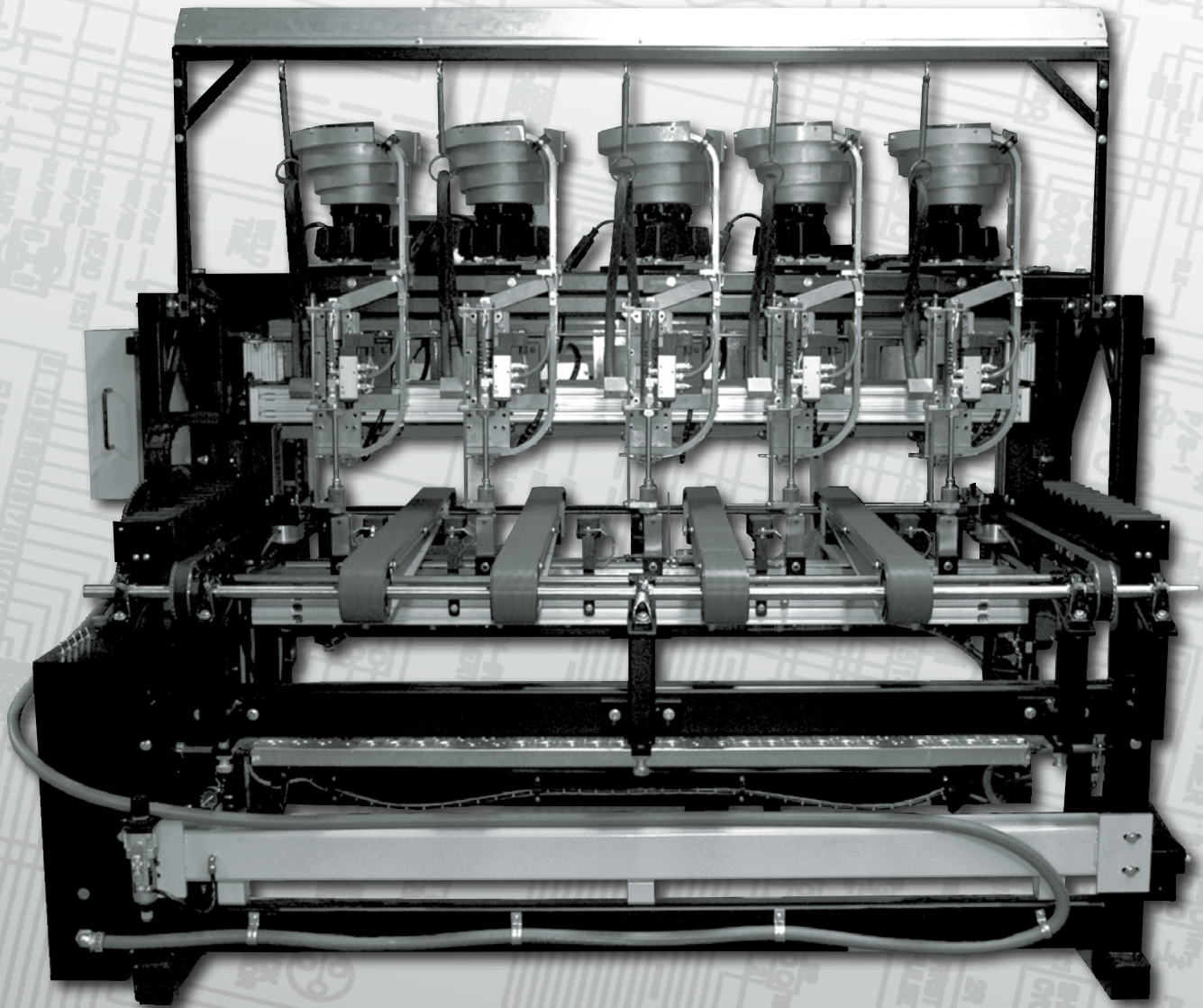


HIGH SPEED MULTIHEAD

HIGH SPEED MULTIHEAD PINSPOTTER



**MACHINERY
DIVISION**

OWNER'S MANUAL



INTRODUCTION

Duro Dyne introduced the first Pinspotter utilizing welded fasteners over 40 years ago. Throughout the years, continuous improvements have been made. The new High Speed Multihead Pinspotter is the latest achievement in insulation fastening power, speed and reliability.

Trouble free service has always been the foundation on which all Duro Dyne Pinspotters are built. All components are designed for easy access for maintenance and service bringing even higher levels of reliability, serviceability and efficiency.

IMPORTANT

Always follow manufacturer's recommendations for proper safety and handling procedures for all materials used in conjunction with this machine as outlined in Manufacturer's Safety Data Sheet (MSDS) for each product.

LIMITED WARRANTY

Duro Dyne Machinery is manufactured by skilled mechanics, utilizing the latest production techniques. Each unit has been rigorously tested prior to packaging and shipment in order to ensure trouble-free operation.

Your Duro Dyne machine has a two year warranty against defects in material. Any component found to be defective will be repaired or replaced (at the manufacturer's discretion) at no cost if the faulty component is returned freight prepaid to the nearest Duro Dyne Service Department. The warranty does not apply to expendable parts or repairs or service due to improper maintenance or operation procedures.

Duro Dyne products have been engineered to maximize operator safety. Unauthorized modification of this product will void the warranty.

All warranty claims must be accompanied by a serial number, date of purchase and the name and address of the distributor it was purchased from.

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POWER REQUIREMENTS

1. HSMH version 208-230 VAC 3 Phase 70 Amp minimum circuit protection.
Circuit protection must be a High Magnetic type circuit breaker or slow blow type fuses.
(Due to the inherent inrush current produced by this machine when welding Duro Dyne recommends using the next size larger current capacity wire over code when possible)
A) Connect 3 phase power to 100 amp service disconnect (breaker) in bottom left of main cabinet. (This breaker does not represent the minimum circuit protection and is there only for service disconnect purposes.)
B) 120VAC Circuit wires to the 5 Amp Breaker (lower left area of main cabinet). 208-230VAC is optional.
(See item 3 for Control Circuit Power)
2. HSMH version 480 VAC 3 Phase 40 Amp minimum circuit protection.
Circuit protection must be a High Magnetic type circuit breaker or slow blow type fuses.
(Due to the inherent inrush current produced by this machine when welding Duro Dyne recommends using the next size larger current capacity wire over code when possible.)
A) Connect 3 Phase power to 100 amp service disconnect (breaker) in the bottom left of main cabinet. (This breaker does not represent the minimum circuit protection and is there only for service disconnect purposes.)
B) 120 VAC circuit wires go to the 5 Amp and the 8 Amp Breakers. The line side of these breakers should be jump together already from the factory. 120 VAC can be wired to either breaker (located in the lower left area of the main cabinet).
3. **Control Circuit Power:** 120 volt wires go to internal 5Amp Breaker. If using optional 208/240Volt to power the Control Console, move the Multi-Tap low voltage Power Supply wires to the corresponding Terminals then connect jumper wires between the internal 5Amp Breaker to the internal 8Amp Breaker and. (Terminal designations: 50 and 58=110V, 51 and 59=208V, 52 and 60=240V)
4. **(Model-A) Vibrator Circuit:** 208/240Volt model (internal 8Amp Breaker / factory wired from the internal 3-Phase/100Amp Breaker)
5. **(Model-B) Vibrator Circuit:** 480Volt model (internal 8Amp Breaker / factory wired together with internal 120VAC/5Amp Breaker)

AIR REQUIREMENTS

1. 11cfm @ 100psi
2. Main Regulator 100psi (located on the left side of the Main Cabinet)
3. Head Regulator 50-60psi (located on the right side of the Main Cabinet)
4. Carriage Regulator 50-60psi (located on the opposite side of the Main Cabinet)
5. Depart Regulator 80psi (located on the Carriage Regulator)

CONTROL WIRES (ENCODER AND FIRE INITIATE CIRCUITS)

- A)** Terminals 122 and 123 are a normally open initiate circuit (no delay) right from the Sheet Sense Wand Switch (located in the lower right area of the Main Cabinet)
- B)** Terminals 139, 140 and 141 are an adjustable delayed initiate circuit for "leading edge" set-up.
139=N/C, 140=C and 141=N/O (located in the lower right area of the Main Cabinet)
- C)** Terminals 125 and 126 or 142 and 143 will activate the High Speed Multi Head unit to weld the pins;
must be a normally open contact with a minimum of a 50 millisecond signal (located in the lower right area of the Main Cabinet)

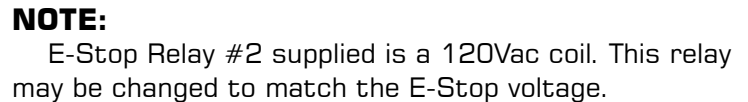
HIGH SPEED MULTI HEAD CONTROL CONSOLE (EXTERNAL)

- 1.** Main Power Switch – Controls Power “on” and “off”
- 2.** E-Stop – Emergency Power turn “off”
- 3.** Head Switches – Controls individual heads “on” and “off”
- 4.** Weld Time Control – Controls the amount of time the Dwell and Weld are “on”
- 5.** Dwell Time Control – Adjustment for how much longer the Dwell Cylinder stays “down” after welding
- 6.** Cycle Switch – Test Switch to “cycle” the multi Head
- 7.** Weld Switch – Switch for disabling the welding circuit
- 8.** Feed Switch – Feeds a pin to the tip and can also be used to “unload” the Feed Tracks when changing pin sizes
- 9.** Auto Cycle Switch – Makes the Feed Switch feed just once to load a pin to the tip or automatically continue feeding to “unload” the Feed Tracks
- 10.** Vibrator Speed Adjustments – Controls the “speed” of the Vibrator Bowls that load the pins into the Feed Tracks

HIGH SPEED MULTI HEAD CONTROL CONSOLE (INTERNAL)

- 1.** Return Delay Adjustment – Delays the “return” back to “home” after each weld
- 2.** Feed Adjustment – Determines how long the feed stays “out” when loading a pin
- 3.** Feed Delay Adjustment – Delays the Feed from loading pins until the Dwell has returned
- 4.** Initiate Delay Adjustment – Delays the initiate signal to the coil line controller for proper placement of the first row of pins
- 5.** Forward Assist Adjustment – Determines how long the Forward Assist Solenoid stays “on”

The E-Stop is your emergency power "OFF". To utilize it, remove the Red wire from the Contactor-1 terminal as indicated by the dotted line to the Contactor-1. (located in the lower left corner of the Main Cabinet; see detail view below)



The E-Stop Series Loop Relay #1 must be engaged at all times (24 / 7) with the LED constantly lit. If this machine's E-Stop Switches malfunction or has a loss of power from Transformer T1 and/or the E-Stop Series Loop Relay fails, jump the two field wires that go to the E-Stop Loop Relay together and this will restore the E-Stop Loop circuit temporarily. Repair machine failure and return field wiring back to original.

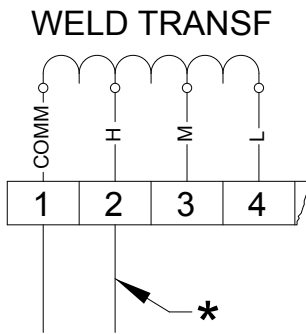


WELD TRANSFORMER MODIFICATIONS

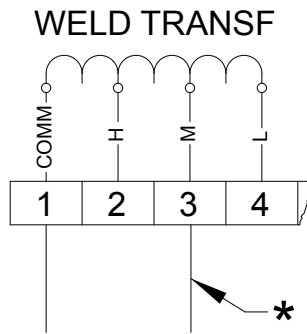
The Weld Transformers (located in the Yellow Enclosure on the Upper Carriage) may be adjusted if the welds are either too hot or too cold as shown below.

NOTE: The original machine weld options are as shown below. (DO NOT move the wire on Terminal-1)

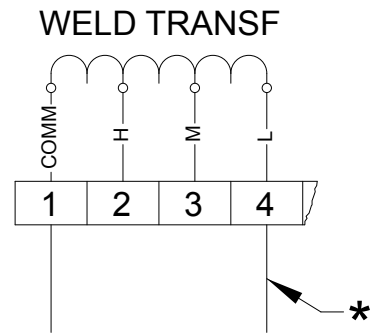
FOR A HIGH WELD,
SECURE '*' LEAD
TO TERM-2



FOR A MEDIUM
WELD, SECURE '*'
LEAD TO TERM-3

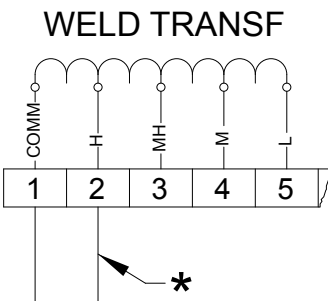


FOR A LOW
WELD, SECURE '*'
LEAD TO TERM-4

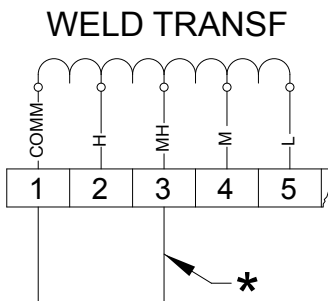


NOTE: The current machine weld options are as shown below. (DO NOT move the wire on Terminal-1)

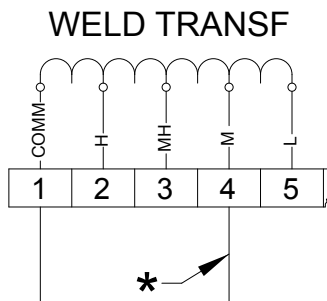
FOR THE HIGHEST
WELD, SECURE '*'
LEAD TO TERM-2



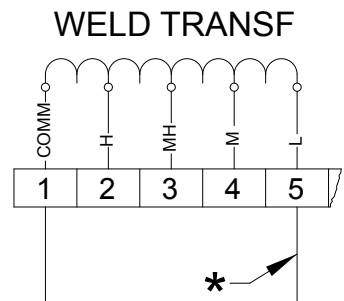
FOR A
MEDIUM-HIGH
WELD, SECURE '*'
LEAD TO TERM-3



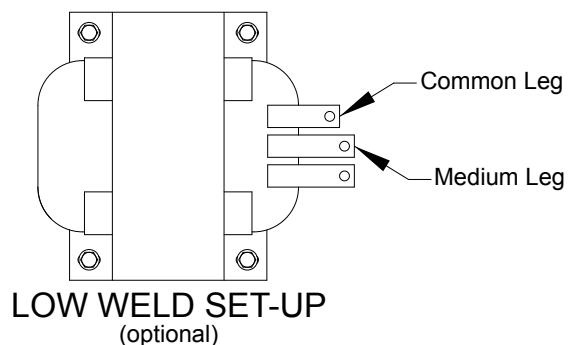
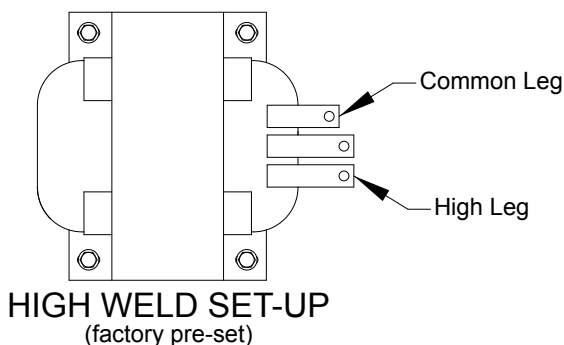
FOR A MEDIUM
WELD, SECURE '*'
LEAD TO TERM-4



FOR A LOW
WELD, SECURE '*'
LEAD TO TERM-5



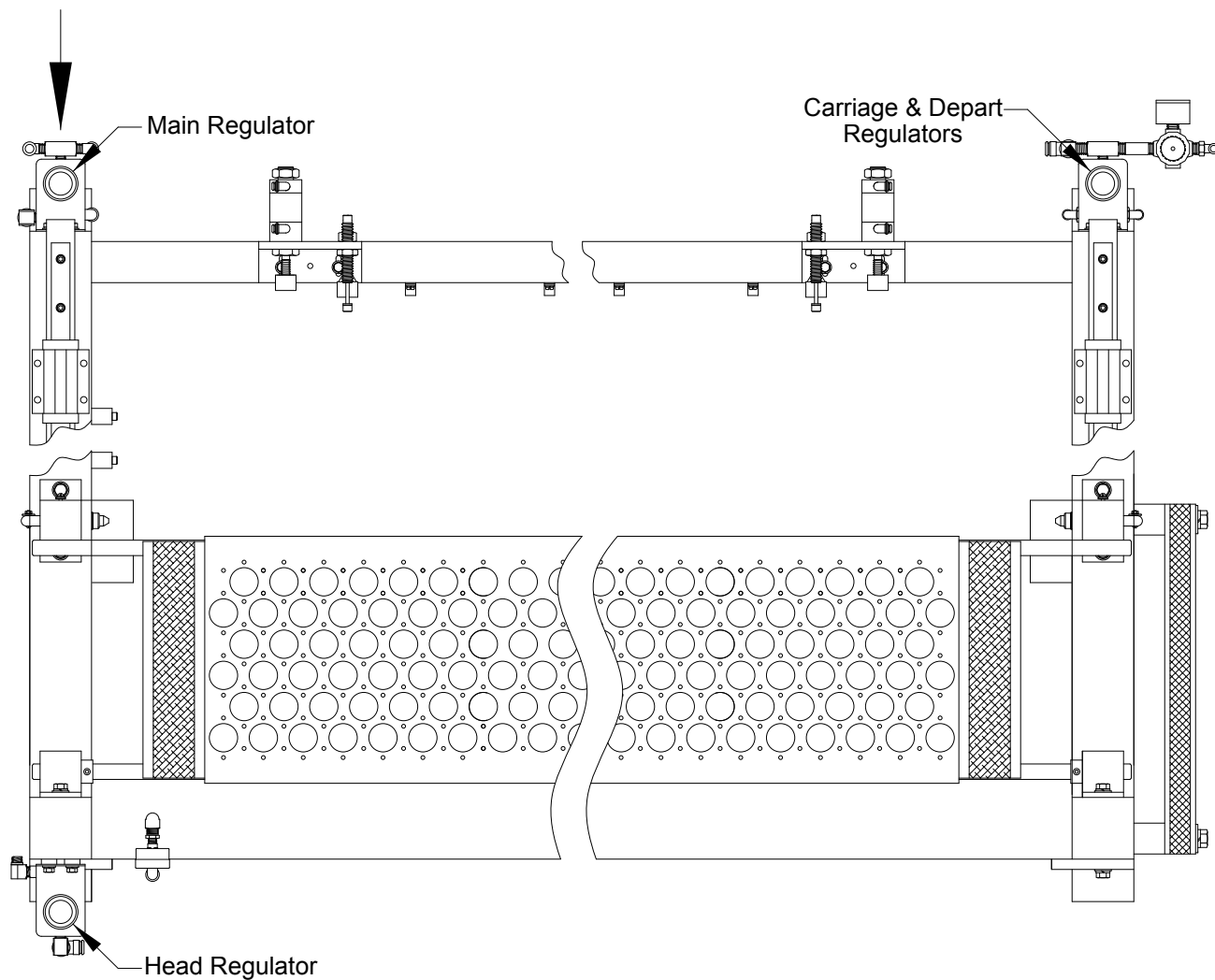
NOTE: If the welds still aren't satisfactory (too hot), move the Weld Cable connections as listed below. (located on the Weld Transformers), View shown from above for illustrative purposes.



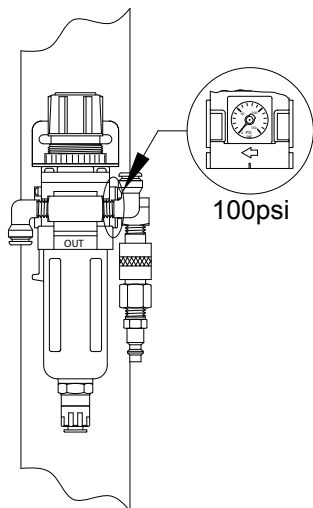
AIR REGULATOR ADJUSTMENTS

There are a total of 4 Air Regulators; Located on the legs of the frame as shown in the illustration below.

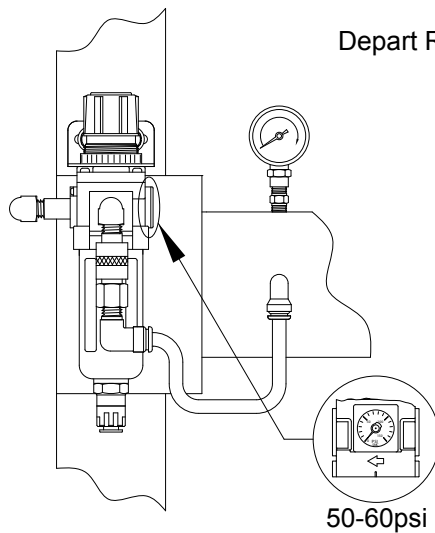
Main Cabinet side
of Machine



Main Regulator

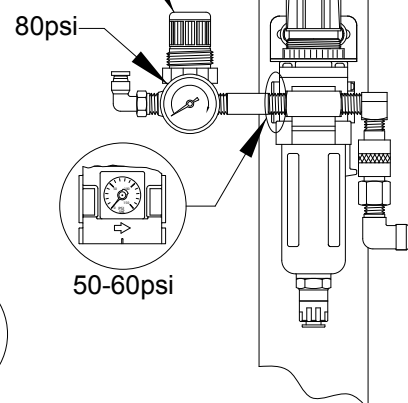


Head Regulator



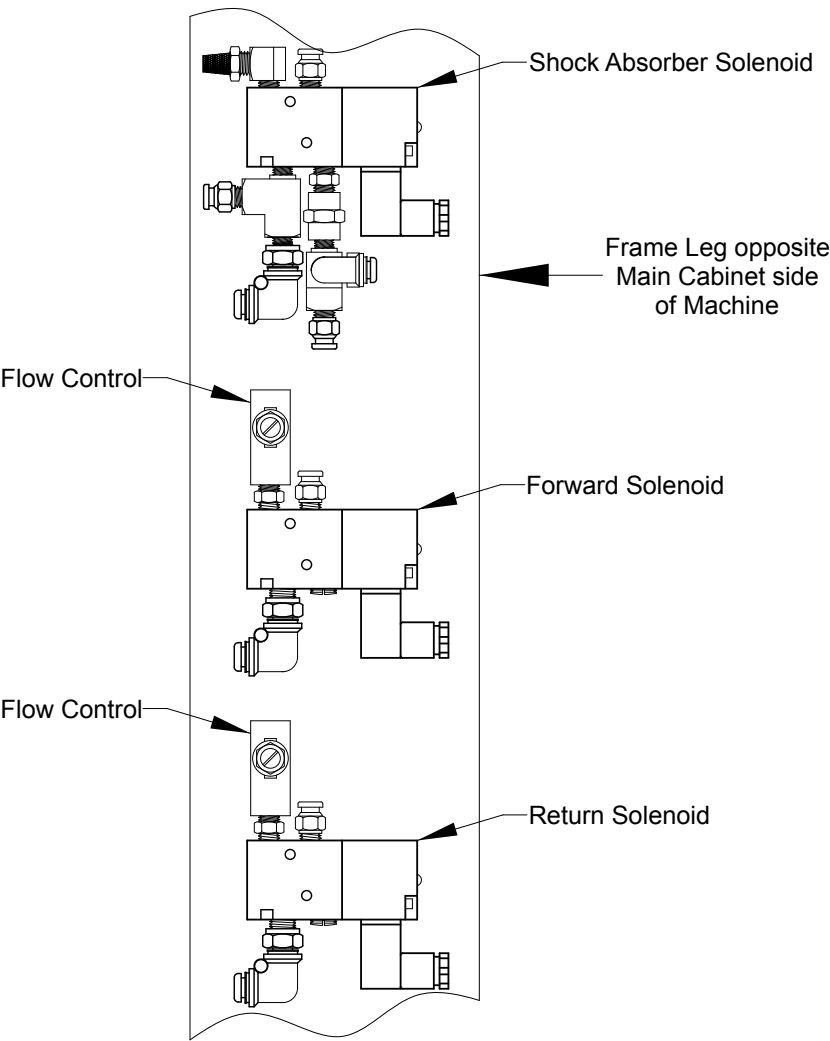
Carriage Regulator

Depart Regulator



ADJUSTING CARRIAGE MOVEMENT

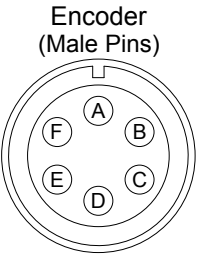
- 1-** Carriage "Slams" home during operation: The Flow Control on the Forward Solenoid may need adjustment.
- 2-** Carriage travel is "Restricted" or "Locked": The Cylinder for the "Carriage Return" is magnetically coupled and may have detached (this will cause the Carriage to not return anymore). Turn the power "OFF" and with an operator on either side of the machine, force the Carriage "Home" to re-couple. The Flow Control on the Return Solenoid, may need to be "Opened" more if this occurs.



Standard HSMH Encoder: (wheel diameter 1.909; travel 6"; CPR 2,048-*optional CPR available)
When securing our Encoder into the operating system, wire terminations are as shown below:
(The Encoder unit is located at the center of the machine above the Conveyor System)

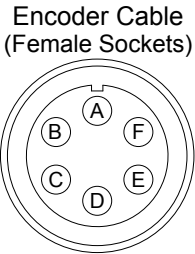
Encoder

Encoder Terminal	Encoder	
	Pin	Wire Color
Common	A	Black
V+	B	White
A+	C	Brown
A-	D	Yellow
B+	E	Red
B-	F	Green



Cable to Coil-Line Console

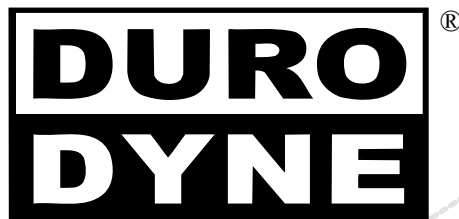
Encoder Terminal	Encoder Cable	
	Pin	Wire Color
Common	A	Green / White
V+	B	White / Green
A+	C	Blue / White
A-	D	White / Blue
B+	E	Orange / White
B-	F	White / Orange



PARTS LIST

17139	TIMER	39167	HSMH SAFETY/OVERRIDE SW ASSY
17192	LO WELD TIP ASSEMBLY	39168	HSMH AIR HOSE ASSY-8FT
17203	INSULATOR	39170	HSMH WELD CABLE ASSY-GROUND
17231	5" DWELL CYLINDER	39172	INTERLOCK SWITCH
17269	FEED CYLINDER BRACKET	39174	HSMH WELD CABLE ASSY-HEAD
17313	12-POST TERM BLOCK	39183	HSMH AUX AIR-HDER PRESSR GAGE
17323	RELAY WITH LED	39184	HSMH 250K POTENTIOMETER
17326	EXHAUST MUFFLER	39185	HSMH EMERGENCY STOP SWITCH
17334	VIB ON/OFF SWITCH	39186	HSMH CONTROL CONSOLE HEAD SW
17351	PUSHER /PAWL	39187	HSMH WELD TIME POTENTIOMETER
17356	ADJ. MUFFLER	39188	HSMH DWELL TIME POTENTIOMETER
17364	FEED CYLINDER	39189	HSMH POWER LAMP - RED
17377	UNIVERSAL REGULATOR ASSEMBLY	39190	HSMH LAMP - AMBER
18066	220V PHASE CONTROL	39191	HSMH 5AMP CIRCUIT BREAKER
21315	GREEN LAMP	39192	HSMH 8AMP CIRCUIT BREAKER
27094	220V TRANFS (MC1)	39193	HSMH 100AMP CIRCUIT BREAKER
39055	HSMH CARRIAGE BRAKE SOLENOID	39194	HSMH 24V CONTACTOR
39056	HSMH CARRIAGE SLED MNTG PLATE	39195	HSMH CONVEYOR SUPPORT MAGNET
39057	HSMH CARRIAGE SLED MNTG BLOCK	39196	HSMH 220V VIB FEMALE PWR CORD
39058	HSMH PROXIMITY SWITCH BRKT	39273	HSMH VIBRATOR BASE PLATE
39059	HSMH CABLE TRACK FIXED BRKT	39290	CONVEYOR PILLOW BLOCK
39060	TIMER	39291	S.S. WELD RELAY
39110	MOMENTARY CONTACT SWITCH	39296	HSMH VIBRATOR BOWL ASSY
39124	HSMH 3-POSITION GROUND BLOCK	39297	HSMH 110V VIBRATOR BASE w/CORD
39125	HSMH 2-POSITION GROUND BLOCK	39298	HSMH 220V VIBRATOR BASE w/CORD
39126	HSMH WELD CABLE SUSPNSN SPRG	39299	HSMH CONVEYOR BELTING
39127	HSMH CARRIAGE FORWARD BELT	39306	HEAD SWITCH
39128	HSMH MANDREL GROUND BAR	39311	WELD POTENTIONMETER
39129	HSMH CATWALK NON-SKID TAPE	39329	CARRIAGE FLOW CONTROL
39130	HSMH CATWALK STEP NON-SKID TAPE	39336	SHORT EXTENSION SHAFT
39131	HSMH CONVEYER DRIVE PULLEY	39338	TIP RETAINER BLOCK
39132	HSMH MANDREL LEAD-IN	39342	BRACKET INSULATOR
39136	REGULATOR	39353	ANTI-FRICTION STRIP
39145	HSMH LOWER MANDREL ASSY	39356	FEED CHANNEL
39147	HSMH CARRIAGE CYLINDER	39357	FEED CHANNEL PLATE
39148	HSMH DEPART CYLINDER	39359	FEED CHANNEL SPACER
39149	HSMH SHOCK ABSORBER	39375	MANDREL ONLY
39150	HSMH DWELL SOLENOID ASSY	39377	MANDREL CLAMPS
39151	HSMH DEPART SOLENOID ASSY	40099	UNIV BELT TENSIONER ASSY
39152	HSMH CARRIAGE SOLENOID ASSY	40310	115V PLUG-IN RELAY
39153	HSMH FEED SOLENOID ASSY	40390	LIMIT SWITCH
39154	HSMH FEED CYL FLOW CNTRL	40393	CARRIAGE PANCAKE CYLINDER
39155	HSMH CARRGE CYL BRAKE PAD/PR	44001	PROX SENSOR CORD
39156	HSMH MATERIAL FEED MAGNET	44002	PROX SENSOR
39157	HSMH ENCODER/CONNECTOR ASSY	44020	HEAD TERMINAL STRIP
39158	HSMH UPPER TRACK SIDE RAILS	44025	LCD DISPLAY
39159	HSMH TRACK SENSOR ASSY	44027	POTENTIONETER KNOB
39160	HSMH TRACK GATE ASSY	44033	POWER SWITCH
39161	HSMH GATE RETURN SPRING	44047	POWER CONTACTOR
39162	HSMH UPPER TRACK ADJ RAIL	44051	RELAY BOARD
39163	HSMH LWR TRACK SIDE RAILS	44052	12V DC POWER SUPPLY
39164	HSMH LWR TRACK RAIL STIFFENERS	44056	UPPER INSULATED BRACKET
39165	HSMH LWR TRACK PIN LATCH KIT	44057	LWR INSULATED BRACKET
39166	HSMH POWER BAR	44070	WELD CABLE CAM LOC
		44097	S.S. RELAY

NOTES



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www.durodyne.com
for the most current product information.

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MACHINERY DIVISION

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