



Installation Manual
**ULTRA MAGNUM
SERVO ROLL FEED**

MODELS SRF-M12 / 18 / 24 / 32 / 36 / 48



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1 INSTALLATION

1.1 MECHANICAL INSTALLATION

The *Ultra Magnum Servo Roll Feed* is supplied with an adjustable mounting bracket. The feed should be securely mounted to the press frame. (A transition bracket is sometimes required in certain applications.) The feed should be centered, square, and perpendicular to the pass line of the press. It should be mounted at a height that will accommodate the appropriate die sets. The feed has a pass line height adjustment of ± 2.0 inches. For mounting dimensions refer to **FIGURE 1** and **MOUNTING DEMENSIONS** table on p.4.

The roll release system requires a clean, dry and lubricated air supply 80-100PSI.

The feeder may be used to push or pull strip stock through the die.

If pilot locating pins are used in your die sets a cam switch will be necessary for controlling feed roll opening and closing.

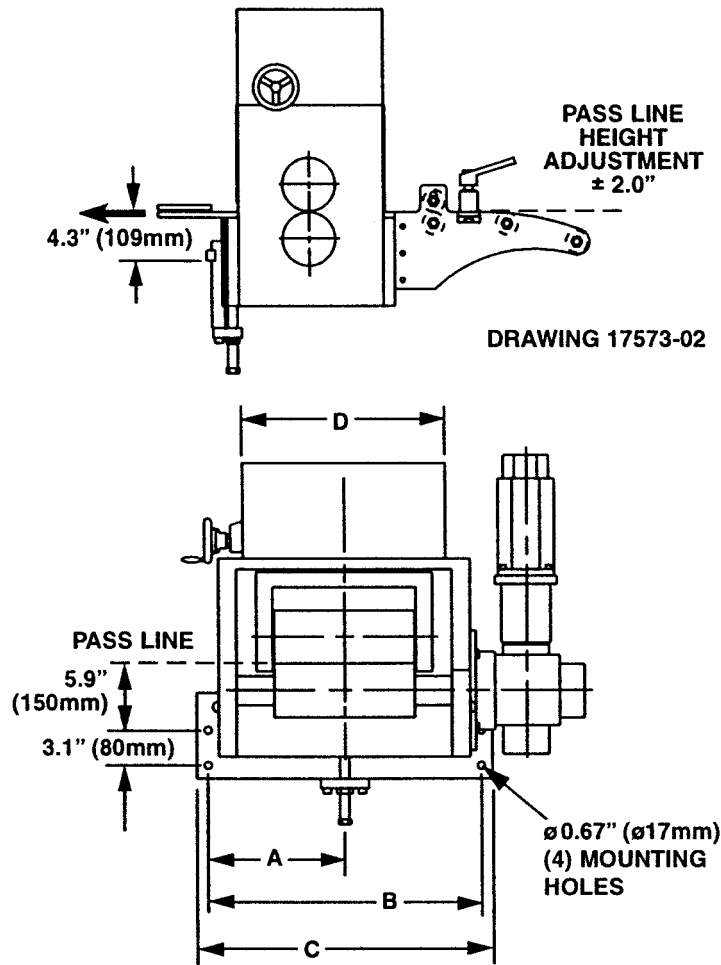


FIGURE 1

MOUNTING DEMENSIONS**INCHES**

MODEL	A	B	C	D
SRF-M12	12.2	24.4	26.4	18.4
SRF-M18	15.3	30.5	32.5	24.4
SRF-M24	18.2	36.4	38.4	30.4
SRF-M32	22.3	44.5	46.5	38.3
SRF-M36	24.2	48.4	50.4	42.4
SRF-M48	30.1	60.2	62.2	54.2

MILLIMETERS

MODEL	A	B	C	D
SRF-M12	310	620	670	467
SRF-M18	387	775	825	619
SRF-M24	462	925	975	772
SRF-M32	565	1130	1181	972
SRF-M36	615	1230	1280	1076
SRF-M48	765	1529	1580	1377

FIGURE 2

1.2 ELECTRICAL INSTALLATION

The *Ultra Magnum Servo Roll Feed* has been designed to make electrical connections quickly and easily. All that is required is a "clean" 220 VAC single-phase 20-ampere source that must be connected to the main disconnect switch. It is recommended that #12 MTW (Machine Tool Wire) be used for the primary power supply input.

The inputs and outputs to your press control (i.e. Emergency Stop, Feed Cam Signal, Pilot Release Cam Signal, Reset Cam Signal) must also be connected for proper operation.

Note, that if your feed is supplied with P/A PLS (Programmable Limit Switch) you don't have to wire Feed and Reset Cam signals.

The motor connects to the electrical control by factory installed "Amphenol" (Military Specifications) Quick connectors.

The optional PLS connects to the electrical controls by factory installed Military Quick connector.

The optional Strip Encoder connects to the electrical control by factory installed Military Quick connectors.

For more detailed wiring information, refer to Electrical Schematic:

A-18335-01 – UltraMagnum-US-standard;

A-18335-02 – UltraMagnum-CE-standard;

A-18335-03 – UltraMagnum-US-with step-down transformer;

A-18335-03 – UltraMagnum-CE-with step-down transformer;

A-18335-14 – UltraMagnum-US-with Strip Encoder.

IMPORTANT!

A #12 MTW GROUNDING CONDUCTOR MUST BE INSTALLED FOR PROPER MACHINE GROUNDING.

NOTE:

All connections should be made in accordance with National Electrical Code (NEC) requirements and must comply with all local ordinances.

NOTE:

A word about electrical "noise" - Most pressroom environments contain considerable electrical noise. It is emitted from electro-mechanical press relays, contacts, and solenoids. While the *Ultra Magnum Servo Roll Feed* has been designed to minimize "self generated" electrical noise, it is difficult to provide protection for all applications. If erratic system behavior is experienced, then the source of the "noise" must be suppressed with either a resistive/capacitive type of suppressor on AC coils, or "Avalanche" type diodes on DC coils.

NOTE:

The *Ultra Magnum Servo Roll Feed* is fully protected by line circuit breakers.

NOTE:

The electrical control enclosure is supplied with a stand/support, which may be placed in any convenient location. The enclosure may also be mounted in any fixed location as long as the cabling is adequate to reach the feed. It is not recommended that the electrical enclosure be mounted directly to the press. The vibrations caused by the punch press can result in damage to the control system

1.3 PLS ENCODER INSTALLATION (OPTIONAL)

The PLS encoder must be mounted on the press so its shaft is coupled or belted to the crankshaft with one to one (1:1) ratio. It is strongly recommended to use plastic or aluminum sprockets on the encoder shaft.

When all required electrical connections are made, power up the feed control and bring up the **Status** screen:

```

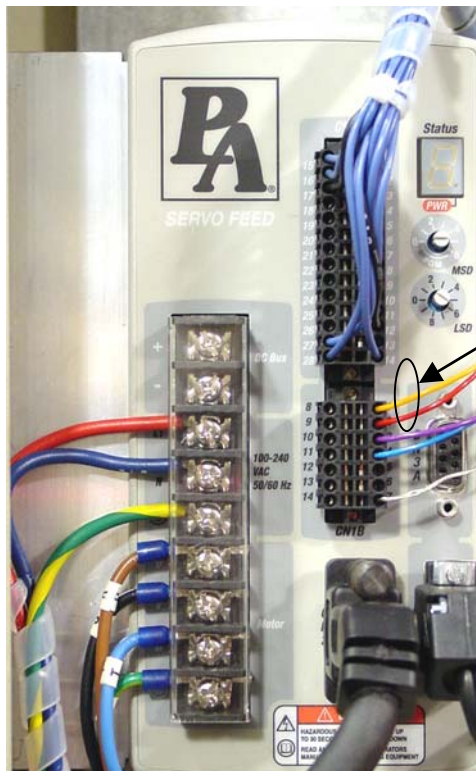
Tool#1      Pos:182
  Manual Mode
30         / Cont.Run
  Press a Mode Key
    
```

Inch the press and watch the press position reading on the status screen. Verify that as the press is moving, the press position reading is changing in ascending order. If it is changing in descending order, then power down the feed control and swap the following wires:

- Servo drive connector CN1B, pin 2 - orange wire;
- Servo drive connector CN1B, pin 3 – red wire.

Power up the feed control and verify that the press reading is now changing in ascending order as the press moving.

NOTE:
 CN1A and CN1B signal connectors on the Ultra5000 drive are spring-clamp connectors. A rectangle hole next to each wire hole is used to unclamp the connection by inserting the miniature screwdriver provided with the servo feed control.



1.4 STRIP ENCODER INSTALLATION (OPTIONAL)

The Strip Encoder comes pre-installed on the feed body and all it needs is proper electrical connections and air pressure of 80-100 PSI to the pressure regulator mounted on the front side of Strip Encoder Assembly.

1.5 LOADING THE FEED

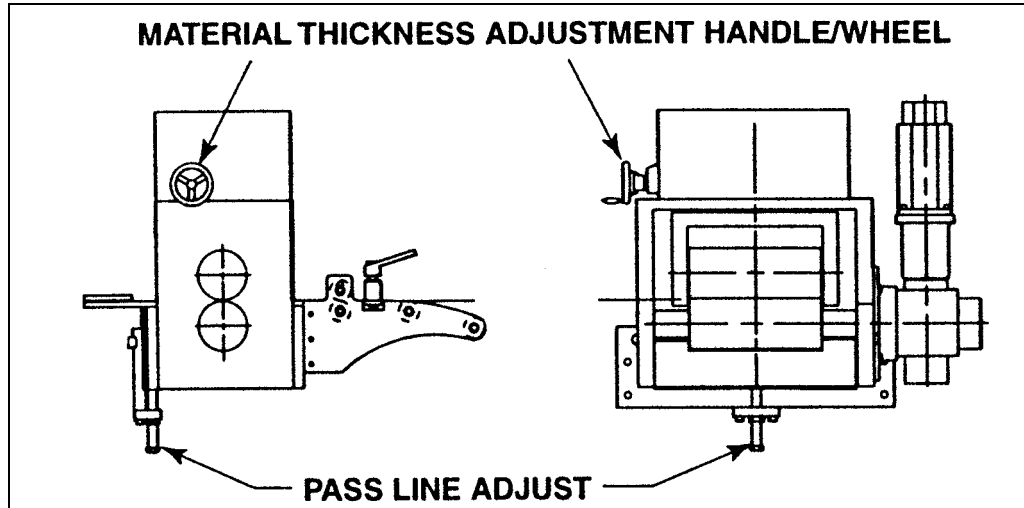


FIGURE 3

Prior to this step, the electrical control must be powered up and all needed parameters are loaded. (Refer to the *Ultra Magnum Servo Feed Operating Manual*.)

NOTE:

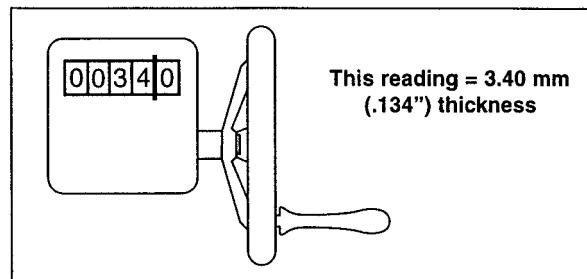
This example is based on using PLS (Programmable Limit Switch), but all PLS timing notes can be easily translated to other forms of timing.

The material thickness and width table, shown on page 8, defines the maximum stock thickness at full width allowed. Do not try to operate the feeder with material thicker than it was designed to feed. Read the following table before loading any material into the feeder.

THICKNESS SETTING CHART

Mfg. Std. Gage No.	Steel Coil Thickness		Dial Setting
	Inch Equiv. for Steel Sheet	Metric Equiv. mm	
—	.2500	6.35	0063[5]
3	.2391	6.07	0060[7]
4	.2242	5.69	0056[9]
5	.2092	5.31	0053[1]
6	.1943	4.94	0049[4]
—	.1875	4.76	0047[6]
7	.1793	4.55	0045[5]
8	.1644	4.18	0041[8]
9	.1495	3.80	0038[0]
10	.1345	3.42	0034[2]
11	.1196	3.04	0030[4]
12	.1046	2.66	0026[6]
13	.0897	2.28	0022[8]
14	.0747	1.90	0019[0]
15	.0673	1.71	0017[1]
16	.0598	1.52	0015[2]
17	.0538	1.37	0013[7]
18	.0478	1.21	0012[1]
19	.0418	1.06	0010[6]
20	.0359	0.91	0009[1]
21	.0329	0.84	0008[4]
22	.0299	0.76	0007[6]
23	.0269	0.68	0006[8]
24	.0239	0.61	0006[1]
25	.0209	0.53	0005[3]
26	.0179	0.45	0014[5]
27	.0164	0.42	0004[2]
28	.0149	0.38	0003[8]
29	.0135	0.34	0003[4]
30	.0120	0.30	0003[0]

- Put the *Ultra Magnum* control into “MANUAL MODE”. Record the present settings of the Feed Cam, Reset Cam, and Pilot Release Cam into a job set-up record sheet for future reference to the job.
- Refer to the *Thickness Setting Chart* shown above. Adjust the material thickness dial for the proper material thickness. Refer to the example in the following drawing for proper setting.



- Open the feed rolls with the “OPEN/CLOSE” switch on the jog pendant. Insert the material and close the feed rolls.

4. Adjust the roll clamping pressure via the pressure regulator located on the material inlet side of the feed in the top cover. Adjust the pressure until the liquid filled gage reads approximately 40 PSI.
5. Using the **Jog Forward** button on the jog pendant, advance the material up to the entrance of the die (far enough where the punches would not pierce the material).
6. Check the vertical alignment of the strip. If necessary, adjust the pass line of the feeder so that the material is at the proper height.
7. Assuming that the press shut height and the tool are set up properly, jog the press one or two strokes without the feed working.
8. Jog the press down slowly observing when the longest pilot would engage the pilot hole in the material if the material were there. (Refer to Figure 4.) Note the press positional readout and put this setting into your Programmable Limit Switch (PLS) for the '**Pilot Release On**' setting. The '**Pilot Release Off**' setting, in most cases, should be 180°. (See Figure 5.) Some drawing applications require the rolls to remain open past 180°.

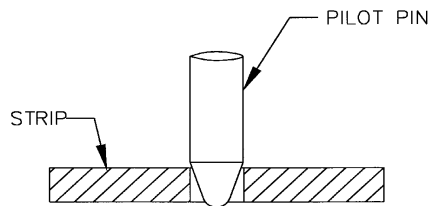


FIGURE 4

9. Continue to jog the press slowly until the longest pilot just comes out of the material. Note the press positional readout and put this setting into your PLS for the '**Feed Cam On**' setting. Set the '**Feed Cam Off**' point so that there is enough time to complete the feed length and enough time to stop the press, if there is a feed fault. (See Figure 5.)
10. Set the '**Reset Cam On**' for 180 degrees and '**Reset Cam Off**' for 200 degrees. This setting should never need changing. (See Figure 5.)

1.5 THREADING THE TOOL

For a comprehensive description, refer to the *Ultra Magnum Servo Roll Feed* Operation Manual.

NOTE ABOUT CAMS:

The Feed Cam (open tool): The feed system uses this press cam for timing the feeder to the press crankshaft. Although no shafting or belts actually connect the press to the feeder, the feed must be “told” when it is safe to move the strip and when the feed move must be completed.

- This “connection” is an electrical one, and not a mechanical one. This gives the Operator/set-up personnel total flexibility in deciding when the feed progression should take place.
- Each die set can have a unique ‘Feed Angle’. This ‘Feed Angle’ is dependent upon many variables; pilot and punch length, press stroke, strip forming in the die, etc.

Put the *Ultra Magnum* control into “JTL” mode. All the adjustments to the feed system and press have now been made. The press is at Top Dead Center (TDC) and ready for automatic cycling. Proceed by advancing the material using **Jog Forward** button on the jog pendant until **WAITING FOR PRESS** is seen in the display and inch the

press through another stroke, verifying that things are happening at the correct time (Roll Release, etc.). If the system is operating properly, you can make a few more "hits", checking your parts.

1.6 RUNNING THE FEED

Put the *Ultra Magnum* into "Auto" mode and press the **Cycle Start** button. The *Ultra Magnum Servo Roll Feed* will now follow the press until it is stopped by the Operator, counter, emergency stop, or feed error.

**TYPICAL 180 DEGREE FEED ANGLE
(FROM 260 DEGREES TO 80 DEGREES):**

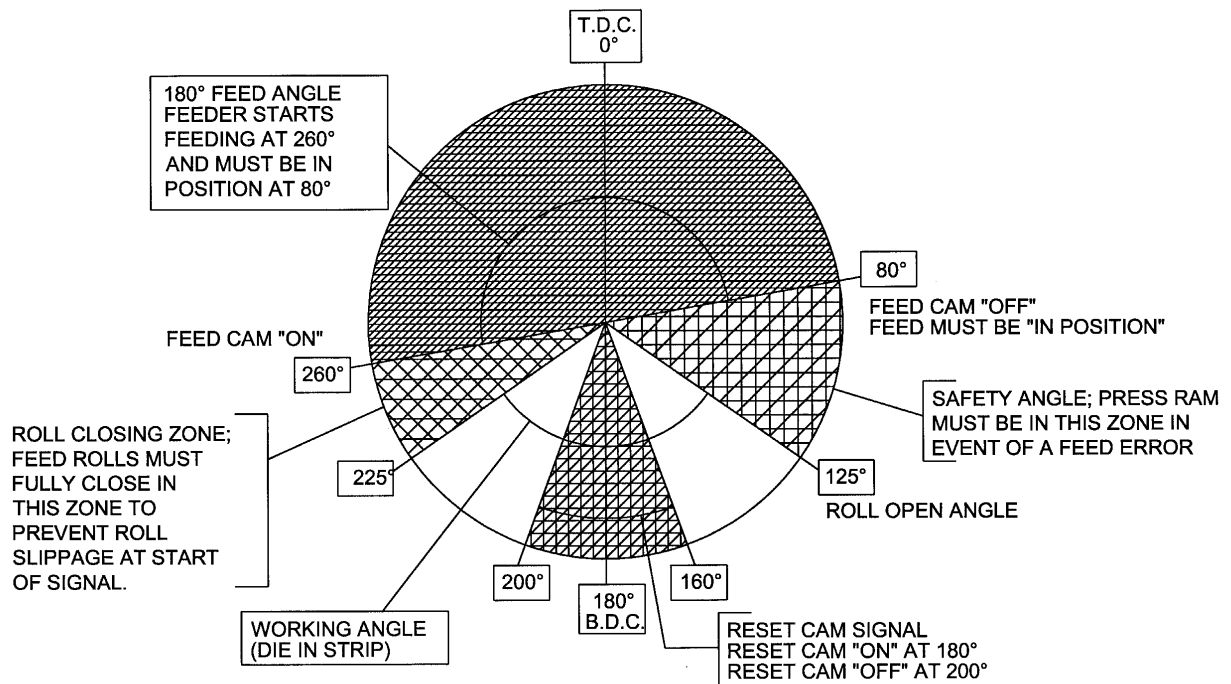


FIGURE 5

NOTES ABOUT 'POSSIBLE PROBLEM TOOLING': *

- A tight die, one that is not square, or has other tooling problems, will cause significant difficulty and downtime. Accuracy in feeding is directly related to how easily the feeder can position the strip in the die. Binding, bad part ejection, or sticking parts may cause the material to "jam" in the die.
- The *Ultra Magnum Servo Roll Feed* will "try" to overcome the "jam-up" by applying more power to the rolls.

ONE OF FOUR OUTCOMES WILL RESULT:

1. The feed will continue to try to move the strip (if the rolls do not slip) until the Feed Cam opens. A **SYNC FAULT** Error will occur and the press will be stopped by the feeder.
2. The feed will apply more power to the rolls, causing them to slip on the material. This produces a "short-feed". In reality the feeder did not "miss-feed". The rolls were positioned properly, the strip did not keep up, causing the die to close and a miss-hit is produced.
3. The feed applies more power to a thin strip, causing the material to buckle somewhere between the feed and the die set. The feeder positioned the strip accurately, it just did not occur in the die set.
4. The feed tries to apply so much power to a heavy strip in order to move it, that excessive current is drawn by the servo drive. This results in the drive shutting down to protect itself and in doing so stops the press.

NOTE: The feed detected a problem and emergency-stopped the press before the die closed. In using the *Ultra Magnum Servo Roll Feed*, you in fact have added a "die protection" system to your tooling.

* A tooling problem is a problem caused by tooling and not the Feeder itself.

2 PNEUMATIC PILOT RELEASE

During operations such as forming or using pilots, the purpose of the Pneumatic Pilot Release is to release the strip from being held by the feeder rolls. This allows the material to be adjusted slightly any time during the press cycle.

The pneumatic release mechanism is mounted on the top of the feeder and can be accessed by removing the cover. Open the rolls allowing clearance between the upper roll and the material approximately 0.010"/0.25 mm. (Use a shim on top of the material, if needed.)

The release is operated by applying the appropriate voltage signal to actuate the 3-way solenoid valve to open the feeder rolls. This power signal can come from a source such as a rotary cam switch. Refer to electrical schematic for proper pilot release connections.

The solenoid valve, located on the release, is provided with a cable attached to the solenoid valve for connecting the power signal leads.

Air pressure of 80-100 PSI is required for proper operation of the release. A 1/2" barb tubing fitting is provided for the air supply connection.

3 MAINTENANCE

The *Ultra Magnum Servo Roll Feed* needs very little maintenance to keep the system operating at its optimum performance.

- This precision equipment must be kept as clean as possible. This is especially important if large amounts of air suspended oil mists in combination with “dirty metals” are used. The resulting abrasive dust can attach itself to the feed rolls and other surfaces, leading to premature wear on many parts.
- The roll release system requires a clean, dry and lubricated air supply, 80-100 PSI. Use the filter/Regulator supplied with the feeder and fill the lubricator with a good grade of hydraulic cylinder oil, like Shell Tellus 32.
- All the bearings are provided with standard “zerk” type grease fittings. They should be lubricated with a good grade of high pressure bearing grease. The frequency of lubrication will depend on the overall usage of the system. A small “shot” once a day is a good starting point. The feed roll gears set should be coated with a small amount of open gear grease.
- All fasteners should be checked for tightness at regular intervals.
- The electrical system also requires very little maintenance. Keep the enclosure clean and replace any burned indicator bulbs. Do not expose the electrical enclosure to constant high temperatures. Possible system failure could result.
- The Feeder’s electrical enclosure door is sealed to prevent oil and contaminants from entering inside. However, small gaps can be found around some sealing surfaces and faceplates. It is a good idea, therefore, to keep the console free of stamping oils and fluids, which could "seep into" the enclosure. Most often, these oils are carried by the Operator’s hands or by air mist lubrication etc.
- All of the above guidelines should be added to your existing pressroom Preventive Maintenance (PM) Program.

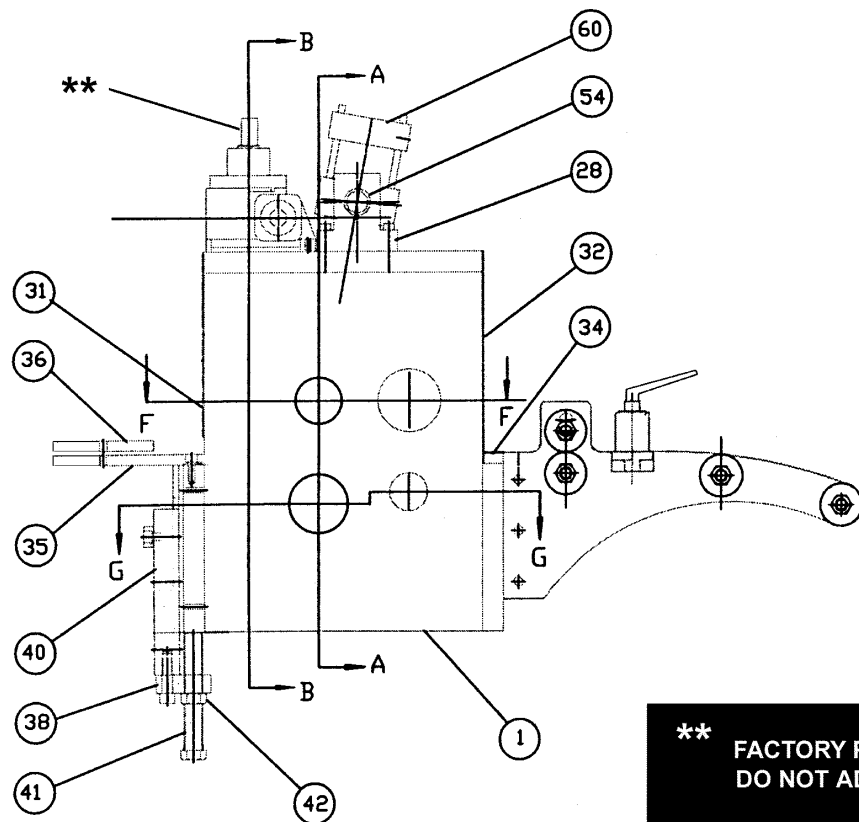
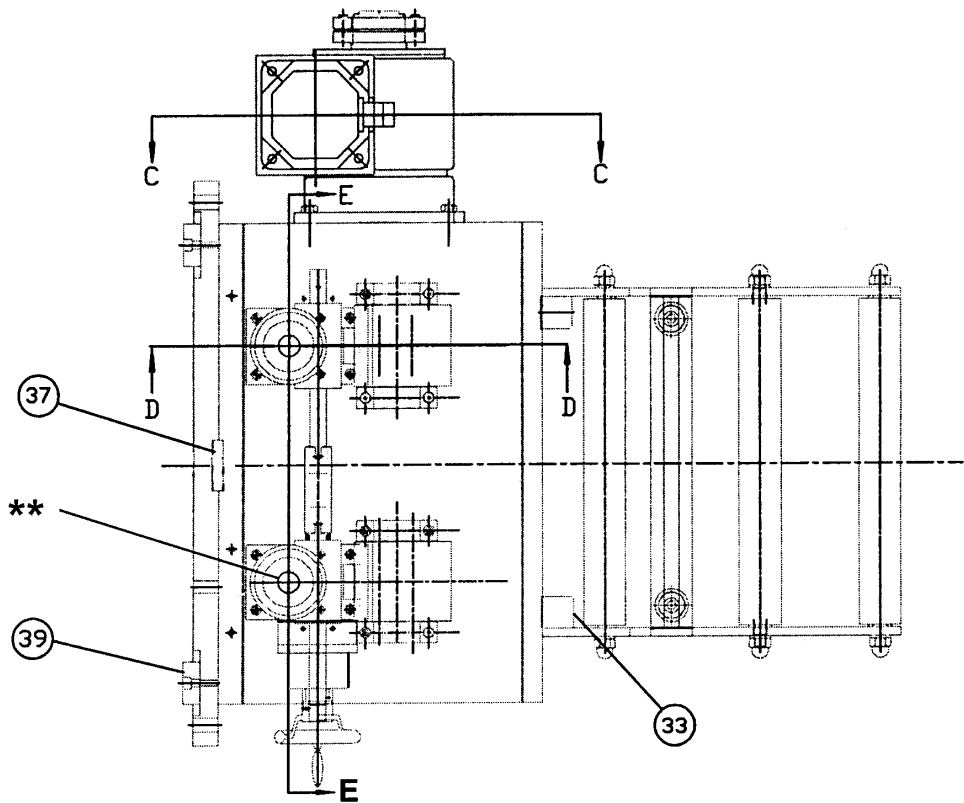
4 ROLL FEED PARTS LIST**MECHANICAL PARTS LIST AND DIAGRAM**

ITEM	PART NO.	QTY	DESCRIPTION
1.	R-001-SRF-MXX	1	FRAME, MACHINED
2.	R-002-SRF-MXX	1	UPPER ROLL HOUSING
3.	R-003-SRF-MXX	1	FEED ROLL, UPPER
4.	R-004-SRF-MXX	1	FEED ROLL, LOWER
5.	R-005-SRF-M	1	RETAINER, GEAR
6.	R-006-SRF-M	2	GEAR, FEED ROLL
7.	R-007-SRF-M	1	RETAINER, UPPER ROLL BRG
8.	R-008-SRF-M	1	SPACER RING
9.	R-009-SRF-M	3	DUST SHIELD
10.	R-010-SRF-M	1	RETAINER BEARING
11.	R-011-SRF-M	1	RETAINER BEARING
12.	R-012-SRF-M	1	DUST SHIELD
13.	R-013-SRF-M	1	RETAINER, BEARING
14.	R-014-SRF-MXX	1	SPACER, PIVOT SHAFT
15.	R-015-SRF-M	2	GEAR
16.	R-016-SRF-M	1	SPACER, PIVOT SHAFT
17.	R-017-SRF-M	1	PINION, SHAFT GEAR
18.	R-018-SRF-M	1	SPACER, WASHER
19.	R-020-SRF-MXX	1	SHAFT, ECCENTRIC
20.	R-021-SRF-M	2	BLOCK, ROLL LIFTING
21.	R-003-SRF-M	2	CAP, ROLL LIFTING BLOCK
22.	R-022-SRF-MXX	1	GUIDE ROD
23.	R-023-SRF-M	2	SPRING RETAINER, LOWER
24.	R-024-SRF-M	2	SPRING RETAINER, UPPER
25.	R-025-SRF-M	2	KEY
26.	R-026-SRF-M	2	PIN, CLEVIS
27.	R-027-SRF-M	2	CLEVIS, ROD END
28.	R-028-SRF-M	4	BLOCK, CYLINDER MOUNTING
29.	R-029-SRF-MXX	1	COUPLING, ADJ. CONN.
30.	R-030-SRF-M	1	BUMPER
31.	R-031-SRF-MXX	1	COVER, EXIT SIDE
32.	R-032-SRF-MXX	1	COVER, ENTRY SIDE

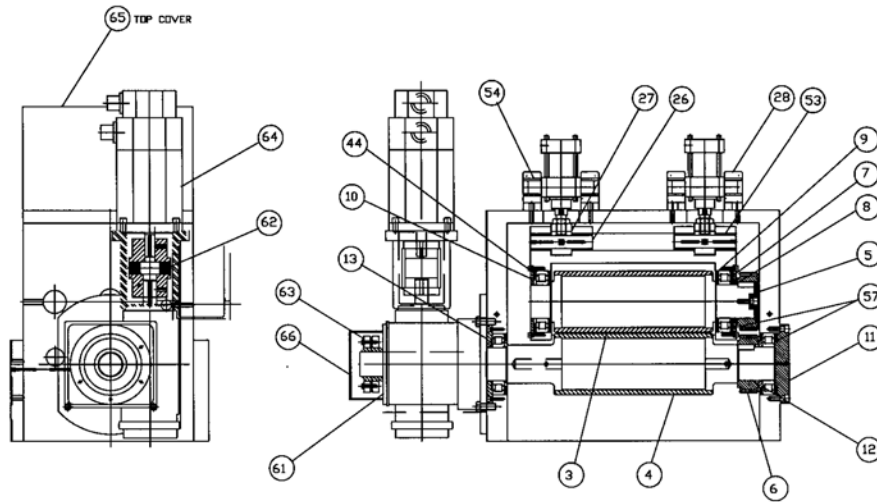
ITEM	PART NO.	QTY	DESCRIPTION
33	R-033-SRF-M	2	BLOCK, CASCADE MOUNTING
34	R-034-SRF-MXX	1	PLATE, ENTRY SUPPORT
35	R-035-SRF-MXX	1	PLATE, STRIP EXIT SUPPORT
36	R-036-SRF-MXX	1	PLATE, STRIP HOLD DOWN
37	R-037-SRF-M	1	KEY
38	R-038-SRF-M	1	BLOCK, HEIGHT ADJ. MOUNT.
39	R-039-SRF-M	2	KEY, LOC.& LEVEL.
40	R-040-SRF-MXX	1	PLATE, PRESS MOUNTING
41	R-041-SRF-M	1	SCREW, ADJUSTMENT
42	R-042-SRF-M	1	NUT, M24 HEX JAM
43	R-043-SRF-M	1	BRACKET, IND. MOUNTING
44	R-044-SRF-M	4	BEARING, ROLLER
45	R-045-SRF-M	8	BEARING, NEEDLE
46	R-046-SRF-M	3	WASHER, BEARING
48	R-048-SRF-M	8	BEARING, NEEDLE
49	R-049-SRF-M	2	BEARING, WASHER
50	R-050-SRF-M	2	RING
51	R-051-SRF-M	2	SPRING
53	R-053-SRF-M	8	BEARING, NEEDLE
54	R-054-SRF-M	4	BEARING, BRONZE
56	R-056-SRF-M	2	JACK, WORM GEAR
57	R-057-SRF-M	6	SPRING
58	R-058-SRF-M	1	INDICATOR, POS.-DIGITAL
59	R-059-SRF-M	1	HAND WHEEL
60	12111-89	2	CYLINDER, AIR
61		1	SPEED REDUCER, WORM DR.
62	12028-44	1	COUPLING, SHAFT-FLEXIBLE
63	12028-39	1	SHRINK DISC, COUPLING
64	16692-66 OR -67	1	MOTOR, ELECTR. SERVO
65	17430-XX	1	COVER, TOP
66	17431	1	COVER, DRIVE SHAFT-END

NOTE: PART NUMBERS WITH "XX" DESIGNATIONS ARE DEPENDENT ON THE MODEL WIDTH.
USE NUMBERS 12,18,24,36 OR 48 RESPECTIVELY FOR MODELS M12,M18,M24, M36 AND M48

MAGNUM MECHANICAL PARTS DIAGRAM



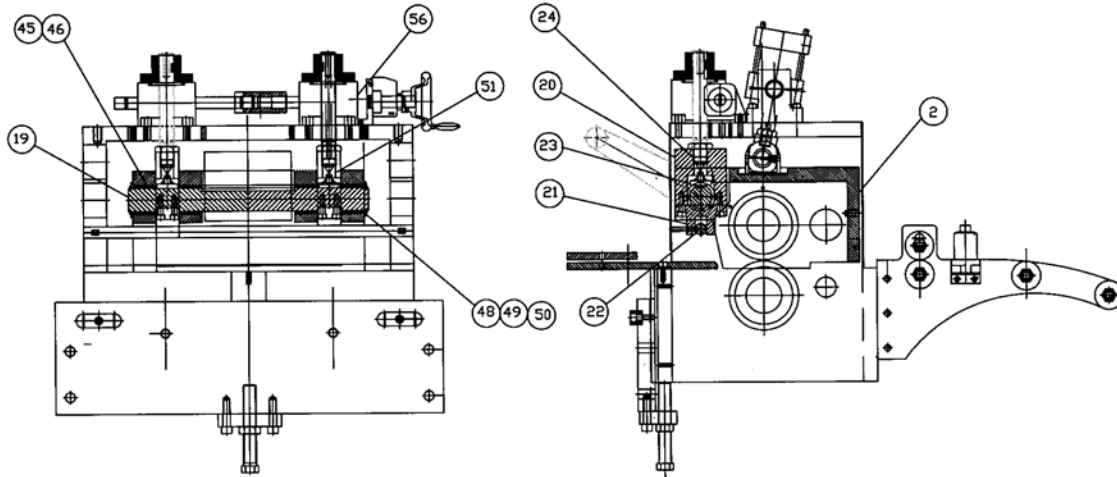
**** FACTORY PRESET
DO NOT ADJUST**



VIEW AT C-C

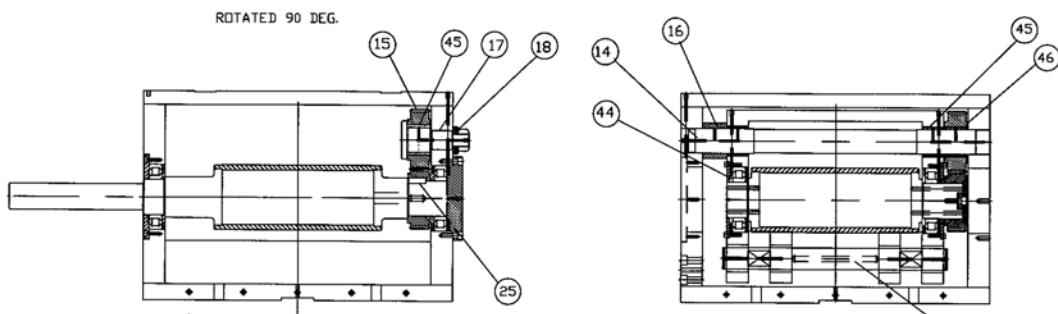
VIEW AT A-A

TOP COVER NOT SHOWN



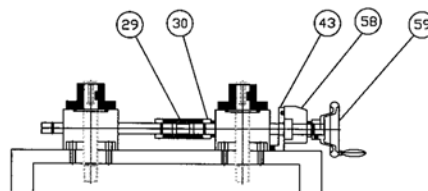
VIEW AT B-B

VIEW AT D-D

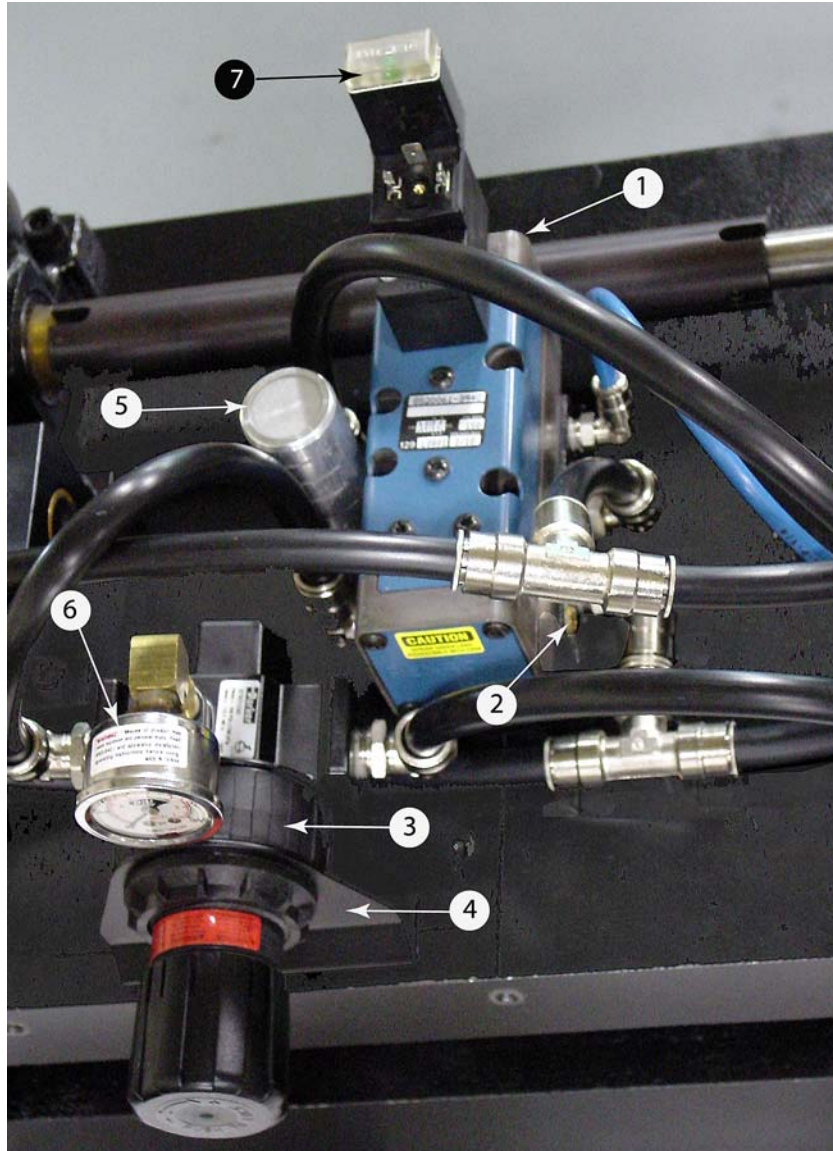


VIEW AT G-G
ROTATED 90 DEG.

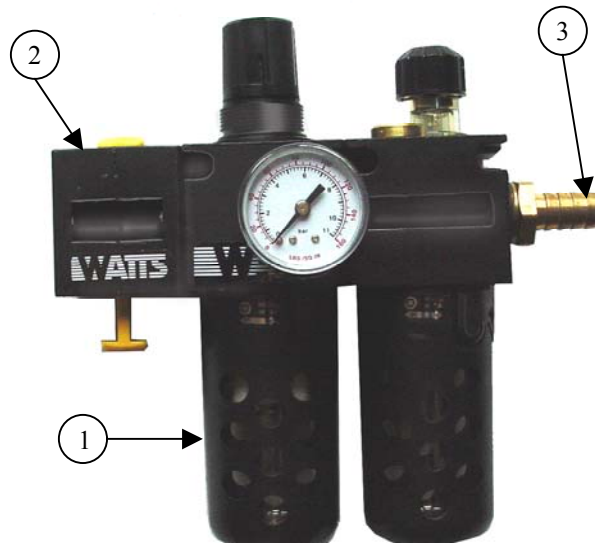
VIEW AT F-F
UPPER ROLL CROSS SECTION
WITH PIVOT MOUNTING
ROTATED 90 DEG.



VIEW AT E-E
ROTATED 90 DEG.



ITEM	PART NO.	QTY	DESCRIPTION
1	12039-80	1	VALVE, SOLENOID-AIR
2	12039-81	1	SUBASE, VALVE MOUNTING
3	12022-95	1	VALVE, PRESSURE REG.
4	12022-99	1	BRACKET, REG. MOUNTING
5	12024-17	1	SILENCER, AIR
6	12019-15	1	GAGE, PRESSURE-BAR.
7	16286-05	1	SUPPRESSOR, SOL. VALVE

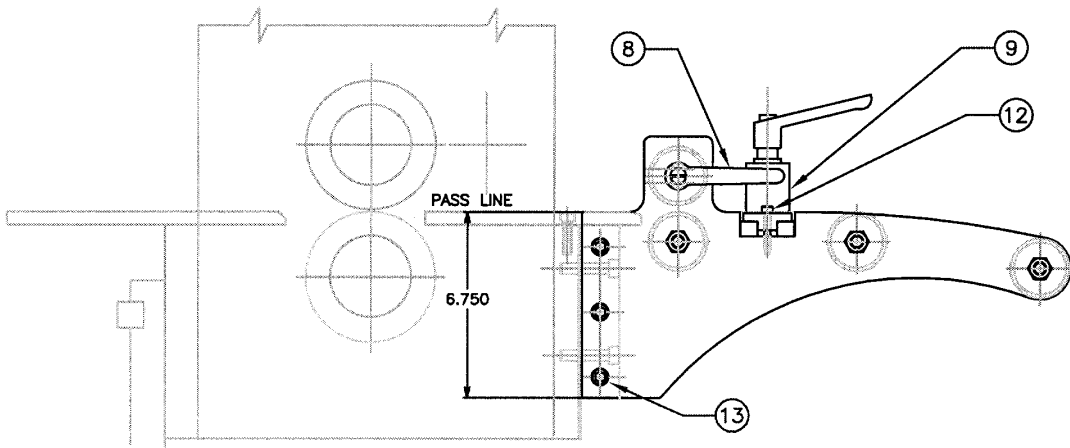
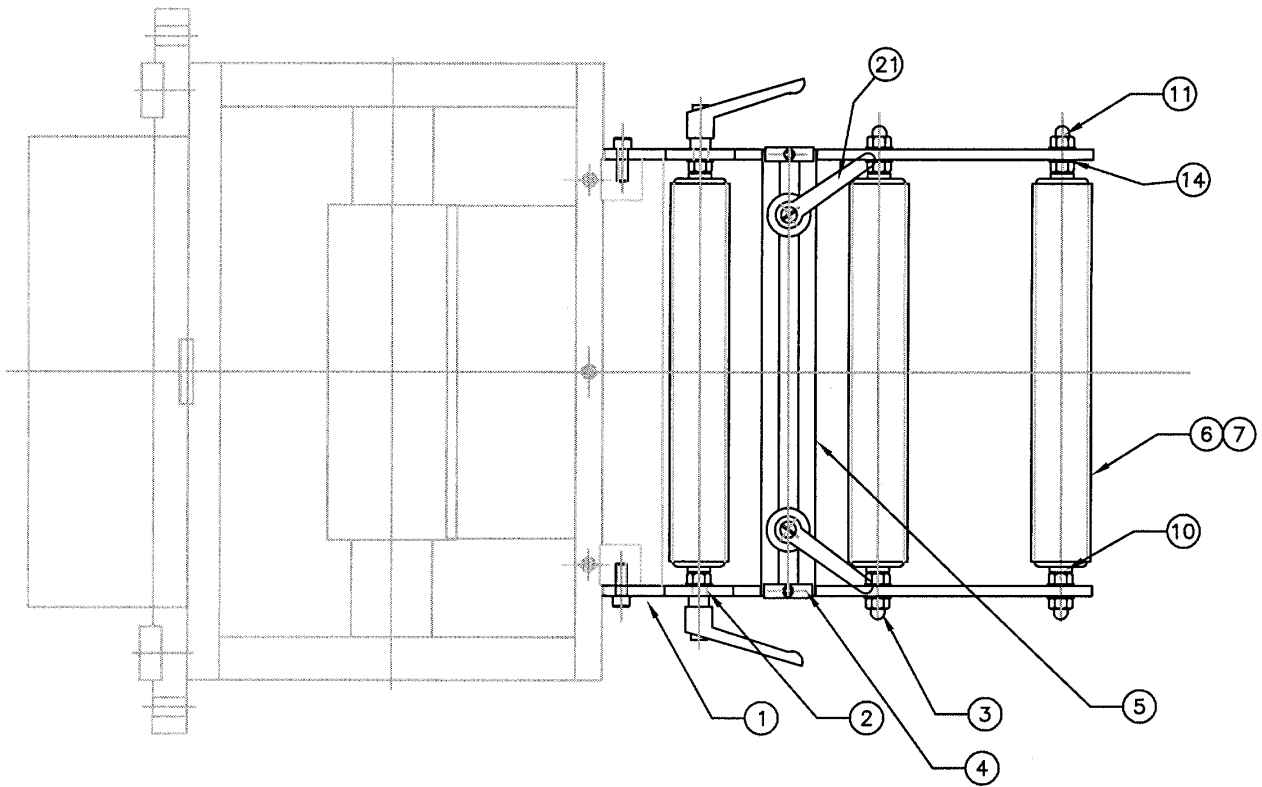


ITEM	PART NO.	QTY	DESCRIPTION
1	12022-36	1	FILTER REGULATOR, LUBRICATOR, ½ NPT
2	12022-100	1	VALVE REGULATOR SHUT-OFF, ½ NPT
3	12032-51	1	FITTING ½ HOSE X ½ NPT MALE

5 CASCADE WITHOUT ENCODER PARTS LIST & DIAGRAM

ITEM	PART NO.	QTY	DESCRIPTION
1	D17443	2	BRACKET, CASCADE SIDE
2	B17444-XX	1	ROD, AXLE-UPPER ROLL
3	B16548-XX	3	ROD, AXLE-LOWER ROLLS
4	A17093	2	CLAMP, GUIDE BAR
5	A17091-XX	2	GUIDE BAR, EDGE ROLLERS
6	C16542-XX	4	ROLLER, CONVEYOR
7	A17445-XX	4	COVER, ROLLER
8	P12416-27	2	HANDLE, 12MM TAP
9	M16522-02	2	ASSEMBLY,EDGE GUIDE ROLL
10	DIN-934-2P-M12	8	HEX NUT, ZINC PLATED
11	DIN-1587-2P-M12	6	M12X1.75 ACORN NUT, ZINC
12	DIN-912-M6X35	2	M6X35 LG, SHCS, BLACK
13	DIN-912-M10X35	6	M10X35 LG, SHCS, BLACK
14	DIN-125-M12	16	M12 WASHER, FLAT
21	16735-02	2	HANDLE, WIDTH GUIDE ADJ.

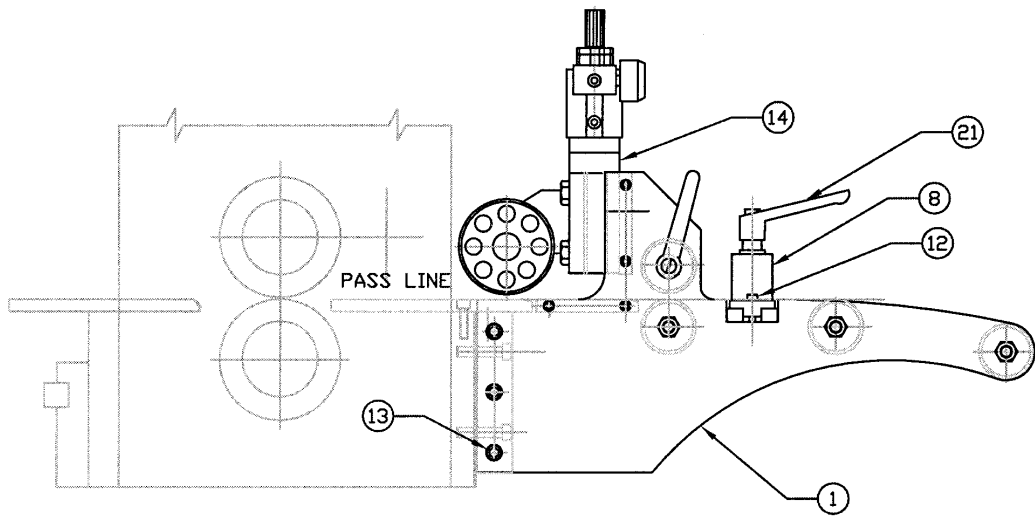
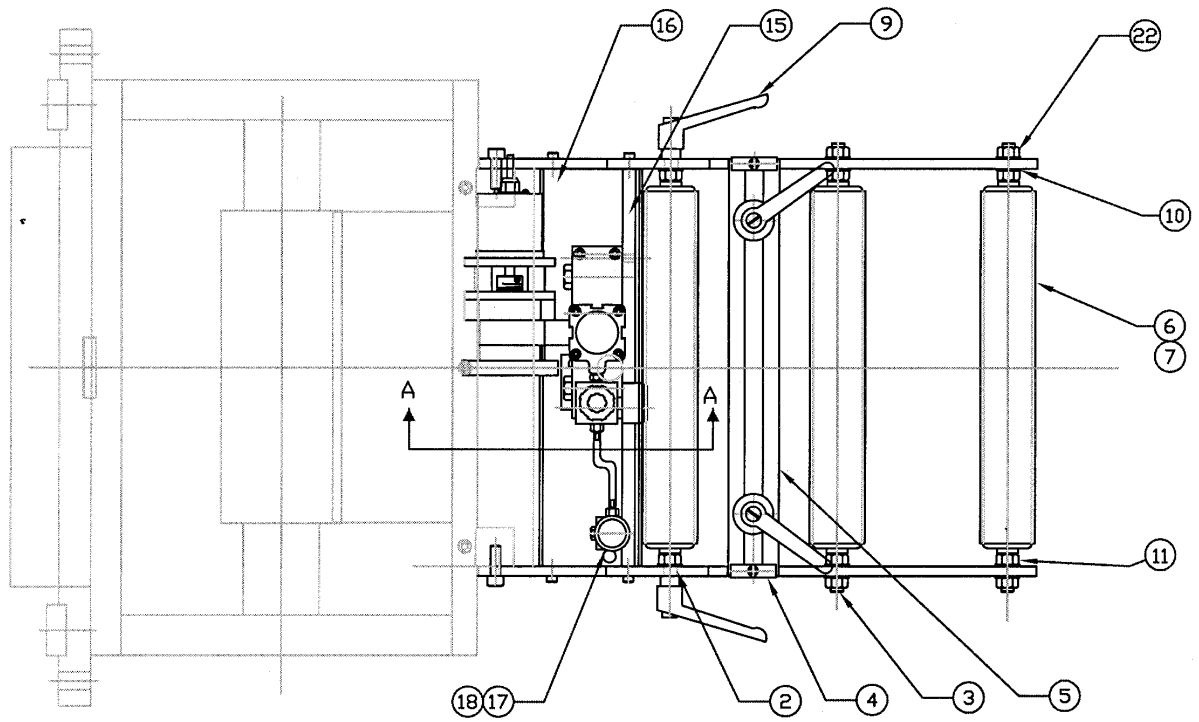
NOTE: PART NUMBERS WITH "XX" DESIGNATIONS ARE DEPENDENT ON THE MODEL WIDTH.
USE NUMBERS 12,18,24,36 OR 48 RESPECTIVELY FOR MODELS M12,M18,M24, M36 AND M48



6 CASCADE WITH ENCODER PARTS LIST & DIAGRAM

ITEM	PART NO.	QTY	DESCRIPTION
1	D17443	2	BRACKET, CASCADE SIDE
2	B17444-XX	1	ROD, AXLE-UPPER ROLL
3	A16548-XX	3	ROD, AXLE-LOWER ROLL
4	A17093	2	CLAMP, GUIDE BAR
5	A17091-XX	2	GUIDE BAR, EDGE ROLLER
6	C16542-XX	4	ROLLER, CONVEYOR
7	A17445-XX	4	COVER, ROLLER
8	M16522-02	2	ASSEMBLY, EDGE GUIDE ROLL
9	P12416-27	2	HANDLE, 12MM TAP
10	DIN-125-M12	16	M12 WASHER, FLAT
11	DIN-934-2P-M12	8	HEX NUT, ZINC PLATED
12	DIN-912-M6X35	2	M6X35 LG, SHCS, BLACK
13	DIN-912-M10X35	6	M10X35 LG, SHCS, BLACK
14	M16967	1	STRIP ENCODER
15	C17183-XX	1	PLATE, ENCODER
16	C17185-XX	1	PLATE, SUPPORT
17	12110-20	1	VALVE, SELECTOR, 4-WAY
18	A16987	2	PIPE PLUG, DRILLED
21	16735-02	2	HANDLE, WIDTH GUIDE ADJ.
22	DIN-1587-2P-M12	6	M12X1.75, ACORN NUT, ZINC

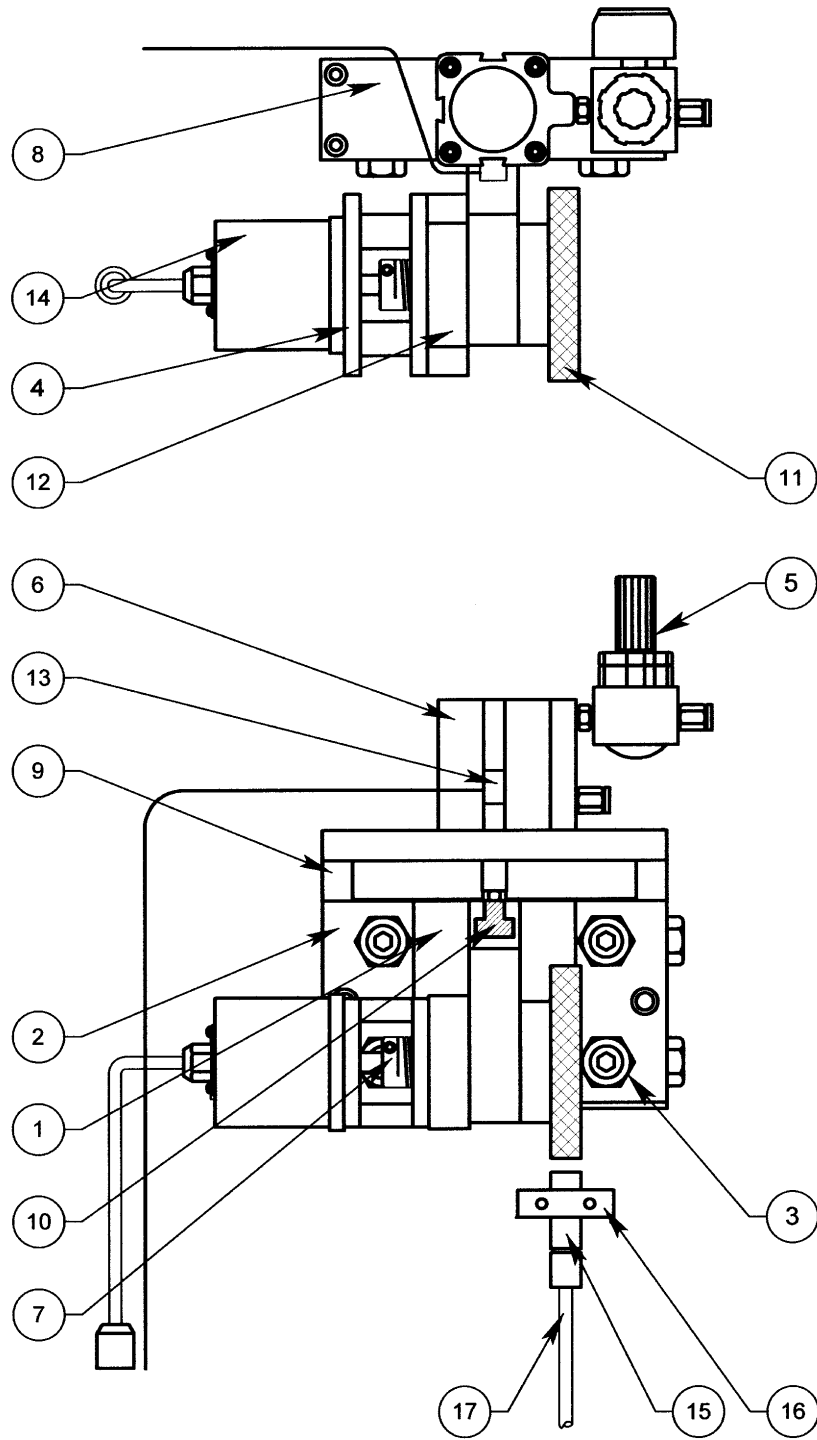
NOTE: PART NUMBERS WITH "XX" DESIGNATIONS ARE DEPENDENT ON THE MODEL WIDTH.
USE NUMBERS 12,18,24,36 OR 48 RESPECTIVELY FOR MODELS M12,M18,M24, M36 AND M48



7 OPTIONAL STRIP ENCODER PARTS LIST & DIAGRAM

ITEM	PART NO.	QTY	DESCRIPTION
1	**	1	SLIDE
2	**	1	BASE
3	**	6	GIB ADJUSTMENT SCREW
4	**	1	ENCODER FLANGE
5	**	1	AIR REGULATOR
6	**	1	AIR CYLINDER
7	**	1	COUPLING
8	**	1	TOP PLATE
9	**	2	TOP PLATE SPACERS
10	**	1	T-NUT
11	**	1	MEASURING WHEEL
12	**	1	SUPPORT
13	**	1	SENSOR, CYLINDER DOWN
14	16846-04	1	ENCODER
15	16399-58	1	SENSOR, END OF STRIP
16	16399-11	1	MOUNTING BLOCK, END OF STRIP SENSOR
17	16399-58	1	CABLE, END OF STRIP SENSOR
18	16846-15	1	CABLE ENCODER, 5M (NOT SHOWN)
19	12087-07	1	JUNCTION BOX (NOT SHOWN)
20	17249-50	1	CABLE, JUNCTION BOX (NOT SHOWN)

** Part of the Strip Encoder Assembly



WARNING

This equipment offers various means of operating or controlling machines. The operator must not be in or near the point-of-operation of the machine, or the operating parts of any equipment installed on the machine, or bodily injury could result. The EMPLOYER must post adequate warning signs onto the machine with proper warnings for his machine and the specific application to which the machine and equipment are being applied.

Occupational Safety and Health Act (OSHA) Sections 1910.211, 1910.212, and 1910.217 contain installation information on the distance between danger points and point-of-operation guards and devices. No specific references have been made to which paragraph of OSHA 1910.211, 1910.212, 1910.217 or any other applicable sections because the paragraphs may change with each edition of the publication of OSHA provisions.

All equipment manufactured by us is designed to meet the construction standards of OSHA in effect at the time of sale, but the EMPLOYER installs the equipment so the EMPLOYER is responsible for installation, use, application, training, and maintenance, as well as adequate signs on the machine onto which this equipment will be installed.

Remember, OSHA says that the EMPLOYER must use operating methods designed to control or eliminate hazards to operating personnel.

It shall be the responsibility of the EMPLOYER to establish and follow a program of periodic and regular inspections of his machine to insure that all their parts, auxiliary equipment, and safeguards are in a safe operating condition and adjustment. Each machine should be inspected and tested no less than weekly to determine the condition of the machine. Necessary maintenance or repair of both shall be performed and completed before the machine is operated. The EMPLOYER shall maintain records of these inspections and the maintenance work performed.

Our Company is not responsible to notify the user of this equipment of future changes in State or Federal laws, or construction standards.

SAFETY PROGRAM

Accident free operation will result from a well developed, management sponsored and enforced safety program. Of vital importance to any successful program is the proper selection of guards and devices. However, there is no safety device that will bring "automatic" safety to your operation.

Of equal importance to this proper selection of the guard and the device is the training of your personnel. Each person must be trained as to the operation of the guard or safety device, highlighting why they have been provided on the equipment. Rules for safe operating should be written and enforced at all times. A final major concern of an effective safety program is regularly scheduled inspection and maintenance of all of the equipment.

To ensure continued safety at all times, top management, line supervision, safety engineers and all employees must assume their proper share of the responsibility in the program. Only as a group, one that knows your own operation and its problems, can you carry out an effective safety program.

To assist you in the development of and continued use of safety programs, many safety minded groups have made guidelines available to you. However, you must know when and how to apply these guidelines. The manufacturer provides information to assist you in properly adjusting and maintaining your equipment. There is no short cut to proper safety; therefore, it is recommended that you comply with their recommendations at all times.

WARRANTY

We warrant our new parts against defects under normal use and service for a period of 12 months after date of shipment. Our obligation under this warranty is limited to replacing or repairing (at our option) the defective part without charge, F.O.B. our plant in Bloomfield, Connecticut. The defective part must be forwarded to our plant, freight prepaid, for our inspection prior to replacement or repair. EXCEPT AS EXPRESSLY PROVIDED HEREIN, THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING A WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Furthermore, the seller does not warrant or represent that the equipment complies with the provisions of any law, particularly including the Occupational Safety and Health Act of 1970, and regulations promulgated thereunder. In no event shall we be liable for special, indirect incidental or consequential damages, however rising.



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