycle.
16) Check gap between silicone rubber dispense bucket and freezer compartment bottom with a business card, from inside the freezer. There should be a snug fit, bucket-to-bottom.

[Photo 1] F3D3S from front

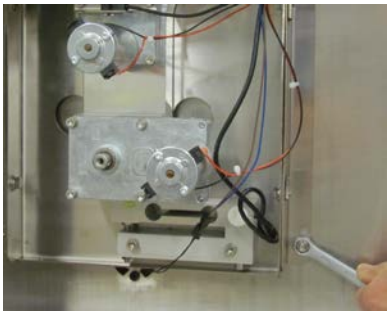
Product bucket & dispenser doors must be centered in and seal against freezer bottom.

[Photo 2] From back of unit



Loosen four assembly-to-side 'L' channel mounting [M6] nuts to adjust front-to-back position and level of door frame.

[Photo 3] From back of unit



Loosen four 'L' channel-to-frame mounting nuts to adjust height and seal of Door Lift Assembly.

🛠Tools Required:

- Medium Phillips screwdriver
- 10 mm box wrench

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3.4 Drum Rotor Motor Adjustment

Problem: The operator reports that the Dispenser makes an intermittent [in-and-out] grinding or scraping noise when dispensing fries. The Drum Rotor, Rotor Drive Shaft or Rotor Motor may be out of alignment.

1) Remove the Fries Hopper from the freezer.
2) Using an empty fries basket, push against the basket bump-switch to activate a fill cycle. Observe and listen to the operation of the Drum Rotor. [**Tip:** You can also use the motor test diagnostic to activate the Drum Rotor Motor from the control panel. **See SM Section CLA Customer Level Access** instructions **– Test Motors ?**]
3) Replace Hopper in freezer and visually check hopper hanger alignment. If OK, proceed to Step 5. If out of alignment, see Section 3.5.
4) Roll unit out to allow access to rear service panel.
5) Disconnect power at outlet. [Pull plug]
6) Remove screws securing rear service access panel. Lift panel up and out.
7) Using a 4 mm [5/32”] Allen/hex wrench, loosen the four Drum Rotor Motor mounting screws. [See Photo 3]
8) Shift position of motor right, left, up or down as needed, to better seat motor gear box shaft in plastic Rotor Drive Shaft, then retighten motor mounting screws. [You may need to repeat this adjustment process to ensure good alignment.]
9) Plug unit into power supply.

Test for normal rotor/motor operation:

10) Turning ON main power switch & pressing Lane-POWER touch pad on control overlay.
11) If word: **Ready** is in display and basket graphic lights are on, position empty fry basket under hopper and push against bump-switch to activate a loading cycle.
12) If Lane dispenses fries [if present] or if rotor turns smoothly without grinding, the unit is working properly.

13) Replace and secure rear service access panel and return Dispenser to normal operating position.

🛠Tools Required:

- Medium Phillips screwdriver
- 4 mm [5/32”] Allen/hex wrench
- 8 mm [5/16”] wrench or socket

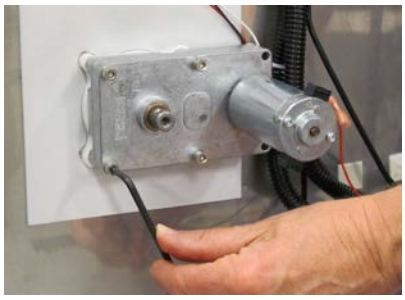
[Photo 1] F3D3S from front

Check alignment of hopper. Adjust hopper hanger brackets as needed. (See Section 3.5)

[Photo 2]

Insert basket against bump-switch then listen to motor for unusual noise.

[Photo 3] From rear of unit



Loosen the four motor mounting screws, adjust and tighten to improve alignment with rotor drive shaft.

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3.5 Fry Hopper Hanger Alignment

Problem: Operators are having trouble installing or aligning hopper after removing it for daily cleaning.

1) Dispenser should be turned OFF and the freezer compartment fully defrosted before proceeding.
2) Open the freezer compartment door; check the hopper-bottom-to-freezer-bottom fit; and slide the hopper in and out on the (right, left or center-on two lane models) upper support hangers.
3) If the hopper is difficult to remove and replace, check to see if it hangs level (front-to-back) and parallel to the left or right freezer side.
4) If the hopper is not hanging straight, use a 10 mm [3/8”] nut driver to loosen the two bolts on the right and/or left support bracket. **NOTE:** On two lane models, loosen the four Hopper Center Support Bracket mounting bolts.
5) Support bracket mounting holes allow vertical movement of the bracket, to adjust Hopper level and alignment within the freezer compartment.
6) Shift one or both brackets up or down as needed then tighten the two (or four) bracket mounting bolts.
7) Slide the hopper on to mounting brackets and visually check Hopper alignment.
8) Repeat adjustment as needed, until hopper is level, parallel and slides on and off the support brackets easily. [See Photo 1]

9) Close door and return freezer-dispenser to service.

🛠Tools Required:
- 10 mm [5/16”] wrench or socket

[Photo 1] F3D3S Freezer

Empty hopper should easily slide on and off side supports.

[Photo 2]

Side of hopper should be roughly parallel to freezer wall.

[Photo 3]

Left & right side hopper supports (& center support on two lane models) have slotted holes to allow up/down adjustment of brackets.

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3.6 Activate Backup Temperature Display – Change Control Board Cable Jumpering

Problem: Freezer is operating but compartment temperature does not appear in left lane display.

NOTE: For F3D3 Models manufactured after November 2011, See page 2 for Cableless Jumper Wire Connector Instructions. **For all other models…**

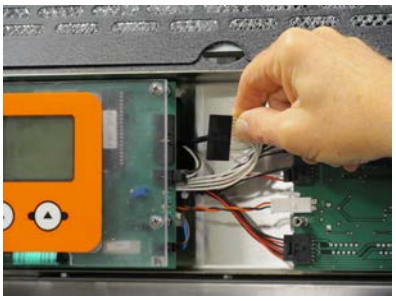
1) Disconnect power at outlet. [Pull plug.]
2) Use a medium Phillips screwdriver to remove the four M5 (two-left, two-right) control panel mounting screws.
3) Pull panel cover/bezel straight out and set aside. **NOTE:** you do NOT need to remove Plexiglas touchpad panels.
4) Locate the three terminal connections on the right side of the Left Lane Main Control Board labeled: **B-B / LON**, **RELAY** and **TEMP PROBE**. These three connections direct compartment temperature to left lane display.
5) Remove Master 12-pin **B-B** (board-to-board) cable connector from left Lane Control Board. See Photo 2
6) Remove Slave 12-pin **B-B** connector from right Lane Control Board.
7) From right Lane Control Board, carefully pull harness out and under the right broad. Extra harness is provided.
8) When 12-pin (Master) **B-B** connector extends past right broad, connect it to right Lane (B-B) terminal.
9) Route (Slave) 12-Pin **B-B** connector and cable back under right Lane Control Board and connect to left Lane (B-B) terminal. **Tip:** A 14" [36 cm] wire fish will help pull harnesses behind right broad, which is mounted on standoff studs.
10) Remove (Master) 3-pin, 2-wire **RELAY** cable connector from left Lane Control Board.
11) From right Lane Control Board, carefully pull harness out and under the right broad. Extra harness is provided.
12) When 3-pin, 2-wire **RELAY** connector extends past broad, connect it to the right Lane **RELAY** terminal.
13) Disconnect 2-pin **TEMP PROBE** connector from left Lane control broad.
14) Pull out extra harness and route connector under right Lane control broad until you have enough harness to connect 2-pin connector to **TEMP PROBE** terminal.
15) Position cover/bezel over lane touch pads and align with left and right side mounting holes.
16) Secure cover/bezel with the four screws removed earlier.
17) Plug in unit power cord to power supply.

Continued…

[Photo 1]

Remove four front control panel cover/bezel screws & pull off cover/bezel.

[Photo 2]



Remove 12-pin (Master) B-B connector from left main control board.

[Photo 3] with touchpad removed

Disconnect 12-pin B-B connector from right control board and pull Master terminal through to right control broad.

[Photo 4]

Connect 12-pin B-B Master & 3-pin, 2-wire RELAY-to-right-main-control-board terminals.

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3.6 Activate Backup Temperature Display – Change Control Board Cable Jumpering *Continued…*

Test the new Temperature Display by:

18) Switch ON main power switch.
19) Current freezer compartment temperature should appear in upper-right corner of Right Lane controls LCD display.

For F3D3 Models Manufactured after November 2012 ONLY…

NOTE: These models may be equipped with a simple 12-pin connector with a single (black) jumper wire. They ship from Franke with the connector plugged in to the **left** Main PC Control Board, in place of a ribbon cable. To active the **right** lane temperature display:

1-4) Follow general instruction Steps 1-4 on page 1.

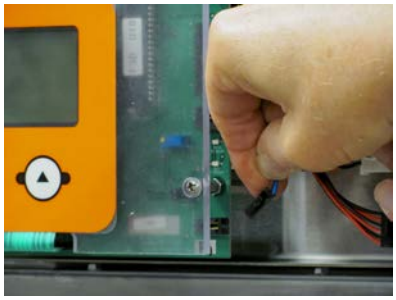
5) Remove 12-pin **B-B** (board-to-board) connector (with jumper wire) from left Lane Control Board.
6) Insert that 12-pin **B-B** connector in right Lane Control Board B-B terminal.

10-19) follow general instruction Steps 10-19 on pages 1 & 2 to change RELAY and TEMP PROBE connections, close control panel bezel and Test operation of activated right lane temperature display.

[Photo 5]

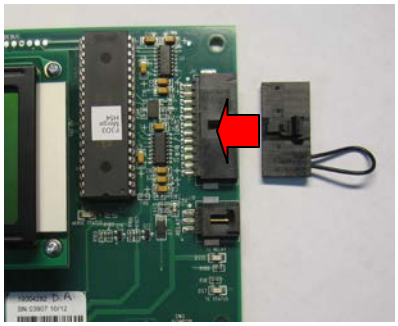
Connect B-B (Slave) to left control board terminal

[Photo 6]



Disconnect TEMP PROBE connector from left control board terminal, pull through to right board & connect to that TEMP PROBE terminal.

[Photo 7] For F3D3 Post-November 2012 Models



Remove 12-pin connector (with jumper) from left board and plug into right board.

Tools Required:

- Medium Phillips screwdriver

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4.0 Models Charged with R-290 Propane ONLY
SERVICE RESTRICTIONS

Model F3D3**P** and F3D3S**P** refrigeration systems are charged with **R290 PROPANE** refrigerant. **It is strictly forbidden to test or repair the F3D3P or F3D3SP Refrigeration System**.

WARNING - Danger of fire!

F3D3P and F3D3SP Model refrigeration systems are filled with R290 (propane). Propane is highly flammable.

Work (analysis/repair/maintenance) on the cooling system is only allowed under certain conditions!

- **Never** repair the cooling system yourself.
- If you experience problems, contact Franke Technical Support. The unit may only be repaired by a refrigeration technician under certain conditions.

Certain requirements apply to work (analysis/repair) on cooling systems that must be strictly observed. If these requirements are not fulfilled, the warranty will be void and Franke accepts no liability.

- Work on cooling system must **never** be carried out in the restaurant.
- The unit may be repaired in a suitable workshop. It is important to ensure there is sufficient ventilation.
- The unit may only be kept outside in the open air for the duration of the work on the cooling system.
- The work may **only** be done by a qualified (certified) specialist company, in accordance with all local laws and standards that may apply.

The only refrigeration system-related service allowed on the R290 PROPANE filled condenser systems are the PM procedures describe in the F3D3P/SP Operating Manual and repeated as Section 4.1 (Preventive Maintenance) of this Service Manual. **If those steps do not resolve a refrigeration system problem, contact the Franke Technical Support Group.**

[Photo 1] – From left side

The exterior of propane models have warning stickers to indicate the potential flammability hazard of R290 Propane.

[Photo 2] From rear of unit

Key refrigeration lines are tagged with warnings (in three languages) of the potential hazards of R290 Propane and the need to contact the Franke Technical Support Group.

[Photo 3] Don't Remove Tags

DO NOT OPEN or attempt to service the R290 Propane filled Refrigeration Package.

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4.1 Basic [Operator] Refrigeration Maintenance

IMPORTANT: These PM procedures are the only service allowed on **R290 PROPANE** filled condenser systems. If they do not resolve problem, contact Franke Support Group.

PROBLEM: Freezer is running but will not reach -18° C [0° F] or lower. High temperatures caused by a dirty condenser coil or extreme ice buildup may cause the freezer to function improperly, not maintain temperature or cease operating.

1) Open the freezer compartment door and verify that it has been defrosted. If significant ice buildup is present, turn OFF main power, leave freezer compartment door open and allow the ice to melt.
2) Check freezer door gasket for damage. If damage is found, see Section 2.2 Door Gasket Replacement.
3) Remove the top louvered access panel above lane control touchpad(s). [Lift up and pull out.]
4) Inspect the Condenser Coil Filter. If dirty, wash in sink. Allow the filter to dry completely before replacing.
5) Inspect the condenser coil to ensure it is clean and free of dust and debris. If it is dirty, clean it with a soft bristle brush or portable vacuum.

CAUTION

Avoid contact with fins on the condenser coil and any refrigeration lines. The fins are very sharp and can cause cuts. Certain refrigerant lines can be very hot and could cause burns to exposed skin. The use of gloves is recommended.

6) Test unit for operation within -18 to -23° C [0° to -10° F] normal operating temperature range.
7) If these steps correct problem, notify unit manager of problems noted with crew cleaning or operator preventative maintenance. If problem persists with Propane units, contact Franke Technical Support Group.

PROBLEM: The Freezer will not run when turned ON.

1) Verify unit is plugged in to correct voltage power supply.
2) Check circuit breaker for that outlet or use a test meter to verify power at outlet.
3) If these simple steps return unit to service, notify unit manager of fix.
4) If unit is plugged in, turned on and power is present at the outlet but Refrigeration System will not power-up, contact Franke Technical Support Group.

[Photo 1] F3D3P Shown

To inspect condenser filter and coil, lift up & remove front louvered access panel.

[Photo 2]

Inspect the condenser coil filter. Filter just lifts off. There are no fasteners. If dirty, wash in sink & allow filter to dry before replacing

[Photo 3]

Use a soft brush to clean condenser coils or a hand vacuum with brush attachment.

🛠Tools/Supplies Required:

- Soft brush or vacuum

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4.2 Condenser Fan Motor Replacement F3D3 & F3D3S Models ONLY

[See Section 1.5 for Part Number]

1) Unlock front casters and roll unit out.
2) Disconnect power at outlet. [Pull plug.]
3) If needed, position a stepladder or stable work platform to access the compressor/condenser compartment.
4) Using a medium Phillips screwdriver, remove two screws securing the right side access panel. Set panel aside.
5) Use your Phillips screwdriver to remove the screw lower-left on the relay/capacitor box.
6) Slide up and lift off the metal enclosure cover.
7) Disconnect the three Condenser Fan Motor wires from the terminal block using needle nose pliers. [Wire colors are: blue, brown & green.]
8) Using a 10 mm [3/8"] wrench or socket, remove the four lock nuts securing motor/fan assembly to condenser mounting frame. See Photo 5, page 2.
9) Using 5/16" [8 mm] nut driver or socket, remove screw securing fan blade to motor shaft. See Photo 6, page 2.
10) Using the 3/8" [10 mm] wrench or socket, remove the four lock nuts securing motor to fan guard. See Photo 7, page 2.
11) Attach the new Condenser Fan Motor to fan guard using the four nuts just removed.
12) Position fan on motor shaft plastic mounting flange and secure with Phillips screw removed earlier.
13) Position fan assembly over four mounting screws and secure using the four lock nuts removed earlier.
14) Reattach the three Fan Motor wires at terminal block. [Wire colors are: blue, brown & green.]
15) Slide metal cover back on relay/capacitor box and secure with single screw removed earlier.

Test Operation of new Condenser Fan Motor by:

16) Plug in unit to power supply.
17) Turn ON unit at Main Power-ON Switch.
18) Allow compressor to draw unit down to its normal operating temperature range, which should be between 0 and -10° F [-18 to -23° C]. Unit should maintain that operating temperature if freezer compartment door remains closed.

19) Replace and secure right side access panel screws removed earlier and return dispenser to normal operating position.

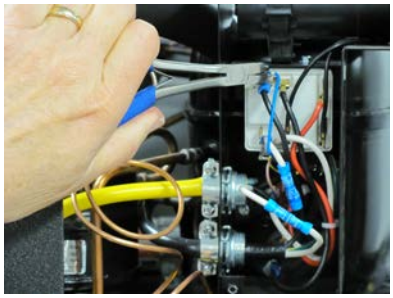
[Photo 1 – From right side]

Remove the right side service access panel.

[Photo 2]

Remove screw & slide up/off relay box cover.

[Photo 3]



Remove three fan motor wires from relay terminals.

[Photo 4 - from above-right]

Access the condenser fan motor from open top of compartment.

More photos…

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4.2 **Condenser Fan Motor Replacement…** *Cont.* **F3D3 & F3D3S Models ONLY**

[Photo 5]

Remove motor/fan assembly from condenser housing.

[Photo 6]

Remove fan blade from motor shaft using 5/16" [8 mm] nut driver or socket.

[Photo 7]

Remove fan guard from motor.

🛠Tools Required:

- Medium Phillips screwdriver
- 10 mm [3/8"] wrench or socket/driver
- 8 mm [5/16"] wrench or socket/driver
- Needle nose pliers

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4.3 Start Capacitor/Start Relay Replacement: F3D3 & F3D3S Models ONLY

[See Section 1.5 for Part Number]

NOTE: Replacement of both capacitor and relay is recommended.

1) Roll unit out to disconnect power at outlet.
2) Using a medium Phillips screwdriver, remove two screws securing right side access panel. Set panel aside.
3) Use your Phillips screwdriver to the remove screw on the lower-left of relay/capacitor enclosure side cover.
4) Slide up and lift off that metal enclosure cover.
5) Using needle nose pliers, carefully remove the two black capacitor leads from the terminal block, without touching each other or the metal box.

WARNING - High voltage! Use caution when handling capacitor. There is a danger of electrical shock, which can cause injury, burns or even death!

6) Unsnap the plastic retainer clip holding the capacitor, and then remove the capacitor.
7) Install the new capacitor and snap retainer clip.
8) Connect black capacitor leads to the terminal block.

Test operation of Compressor by:

9) Plug in unit power cord to power supply.
10) Turn ON unit at Main Power-ON Switch.
11) If compressor starts and runs, proceed to Step 22.

To Replace Start Relay:

12) Unsnap retainer to remove capacitor and provide access to relay.
13) Using needle nose pliers, disconnect the seven wires from the relay terminals.
14) Using a Phillips screwdriver to remove two screws mounting relay to electrical enclosure. Remove the relay.
15) Install the new relay and secure with those two screws.
16) Reconnect the 7 wires to the relay terminals, as follows: T1 = Black from capacitor; T2 = Red from compressor; T4 = Black from capacitor; White from power cord and White from compressor; T5 = Black from power cord and Black from compressor.
17) Replace capacitor removed to provide relay access.
18) Replace [and secure] metal relay enclosure cover.

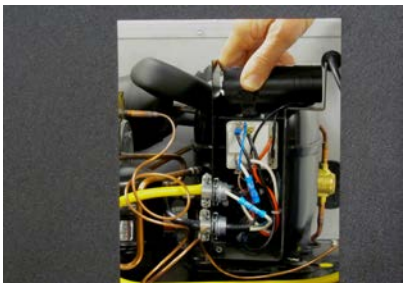
Continued…

[Photo 1]

Remove the right side service access panel.

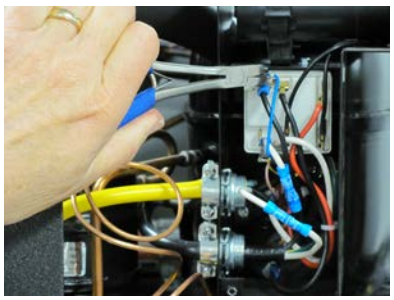
[Photo 2]
Remove screw & slide up/off relay box cover.

[Photo 3] Replace Capacitor



Try replacing the capacitor first. If replacement of the capacitor does not start the compressor, replace the start relay.

[Photo 4] Replace Relay



Remove relay terminal connections.

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To Replace Start Relay…*Continued*:

Test operation of Compressor by:

19) Plug in unit to power source.
20) Turn ON unit at Main Power-ON Switch.
21) If compressor starts and runs, proceed to Step 22.

22) Replace and secure right side access panel using screws removed earlier; and return Dispenser to normal operating position.

[Photo 5]

Use Phillips screwdriver to remove two screws that mount relay to electric enclosure.

🛠Tools Required:

- Medium Phillips screwdriver
- Needle nose pliers

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4.4 Checking System [Refrigerant] Pressure and Electronic Leak Detection… [F3D3 & F3D3S Models ONLY]

1) Roll unit out to disconnect power at outlet. [Pull plug.]
2) Position a stepladder or stable work platform to access the compressor/condenser compartment from the top.
3) Using standard manifold refrigeration gauges, securely attach connectors to discharge & suction access valves.
4) Plug in unit. Turn ON Main Power Switch and allow compressor to run for several minutes to stabilize pressures.
5) Using gauges, confirm the following pressures for units with a **16 oz. [454 gm] R404A charge:**
   - Discharge Valve: 230 +/- 10 psig [16 ± 1 Bar] @ 80˚F/27°C ambient
   - Suction Valve: 5 +/- 2 psig [.4 ± .1 Bar] @ 80˚F/27°C ambient
6) If Discharge Valve pressure is HIGH and Suction Valve pressure is LOW, check for a kinked or restricted line.
7) If a kinked or restricted line is found, **see Section 4.6** for Expansion Valve/Filter replacement.
8) If Discharge Valve Pressure is LOW and Suction Pressure is LOW, verify leak and location with an Electronic Leak Detector. [If existing system pressures are high enough, a thorough scan with a standard leak detector may be sufficient to locate the exact location.]
9) If system pressure is too low or leak(s) is/are intermittent and difficult to detect, recover any remaining refrigerant then pressurize the system with nitrogen to an equalized MAXIMUM of 150 PSIG [10.5 Bar]; **per Section 4.4A**
10) **NOTE:** If using an electronic leak detector, add a few ounces of R-404A to act as a tracer gas. Use electronic leak detector or apply soap solution to locate any leaks.
11) **IMPORTANT**: Make sure the condensing unit is off when checking for leaks. Air movement from the fan would inhibit the ability of the leak detector to sense refrigerant.

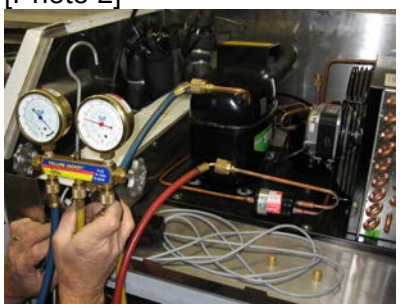
NOTE: Do not use an electronic leak detector to locate leaks inside the freezer evaporator housing. The foam insulation used inside the evaporator housing contains HFCs, which will generate false readings. **See Section 4.4B for Nitrogen Pressure Testing of Evaporator.**

12) If a leak is found, see Section 4.5 for Leak Repair Procedures.

[Photo 1] F3D3S from back

Access the refrigeration compartment from back or top.

[Photo 2]



Check Discharge and Suction Valve pressures using a manifold refrigeration gauge.

[Photo 3]

If system pressure is too low or the leaks difficult to pinpoint, pressurize system with 150 PSIG [10.5 Bar] of Nitrogen and use an electronic leak detector or soap solution.

🛠Tools Required:

- Medium Phillips Screwdriver
- Manifold Refrigeration Pressure Gauge
- Electronic Refrigeration Leak Detector or
- Liquid leak-detection soap

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4.4.1 Checking For Leaks Using Nitrogen F3D3 & F3D3S Models ONLY

If a leak is very small or intermittent and difficult to detect, the system can be leak-checked by pressurizing with nitrogen. **NOTE:** Follow this procedure before checking for a leak in the cold wall Evaporator. **See Section 4.4.2 for Evaporator.**

1) Separate the high side from the low side by cutting the copper lines going into the walls of the freezer cabinet.
2) Pinch and solder the cut lines on the high side or add additional access fittings to pressurize the refrigeration system **except the evaporator**.
3) To use an electronic leak detector, add a few ounces of R-404A to act as a tracer gas.
4) Pressurize the high side and the compressor with nitrogen through access fittings to an equalized maximum of 150 PSIG [10.5 Bar]. **IMPORTANT:** A test pressure higher than 150 PSIG is not recommended for the compressor shell. (See Photo 3)
5) Use an electronic leak detector or application of a soap solution to locate any and all leaks. Places to check carefully include:
   - The pressure relief valve
   - Fittings and seams on the receiver tank
   - All solder joints
   - Access fittings (with and without caps on)
6) If a leak cannot be found and the test pressure appears to be steady, **record the test pressure, plus room temperature and cabinet inside wall temperature**.
7) Leave the unit pressurized for 24 hours.

Record Pressure & Temps.	Initial	After 24 Hours
Test Pressure:	PSIG/Bar	PSIG/Bar
Room Temperature:	°F / °C	°F / °C
Inside Wall Temperature:	°F / °C	°F / °C

8) Record the pressures and temperatures again at the end of the test period. A pressure drop of more than 10 PSIG [.7 Bar] within 24 hours indicates that there is a leak somewhere and a more careful search is required.

NOTE: Do not use an electronic leak detector to locate leaks inside the freezer evaporator housing. The foam insulation used inside the evaporator housing contains HFCs, which will generate false readings.

[Photo 1] – from above-right

Cut the copper lines going down into the freezer cabinet.

[Photo 2] – from right side

Pinch & solder high side lines or use access fittings on both high & low (evaporator) side.

[Photo 3]

Add a few ounces of R-404A refrigerant & pressurize to 150 PSIG [10.5 Bars] with nitrogen.

🛠Tools Required:

- Tubing cutter
- Crimping tool or pliers
- Two-four access fittings
- Torch, solder, etc.
- Manifold Refrigeration Pressure Gauge
- Electronic Refrigeration Leak Detector or
- Liquid leak-detection soap

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4.4.2 Cold Wall Evaporator Leak Detection

NOTE: F3D3 & F3D3S Models ONLY - This procedure for leak detection should be used when electronic detection or soap failed to locate a leak in the system HIGH SIDE. **(See procedure 4.4 & 4.4.1 before using this procedure.)**

IMPORTANT: Following this procedure and documentation of test pressures may be required for warranty coverage.

1) After trying other leak detection methods, recover any remaining refrigerant.
2) Separate the high side from the low side. Use a tubing cutter to cut the copper lines going into the cabinet walls.
3) Solder access fittings to both sides of the evaporator (both lines coming out of the cabinet wall).
4) Before pressurizing the low side, check for restrictions in the evaporator tubing by blowing some nitrogen through the system. **NOTE:** Some oil is likely to come through so have a rag ready. Clean oil has the consistency and appearance of water. Thick or discolored oil or other material may indicate other problems in the system.
5) Pressurize the low side line to **250 PSIG** [14.7 Bars] using nitrogen. Check for leaks at newly installed access fittings and hose connections using soap bubbles. Also check for leaks where lines go into the cabinet body.
6) After about 10 minutes, when system pressure is steady, **record the test pressure**. Also record room and cabinet inside wall temperatures:

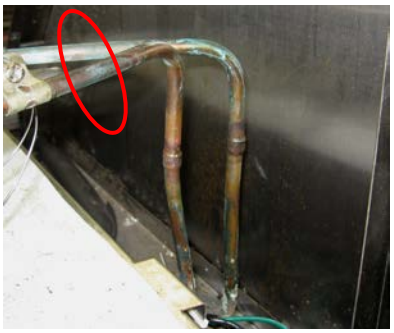
Record Pressure & Temps.	Initial	After 24 Hours
Test Pressure:	PSIG/Bar	PSIG/Bar
Room Temperature:	°C / °F	°C / °F
Inside Wall Temperature:	°C / °F	°C / °F

7) Leave the unit pressurized for 24 hours.
8) Record the pressure and temperatures again at the end of the test period. **A pressure drop of more than 10 PSIG [.7 Bar] within 24 hours indicates there is a leak in the evaporator.**

NOTE: Do not use an electronic leak detector to locate leaks inside the freezer evaporator housing. The foam insulation used inside the evaporator housing contains HFCs, which will generate false readings.

9) **IMPORTANT:** If an evaporator leak is clearly indicated, contact Franke Technical Support for assistance.

[Photo 1]



Separate and cut the high & low side lines from the (cold wall) evaporator and solder on access fittings.

[Photo 2]

Pressurize the low side to 250 PSIG [17.2 Bars] using nitrogen, check for leaks and pressure level after 10 minutes & again after 24 hours.

🛠Tools-Supplies Required:

- Tubing cutter
- Two access fittings
- Torch, solder, etc.
- Manifold Refrigeration Pressure Gauge
- Liquid leak-detection soap
- Rag or paper towels

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4.5 Repair System Refrigerant Leak F3D3 & F3D3S Models ONLY

1) Roll unit out to disconnect power at outlet. [Pull plug.]
2) Position a stepladder or stable work platform to access the compressor/condenser compartment from the top.
3) Repair or replace refrigerant lines as needed. **NOTE**: Replacement of the filter/dryer is recommended whenever the refrigeration system is opened for repair.
4) **NOTE:** Recover any residual refrigerant and ensure line pressure is equalized to zero, before opening the refrigeration system.

IMPORTANT: Any residual refrigerant charge should be recovered in strict accordance with all environmental laws.

5) **NOTE:** The system may need to be drained completely and new Polyol Ester Oil added. If required, the old Polyol Ester Oil should be recovered and disposed of in accordance with Federal Laws covering the handling of hazardous materials.
6) When resealing the system, use a continuous Nitrogen charge to assure no contaminants enter the system, especially when brazing.
7) After resealing is complete, repressurize the system and check for leaks.
8) Before recharging the system, pull a vacuum equivalent to 30 inches [760 mm] of Mercury, for a minimum of 30 minutes.
9) Recharge the system with R404A refrigerant, per nameplate label specification.

Test operation of Refrigeration System by:

10) Plug in unit power cord to power source.
11) Turn ON unit at Main Power-ON Switch.
12) If compressor starts and brings the Freezer compartment down to the normal operating temperature range of -18 to -23° C [0 to -10° F], proceed to Step 13.

13) Return Dispenser to normal operating position and lock front casters.

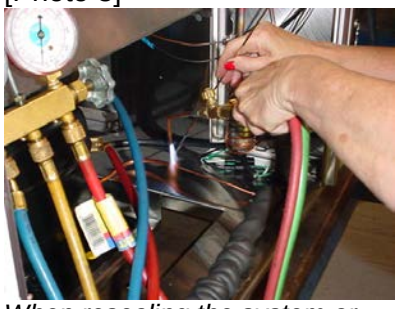
[Photo 1 – From back]

Access the refrigeration compartment from back or top.

[Photo 2]

Recover any residual refrigerant and ensure line pressure is zero before opening system.

[Photo 3]



When resealing the system or repairing leaks, use continuous Nitrogen charge to keep contaminants out.

🛠 Tools/Supplies Required:
- Refrigerant Recovery Tank & fittings
- Nitrogen Charge Tank
- R404A Refrigerant
- Brazing Torch, etc.

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4.6 Thermostatic Expansion Valve & Sensor Assembly Replacement F3D3 & F3D3S Models ONLY

1) Position a stepladder or stable work platform to access the compressor/condenser compartment from the top.
2) **NOTE:** Recover any residual refrigerant and ensure line pressure is equalized to zero, before opening the refrigeration system.

> **IMPORTANT**: Any residual refrigerant charge should be recovered in strict accordance with the Federal Clean Air Act.

3) Remove insulating foam around valve and tubing.
4) Cut line above and below the expansion valve using a small tubing cutter. Remove existing Expansion Valve & Sensor Bulb Assembly.
5) Install new Expansion Valve & Sensor Assembly. **IMPORTANT:** Wrap valve body with a wet rag before applying any heat, to prevent any damage. Braze lines as required.
6) When resealing the system, use a continuous Nitrogen charge to assure no contaminants enter the system, especially when brazing.
7) After resealing is complete, pressurize system and check for any leaks.
8) Mount sensor bulb using the strap clamp provided to the suction line, in the “10 o’clock” or “2 o’clock” position. **DO NOT** mount in 12 o’clock or 3-to-9 o’clock position.
9) Before recharging the system, pull a vacuum equivalent to 30 inches [760 mm] of Mercury, for a minimum of 30 minutes.
10) Recharge the system with R404A refrigerant, per nameplate label specification.

Test operation of Refrigeration System by:

11) Plug in power cord to outlet.
12) Turn ON unit at Main Power-ON Switch.
13) If compressor starts and brings the Freezer compartment down to the normal operating temperature range of -18 to -23° C [0 to -10° F], proceed to Step 15.
14) Replace black foam insulation enclosing the expansion valve and sensor, to minimize condensation. Secure insulation with electrician’s tape.

15) Return Dispenser to normal operating position.

[Photo 1] F3D3S from back

Access the refrigeration compartment from back or top.

[Photo 2]

Remove insulation from valve & adjacent tubing.

[Photo 3]

Cut refrigeration line above and below Expansion Valve.

🛠Tools/Supplies Required:

- Refrigerant Recovery Tank & fittings
- Nitrogen Charge Tank
- R404A Refrigerant
- Tubing Cutter
- Brazing Torch & supplies
- Wet rag
- Electrician’s tape

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4.7 Condensing Unit Replacement F3D3 & F3D3S Models ONLY

[See Section 1.5 for Part Number]

1) Roll unit out to disconnect power. [Pull plug]
2) Remove screws securing rear service access panel. Lift panel up and off.
3) From rear of unit - use an 8 mm [5/16”] box wrench or socket to loosen the four Condenser Assembly base retaining screws.
4) Trace the Condenser power cord to the strain relief through condenser compartment bottom. Remove the plastic nut. Use pliers, as needed.
5) Follow power cord down to DIN rail mounted relay and terminal block on back of freezer compartment. Use a needle-nose pliers to disconnect neutral and line wires from the compressor relay.
6) Remove ground wire from terminal block or grounding post.
7) From the condenser compartment, pull compressor power cord up through the strain relief.
8) **NOTE:** Recover any residual refrigerant and ensure line pressure is equalized to zero, before opening the refrigeration system.

> **IMPORTANT**: Any residual refrigerant charge should be recovered in strict accordance with all environmental laws.

9) Cut the refrigerant lines. (See Photo 5 & 6 on page 2) **NOTE:** Cut **return line** as close to the compressor as possible. Slit and remove insulation, as needed. Cut the line **from compressor** between the sight glass and the filter/dryer.
10) Slide old condensing unit out of refrigeration compartment. Slide the new condensing unit into position and secure with the four retaining screws.

> **CAUTION**
> Condensing unit weights 23 kg [50 lbs]. Obtain help if needed, to remove from refrigeration compartment.

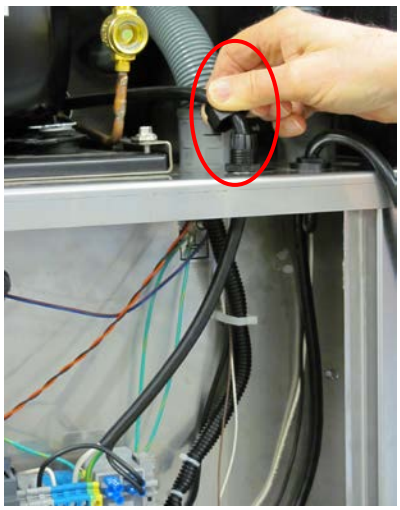
11) Clean and prepare the refrigeration line fittings, then braise those line connections.
12) Replace or repair any split insulation on the return line.

Continued…

[Photo 1 – From back of unit]

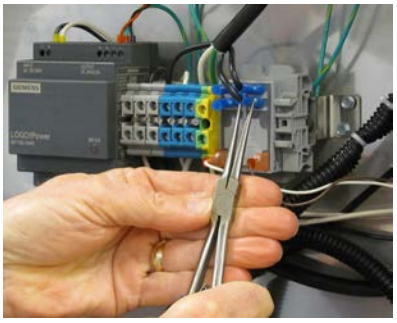
Loosen the four Condenser Assembly base retaining screws.

[Photo 2]



Remove plastic nut from condensing unit power cord strain relief.

[Photo 3]



Disconnect three condenser power cord wires from DIN-rail mounted terminal block & relay.

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4.7 Condensing Unit Replacement …*Continued*

13) **NOTE:** When resealing the system, use a continuous Nitrogen charge to assure no contaminants enter the system, especially when brazing.
14) Before recharging system, pull a vacuum equivalent to 760 mm [30 inches] of Mercury, for a minimum of 30 minutes.
15) Recharge the system with R404A refrigerant, per nameplate label specifications.
16) Route condenser power cord though strain relief plastic nut then down through the compartment bottom.
17) Pull down enough cord to reach the terminal block and relay.
18) Use your small screwdriver and pliers to attach the power cord wires to the terminal block ground and relay (line & neutral).
19) Screw on the plastic strain relief, route and secure power cord with wire ties, away from refrigeration lines, etc.

Test operation of Refrigeration System by:

20) Plug in unit power cord to outlet.
21) Turn ON unit at Main Power-ON Switch.
22) If compressor starts and brings the Freezer compartment down to the normal operating temperature range of -18 to -23° C [0 to -10° F], repair is complete.

23) Return Dispenser to normal operating position and lock front casters.

🛠 Tools/Supplies Required:

- Medium Phillips screwdriver
- 8 mm [5/16”] socket/wrench
- Needle-nose pliers
- 2-3 mm [1/8”] flat blade screwdriver
- Refrigerant Recovery Tank & fittings
- Nitrogen Charge Tank
- R404A Refrigerant
- Tubing Cutter
- Brazing Torch, etc.

[Photo 4]

Recover any residual refrigerant & ensure line pressure is zero before opening system.

[Photo 5 – From back]

Cut compressor line between sight glass & filter/dryer.

[Photo 6 – From above]

Cut return line as close as possible to compressor.

[Photo 7]

When resealing the system, use a continuous Nitrogen charge to keep contaminants out.

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