Field-IQ Liquid Application with Servo or PWM Control Valves

NOTE: Before starting the Field-IQ plug-in setup on the FmX integrated display, ensure that:

*   All components of the system are installed on the vehicle and implement.

*   The Field-IQ plug-in has been added to the FmX integrated display configuration.

    *   From the *Home* screen, tap the **RUN** icon.

    *   Next to *Implement*, tap **EDIT**.

    *   The *Configuration* screen appears. ensure that the Field-IQ icon appears in the list. If it does not appear, tap **Add/Remove** to add the plug-in to the configuration.

*   The *Implement* Setup has the proper selection for operation (planting, strip-till, etc.)

    *   From the *Home* screen, tap the **RUN** icon. Next to *Implement*, tap **EDIT**.

    *   The *Configuration* screen appears. Select the *Implement* from the list on the left and tap **SETUP**.

    *   The *Implement Setup* screen appears. In the *Operations* tab, select your application - spraying, strip-till, etc. the tap **OK**.

NOTE: For more information about setting up the implement, see Chapter 7, Implement Configuration in the FmX Manual.
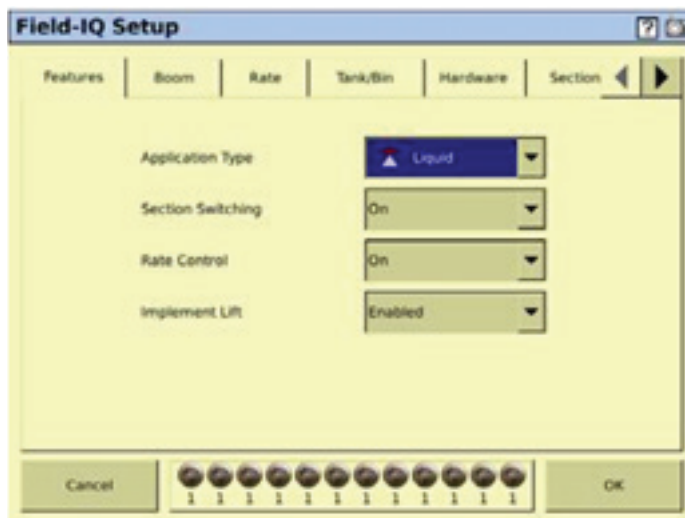
Field-IQ Setup for Liquid

1. From the *Home* screen, tap the [icon] icon. The *Configuration Selection* screen appears.

2. Next to Implement, tap **EDIT**. The *Configuration* screen appears.
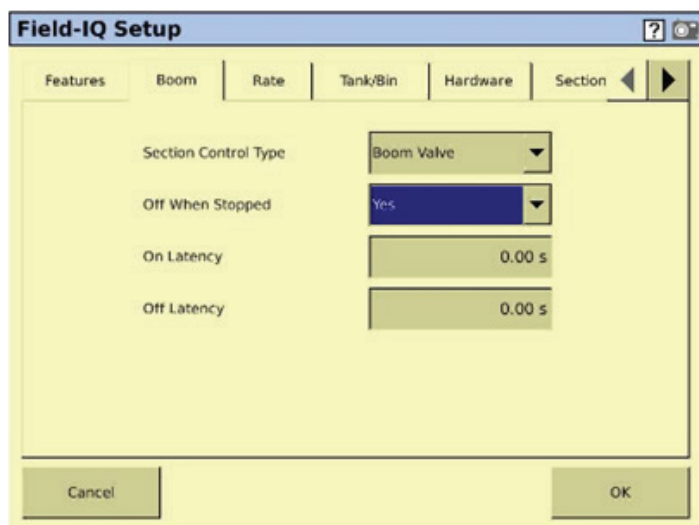
3. Select Field-IQ and then tap **SETUP**.

Features Tab

1. In the *Application Type* drop-down list, ensure that **Liquid** is selected.

2. In the *Selection Switching* drop-down list, select either **On** or **Off**.

    *   When **On** is selected, *Automatic Section Control* is active and at least one Field-IQ section control module must be installed.

3. In the *Rate Control* drop-down list, select either **On** or **Off**.

    *   When **On** is selected, *Rate Control* is active and at least one Field-IQ Rate and Section Control module must be installed.

4. In the *Implement Lift* drop-down list, select either **Enable** or **Disable**.

    *   Select **Enable** for the system to use the *Implement Lift* to start and stop coverage logging.

    *   Select *Disable* for the system to ignore the *Implement Lift* switch (if installed).

    *   You can manually control coverage logging from the **RUN** screen.

Boom Tab

1. Select the *Boom* tab.

Field-IQ Setup

| Features | Boom | Rate | Tank/Bin | Hardware | Section ◀ ▶ |

Section Control Type	Boom Valve ▼
Off When Stopped	Yes ▼
On Latency	0.00 s
Off Latency	0.00 s

Cancel   OK

2. To control whether the system sends a high or a low signal to close a section valve, select one of the following options from the *Section Signal* drop-down list.

   - Reverse Polarity
   - Electric clutch
   - Boom Valve
   - Liquid Block

   ⚠ CAUTION - Selecting the incorrect valve causes the system to operate opposite of the required result.

3. In the *Turn Off When Stopped* drop-down list select an option:

   - Selecting Yes turns off the sections when the GPS speed is zero.

4. In the *On Latency* field, enter a value.

   - By default, it is set to 0.0 seconds. See FmX manual for settings other than 0.

5. In the *Off Latency* field, enter a value.

   - By default, it is set to 0.0 seconds. See FmX manual for settings other than 0.

Rate Tab

1. Select the *Rate* tab.

Field-IQ Setup

| Features | Boom | Rate | Tank/Bin | Hardware | Section ◀ ▶ |

Rate 1 (default)	7.93 gal/a
Rate 2	6.34 gal/a
Rate Adjustment	0.53 gal/a
Rate Snapping	Disabled ▼
Total Nozzles	12

Cancel   OK

NOTE: The Rate Tab is only visible if you have at least one Field-IQ Rate and Section Control module installed.

2. In the *Rate 1* field, enter a value. This is the Application Rate to be used when the Rate Switch in the Field-IQ master switch box is in Rate 1.

3. In the *Rate 2* field, enter a value. This is the Application Rate to be used when the Rate Switch in the Field-IQ master switch box is in Rate 2.

4. In the *Rate Increment* field, enter a value. This is the increment to be used each time the Increment/Decrement switch is pressed.

5. In the *Rate Snapping* drop-down list, select one of the following:

   - Enable: to show the applied rate the same as the target rate, if the applied rate is within 10% of the target rate.
   - Disabled: to show the actual applied value.

6. In the Total Nozzles field, enter a value. This is the total number of nozzles/orifices on the machine.
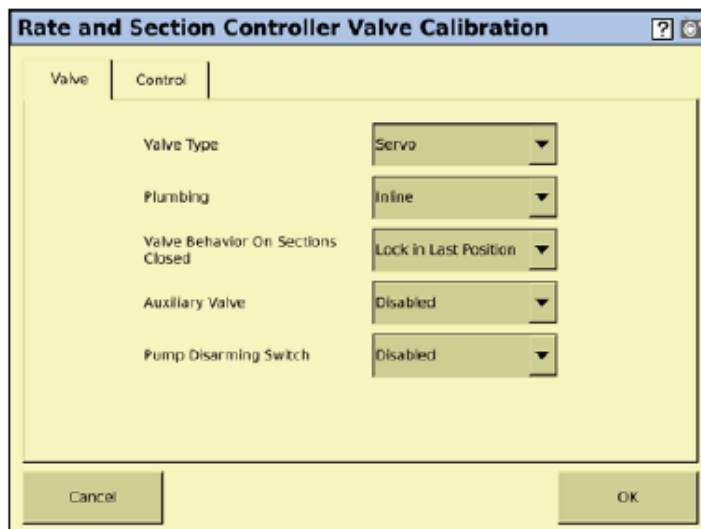
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Calibrating the Modules

The Field-IQ *Calibrate* option only appears on the Configuration screen if you have at least one Field-IQ Rate and Section Control module installed.

1. From the **Configuration** screen, select the Field-IQ plug-in and then tap **CALIBRATE**.

2. From the **Field-IQ Calibrate screen**, select the Rate and Section Control Module to be calibrated. The message **NOT calibrated** appears at the end of the modules that need calibration.
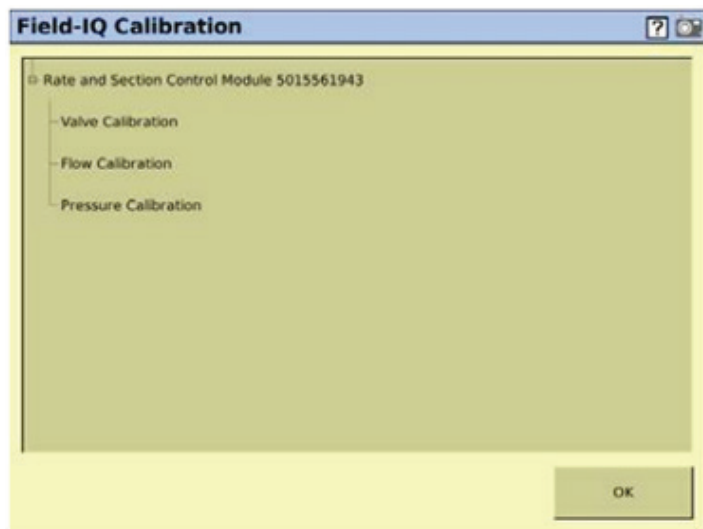
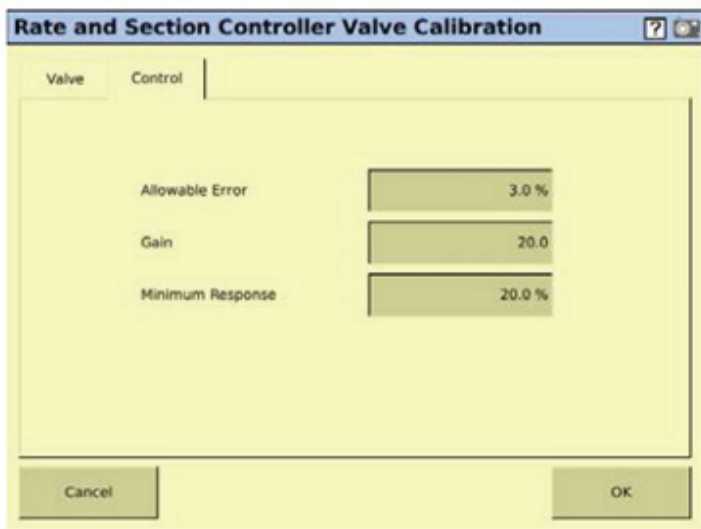3. Select Valve Calibration. the following screen appears.

*NOTE: See the table below for options.*

For this field...	Select on of the following options...
Valve Type	• **Pump Servo:** The Pump Servo setting controls an electrically operated hydraulic servo valve. As the valve actuates, it adjusts the hydraulic flow to the pump, increasing or decreasing the pump speed to deliver proper amount of product. • **PWM:** The PWM pump setting controls an electric solenoid valve which adjusts the hydraulic flow to the pump. Increasing or decreasing the speed of the pump to control the product output. ***This is also the selection for the Micro-Trak PWM controlled EMD.*** • **Fast Servo:** 4-wire electric motor turns a ball or a butterfly to increase/decrease flow. • **Servo:** 2-wire electric motor turns a ball or a butterfly to increase/decrease flow. ***This is also the selection for the Micro-Trak servo valve and for the micro-Trak standard EMD.***
Plumbing	• **Inline:** Valve is in the solution line going to boom. The valve open to increase application rate. • **Bypass:** Valve is in the Return to Tank line. The valve closes to increase the application rate.
Valve Behavior on Sections Closed	• **Close:** When all sections are off, the control valve returns to the closed position. • **Lock in Last Position:** When all sections are off, the control valve remains in the last position. This setting allows the system to return to the target rate faster.

Auxiliary Valve	• If you have an Auxiliary Valve installed, select one of the following:
	  • **Master:** Valve closes when the system is turned off.
	  • **Dump:** Valve open to dump flow to return line when the system is turned off.

Pump Disarming Switch	• **Enable:** Select this option if you have a Pump Disarming Switch installed. *Refer to Trimble FmX Manual*.

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4. Select the *Control* tab. Enter a value for each of the following:
   - Allowable Error
   - Gain
   - Minimum Response

NOTE: For information about values for your sprayer, see the Field-IQ Getting Started Guide.

5. To **OK** to return to the main calibration screen, and the tap *Flow Calibration*. The following screen appears.
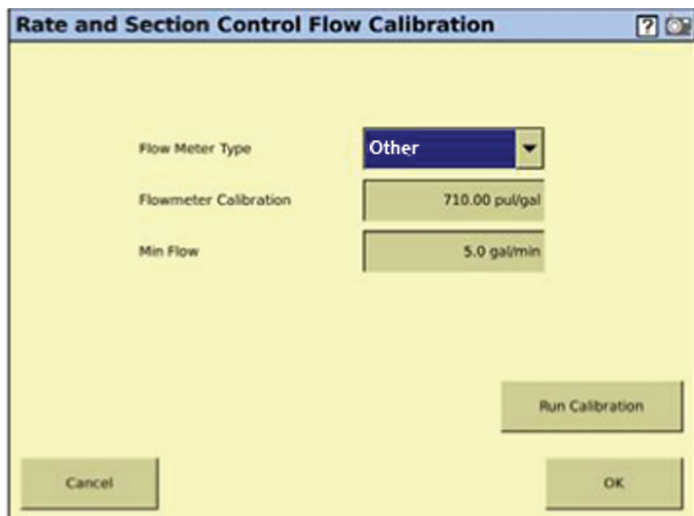
6. Enter a value for each of the following:
   - *Flowmeter Type:* Select Other from the drop-down list.
   - *Flowmeter Calibration:* The flowmeter is calibrated with water at the factory and assigned a "Liquid Cal" number. Adjust to this number - printed on the plastic tag attached to the flowmeter.

FM750 GFN Flowmeter
P/N 11501
S/N 000000000

Micro-Trak liquid cal - 140
Pulses per gallon - 70.00
Pulses per 10 gallons - 700.00
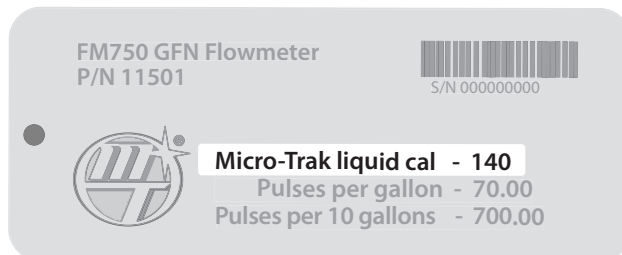
   - *MinFlow:* Enter the required minimum flow rate for the system. Use this setting to keep the control valve and flowmeter above the minimum operating level.

See the FmX Integrated Display User Guide Field-IQ section for pre-field checkout procedure and operating instructions.

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4

Wiring Harness - Single Section
P/N 18328

Section 1

Servo

Run/Hold

Flow

Pressure 2

Pressure 1

3/4" HEAT SHRINK (2 PLCS)

LABEL (6 PLCS)

Terminal	Pin	Wire		Connector Pin	Connector Type	Signal
+12V	A1	18 GA. RED		A	2-PIN M/P TOWER	PRESS. SOURCE 1
PRESS. SIG 1	A2	18 GA. WHT		B		PRESS. RETURN 1
	A3					
+12V	B1	18 GA. RED		A	2-PIN M/P TOWER	PRESS. SOURCE 2
PRESS. SIG 2	B2	18 GA. WHT		B		PRESS. RETURN 2
	B3					
FLOW PWR	C1	18 GA. RED		A	3-PIN M/P TOWER	FLOW PWR
FLOW SIG	C2	18 GA. WHT		B		FLOW SIG.
FLOW GND	C3	18 GA. BLK		C		FLOW GND
R/H PWR	D1	18 GA. WHT				
R/H SIG	D2	18 GA. RED		A	3-PIN M/P TOWER	R/H SIG
	D3			B		R/H PWR
SERVO +	E1	18 GA. GRN		C		
SERVO -	E2	18 GA. YEL				
	E3					
	F1			A	3-PIN W/P SHROUD	SERVO -
	F2			B		SERVO +
	F3			C		
	G1					
	G2					
GND	G3	18 GA. BLK				
	H1					
	H2					
PWR	H3	18 GA. RED		A	3-PIN W/P TOWER	PWR
	J1			B		GND
	J2			C		SEC. 1 SIG.
	J3					
SECTION 1 SIG.	K1	18 GA. ORG				
	K2					
	K3					

30-PIN CINCH CONN.

PRESSURE 1 — 18 GA. RED / 18 GA. WHT

PRESSURE 2 — 18 GA. RED / 18 GA. WHT

FLOW — 18 GA. RED / 18 GA. WHT / 18 GA. BLK

RUN/HOLD — 18 GA. RED / 18 GA. WHT

SERVO — 18 GA. YEL / 18 GA. GRN

SECTION 1 — 18 GA. RED / 18 GA. BLK / 18 GA. ORG

1/8" BRAIDED SLEEVE & 1/4" HEAT SHRINK (6 PLCS)

3/8" BRAIDED SLEEVE

2.0 FT.

7.0 FT.

P/N 50360

MICRO-TRAK®
INNOVATIVE FROM THE GROUND UP

Wiring Harnesses - Multiple Section
P/N 18329 - Main Branch
P/N 18330 - Sections 1-6
P/N 18331 - Sections 7-12

SECTION 1
SECTION 2
SECTION 3
SECTION 4
SECTION 5
SECTION 6

SECTION 7
SECTION 8
SECTION 9
SECTION 10
SECTION 11
SECTION 12

SECTIONS 1-6
P/N 18330

SECTIONS 7-12
P/N 18331

PRESSURE 1
PRESSURE 2
FLOW
RUN/HOLD
SERVO
SECTION 1

MAIN BRANCH
P/N 18329

TO FIELD-IQ RATE/SECTION
CONTROL MODULE
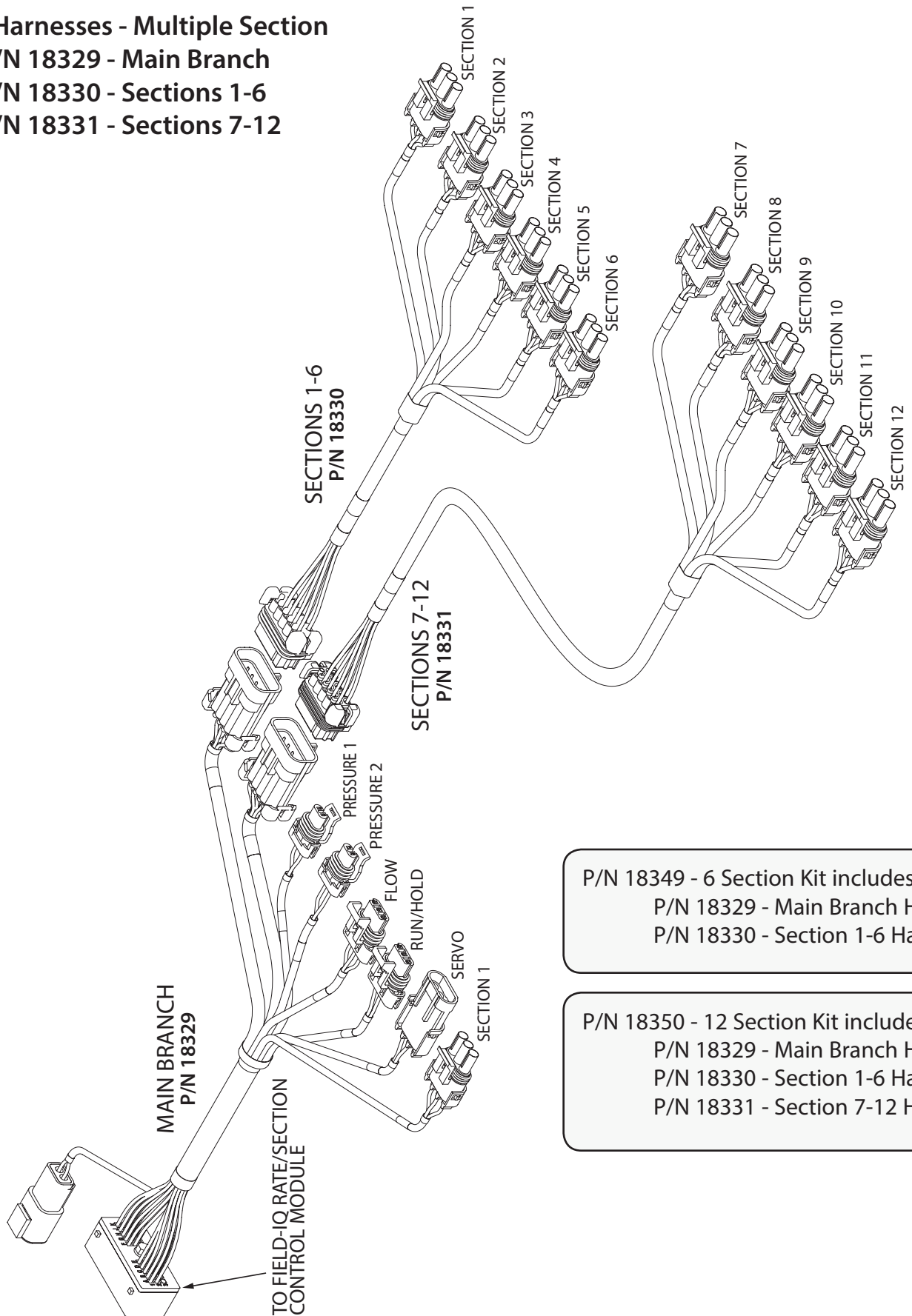
P/N 18349 - 6 Section Kit includes:
    P/N 18329 - Main Branch Harness
    P/N 18330 - Section 1-6 Harness

P/N 18350 - 12 Section Kit includes:
    P/N 18329 - Main Branch Harness
    P/N 18330 - Section 1-6 Harness
    P/N 18331 - Section 7-12 Harness

P/N 50360

Wiring Harness Main Branch
P/N 18329

MAIN BRANCH
P/N 18329

Section 7-12

Section 1-6

Pressure 2

Pressure 1

Flow

Run/Hold

Servo

Section 1

P/N 50360

Wiring Harness Main Branch
P/N 18329

P/N 50360
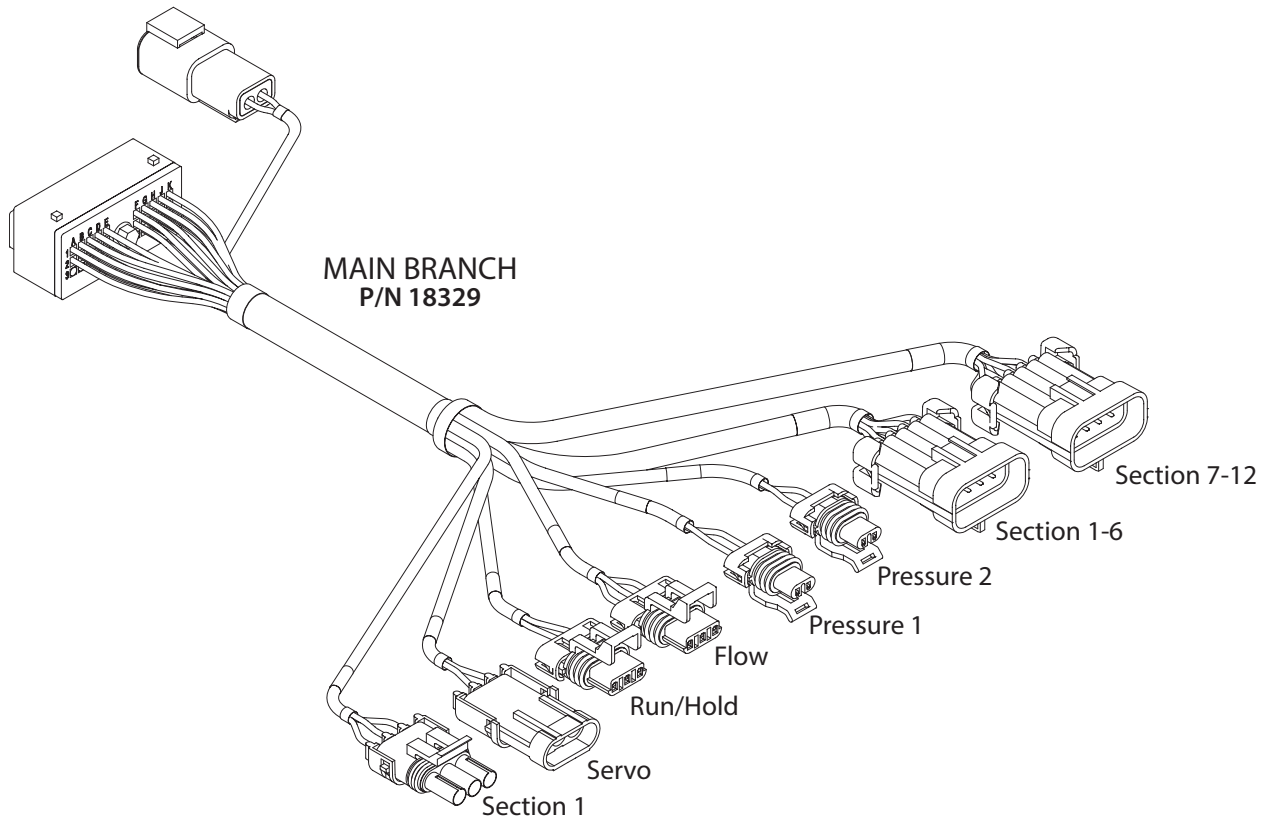
Wiring Harness - Sections 1-6
P/N 18330

Sections 1-6
P/N 18330

Section 1
Section 2
Section 3
Section 4
Section 5
Section 6

P/N 50360
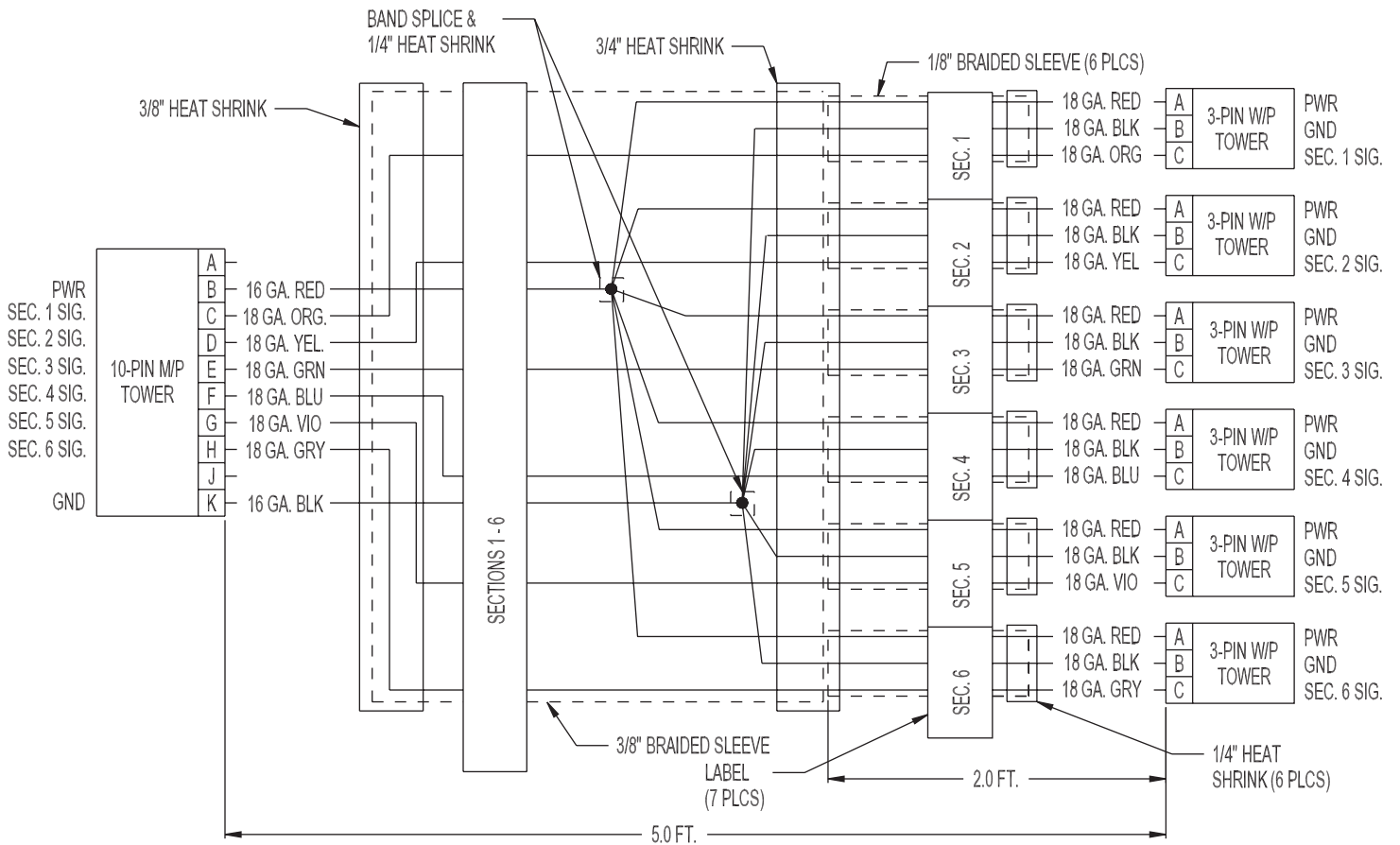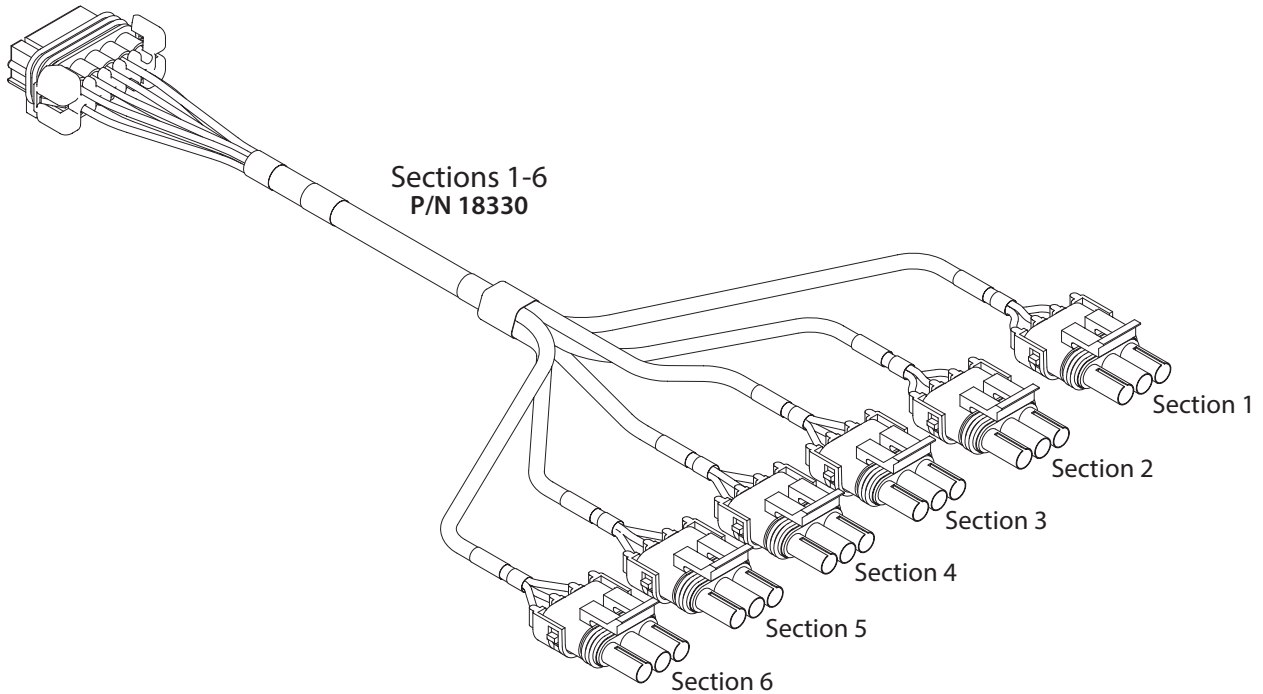
Wiring Harness - Sections 7-12
P/N 18331

Section 7
Section 8
Section 9
Section 10
Section 11
Section 12

BAND SPLICE &
1/4" HEAT SHRINK

3/4" HEAT SHRINK

1/8" BRAIDED SLEEVE (6 PLCS)

3/8" HEAT SHRINK

		18 GA. RED	A		PWR
	SEC. 7	18 GA. BLK	B	3-PIN W/P TOWER	GND
		18 GA. ORG	C		SEC.71 SIG.

		18 GA. RED	A		PWR
	SEC. 8	18 GA. BLK	B	3-PIN W/P TOWER	GND
		18 GA. YEL	C		SEC. 8 SIG.

		18 GA. RED	A		PWR
	SEC. 9	18 GA. BLK	B	3-PIN W/P TOWER	GND
		18 GA. GRN	C		SEC. 9 SIG.

		18 GA. RED	A		PWR
	SEC. 10	18 GA. BLK	B	3-PIN W/P TOWER	GND
		18 GA. BLU	C		SEC. 10 SIG.

		18 GA. RED	A		PWR
	SEC. 11	18 GA. BLK	B	3-PIN W/P TOWER	GND
		18 GA. VIO	C		SEC. 11 SIG.

		18 GA. RED	A		PWR
	SEC. 12	18 GA. BLK	B	3-PIN W/P TOWER	GND
		18 GA. GRY	C		SEC. 12 SIG.

PWR
SEC. 7 SIG.
SEC. 8 SIG.
SEC. 9 SIG.
SEC. 10 SIG.
SEC. 11 SIG.
SEC. 12 SIG.

GND

10-PIN W/P TOWER

A	
B	16 GA. RED
C	18 GA. ORG.
D	18 GA. YEL.
E	18 GA. GRN
F	18 GA. BLU
G	16 GA. VIO
H	18 GA. GRY
J	
K	16 GA. BLK

SECTIONS 7 - 12

3/8" BRAIDED SLEEVE

LABEL
(7 PLCS)

2.0 FT.

1/4" HEAT SHRINK
(6 PLCS)

5.0 FT.