

RAST2.5 SEMI-AUTOMATIC TERMINATOR MACHINE
For Appli-Mate™ Connectors
Instruction Manual
Order No. 62300-6200



- Description
- Operation
- Maintenance

WARNING

NEVER USE THIS FIXTURE WITHOUT THE GUARDING OR OTHER SAFETY DEVICES IN PLACE, GUARD DOORS CLOSED AND GUARD OVERRIDE SWITCHED "OFF".

FIXTURE GUARDING IS DESIGNED TO PREVENT HANDS FROM REMAINING IN THE DANGER AREAS OF THE FIXTURE.

RUNNING THIS FIXTURE WITHOUT GUARDS, UNDER ANY CIRCUMSTANCES, CAN CAUSE SERIOUS INJURY.

NEVER OPERATE, SERVICE OR ADJUST THIS FIXTURE WITHOUT PROPER INSTRUCTION AND WITHOUT FIRST READING AND UNDERSTANDING THE INSTRUCTIONS IN THE OPERATING MANUAL.

NEVER SERVICE THIS FIXTURE WHILE IT IS CONNECTED TO ANY ELECTRICAL POWER SOURCE. DISCONNECT POWER BY SWITCHING OFF THE MAINS ISOLATOR.

WORK SAFELY AT ALL TIMES

**For Service, Contact Your
Local Molex Sales Office**

**Molex Application Tooling Group
2200 Wellington Court
Lisle, Illinois 60532
Tel: 630-969-4550
Fax: 630-505-0049**

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Section 1

General Description

- 1.1. Description
- 1.2. Technical Specifications
- 1.3. Applicable Products and Wires
- 1.4. Delivery Check
- 1.5. Ce Compliance

1.1 Description

The 62300-6200 APPLI-MATE™ (Rast 2.5) Semi-Automatic Terminator Machine, is designed to terminate the APPLI-MATE™ (Rast 2.5) female connector series (See Section 6) onto discrete wire (0.22 mm² or 0.38 mm²). This machine will accommodate circuit size 2 through 20.

1.2 Technical Specifications

Power Specifications:

To function correctly, these fixtures require the following services:

Electrical Service

115/220 VAC 50/60 HZ 1 Phase 2 AMPS

Pneumatic Service

6 BAR (85 psi) Minimum Clean, Dry and Filtered Air Source

Pressure Gauge Settings

Main supply to machine - 6 BAR (85 psi)

1.3 Applicable Products And Wires

Connectors

Appli-Mate™ RAST 2.5 connector series 90871, 90872, 91716, 91717, and 92332. See Connector Chart in Section 6.

Wires

Conductor: 0.22mm² or 0.38mm²
Insulation outer diameter: 1.60mm maximum

1.4 Delivery Check

Carefully remove this machine from its shipping container and determine that the following items are included in the package.

Order No.

62300-6200 Semi-Automatic Terminator Machine for APPLI-MATE™ (Rast 2.5)

ATS-623006200 Instruction Manual

1.5 CE Compliance

Complies with the general health and safety requirements in accordance with:

- Council Directive 98/37/EEC
- Council Directive 89/336/EEC and amended by 92/31/EEC
- Council Directive 73/23/EEC

This machinery has been designed and manufactured in accordance with the following transposed harmonised European standards.

- EN292: parts 1 and 2: 1991, Safety of Machinery - Basic concepts, general principles for design.
- EN294: 1992, Safety of Machinery - Safety distances to prevent danger zones reached by the upper limbs.
- EN349: 1993, Safety of Machinery - Minimum gaps to avoid crushing of parts of the human body.
- EN418: 1992, Safety of Machinery - Emergency stop equipment, functional aspects - Principles for design.
- EN60204 part 1: 1993, Safety of Machinery - Electrical equipment of machines - Specification for general requirements.

Section 2

Start-Up / Shut Down Procedures

- 2.1. General Operation
- 2.2 Machine Operation and Process Flow
- 2.3 Operator Set Up And Functions

2.1 General Operation

2.1.1 Preliminary

1. Connect air supply to fixture. Use 6mm nylon air hose in the quick-fitting.
2. Turn on mains power Isolator.
3. Release Emergency-stop push buttons if necessary.

2.1.2 System Start-Up (When above conditions are met)

1. Reset the power by pushing the Reset button.
2. Wait approximately 5 seconds for the air supply to reach operating pressure.
3. Home the sensor motor. See section 4.1 (screen 5).
4. Enter the circuit size. See section 4.1.
5. Press Start button.

2.1.3 Start-Up Following A Fault

1. Identify the fault on the touch screen.
2. Correct fault.
3. Reset the power by pushing the Reset button.
4. Wait approximately 5 seconds for the air supply to reach operating pressure.
5. Home the sensor motor.
6. Press Start button.

2.1.4 Start-Up After An Emergency Stop Or Guard Interrupt

1. Release Emergency Stops or close guard doors.
2. Press Reset button on operator panel.
3. Wait approximately 5 seconds for the air supply to reach operating pressure.
4. Home the sensor motor.
5. Press Start button on operator panel

2.1.5 Start-Up After A Power Failure

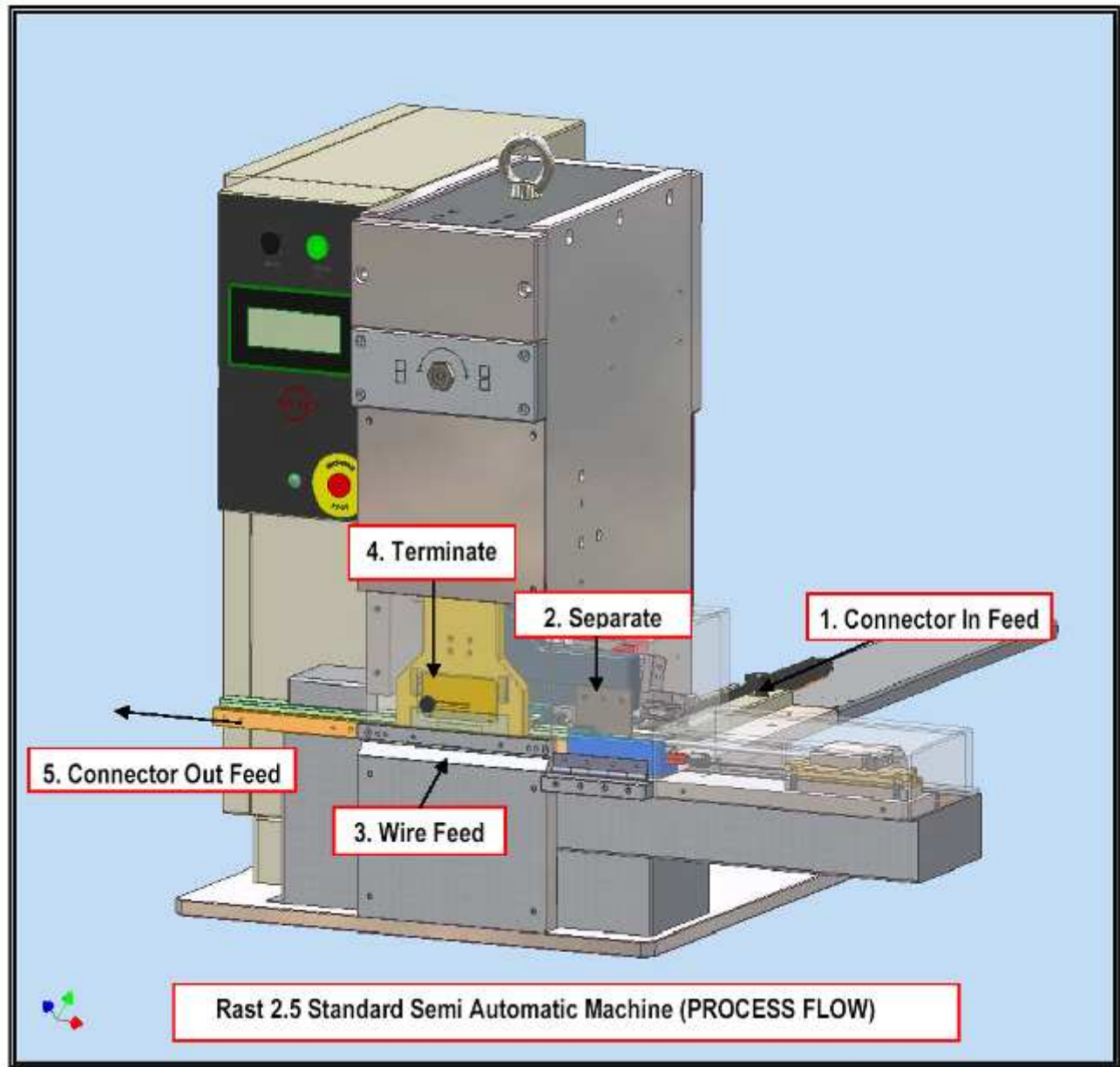
1. Release Emergency Stops or close guard doors.
2. Press Reset button on operator panel.
3. Wait approximately 5 seconds for the air supply to reach operating pressure.
4. Home the sensor motor.
5. Enter the Circuit size.
6. Press Start button on operator panel

2.1.6 System Shut Down

1. Press the Emergency Stop button.
2. For extended periods of shutdown (i.e. Holidays), switch off the Mains Isolator.

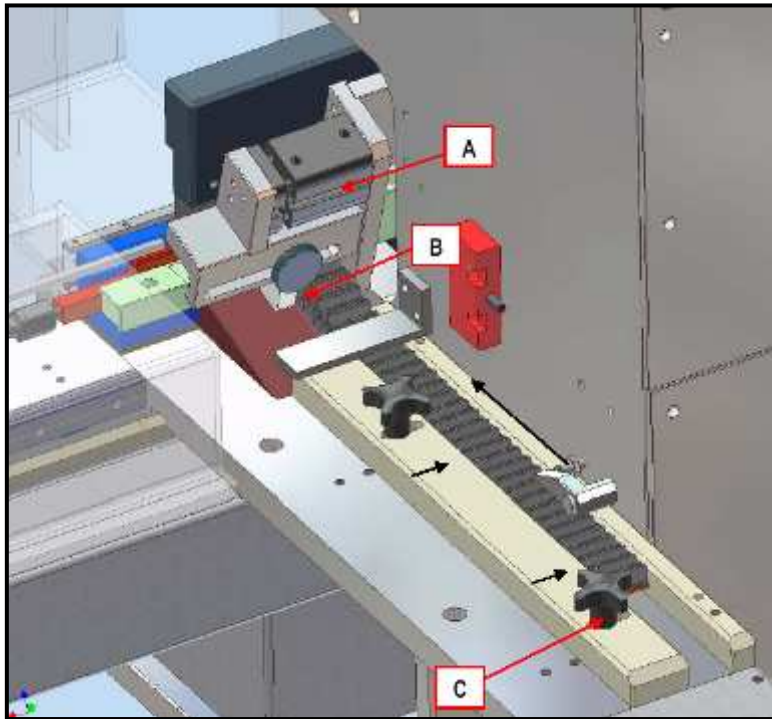
CAUTION: NEVER OPERATE THIS FIXTURE WITHOUT GUARDS IN PLACE.

2.2 Semi-Automatic Terminator Machine Operation and Process Flow



2.2.1 Connector Infeed

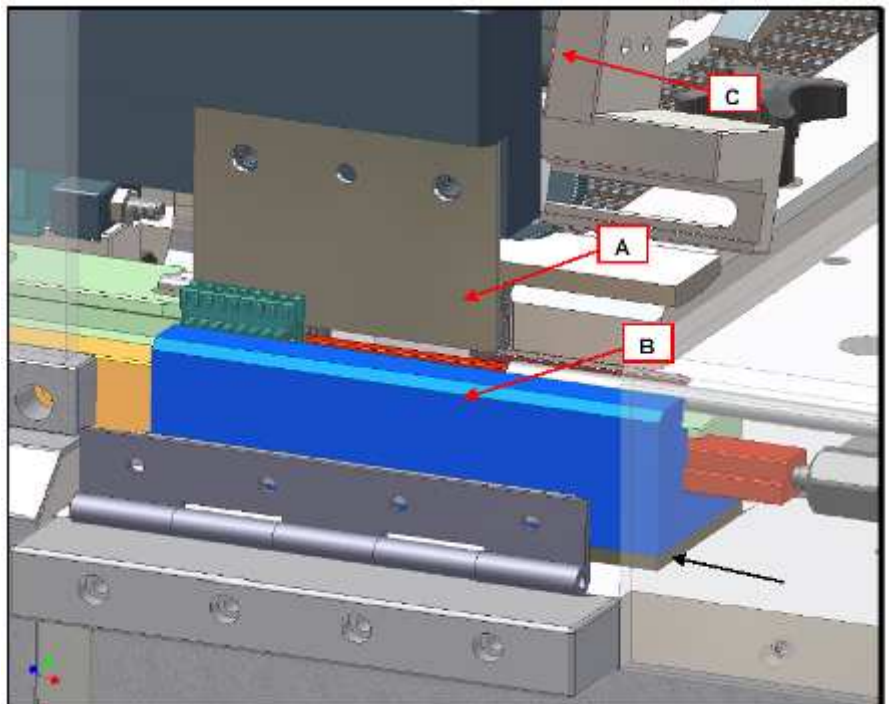
The strips of connectors are inserted into the adjustable locator. For operator instruction see *section 2.3. (operator set up and functions)* The gripper then clamps the connectors and transports it into the next part of the process, the cut station. This machine is designed to run one chain of connectors at a time. Connector chains should not be stacked side-by-side.



- A Clamping Cylinder
- B Knurled Screw to tighten/release the adjustable gripper jaw
- C Clamp Screw

2.2.2 Connector Separate (Cut Loose)

1. In the automatic mode the connectors are transferred to the cut station by the connector feed cylinder.
2. The cut support track automatically moves in behind the first row of connectors.
3. The cut blade separates the first row of connectors from the chain, so it can be fed to the next station.
(The connector feed cylinder remains forward until after the cut.)
4. Note: Cutting loose happens simultaneously with termination.

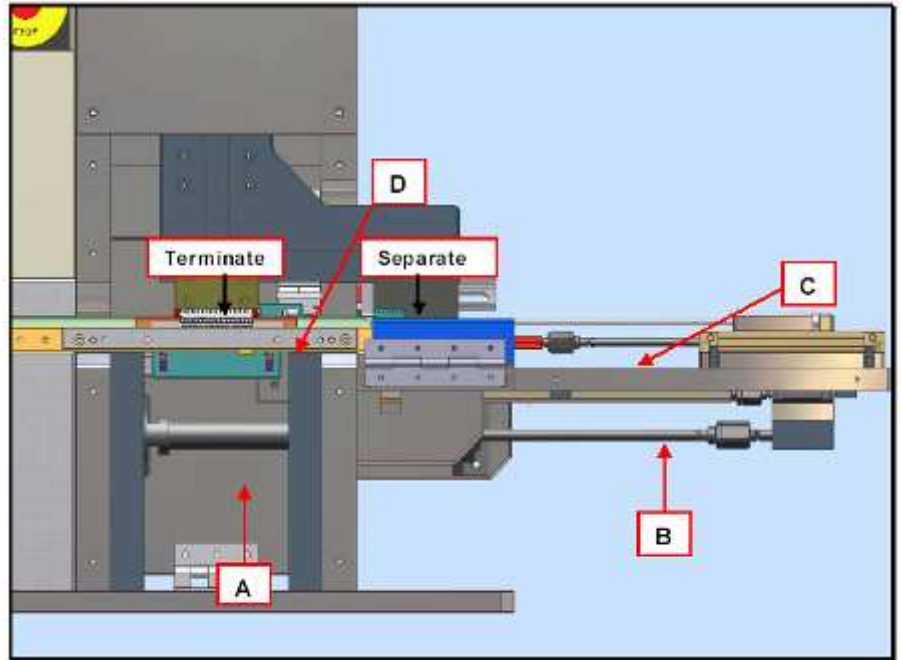


- A Cut Loose Blade
- B Cut Support Track
- C Connector Feed Cylinder

2.2.3 Connector Transfer

1. After a row of connectors has been separated they are transferred to the termination position.
2. After a connector has been inserted with wires and has been terminated the finished assembly is transferred out of the terminating station while the newly separated connector enters.
3. The connector transfer and the out feed are one motion.

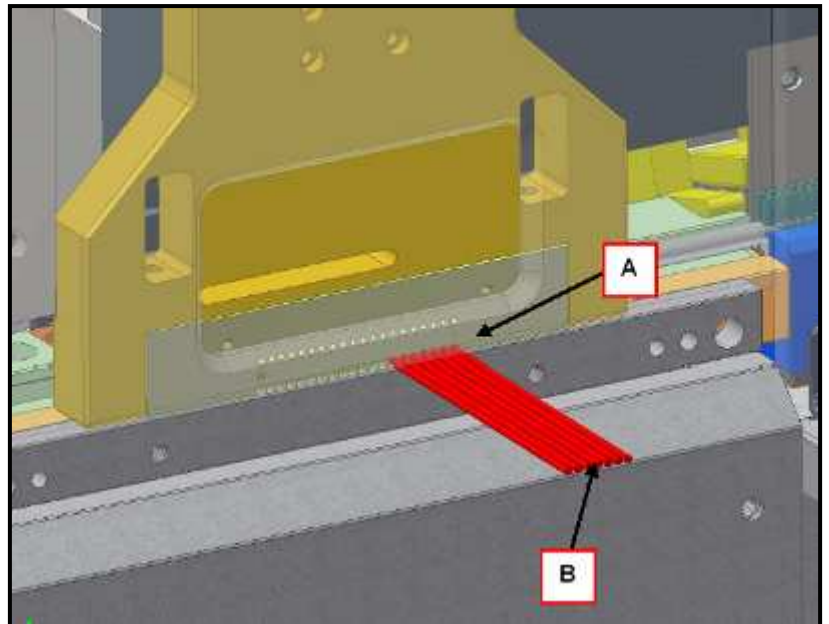
- A Transfer Cylinder
- B Connecting Rod
- C Transfer Rod
- D Out feed Pawl



2.2.4 Wire Feed (Mask Tooling)

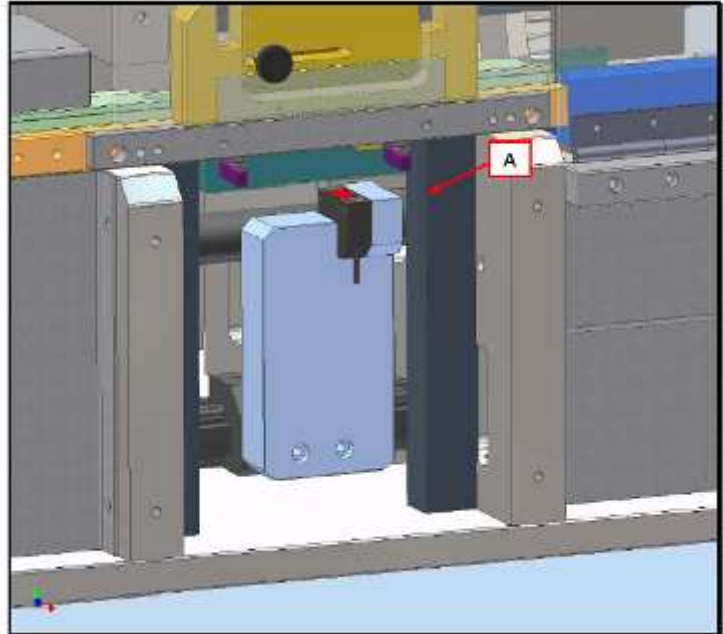
1. After the connector has been transferred from the cut station to the termination station the operator manually inserts the wires into the connector.
2. This is aided by using a numbered plate (mask tooling) that slides down in front of the connector.
3. This slide centers the connector with location tooling on the mask tooling.
4. The operator can then use the mask tooling to guide the wires into the connector. See Section 2.3.4 (operator set up and functions)

- A Mask Tooling (numbered plate)
- B Manually inserted wires



2.2.5 Wire Feed (Laser Sensor)

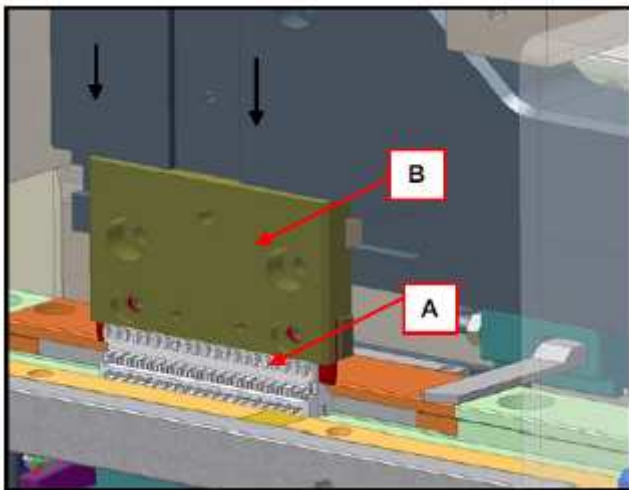
1. The Inserted wires push out a spring loaded pin at the back of the housing. A Laser Sensor senses the movement of the pin.
2. According to the connector circuit size and corresponding program selected by the operator (See section 2.3.4) the machine detects when the correct amount of wires have been inserted successfully.
3. After all wires have been inserted successfully, the machine automatically terminates the connector.



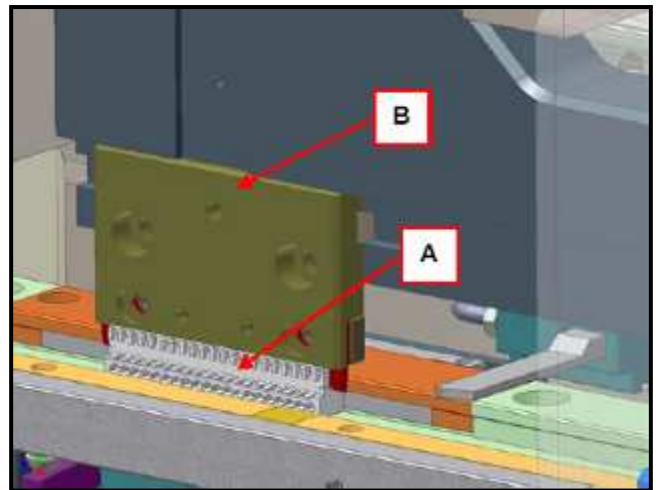
A Laser Sensor

2.2.6 Termination Station

1. The connector is automatically terminated after all the wires have been inserted correctly.
2. The termination tool moves downwards and closes the connector, terminating the inserted wires.
3. At the same time a new row of connectors is being cut free from the chain.
4. The out feed pawl then removes the finished assembly to the end of the track.



A Open Connector
B Termination Tool



A Closed Connector
B Termination Tool

2.3 Operator Set-Up and Functions

2.3.1 Machine Run

To Power Up

1. Turn on main disconnect switch on electrical cabinet door.
2. Touch screen will reset.
3. Laser sensor motor will automatically home itself or request operator to press home button.

To Set Up (Touch Screen)

1. Press "Manual"
2. Press "Set up"
3. Select circuit size (3 – 20)
4. Select positions of wires to be inserted and choose the language.
5. Press "main" to return to start screen.

To Load Connector

1. Press "Manual"
2. Press "Hsg feed open"
3. Press "Hsg cut support"
4. Feed connectors manually to touch face of cut support blade. See section 2.3.3
5. Press "Hsg feed grip"
6. Press "Main"
7. Press "Load"
8. Terminator Machine will automatically feed connectors to cut position.

To Start Run

1. Press "Start"
2. The first connector will be cut the fed to termination position.
3. Mask tooling will lower
4. Operator must manually insert wires into connector. See section 2.3.4. Touch screen will prompt operator position of each wire.

To Correct An Incorrectly Inserted Wire

1. Cycle can be stopped if wrong wire is put into wrong slot by pressing "REDO"
2. Mask tooling will rise allow removal of wire.
Note: other wires may fall out of the connector and may need to be re-inserted.
3. Press "REDO" to restart cycle.

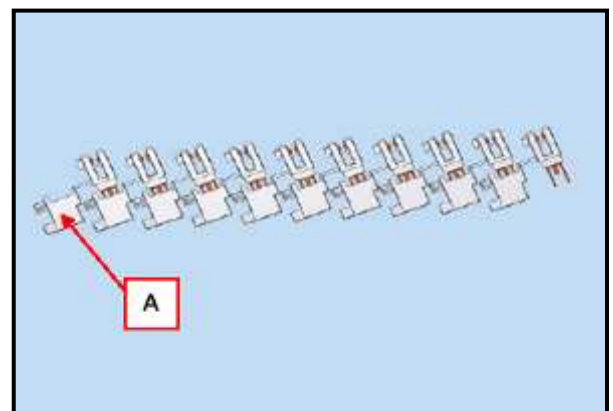
Note: A wire must be inserted for functions "STOP" or "REDO" to be available on the touch screen.

For detailed explanations of touch screens see SECTION 4.

2.3.2 Material Supply

1. The connectors are supplied in continuous chains and can be connected or disconnected at the trailing end of the chain.
2. A sensor detects when the machine is running low on connectors.
3. The operator then connects the upper housing of the chain in the machine into the lower housing of the new chain. The connector splicing tool should be used to ensure the proper pre-load height.

The operator **MUST** remove the first part of the connector at the beginning of the strip of connectors to be fed into the machine. The strips must begin with a complete connector.



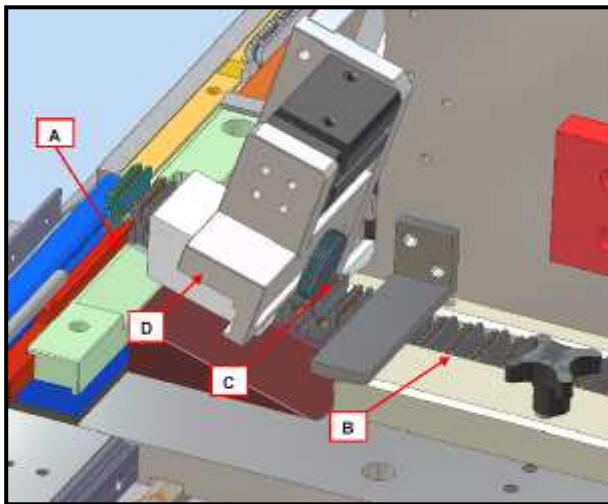
A Removed when loading an empty machine

2.3.3 Setting Up Connector Feed

1. When circuit size is changed the connector feed must be set up.
2. Adjust the guide rail to suit the width of the connectors. This can be set up to 20 positions.

The rail can be moved by opening the clamp screws and simply sliding the rail lightly against the connector chain as shown. The connectors must be able to slide easily. Retighten the clamp screws.

3. Loosen the knurled screw at the clamping cylinder and slide the gripper jaw as far as possible to the right.
4. Insert a strip of connectors into the machine until they bottom out against the cut support track.
5. Slide the gripper jaw to within approximately 2mm of the connectors and tighten the knurled screw.
6. Select the circuit size with wire quantity and position on the touch screen and start the machine. (See Section 2.3.5)



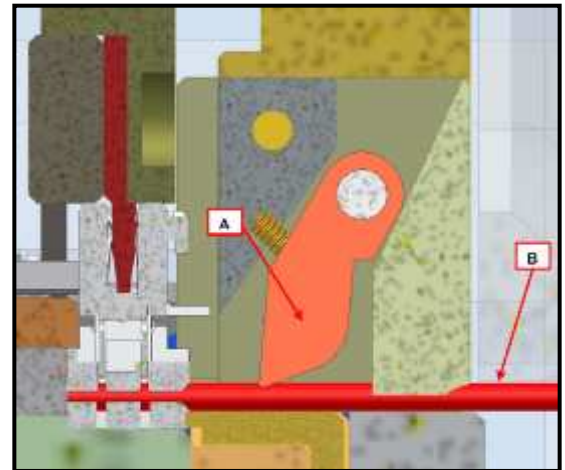
- A Cut Support Track
- B Guide Rail
- C Knurled Screw
- D Gripper Jaw

2.3.4 Wire Feed

1. The Operator must manually insert each connector circuit size with corresponding number of wires.
2. As explained in Section 2.2.5 the operator uses a numbered guide as an aid to insert the wires into the connector. The touch screen prompts the operator to the number slot on the guide to place each wire.
3. After the operator has correctly inserted the wire at the correct position an audio tone will sound, an LED will illuminate, and the operator can

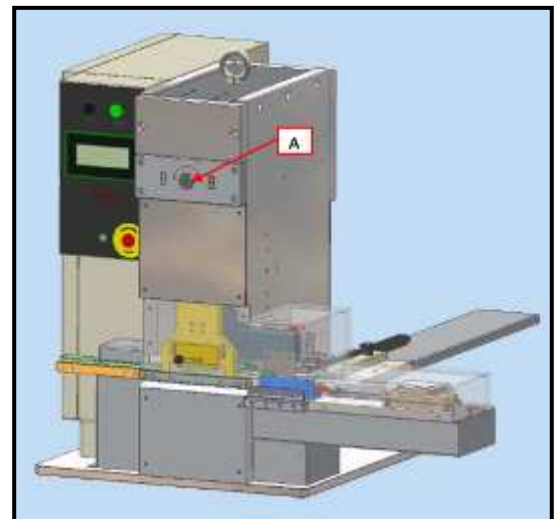
move to the next position (prompted on the touch screen).

4. The mask tooling has spring loaded inserts which will keep the wires held in position until the connector has been terminated. After the wire is inserted, do not attempt to pull the wire out as the clamp grip may damage the wire. If an insertion error occurs, it is best to use the REDO function.



- A Spring Loaded Wire Clamp
- B Fully inserted Wire

2.3.5 Termination Shut Height Adjustment



- A Shut Height Fine Adjustment Screw

1. The termination shut height may be easily adjusted from the front of the machine.
2. Use a 24mm open-end wrench and an 8mm hex key to finely adjust the shut height.
3. The adjustment screw is situated at the front of machine as shown.

2.3.6 Program Selection (Circuit Size)

1. When circuit size (or number of wires loaded) changes, the program must be changed on the touch screen.
2. The following procedure must be followed when setting up for a new program and circuit size as well as setting up new connector feed. See section 2.3.2.
3. On the touch screen:
 - a. From Ready to Run. Press “Manual”
 - b. From Manual. Press “Set Up”
 - c. From Set Up. “Enter circuit size.” Keypad will appear. Select desired circuit size (3-20 circuit). Size will be displayed on circuit size line.
 - d. From Set Up. Press “Next”
 - e. Select Wire Positions 1-10. Press the number and Y and N will toggle in the box above the number. Y= Wire Present, N= No Wire. Ensure that unused circuit positions

have N. Press “Next” to set up Wire Positions 11-20. Repeat for wires 11-20.

- f. From Select Wire Positions. Press “Main” to return to Ready to Run.
- g. Press “Start” to run automatically. Press “Load” to feed a housing into the feed track.

2.3.7 Machine Errors / Faults

The Operator is responsible for ensuring that machine errors / faults are corrected immediately. If the operator is unable to locate or resolve the fault, they should seek assistance from the line Technician.

See Section 4 for a full listing of faults.

2.3.8 Finished Product

The operator will ensure that the finished products are removed from the end of the machine.

Section 3

Message Fault Display and Maintenance

3.1 Fault Displays

3.2 Maintenance

3.3 Perishable Tooling

3.4 Spare Parts

3.1 Fault Displays

3.1.1 Name and Functions

Name	Location	Function
Emergency Stop (Red Mushroom knob on yellow background)	LH side of machine. (Control Box)	To stop fixture immediately as well as isolating the mains power and air from the fixture.
Power On Lamp (Green Lamp)	Centre of machine. (Control Box).	To Indicate that the machine is ready to run.
Reset Button (Blue Switch)	LH side of machine. (Control Box)	To connect mains power and air to the machine.

3.1.2 Description Of Indicators

Name	Indicator	Description
LED (Green)	Solid Green	Wire inserted
Speaker	Audible "beep"	Wire inserted

3.2 Maintenance

3.2.1 Cleaning

The RAST2.5 Semi-Automatic Terminator Machine should be cleaned at least once a day with a soft brush to remove dust and debris.

CAUTION: Using compressed air to clean the Terminator is not recommended as debris could become jammed in the tooling and/or come flying out at the operator

3.2.2 Lubrication

The press requires regular lubrication on a monthly basis. Place a small amount of lubricant with Teflon, such as Permatex "Superlube", on the sliding surfaces.

An example of a maintenance chart is shown below. Copy and use this chart to track the maintenance of your Terminator or use this as a template to create you own schedule or use your company's standard chart, if applicable.

3.2.3 Preventive Maintenance Chart

Time	Maintenance
Daily	Clean all tooling in the following areas
	<ul style="list-style-type: none"> ✓ Slides ✓ Cylinders
Weekly	✓ Check out tooling for signs for of wear.
	✓ Check cutting and termination tools for signs of wear.
	✓ Check condition of slides.
	✓ Check that the air regulator is set to 6 Bar (85 psi).
	✓ Ensure all shock absorbers and stops are tight.
Monthly	✓ Wipe down all tooling in the following areas: slides, cylinders, and carriage rails.
	✓ Carry out Weekly PM.
	✓ Check slide for excessive play (tighten as necessary).
	✓ Check condition of all shock absorbers and stops.
	✓ Check out functionality of all sensors.
	✓ Check for air leaks, loose fittings, damaged airlines, and gauges.
6 Months	✓ Check General condition of all tooling.
	✓ Carry out Monthly Preventative Maintenance.

3.3 Perishable Parts

Customers are responsible for maintaining the The RAST 2.5 Semi-Automatic Terminator Machine. Perishable parts are those parts that come in contact with the product and will wear out over time. Molex recommends that all customers keep at least one set of the perishable tool kits in stock at all times. This will reduce the amount of production down time. These parts are identified in the Parts List below.

Perishable Tooling List

Part No.	Description	Quantity
62300-6201	Housing Cut Blade	1
62300-6202	Termination Tool	1
62300-6203	Termination Support Blade	1
62300-6204	Termination Support Blade (side latches)	1
62300-6205	Wire Detect Pin	1

3.4 Spare Parts

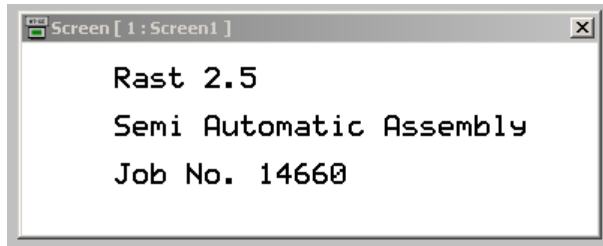
Customers are responsible for maintaining the The RAST 2.5 Semi-Automatic Terminator Machine. Spare parts are available. Moving and functioning parts can be damaged or wear out over time and will require replacement. See assembly drawings and parts lists in Section 5 for additional detail.

Section 4

Touch Screens and Troubleshooting

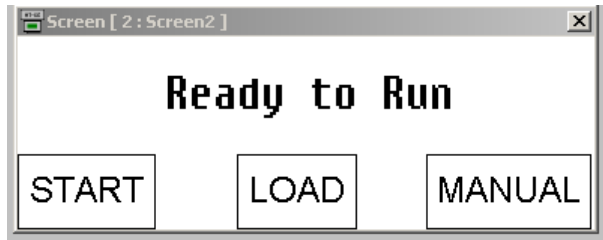
Touch Screens

Screen 1 Start Up Screen



This screen appears after the machine has been powered up. It is only an information screen.

Screen 2 Ready to Run Screen



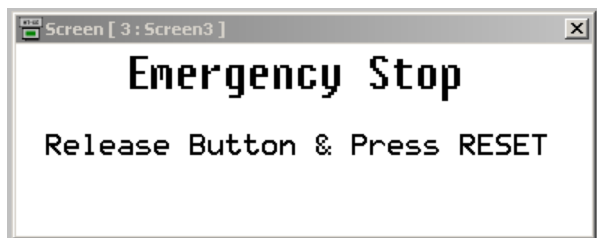
This screen is displayed when the machine is stopped and there are no fault conditions. It has 3 buttons located on the bottom.

START: This button starts the machine.

LOAD: When there is no housing in the feed track, press this button to automatically move a part into the feed track.

MANUAL: Selects manual mode and changes the screen to the Manual #1 [Screen 30].

Screen 3 Emergency Stop Screen



This screen is displayed when the Emergency Stop button has pressed. It also appears after power up and after the Safety Guard Open screen, when the

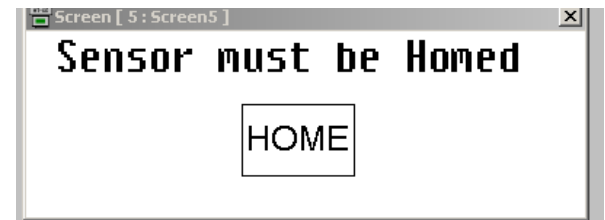
door has been closed. Release the Emergency Stop button and press the blue reset button on the main Panel.

Screen 4 Safety Guard Open Screen



This screen is displayed when the safety guard is open. Close the guard and press the blue reset button on the main panel.

Screen 5 Sensor must be Homed Screen



This is displayed after the machine has been reset. The stepper motor that drives the laser sensor must be homed after a power loss or Emergency Stop to ensure it is in the correct position to detect the wires. Press the **HOME** button and it will home automatically. When the sensor reaches the home position, the Ready to Run screen will be displayed.

Screen 6 Running Screen



This screen is displayed when the machine is running in automatic mode.

Parts Made: Displays how many parts have been made in the current batch.

Insert Wire into Position: Displays the position where the current wire is to be inserted.

STOP: This button stops the automatic mode. The operator must finish inserting all wires into the connector and terminate the connector before the end of cycle is reached.

REDO: This button allows the operator to correct an error on the existing connector. The mask tooling will go up, the wire(s) can be removed and the sensor motor will go to home position. Screen 9 will be displayed when this button is pressed.

Screen 7

Waiting to Stop Screen



This screen is displayed after the stop button has been pressed and before the current cycle has been completed.

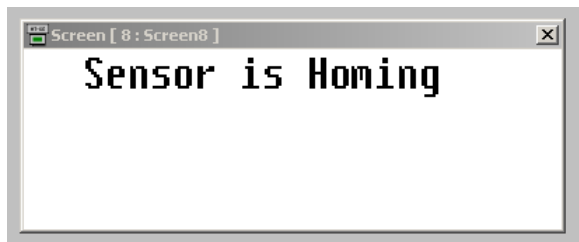
Parts Made: Displays how many parts have been made in the current batch.

Insert Wire into Position: Displays the position where the current wire is to be inserted.

REDO: This button allows the operator to correct an error on the existing housing. The mask tooling will go up, the wires can be removed and the sensor motor will go to home position. Screen 9 will be displayed when this button is pressed.

Screen 8

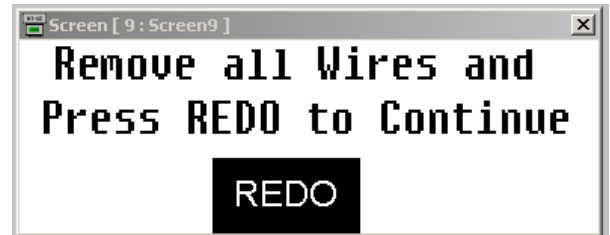
Sensor is Homing Screen



This screen is displayed after the Home Sensor Button has been pressed on Screen 5. When the sensor reaches the home position the Ready to Run Screen will be displayed.

Screen 9

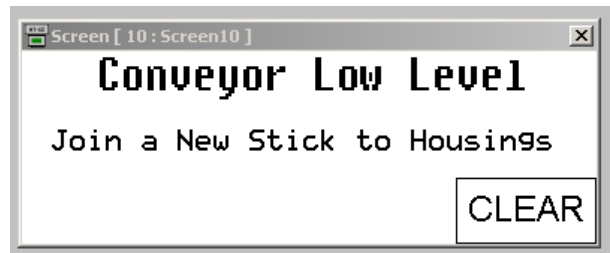
Redo Screen



This screen appears after REDO has been pressed on either Screen 6 or 7. When all the wires have been removed, press REDO to return to Screen 6 or 7.

Screen 10

Conveyor Low Level Fault Screen



This screen is displayed when the connector conveyor level is low. Join another chain to the existing chain and press the CLEAR button to continue.

Screen 11

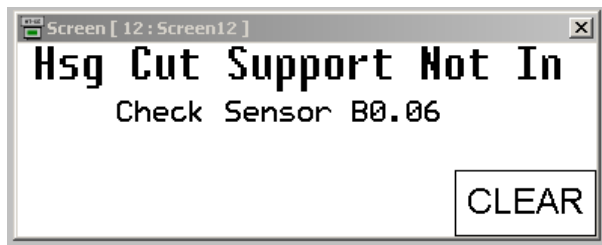
Housing Cut Support not Out Fault Screen



This screen is displayed when the Housing Cut Support Cylinder fails to activate sensor B0.05. Check to see if the tooling jammed or if something is

stopping the cylinder from completing its stroke. Clear the fault and press **CLEAR** button. Air may have to be removed from the machine to clear the fault either by pressing Emergency Stop, opening the guard door or disconnecting the air supply. If any of these are done their respective faults (“Emergency Stop”, “Safety Guard Open”, or “Air Pressure Low”) will take precedence on the display.

Screen 12
Housing Cut Support Not In Fault Screen.



This screen is displayed when the Housing Cut Support Cylinder fails to activate sensor B0.06. Check to see if the tooling jammed or if something is stopping the cylinder from completing its stroke. Clear the fault and press **CLEAR** button.

Air may have to be removed from the machine to clear the fault either by pressing Emergency Stop, opening the guard door or disconnecting the air supply. If any of these are done their respective faults (“Emergency Stop”, “Safety Guard Open”, or “Air Pressure Low”) will take precedence on the display.

Screen 13
Housing Feed not Back Fault Screen



This screen is displayed when the Housing Feed Cylinder fails to activate sensor B0.10. Check to see if the tooling jammed or if something is stopping the cylinder from completing its stroke. Clear the fault and press **CLEAR** button.

Air may have to be removed from the machine to clear the fault either by pressing Emergency Stop, opening the guard door or disconnecting the air supply. If any of these are done their respective faults (“Emergency Stop”, “Safety Guard Open”, or “Air Pressure Low”) will take precedence on the display.

Screen 14
Housing Feed not Forward Fault Screen



This screen is displayed when the Housing Feed Cylinder fails to activate sensor B0.11. Check to see if the tooling jammed or if something is stopping the cylinder from completing its stroke. Clear the fault and press **CLEAR** button.

Air may have to be removed from the machine to clear the fault either by pressing Emergency Stop, opening the guard door or disconnecting the air supply. If any of these are done their respective faults (“Emergency Stop”, “Safety Guard Open”, or “Air Pressure Low”) will take precedence on the display.

Screen 15
Housing Feed Gripper not Closed Fault Screen



This screen is displayed when the Housing Feed Gripper Cylinder fails to activate sensor B0.09. Check to see if the tooling jammed or if something is stopping the cylinder from completing its stroke. Clear the fault and press **CLEAR** button.

Air may have to be removed from the machine to clear the fault either by pressing Emergency Stop, opening the guard door or disconnecting the air supply. If any of these are done their respective faults (“Emergency Stop”, “Safety Guard Open”, or “Air Pressure Low”) will take precedence on the display.

Screen 16

Housing Feed Gripper Cylinder not Open Fault Screen



This screen is displayed when the Housing Feed Gripper Cylinder fails to deactivate sensor B0.09. Check to see if the tooling jammed or if something is stopping the cylinder from completing its stroke. Clear the fault and press **CLEAR** button.

Air may have to be removed from the machine to clear the fault either by pressing Emergency Stop, opening the guard door or disconnecting the air supply. If any of these are done their respective faults (“Emergency Stop”, “Safety Guard Open”, or “Air Pressure Low”) will take precedence on the display.

Screen 17

Housing Stick Feed not Back Fault Screen



This screen is displayed when the Housing Stick Feed Cylinder fails to activate sensor B0.07. Check to see if the tooling jammed or if something is stopping the cylinder from completing its stroke. Clear the fault and press **CLEAR** button.

Air may have to be removed from the machine to clear the fault either by pressing Emergency Stop, opening the guard door or disconnecting the air supply. If any of these are done their respective faults (“Emergency Stop”, “Safety Guard Open”, or “Air Pressure Low”) will take precedence on the display.

Screen 18

Housing Stick Feed not Forward Fault Screen



This screen is displayed when the Housing Stick Feed Cylinder fails to activate sensor B0.08. Check to see if the tooling jammed or if something is stopping the cylinder from completing its stroke. Clear the fault and press **CLEAR** button.

Air may have to be removed from the machine to clear the fault either by pressing Emergency Stop, opening the guard door or disconnecting the air supply. If any of these are done their respective faults (“Emergency Stop”, “Safety Guard Open”, or “Air Pressure Low”) will take precedence on the display.

Screen 19

Mask Tooling not Up Fault Screen



This screen is displayed when the Mask Tooling Cylinder fails to activate sensor B1.00. Check to see if the tooling jammed or if something is stopping the cylinder from completing its stroke. Clear the fault and press **CLEAR** button.

Air may have to be removed from the machine to clear the fault either by pressing Emergency Stop, opening the guard door or disconnecting the air supply. If any of these are done their respective faults (“Emergency Stop”, “Safety Guard Open”, or “Air Pressure Low”) will take precedence on the display.

Screen 20
Mask Tooling not Down Fault Screen



This screen is displayed when the Mask Tooling Cylinder fails to activate sensor B1.01. Check to see if the tooling jammed or if something is stopping the cylinder from completing its stroke. Clear the fault and press **CLEAR** button.

Air may have to be removed from the machine to clear the fault either by pressing Emergency Stop, opening the guard door or disconnecting the air supply. If any of these are done their respective faults (“Emergency Stop”, “Safety Guard Open”, or “Air Pressure Low”) will take precedence on the display.

Screen 21
Termination Tooling not Up Fault Screen



This screen is displayed when the Termination Tooling Cylinder fails to activate sensor B1.02. Check to see if the tooling jammed or if something is stopping the cylinder from completing its stroke. Clear the fault and press **CLEAR** button.

Air may have to be removed from the machine to clear the fault either by pressing Emergency Stop,

opening the guard door or disconnecting the air supply. If any of these are done their respective faults (“Emergency Stop”, “Safety Guard Open”, or “Air Pressure Low”) will take precedence on the display.

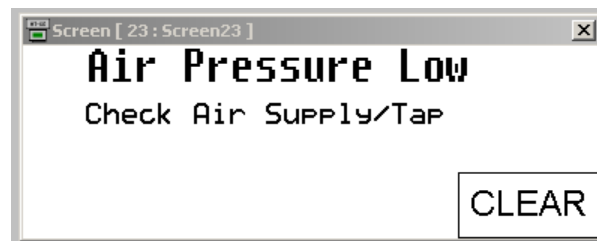
Screen 22
Termination Tooling not Down Fault Screen



This screen is displayed when the Termination Tooling Cylinder fails to activate sensor B1.03. Check to see if the tooling jammed or if something is stopping the cylinder from completing its stroke. Clear the fault and press **CLEAR** button.

Air may have to be removed from the machine to clear the fault either by pressing Emergency Stop, opening the guard door or disconnecting the air supply. If any of these are done their respective faults (“Emergency Stop”, “Safety Guard Open”, or “Air Pressure Low”) will take precedence on the display.

Screen 23
Air Pressure Low Fault Screen

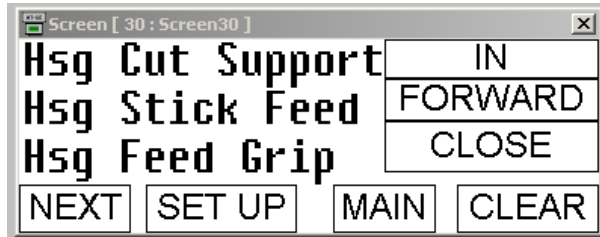


This screen is displayed when the Air Pressure coming to the Machine is Low. Check the following:

1. Factory Air Pressure is OK.
2. Air is connected to the machine.
3. Air Isolating Valve is turned on.
4. Air Pressure is set to 6.0 bar (85 psi)
5. Air Safety valve is on.
6. Air Leaks.

Screen 30
Manual Screen #1

This screen is displayed when Manual has been selected from the Ready to Run Screen or PREV has been selected from the Manual #2 Screen.



Hsg Cut Support Button: This button allows manual operation of the Housing Cut Support Cylinder. Pressing the button once will extend the cylinder (out); pressing it again will retract the cylinder (in). The text on the button will change between **IN** and **OUT** as the button is pressed.

Hsg Stick Feed Button: This button allows manual operation of the Housing Stick Feed Cylinder. Pressing the button once will extend the cylinder (out); pressing it again will retract the cylinder (in). The text on the button will change between **FORWARD** and **BACK** as the button is pressed. The cylinder can only move Forward if the Housing Cut Support is out and can only move Back if the Housing Feed Gripper is open.

Hsg Feed Grip Button: This button allows manual operation of the Housing Feed Gripper Cylinder. Pressing the button once will allow the cylinder to move open, pressing it again will return the cylinder to the closed position. The text on the button will change between **OPEN** and **CLOSE** as the button is pressed.

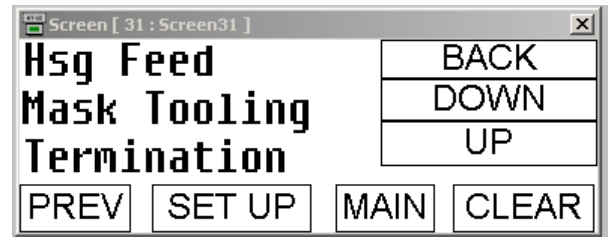
NEXT: Changes the screen to the Manual #2 Screen

SET UP: Selects Set Up mode and changes the screen to the Set Up #1 [Screen 40].

MAIN: Select Automatic mode and changes the screen to Ready to Run [Screen 2].

CLEAR: Clears any faults.

Screen 31
Manual Screen #2



This screen is displayed when the NEXT button is pressed on Manual Screen #1.

Hsg Feed Button: This button allows manual operation of the Housing Feed Cylinder. Pressing the button once will allow the cylinder to move forward, pressing it again will return the cylinder to the back position. The text on the button will change between **FORWARD** and **BACK** as the button is pressed. The cylinder can move **FORWARD** only when the Mask tooling is up.

Mask Tooling Button: This button allows manual operation of the Mask Tooling Cylinder. Pressing the button once will allow the cylinder to move up, pressing it again will return the cylinder to the down position. The text on the button will change between **UP** and **DOWN** as the button is pressed.

Termination Button: This button allows manual operation of the Termination Cylinder. Pressing the button once will allow the cylinder to move down, pressing it again will return the cylinder to the up position. The text on the button will change between **DOWN** and **UP** as the button is pressed. The cylinder can move **Down** only when the Housing Feed is back.

PREV: Changes the screen to Manual Screen #1.

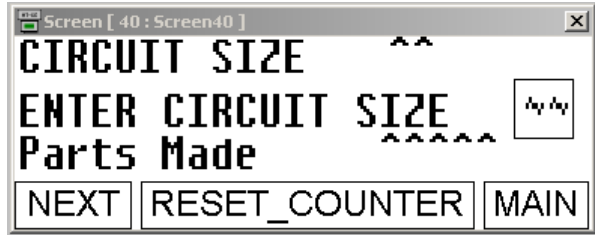
SET UP: Selects Set Up mode and changes the screen to the Set Up #1 [Screen 40].

MAIN: Select Automatic mode and changes the screen to Ready to Run [Screen 2].

CLEAR: Clears any faults.

Screen 40
Set Up #1 Screen

This screen is displayed when the SET UP button is pressed on the Manual Screens or PREV has been selected from the Set Up #2 screen.



CIRCUIT SIZE: This displays the current circuit size of the connectors being processed.

ENTER CIRCUIT SIZE: This button allows the circuit size of the connector to be entered. When the button is pressed a pop-up screen [Screen 65001] will appear. When the ENTER button on the pop-up Screen is pressed, the circuit size will be displayed on the button. Only values between 3 and 20 will be accepted by the display.

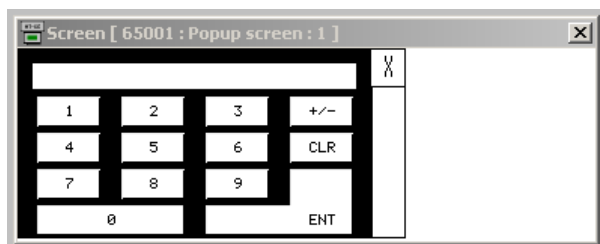
Parts Made: Displays how many assemblies have been made in the current batch.

NEXT: Changes the screen to the Set Up #2 Screen

RESET_COUNTER Button: Resets the value of Parts Made to zero.

MAIN: Select Automatic mode and changes the screen to Ready to Run [Screen 2].

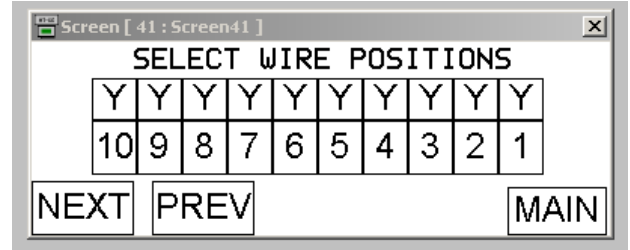
Screen 65001
Pop Up Screen



This screen appears when the Enter circuit Size Button has been pressed on Screen 40. Enter the desired circuit size on the “calculator” screen and press ENT. Only values between 3 and 20 will be accepted.

Screen 41
Set Up Screen #2

This screen is displayed when the NEXT button is pressed on the Set Up #1 Screen.



SELECT WIRE POSITIONS: This allows selection of wires (1-10 only) that are to be loaded in the connector. Pressing the number of the wire position will either select or deselect the presence of a wire in that position. The current status of that position is displayed above the number [Y = wire present, N = no wire].

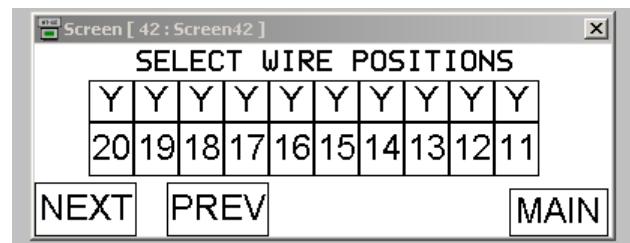
For circuit sizes below 20 please ensure that all positions above the current size are status “N”.

NEXT: Changes the screen to Set Up Screen #3 (Screen 42)

PREV: Changes the screen to Set Up Screen #1 (Screen 40)

MAIN: Changes the screen to Ready to Run Screen (Screen 2)

Screen 42
Set Up Screen #3



This screen is displayed when NEXT button is pressed on the Set Up #2 Screen.

SELECT WIRE POSITIONS: This allows selection of wires (11-20 only) that are to be loaded in the connector. Pressing the number of the wire position will either select or deselect the presence of a wire in that position. The current status of that position is displayed above the number (Y = wire present, N = no wire).

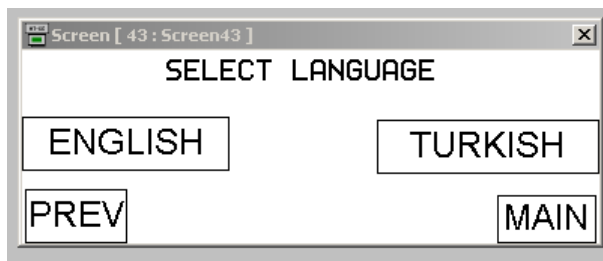
For circuit sizes below 20 please ensure that all positions above the current size are N.

NEXT: Changes the screen to Set Up Screen #4 (Screen 43)

PREV: Changes the screen to Set Up Screen #2 (Screen 41)

MAIN: Changes the screen to Ready to Run Screen (Screen 2)

Screen 43
Set Up Screen #4



This screen is displayed when the NEXT button is pressed on the Set Up #3 Screen.

SELECT LANGUAGE. This allows language selection for the touch screen messages. When the screens are displayed in English pressing TURKISH will automatically redisplay the screen in Turkish. All the Turkish screens have the exact same layout and functions as the English screens.

When the screens are displayed in Turkish pressing ENGLISH will automatically redisplay the screen in English.

PREV: Changes the screen to Set Up Screen #3 (Screen 42)

MAIN: Changes the screen to Ready to Run Screen (Screen 2)

Section 5

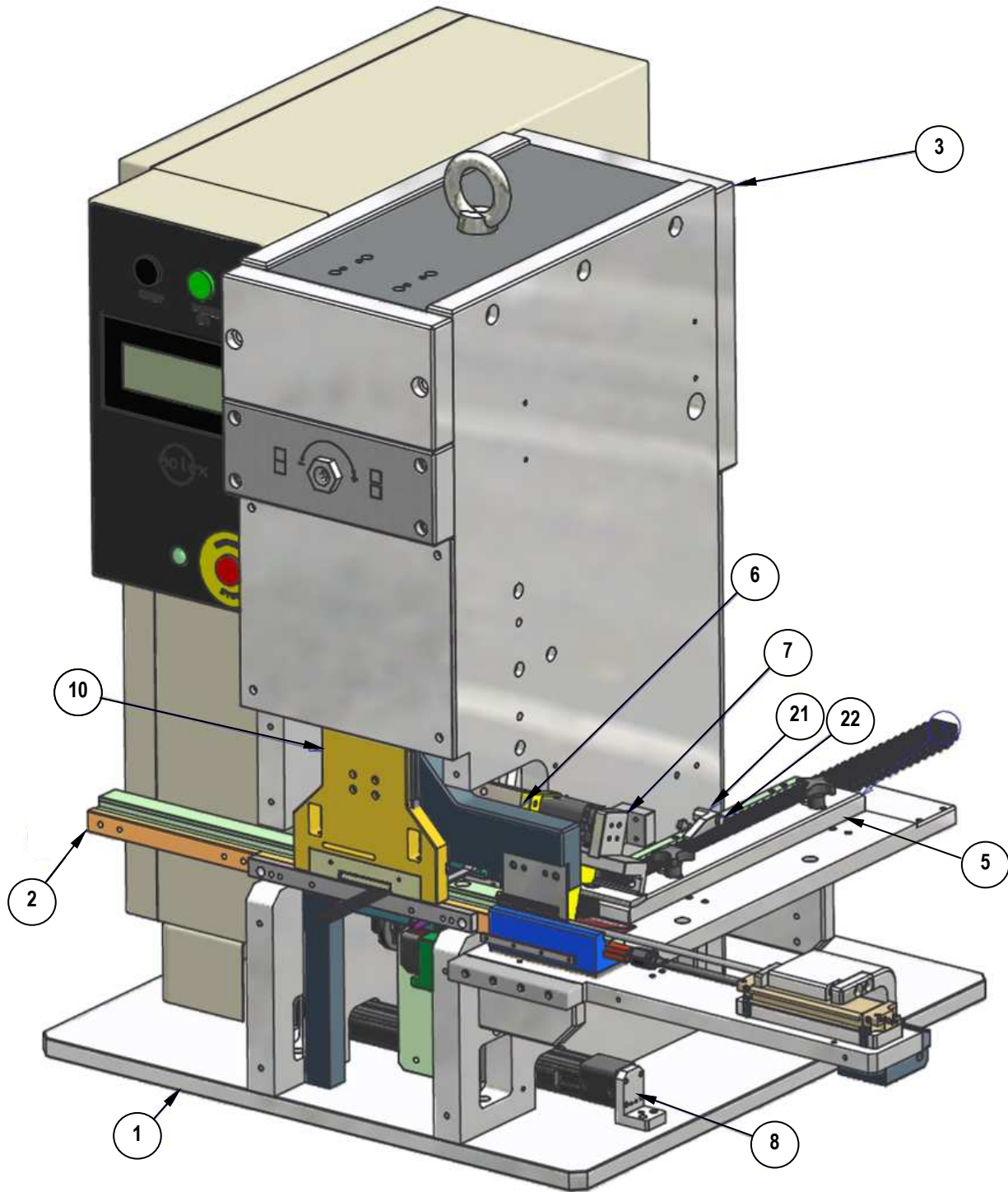
Assembly Drawings, Electrical and Pneumatic Diagrams

- 5.1 Assembly Drawings
- 5.2 Electrical Drawings
- 5.3 Pneumatic Drawings

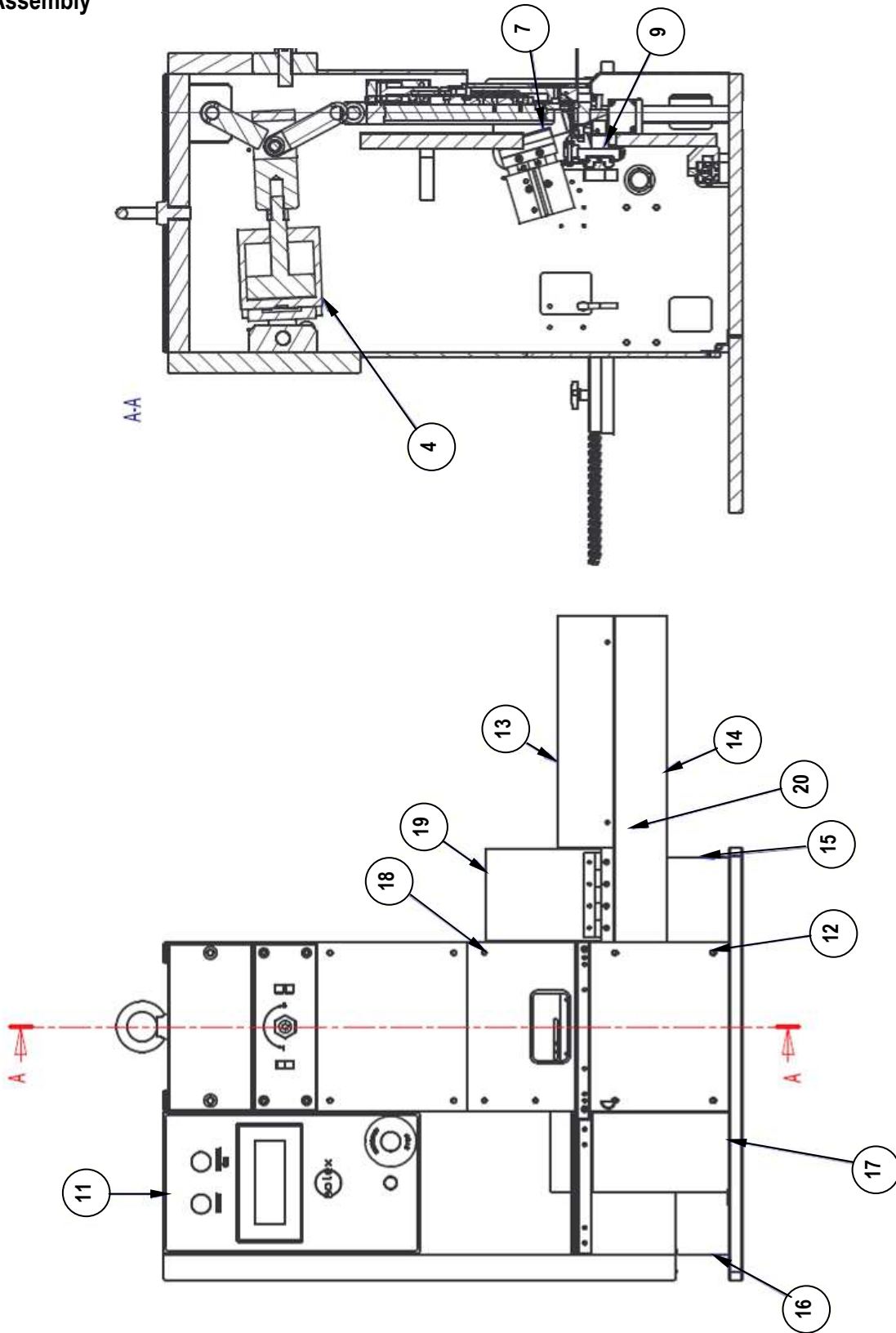
5.1 Main Assembly

Main Assembly 62300-6200			
Item	Order No.	Description	Qty.
1	62300-6206	Table Top	1
2	62300-6207	Termination Track Assembly	1
3	62300-6208	Frame Assembly	1
4	62300-6209	Toggle Joint Assembly	1
5	62300-6210	Infeed Table Assembly	1
6	62300-6211	Cut and Termination Slide Assembly	1
7	62300-6212	Infeed Gripper Assembly	1
8	62300-6213	Laser Sensor Assembly	1
9	62300-6214	Out-Feed Pawl Assembly	1
10	62300-6215	Mask Tooling Assembly	1
11	62300-6216	IOP Box Assembly	1
12	62300-6217	Guard	1
13	62300-6218	Polycarb Guard	1
14	62300-6219	Guard	1
15	62300-6220	Guard	1
16	62300-6221	Cabinet Skirt	1
17	62300-6222	Stainless Guard	1
18	62300-6223	Polycarb Guard	1
19	62300-6224	Hinged Guard	1
20	62300-6225	Hinged Guard Support	1
21	62300-6226	Proximity Switch	1
22	62300-6227	Prox Pivot Pin	1

Main Assembly



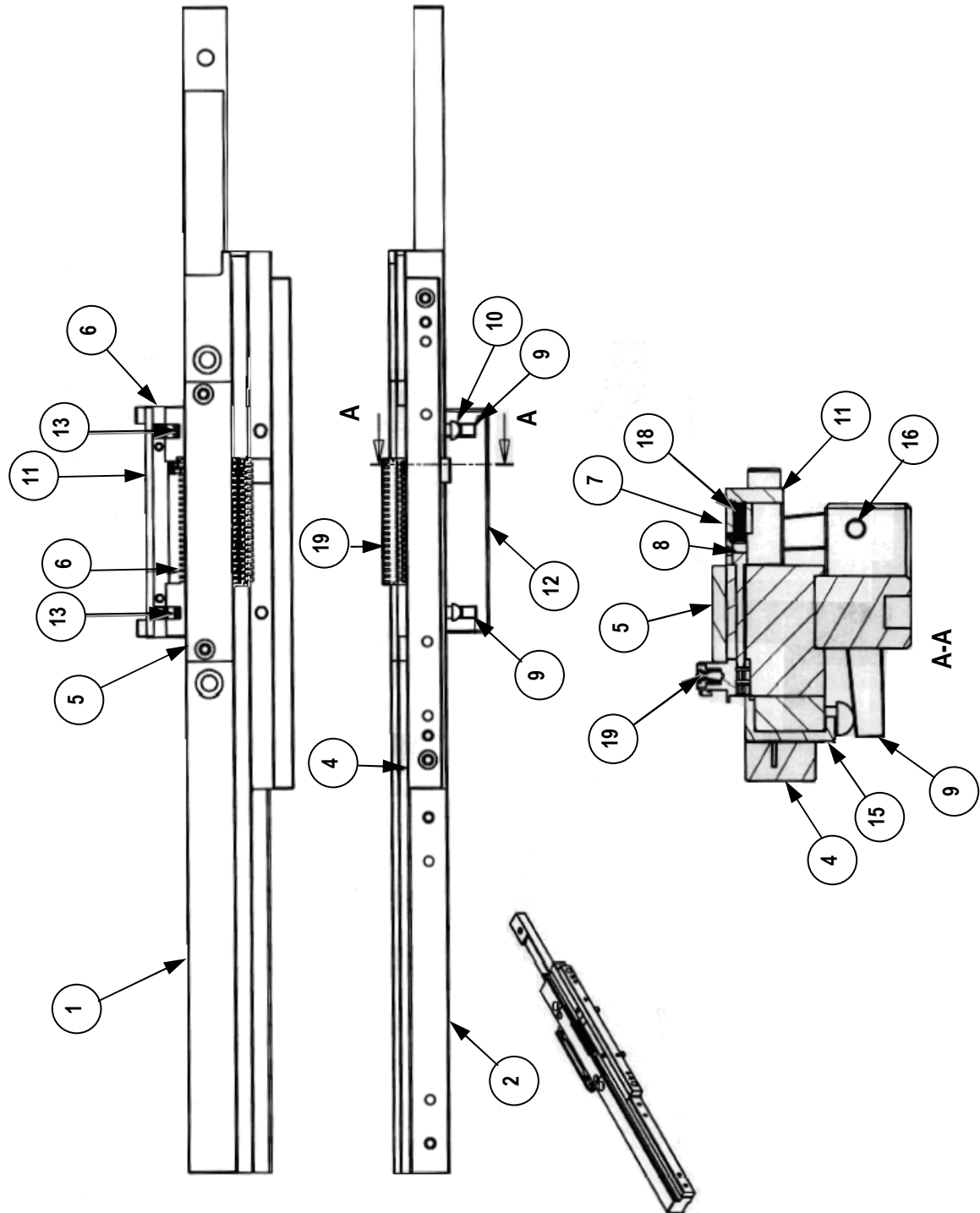
Main Assembly



Termination Track Assembly

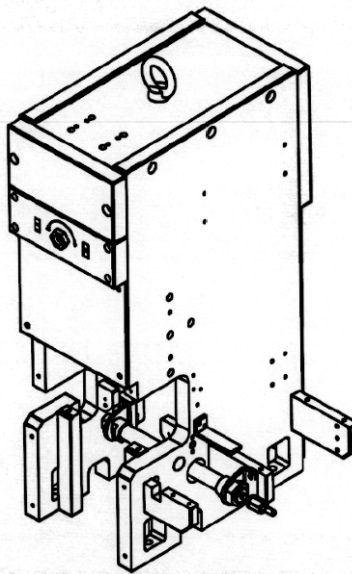
Terminator Track Assembly 62300-6207			
Item	Order No.	Description	Qty.
1	62300-6228	Termination Track	1
2	62300-6229	Entry Cover	1
3	62300-6230	Exit Cover	1
4	62300-6231	Wire Guide Support	1
5	62300-6232	Slide Cover Plate	1
6	62300-6233	Wire Detect Pin Slide	1
7	62300-6234	Spring Block	1
8	62300-6205	Wire Detect Pin	2
9	62300-6235	Wire Detect Lever	2
10	62300-6236	Wire Detect Trigger Pin	2
11	62300-6237	Spring Support Plate	1
12	62300-6238	Pivot Block	1
13	62300-6239	Pivot Pin	2
14	62300-6240	Laser Reflect Plate	1
15	62300-6241	Termination Brake	1
16	62300-6242	Pivot Pin	2
17	N/A	C-Spring Entex #913	4
18	N/A	C-Spring Entex #3100	20
19	REF	Customer Product- Rast 2.5	1

Termination Track Assembly

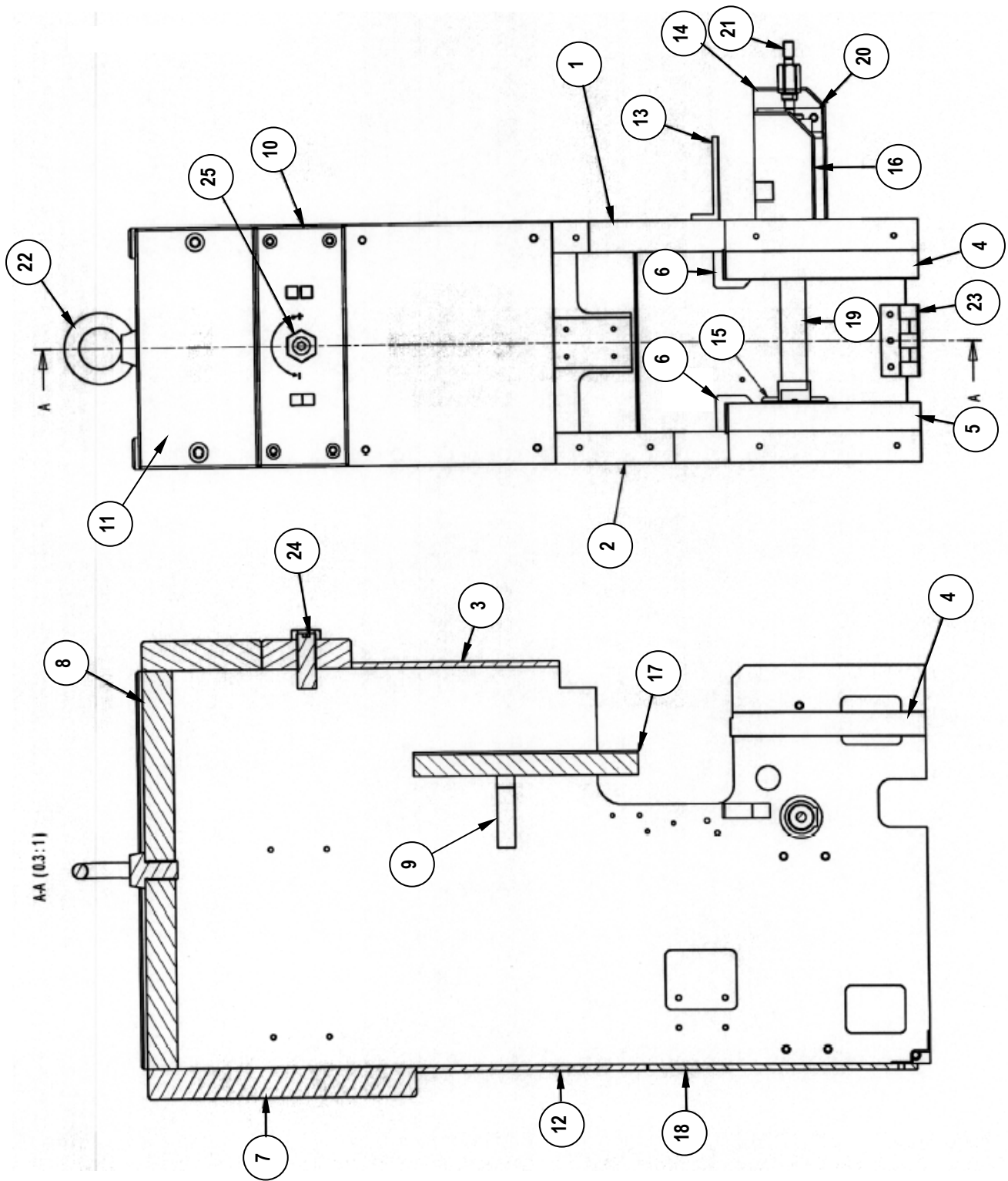


Frame Assembly

Frame Assembly 62300-6208			
Item	Order No.	Description	Qty
1	62300-6243	Left Frame Upright	1
2	62300-6244	Right Frame Upright	1
3	62300-6245	Front Cover Plate	1
4	62300-6246	Right Track Upright	1
5	62300-6247	Left Track Upright	1
6	62300-6248	THK Slide Bkt.	2
7	62300-6249	Back Frame Upright	1
8	62300-6250	Top Plate	1
9	62300-6251	Gusset	2
10	62300-6252	Termination Adjust Plate	1
11	62300-6253	Top Front Plate	1
12	62300-6254	Front Cover	1
13	62300-6255	Guide Plate	1
14	62300-6256	Infeed Table Mtg. Plate	2
15	62300-6257	Cylinder Mtg. Plate	1
16	62300-6258	Cut Loose St Support Plate	1
17	62300-6259	Termination Slide Mtg. Plate	1
18	62300-6260	Rear Hinged Cover	1
19	N/A	Transfer Cylinder- Festo -DSNU 20-150-PPV-A-S10	1
20	N/A	Foot Mtg.- Festo -HBN-20-25x2	2
21	N/A	Floating Joint- Festo -2062_FK_M8	1
22	N/A	Lifting Eye Bolt- Misumi -SCHI16	1
23	N/A	Stepped Hinge- Misumi -HHSD5	1
24	N/A	Hard Stop- Misumi -ANB 16-45	1
25	N/A	Nut- Misumi -ANN 16	1



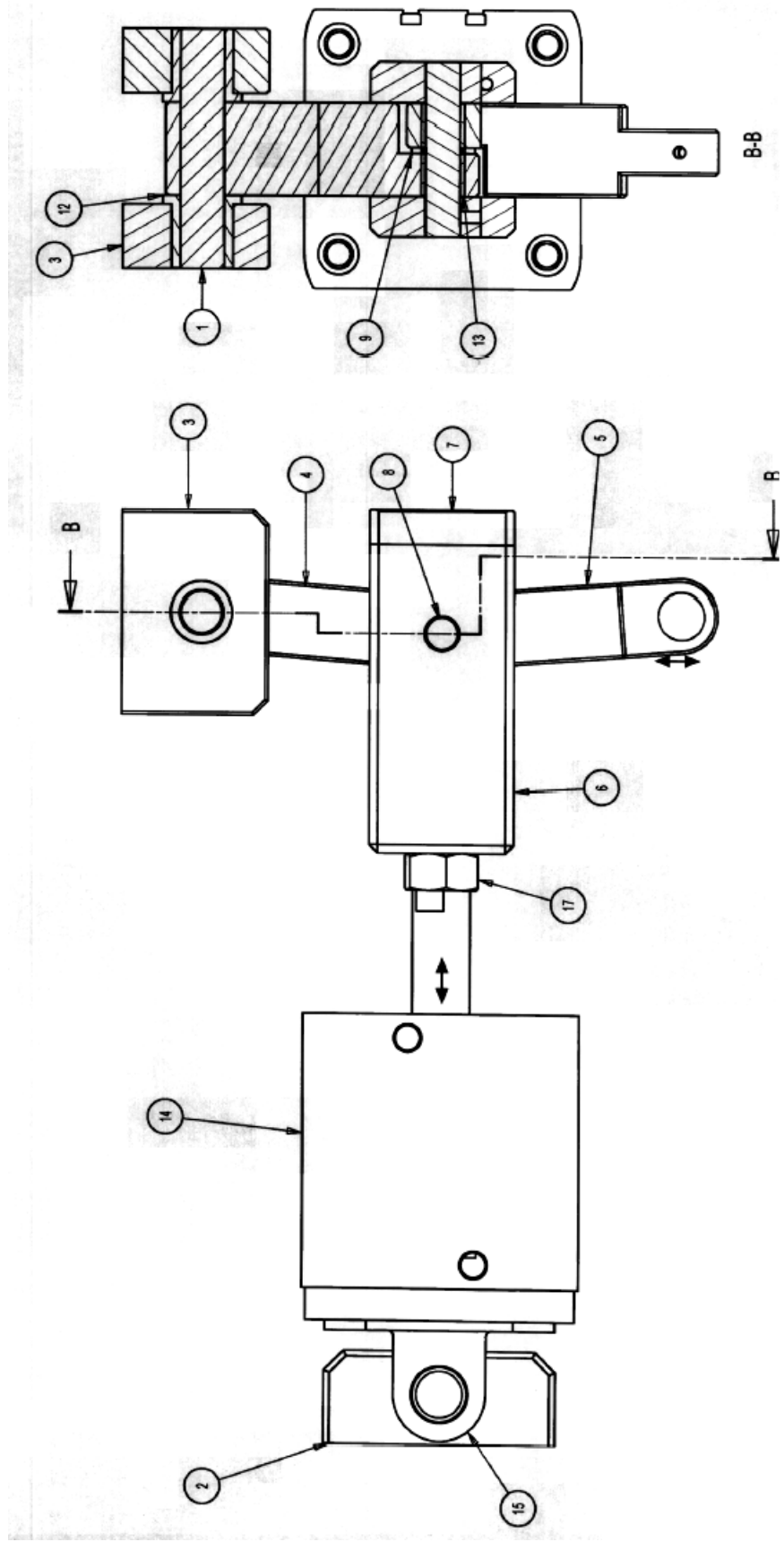
Frame Assembly



Toggle Joint Assembly

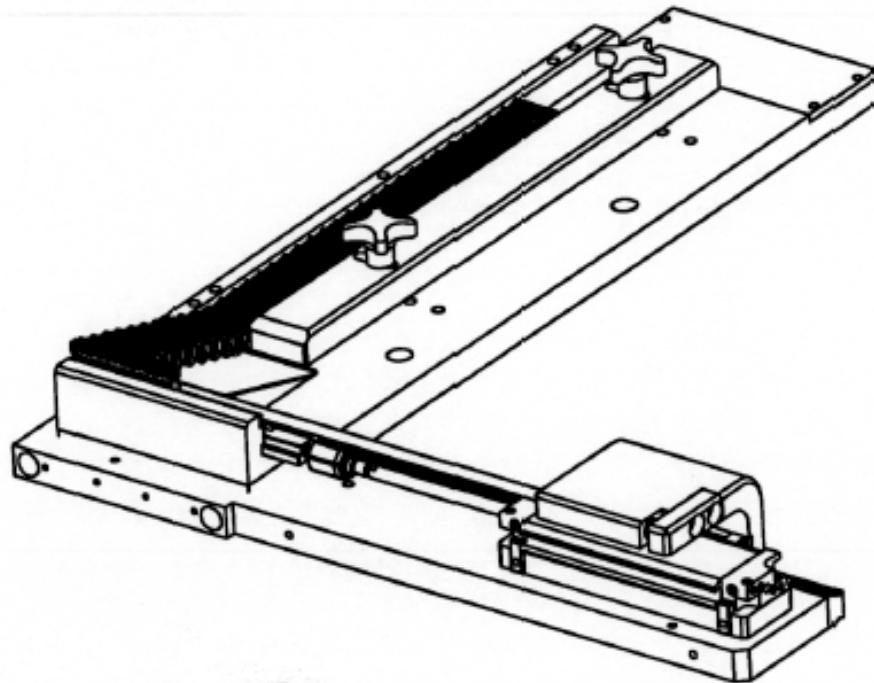
Toggle Joint Assembly 62300-6209			
Item	Order No.	Description	Qty.
1	62300-6261	Fixed Pivot Pin	1
2	62300-6262	Cylinder Pivot Block	1
3	62300-6263	Fixed Pivot Block	2
4	62300-6264	Fixed Link Arm	1
5	62300-6265	Moving Link Arm	1
6	62300-6266	Toggle Joint	1
7	62300-6267	End Plate	1
8	62300-6268	Toggle Joint Pivot Pin	1
9	62300-6269	Brass Washer	1
12	N/A	Flange Bushing- Oilite -AMF1521 25	2
13	N/A	Straight Bushing- Oilite -AMC1215-16	2
14	N/A	Compact Cylinder- Festo -ADN-80-40-A-P-A	1
15	N/A	Swivel Flange- Festo -SNCB-80	1
16	N/A	Straight Bushing- Oilite -AMC1620 12	2
17	N/A	M16 Nut	1

Toggle Joint Assembly

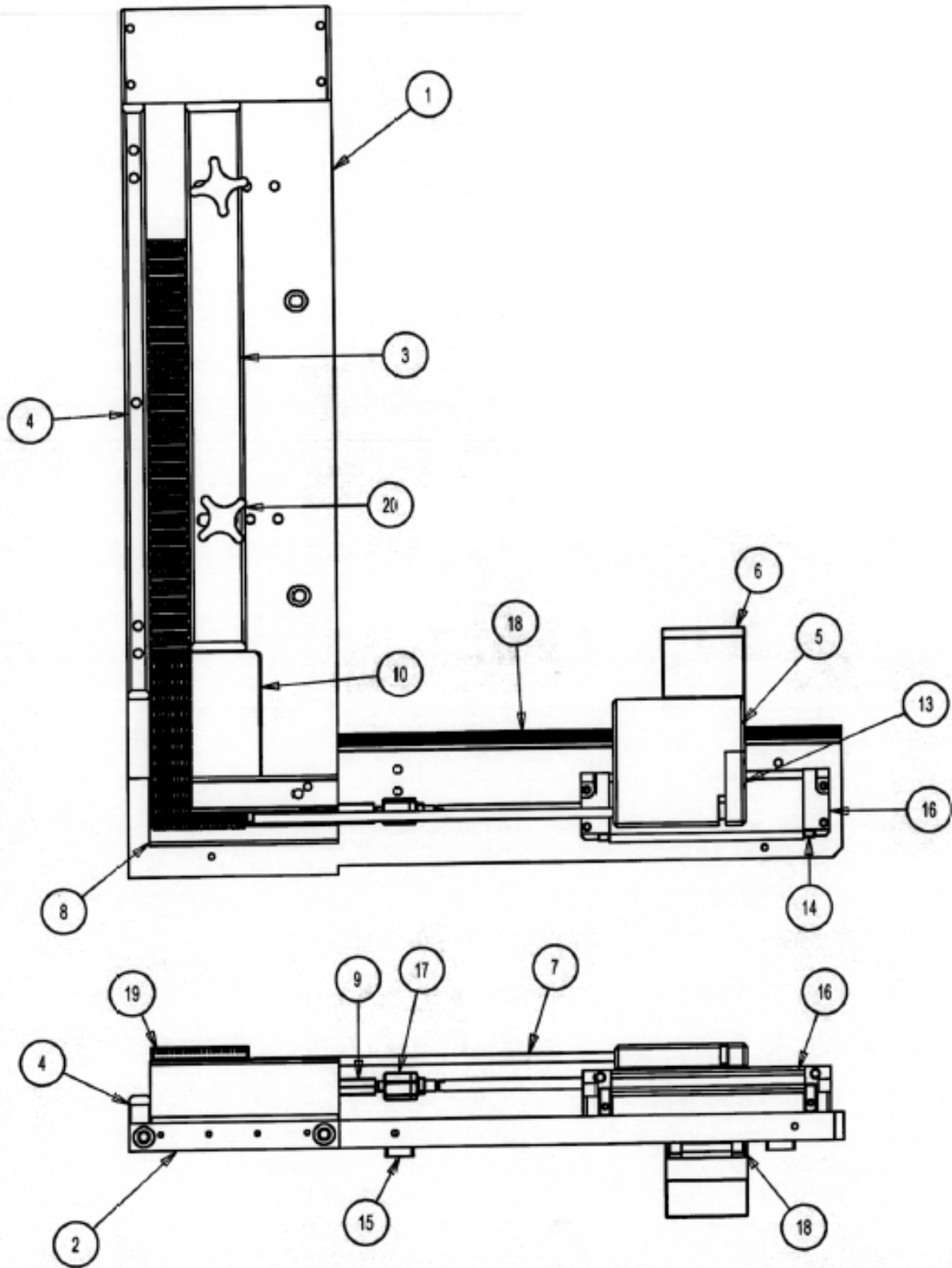


In-Feed Table Assembly

In-Feed Table Assembly 62300-6210			
Item	Order No.	Description	Qty.
1	62300-6270	In-feed Table	1
2	62300-6271	In Feed Front Plate	1
3	62300-6272	Adjustment Side Guide	1
4	62300-6273	Fixed Side Guide	1
5	62300-6274	Push Bar Mtg. Block	1
6	62300-6275	Tie Rod Connect Block	1
7	62300-6276	Push Bar	1
8	62300-6277	Cut Station Track Section	1
9	62300-6278	Gateway Track	1
10	62300-6279	Infeed Ramp	1
11	62300-6280	Track Spacer	1
12	62300-6281	Cylinder Mtg. Plate	1
13	62300-6282	Push Bar End Stop	1
14	62300-6283	Cylinder Pos Block	2
15	62300-6284	Rail Support Block	2
16	N/A	Cylinder- Festo - DZF-12-70-A-P-A	1
17	N/A	Floating Joint- Festo -2061 FK-M6-(0;0)	1
18	N/A	Rail and Carriage- THK- RSH15ZMUU+270L	1
19	REF	Customer Product-RAST 2.5	1
20	N/A	Knob- Ganter Griff -GN 6335.4-TE-32-M6-25	1



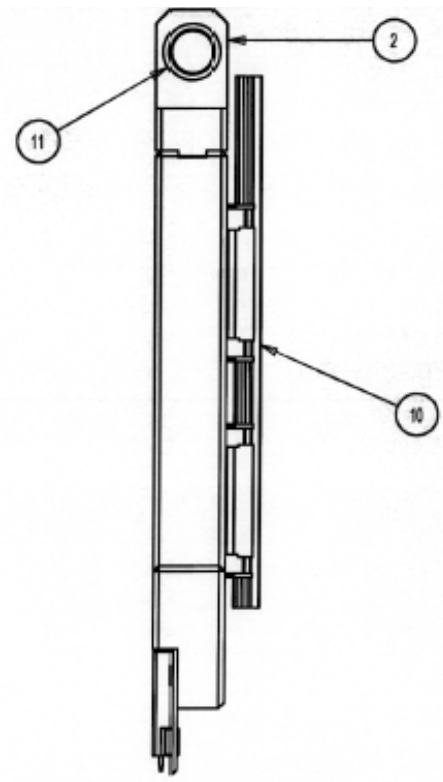
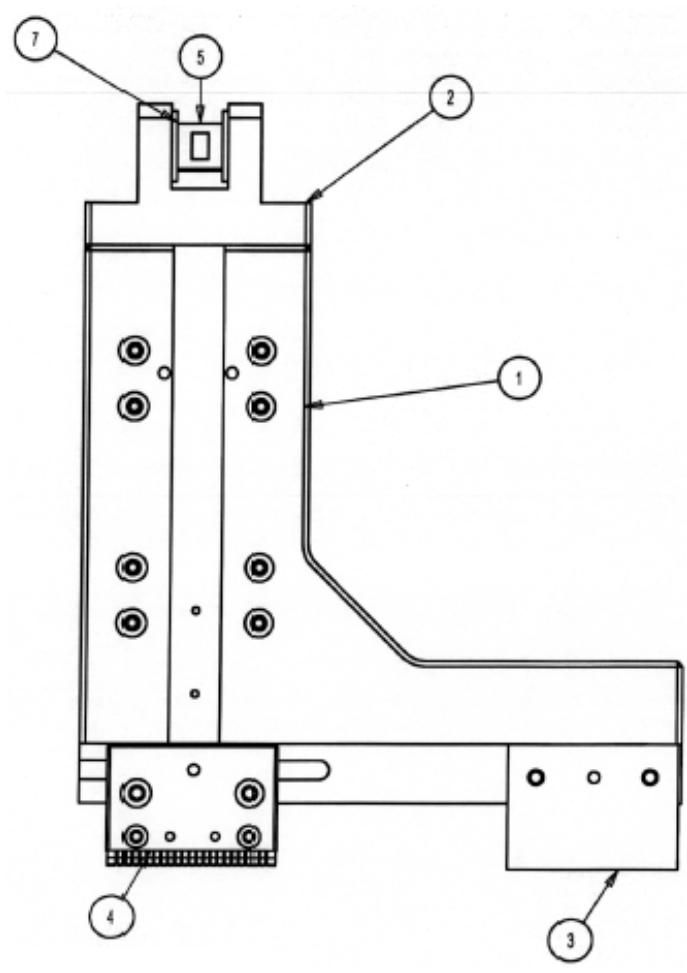
In-Feed Table Assembly



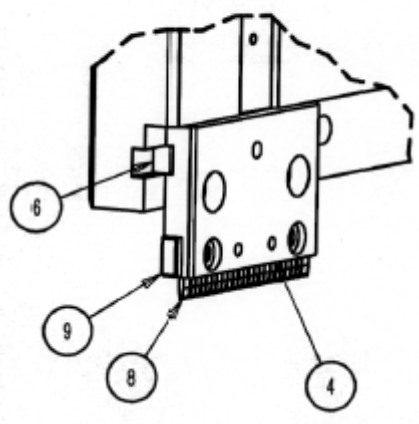
Cut and Termination Assembly

Cut and Term Slide Assembly 62300-6211			
Item	Order No.	Description	Qty.
1	62300-6285	Cut and Termination Tooling Plate	1
2	62300-6286	Toggle To Slide Linkage	1
3	62300-6201	Housing Cut Blade	1
4	62300-6202	Termination Tool	1
5	62300-6287	Toggle Joint Pin	1
6	62300-6288	Cut and Termination Tooling Key	1
7	62300-6289	Brass Washer	2
8	62300-6203	Termination Support Blade	1
9	62300-6290	Termination Insert	1
10	N/A	Rail and Carriage- THK -SRS15WMUU+190L	1
11	N/A	Bush- Oilite -AMC1620 12	2
---	62300-6204	Termination Support Blade-Latches	1

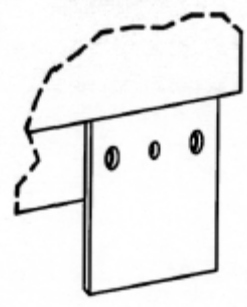
Cut and Termination Assembly



A (1:2)
TERMINATE

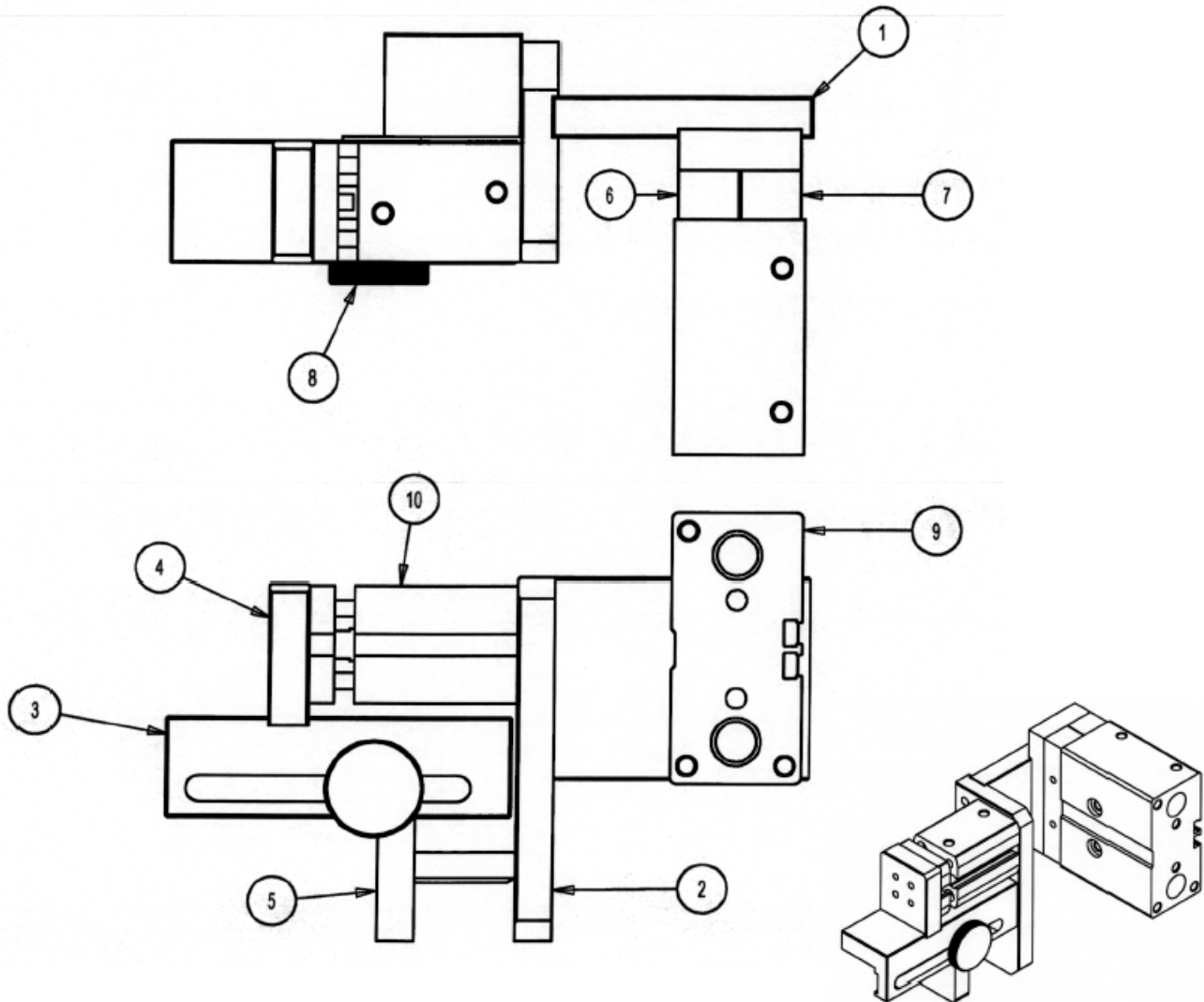


B (1:2)
CUT LOOSE



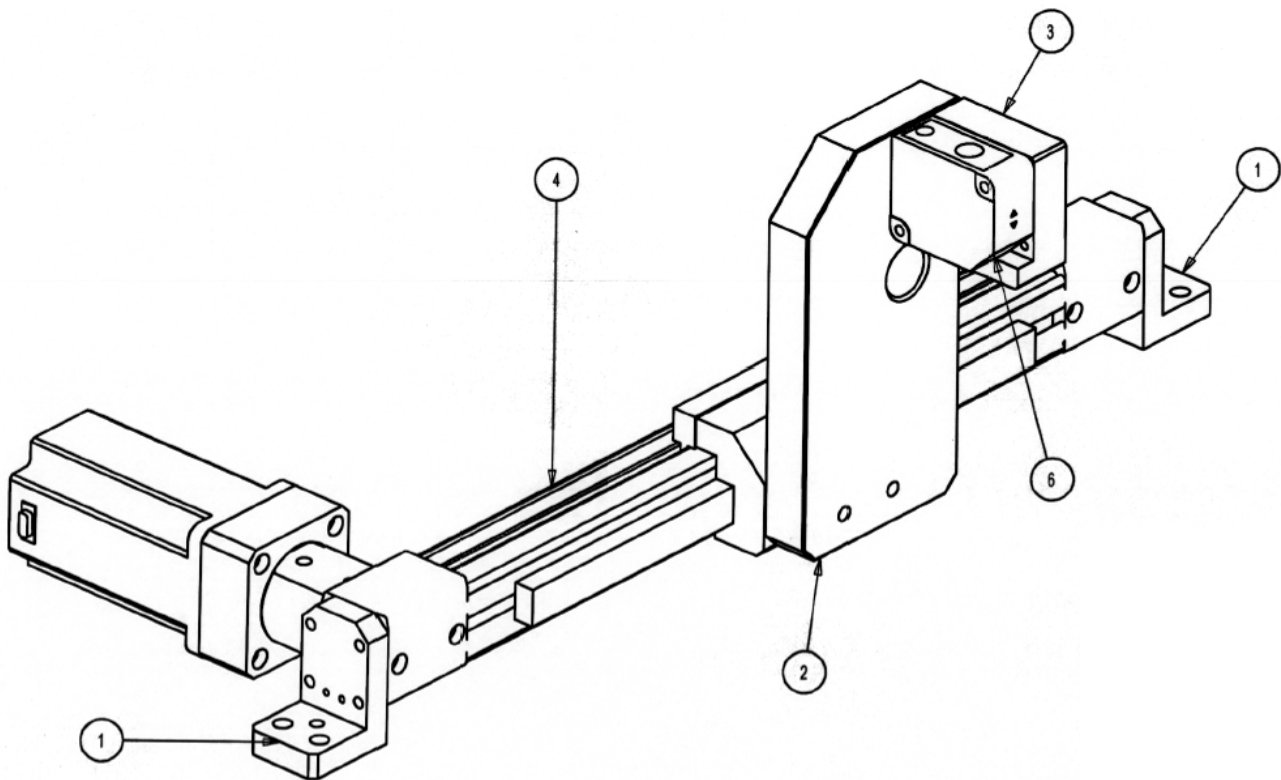
In-Feed Gripper Assembly

In-Feed Gripper Assembly 62300-6212			
Item	Order No.	Description	Qty.
1	62300-6291	Infeed Cylinder Mtg. Plate	1
2	62300-6292	Fixed Clamp Plate	1
3	62300-6293	Adjustable Clamp Plate	1
4	62300-6294	Clamp Cylinder Plate	1
5	62300-6295	Infeed Moving Clamp	1
6	62300-6296	Cylinder Spacer Block	1
7	62300-6297	Cylinder Spacer Block	1
8	N/A	Thumbscrew- Ganter Griff -DIN 653-M6-16	1
9	N/A	Cylinder- Festo- DFM-16-20-P-A-GF	1
10	N/A	Compact Cylinder- Festo -ADNGF-16-5-P-A	1



Laser Sensor Assembly

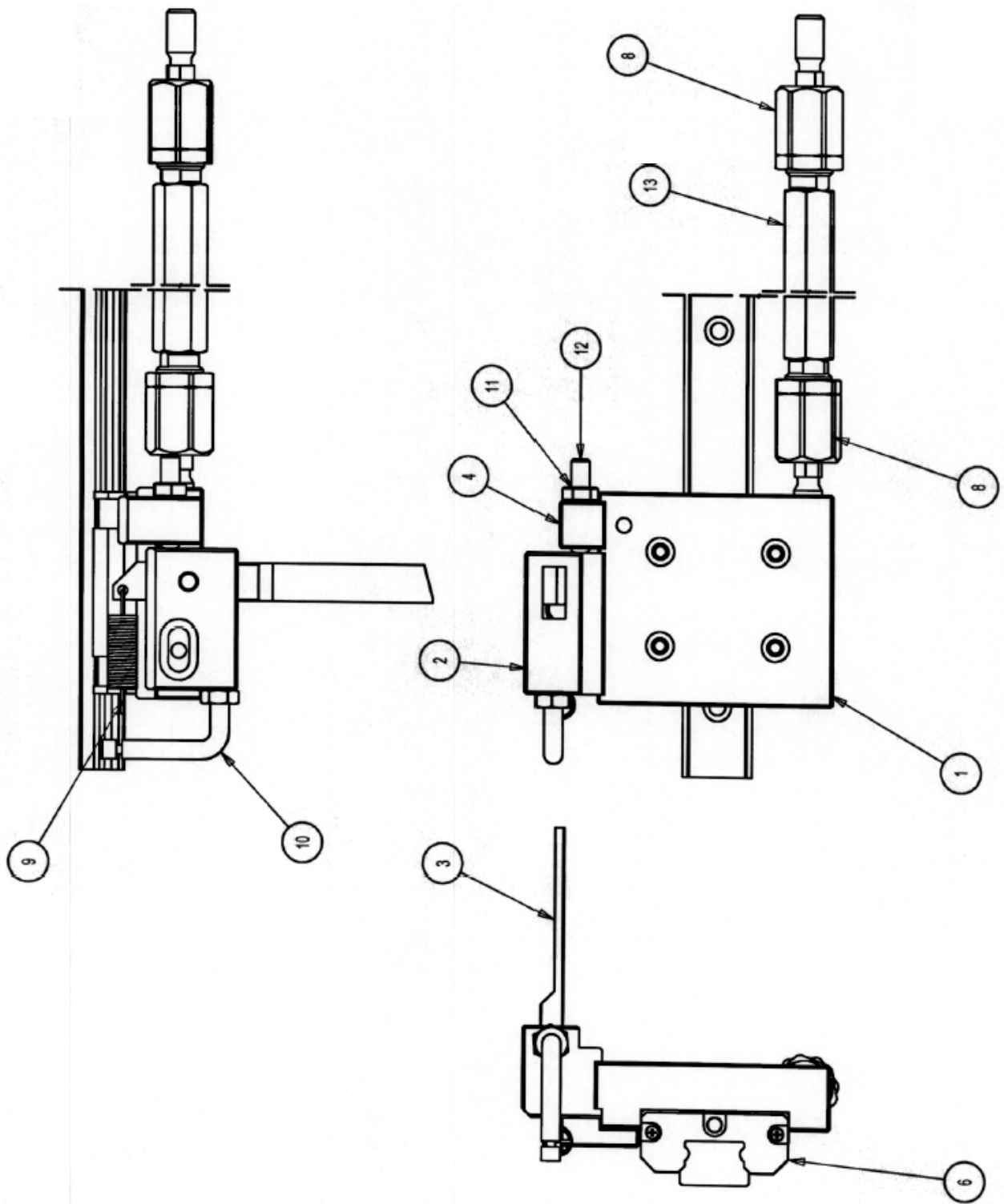
Laser Sensor Assembly 62300-6213			
Item	Order No.	Description	Qty.
1	62300-6298	Mounting Feet	2
2	62300-6299	Slide Mtg. Plate	1
3	62300-6401	Sensor Mtg. Block	1
4	N/A	Festo Unit (<i>Items 7 thru 10</i>)	REF
5	N/A	Location Pins- Festo -150928 ZBS-5	2
6	N/A	Sensor- Omron - ZX-LD40	1
7	N/A	Festo -KSE-15-22-D04-D05	1
8	N/A	Festo -MTR-ST-42-48S-AA	1
9	N/A	Festo -MTR-FL30-ST42 FLANGE	1
10	N/A	Festo -DGE-12-100-ZR-LV-RV-GK-KF-KG	1



Out-Feed Pawl Assembly

Out-Feed Pawl Assembly 62300-6214			
Item	Order No.	Description	Qty.
1	62300-6402	Out-Feed Pawl Mtg. Plate	1
2	62300-6403	Out-Feed Pawl Body	1
3	62300-6404	Out-Feed Pawl Body	1
4	62300-6405	Out-Feed Pawl Adjust Block	1
5	62300-6406	Pawl Pivot Pin	1
6	N/A	Rail and Carriage- THK -RSH15ZMUU+190L	1
8	N/A	Floating Joint- Festo -2061 FK-M6-(0;0)	2
9	N/A	Tension Spring- Entex - #521 TENSION	1
10	N/A	Spring Post- Misumi -BSPL4-25	1
11	N/A	Nut- Misumi -ANN 4	1
12	N/A	Hard Stop- Misumi -ANB 4-20	1
13	N/A	Hexagonal Post- Misumi - LSBL10-263-F10-M6-N6-FC	1

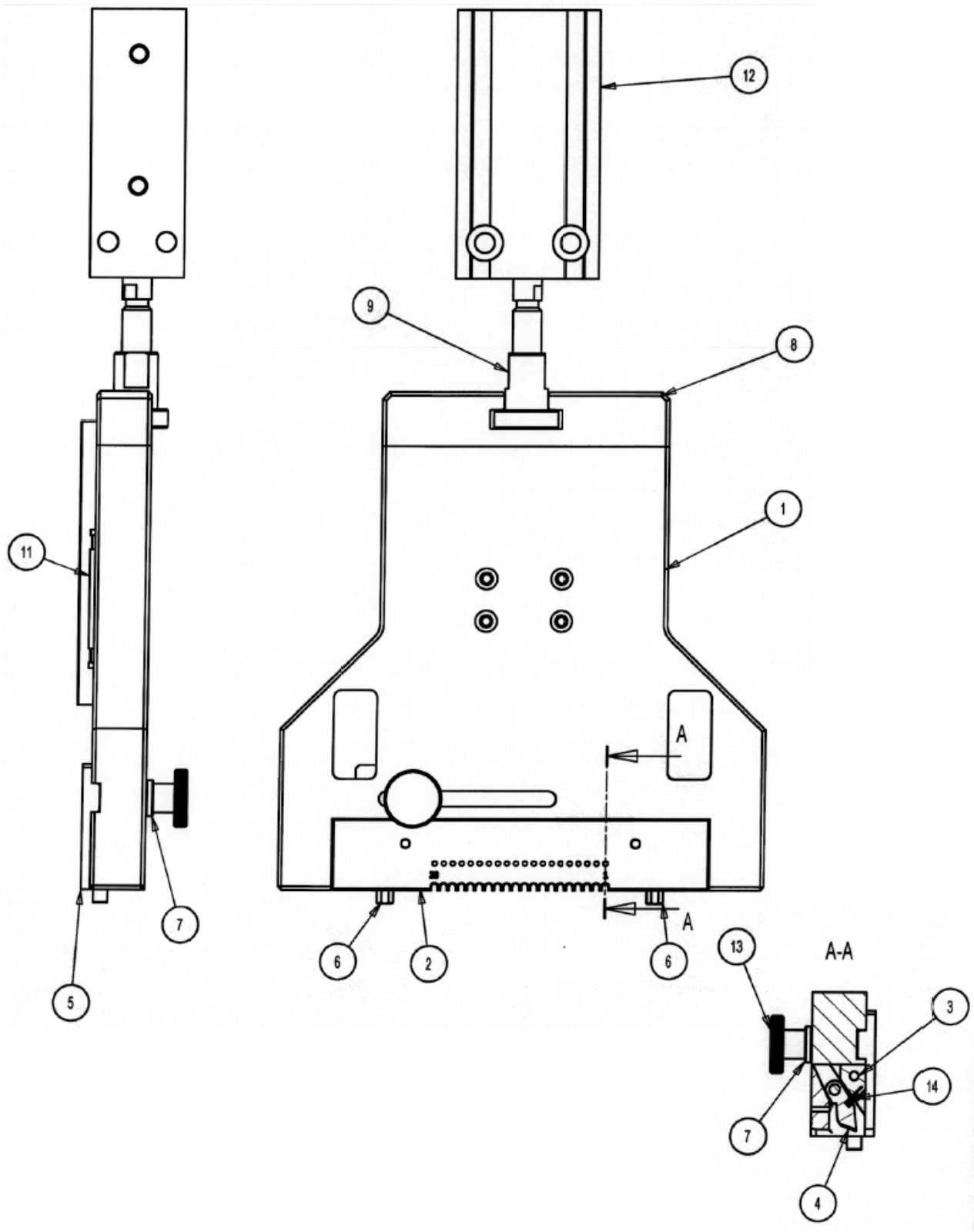
Out-Feed Pawl Assembly



Wire Mask Tooling

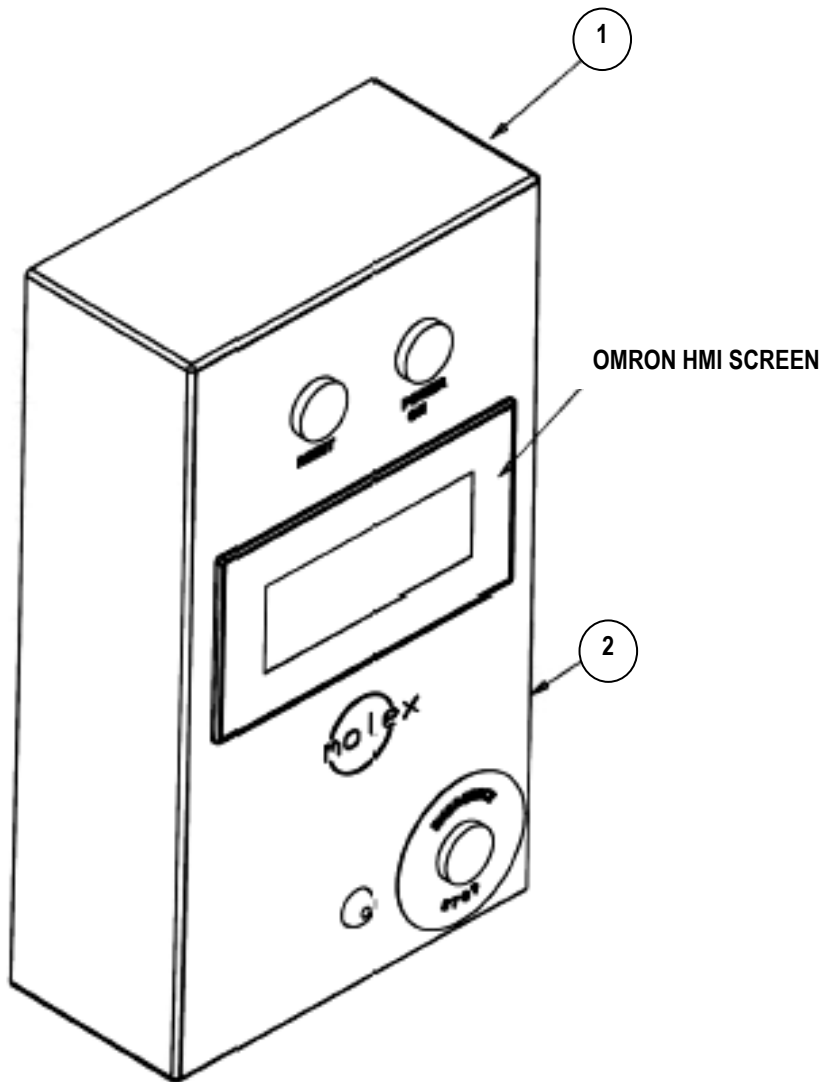
Wire Mask Tooling 62300-6215			
Item	Order No.	Description	Qty.
1	62300-6407	Mask Tooling Slide Plate	1
2	62300-6408	Mask Tooling	1
3	62300-6409	Spring Retaining Block	1
4	62300-6410	Cable Gripper	1
5	62300-6411	Adjustable Comb Tooling	1
6	62300-6412	Wire Detect Trigger Pin	2
7	62300-6413	Thumbscrew Washer	1
8	62300-6414	Cylinder Clevis	1
9	62300-6415	Floating Joint	1
10	62300-6416	Gripper Pivot Pin	1
11	N/A	Rail and Carriage- THK -RSH9WZMUU+80L	1
12	N/A	Cylinder- Festo -DMM-20-20-P-A	1
13	N/A	Thumbscrew- Ganter Griff -DIN 464-M4-12	1
14	N/A	Compression Spring- Entex - #3016	20

Wire Mask Tooling



IOP Box Assembly

IOP Box Assembly 62300-6216			
Item	Order No.	Description	Qty.
1	62300-6417	IOP Box	1
2	62300-6418	Lexan Label	1



5.2 Electrical Parts List

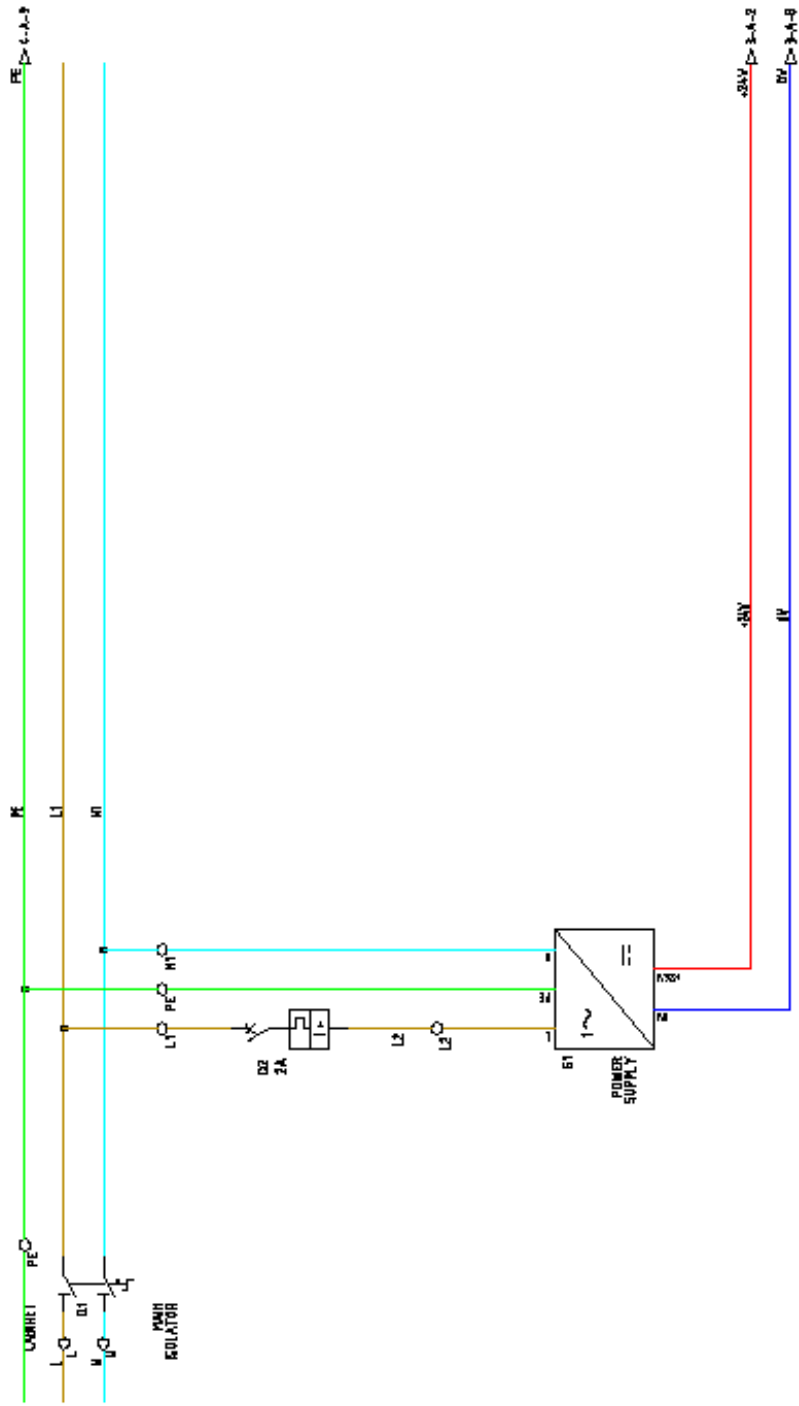
Manufacturer	Description	Qty
Allen-Bradley	440N-S32022	1
Omron	CPM2A-60CDT1-D	1
	NT2S-CN212V1	1
	NT3S-ST126BE	1
	S8VS-12024	1
	ZXLD40	1
	ZX LDA41	1
Wago	209-501 Customise cards	20
	280-402	100
	280-520	50
ITW	DE9SF	1
Moeller	TO-2-1/EZ	1
Telemecanique	ZB2BZ101	1
	ZB2BZ102	1
	ZB2BS54	1
	ZB2BE102	1
	ZB2BA6	1
	ZB4BVB3	1
	ZB4BV033	1
MH	MHDM-9-K	1
Merlin Gerin	C60HD102	1
CML	19210351 LED Green	1
PILZ	774310 PNOZ X3 24VAC 24VDC Safety Relay	1
Radionics	622-1449	1
SMC Pneumatics	AS1001F-04 Speed Control	10
	KGL04-M5 - elbows	10
Festo Ltd	150387 SIEN-M8B-PS-S-L Proximity Switch,M8	1
	150857 SME-8-S-LED-24 Proximity Switch	11
	151687 MSSD-EB Plug Socket	2
	153344 QSML-4 Fitting	5
	153347 QSML-4H Fitting	5
	159421 SIM-M8-3GD-5-PU Proximity Switch Socket, Straight	13
	159423 SIM-M8-3WD-5-PU Proximity Switch Socket, Right Angle	1
	161419 UC-1/8 Silencer	2
	163142 CPE18-M1H-5L-1/4	1
	164274 PEV-1/4-WD-LED-24 Angled Socket	1
	165004 UC-1/4 Silencer	2
	175095 SMBR-8-20 Mounting Kit	2
	185781 LFR-1/4-D-MINI-KG Servis Combination	1
	193740 DGE-12-100-ZR-LK-KG-KF-GK Toothed Belt Axis	1
	2061 FK-M6	2
	2061 FK-M6	1
2062-FK-M8	1	

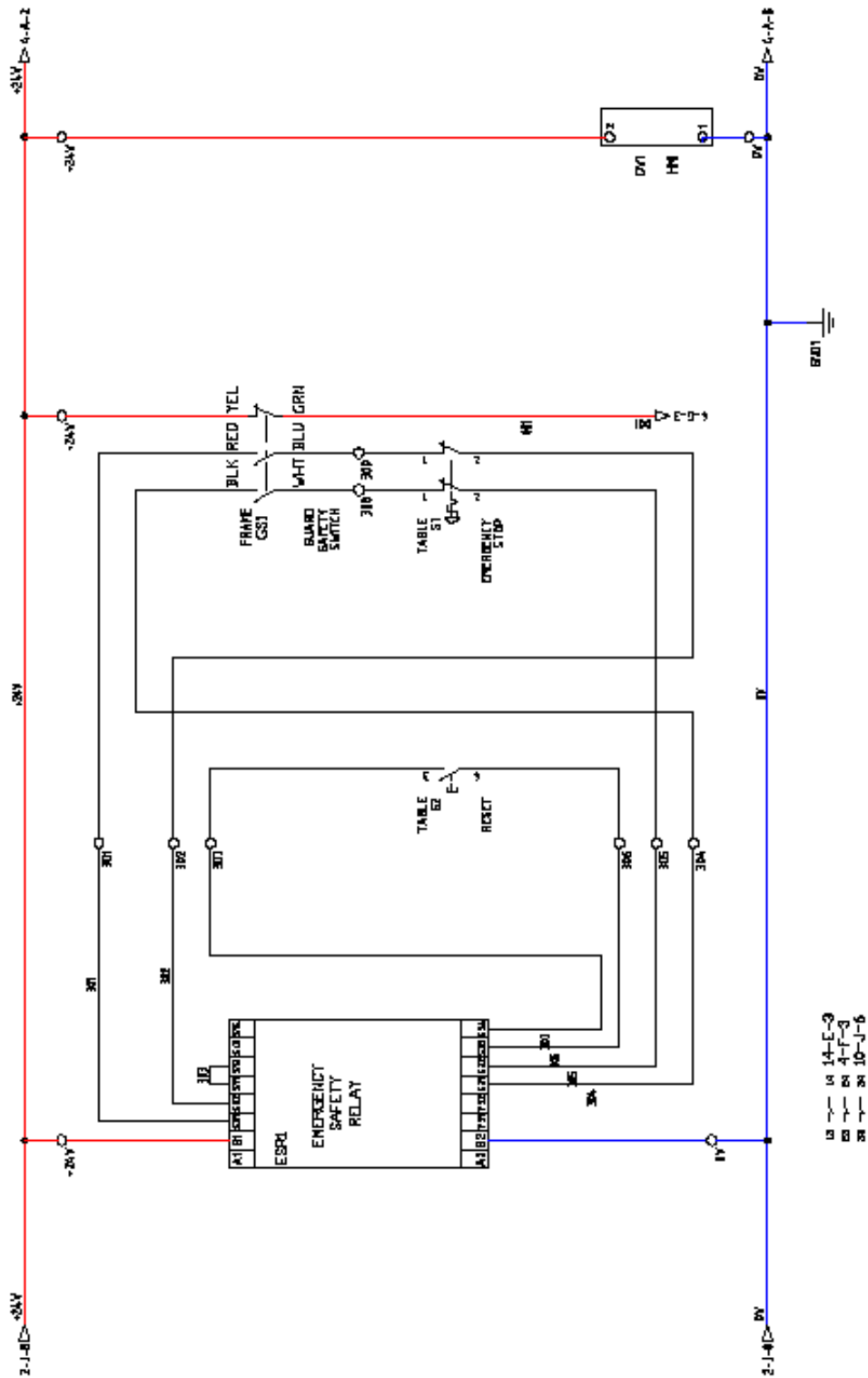
Manufacturer	Description	Qty
Festo Ltd	525675 CPV-SC-MP-VI Valve Terminal [80P-10-1MS-PF-N-SLG-MJJ3MLL+CP]	1
	525911 SMT-8F-24V-K7,5-OE Proximity Switch	2
	530059 MTRE-ST-42-48S-AA Stepper Motor	1
	530079 MTR-FL30-ST42 Motor Flange	1
	530084 KSE-15-22-D04-D05 Coupling	1
	ADN-80-40-A-P-A	1
	ADNGF-16-5-P-A	1
	DFM-16-20-P-A-GF	1
	DMM-20-20-P-A	1
	DSNU 20-150-PPV-A-S10	1
	DZF-12-70-A-P-A	1
	SIEN-M5B-PS-S-L	1
	SNCB-80	1

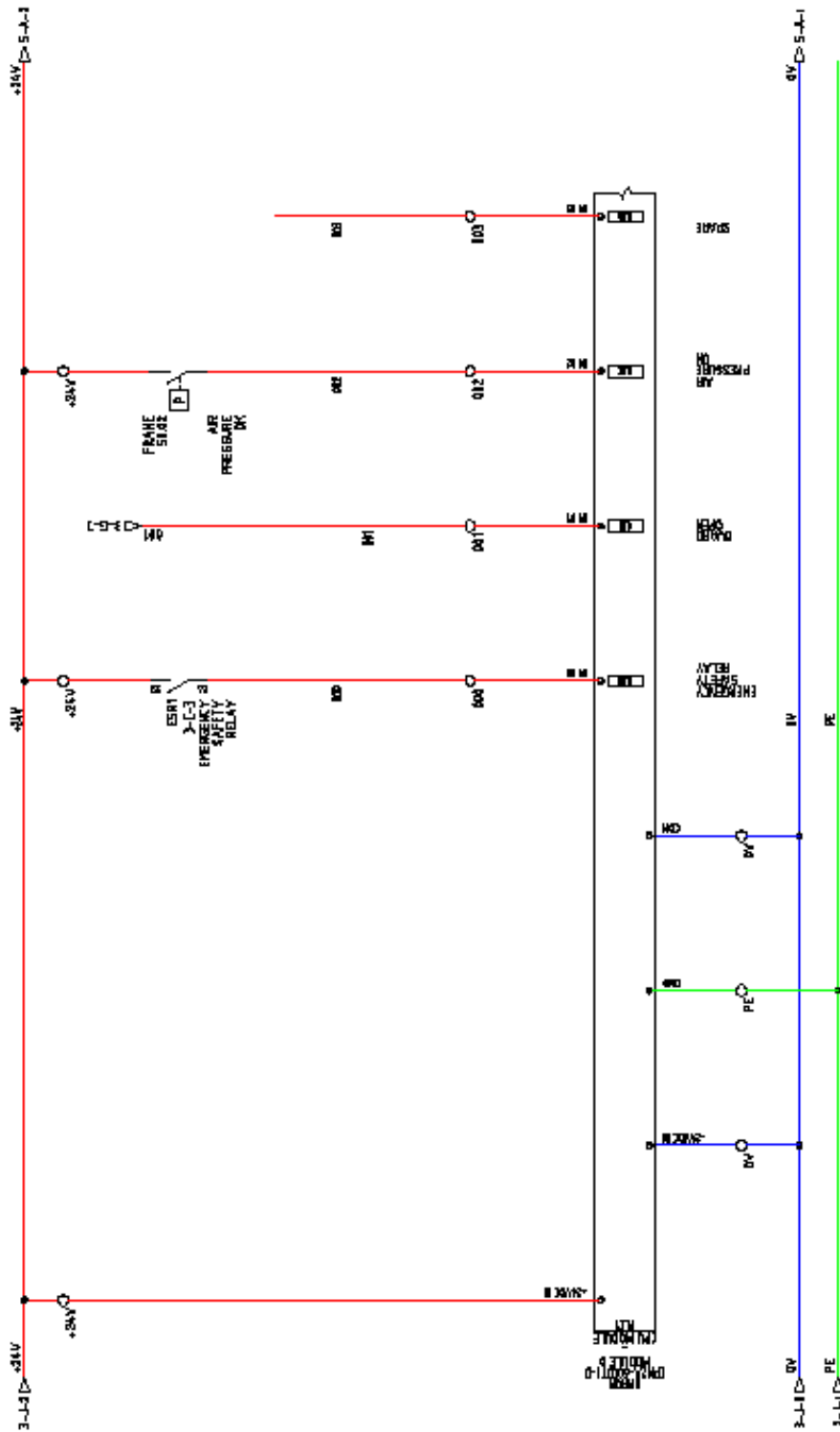
Commercial Hardware

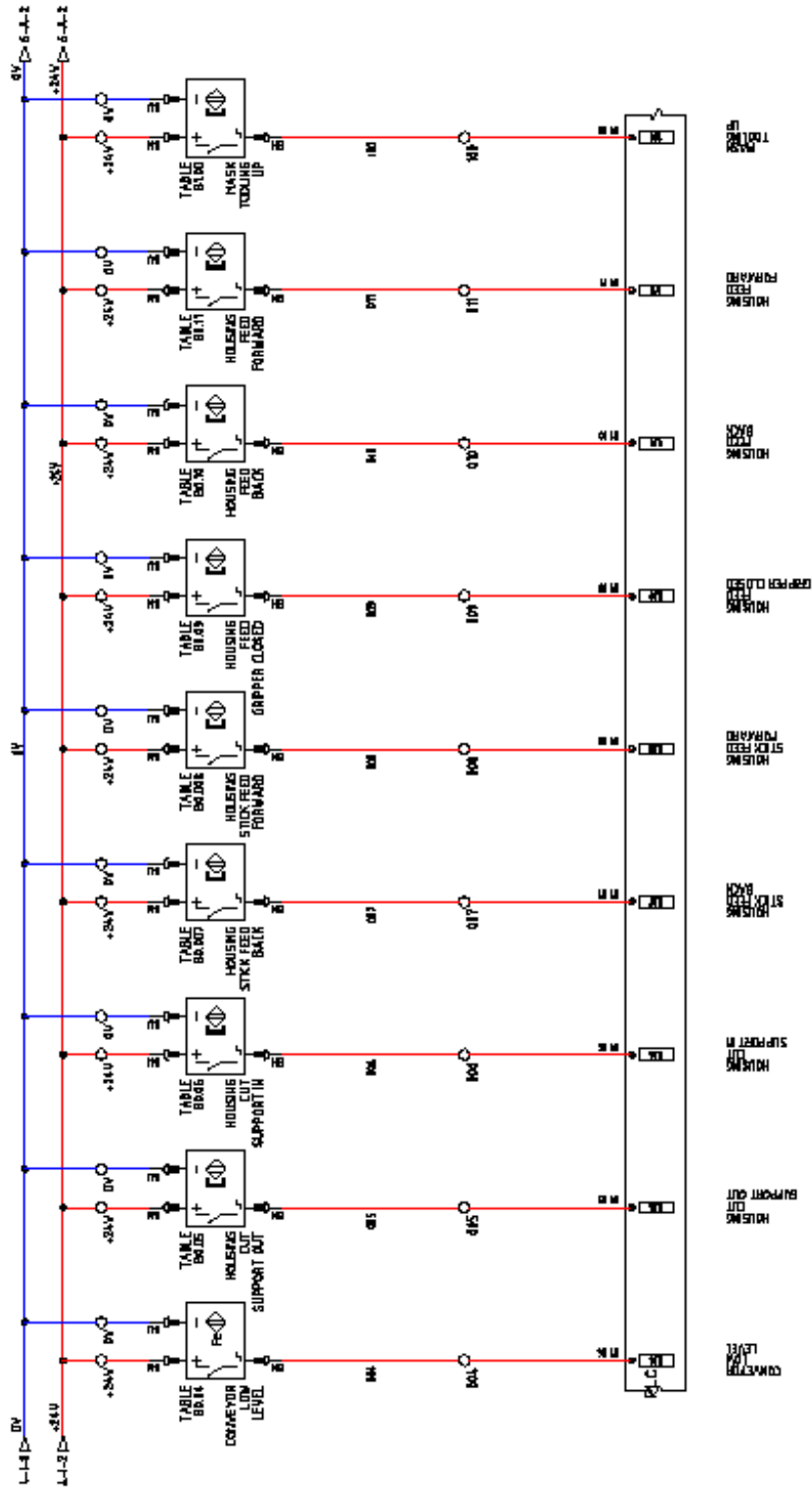
Manufacturer	Description	Qty
FHB	600 X 400 X 200 Cabinet	1
Kato-Entex	Entex No 3016	50
	Entex No 913	10
	Entex No 3022	50
	Entex No 3096	50
	Entex No 3100	50
	Entex No 3302	1
Misumi	ANB16-45	1
	BSPL4-25	1
	HHKS100	1
	HHKST100	1
	HHSD5	1
	LBRFNF6-283-10-PC-QC	1
	SCHI16	1
THK	2SRS15WMUU+190L	1
	SRS 9WM UU +80L	1
	RSH15ZMUU+230L	1
	RSH15ZMUU+270L	1
Royal Diversified Products Inc.	MQB 1.59 63)	27
	MQB 1.60 X 63)	27
TED Ltd	DIN 464-M4-12	1
	DIN 464-M4-20	1
	DIN 653 M6-16	1
	GN 6335.4-TE-32-M6-25	2
	GN 6335.4-TE-32-M6-45	2

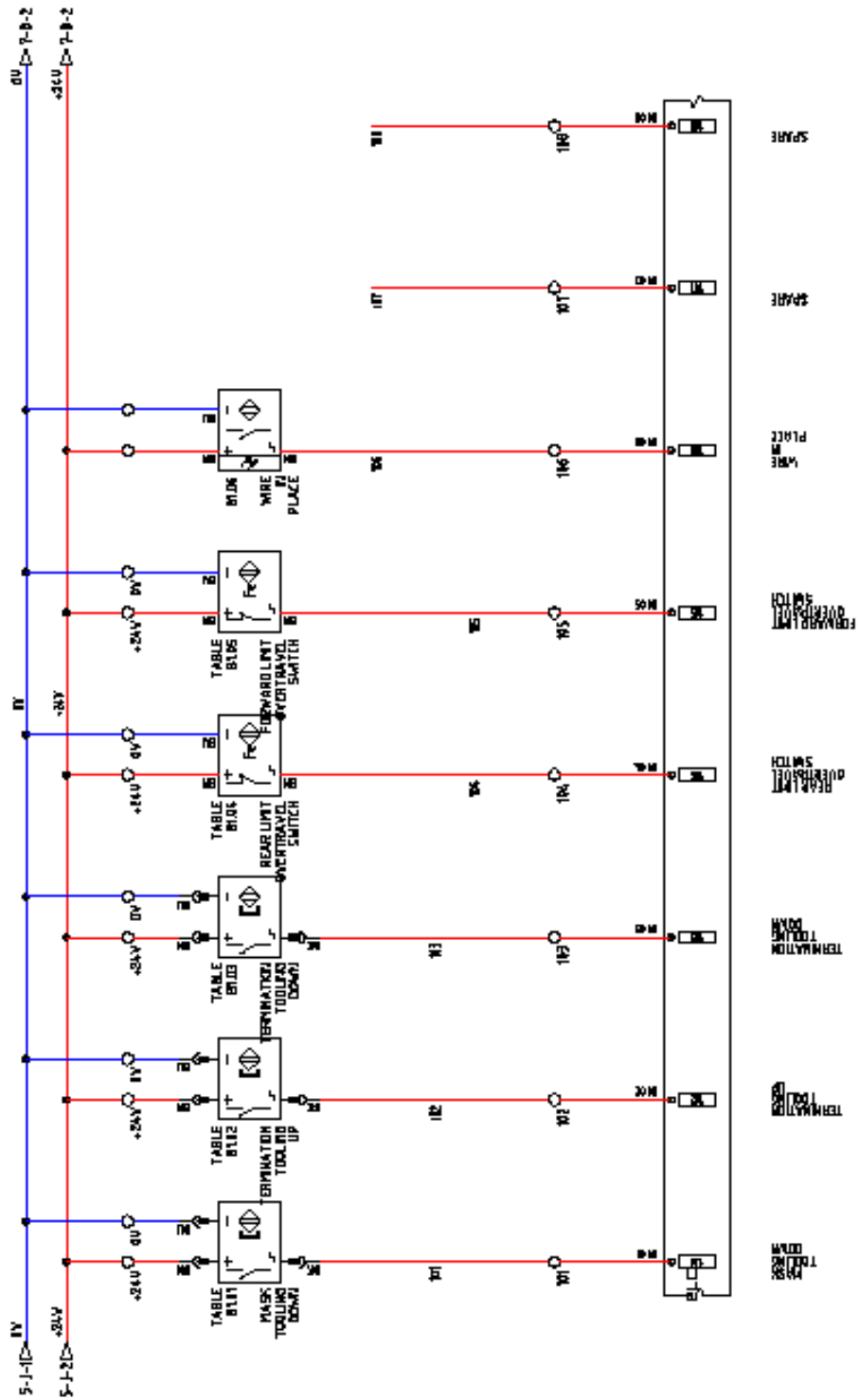
5.2 Electrical Drawings

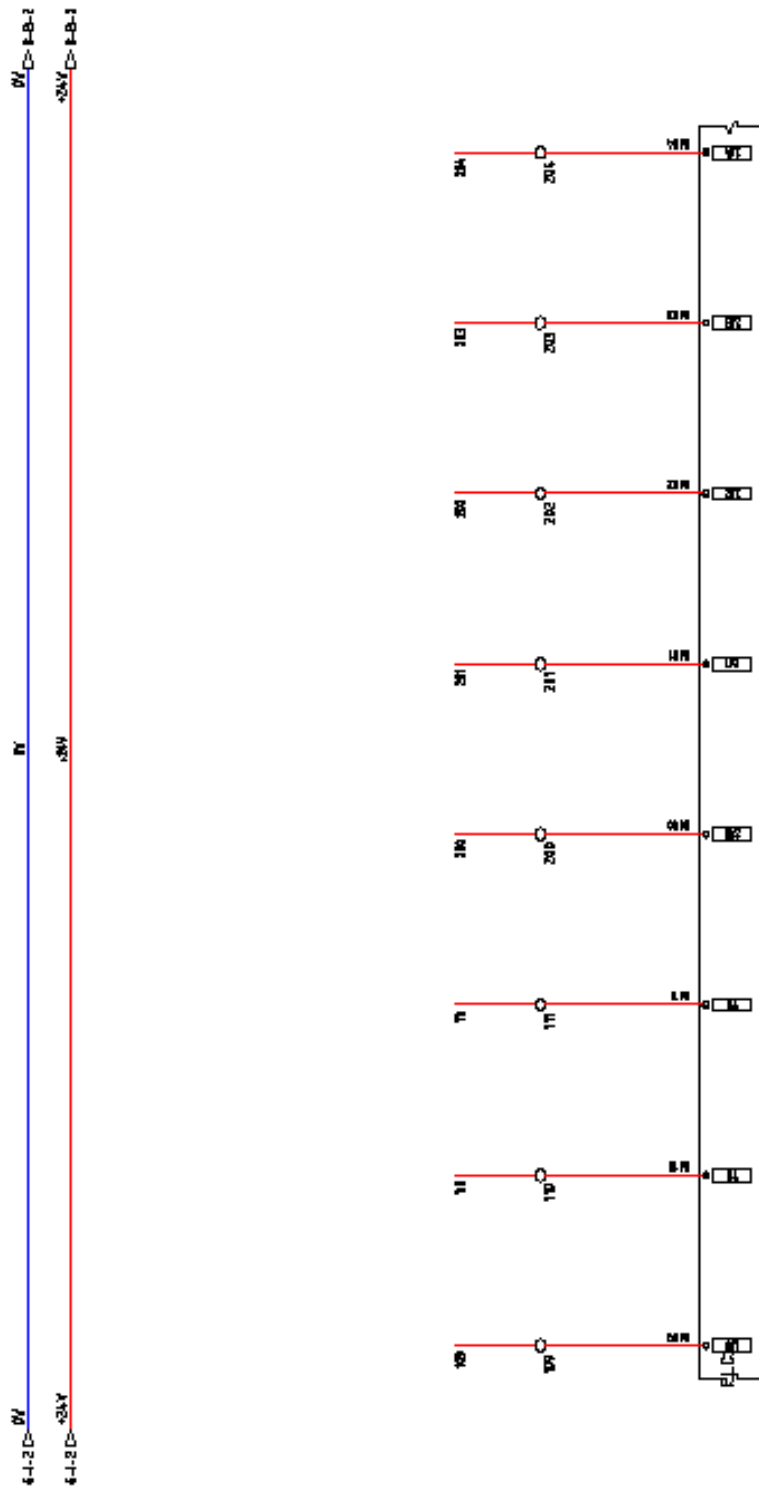


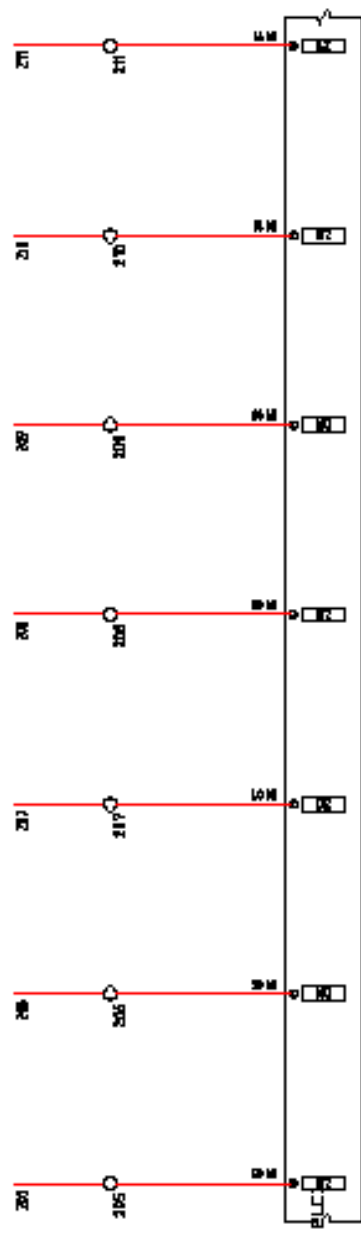
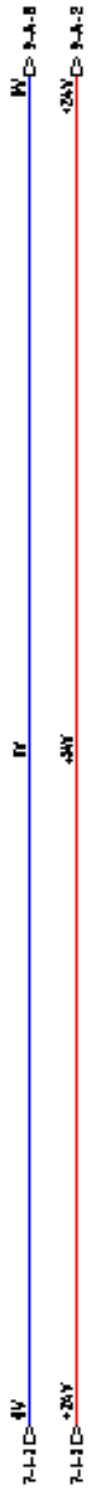


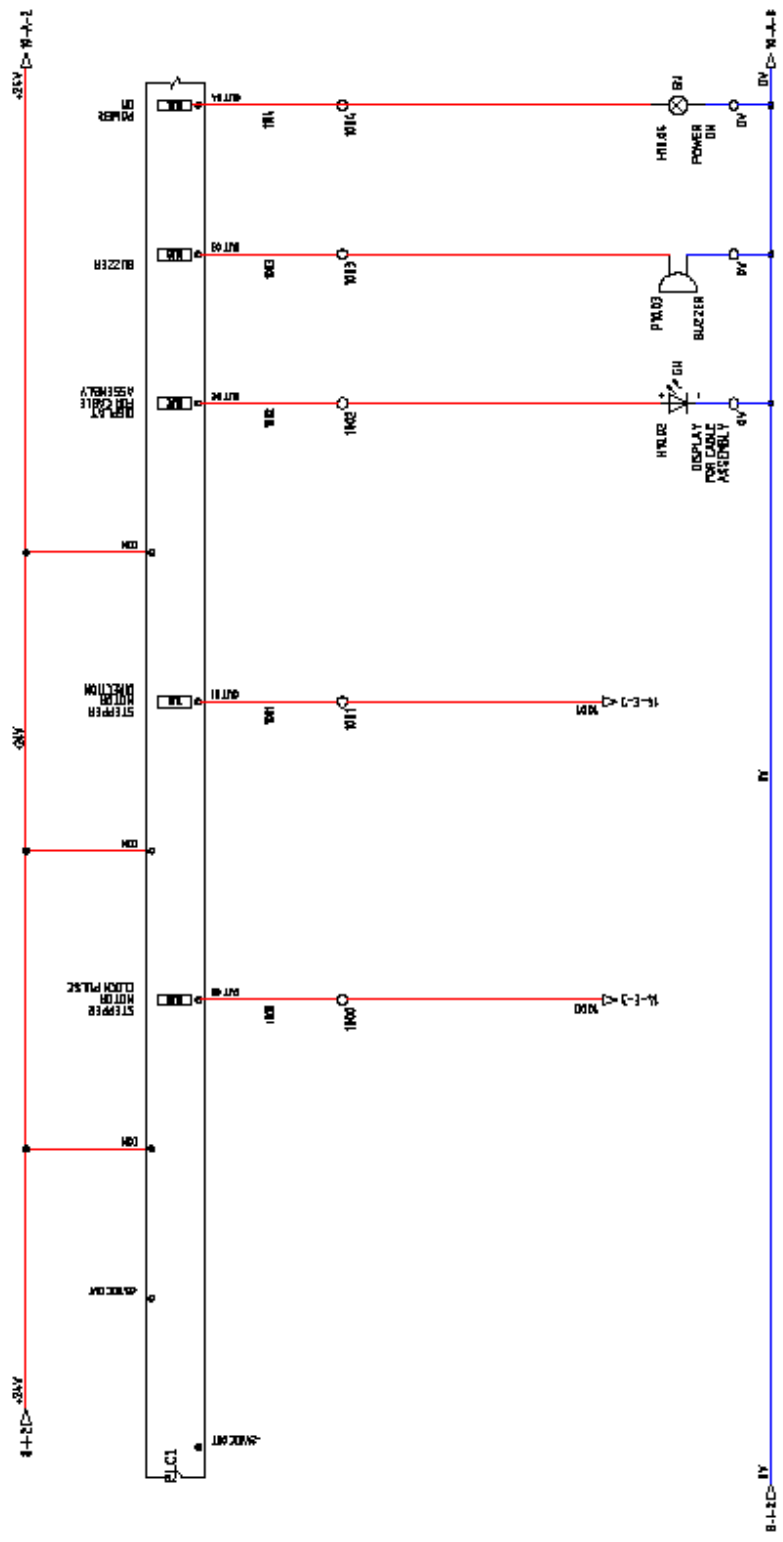


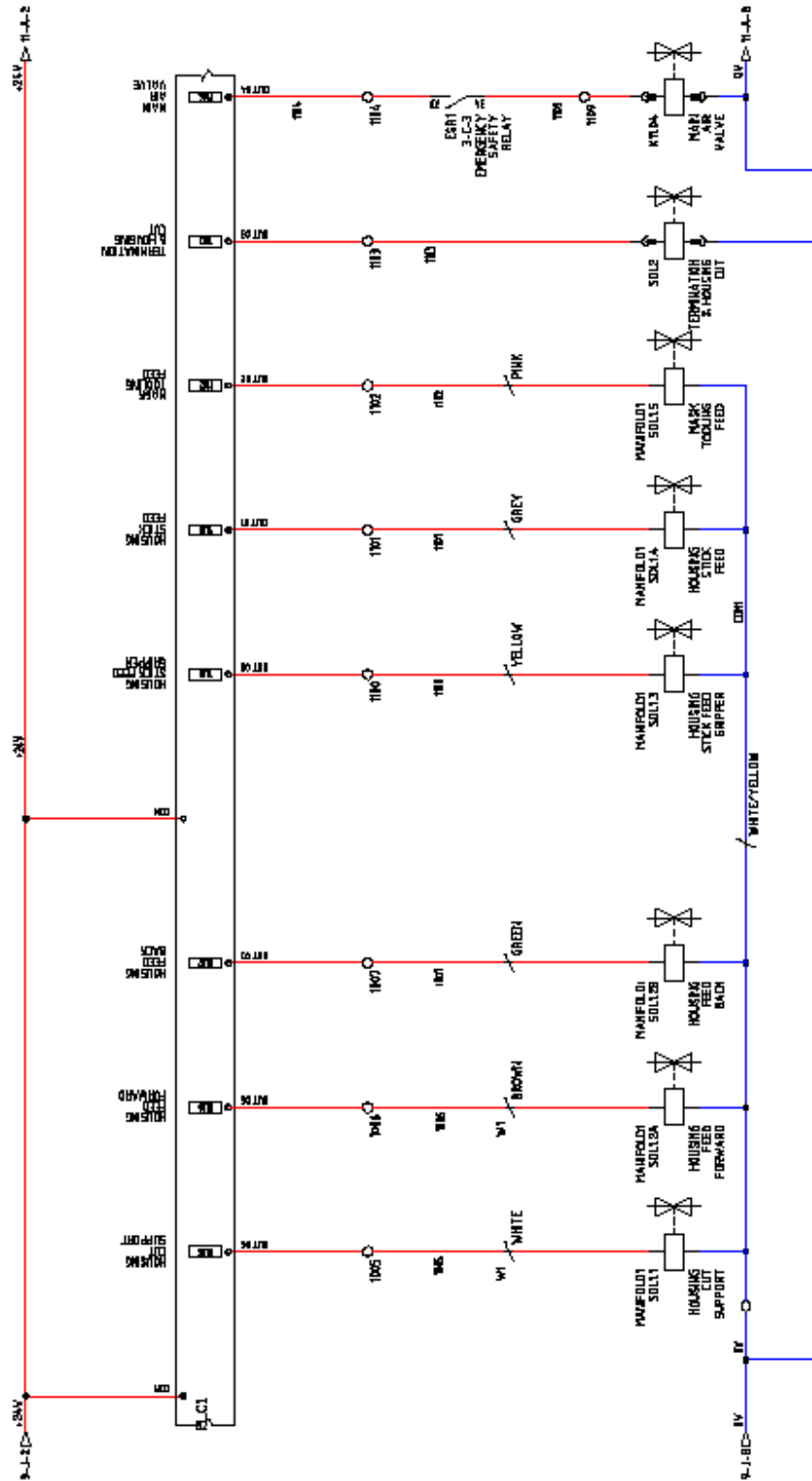


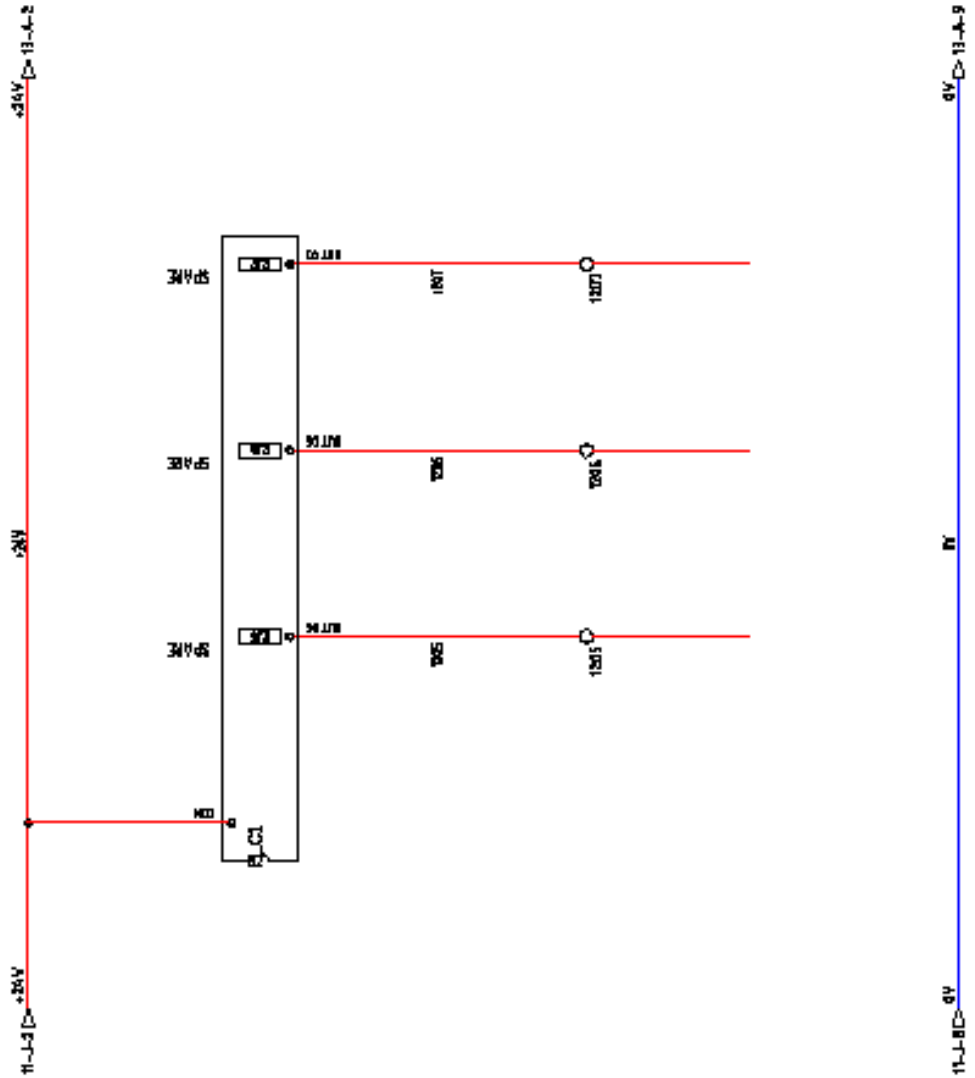


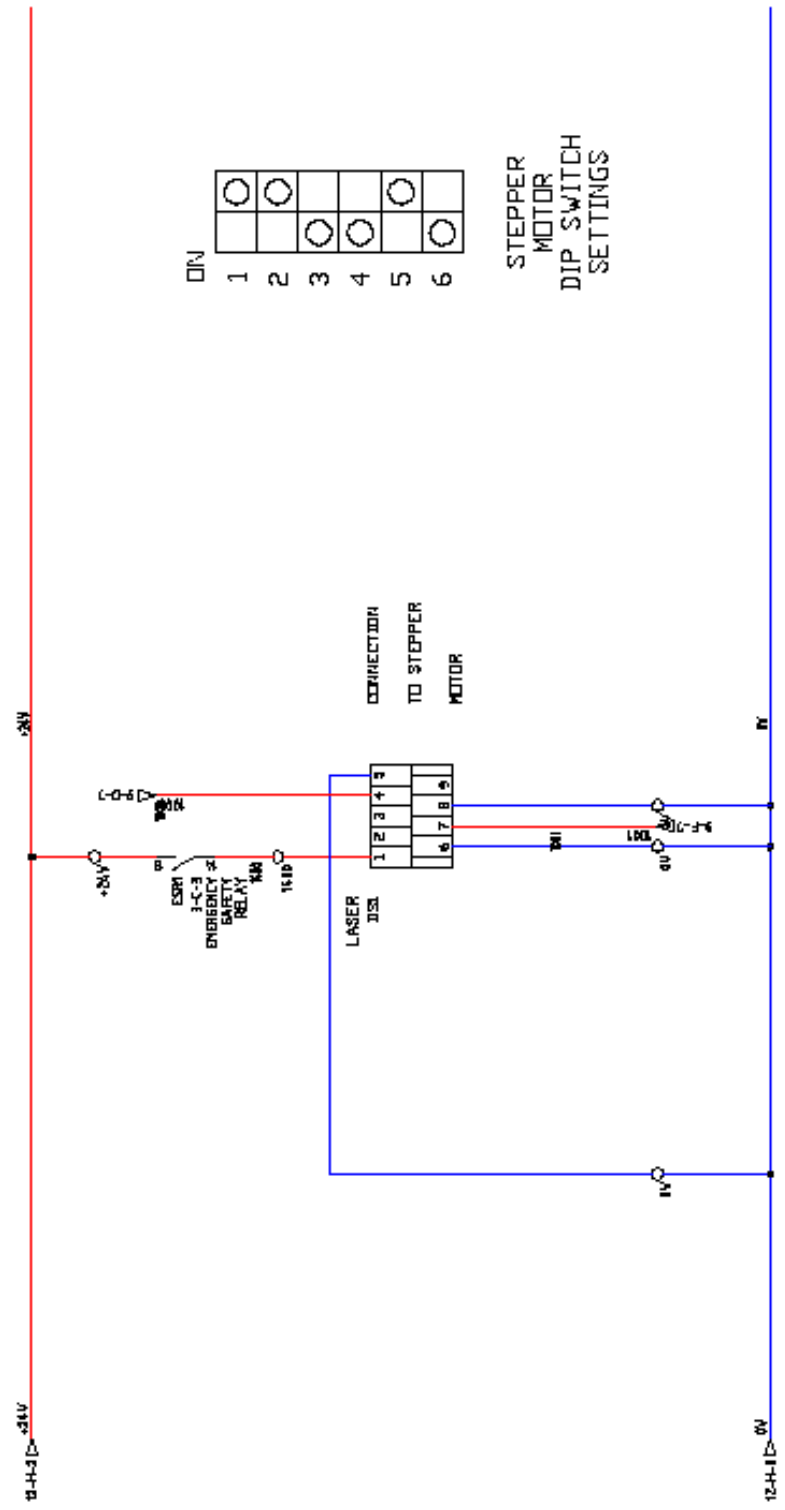












BILL OF MATERIALS

SUPPLIER	MEG	QTY	SUPPLIER PART	CATALOG	DESCRIPTION
RADIUMS					
FARNELL	AWJ	1	522-1449	KSC3524	Buzzer
FARNELL		1	52074	07-5228	Solder Bucket Socket 19 Way
FARNELL		1	430-3430	430-3430	DIE CAST SUB D HOOD (9 WAY)
FARNELL		1	430-3430	464-004	24V LED GREEN
FESCO		1	163142	CP18-MH-SL-174	SOLENOID VALVE
FESCO		1	563675	CPV-SC-M-VI	VALVE TERMINAL
FESCO		1	193740	DIE-12-00-28-LK-KG-RF-GK	TOOTHED BELT AXIS
FESCO		1	530084	KSE-15-22-004-005	COUPLER
FESCO		1	165761	LFR-174-1-MINIKG	SERVS COMBINATION
FESCO		2	151687	MS31-ER	PLUG SOCKET
FESCO		1	520079	MTR-FL-30-S742	MOTOR FLANGE
FESCO		1	530059	MTR-ST-42-485-AA	STEPPER MOTOR
FESCO		1	164274	PEV-174-WD-LED-24	ANGLED SOCKET
FESCO		1	133344	MSM-4	FILING
FESCO		5	150387	MSM-4H	FILING
FESCO		1	150387	STER-MB-PS-S-I	PROXIMITY SWITCH
FESCO		13	159421	SIM-M8-360-S-PU	PROXIMITY SWITCH SOCKET STRAIGHT
FESCO		1	159423	SIM-M8-360-S-PU	PROXIMITY SWITCH SOCKET RIGHT ANGLE
FESCO		2	175095	SMR-B-20	MOUNTING KIT
FESCO		1	150857	SME-B-S-LED-24	PROXIMITY SWITCH
FESCO		1	524911	SMT-8F-24V-K7.5-DE	PROXIMITY SWITCH
FESCO		2	163004	UC-174	SILENCER
AIK	GUARDMASTER			4401-532022	STEPA GUARD SWITCH SIP
FARNELL	MERLIN GERIN	1	434-5661	650H102	1 POLE 2 AMP MCB
FARNELL	MOELLER	1	175-456	10-2-172	3 POLE ROTARY CAM SWITCH
AIC	OMRON	1		CPMA-600D11-D	CPMA - CPU W/ 60 I/O POINTS
AIC	OMRON	1		PL28-CR2EVI	PLC TO RT CONNECTING CABLE
AIC	OMRON	1		PL33-S126DE	HMI TOUCHSCREEN
AIC	OMRON	1		SVS-1204	POWER SUPPLY SA
AIC	OMRON	1		ZX-L140	LASER DISPLACEMENT SENSOR HEAD
AIC	OMRON	1		ZX-L141	AMPLIFIER AND DISPLAY
PLZ	PIZ	1	774310	PM02-X3-24VDC	EMERGENCY STOP & GATE MONITORING
SMC	SMC	1		AX1100-TSP3-050	1/2 SUB CONNECTOR CABLE
FARNELL	TELEMECANIQUE	1	177-611	Z82B65	PUSH BUTTON MOMENTARY
FARNELL	TELEMECANIQUE	1	175-460	Z82B102	ADDITION CONTACT
FARNELL	TELEMECANIQUE	1	175-458	Z82B554	MUSHROOM HEAD, RELE-LATCH TORN TO RELEASE
FARNELL	TELEMECANIQUE	1	175-451	Z82B101	SWITCH BODY
FARNELL	TELEMECANIQUE	1	175-452	Z82B102	SWITCH BODY
FARNELL	TELEMECANIQUE	1	305-4883	Z84B7033	PILOT LIGHT HEAD FOR LED
FARNELL	TELEMECANIQUE	1	305-4731	Z84BVB3	LED BODY

COMPONENTS 1

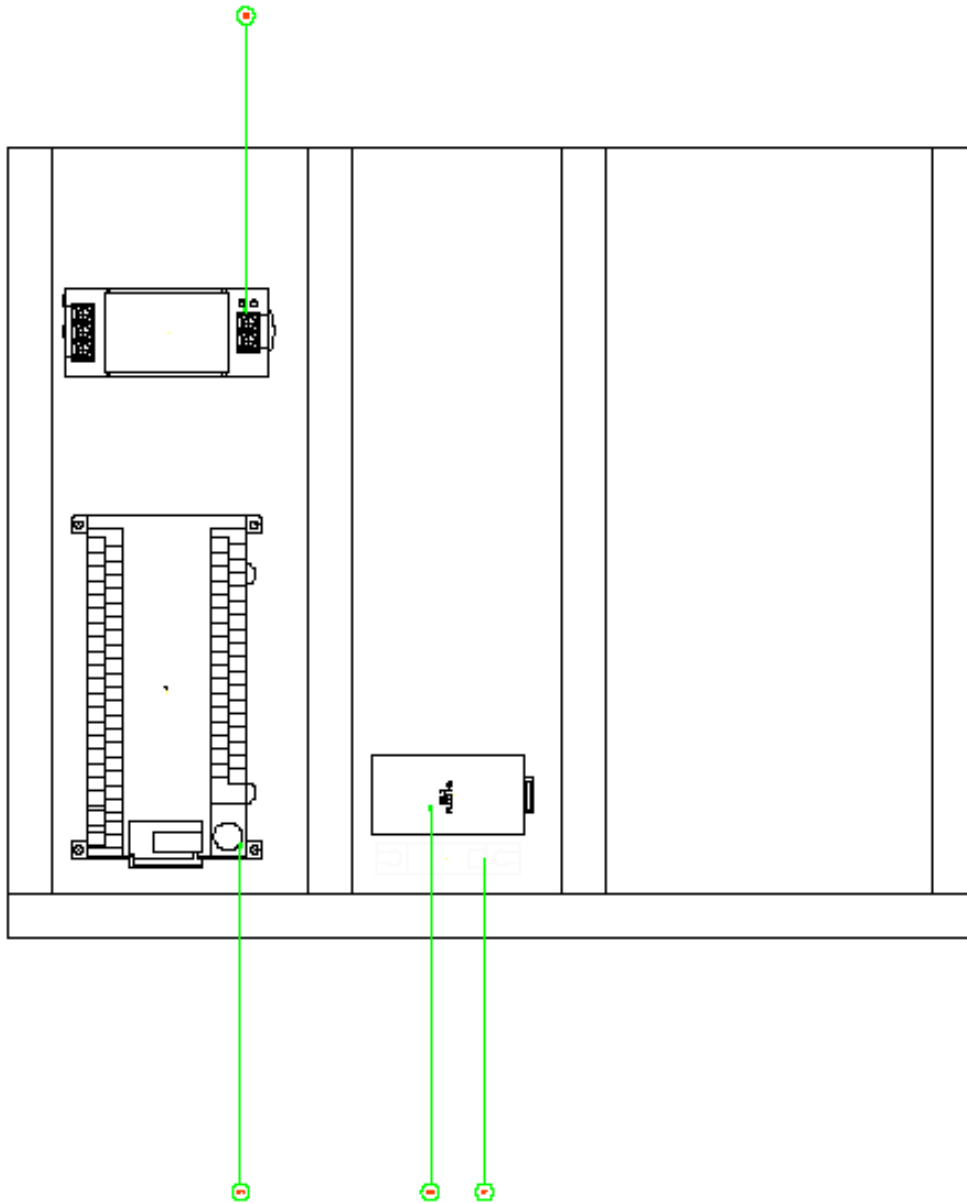
SH	TAGNAME	CAT	MFG	DE-SIC1	DE-STOP	DE-SIC3
2	+CABINET-Q1	TO-2-1/EZ	MOELLER	MAIN	ISOLATOR	DESIGN
2	G1	SBVS-12024	OMRON	POWER	SUPPLY	
3	Q2	C60H102	MERLIN GERIN			
3	+FRAME-GS1	440Y-S32022	GUARDMASTER	GUARD	SAFETY	SWITCH
3	+TABLE-S1	Z82B354	TELEMECANIQUE	EMERGENCY	STOP	
3	+TABLE-S2	Z82B2102	TELEMECANIQUE			
3	DI1	Z82B102	TELEMECANIQUE			
3	DI2	Z82B86	TELEMECANIQUE			
3	DI3	Z82B2101	TELEMECANIQUE	RESET		
3	DI4	NT3S-ST126BE	OMRON	HMI		
3	ES1	NT3S-EN212V1	OMRON	EMERGENCY	SAFETY	RELAY
3	ES2	NT3S-EN212V1	OMRON	EMERGENCY	SAFETY	RELAY
4	+FRAME-S0.02	PH02-X3-24VDC	PIZZ			
4	PLC1			AIR	PRESSURE	OK
5	+TABLE-B0.007	CPM2A-SUC001-1	OMRON	MODULE 1		CPU MODULE
5	+TABLE-B0.008	SME-B-3-LED-24	FESTO	HOUSING	STICK FEED	BACK
5	+TABLE-B0.04	SME-M8-3-LED-24	FESTO	HOUSING	STICK FEED	FORWARD
5	+TABLE-B0.05	SME-M8-3-LED-24	FESTO	CONVEYOR	LOW	LEVEL
5	+TABLE-B0.06	SME-M8-3-LED-24	FESTO	HOUSING	CUT	SUPPORT OUT
5	+TABLE-B0.09	SME-M8-3-LED-24	FESTO	HOUSING	CUT	SUPPORT IN
5	+TABLE-B0.10	SME-M8-3-LED-24	FESTO	HOUSING	FEED	GRIPPER CLOSED
5	+TABLE-B0.11	SME-M8-3-LED-24	FESTO	HOUSING	FEED	BACK
5	+TABLE-B1.00	SIM-M8-3-LED-24	FESTO	HOUSING	FEED	FORWARD
6	+TABLE-B1.01	SIM-M8-3-LED-24	FESTO	MASK	TOOLING	UP
6		SIM-M8-3-LED-24	FESTO	MASK	TOOLING	DOWN

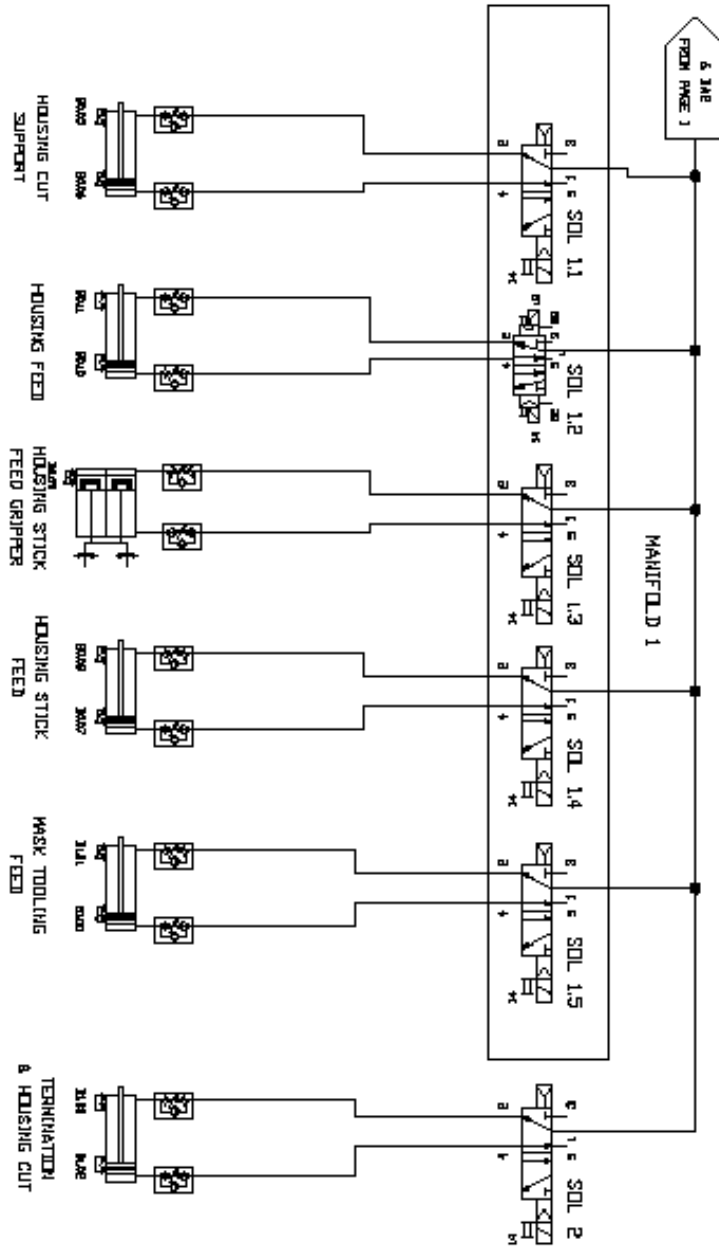
COMPONENTS 2

SH	TAGNAME	CAT	MFG	DESCR	DESCR	QTY
6	+TABLE-B1.02	SME-B-S-LED-24 SIM-MB-31D-5-P11	FESTO	TERMINATION	TOOLING	UP
6	+TABLE-B1.03	SME-MB-31D-5-P11	FESTO	TERMINATION	TOOLING	DOWN
6	+TABLE-B1.04	SMT-MB-24V-K7.5-DE	FESTO	REAR LIMIT	OVERTRAVEL	SWITCH
6	+TABLE-B1.05	SMT-MB-24V-K7.5-DE	FESTO	FORWARD LIMIT	OVERTRAVEL	SWITCH
6	B1.D6	ZX-LD41	OMRON	WIRE	IN	PLACE
9	H10.02	464-004	FARNELL	DISPLAY	FOR CABLE	ASSEMBLY
9	H10.04	Z84BV83	TELEMECANIQUE	POWER	ON	
9	P10.03	KSG3524	TELEMECANIQUE	BUZZER		
10	+MANIFOLD1-SOL1.1	LPV-SL-MP-V1	AWD	HOUSING	CUT	SUPPORT
10	+MANIFOLD1-SOL1.2	GSM1-4	FESTO	HOUSING		5
10	+MANIFOLD1-SOL1.3	GSM1-4H	FESTO	HOUSING		5
10	+MANIFOLD1-SOL1.4			HOUSING	FEED	FORWARD
10	+MANIFOLD1-SOL1.5			HOUSING	FEED	BACK
10				HOUSING	STICK FEED	GRIPPER
10				HOUSING	STICK FEED	FEED
10				HOUSING	TOOLING	FEED
10	K11.04	LFR-174-D-MINI-KG PEV-1/4-WD-LED-24 MSSD-EB UC-1/4	FESTO	MAIN	AIR	VALVE
10	SOL2	CPE18-MH-SL-174	FESTO	TERMINATION	& HOUSING	CUT
10	WI	MSSD-EB MTR-FL30-ST42	FESTO	CONNECTION	TO STEPPER	MOTOR
13	+LASER-DIS1	MTR-FL30-ST42 KSE-15-22-D04-D05 IGE-12-100-2R-LK-KG-KF-GK 107-522B 430-3430	FESTO FESTO FESTO FARNELL	CONNECTION	TO STEPPER	MOTOR

PANEL BILL OF MATERIALS

ITEM	TAGS	QTY	SUB	MFG	CATALOG
1	PLC1	1		OMRON	CPM2A-60CDT1-D
3	G1	1		OMRON	S8VS-12024
4	Q2	1		MERLIN GERIN	C60HD102
5	ESR1	1		PILZ	PNQZ X3 24VDC





Section 6

Connector Series Chart

Products: 2.50mm (.098") Pitch Appli-Mate™ RAST 2.5 IDT Connector Assemblies 2 to 20 Circuits.

Connector Series No.	Circuit Size	Connector Assembly Order No.						
90871	3	90871-0001	90871-0002	90871-0013	90871-0014	90871-0015	90871-0016	90871-0017
		90871-0018	90871-0019	90871-0020	90871-0021	90871-0022	90871-0024	90871-0034
		90871-0041	90871-0042	90871-0044	90871-0251	90871-0252	90871-0253	
	4	90871-0501	90871-0502	90871-0503	90871-0504	90871-0505	90871-0506	90871-0507
		90871-0508	90871-0509	90871-0530	90871-0538	90871-0539	90871-0540	90871-0541
		90871-0542	90871-0677	90871-0678	90871-0679	90871-0751	90871-0752	90871-0755
	5	90871-1001	90871-1002	90871-1003	90871-1004	90871-1005	90871-1006	90871-1007
		90871-1008	90871-1009	90871-1251				
	6	90871-1501	90871-1502	90871-1503	90871-1504	90871-1505	90871-1506	90871-1507
		90871-1508	90871-1509	90871-1510	90871-1511	90871-1512	90871-1513	90871-1514
		90871-1515	90871-1516	90871-1517	90871-1518	90871-1519	90871-1520	90871-1521
		90871-1522	90871-1523	90871-1524	90871-1525	90871-1526	90871-1527	90871-1528
	7	90871-1529	90871-1751	90871-1752	90871-1753			
		90871-2001	90871-2002	90871-2004	90871-2005	90871-2006	90871-2007	90871-2008
	8	90871-2009	90871-2251	90871-2253				
		90871-2501	90871-2502	90871-2503	90871-2504	90871-2505	90871-2506	90871-2507
	9	90871-2508	90871-2509	90871-2751	90871-2752	90871-2753		
		90871-3001	90871-3002	90871-3003	90871-3004	90871-3251	90871-3256	
	10	90871-3501	90871-3502	90871-3503	90871-3751	90871-3752	90871-3753	
	11	90871-4001	90871-4002	90871-4251				
12	90871-4501	90871-4751						
13	90871-5001	90871-5002	90871-5003	90871-5004	90871-5005			
14	90871-5501	90871-5751						
15	90871-6001	90871-6002	90871-6251					
16	90871-6501							
17	90871-7001							
18	90871-7501							
19	90871-8001							
20	90871-8501	90871-8751						
90872	2	90872-0002	90872-0003	90872-0004	90872-0005	90872-0006	90872-0007	90872-0008
		90872-0009	90872-0010	90872-0011	90872-0012	90872-0013	90872-0014	90872-0015
		90872-0016	90872-0017	90872-0018	90872-0019	90872-0020	90872-0021	90872-0022
		90872-0023	90872-0024	90872-0351	90872-0352	90872-0353	90872-0354	90872-0501
	3	90872-1001	90872-1002	90872-1003	90872-1004	90872-1005	90872-1007	90872-1008
		90872-1009	90872-1010	90872-1011	90872-1501			
	4	90872-2001	90872-2002	90872-2003	90872-2004	90872-2005	90872-2006	90872-2007
		90872-2008	90872-2009	90872-2010	90872-2011			
5	90872-3001							
6	90872-4001							
7	90872-5001	90872-5002						
8	90872-6001							
91491	2	91491-0002	91491-0022	91491-0042	91491-0062			
	3	91491-0003	91491-0023	91491-0043	91491-0063	91491-0143	91491-0203	91491-0243
		91491-0263						
	4	91491-0004	91491-0044	91491-0104	91491-0144	91491-0304	91491-0344	
5	91491-0005	91491-0045	91491-0305	91491-0345	91491-0405	91491-0445		

Connector Series No.	Circuit Size	Connector Assembly Order No.							
91491	6	91491-0006	91491-0046	91491-0506	91491-0546				
	7	91491-0007	91491-0047	91491-0607	91491-0647				
	8	91491-0008	91491-0048	91491-0208	91491-0248	91491-0708	91491-0748	91491-2048	
	9	91491-0009	91491-0049	91491-0509	91491-0549	91491-0809	91491-0849		
	10	91491-0010	91491-0050	91491-0210	91491-0250	91491-0310	91491-0350	91491-0910	
		91491-0950							
	11	91491-0011	91491-0051	91491-0511	91491-0551	91491-0611	91491-0651	91491-1011	
		91491-1051							
	12	91491-0012	91491-0052	91491-0412	91491-0452	91491-0612	91491-0652	91491-0852	
		91491-1112	91491-1152						
	13	91491-0013	91491-0053	91491-1213	91491-1253				
	14	91491-0014	91491-0054	91491-1314	91491-1354				
	15	91491-0015	91491-0055	91491-0215	91491-0255	91491-1415	91491-1455		
	16	91491-0016	91491-0056	91491-1516	91491-1556				
	17	91491-0017	91491-0057	91491-1617	91491-1657				
	18	91491-0018	91491-0058	91491-1718	91491-1758				
	91716	3	91716-0001	91716-0002	91716-0013	91716-0014	91716-0015	91716-0016	91716-0017
			91716-0018	91716-0019	91716-0020	91716-0021	91716-0022	91716-0023	91716-0024
91716-0034			91716-0041	91716-0042	91716-0043	91716-0044	91716-0045	91716-0046	
4		91716-0501	91716-0502	91716-0503	91716-0504	91716-0505	91716-0506	91716-0507	
		91716-0530	91716-0538	91716-0539	91716-0540	91716-0541	91716-0542	91716-0543	
		91716-0544	91716-0545	91716-0546	91716-0677	91716-0678	91716-0679		
5		91716-1001	91716-1002	91716-1003	91716-1004	91716-1005	91716-1006	91716-1007	
		91716-1008	91716-1009	91716-1010	91716-1011	91716-1012	91716-1013	91716-1014	
		91716-1015							
6		91716-1501	91716-1502	91716-1503	91716-1504	91716-1505	91716-1506	91716-1507	
		91716-1509	91716-1510	91716-1511	91716-1512	91716-1513	91716-1514	91716-1515	
		91716-1516	91716-1517	91716-1518	91716-1519	91716-1520	91716-1521	91716-1522	
		91716-1523	91716-1524	91716-1525	91716-1526	91716-1527	91716-1528	91716-1529	
7		91716-1531	91716-1532	91716-1534	91716-1535	91716-1536	91716-1537		
		91716-2001	91716-2002	91716-2004	91716-2005	91716-2006	91716-2007	91716-2008	
		91716-2009	91716-2010	91716-2011	91716-2012	91716-2013	91716-2014	91716-2015	
		91716-2016	91716-2017	91716-2018	91716-2019				
8		91716-2501	91716-2502	91716-2503	91716-2504	91716-2505	91716-2506	91716-2507	
		91716-2508	91716-2509	91716-2510	91716-2511	91716-2512	91716-2513	91716-2514	
9		91716-3001	91716-3002	91716-3003	91716-3004	91716-3005	91716-3006	91716-3007	
		91716-3008	91716-3009						
10		91716-3501	91716-3502	91716-3503	91716-3504				
11		91716-4001							
12		91716-4501	91716-4502	91716-4503	91716-4504	91716-4505			
13		91716-5001	91716-5002	91716-5003					
14		91716-5501							
15		91716-6001	91716-6002						
16		91716-6501							
17		91716-7001							
18		91716-7501							
19		91716-8001							
20		91716-8501							
91717	2	91717-0002	91717-0003	91717-0004	91717-0005	91717-0006	91717-0007	91717-0008	
		91717-0009	91717-0010	91717-0011	91717-0012	91717-0013	91717-0014	91717-0015	
		91717-0016	91717-0017	91717-0018	91717-0019	91717-0020	91717-0021	91717-0022	
		91717-0023	91717-0024	91717-0025	91717-0026	91717-0027	91717-0028	91717-0029	
		91717-0030	91717-0031	91717-0032	91717-0033	91717-0035	91717-0036	91717-0037	

Connector Series No.	Circuit Size	Connector Assembly Order No.							
91717	2	91717-0038	91717-0039	91717-0040	91717-0351				
	3	91717-1001	91717-1002	91717-1003	91717-1004	91717-1005	91717-1007	91717-1008	
		91717-1009	91717-1010	91717-1011					
	4	91717-2001	91717-2002	91717-2003	91717-2004	91717-2005	91717-2006		
	5	91717-3001	91717-3002						
	6	91717-4001	91717-4002						
	7	91717-5001							
	8	91717-6001							
	9	91717-7001							
	10	91717-8001							
92332	3	92332-0043							
	5	92332-0045							
	8	92332-2048	92332-2148						
92336	3	92336-0001	92336-0002	92336-0013	92336-0014	92336-0015	92336-0016	92336-0017	
		92336-0018	92336-0019	92336-0020	92336-0021	92336-0022	92336-0023	92336-0024	
		92336-0041	92336-0042	92336-0043	92336-0044	92336-0045	92336-0046		
	4	92336-0501	92336-0502	92336-0503	92336-0504	92336-0505	92336-0506	92336-0507	
		92336-0530	92336-0538	92336-0539	92336-0540	92336-0541	92336-0542	92336-0543	
		92336-0544	92336-0545	92336-0546	92336-0677	92336-0678	92336-0679		
	5	92336-1001	92336-1002	92336-1003	92336-1004	92336-1005	92336-1006	92336-1007	
		92336-1008	92336-1009	92336-1010	92336-1011	92336-1012	92336-1013	92336-1014	
		92336-1015							
	6	92336-1501	92336-1502	92336-1503	92336-1504	92336-1505	92336-1506	92336-1507	
		92336-1508	92336-1509	92336-1510	92336-1511	92336-1512	92336-1513	92336-1514	
		92336-1515	92336-1516	92336-1517	92336-1518	92336-1519	92336-1520	92336-1521	
		92336-1522	92336-1523	92336-1524	92336-1525	92336-1526	92336-1527	92336-1528	
		92336-1529	92336-1530	92336-1531	92336-1532	92336-1534	92336-1535	92336-1536	
		92336-1537							
	7	92336-2001	92336-2002	92336-2004	92336-2005	92336-2006	92336-2007	92336-2008	
		92336-2009	92336-2010	92336-2011	92336-2012	92336-2013	92336-2014	92336-2015	
		92336-2016	92336-2017	92336-2018	92336-2019				
	8	92336-2501	92336-2502	92336-2503	92336-2504	92336-2505	92336-2506	92336-2507	
		92336-2508	92336-2509	92336-2510	92336-2511	92336-2512	92336-2513	92336-2514	
	9	92336-3001	92336-3002	92336-3003	92336-3004	92336-3005	92336-3006	92336-3007	
		92336-3008	92336-3009						
	10	92336-3501	92336-3502	92336-3503	92336-3504				
	11	92336-4001							
	12	92336-4501	92336-4502	92336-4503	92336-4504	92336-4505			
	13	92336-5001	92336-5002	92336-5003					
	14	92336-5501							
	15	92336-6001	92336-6002						
	16	92336-6501							
	17	92336-7001							
	18	92336-7501							
	19	92336-8001							
20	92336-8501								
93037	3	93037-0001	93037-0003	93037-0004	93037-0005	93037-0006	93037-0007	93037-0251	
		93037-0252	93037-0253	93037-0254	93037-0255	93037-0256	93037-0257	93037-0258	
		93037-0259	93037-0260	93037-0261	93037-0262	93037-0301	93037-0302	93037-0303	
	4	93037-0501	93037-0502	93037-0503	93037-0751	93037-0752	93037-0753	93037-0754	
		93037-0755	93037-0756	93037-0757	93037-0758	93037-0759			
	5	93037-1001	93037-1002	93037-1003	93037-1251	93037-1252	93037-1253		
	6	93037-1501	93037-1502	93037-1503	93037-1504	93037-1505	93037-1506	93037-1507	
		93037-1508	93037-1509	93037-1751					

Connector Series No.	Circuit Size	Connector Assembly Order No.						
93037	7	93037-2001	93037-2002	93037-2003	93037-2004	93037-2005		
	8	93037-2501	93037-2502	93037-2751	93037-2752			
	9	93037-3001	93037-3002	93037-3003				
	10	93037-3501	93037-3502					
	11	93037-4001	93037-4251					
	12	93037-4501						
93039	2	93039-0001	93039-0002	93039-0003	93039-0004	93039-0251	93039-0252	93039-0253
		93039-0254	93039-0255	93039-0256				
	3	93039-1001						
	4	93039-2001	93039-2002					
	5	93039-3001						
	6	93039-4001						
93050	3	93050-0001	93050-0003	93050-0005	93050-0006	93050-0007	93050-0008	93050-0009
		93050-0012	93050-0013	93050-0014	93050-0016	93050-0017	93050-0018	93050-0019
		93050-0020	93050-0021					
	4	93050-0501	93050-0502	93050-0503	93050-0504	93050-0505	93050-0506	93050-0507
		93050-0508	93050-0509					
	5	93050-1001	93050-1002	93050-1003	93050-1004	93050-1005		
	6	93050-1501	93050-1502	93050-1503	93050-1504	93050-1505		
	7	93050-2001	93050-2002	93050-2003				
	8	93050-2501	93050-2502	93050-2503				
	9	93050-3001	93050-3002					
	10	93050-3501	93050-3502	93050-3503				
	11	93050-4001	93050-4002					
	12	93050-4501						
13	93050-5001							
93051	2	93051-0001	93051-0002	93051-0003	93051-0004	93051-0005	93051-0006	93051-0007
		93051-0008	93051-0012	93051-0013	93051-0014	93051-0015	93051-0017	93051-0018
		93051-0019	93051-0020	93051-0021	93051-0024	93051-0025	93051-0026	93051-0027
		93051-0028	93051-0029					
	3	93051-1001	93051-1002	93051-1003	93051-1004	93051-1005	93051-1006	93051-1007
		93051-1008						
	4	93051-2001	93051-2002	93051-2003	93051-2004	93051-2005	93051-2006	
	5	93051-3001	93051-3002					
	6	93051-4001	93051-4002	93051-4003	93051-4004			
	7	93051-5001	93051-5002					

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