Axi dyne®
ELECTRIC LINEAR MOTION PRODUCTS

WELD AXIS *System*
User Manual

TOL-O-MATIC, INC
Excellence in Motion®

3600-4640_00

3/04

Contents

LIST OF FIGURES

Health and Safety Regulations 1

1.1 General

Read completely through the applicable sections of the manual before the equipment/unit is unpacked, installed or operated. Pay careful attention to all of the dangers, warnings, cautions and notes stated in this manual.

Serious injury to persons or damage to the equipment may result if the information contained in this manual is not followed.

Items that are specifically marked **DANGER!, WARNING!, CAUTION!, OR NOTE!,** are arranged in a hierarchical system and have the following meaning:

DANGER! Indicates a very hazardous situation which, if not avoided, could result in death or serious injury. This signal word is limited to the most extreme situations.

WARNING! Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION! Indicates a potentially hazardous situation which, if not avoided, this situation may result in property damage or minor or moderate injury.

NOTE! This Information requires special attention.

1.2 Warning for Hot Surfaces

WARNING! Normal operating temperature of weld actuator can reach 175 Degrees F.

1.3 Modifications to the equipment

WARNING! The manufacturer takes no responsibility whatsoever if the equipment is modified or if the equipment is used in any way not intended at the time of delivery. Unauthorized modifications or changes to the equipment are strictly forbidden.

1.4 Requirements regarding Personnel

NOTE! All personnel must be completely informed regarding all safety regulations and the function of the equipment.

1.5 Packing, Transport and Unpacking

NOTE! Anchor and secure actuator in such a way as to prevent damage during transport. Also make sure the actuator is clean and dry and protected from moisture.

1.6 Risk Area and Personnel

WARNING! When Weld Axis components are installed in a weld gun, pinch points are generated that exert dangerous forces capable of severe bodily injury. The risk area surrounding the weld actuator must either be enclosed or clearly marked including display signage in accordance with all applicable national and international legal requirements for welding actuators. The risk area must be protected by a safety system that stops the equipment if anyone enters the risk area. Personnel who enter the risk area must be authorized, trained and qualified for the different tasks inside the risk area.

1.7 Repair and Maintenance

All supply media must be shut OFF (electricity) before any work is begun on any equipment that is associated with the welding gun application.

2.1 Intended Use

The Weld Axis System is intended to be used as a servo retrofit to an existing pneumatic actuator on a spot welding gun where inputs from a primary controller such as a robot, weld controller, or PLC point to a weld schedule(s) and triggers the servo actuator to close. The Weld Axis System is also intended to be a cost-effective alternative to the 7th axis of robots, as well as in fixture applications where no other motion control exists.

The Weld Axis functions as a motion controller, a motor driver, and a convenient setup and calibration tool for servo welding. Setup and calibration is performed using a hand-held teach pendant. Setup information is retained within a removable flash card on the computer and not in the teach pendant, allowing a single teach pendant to be used with multiple systems.

The Weld Axis System can be supplied as a component system for convenient integration into existing panels or as a complete system in its own enclosure

2.1.1   WELD AXIS COMPONENT SYSTEM

The Weld Axis Component System includes the following:
• Servo weld actuator
• Controller/drive (Axiom Plus PV20 or PV30)
• Single board computer
• Hand-held teach pendant (one may be used for multiple systems)
• 24 VDC Power supply
• Cables and Connectors
• Schematics/wiring diagrams

Components are integrated into the users panel as shown in Figure 2.1

Figure 2.1 – Weld Axis Component System

2.1.2 WELD AXIS PANEL SYSTEM

The Weld Axis Panel System shown in figure 2.2 includes the items from the base system plus a control reliable E-stop system all mounted into a NEMA 12 rated enclosure
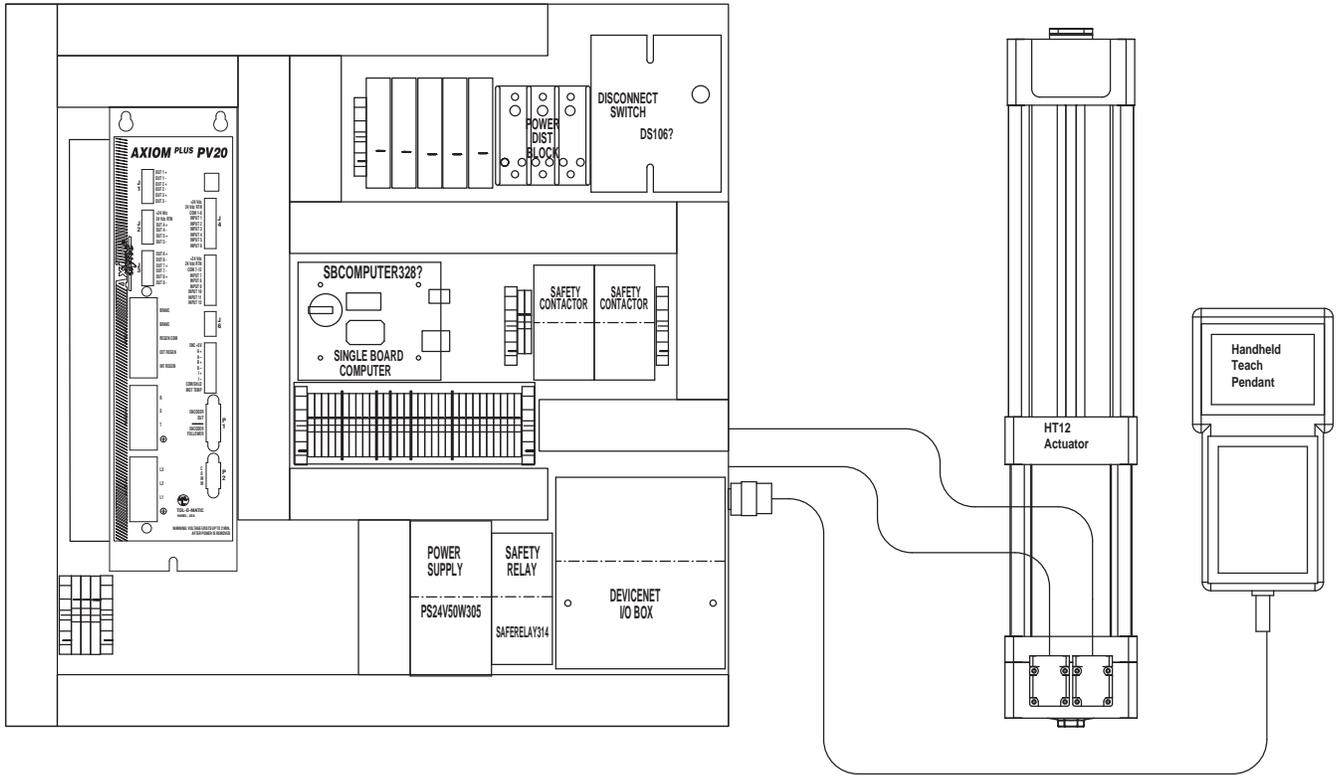
Figure 2.2 – Weld Axis Panel System

The following options are available:
• Devicenet interface.
• Thirty meter motor and encoder cables
• Drive isolation transform

WARNING! Before installation and commissioning of the equipment, this manual and all accompanying manufacturer documents and manuals MUST be completely read by the concerned personnel. All warning texts must be given special attention.

2.2 Identification

2.2.1 ACTUATOR IDENTIFICATION

Figure 2.3 shows an example of a standard Tol-O-Matic, Inc. HT series actuator.
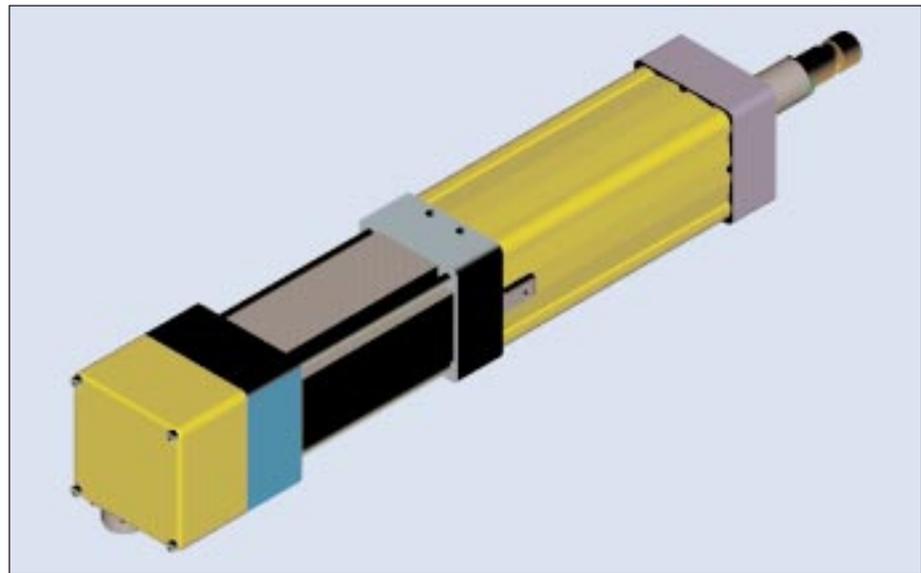
Figure 2.3 – HT series weld actuator

Figure 2.4 shows a sample label that is affixed to the actuator. Do not remove the actuator identification label and do not make it unreadable!
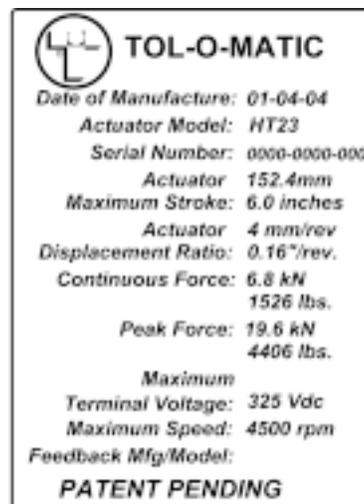
Figure 2.4 – Actuator identification label

2.2.2 WELD AXIS COMPONENT SYSTEM

The Weld Axis Component system consists of the following parts:

DESCRIPTION	QUANTITY
PWR SUP,24VDC,50W	1
Weld Axis SBC WITH	1
ASSY,CABLE W/CONN,SBC	1
CABLE,RS232	1
CABLE,AXIOM PLUS/SBC	1
AXIOM PLUS,PV20,W/SFT	1
CABLE ASSY,15M,POWER	1
CABLE ASSY,15M,ENCODER	1

The following table shows the proper Axiom Plus(PV) to be use with the various size weld actuators:

Actuator Model #	Axiom Plus Model #
HT7	PV10
HT12	PV20
HT23	PV30
SWxx	PV30

2.2.3 WELD AXIS PANEL SYSTEM

In the Weld Axis panel system manufactured by Tol-O-Matic, Inc. there will be a label affixed to the inside of the control panel door (see figure 2.5).
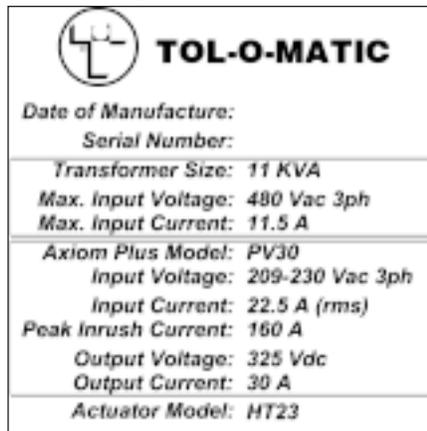
Figure 2.5 – Control Panel Label

2.3 Manufacturer

Tol-O-Matic, Inc.
3800 County Road 116
Hamel, MN 55340
USA
763-478-8000

Perform repairs, maintenance and inspections before storing the actuator to ensure that the gun is in good working order.
Make sure the actuator is placed in a suitable storage position to prevent damage to the connectors and electronics. Store the control cabinet in a clean dry place with humidity between 5% and 95%, non-condensing. Make sure the temperature is between -4° to 158° F (-20° to 70° C).

3.1 Weld Axis Controls

The Weld Axis controls are used to control the position and force of the weld actuator based on the inputs from a master controller. The I/O structure is designed to mimic a pneumatic system allowing for easy retrofitting into an existing application. Figure 3-1 shows an example Weld Axis panel system.
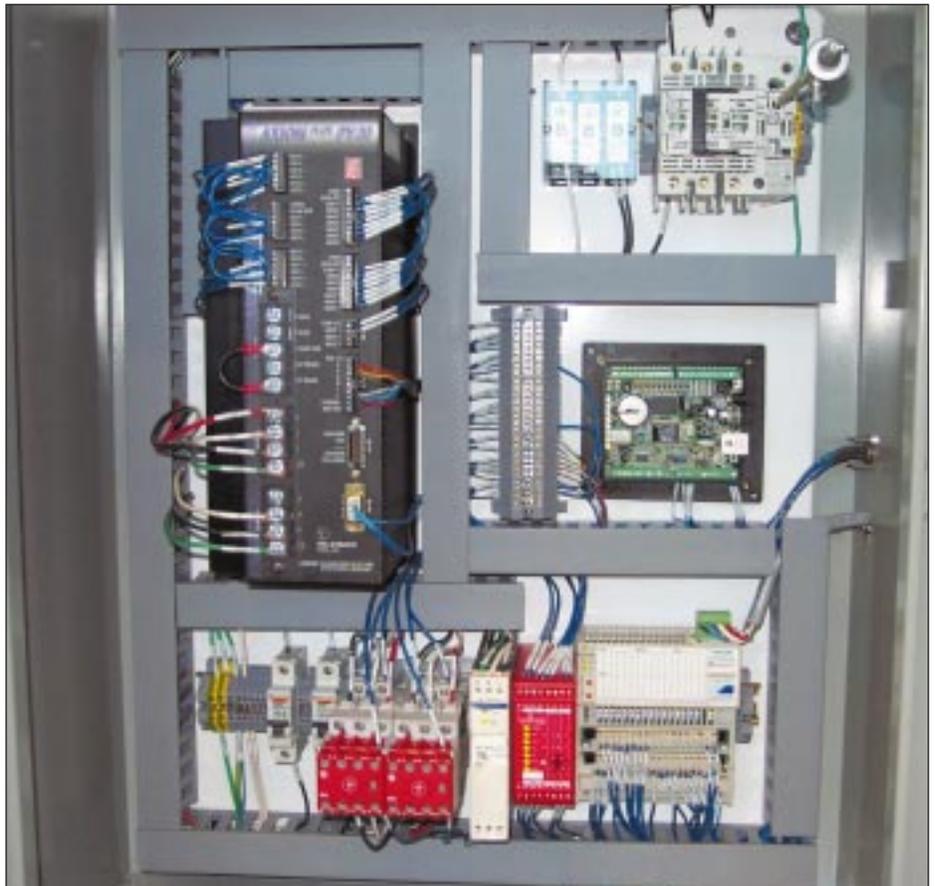
Figure 3.1 – Example Weld Axis control panel

⚡ **WARNING!** High voltage may be present on the terminals of the unit. Remove power and disconnect the power cable before making or removing any connection.

3.2 Hand-held Teach Pendant

The hand-held teach pendant is used as the operator interface. The operator enters the setup and welding parameters and the values are transferred to the Single Board Computer/removable flash card. The same hand-held teach pendant can be used with multiple systems. If an installation has multiple Weld Axis systems only one hand-held teach pendant would be needed.

Figure 3.2 – Hand-held teach pendant

3.3 Single Board Computer

The single board computer gets user data from the hand held teach pendant and converts the user data into the register values that the Axiom Plus requires. The single board computer can backup the data entered by the user and the Axiom Plus program to a removable flash memory card.

3.4 AxiomPlus (PV)

The Axiom Plus controller/drive provides the power to run the motor and the logic to respond to the interface signals. The Axiom Plus runs PLC and Sequential programs to produce the desired motion and weld forces. For more information on the Axiom Plus see the Axiom Plus Users Manual (3600-4628).

4.1 Installing the Weld Actuator

Please refer to your weld gun documentation for mechanical installation

4.2 Installing the Weld Axis Component System

The Weld Axis Component System includes the necessary parts to integrate a Weld Axis system into an existing enclosure or customer designed control panel. A wiring diagram is included in appendix 6.3. The heat dissipation of the Axiom Plus for cabinet sizing is:

Actuator Model	Axiom Plus Model	Heat dissipation
HT7	PV10	28 Watts
HT12	PV20	47 Watts
HT23	PV30	65 Watts
SWxx	PV30	65 Watts

4.3 Installing the Weld Axis Control System

Weld Axis enclosures supplied by Tol-O-Matic, Inc. are NEMA 12 rated and should be mounted in a location were the environment does not exceed the specifications of the NEMA 12 rating.

4.4 Power required for the Weld Axis

Tol-O-Matic recommends the Weld Axis system be used with three phase 208-230 VAC power. The table below lists the required amperage. If a step down transformer is required, it is recommended a drive isolation type transformer with a delta primary and a wye secondary winding be used.

	HT7 (PV10)	HT12 (PV20)	HT23 & SWxx (PV30)
Maximum Input Current Single Phase	12.5 A (rms)	25 A (rms)	37.5 A (rms)
Maximum Input Current Three Phase	7.5 A (rms)	15 A (rms)	22.5 A (rms)
Input Voltage (Single or Three Phase)	190VAC – 250VAC	190VAC – 250VAC	190VAC – 250VAC
Peak Inrush Current	65 A	160 A	160 A
Input Frequency	47 Hz – 63 Hz	47 Hz – 63 Hz	47 Hz – 63 Hz

4.5 Interface to master controller

The Weld Axis is designed to operate as a slave to a master controller. The interface can be customized to work with an existing master controller.

4.6 Setup

4.6.1 GENERAL

Before commissioning the weld actuator, there are certain inspections and settings that must be carried out. Also after maintenance activities, the gun must be inspected before it is returned to service.

4.6.2 INSPECTION OF MECHANICAL TRAVEL LIMITS.

The mechanical travel limits of the actuator must be verified to ensure the actuator will not reach an internal hard limit during normal operation. Turn the controller power off. With the actuator installed on a weld gun, manually rotate the servo gun gear or pull the gun arms apart, extending the tube until the weld gun tips are closed and record the distance the rod is extended (d1). Remove one arm and manually rotate the servo gun gear or push the gun arms together, until the actuator reaches its end of travel and record the distance the rod is extended (d2). The difference between the two measurements, minus the gun deflection (d3) should be greater than 5 mm (d2 - d1 - d3 $\geq$ 5mm).
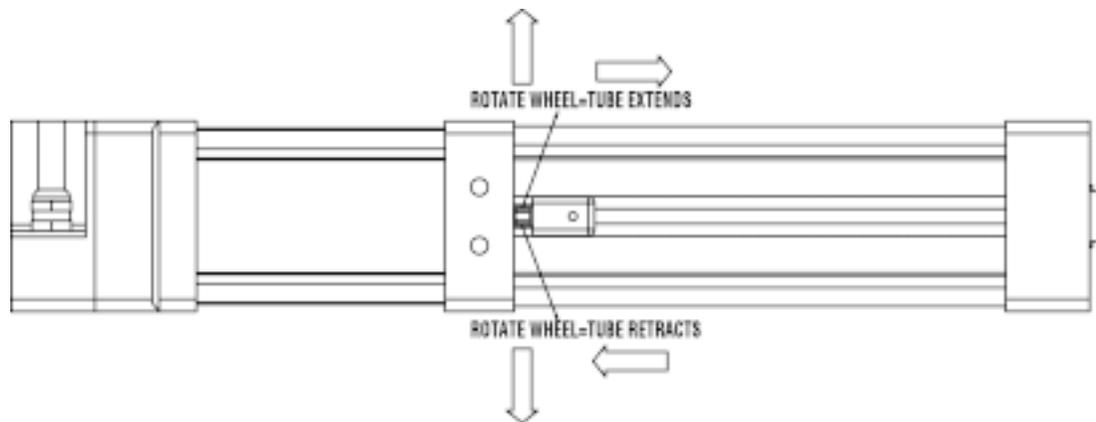
Figure 4.1 – Manual operation of HT series actuator

4.6.3 AXIOM PLUS CONTROLLER SETUP

The setup of the Axiom Plus only needs to be verified during initial installation. All settings are backed up on the Single Board Computer (SBC) flash memory card. Using the Axiom Plus programming software running on a PC the following selections are verified:

1. Select the correct indexer model being used.
2. Select the motor winding being used. This information is indicated on the actuator label
3. Select the register precision. See figure 4.3 for settings.

After the settings have been made, they should be downloaded to the Axiom Plus using the "Download Parm's to indexer" button.
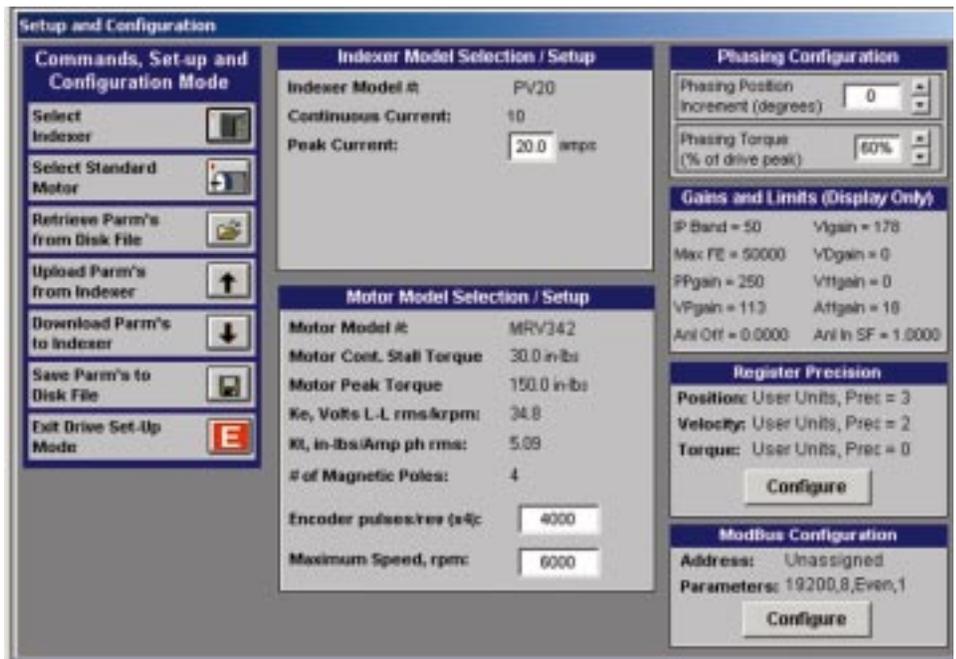
Figure 4.2 – Axiom Plus Setup and Configuration Screen
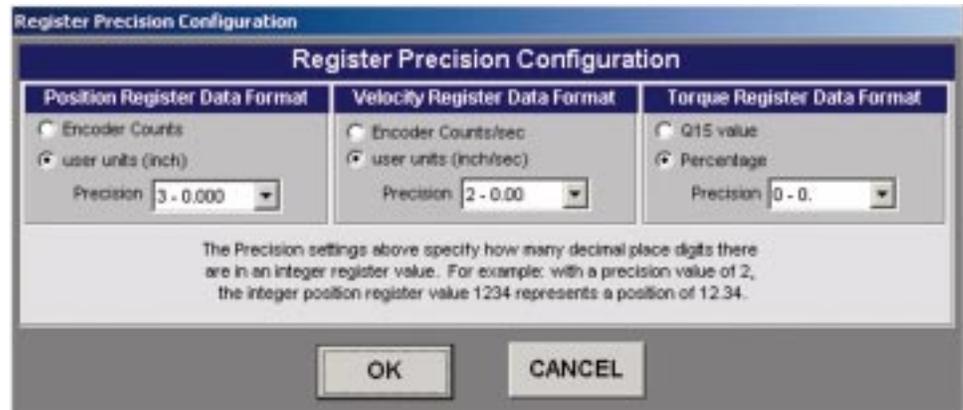
Figure 4.3 – Axiom Plus Register Precision Configuration Screen

4.6.4 AXIOM PLUS PLC PROGRAM

The Axiom Plus PLC program needs to be set up to match the I/O requirements and assignment of the supervisory controller. A listing of the Axiom Plus standard PLC program is included in the appendix 6.5. The first 12 rungs of the PLC program are used to assign physical inputs to local flags and the next 3 rungs assign internal flags to physical outputs. Although physical inputs can be reassigned to any of the internal flags, it is recommended that the default assignment be used. The PLC program contains the logic to determine what routine that the sequential program will run based on the inputs from the master controller. The following table is a list of the I/O in the standard Weld Axis PLC program.

Physical Input	Internal Flag	Description
IN001	LF001	"Binary 1" - Binary 1-8 input sequence is used to select the weld schedule 1-15. The binary sequence has to be set before the close gun command is received for the master controller.
IN002	LF002	"Binary 2"
IN003	LF003	"Binary 4"
IN004	LF004	"Binary 8"
IN005	LF006	"Backup 1" - Backup 1-4 input sequence is used to select the open positions 0-7 based on the
IN006	LF007	"Backup 2"
IN007	LF008	"Backup 4"
IN008		Spare
IN009	LF005	"Close" - When input is on the actuator will close at the position and pressure set with binary 1,2,3,4 and remain closed until the input is removed.
IN010	LF019	"ClearErr" - Clears the position error output.
IN011	LF012	"CheckCap" - Used to check the wear of the caps. When this input is on and the close signal is received the actuator will close at a slow speed until the tips touch. If the caps are worn past the value entered in the TP then the "CapWore" output will be activated.
IN012	LF017	"ManNewCP" - Used to indicate that new caps have been installed. When this input is on and the close signal is received the actuator will close at a slow speed until the tips touch. This position will become the new cap value.
IN013		spare
IN014		spare
IN015	LF010	"No Estop" - When input is on drive stage will be enabled
OUT1	STP021	"Sig Weld" - Ready to weld signal
OUT2	IS002	"Fault" – The drive is faulted.
OUT3	STP018	"Opened" – Actuator is at an open position.
OUT 4	LF018	"PosError" - When using either the "close position" or the "dynamic" position checks, this output will turn on if the actuator stops during a weld move in an invalid position.
OUT 5	STP012	"CapWore" - Indicated that the caps are worn beyond the service limit entered in the TP. The output will stay on until another cap check is done and the caps are with the wear limit.
OUT 6		spare
OUT 7		spare
OUT 8		spare

Figure 4.4 – I/O Table

4.6.5 AXIOM PLUS SEQUENTIAL PROGRAM

The sequential program consists of a main loop that calls the subroutines associated with each weld schedule and open position. The PLC program sets internal flags that are read by the sequential program.   In most applications the Axiom Plus sequential program will not need to be modified. A listing of the sequential is included in appendix 6.6.

4.6.6 WELD AXIS TEACH PENDANT/SINGLE BOARD COMPUTER

4.6.6.1 Menu Structure
The Weld Axis teach pendant and single board computer are used to provide the user with a simple way to interact with the Axiom Plus controller. All the setup and troubleshooting of the system is done from the teach pendant.

Figure 4-5 shows the teach pendant menu structure with a description of each item.

SETUP	Force units		Select between imperial and metric units
	Length units		Select between imperial and metric units
	Gun Ratio		Enter the ratio of actuator travel to tip travel
	Force Capacity of Gun		Enter the maximum force the weld gun can produce.
	Define Limits		The Define Limits is used to define the travel limits of the actuator. To determine the limits remove the tips from the weld gun and choose this command then give the gun close signal from the external controller. The gun will close at a low speed until the end of travel is reached. When the end of travel is reached the position will be recorded and that this position minus 0.05 inches will become the forward position limit. If the forward position limit is reached during normal operation a FL1 will be displayed on the Axiom Plus front panel LED.
	Position Checks	None	No position checks are done at the weld position
		Close Position	When Close Position is selected a valid weld position window is created. Before the ready to weld signal is given the tips must be between the deceleration point and the tips closed position plus the cap wear value. If the current position is outside the valid window the "poserror" output is turned on and the ready to weld signal will not be given.
		Dynamic	When Dynamic is selected a valid weld position window is created. Before the ready to weld signal is given the tips must be between the deceleration point and the last valid weld position plus the cap missing value entered as part of the dynamic position check setup. If the current position is outside the valid window, the "poserror" output is turned on and the ready to weld signal will not be given.
	Start Calibration		Start calibration is used to set the starting value of motor torque used during the calibration process. The default value is 5% of motor torque. If the actuator will not move at 5% during calibration, raise the value in Start Calibration until the first calibration move is successful.
	Decel Point Offset		Decel Point Offset is the distance before the tips touch the part, where the actuator starts to decelerate to the soft touch speed. The default value is 0.125". A larger value may be required if the tips are not at soft touch speed before impacting the workpiece.
CALIBRATION			Calibration is the process of defining the relationship between the drive output current and the weld force. When the calibration option is chosen from the menu, the teach pendant will ask the operator to close the tips on a force gage and enter the resulting force at ten different levels of drive current. When a force is entered in the weld schedule, the value of drive current is interpolated from the values entered during calibration. During the calibration process the positions are recorded at the different force levels to create a force vs. deflection curve. This curve is used when doing position checks and cap wear monitoring.
DEFINE CLOSE			Used to define the tips closed position of the weld gun. The Define Close is a two stage process. The first move is done at minimum torque and is used to determine the soft touch decel point. The second stage is done at the maximum gun force and is used to calculate values for positioning checking and cup wear.
WELD SCHEDULE	1-8		The fifteen weld schedules are used to enter the weld force and the thickness of the material being welded. The thickness is used along with the gun closed location to calculate the decel point for the soft touch feature. A text field is included to allow for a comment to be entered for each weld schedule. The weld schedule number corresponds to the binary sequence set by four. The second page of the weld schedules is accessed by pressing the ? key.
	9-15		
OPEN POSITION	0-7		The eight open positions are used to define the distance between the tips when the weld gun is in the open position.
DIAGNOSTICS	Current Drive Status		Shows the drive status code and description along with the current position of the actuator.
	Drive History		Shows the last 13 drive status changes including the status code and the time/date.
	Reset Drive		Used to reset a non-fatal fault from the teach pendant
	Reset Parameters		Resets all the setup parameters entered from the teach pendant.
	Change Date/Time		Set the current date and time for use in the drive history.
	Data Storage	Backup Axiom Plus	This option will backup both the Axiom Plus program and configurations to the removable flash memory card. This operation will take about 5 minutes to complete
		Restore Axiom Plus	This option will restore the Axiom Plus program and configurations that was backup on the removable flash card. This operation will take about 5 minutes to complete.
		Manually backup weld data	This option will backup all the data entered into the teach pendant.
		Restore manual weld data	This option will restore the teach pendant settings backed up using the "Manually backup weld data option"
		Restore autosaved weld data	This option will restore the teach pendant settings that are automatically saved every time the teach pendant goes to the main menu.
	I/O Status		Shows the status of the Axiom Plus inputs, outputs and the current position.

Figure 4.5 – Teach pendant menu structure

4.6.6.2 Setup Weld Data

When setting up a new Weld Axis system, the following steps should be completed in order.

1) **Enter the system of units for the force.**

2) **Enter the system of units for distance.**

3) **Enter the gun ratio.** The ratio is the actuator travel divided by the tip travel.

4) **Enter the mechanical force limit for the weld gun.**

5) **Define the position limits.** The actuator limit is the forward travel limit of the actuator. The limit is found by removing the tips from the weld gun and choosing the define limits option from the setup menu and then giving the gun close signal from the external controller. The gun will close at a low speed until the end of travel is reached. The end of travel position is then loaded into the Axiom Plus as the forward position limit.

6) **Calibrate the actuator.** Calibration is needed to create a relationship between the motor armature current and the force output of the actuator. The user will use a force gage to measure the force between the tips at ten motor current levels. On the teach pendant select the calibration option. The screen will indicate the percentage torque being used and will wait for the user to enter the force value measured. To measure the force place the gage between the tips and turn on the close gun command from the master controller. The gun will close at a slow speed until the tips contact the force gage. Once the force has been entered it will progress to the next current level until the calibration is complete. If the actuator fails to move at the lower levels of motor torque, enter zero for the force. When the calibration is complete, change the "Start Calibration Value" in the setup menu to the first value where the actuator closed correctly.

7) **Define the tips closed position.** This position is needed to calculate the deceleration point for the soft touch feature. Use the define close position option on the teach pendant, the system will wait until the close gun command is turned on from

the master controller. The gun will then close at a slow speed at minimum motor torque until the tips are closed. The actuator will open slightly and close again at gun capacity.

8) **Setup the desired weld schedule.** The weld schedule is what specifies the force for the weld and the stackup of the material being welded. The stackup and the tips closed position are used to determine the position were the system goes to soft touch speed. There are 15 possible weld schedules possible. The weld schedule is displayed in two pages, the second page is displayed by pressing the down arrow button. To modify the value for a weld schedule enter the number of the weld schedule, another page is displayed allowing the user to enter a description, the weld force and the max stackup.

9) **Determine the desired open position.** The open position is defined as the distance between the weld gun tips. There are eight possible open positions. To modify an open position number to be modified and the choose the comment or the open distance.

NOTES:

Repair and Maintenance *5*

5.1 Weld Actuator

▲ NOTE! Before starting any maintenance activities, make sure
that the supply voltage is shut OFF.

No lubrication is required during the service life of the weld
actuator.

Disassembly of the weld actuator is not recommended. Weld
Actuators should be returned to Tol-O-Matic for evaluation and
repair. Contact the weldgun manufacturer for instructions on how
to return the weld actuator for evaluation.

5.2 Weld Axis Control Panel

5.2.1 TESTING OF THE ACTUATOR WELD FORCE

When the Weld Axis starts to close the gun, it does not limit the
motor torque until it transitions to the soft touch speed. When
checking weld force, be sure to select a weld schedule that has a
stackup larger than the force gage being used. If the force measured
is not within specifications for the force set in the weld schedule, the
system should be re-calibrated.

5.2.2 CHANGING THE CAPS

When changing the caps, the tips closed position will need to be
redefined if the new caps are a different style or if the close position
has been redefined with used caps. If these conditions do not apply,
the new caps can be installed without accessing the teach pendant.

Troubleshooting Guide

Tol-O-Matic Axiom series drives are designed for ease of installation and years of trouble-free operation. If difficulties are encountered in the setup or in operation, this guide should prove useful in diagnosing and correcting the problem. If problems persist, please contact your Tol-O-Matic distributor for further assistance.

Symptom/Fault Code: Status display not lit.
Possible Causes: No ac power; internal malfunction.
Possible Solutions: Verify ac power and connections; call your Tol-O-Matic distributor.

Symptom/Fault Code: Digital I/O not working correctly.
Possible Causes: No 5-25Vdc power.
Possible Solutions: Verify correct connection.

Symptom/Fault Code: F01 - Power selection switch fault.
Possible Causes: Line-power selection switch set incorrectly.
Possible Solutions: Set to "115 V" for 115 Vac operation or "230 V" for 208 Vac or 230 Vac operation.

Symptom/Fault Code: F02 - Bridge hardware fault.
Possible Causes: Motor lead short circuit; bus over-voltage; drive's output bridge damaged.
Possible Solutions: Check motor cables and motor for shorts; connect internal or external regen resistor; call your Tol-O-Matic distributor.

Symptom/Fault Code: F03 - Current feedback fault.
Possible Causes: Possible open winding; current feedback circuitry not functioning correctly.
Possible Solutions: Check motor cable wiring and motor windings; call your Tol-O-Matic distributor.

Symptom/Fault Code: F04 - Current regulation fault.
Possible Causes: Drive current regulation out of tolerance; current feedback in "saturation" for 1 second.
Possible Solutions: Check motor cables and motor windings; verify that torque/speed requirement not greater than motor/drive capability.

Symptom/Fault Code: F05 - Drive over-temperature fault.
Possible Causes: Drive heat sink over 90° C.
Possible Solutions: Ambient temp above 50° C.; need external regen pack.

Symptom/Fault Code: F06 - Motor over-temperature fault.
Possible Causes: Motor thermostat tripped.
Possible Solutions: Inadequate motor cooling; motor rating exceeded.

Symptom/Fault Code: F51 - Phasing fault.
Possible Causes: Initial phase estimation routine not executed successfully.
Possible Solutions: Check encoder and motor wiring; increase phasing torque.

Symptom/Fault Code: F52 - Drive over-current fault.
Possible Causes: Inverse time trip calculated based on the drive's peak and continuous rating exceeded.
Possible Solutions: Verify sizing requirements; check tuning; check for mechanical problems in system.

Symptom/Fault Code: F53 - Motor over-current fault.
Possible Causes: I^2*time protection based on the motor's peak and continuous rating exceeded.
Possible Solutions: Verify sizing requirements; check for mechanical problems in system.

Symptom/Fault Code: F54 - Bus under-voltage fault.
Possible Causes: Bus voltage falls below low-limit.
Possible Solutions: Check line voltage under load (must be at least 90 Vac).

Symptom/Fault Code: F55 - Maximum following-error fault.
Possible Causes: Maximum position following error reached.
Possible Solutions: Verify correct maximum following error setting; check tuning; check for mechanical problems in system.

Symptom/Fault Code: F56 - Velocity regulation fault.
Possible Causes: Velocity regulation out of tolerance.
Possible Solutions: Check tuning; check for mechanical problems in system.

Symptom/Fault Code: F57 - Serial communication fault.
Possible Causes: Communication cable not connected.
Possible Solutions: Check communication cable connections.

6.1 Motor Specifications

6.1.1 HT12

Continuous Stall Torque:	3.4 N-m
Peak Stall Torque:	16.9 N-m
Thermal Resistance:	0.58 celsius/watt
Stall Current:	6.13 A RMS
Peak Current:	30.7 A RMS
Number of Poles:	4
Kt:	0.58 N-m/Amp per phase RMS
Ke:	0.332 V/rad/s L-L RMS
Resistance @ 25 C:	2.0 ohms L-L
Stator Inductance:	6.1 mH L-L
Maximum Bus Voltage:	325 Vdc
Rated Speed @ Maximum Voltage:	4500 RPM
Demagnetization Current:	39 Amps

Thermal sensor will shut down the motor at 311 degrees F. However the motor should not perform a duty cycle that repeatedly generate motor temperatures above 175 degrees F, or premature bearing failure will result.

6.1.2 HT23

Continuous Stall Torque:	5.0 Nm
Peak Stall Torque:	24.9 Nm
Thermal Resistance:	0.56 celsius/watt
Stall Current:	7.55 A RMS
Peak Current:	37.8 A RMS
Number of Poles:	4
Kt:	0.69 Nm/amp per phase RMS
Ke:	0.396 V/rad/s L-L RMS
Resistance @ 25 C:	1.4 ohms L-L
Stator Inductance:	5.1 mH L-L
Maximum Bus Voltage:	325 Vdc
Rated Speed @ Maximum Voltage:	4500 RPM
Demagnetization Current:	45 Amps

Thermal sensor will shut down the motor at 311 degrees F. However the motor should not perform a duty cycle that repeatedly generate motor temperatures above 175 degrees F, or premature bearing failure will result.

6.2 Connector Pinout

6.2.1 MOTOR ARMATURE

MRV 2X/3X Motor

MOTOR CONNECTOR PINOUT	
PIN	FUNCTION
1	PHASE R
2	PHASE S
3	PHASE T
4	CASE GROUND

MS3112E - 14 - 8P
MOTOR CONNECTOR
MATING CONNECTOR
MS3116E - 14 - 8S
(NOT SHOWN)
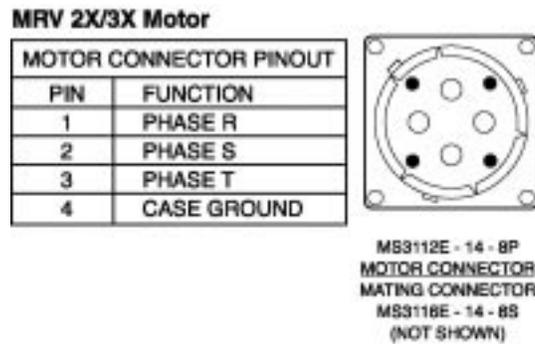
Figure 6.1 – Pinout of motor armature connection

6.2.2 MOTOR ENCODER

MRV 2X/3X/5X Encoder

	SENSOR/FEEDBACK CONNECTOR PINOUT			
	PIN	FUNCTION	PIN	FUNCTION
Red	A	THERMOSTAT	L	N.C.
Green	B	THERMOSTAT	M	N.C.
	C	N.C.	N	CHANNEL B Purple
Black	D	INDEX	P	CHANNEL B̄ Grey
White	E	INDEX	R	N.C.
Orange	F	CHANNEL A	S	N.C.
Yellow	G	CHANNEL Ā	T	N.C.
Blue	H	ENCODER GROUND	U	N.C.
	J	N.C.	V	N.C.
Brown	K	+5 VDC ENCODER		

MS3112E - 14 - 19P
MOTOR CONNECTOR
MATING CONNECTOR
MS3116E - 14 - 19S
(NOT SHOWN)
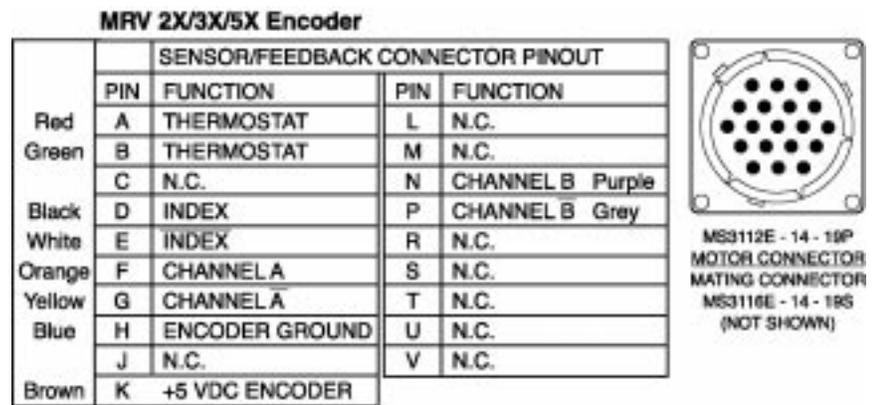
Figure 6.2: Pinout of motor encoder connection

6.2.3 TEACH PENDANT

HAND-HELD CONNECTOR PINOUT

PIN	Function
A	Transmit TXD2
B	+24 Vdc
C	0 Vdc
D	Receive RXD2
E	Input #1 on SBCF
F	0 Vdc
G	
H	
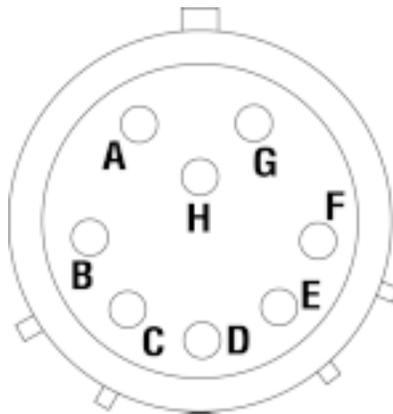
Figure 6.3 – Pinout of teach pendant connection

6.3 Weld Axis Base System wiring diagram

Figure 6.4 – Base System Wiring

6.4 Weld Axis Panel System wiring diagram

101
102
103
104
105
106
107   101
108   102
109   103
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141

DS106

104
105
106

L1   L1   T1
L2   L2   T2
L3   L3   T3

30 AMP
DISCONNECT
30AMP FUSE (1MDC)

X3
X2
X1
X0

6
9
5
8
4
7

107
108
109

11 KVA DRIVE ISOLATION TRANSFORMER

CB127
L1   T1   110   L/233
L2   T2   111   L/234
L3   T3   112   L/235
25 AMP

CB133
L1   T1   113   L/303
L2   T2   114   L/304
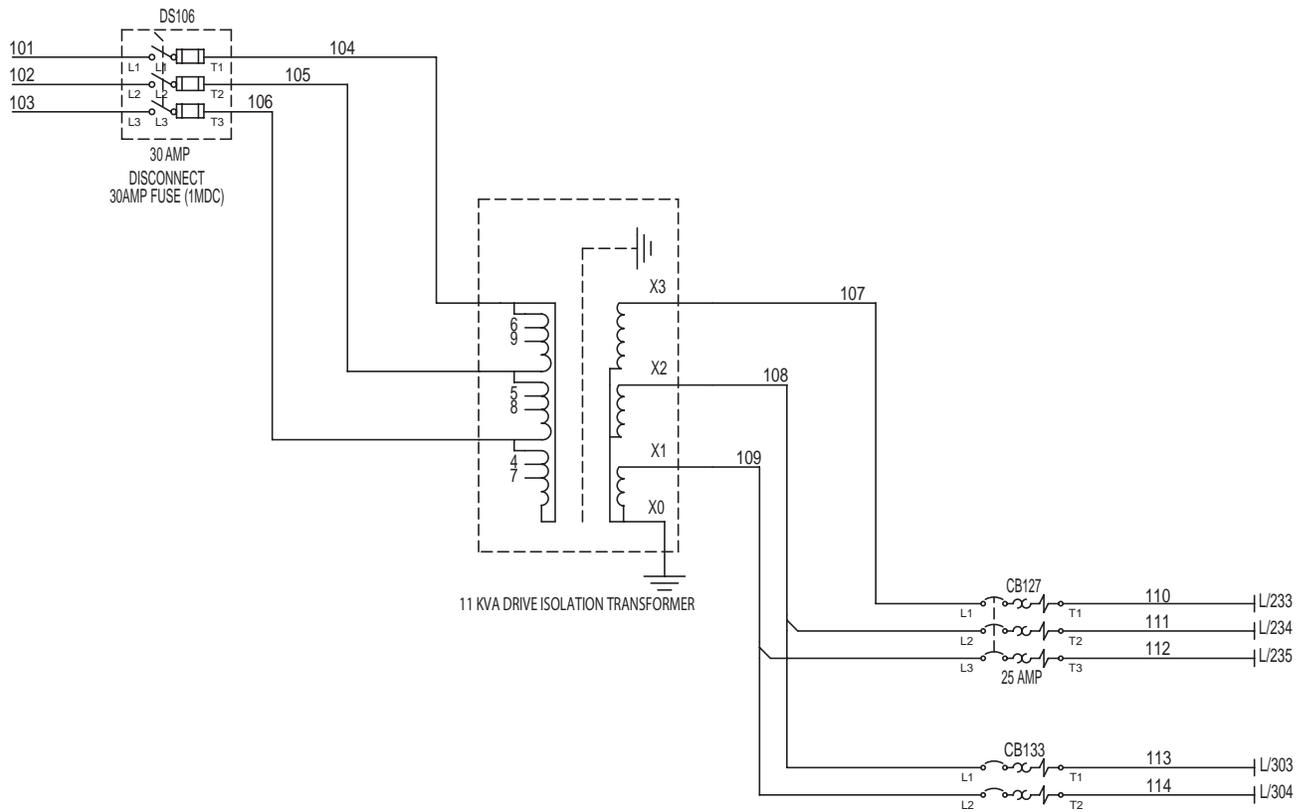
TOL-O-MATIC, INC. : WELD-AXIS HT12 3-PHASE DWG#3620-7104, REV 00, PAGE 1

Figure 6.5 – Weld Axis HT12 3-phase wiring diagram (1 of 4)

201	OUT1+	AXIOMPLUS201	+24VDC
202	OUT1-	AXIOM PLUS	24VDCRTN	203	L/321
203	OUT2+		COM1-6
204	OUT2-	J1	J4	INPUT1
205	OUT3+		INPUT2
206	OUT3-		INPUT3
207			INPUT4
208	+24VDC		INPUT5
209	24VDCRTN		INPUT6
210	OUT4+	J2	
211	OUT4-		+24VDC
212	OUT5+		24VDCRTN
213	OUT5-		COM7-12
214		J5	INPUT7
215	OUT6+		INPUT8
216	OUT6-		INPUT9
217	OUT7+		INPUT10
218	OUT7-	J2	INPUT11
219	OUT8+		INPUT12
220	OUT8-		
221			COM13-15
222	BRAKE		INPUT13	223	L/321
223	BRAKE	J6	INPUT14
224	REGENCOM	TB1	INPUT15
225	EXTREGEN		
226	INTREGEN		ENCODER+5V	BROWN
227			A+	ORANGE
228	R		A-	YELLOW
229	S	TB2	B+	VIOLET
230	T	J7	B-	GREY
231	GND		I+	BLACK
232			I-	WHITE
233	L3		COM/SHIELD	BLUE/GREEN/SHIELD
234	L2	TB3	MOTTEMP	RED
235	L1			332	L/332
236	GND		2	333	L/333
237			3	300	L/331
238		P2	5	
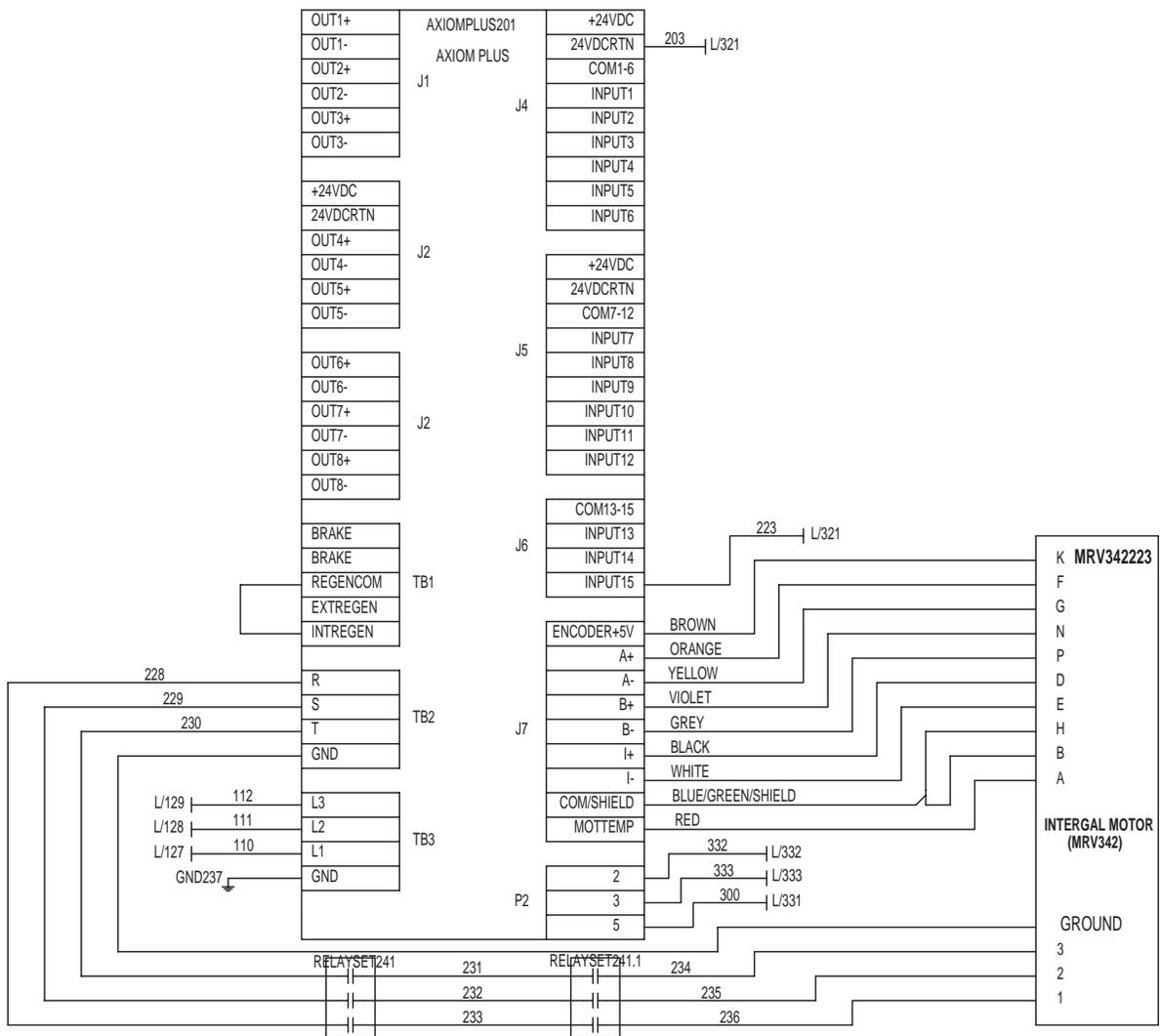
TOL-O-MATIC, INC: WELD-AXIS HT12 3-PHASE DWG# 3620-7104, PAGE 2

Figure 6.6 – Weld Axis HT12 3-phase wiring diagram (2 of 4)

Figure 6.7 – Weld Axis HT12 3-phase wiring diagram (3 of 4)

TOL-O-MATIC, INC. : WELD-AXIS HT12 3-PHASE DWG# 3620-7204, REV 00

Figure 6.8 – Weld Axis HT12 3-phase panel layout (4 of 4)

6.5 Axiom Plus Standard PLC Program

RUNG 001 User Rung Comment

```
|  Binary 1                                                  Binary 1 |
|----| |----+----------+----------+----------+----------+----( )----|
|  IN  001                                                  LF  001  |
```

RUNG 002 User Rung Comment

```
|  Binary 2                                                  Binary 2 |
|----| |----+----------+----------+----------+----------+----( )----|
|  IN  002                                                  LF  002  |
```

RUNG 003 User Rung Comment

```
|  Binary 4                                                  Binary 4 |
|----| |----+----------+----------+----------+----------+----( )----|
|  IN  003                                                  LF  003  |
```

RUNG 004 User Rung Comment

```
|  Binary 4                                                  Binary 8 |
|----| |----+----------+----------+----------+----------+----( )----|
|  IN  004                                                  LF  004  |
```

RUNG 005 User Rung Comment

```
|  Close                                                  Close    |
|----| |----+----------+----------+----------+----------+----( )----|
|  IN  009                                                  LF  005  |
```

RUNG 006 User Rung Comment

```
|  Backup 1                                                  Backup 1 |
|----| |----+----------+----------+----------+----------+----( )----|
|  IN  005                                                  LF  006  |
```

RUNG 007 User Rung Comment

```
|  Backup 2                                                  Backup 2 |
|----| |----+----------+----------+----------+----------+----( )----|
|  IN  006                                                  LF  007  |
```

RUNG 008 User Rung Comment

```
|  Backup 4                                                    Backup 4 |
|----| |----+----------+----------+----------+----------+----( )----|
|  IN  007                                                    LF  008  |
```

RUNG 009 User Rung Comment

```
|  NO Estop                                                    No Estop |
|----| |----+----------+----------+----------+----------+----( )----|
|  IN  015                                                    LF  010  |
```

RUNG 010 User Rung Comment

```
|  ClearErr                                                    ClearErr |
|----| |----+----------+----------+----------+----------+----( )----|
|  IN  010                                                    LF  019  |
```

RUNG 011 User Rung Comment

```
|  CheckCap                                                    CapCheck |
|----| |----+----------+----------+----------+----------+----( )----|
|  IN  011                                                    LF  012  |
```

RUNG 012 User Rung Comment

```
|  ManNewCp                                                    New Cap  |
|----| |----+----------+----------+----------+----------+----( )----|
|  IN  012                                                    LF  017  |
```

RUNG 013 User Rung Comment

```
|  SigWeld                                                    Sig Weld |
|----| |----+----------+----------+----------+----------+----( )----|
|  STP 021                                                    OUT 001  |
```

RUNG 014 User Rung Comment

```
|  PosError                                                    PosError |
|----| |----+----------+----------+----------+----------+----( )----|
|  LF  018                                                    OUT 002  |
```

RUNG 015 User Rung Comment

```
|  CapWore                                                  CapWore  |
|----| |----+----------+----------+----------+----------+----( )----|
|  STP 012                                                  OUT 003  |
```

RUNG 016 User Rung Comment

```
|  opened       PosError    fault                           Opened   |
|----| |----+----|/|----+----|/|----+----------+----------+----( )----|
|  STP 018      LF  018      IS  002                        OUT 004   |
```

RUNG 017 User Rung Comment

```
|                                                           PowerOK  |
|----------+----------+----------+----------+----------+----( )----|
|                                                           OUT 005  |
```

RUNG 018 User Rung Comment

```
|  fault                                                    Fault    |
|----| |----+----------+----------+----------+----------+----( )----|
|  IS  002                                                  OUT 006  |
```

RUNG 019 User Rung Comment

```
|  PosError                                            PosError |
|----| |----+----------+----------+----------+----------+----(L)----|
|  STP 013                                             LF  018  |
```

RUNG 020 User Rung Comment

```
|  ClearErr                                            PosError |
|----| |----+----------+----------+----------+----------+----(U)----|
|  LF  019                                             LF  018  |
```

RUNG 021 User Rung Comment

```
|  Close                                                Close    |
|----| |----+----------+----------+----------+----------+----( )----|
|  LF  005                                              PTS 020  |
```

RUNG 022 User Rung Comment

```
|  No Estop                                                    Estopdly |
|----| |----+----------+----------+----------+----------+--|TMR01|--|
|  LF  010         ONDL |  |
|                                                              P=1.00   |
```

RUNG 023 User Rung Comment

```
|  Estopdly    SftReset                                        Enable   |
|----| |----+----|/|----+----------+----------+----------+----( )----|
|  TMR 001     FF  007                                         ICC 001  |
```

RUNG 024 User Rung Comment

```
|  No Estop     Enabled      Phase Dn    QuitMove              Cyc Strt |
|----| |----+----| |----+----| |----+----|/|----+----------+----( )----|
|  LF  010      ICS 001      IS  001      FF  005              ICC 002  |
```

RUNG 025 User Rung Comment

```
|  Homed                                                       Home     |
|----|/|----+----------+----------+----------+----------+----( )----|
|  IS  004                                                     PTS 002  |
```

RUNG 026 User Rung Comment

```
|  IP flag     Close IP                                        In Pos   |
|----|/|----+----| |----+----------+----------+----------+----( )----|
|  IS  006  | STP 001  |                                       PTS 001  |
|           |          |
|           |          |
|           | Home IP  |
|        +----| |----+
|             STP 002
```

RUNG 027 User Rung Comment

```
|  Delay                                                       delay    |
|----| |----+----------+----------+----------+----------+--|TMR02|--|
|  STP 011         ONDL |  |
|                                                              P=0.10   |
```

RUNG 028 User Rung Comment

```
|  delay                                              delay   |
|----| |----+----------+----------+----------+----------+----( )----|
|  TMR 002                                            PTS 003  |
```

RUNG 029 User Rung Comment

```
|  Close        Manual        New Cap      CapCheck              ManualOR |
|----| |----+----|/|----+----|/|----+----|/|----+----------+----( )----|
|  LF  005      FF  002      LF  017      LF  012              LF  011  |
```

RUNG 030 User Rung Comment

```
|  Binary 1     Binary 2     Binary 4     Binary 8     ManualOR    Press1   |
|----| |----+----|/|----+----|/|----+----|/|----+----| |----+----( )----|
|  LF  001      LF  002      LF  003      LF  004      LF  011    PTS 005  |
```

RUNG 031 User Rung Comment

```
|  Binary 1     Binary 2     Binary 4     Binary 8     ManualOR    Press2   |
|----|/|----+----| |----+----|/|----+----|/|----+----| |----+----( )----|
|  LF  001      LF  002      LF  003      LF  004      LF  011    PTS 006  |
```

RUNG 032 User Rung Comment

```
|  Binary 1     Binary 2     Binary 4     Binary 8     ManualOR    Press3   |
|----| |----+----| |----+----|/|----+----|/|----+----| |----+----( )----|
|  LF  001      LF  002      LF  003      LF  004      LF  011    PTS 007  |
```

RUNG 033 User Rung Comment

```
|  Binary 1     Binary 2     Binary 4     Binary 8     ManualOR    Press4   |
|----|/|----+----|/|----+----| |----+----|/|----+----| |----+----( )----|
|  LF  001      LF  002      LF  003      LF  004      LF  011    PTS 008  |
```

RUNG 034 User Rung Comment

```
|  Binary 1     Binary 2     Binary 4     Binary 8     ManualOR    Press5   |
|----| |----+----|/|----+----| |----+----|/|----+----| |----+----( )----|
|  LF  001      LF  002      LF  003      LF  004      LF  011    PTS 009  |
```

RUNG 035 User Rung Comment

```
|   Binary 1     Binary 2     Binary 4     Binary 8     ManualOR     Press6    |
|----|/|----+----| |----+----| |----+----|/|----+----| |----+----( )----|
|  LF  001      LF  002      LF  003      LF  004      LF  011      PTS 010   |
```

RUNG 036 User Rung Comment

```
|   Binary 1     Binary 2     Binary 4     Binary 8     ManualOR     Press7    |
|----| |----+----| |----+----| |----+----|/|----+----| |----+----( )----|
|  LF  001      LF  002      LF  003      LF  004      LF  011      PTS 011   |
```

RUNG 037 User Rung Comment

```
|   Binary 1     Binary 2     Binary 4     Binary 8     ManualOR     Press8    |
|----|/|----+----|/|----+----|/|----+----| |----+----| |----+----( )----|
|  LF  001      LF  002      LF  003      LF  004      LF  011      PTS 012   |
```

RUNG 038 User Rung Comment

```
|   Binary 1     Binary 2     Binary 4     Binary 8     ManualOR     Press9    |
|----| |----+----|/|----+----|/|----+----| |----+----| |----+----( )----|
|  LF  001      LF  002      LF  003      LF  004      LF  011      PTS 013   |
```

RUNG 039 User Rung Comment

```
|   Binary 1     Binary 2     Binary 4     Binary 8     ManualOR     Press10   |
|----|/|----+----| |----+----|/|----+----| |----+----| |----+----( )----|
|  LF  001      LF  002      LF  003      LF  004      LF  011      PTS 014   |
```

RUNG 040 User Rung Comment

```
|   Binary 1     Binary 2     Binary 4     Binary 8     ManualOR     Press11   |
|----| |----+----| |----+----|/|----+----| |----+----| |----+----( )----|
|  LF  001      LF  002      LF  003      LF  004      LF  011      PTS 015   |
```

RUNG 041 User Rung Comment

```
|   Binary 1     Binary 2     Binary 4     Binary 8     ManualOR     Press12   |
|----|/|----+----|/|----+----| |----+----| |----+----| |----+----( )----|
|  LF  001      LF  002      LF  003      LF  004      LF  011      PTS 016   |
```

RUNG 042 User Rung Comment

```
|  Binary 1     Binary 2     Binary 4     Binary 8     ManualOR     Press13  |
|----| |----+----|/|----+----| |----+----| |----+----| |----+----( )----|
|  LF  001      LF  002      LF  003      LF  004      LF  011      PTS 017  |
```

RUNG 043 User Rung Comment

```
|  Binary 1     Binary 2     Binary 4     Binary 8     ManualOR     Press14  |
|----|/|----+----| |----+----| |----+----| |----+----| |----+----( )----|
|  LF  001      LF  002      LF  003      LF  004      LF  011      PTS 018  |
```

RUNG 044 User Rung Comment

```
|  Binary 1     Binary 2     Binary 4     Binary 8     ManualOR     Press15  |
|----| |----+----| |----+----| |----+----| |----+----| |----+----( )----|
|  LF  001      LF  002      LF  003      LF  004      LF  011      PTS 019  |
```

RUNG 045 User Rung Comment

```
|  Close        Opened0      Backup 1     Backup 2     Backup 4     Open 0   |
|----|/|----+----|/|----+----|/|----+----|/|----+----|/|----+----( )----|
|  LF  005      STP 003      LF  006      LF  007      LF  008      PTS 021  |
```

RUNG 046 User Rung Comment

```
|  Close        Opened1      Backup 1     Backup 2     Backup 4     Open 1   |
|----|/|----+----|/|----+----| |----+----|/|----+----|/|----+----( )----|
|  LF  005      STP 004      LF  006      LF  007      LF  008      PTS 022  |
```

RUNG 047 User Rung Comment

```
|  Close        opened2      Backup 1     Backup 2     Backup 4     Open 2   |
|----|/|----+----|/|----+----|/|----+----| |----+----|/|----+----( )----|
|  LF  005      STP 005      LF  006      LF  007      LF  008      PTS 023  |
```

RUNG 048 User Rung Comment

```
|  Close        opened3      Backup 1     Backup 2     Backup 4     Open 3   |
|----|/|----+----|/|----+----| |----+----| |----+----|/|----+----( )----|
|  LF  005      STP 006      LF  006      LF  007      LF  008      PTS 024  |
```

RUNG 049 User Rung Comment

```
|  Close          opened4      Backup 1     Backup 2     Backup 4     Open 4   |
|----|/|----+----|/|----+----|/|----+----|/|----+----| |----+----( )----|
|  LF  005      STP 007      LF  006      LF  007      LF  008      PTS 025  |
```

RUNG 050 User Rung Comment

```
|  Close          opened5      Backup 1     Backup 2     Backup 4     open 5   |
|----|/|----+----|/|----+----| |----+----|/|----+----| |----+----( )----|
|  LF  005      STP 008      LF  006      LF  007      LF  008      PTS 026  |
```

RUNG 051 User Rung Comment

```
|  Close          opened6      Backup 1     Backup 2     Backup 4     open 6   |
|----|/|----+----|/|----+----|/|----+----| |----+----| |----+----( )----|
|  LF  005      STP 009      LF  006      LF  007      LF  008      PTS 027  |
```

RUNG 052 User Rung Comment

```
|  Close          opened7      Backup 1     Backup 2     Backup 4     open 7   |
|----|/|----+----|/|----+----| |----+----| |----+----| |----+----( )----|
|  LF  005      STP 010      LF  006      LF  007      LF  008      PTS 028  |
```

RUNG 053 User Rung Comment

```
|  DoCalib      Close        Manual       dontrun                  DoCalibr |
|----| |----+----| |----+----| |----+----|/|----+----------+----( )----|
|  FF  001      LF  005      FF  002      LF  016                  PTS 030  |
```

RUNG 054 User Rung Comment

```
|  Manual       Close        CloseSet                             SetClose |
|----| |----+----| |----+----| |----+----------+----------+----( )----|
|  FF  002      LF  005      FF  003    |                         PTS 031  |
|                                       |                                  |
|                                       |                                  |
|  New Cap      Close                   |                                  |
|----| |----+----| |----+----------+                              |
|  LF  017      LF  005
```

RUNG 055 User Rung Comment

```
|   CapDone                                                    ReadExt  |
|----| |----+----------+----------+----------+----------+----( )----|
|   STP 015                                                    LF  013  |
```

RUNG 056 User Rung Comment

```
|   CloseLim    Manual     Close                               CloseLim |
|----| |----+----| |----+----| |----+----------+----------+----( )----|
|   FF  004     FF  002     LF  005                            PTS 032  |
```

RUNG 057 User Rung Comment

```
|   CapCheck    Close                                          CapCheck |
|----| |----+----| |----+----------+----------+----------+----( )----|
|   LF  012     LF  005                                        PTS 029  |
```

RUNG 058 User Rung Comment

```
|                                                              DoCheck  |
|----------+----------+----------+----------+----------+----( )----|
|                                                              PTS 033  |
```

RUNG 059 User Rung Comment

```
|   BegWTim                                                    Welding  |
|----| |----+----------+----------+----------+----------+--|TMR03|--|
|   STP 016           PLS  |  |                                         |
|                                                              P=2.75   |
```

RUNG 060 User Rung Comment

```
|   Welding     Close                                          TimeClos |
|----| |----+----| |----+----------+----------+----------+----( )----|
|   TMR 003     LF  005                                        PTS 035  |
```

RUNG 061 User Rung Comment

```
|   Welding     BegWTim                                        waitcool |
|----|/|----+----| |----+----------+----------+----------+--|TMR04|--|
|   TMR 003     STP 016                                        |PLS  |  |
|                                                              P=1.50   |
```

RUNG 062 User Rung Comment

```
|   waitcool                                                      dontrun  |
|----| |----+----------+----------+----------+----------+----( )----|
|   TMR 004                                                       LF  016  |
```

RUNG 063 User Rung Comment

```
|   GotTor                                                        GotTor   |
|----| |----+----------+----------+----------+----------+----( )----|
|   IS  012                                                       PTS 004  |
```

RUNG 064 User Rung Comment

```
|   CWLimit      Homed          lim IP                            CW lim   |
|---|PVAR|--+----| |----+----|/|----+----------+----------+----( )----|
|    |CMPR|      IS  004      STP 014                             ICC 011  |
|P > PNV 027
```

RUNG 065 User Rung Comment

```
|   neg lim     Homed                                             CCW lim  |
|----| |----+----| |----+----------+----------+----------+----( )----|
|   IS  011     IS  004                                           ICC 012  |
```

RUNG 066

```
|   Homed                                                         Homed    |
|----| |----+----------+----------+----------+----------+----( )----|
|   IS  004                                                       PTS 036  |
```

6.6 Axiom Plus Standard Sequential Program

Line#001

label:

comment: user comment for line #0001

Assign Register - VEL 001 = 3.00

Line#002

label:

comment: user comment for line #0002

Position Compare - Branch Label: DONE

Comparison: Command Position < PNV 027 CWLimit

Line#003

label:

comment: user comment for line #0003

Conditional Branch to Label: DONE

Conditional Operand: PLC-to-SEQ PRG FLAG #036 : PTS 036

Branch on Logic 1 (normally-open)

Line#004

label:

comment: user comment for line #0004

Assign Register - PNV 027 CWLimit = 999.990

Line#005

label: DONE

comment: user comment for line #0005

Time Delay: 1 seconds

Line#006

label:

comment: Set the In-Position Band

Set In-Position Band = 1500 Encoder Counts,
 or 0.075 inch

Line#007

label:

comment: user comment for line #0007

Set/Clear Flag Bit -- CLEAR STP 003

CLEAR SEQ PRG-to-PLC FLAG #003 : STP 003

Line#008

label:

comment: user comment for line #0008

Set/Clear Flag Bit -- CLEAR STP 004

CLEAR SEQ PRG-to-PLC FLAG #004 : STP 004

Line#009

label: LOOP1

comment: user comment for line #0009

Conditional Subroutine Call: HOME

Conditional Operand: PLC-to-SEQ PRG FLAG #002 : PTS 002

Call Subroutine on Logic 1 (normally-open)

Line#010

label:

comment: Flag ext computer, move done

Set/Clear Flag Bit -- CLEAR STP 015

CLEAR SEQ PRG-to-PLC FLAG #015 : STP 015

Line#011

label:

comment: user comment for line #0011

Set/Clear Flag Bit -- CLEAR STP 020

CLEAR SEQ PRG-to-PLC FLAG #020 : STP 020

Line#012

label:

comment: user comment for line #0012

Conditional Subroutine Call: CLOSEPOS

Conditional Operand: PLC-to-SEQ PRG FLAG #031 : PTS 031

Call Subroutine on Logic 1 (normally-open)

Line#013

label:

comment: user comment for line #0013

Conditional Subroutine Call: CLOSELIM

Conditional Operand: PLC-to-SEQ PRG FLAG #032 : PTS 032

Call Subroutine on Logic 1 (normally-open)

Line#014

label:

comment: user comment for line #0014

Conditional Subroutine Call: CALIB

Conditional Operand: PLC-to-SEQ PRG FLAG #030 : PTS 030

Call Subroutine on Logic 1 (normally-open)

Line#015

label:

comment: user comment for line #0015

Conditional Subroutine Call: CAPCHECK

Conditional Operand: PLC-to-SEQ PRG FLAG #029 : PTS 029

Call Subroutine on Logic 1 (normally-open)

Line#016

label:

comment: user comment for line #0016

Conditional Subroutine Call: PRESS1

Conditional Operand: PLC-to-SEQ PRG FLAG #005 : PTS 005

Call Subroutine on Logic 1 (normally-open)

Line#017

label:

comment: user comment for line #0017

Conditional Subroutine Call: PRESS2

Conditional Operand: PLC-to-SEQ PRG FLAG #006 : PTS 006

Call Subroutine on Logic 1 (normally-open)

Line#018

label:

comment: user comment for line #0018

Conditional Subroutine Call: PRESS3

Conditional Operand: PLC-to-SEQ PRG FLAG #007 : PTS 007

Call Subroutine on Logic 1 (normally-open)

Line#019

label:

comment: user comment for line #0019

Conditional Subroutine Call: PRESS4

Conditional Operand: PLC-to-SEQ PRG FLAG #008 : PTS 008

Call Subroutine on Logic 1 (normally-open)

Line#020

label:

comment: user comment for line #0020

Conditional Subroutine Call: PRESS5

Conditional Operand: PLC-to-SEQ PRG FLAG #009 : PTS 009

Call Subroutine on Logic 1 (normally-open)

Line#021

label:

comment: user comment for line #0021

Conditional Subroutine Call: PRESS6

Conditional Operand: PLC-to-SEQ PRG FLAG #010 : PTS 010

Call Subroutine on Logic 1 (normally-open)

Line#022

label:

comment: user comment for line #0022

Conditional Subroutine Call: PRESS7

Conditional Operand: PLC-to-SEQ PRG FLAG #011 : PTS 011

Call Subroutine on Logic 1 (normally-open)

Line#023

label:

comment: user comment for line #0023

Conditional Subroutine Call: PRESS8

Conditional Operand: PLC-to-SEQ PRG FLAG #012 : PTS 012

Call Subroutine on Logic 1 (normally-open)

Line#024

label:

comment: user comment for line #0024

Conditional Subroutine Call: PRESS9

Conditional Operand: PLC-to-SEQ PRG FLAG #013 : PTS 013

Call Subroutine on Logic 1 (normally-open)

Line#025

label:

comment: user comment for line #0025

Conditional Subroutine Call: PRESS10

Conditional Operand: PLC-to-SEQ PRG FLAG #014 : PTS 014

Call Subroutine on Logic 1 (normally-open)

Line#026

label:

comment: user comment for line #0026

Conditional Subroutine Call: PRESS11

Conditional Operand: PLC-to-SEQ PRG FLAG #015 : PTS 015

Call Subroutine on Logic 1 (normally-open)

Line#027

label:

comment: user comment for line #0027

Conditional Subroutine Call: PRESS12

Conditional Operand: PLC-to-SEQ PRG FLAG #016 : PTS 016

Call Subroutine on Logic 1 (normally-open)

Line#028

label:

comment: user comment for line #0028

Conditional Subroutine Call: PRESS13

Conditional Operand: PLC-to-SEQ PRG FLAG #017 : PTS 017

Call Subroutine on Logic 1 (normally-open)

Line#029

label:

comment: user comment for line #0029

Conditional Subroutine Call: PRESS14

Conditional Operand: PLC-to-SEQ PRG FLAG #018 : PTS 018

Call Subroutine on Logic 1 (normally-open)

Line#030

label:

comment: user comment for line #0030

Conditional Subroutine Call: PRESS15

Conditional Operand: PLC-to-SEQ PRG FLAG #019 : PTS 019

Call Subroutine on Logic 1 (normally-open)

Line#031

label:

comment: user comment for line #0031

Conditional Subroutine Call: OPEN0

Conditional Operand: PLC-to-SEQ PRG FLAG #021 : PTS 021

Call Subroutine on Logic 1 (normally-open)

Line#032

label:

comment: user comment for line #0032

Conditional Subroutine Call: OPEN1

Conditional Operand: PLC-to-SEQ PRG FLAG #022 : PTS 022

Call Subroutine on Logic 1 (normally-open)

Line#033

label:

comment: user comment for line #0033

Conditional Subroutine Call: OPEN2

Conditional Operand: PLC-to-SEQ PRG FLAG #023 : PTS 023

Call Subroutine on Logic 1 (normally-open)

Line#034

label:

comment: user comment for line #0034

Conditional Subroutine Call: OPEN3

Conditional Operand: PLC-to-SEQ PRG FLAG #024 : PTS 024

Call Subroutine on Logic 1 (normally-open)

Line#035

label:

comment: user comment for line #0035

Conditional Subroutine Call: OPEN4

Conditional Operand: PLC-to-SEQ PRG FLAG #025 : PTS 025

Call Subroutine on Logic 1 (normally-open)

Line#036

label:

comment: user comment for line #0036

Conditional Subroutine Call: OPEN5

Conditional Operand: PLC-to-SEQ PRG FLAG #026 : PTS 026

Call Subroutine on Logic 1 (normally-open)

Line#037

label:

comment: user comment for line #0037

Conditional Subroutine Call: OPEN6

Conditional Operand: PLC-to-SEQ PRG FLAG #027 : PTS 027

Call Subroutine on Logic 1 (normally-open)

Line#038

label:

comment: user comment for line #0038

Conditional Subroutine Call: OPEN7

Conditional Operand: PLC-to-SEQ PRG FLAG #028 : PTS 028

Call Subroutine on Logic 1 (normally-open)

Line#039

label:

comment: user comment for line #0039

Branch to Label: LOOP1

Line#040

label: OPEN0

comment: user comment for line #0040

Call Subroutine with Start Label: OPENSTRT

Line#041

label:

comment: Move to open position

Abs Position Move -- Position = PNV 001-

Vel = 1.00 Acc = 799.999 Dec = 799.999

Trigger #1: PLC-to-PRG Flag #003 Logic One

Action #1 (Trig #1): New Speed = VEL 001

Action #2 (Trig #1): New Torque Limit = 100.0%

Trigger #2: No Trigger Event

Line#042

label:

comment: user comment for line #0042

Set/Clear Flag Bit -- CLEAR STP 011

CLEAR SEQ PRG-to-PLC FLAG #011 : STP 011

Line#043

label:

comment: user comment for line #0043

Set/Clear Flag Bit -- SET STP 003

SET SEQ PRG-to-PLC FLAG #003 : STP 003

Line#044

label:

comment: user comment for line #0044

Set/Clear Flag Bit -- SET STP 018

SET SEQ PRG-to-PLC FLAG #018 : STP 018

Line#045

label:

comment: user comment for line #0045

Return from Subroutine

Line#046

label: OPEN1

comment: user comment for line #0046

Call Subroutine with Start Label: OPENSTRT

Line#047

label:

comment: Move to open position

Abs Position Move -- Position = PNV 002-

Vel = 1.00 Acc = 500.0 Dec = 500.0

Trigger #1: PLC-to-PRG Flag #003 Logic One

Action #1 (Trig #1): New Speed = VEL 001

Action #2 (Trig #1): New Torque Limit = 100.0%

Trigger #2: No Trigger Event

Line#048

label:

comment: user comment for line #0048

Set/Clear Flag Bit -- CLEAR STP 011

CLEAR SEQ PRG-to-PLC FLAG #011 : STP 011

Line#049

label:

comment: user comment for line #0049

Set/Clear Flag Bit -- SET STP 004

SET SEQ PRG-to-PLC FLAG #004 : STP 004

Line#050

label:

comment: user comment for line #0050

Set/Clear Flag Bit -- SET STP 018

SET SEQ PRG-to-PLC FLAG #018 : STP 018

Line#051

label:

comment: user comment for line #0051

Return from Subroutine

Line#052

label: OPEN2

comment: user comment for line #0052

Call Subroutine with Start Label: OPENSTRT

Line#053

label:

comment: Move to open position

Abs Position Move -- Position = PNV 003-

Vel = 1.00 Acc = 500.0 Dec = 500.0

Trigger #1: PLC-to-PRG Flag #003 Logic One

Action #1 (Trig #1): New Speed = VEL 001

Action #2 (Trig #1): New Torque Limit = 100.0%

Trigger #2: No Trigger Event

Line#054

label:

comment: user comment for line #0054

Set/Clear Flag Bit -- CLEAR STP 011

CLEAR SEQ PRG-to-PLC FLAG #011 : STP 011

Line#055

label:

comment: user comment for line #0055

Set/Clear Flag Bit -- SET STP 005

SET SEQ PRG-to-PLC FLAG #005 : STP 005

Line#056

label:

comment: user comment for line #0056

Set/Clear Flag Bit -- SET STP 018

SET SEQ PRG-to-PLC FLAG #018 : STP 018

Line#057

label:

comment: user comment for line #0057

Return from Subroutine

Line#058

label: OPEN3

comment: user comment for line #0058

Call Subroutine with Start Label: OPENSTRT

Line#059

label:

comment: Move to open position

Abs Position Move -- Position = PNV 004-

Vel = 1.00 Acc = 500.0 Dec = 500.0

Trigger #1: PLC-to-PRG Flag #003 Logic One

Action #1 (Trig #1): New Speed = VEL 001

Action #2 (Trig #1): New Torque Limit = 100.0%

Trigger #2: No Trigger Event

Line#060

label:

comment: user comment for line #0060

Set/Clear Flag Bit -- CLEAR STP 011

CLEAR SEQ PRG-to-PLC FLAG #011 : STP 011

Line#061

label:

comment: user comment for line #0061

Set/Clear Flag Bit -- SET STP 006

SET SEQ PRG-to-PLC FLAG #006 : STP 006

Line#062

label:

comment: user comment for line #0062

Set/Clear Flag Bit -- SET STP 018

SET SEQ PRG-to-PLC FLAG #018 : STP 018

Line#063

label:

comment: user comment for line #0063

Return from Subroutine

Line#064

label: OPEN4

comment: user comment for line #0064

Call Subroutine with Start Label: OPENSTRT

Line#065

label:

comment: Move to open position

Abs Position Move -- Position = PNV 005-

Vel = 1.00 Acc = 500.0 Dec = 500.0

Trigger #1: PLC-to-PRG Flag #003 Logic One

Action #1 (Trig #1): New Speed = VEL 001

Action #2 (Trig #1): New Torque Limit = 100.0%

Trigger #2: No Trigger Event

Line#066

label:

comment: user comment for line #0066

Set/Clear Flag Bit -- CLEAR STP 011

CLEAR SEQ PRG-to-PLC FLAG #011 : STP 011

Line#067

label:

comment: user comment for line #0067

Set/Clear Flag Bit -- SET STP 007

SET SEQ PRG-to-PLC FLAG #007 : STP 007

Line#068

label:

comment: user comment for line #0068

Set/Clear Flag Bit -- SET STP 018

SET SEQ PRG-to-PLC FLAG #018 : STP 018

Line#069

label:

comment: user comment for line #0069

Return from Subroutine

Line#070

label: OPEN5

comment: user comment for line #0070

Call Subroutine with Start Label: OPENSTRT

Line#071

label:

comment: Move to open position

Abs Position Move -- Position = PNV 006-

Vel = 1.00 Acc = 500.0 Dec = 500.0

Trigger #1: PLC-to-PRG Flag #003 Logic One

Action #1 (Trig #1): New Speed = VEL 001

Action #2 (Trig #1): New Torque Limit = 100.0%

Trigger #2: No Trigger Event

Line#072

label:

comment: user comment for line #0072

Set/Clear Flag Bit -- CLEAR STP 011

CLEAR SEQ PRG-to-PLC FLAG #011 : STP 011

Line#073

label:

comment: user comment for line #0073

Set/Clear Flag Bit -- SET STP 008

SET SEQ PRG-to-PLC FLAG #008 : STP 008

Line#074

label:

comment: user comment for line #0074

Set/Clear Flag Bit -- SET STP 018

SET SEQ PRG-to-PLC FLAG #018 : STP 018

Line#075

label:

comment: user comment for line #0075

Return from Subroutine

Line#076

label: OPEN6

comment: user comment for line #0076

Call Subroutine with Start Label: OPENSTRT

Line#077
label:
comment: Move to open position
Abs Position Move -- Position = PNV 007-
Vel = 1.00 Acc = 500.0 Dec = 500.0
Trigger #1: PLC-to-PRG Flag #003 Logic One
Action #1 (Trig #1): New Speed = VEL 001
Action #2 (Trig #1): New Torque Limit = 100.0%
Trigger #2: No Trigger Event

Line#078
label:
comment: user comment for line #0078
Set/Clear Flag Bit -- CLEAR STP 011
CLEAR SEQ PRG-to-PLC FLAG #011 : STP 011

Line#079
label:
comment: user comment for line #0079
Set/Clear Flag Bit -- SET STP 009
SET SEQ PRG-to-PLC FLAG #009 : STP 009

Line#080
label:
comment: user comment for line #0080
Set/Clear Flag Bit -- SET STP 018
SET SEQ PRG-to-PLC FLAG #018 : STP 018

Line#081
label:
comment: user comment for line #0081
Return from Subroutine

Line#082
label: OPEN7
comment: user comment for line #0082
Call Subroutine with Start Label: OPENSTRT

Line#083
label:
comment: Move to open position
Abs Position Move -- Position = PNV 008-
Vel = 1.00 Acc = 500.0 Dec = 500.0
Trigger #1: PLC-to-PRG Flag #003 Logic One
Action #1 (Trig #1): New Speed = VEL 001
Action #2 (Trig #1): New Torque Limit = 100.0%
Trigger #2: No Trigger Event

Line#084
label:
comment: user comment for line #0084
Set/Clear Flag Bit -- CLEAR STP 011
CLEAR SEQ PRG-to-PLC FLAG #011 : STP 011

Line#085
label:
comment: user comment for line #0085
Set/Clear Flag Bit -- SET STP 010
SET SEQ PRG-to-PLC FLAG #010 : STP 010

Line#086
label:
comment: user comment for line #0086
Set/Clear Flag Bit -- SET STP 018
SET SEQ PRG-to-PLC FLAG #018 : STP 018

Line#087
label:
comment: user comment for line #0087
Return from Subroutine

Line#088
label: HOME
comment: Low torque for home
Set Maximum Torque Limit -- 30.0 %

Line#089
label:
comment: user comment for line #0089
Set/Clear Flag Bit -- SET STP 002
SET SEQ PRG-to-PLC FLAG #002 : STP 002

Line#090
label:
comment: user comment for line #0090
Velocity Move -- Velocity = -0.50 inch / sec
Acc = 20.0 Dec = 100.0
Trigger #1: PLC-to-PRG Flag #001 Logic One
Action #1 (Trig #1): Terminate Motion Instruction
Action #2 (Trig #1): No Action
Trigger #2: No Trigger Event

Line#091
label:
comment: user comment for line #0091
Set/Clear Flag Bit -- CLEAR STP 002
CLEAR SEQ PRG-to-PLC FLAG #002 : STP 002

Line#092
label:
comment: user comment for line #0092
Set Command Position = Actual -- Zero Following Error

Line#093
label:
comment: user comment for line #0093
Inc Position Move -- Distance = 0.125 inch
Vel = 1.00 Acc = 4.998 Dec = 4.998
Trigger #1: No Trigger Event
Trigger #2: No Trigger Event

Line#094
label:
comment: define pos as "Home"
Define Present Absolute Position
Define Absolute COMMAND Position as 0.000 inch

Line#095
label:
comment: user comment for line #0095
Return from Subroutine

Line#096
label: PRESS1
comment: user comment for line #0096
Call Subroutine with Start Label: CLOSESET

Line#097
label:
comment: user comment for line #0097
Abs Position Move -- Position = PNV 010-
Vel = VEL 001- Acc = 500.0 Dec = 500.0
Trigger #1: No Trigger Event
Trigger #2: No Trigger Event

Line#098
label:
comment: user comment for line #0098
Wait for Input / Flag -- IN 014 -- Logic 1
Conditional Operand: PHYSICAL INPUT #014 : IN 014
Continue on Logic 1 (normally-open)
Do NOT Enable PLC Commanded JOG Motion while Waiting

Line#099
label:
comment: user comment for line #0099
Set Maximum Torque Limit -- TNV 001 %

Line#100
label:
comment: user comment for line #0100
Velocity Move -- Velocity = 1.00 inch / sec
Acc = 250.0 Dec = 250.0
Trigger #1: Incremental Distance = 0.250 inch
Action #1 (Trig #1): Set PRG-to-PLC Flag #001
Action #2 (Trig #1): No Action
Trigger #2: PLC-to-PRG Flag #001, Logic One
Action #1 (Trig #2): Terminate Motion Instruction
Action #2 (Trig #2): No Action

Line#101

label:

comment: user comment for line #0101

Conditional Branch to Label: PR1GO

Conditional Operand: PLC-to-SEQ PRG FLAG #033 : PTS 033

Branch on Logic 0 (normally-closed)

Line#102

label:

comment: user comment for line #0102

Position Compare - Branch Label: PR1STOP

Comparison: Actual Position < PNV 010

Line#103

label:

comment: user comment for line #0103

Position Compare - Branch Label: PR1GO

Comparison: Actual Position < POS 001

Line#104

label: PR1STOP

comment: user comment for line #0104

Call Subroutine with Start Label: NOTPOS

Line#105

label: PR1GO

comment: Move to weld position

Call Subroutine with Start Label: CLOSEDN

Line#106

label:

comment: user comment for line #0106

Conditional Branch to Label: EXIT1

Conditional Operand: SEQ PRG-to-PLC FLAG #020 : STP 020

Branch on Logic 1 (normally-open)

Line#107

label:

comment: user comment for line #0107

Store Position to Register: POS 016-

Store Absolute ACTUAL Position

Line#108

label: EXIT1

comment: user comment for line #0108

Return from Subroutine

Line#109

label: PRESS2

comment: user comment for line #0109

Call Subroutine with Start Label: CLOSESET

Line#110

label:

comment: user comment for line #0110

Abs Position Move -- Position = PNV 011-

Vel = VEL 001- Acc = 500.0 Dec = 500.0

Trigger #1: No Trigger Event

Trigger #2: No Trigger Event

Line#111

label:

comment: user comment for line #0111

Set Maximum Torque Limit -- TNV 002 %

Line#112

label:

comment: user comment for line #0112

Velocity Move -- Velocity = 1.00 inch / sec

Acc = 250.0 Dec = 250.0

Trigger #1: Incremental Distance = 0.250 inch

Action #1 (Trig #1): Set PRG-to-PLC Flag #001

Action #2 (Trig #1): No Action

Trigger #2: PLC-to-PRG Flag #001, Logic One

Action #1 (Trig #2): Terminate Motion Instruction

Action #2 (Trig #2): No Action

Line#113

label:

comment: user comment for line #0113

Conditional Branch to Label: PR2GO

Conditional Operand: PLC-to-SEQ PRG FLAG #033 : PTS 033

Branch on Logic 0 (normally-closed)

Line#114
label:
comment: user comment for line #0114
Position Compare - Branch Label: PR2STOP
Comparison: Actual Position < PNV 011

Line#115
label:
comment: user comment for line #0115
Position Compare - Branch Label: PR2GO
Comparison: Actual Position < POS 002

Line#116
label: PR2STOP
comment: user comment for line #0116
Call Subroutine with Start Label: NOTPOS

Line#117
label: PR2GO
comment: Move to weld position
Call Subroutine with Start Label: CLOSEDN

Line#118
label:
comment: user comment for line #0118
Conditional Branch to Label: EXIT2
Conditional Operand: SEQ PRG-to-PLC FLAG #020 : STP 020
Branch on Logic 1 (normally-open)

Line#119
label:
comment: user comment for line #0119
Store Position to Register: POS 017-
Store Absolute ACTUAL Position

Line#120
label: EXIT2
comment: user comment for line #0120
Return from Subroutine

Line#121
label: PRESS3
comment: user comment for line #0121
Call Subroutine with Start Label: CLOSESET

Line#122
label:
comment: user comment for line #0122
Abs Position Move -- Position = PNV 012-
Vel = VEL 001- Acc = 500.0 Dec = 500.0
Trigger #1: No Trigger Event
Trigger #2: No Trigger Event

Line#123
label:
comment: user comment for line #0123
Set Maximum Torque Limit -- TNV 003 %

Line#124
label:
comment: user comment for line #0124
Velocity Move -- Velocity = 1.00 inch / sec
Acc = 250.0 Dec = 250.0
Trigger #1: Incremental Distance = 0.250 inch
Action #1 (Trig #1): Set PRG-to-PLC Flag #001
Action #2 (Trig #1): No Action
Trigger #2: PLC-to-PRG Flag #001, Logic One
Action #1 (Trig #2): Terminate Motion Instruction
Action #2 (Trig #2): No Action

Line#125
label:
comment: user comment for line #0125
Conditional Branch to Label: PR3GO
Conditional Operand: PLC-to-SEQ PRG FLAG #033 : PTS 033
Branch on Logic 0 (normally-closed)

Line#126
label:
comment: user comment for line #0126
Position Compare - Branch Label: PR3STOP
Comparison: Actual Position < PNV 012

Line#127

label:

comment: user comment for line #0127

Position Compare - Branch Label: PR3GO

Comparison: Actual Position < POS 003

Line#128

label: PR3STOP

comment: user comment for line #0128

Call Subroutine with Start Label: NOTPOS

Line#129

label: PR3GO

comment: Move to weld position

Call Subroutine with Start Label: CLOSEDN

Line#130

label:

comment: user comment for line #0130

Conditional Branch to Label: EXIT3

Conditional Operand: SEQ PRG-to-PLC FLAG #020 : STP 020

Branch on Logic 1 (normally-open)

Line#131

label:

comment: user comment for line #0131

Store Position to Register: POS 018-

Store Absolute ACTUAL Position

Line#132

label: EXIT3

comment: user comment for line #0132

Return from Subroutine

Line#133

label: PRESS4

comment: user comment for line #0133

Call Subroutine with Start Label: CLOSESET

Line#134

label:

comment: user comment for line #0134

Abs Position Move -- Position = PNV 013-

Vel = VEL 001- Acc = 500.0 Dec = 500.0

Trigger #1: No Trigger Event

Trigger #2: No Trigger Event

Line#135

label:

comment: user comment for line #0135

Set Maximum Torque Limit -- TNV 004 %

Line#136

label:

comment: user comment for line #0136

Velocity Move -- Velocity = 1.00 inch / sec

Acc = 250.0 Dec = 250.0

Trigger #1: Incremental Distance = 0.250 inch

Action #1 (Trig #1): Set PRG-to-PLC Flag #001

Action #2 (Trig #1): No Action

Trigger #2: PLC-to-PRG Flag #001, Logic One

Action #1 (Trig #2): Terminate Motion Instruction

Action #2 (Trig #2): No Action

Line#137

label:

comment: user comment for line #0137

Conditional Branch to Label: PR4GO

Conditional Operand: PLC-to-SEQ PRG FLAG #033 : PTS 033

Branch on Logic 0 (normally-closed)

Line#138

label:

comment: user comment for line #0138

Position Compare - Branch Label: PR4STOP

Comparison: Actual Position < PNV 013

Line#139

label:

comment: user comment for line #0139

Position Compare - Branch Label: PR4GO

Comparison: Actual Position < POS 004

Line#140

label: PR4STOP

comment: user comment for line #0140

Call Subroutine with Start Label: NOTPOS

Line#141

label: PR4GO

comment: Move to weld position

Call Subroutine with Start Label: CLOSEDN

Line#142

label:

comment: user comment for line #0142

Conditional Branch to Label: EXIT4

Conditional Operand: SEQ PRG-to-PLC FLAG #020 : STP 020

Branch on Logic 1 (normally-open)

Line#143

label:

comment: user comment for line #0143

Store Position to Register: POS 019-

Store Absolute ACTUAL Position

Line#144

label: EXIT4

comment: user comment for line #0144

Return from Subroutine

Line#145

label: PRESS5

comment: user comment for line #0145

Call Subroutine with Start Label: CLOSESET

Line#146

label:

comment: user comment for line #0146

Abs Position Move -- Position = PNV 014-

Vel = VEL 001- Acc = 500.0 Dec = 500.0

Trigger #1: No Trigger Event

Trigger #2: No Trigger Event

Line#147

label:

comment: user comment for line #0147

Set Maximum Torque Limit -- TNV 005 %

Line#148

label:

comment: user comment for line #0148

Velocity Move -- Velocity = 1.00 inch / sec

Acc = 250.0 Dec = 250.0

Trigger #1: Incremental Distance = 0.250 inch

Action #1 (Trig #1): Set PRG-to-PLC Flag #001

Action #2 (Trig #1): No Action

Trigger #2: PLC-to-PRG Flag #001, Logic One

Action #1 (Trig #2): Terminate Motion Instruction

Action #2 (Trig #2): No Action

Line#149

label:

comment: user comment for line #0149

Conditional Branch to Label: PR5GO

Conditional Operand: PLC-to-SEQ PRG FLAG #033 : PTS 033

Branch on Logic 0 (normally-closed)

Line#150

label:

comment: user comment for line #0150

Position Compare - Branch Label: PR5STOP

Comparison: Actual Position < PNV 014

Line#151

label:

comment: user comment for line #0151

Position Compare - Branch Label: PR5GO

Comparison: Actual Position < POS 005

Line#152

label: PR5STOP

comment: user comment for line #0152

Call Subroutine with Start Label: NOTPOS

Line#153

label: PR5GO

comment: Move to weld position

Call Subroutine with Start Label: CLOSEDN

Line#154

label:

comment: user comment for line #0154

Conditional Branch to Label: EXIT5

Conditional Operand: SEQ PRG-to-PLC FLAG #020 : STP 020

Branch on Logic 1 (normally-open)

Line#155

label:

comment: user comment for line #0155

Store Position to Register: POS 020-

Store Absolute ACTUAL Position

Line#156

label: EXIT5

comment: user comment for line #0156

Return from Subroutine

Line#157

label: PRESS6

comment: user comment for line #0157

Call Subroutine with Start Label: CLOSESET

Line#158

label:

comment: user comment for line #0158

Abs Position Move -- Position = PNV 015-

Vel = VEL 001- Acc = 500.0 Dec = 500.0

Trigger #1: No Trigger Event

Trigger #2: No Trigger Event

Line#159

label:

comment: user comment for line #0159

Set Maximum Torque Limit -- TNV 006 %

Line#160

label:

comment: user comment for line #0160

Velocity Move -- Velocity = 1.00 inch / sec

Acc = 250.0 Dec = 250.0

Trigger #1: Incremental Distance = 0.250 inch

Action #1 (Trig #1): Set PRG-to-PLC Flag #001

Action #2 (Trig #1): No Action

Trigger #2: PLC-to-PRG Flag #001, Logic One

Action #1 (Trig #2): Terminate Motion Instruction

Action #2 (Trig #2): No Action

Line#161

label:

comment: user comment for line #0161

Conditional Branch to Label: PR6GO

Conditional Operand: PLC-to-SEQ PRG FLAG #033 : PTS 033

Branch on Logic 0 (normally-closed)

Line#162

label:

comment: user comment for line #0162

Position Compare - Branch Label: PR6STOP

Comparison: Actual Position < PNV 015

Line#163

label:

comment: user comment for line #0163

Position Compare - Branch Label: PR6GO

Comparison: Actual Position < POS 006

Line#164

label: PR6STOP

comment: user comment for line #0164

Call Subroutine with Start Label: NOTPOS

Line#165

label: PR6GO

comment: Move to weld position

Call Subroutine with Start Label: CLOSEDN

Line#166

label:

comment: user comment for line #0166

Conditional Branch to Label: EXIT6

Conditional Operand: SEQ PRG-to-PLC FLAG #020 : STP 020

Branch on Logic 1 (normally-open)

Line#167

label:

comment: user comment for line #0167

Store Position to Register: POS 021-

Store Absolute ACTUAL Position

Line#168

label: EXIT6

comment: user comment for line #0168

Return from Subroutine

Line#169

label: PRESS7

comment: user comment for line #0169

Call Subroutine with Start Label: CLOSESET

Line#170

label:

comment: user comment for line #0170

Abs Position Move -- Position = PNV 016-

Vel = VEL 001- Acc = 500.0 Dec = 500.0

Trigger #1: No Trigger Event

Trigger #2: No Trigger Event

Line#171

label:

comment: user comment for line #0171

Set Maximum Torque Limit -- TNV 007 %

Line#172

label:

comment: user comment for line #0172

Velocity Move -- Velocity = 1.00 inch / sec

Acc = 250.0 Dec = 250.0

Trigger #1: Incremental Distance = 0.250 inch

Action #1 (Trig #1): Set PRG-to-PLC Flag #001

Action #2 (Trig #1): No Action

Trigger #2: PLC-to-PRG Flag #001, Logic One

Action #1 (Trig #2): Terminate Motion Instruction

Action #2 (Trig #2): No Action

Line#173

label:

comment: user comment for line #0173

Conditional Branch to Label: PR7GO

Conditional Operand: PLC-to-SEQ PRG FLAG #033 : PTS 033

Branch on Logic 0 (normally-closed)

Line#174

label:

comment: user comment for line #0174

Position Compare - Branch Label: PR7STOP

Comparison: Actual Position < PNV 016

Line#175

label:

comment: user comment for line #0175

Position Compare - Branch Label: PR7GO

Comparison: Actual Position < POS 007

Line#176

label: PR7STOP

comment: user comment for line #0176

Call Subroutine with Start Label: NOTPOS

Line#177

label: PR7GO

comment: Move to weld position

Call Subroutine with Start Label: CLOSEDN

Line#178

label:

comment: user comment for line #0178

Conditional Branch to Label: EXIT7

Conditional Operand: SEQ PRG-to-PLC FLAG #020 : STP 020

Branch on Logic 1 (normally-open)

Line#179

label:

comment: user comment for line #0179

Store Position to Register: POS 022-

Store Absolute ACTUAL Position

Line#180

label: EXIT7

comment: user comment for line #0180

Return from Subroutine

Line#181

label: PRESS8

comment: user comment for line #0181

Call Subroutine with Start Label: CLOSESET

Line#182

label:

comment: user comment for line #0182

Abs Position Move -- Position = PNV 017-

Vel = VEL 001- Acc = 500.0 Dec = 500.0

Trigger #1: No Trigger Event

Trigger #2: No Trigger Event

Line#183

label:

comment: user comment for line #0183

Set Maximum Torque Limit -- TNV 008 %

Line#184

label:

comment: user comment for line #0184

Velocity Move -- Velocity = 1.00 inch / sec

Acc = 250.0 Dec = 250.0

Trigger #1: Incremental Distance = 0.250 inch

Action #1 (Trig #1): Set PRG-to-PLC Flag #001

Action #2 (Trig #1): No Action

Trigger #2: PLC-to-PRG Flag #001, Logic One

Action #1 (Trig #2): Terminate Motion Instruction

Action #2 (Trig #2): No Action

Line#185

label:

comment: user comment for line #0185

Conditional Branch to Label: PR8GO

Conditional Operand: PLC-to-SEQ PRG FLAG #033 : PTS 033

Branch on Logic 0 (normally-closed)

Line#186

label:

comment: user comment for line #0186

Position Compare - Branch Label: PR8STOP

Comparison: Actual Position < PNV 017

Line#187

label:

comment: user comment for line #0187

Position Compare - Branch Label: PR8GO

Comparison: Actual Position < POS 008

Line#188

label: PR8STOP

comment: user comment for line #0188

Call Subroutine with Start Label: NOTPOS

Line#189

label: PR8GO

comment: Move to weld position

Call Subroutine with Start Label: CLOSEDN

Line#190

label:

comment: user comment for line #0190

Conditional Branch to Label: EXIT8

Conditional Operand: SEQ PRG-to-PLC FLAG #020 : STP 020

Branch on Logic 1 (normally-open)

Line#191

label:

comment: user comment for line #0191

Store Position to Register: POS 023-

Store Absolute ACTUAL Position

Line#192

label: EXIT8

comment: user comment for line #0192

Return from Subroutine

Line#193

label: PRESS9

comment: user comment for line #0193

Call Subroutine with Start Label: CLOSESET

Line#194

label:

comment: user comment for line #0194

Abs Position Move -- Position = PNV 018-

Vel = VEL 001- Acc = 500.0 Dec = 500.0

Trigger #1: No Trigger Event

Trigger #2: No Trigger Event

Line#195

label:

comment: user comment for line #0195

Set Maximum Torque Limit -- TNV 009 %

Line#196

label:

comment: user comment for line #0196

Velocity Move -- Velocity = 1.00 inch / sec

Acc = 250.0 Dec = 250.0

Trigger #1: Incremental Distance = 0.250 inch

Action #1 (Trig #1): Set PRG-to-PLC Flag #001

Action #2 (Trig #1): No Action

Trigger #2: PLC-to-PRG Flag #001, Logic One

Action #1 (Trig #2): Terminate Motion Instruction

Action #2 (Trig #2): No Action

Line#197

label:

comment: user comment for line #0197

Conditional Branch to Label: PR9GO

Conditional Operand: PLC-to-SEQ PRG FLAG #033 : PTS 033

Branch on Logic 0 (normally-closed)

Line#198

label:

comment: user comment for line #0198

Position Compare - Branch Label: PR9STOP

Comparison: Actual Position < PNV 018

Line#199

label:

comment: user comment for line #0199

Position Compare - Branch Label: PR9GO

Comparison: Actual Position < POS 009

Line#200

label: PR9STOP

comment: user comment for line #0200

Call Subroutine with Start Label: NOTPOS

Line#201

label: PR9GO

comment: Move to weld position

Call Subroutine with Start Label: CLOSEDN

Line#202

label:

comment: user comment for line #0202

Conditional Branch to Label: EXIT9

Conditional Operand: SEQ PRG-to-PLC FLAG #020 : STP 020

Branch on Logic 1 (normally-open)

Line#203

label:

comment: user comment for line #0203

Store Position to Register: POS 024-

Store Absolute ACTUAL Position

Line#204

label: EXIT9

comment: user comment for line #0204

Return from Subroutine

Line#205

label: PRESS10

comment: user comment for line #0205

Call Subroutine with Start Label: CLOSESET

Line#206

label:

comment: user comment for line #0206

Abs Position Move -- Position = PNV 019-

Vel = VEL 001- Acc = 500.0 Dec = 500.0

Trigger #1: No Trigger Event

Trigger #2: No Trigger Event

Line#207

label:

comment: user comment for line #0207

Set Maximum Torque Limit -- TNV 010 %

Line#208

label:

comment: user comment for line #0208

Velocity Move -- Velocity = 1.00 inch / sec

Acc = 250.0 Dec = 250.0

Trigger #1: Incremental Distance = 0.250 inch

Action #1 (Trig #1): Set PRG-to-PLC Flag #001

Action #2 (Trig #1): No Action

Trigger #2: PLC-to-PRG Flag #001, Logic One

Action #1 (Trig #2): Terminate Motion Instruction

Action #2 (Trig #2): No Action

Line#209

label:

comment: user comment for line #0209

Conditional Branch to Label: PR10GO

Conditional Operand: PLC-to-SEQ PRG FLAG #033 : PTS 033

Branch on Logic 0 (normally-closed)

Line#210

label:

comment: user comment for line #0210

Position Compare - Branch Label: PR10STOP

Comparison: Actual Position < PNV 019

Line#211

label:

comment: user comment for line #0211

Position Compare - Branch Label: PR10GO

Comparison: Actual Position < POS 010

Line#212

label: PR10STOP

comment: user comment for line #0212

Call Subroutine with Start Label: NOTPOS

Line#213

label: PR10GO

comment: Move to weld position

Call Subroutine with Start Label: CLOSEDN

Line#214

label:

comment: user comment for line #0214

Conditional Branch to Label: EXIT10

Conditional Operand: SEQ PRG-to-PLC FLAG #020 : STP 020

Branch on Logic 1 (normally-open)

Line#215

label:

comment: user comment for line #0215

Store Position to Register: POS 025-

Store Absolute ACTUAL Position

Line#216

label: EXIT10

comment: user comment for line #0216

Return from Subroutine

Line#217

label: PRESS11

comment: user comment for line #0217

Call Subroutine with Start Label: CLOSESET

Line#218

label:

comment: user comment for line #0218

Abs Position Move -- Position = PNV 020-

Vel = VEL 001- Acc = 500.0 Dec = 500.0

Trigger #1: No Trigger Event

Trigger #2: No Trigger Event

Line#219

label:

comment: user comment for line #0219

Set Maximum Torque Limit -- TNV 011 %

Line#220

label:

comment: user comment for line #0220

Velocity Move -- Velocity = 1.00 inch / sec

Acc = 250.0 Dec = 250.0

Trigger #1: Incremental Distance = 0.250 inch

Action #1 (Trig #1): Set PRG-to-PLC Flag #001

Action #2 (Trig #1): No Action

Trigger #2: PLC-to-PRG Flag #001, Logic One

Action #1 (Trig #2): Terminate Motion Instruction

Action #2 (Trig #2): No Action

Line#221

label:

comment: user comment for line #0221

Conditional Branch to Label: PR11GO

Conditional Operand: PLC-to-SEQ PRG FLAG #033 : PTS 033

Branch on Logic 0 (normally-closed)

Line#222

label:

comment: user comment for line #0222

Position Compare - Branch Label: PR11STOP

Comparison: Actual Position < PNV 020

Line#223

label:

comment: user comment for line #0223

Position Compare - Branch Label: PR11GO

Comparison: Actual Position < POS 011

Line#224

label: PR11STOP

comment: user comment for line #0224

Call Subroutine with Start Label: NOTPOS

Line#225

label: PR11GO

comment: Move to weld position

Call Subroutine with Start Label: CLOSEDN

Line#226

label:

comment: user comment for line #0226

Conditional Branch to Label: EXIT11

Conditional Operand: SEQ PRG-to-PLC FLAG #020 : STP 020

Branch on Logic 1 (normally-open)

Line#227

label:

comment: user comment for line #0227

Store Position to Register: POS 026-

Store Absolute ACTUAL Position

Line#228

label: EXIT11

comment: user comment for line #0228

Return from Subroutine

Line#229

label: PRESS12

comment: user comment for line #0229

Call Subroutine with Start Label: CLOSESET

Line#230

label:

comment: user comment for line #0230

Abs Position Move -- Position = PNV 021-

Vel = VEL 001- Acc = 500.0 Dec = 500.0

Trigger #1: No Trigger Event

Trigger #2: No Trigger Event

Line#231

label:

comment: user comment for line #0231

Set Maximum Torque Limit -- TNV 012 %

Line#232

label:

comment: user comment for line #0232

Velocity Move -- Velocity = 1.00 inch / sec

Acc = 250.0 Dec = 250.0

Trigger #1: Incremental Distance = 0.250 inch

Action #1 (Trig #1): Set PRG-to-PLC Flag #001

Action #2 (Trig #1): No Action

Trigger #2: PLC-to-PRG Flag #001, Logic One

Action #1 (Trig #2): Terminate Motion Instruction

Action #2 (Trig #2): No Action

Line#233

label:

comment: user comment for line #0233

Conditional Branch to Label: PR12GO

Conditional Operand: PLC-to-SEQ PRG FLAG #033 : PTS 033

Branch on Logic 0 (normally-closed)

Line#234

label:

comment: user comment for line #0234

Position Compare - Branch Label: PR12STOP

Comparison: Actual Position < PNV 021

Line#235

label:

comment: user comment for line #0235

Position Compare - Branch Label: PR12GO

Comparison: Actual Position < POS 012

Line#236

label: PR12STOP

comment: user comment for line #0236

Call Subroutine with Start Label: NOTPOS

Line#237

label: PR12GO

comment: Move to weld position

Call Subroutine with Start Label: CLOSEDN

Line#238

label:

comment: user comment for line #0238

Conditional Branch to Label: EXIT12

Conditional Operand: SEQ PRG-to-PLC FLAG #020 : STP 020

Branch on Logic 1 (normally-open)

Line#239

label:

comment: user comment for line #0239

Store Position to Register: POS 027-

Store Absolute ACTUAL Position

Line#240

label: EXIT12

comment: user comment for line #0240

Return from Subroutine

Line#241

label: PRESS13

comment: user comment for line #0241

Call Subroutine with Start Label: CLOSESET

Line#242

label:

comment: user comment for line #0242

Abs Position Move -- Position = PNV 022-

Vel = VEL 001- Acc = 500.0 Dec = 500.0

Trigger #1: No Trigger Event

Trigger #2: No Trigger Event

Line#243

label:

comment: user comment for line #0243

Set Maximum Torque Limit -- TNV 013 %

Line#244

label:

comment: user comment for line #0244

Velocity Move -- Velocity = 1.00 inch / sec

Acc = 250.0 Dec = 250.0

Trigger #1: Incremental Distance = 0.250 inch

Action #1 (Trig #1): Set PRG-to-PLC Flag #001

Action #2 (Trig #1): No Action

Trigger #2: PLC-to-PRG Flag #001, Logic One

Action #1 (Trig #2): Terminate Motion Instruction

Action #2 (Trig #2): No Action

Line#245

label:

comment: user comment for line #0245

Conditional Branch to Label: PR13GO

Conditional Operand: PLC-to-SEQ PRG FLAG #033 : PTS 033

Branch on Logic 0 (normally-closed)

Line#246

label:

comment: user comment for line #0246

Position Compare - Branch Label: PR13STOP

Comparison: Actual Position < PNV 022

Line#247

label:

comment: user comment for line #0247

Position Compare - Branch Label: PR13GO

Comparison: Actual Position < POS 013

Line#248

label: PR13STOP

comment: user comment for line #0248

Call Subroutine with Start Label: NOTPOS

Line#249

label: PR13GO

comment: Move to weld position

Call Subroutine with Start Label: CLOSEDN

Line#250

label:

comment: user comment for line #0250

Conditional Branch to Label: EXIT13

Conditional Operand: SEQ PRG-to-PLC FLAG #020 : STP 020

Branch on Logic 1 (normally-open)

Line#251

label:

comment: user comment for line #0251

Store Position to Register: POS 028-

Store Absolute ACTUAL Position

Line#252

label: EXIT13

comment: user comment for line #0252

Return from Subroutine

Line#253

label: PRESS14

comment: user comment for line #0253

Call Subroutine with Start Label: CLOSESET

Line#254

label:

comment: user comment for line #0254

Abs Position Move -- Position = PNV 023-

Vel = VEL 001- Acc = 500.0 Dec = 500.0

Trigger #1: No Trigger Event

Trigger #2: No Trigger Event

Line#255

label:

comment: user comment for line #0255

Set Maximum Torque Limit -- TNV 014 %

Line#256

label:

comment: user comment for line #0256

Velocity Move -- Velocity = 1.00 inch / sec

Acc = 250.0 Dec = 250.0

Trigger #1: Incremental Distance = 0.250 inch

Action #1 (Trig #1): Set PRG-to-PLC Flag #001

Action #2 (Trig #1): No Action

Trigger #2: PLC-to-PRG Flag #001, Logic One

Action #1 (Trig #2): Terminate Motion Instruction

Action #2 (Trig #2): No Action

Line#257

label:

comment: user comment for line #0257

Conditional Branch to Label: PR14GO

Conditional Operand: PLC-to-SEQ PRG FLAG #033 : PTS 033

Branch on Logic 0 (normally-closed)

Line#258

label:

comment: user comment for line #0258

Position Compare - Branch Label: PR14STOP

Comparison: Actual Position < PNV 023

Line#259

label:

comment: user comment for line #0259

Position Compare - Branch Label: PR14GO

Comparison: Actual Position < POS 014

Line#260

label: PR14STOP

comment: user comment for line #0260

Call Subroutine with Start Label: NOTPOS

Line#261

label: PR14GO

comment: Move to weld position

Call Subroutine with Start Label: CLOSEDN

Line#262

label:

comment: user comment for line #0262

Conditional Branch to Label: EXIT14

Conditional Operand: SEQ PRG-to-PLC FLAG #020 : STP 020

Branch on Logic 1 (normally-open)

Line#263

label:

comment: user comment for line #0263

Store Position to Register: POS 029-

Store Absolute ACTUAL Position

Line#264

label: EXIT14

comment: user comment for line #0264

Return from Subroutine

Line#265

label: PRESS15

comment: user comment for line #0265

Call Subroutine with Start Label: CLOSESET

Line#266

label:

comment: user comment for line #0266

Abs Position Move -- Position = PNV 024-

Vel = VEL 001- Acc = 500.0 Dec = 500.0

Trigger #1: No Trigger Event

Trigger #2: No Trigger Event

Line#267

label:

comment: user comment for line #0267

Set Maximum Torque Limit -- TNV 015 %

Line#268

label:

comment: user comment for line #0268

Velocity Move -- Velocity = 1.00 inch / sec

Acc = 250.0 Dec = 250.0

Trigger #1: Incremental Distance = 0.250 inch

Action #1 (Trig #1): Set PRG-to-PLC Flag #001

Action #2 (Trig #1): No Action

Trigger #2: PLC-to-PRG Flag #001, Logic One

Action #1 (Trig #2): Terminate Motion Instruction

Action #2 (Trig #2): No Action

Line#269

label:

comment: user comment for line #0269

Conditional Branch to Label: PR15GO

Conditional Operand: PLC-to-SEQ PRG FLAG #033 : PTS 033

Branch on Logic 0 (normally-closed)

Line#270

label:

comment: user comment for line #0270

Position Compare - Branch Label: PR15STOP

Comparison: Actual Position < PNV 024

Line#271

label:

comment: user comment for line #0271

Position Compare - Branch Label: PR15GO

Comparison: Actual Position < POS 015

Line#272

label: PR15STOP

comment: user comment for line #0272

Call Subroutine with Start Label: NOTPOS

Line#273

label: PR15GO

comment: Move to weld position

Call Subroutine with Start Label: CLOSEDN

Line#274

label:

comment: user comment for line #0274

Conditional Branch to Label: EXIT15

Conditional Operand: SEQ PRG-to-PLC FLAG #020 : STP 020

Branch on Logic 1 (normally-open)

Line#275

label:

comment: user comment for line #0275

Store Position to Register: POS 030-

Store Absolute ACTUAL Position

Line#276

label: EXIT15

comment: user comment for line #0276

Return from Subroutine

Line#277

label: CLEAR

comment: user comment for line #0277

Set/Clear Flag Bit -- CLEAR STP 003

CLEAR SEQ PRG-to-PLC FLAG #003 : STP 003

Line#278

label:

comment: user comment for line #0278

Set/Clear Flag Bit -- CLEAR STP 004

CLEAR SEQ PRG-to-PLC FLAG #004 : STP 004

Line#279

label:

comment: user comment for line #0279

Set/Clear Flag Bit -- CLEAR STP 001

CLEAR SEQ PRG-to-PLC FLAG #001 : STP 001

Line#280

label:

comment: user comment for line #0280

Set/Clear Flag Bit -- CLEAR STP 005

CLEAR SEQ PRG-to-PLC FLAG #005 : STP 005

Line#281

label:

comment: user comment for line #0281

Set/Clear Flag Bit -- CLEAR STP 006

CLEAR SEQ PRG-to-PLC FLAG #006 : STP 006

Line#282

label:

comment: user comment for line #0282

Set/Clear Flag Bit -- CLEAR STP 007

CLEAR SEQ PRG-to-PLC FLAG #007 : STP 007

Line#283

label:

comment: user comment for line #0283

Set/Clear Flag Bit -- CLEAR STP 008

CLEAR SEQ PRG-to-PLC FLAG #008 : STP 008

Line#284

label:

comment: user comment for line #0284

Set/Clear Flag Bit -- CLEAR STP 009

CLEAR SEQ PRG-to-PLC FLAG #009 : STP 009

Line#285

label:

comment: user comment for line #0285

Set/Clear Flag Bit -- CLEAR STP 010

CLEAR SEQ PRG-to-PLC FLAG #010 : STP 010

Line#286

label:

comment: user comment for line #0286

Set/Clear Flag Bit -- CLEAR STP 020

CLEAR SEQ PRG-to-PLC FLAG #020 : STP 020

Line#287

label:

comment: user comment for line #0287

Set/Clear Flag Bit -- CLEAR STP 018

CLEAR SEQ PRG-to-PLC FLAG #018 : STP 018

Line#288

label:

comment: user comment for line #0288

Return from Subroutine

Line#289

label: CLOSESET

comment: user comment for line #0289

Set Maximum Torque Limit -- 100.0 %

Line#290

label:

comment: user comment for line #0290

Call Subroutine with Start Label: CLEAR

Line#291

label:

comment: user comment for line #0291

Return from Subroutine

Line#292

label: CLOSEDN

comment: user comment for line #0292

Conditional Subroutine Call: NOTPOS

Conditional Operand: PLC-to-SEQ PRG FLAG #004 : PTS 004

Call Subroutine on Logic 0 (normally-closed)

Line#293

label:

comment: user comment for line #0293

Conditional Branch to Label: SKIP

Conditional Operand: SEQ PRG-to-PLC FLAG #020 : STP 020

Branch on Logic 1 (normally-open)

Line#294

label:

comment: user comment for line #0294

Set/Clear Flag Bit -- SET STP 021

SET SEQ PRG-to-PLC FLAG #021 : STP 021

Line#295

label: SKIP

comment: user comment for line #0295

Set/Clear Flag Bit -- CLEAR STP 001

CLEAR SEQ PRG-to-PLC FLAG #001 : STP 001

Line#296

label:

comment: user comment for line #0296

Wait for Input / Flag -- PTS 020 -- Logic 0

Conditional Operand: PLC-to-SEQ PRG FLAG #020 : PTS 020

Continue on Logic 0 (normally-closed)

Do NOT Enable PLC Commanded JOG Motion while Waiting

Line#297

label:

comment: user comment for line #0297

Set Command Position = Actual -- Zero Following Error

Line#298

label: NOTORQUE

comment: user comment for line #0298

Return from Subroutine

Line#299

label: OPENSTRT

comment: Open Position Binary 0

Set/Clear Flag Bit -- CLEAR STP 021

CLEAR SEQ PRG-to-PLC FLAG #021 : STP 021

Line#300

label:

comment: user comment for line #0300

Call Subroutine with Start Label: CLEAR

Line#301

label:

comment: user comment for line #0301

Set/Clear Flag Bit -- SET STP 011

SET SEQ PRG-to-PLC FLAG #011 : STP 011

Line#302

label:

comment: user comment for line #0302

Return from Subroutine

Line#303

label: CALIB

comment: user comment for line #0303

Call Subroutine with Start Label: CLOSESET

Line#304

label:

comment: user comment for line #0304

Set Maximum Torque Limit -- TNV 016 %

Line#305

label:

comment: user comment for line #0305

Velocity Move -- Velocity = 1.00 inch / sec

Acc = 250.0 Dec = 250.0

Trigger #1: Incremental Distance = 3.000 inch

Action #1 (Trig #1): Set PRG-to-PLC Flag #001

Action #2 (Trig #1): No Action

Trigger #2: PLC-to-PRG Flag #001, Logic One

Action #1 (Trig #2): Terminate Motion Instruction

Action #2 (Trig #2): No Action

Line#306

label:

comment: user comment for line #0306

Set/Clear Flag Bit -- SET STP 016

SET SEQ PRG-to-PLC FLAG #016 : STP 016

Line#307

label:

comment: user comment for line #0307

Time Delay: 1 seconds

Line#308

label:

comment: user comment for line #0308

Set/Clear Flag Bit -- CLEAR STP 001

CLEAR SEQ PRG-to-PLC FLAG #001 : STP 001

Line#309

label:

comment: user comment for line #0309

Wait for Input / Flag -- PTS 035 -- Logic 0

Conditional Operand: PLC-to-SEQ PRG FLAG #035 : PTS 035

Continue on Logic 0 (normally-closed)

Do NOT Enable PLC Commanded JOG Motion while Waiting

Line#310

label:

comment: user comment for line #0310

Set/Clear Flag Bit -- CLEAR STP 016

CLEAR SEQ PRG-to-PLC FLAG #016 : STP 016

Line#311

label:

comment: user comment for line #0311

Set Command Position = Actual -- Zero Following Error

Line#312

label:

comment: user comment for line #0312

Store Position to Register: PNV 025-CalibPos

Store Absolute ACTUAL Position

Line#313

label:

comment: user comment for line #0313

Inc Position Move -- Distance = -0.250 inch

Vel = 1.00 Acc = 400.0 Dec = 400.0

Trigger #1: No Trigger Event

Trigger #2: No Trigger Event

Line#314

label:

comment: user comment for line #0314

Wait for Input / Flag -- PTS 020 -- Logic 0

Conditional Operand: PLC-to-SEQ PRG FLAG #020 : PTS 020

Continue on Logic 0 (normally-closed)

Do NOT Enable PLC Commanded JOG Motion while Waiting

Line#315

label: NOTORQU2

comment: user comment for line #0315

Return from Subroutine

Line#316

label: CLOSEPOS

comment: user comment for line #0316

Call Subroutine with Start Label: CLOSESET

Line#317

label:

comment: Move to weld position

Set Maximum Torque Limit -- TNV 017 %

Line#318

label:

comment: user comment for line #0318

Set/Clear Flag Bit -- SET STP 001

SET SEQ PRG-to-PLC FLAG #001 : STP 001

Line#319

label:

comment: user comment for line #0319

Velocity Move -- Velocity = 0.75 inch / sec

Acc = 250.0 Dec = 250.0

Trigger #1: PLC-to-PRG Flag #001 Logic One

Action #1 (Trig #1): Terminate Motion Instruction

Action #2 (Trig #1): No Action

Trigger #2: No Trigger Event

Line#320

label:

comment: user comment for line #0320

Store Position to Register: PNV 025-CalibPos

Store Absolute ACTUAL Position

Line#321

label:

comment: user comment for line #0321

Time Delay: 0.5 seconds

Line#322

label:

comment: user comment for line #0322

Inc Position Move -- Distance = -0.500 inch

Vel = 1.00 Acc = 25.0 Dec = 25.0

Trigger #1: No Trigger Event

Trigger #2: No Trigger Event

Line#323

label:

comment: user comment for line #0323

Time Delay: 0.5 seconds

Line#324

label:

comment: Move to weld position

Set Maximum Torque Limit -- TNV 018 %

Line#325

label:

comment: user comment for line #0325

Velocity Move -- Velocity = 0.75 inch / sec

Acc = 250.0 Dec = 250.0

Trigger #1: PLC-to-PRG Flag #001 Logic One

Action #1 (Trig #1): Terminate Motion Instruction

Action #2 (Trig #1): No Action

Trigger #2: No Trigger Event

Line#326

label:

comment: user comment for line #0326

Store Position to Register: PNV 026-

Store Absolute ACTUAL Position

Line#327

label:

comment: user comment for line #0327

Set/Clear Flag Bit -- CLEAR STP 001

CLEAR SEQ PRG-to-PLC FLAG #001 : STP 001

Line#328

label:

comment: user comment for line #0328

Set/Clear Flag Bit -- SET STP 015

SET SEQ PRG-to-PLC FLAG #015 : STP 015

Line#329

label:

comment: user comment for line #0329

Time Delay: 0.5 seconds

Line#330

label:

comment: user comment for line #0330

Wait for Input / Flag -- PTS 020 -- Logic 0

Conditional Operand: PLC-to-SEQ PRG FLAG #020 : PTS 020

Continue on Logic 0 (normally-closed)

Do NOT Enable PLC Commanded JOG Motion while Waiting

Line#331

label:

comment: user comment for line #0331

Return from Subroutine

Line#332

label: CLOSELIM

comment: user comment for line #0332

Call Subroutine with Start Label: CLOSESET

Line#333

label:

comment: Move to weld position

Set Maximum Torque Limit -- 30.0 %

Line#334

label:

comment: user comment for line #0334

Set/Clear Flag Bit -- SET STP 014

SET SEQ PRG-to-PLC FLAG #014 : STP 014

Line#335

label:

comment: user comment for line #0335

Set/Clear Flag Bit -- SET STP 001

SET SEQ PRG-to-PLC FLAG #001 : STP 001

Line#336

label:

comment: user comment for line #0336

Velocity Move -- Velocity = 0.75 inch / sec

Acc = 250.0 Dec = 250.0

Trigger #1: PLC-to-PRG Flag #001 Logic One

Action #1 (Trig #1): Terminate Motion Instruction

Action #2 (Trig #1): No Action

Trigger #2: No Trigger Event

Line#337

label:

comment: user comment for line #0337

Set/Clear Flag Bit -- CLEAR STP 001

CLEAR SEQ PRG-to-PLC FLAG #001 : STP 001

Line#338

label:

comment: user comment for line #0338

Set/Clear Flag Bit -- CLEAR STP 014

CLEAR SEQ PRG-to-PLC FLAG #014 : STP 014

Line#339

label:

comment: user comment for line #0339

Time Delay: 0.5 seconds

Line#340

label:

comment: user comment for line #0340

Store Position to Register: PNV 027-CWLimit

Store Absolute ACTUAL Position

Line#341

label:

comment: user comment for line #0341

Set/Clear Flag Bit -- SET STP 015

SET SEQ PRG-to-PLC FLAG #015 : STP 015

Line#342

label:

comment: user comment for line #0342

Wait for Input / Flag -- PTS 020 -- Logic 0

Conditional Operand: PLC-to-SEQ PRG FLAG #020 : PTS 020

Continue on Logic 0 (normally-closed)

Do NOT Enable PLC Commanded JOG Motion while Waiting

Line#343

label:

comment: user comment for line #0343

Return from Subroutine

Line#344

label: CAPCHECK

comment: user comment for line #0344

Call Subroutine with Start Label: CLOSESET

Line#345

label:

comment: user comment for line #0345

Set/Clear Flag Bit -- CLEAR STP 012

CLEAR SEQ PRG-to-PLC FLAG #012 : STP 012

Line#346

label:

comment: Move to weld position

Set Maximum Torque Limit -- 30.0 %

Line#347

label:

comment: user comment for line #0347

Set/Clear Flag Bit -- SET STP 001

SET SEQ PRG-to-PLC FLAG #001 : STP 001

Line#348

label:

comment: user comment for line #0348

Velocity Move -- Velocity = 0.75 inch / sec

Acc = 250.0 Dec = 250.0

Trigger #1: PLC-to-PRG Flag #001 Logic One

Action #1 (Trig #1): Terminate Motion Instruction

Action #2 (Trig #1): No Action

Trigger #2: No Trigger Event

Line#349

label:

comment: user comment for line #0349

Set/Clear Flag Bit -- CLEAR STP 001

CLEAR SEQ PRG-to-PLC FLAG #001 : STP 001

Line#350

label:

comment: user comment for line #0350

Position Compare - Branch Label: GOODTOGO

Comparison: Actual Position < PNV 029

Line#351

label:

comment: user comment for line #0351

Set/Clear Flag Bit -- SET STP 012

SET SEQ PRG-to-PLC FLAG #012 : STP 012

Line#352
label: GOODTOGO
comment: user comment for line #0352
Set/Clear Flag Bit -- SET STP 015
SET SEQ PRG-to-PLC FLAG #015 : STP 015

Line#353
label:
comment: user comment for line #0353
Time Delay: 0.5 seconds

Line#354
label:
comment: user comment for line #0354
Wait for Input / Flag -- PTS 020 -- Logic 0
Conditional Operand: PLC-to-SEQ PRG FLAG #020 : PTS 020
Continue on Logic 0 (normally-closed)
Do NOT Enable PLC Commanded JOG Motion while Waiting

Line#355
label:
comment: user comment for line #0355
Return from Subroutine

Line#356
label: NOTPOS
comment: user comment for line #0356
Set/Clear Flag Bit -- SET STP 013
SET SEQ PRG-to-PLC FLAG #013 : STP 013

Line#357
label:
comment: user comment for line #0357
Time Delay: 0.01 seconds

Line#358
label:
comment: user comment for line #0358
Set/Clear Flag Bit -- CLEAR STP 013
CLEAR SEQ PRG-to-PLC FLAG #013 : STP 013

Line#359
label:
comment: user comment for line #0359
Set/Clear Flag Bit -- SET STP 020
SET SEQ PRG-to-PLC FLAG #020 : STP 020

Line#360
label:
comment: user comment for line #0360
Return from Subroutine

NOTES