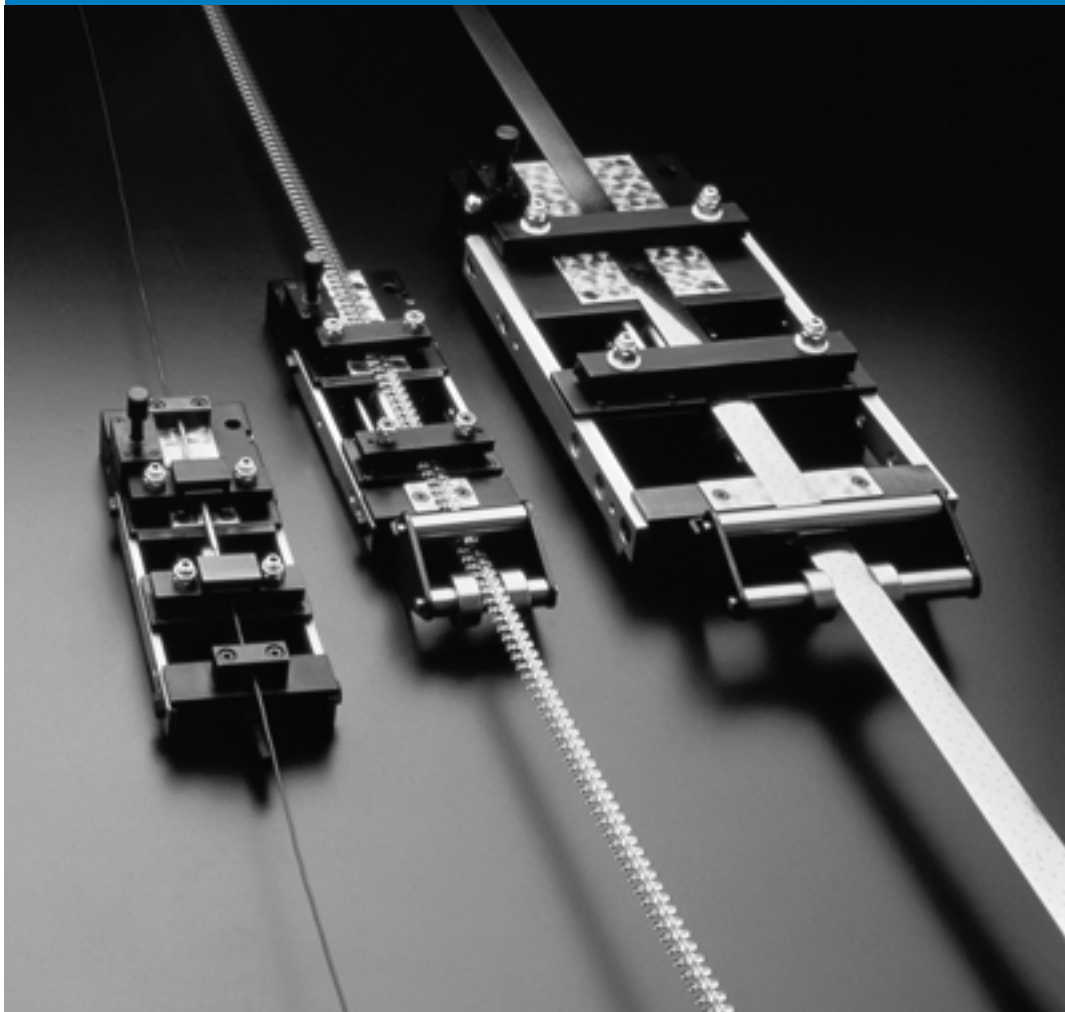




**PRECISION
AIR FEED**



**INSTALLATION
& OPERATING
INSTRUCTION
MANUAL**

P/A INDUSTRIES INC.

OVER FORTY YEARS EXPERIENCE

Since 1954, P/A engineers have been designing and building equipment for the Metalforming Industry. Our commitment to provide innovative production equipment of the highest quality is second to none.

CUP SEAL DESIGN

P/A is the only air feed manufacturer that provides low maintenance, high-cycle life cup wiper seals on the main cylinder. Every quality-built air cylinder uses the same technology as P/A. Cup seals reduce friction and heat which increases cycle life and performance by a conservative factor of 50 times.

U.S. PATENTS

The leader in pneumatic press feed patents in the world is unquestionably P/A Industries. Today's design is covered by a combination of the following patents:

3,329,327; 3,462,056; 3,485,430; 3,561,657;
3,583,268; 3,561,309; 3,847,320; 4,051,987;
4,195,161; 4,310,114; 4,160,518; 4,076,161;
4,095,733; 4,140,261; 4,175,688; 4,290,541;
4,261,238; 4,277,997; 4,207,999; 4,267,950;
4,329,897; 4,351,462; 4,399,937; 4,444,346;
4,531,662; 4,619,390.

Other patents pending and foreign patents are not included above.



P/A believes in providing the best production performance air feed available anywhere in the world today. To prove that we are the BEST, a serialized Repair Certificate is enclosed with each air feed. This can be used at any time for a “no-charge” repair. Please keep this valuable Certificate with your records and return to P/A with the feed for our FREE REPAIR SERVICE.



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AIR FEED FEATURES

FASTER SPEEDS

Our patented system sequences high speed models up to 400 cycles per minute at full two inch pitch.

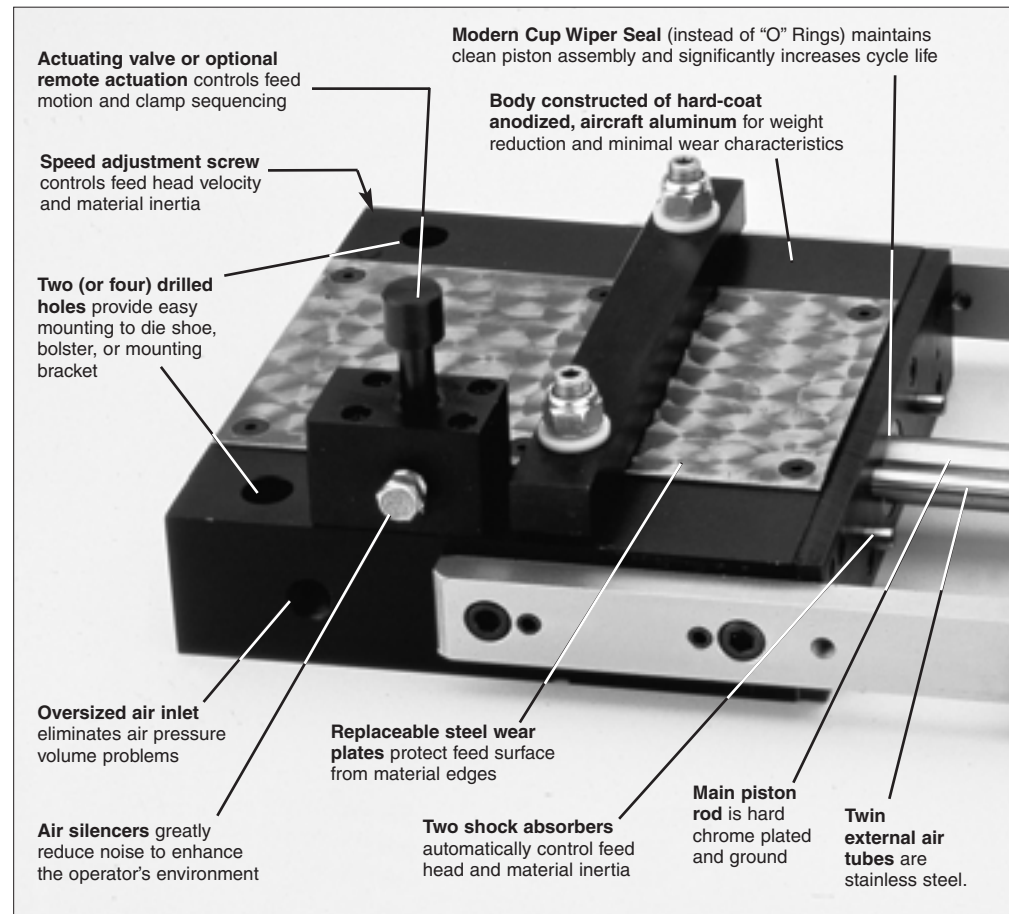
VERSATILE

Coil stock can be fed in any direction or angle at any time during the machine cycle. A single feed can push or pull through long or short progressions. A variety of stock widths and thicknesses can be fed at different speeds and feed lengths. Two or more strips can be simultaneously fed by the same feed.

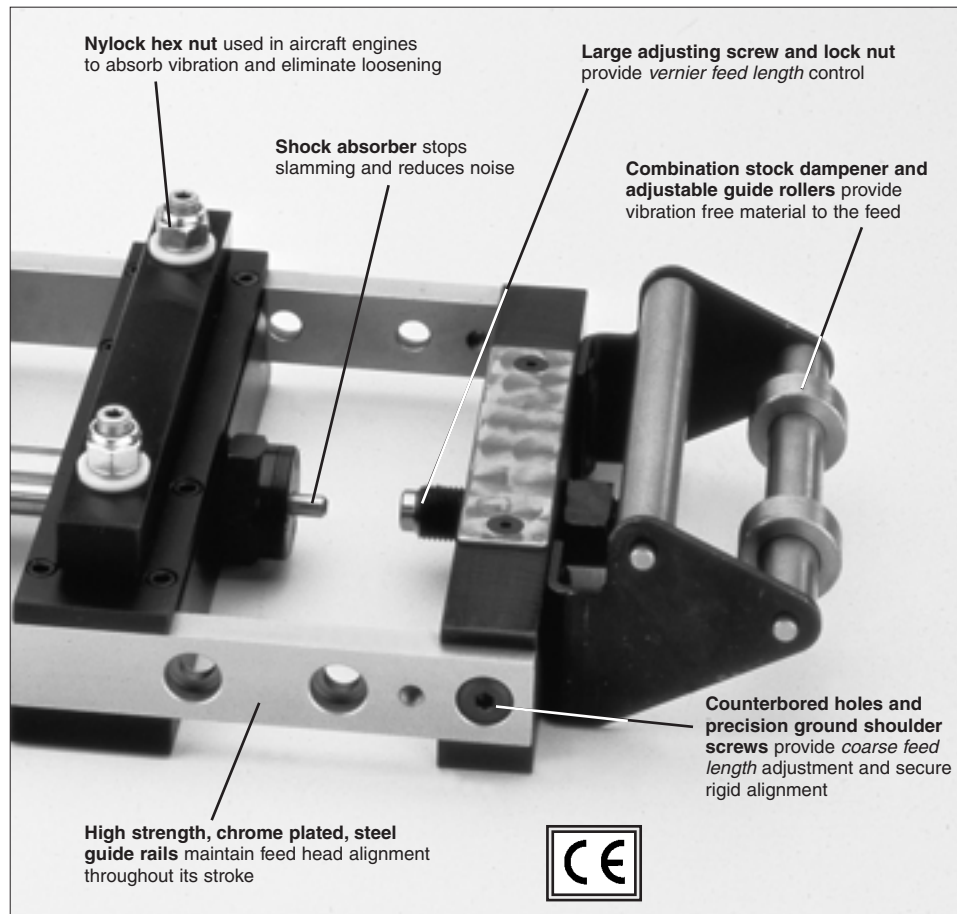
INEXPENSIVE

The cost of P/A feeds are 65% to 90% less than conventional roll or slide feeds. With savings like that you should consider leaving the feed permanently mounted on the tool to decrease set up time and increase productivity.

Surveys show that Contract Job Shop Stampers prefer P/A air feeds because they are the easiest and most economical way to change from one job to another.



AIR FEED FEATURES



SIMPLE INSTALLATION

Our feeds are extremely easy to mount. Two (or four) mounting bolts and a single air line connection are all that's necessary. A compact, clean design permits the P/A Air Feed to be mounted right on the die set.

QUICK SET-UP

Adjustments are quick, simple and positive. To change feed length, turn the adjustment screw to the desired pitch between positive stops and tighten the locknut.

PATENTED DESIGN

Technologically the BEST air feed on the market today! U.S. Patent No. 4,444,346.

REPEATABILITY

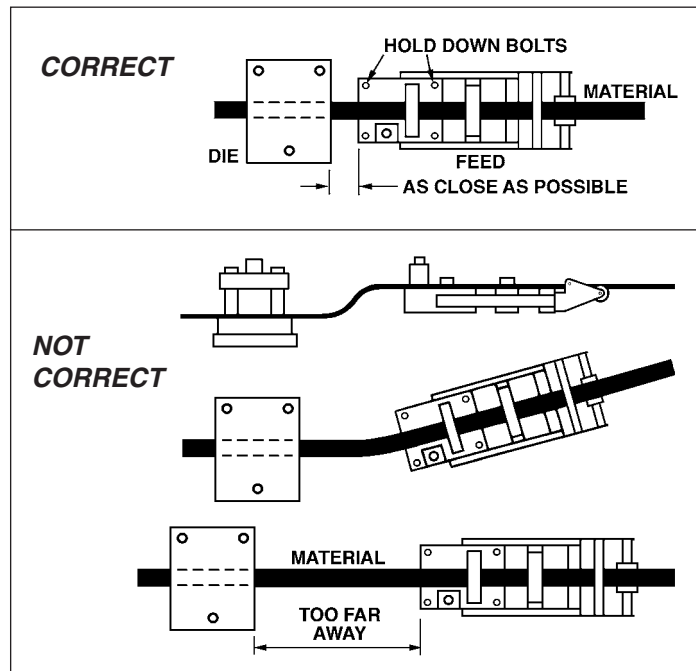
Consistently holds $\pm .001"$ (.025mm) stroke after stroke. The most precise press feed available at a reasonable cost.

HANDLES VARIETY OF MATERIALS

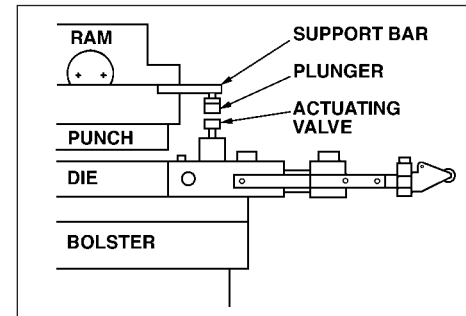
Paper, plastic, foil, fabric, wire, tubing . . . you name it and P/A will feed it. Highly polished materials or extrusions, preformed or irregularly shaped materials – all can easily be adapted with special clamps.

MOUNTING THE AIR FEED

Its compact design will allow this Feed to be installed on the Die or Press Bolster, or on many types of machines, at any angle, including upside down or vertical. Use two (or four) minimal clearance Hold-Down Bolts to solidly fasten the Feed as close to the Work Station as possible. **NEVER** use 'C' clamps as the Feed may move or shift position.



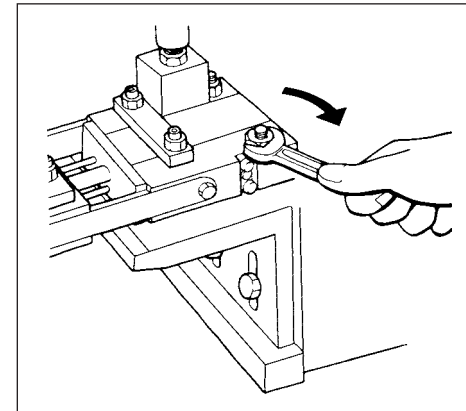
Mounting directly on the Die is **recommended** for "Just-In-Time" production and to reduce set-up time.



The top of the Feed Wear Plate should be level with the lower Die Face and the front of the Feed square and centered with the tool.

A mounting bracket provides easy vertical adjustment for tools with different stock line heights.

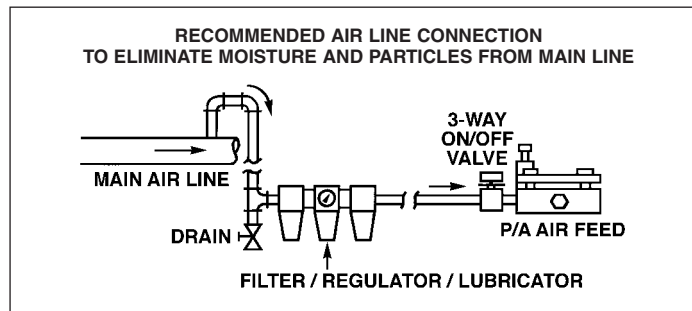
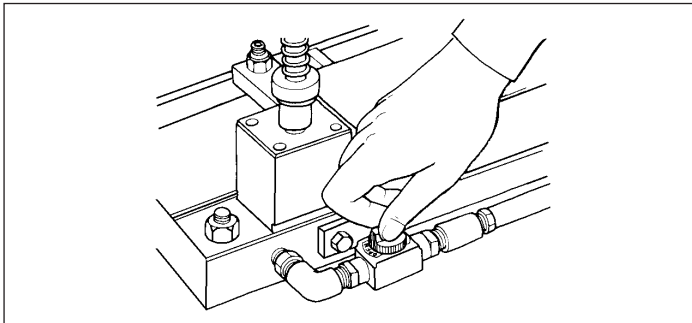
The Feed can be moved from press to press, or die to die, in a matter of minutes.



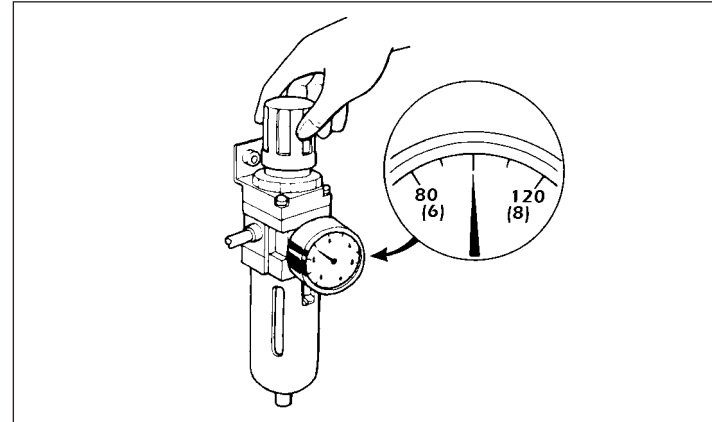
AIR POWER SUPPLY CONNECTION TO THE FEED

A single air line connection is all that is needed for maximum power with minimum air consumption. We **strongly** recommend that an **oversized** air hose be connected to the Feed with a water separator type filter and air line oiler.

The use of a 3-Way On/Off Exhaust Valve will make minor adjustments and strip insertion easier.



Set the Air Pressure Regulator between 80 and 120 PSI (6 to 8 Bar).



FEED LUBRICATION

Fill the air line lubricator with a good grade of hydraulic cylinder oil, like Shell Tellus 32. Set for one drop per minute to properly clean and lubricate all internal parts.

NEVER use Spindle Oils, Motor Oils, Solvents, WD-40, or Stock Lubricating Oils. Use of these types of oils will cause Feed performance to deteriorate, as well as premature wear.

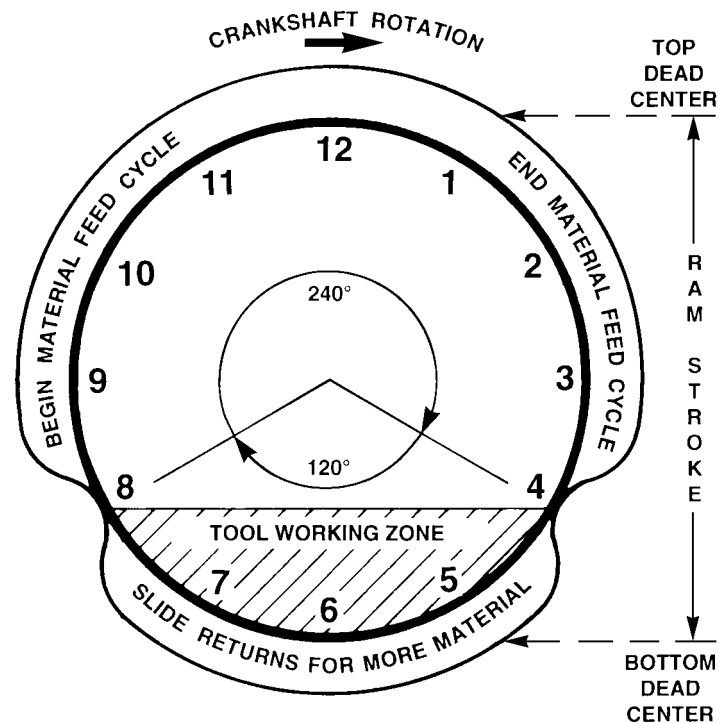
PRESS FEED TIMING

The Reciprocating Linear Motion of the Feed Slide must be timed to the press crankshaft rotation for optimum performance. The Actuating Valve's vertical motion controls the sequencing of the Stock Clamp, Feed Clamp, and the Feed Slide.

To understand how the rotary crankshaft and linear Feed Slide motion work together in a Press Feed Cycle, it might be helpful to visualize a Clock Face. The position "Top Dead Center" of the Ram Stroke would be 12 o'clock, half way down would be 3 o'clock, "Bottom Dead Center" is 6 o'clock, and moving half way up would be 9 o'clock.

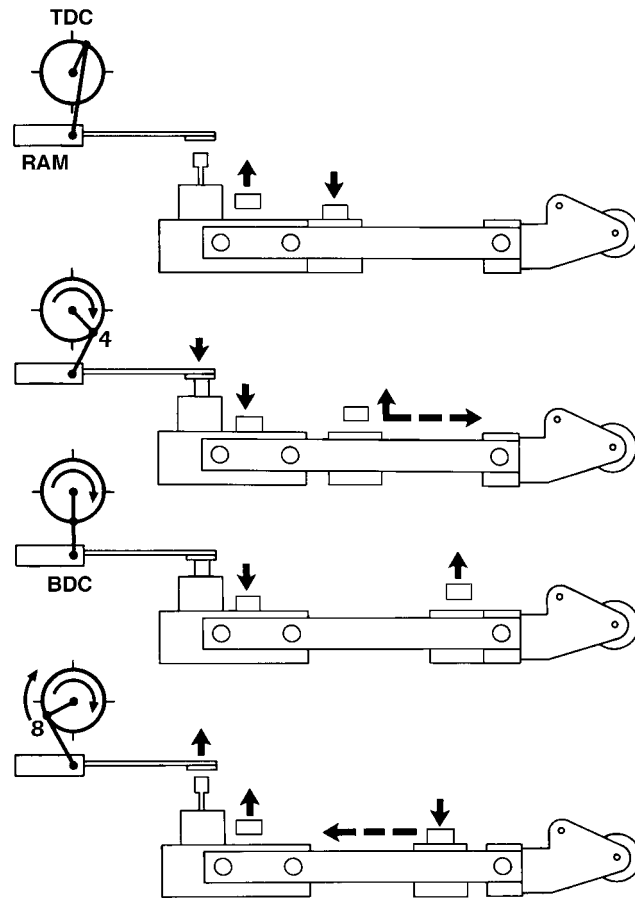
The optimum Feed cycle requires two thirds of the crankshaft rotation (240 degrees) to feed the material into position. During the remaining 120 degrees, the Feed Slide returns to the Stop Screw for more Material. As soon as the Stamped Part has been ejected and the Punches are clear of the Die (approximately 8 to 8:30 on the clock), the Feed Clamp will grip the Stock and then the Feed Slide will begin moving towards the Feed Body.

CAUTION: To properly complete a Feed Stroke, the Feed Slide must have enough time to contact the Feed Body before 4 o'clock and then return to the Stop Screw before 8 o'clock during the 360 degree crankshaft rotation otherwise erratic short feed progressions will occur.



Another method of controlling the Feed Timing is to use the Remote Electric or Pneumatic Actuation Systems to suit the Press and Part applications. These methods require the same 240° feed and 120° return timing cycle.

AIR FEED SEQUENCE



- Actuating Valve **up**
- Feed Slide **forward**
- Stock Clamp **open**
- Feed Clamp **closed**

*AT TOP OF
PRESS STROKE*

- Actuating Valve **down**
- Stock Clamp **closes**
- Feed Clamp **opens**
- Feed Slide **moves back**

*AT BEGINNING OF
NON-FEED STROKE*

- Feed Slide **rests
against Stop Screw**
- Stock Clamp **closed**
- Feed Clamp **open**

*AT END OF
NON-FEED STROKE*

- Actuating Valve **up**
- Feed Clamp **closes**
- Stock Clamp **opens**
- Feed Slide **moves forward**

*AT BEGINNING OF
FEED STROKE*

CONTROLLING THE FEED

MECHANICAL ACTUATION

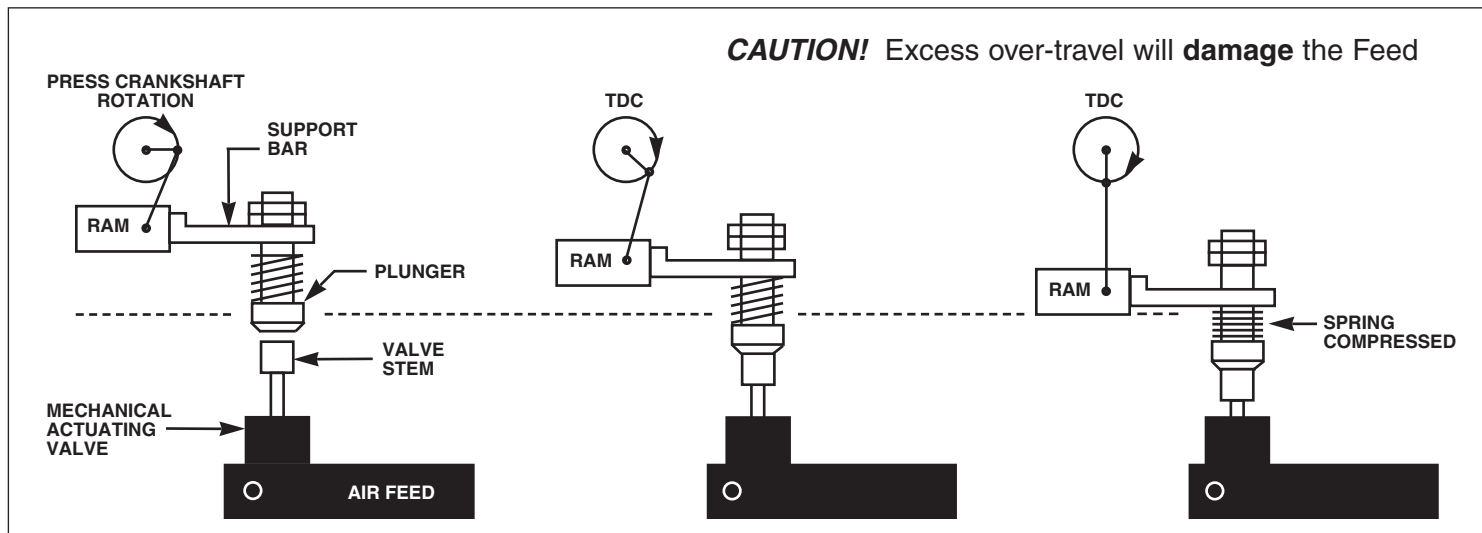
Install a Support Bar with a Plunger on the upper Die Block of the Tool or on the Press Ram. The vertical Plunger should be threaded to allow vertical height adjustments. The Plunger should contact the center of the Feeder's Actuating Valve Stem. After contact, and during the first 1/4" (6mm) of downward Valve Stem travel, nothing happens with the Feed Slide Control.

During the next 3/16" (5mm) of travel, the Mechanical Actuation Valve opens causing the clamps to shift and

the non-feed stroke begins. The remaining downward stroke of the Valve Stem is over-travel.

When the Press Ram passes BDC and begins to move upward, the Valve Stem reverses travel direction. As the Plunger moves off the Valve Stem, the Mechanical Actuation Valve closes causing the clamps to shift and the Feed Slide to begin the feed stroke.

Installing a Spring on the Plunger to contact the Actuating Valve Stem will result in a more desirable Feed Cycle for Presses with long strokes.

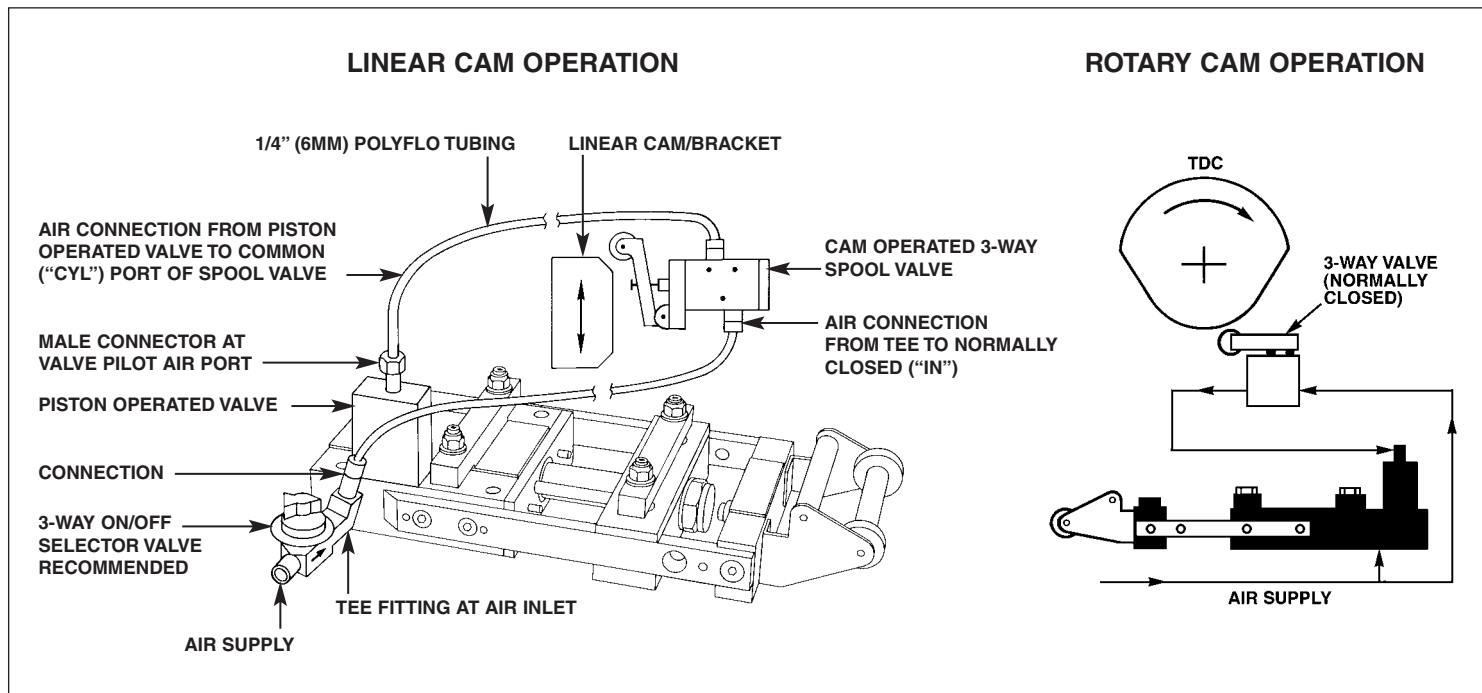


CONTROLLING THE FEED

REMOTE PNEUMATIC ACTUATION

By removing the Mechanical Actuating Valve Assembly, the timing control of the feed cycle can be changed by installing the optional Piston Operated Valve (POV).

The Feed Cycle is then controlled by a cam operated 3-Way Spool Valve and a Linear Cam mounted on the Press Ram, or by a Rotary Cam mounted on the crankshaft.

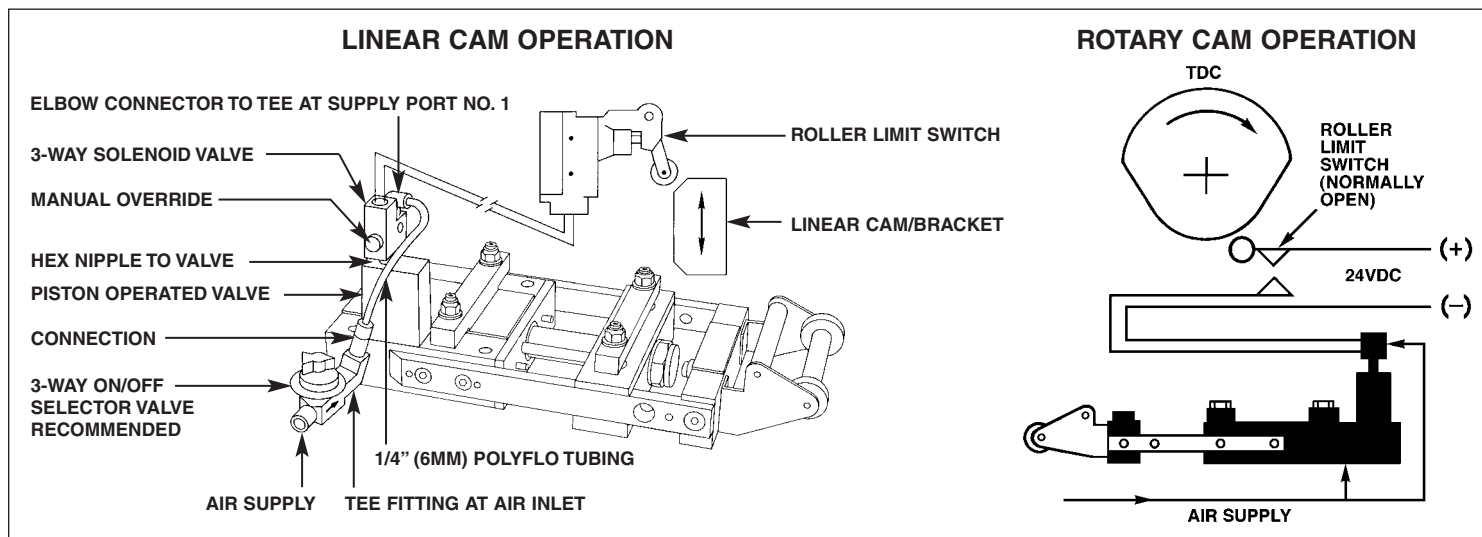
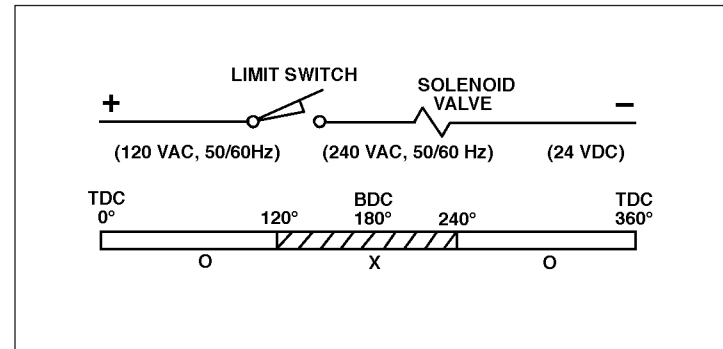


CONTROLLING THE FEED

REMOTE ELECTRIC ACTUATION

To control the timing of the Feed Slide motion electrically, install the 3-Way Solenoid Valve on top of the P.O.V. and wire into a Limit Switch. Mounting a Linear Cam on the Press Ram Slide or installing a Rotary Cam on the crankshaft are two ways to electrically control the Feed Cycle.

Many new presses today are equipped with electronic Programmable Controllers and/or electronic Rotary Limit Switches. Specify 24 VDC for Solenoid Valve.



CONTROLLING THE FEED

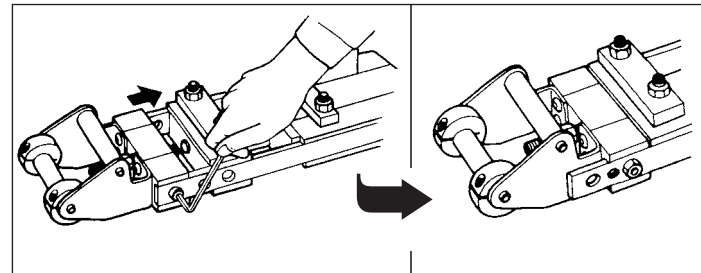
REPEATER CONTROL SYSTEM

The Air Feed can be multiple stroked for each cycle of the Press to obtain greater feed length increments than the Air Feed's maximum feed stroke capacity. The Repeater Control has a digital counter and Key Lock Selector Control for "Feed Control Press" or "Press Control Feed". Used with Remote Electric Actuation and 120 VAC, 50/60 Hz Power Supply. Transformers for other voltages are available.

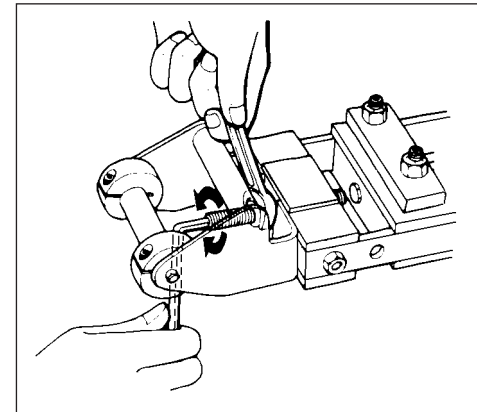


FEED LENGTH ADJUSTMENT

For **coarse feed length adjustment** there are counter-bored holes provided in the side rails of the Feed. Move the Stop Block, and insert and tighten the Shoulder Screws in the holes closest to the desired feed stroke.

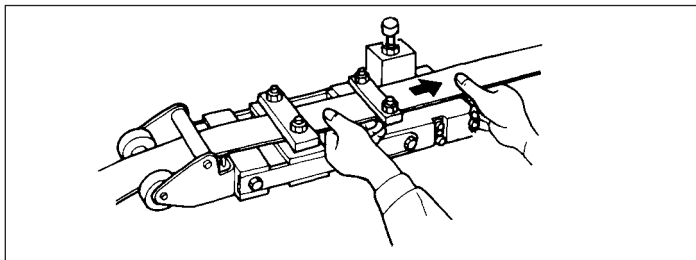


For **fine adjustment**, move the Feed Slide to the **exact distance** between it and the Main Body. Adjust the Stop Screw to contact the Feed Slide and tighten the Hex Nut.

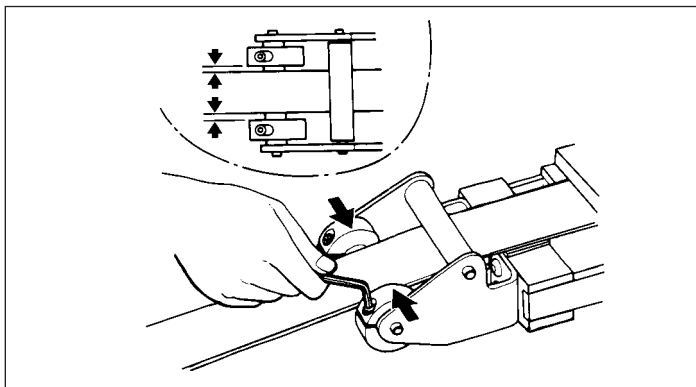


MATERIAL ADJUSTMENT

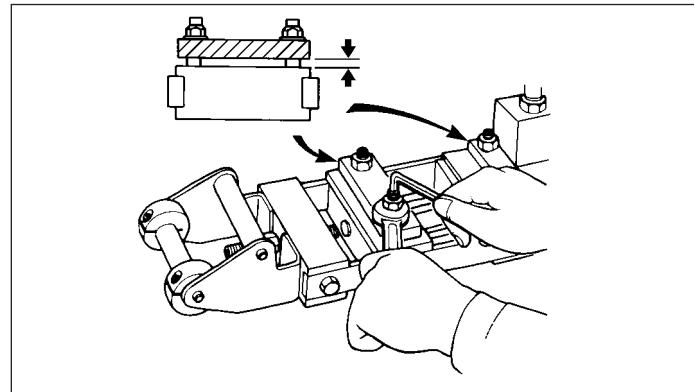
STEP 1. The strip material must be straight and parallel from the Rear Stock Guides through the Feed and into the Tool.



STEP 2. Adjust the two Roller Stock Guides with enough lateral clearance for camber and variations in stock width.



STEP 3. Recommended vertical clearance between the Material and the two Clamps is .010" to .020" (.3mm to .5mm). Adjust by holding the Clamp Piston Stem with a Hex Key and turn the Hex Nut.

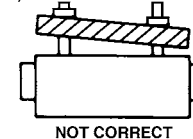
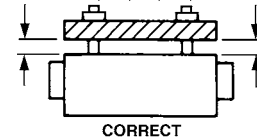


CAUTION! It is very important to have a **level** Clamp condition for both the Feed Clamp and the Stock Clamp.

FACTORY SETTINGS:

MODEL AX – .060" (1.5MM)

MODELS CX, DX, FX, HX, LX – .093" (2.3MM)

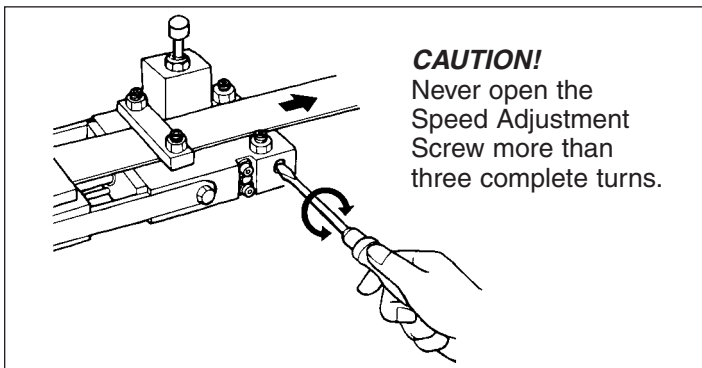


SPEED CONTROL

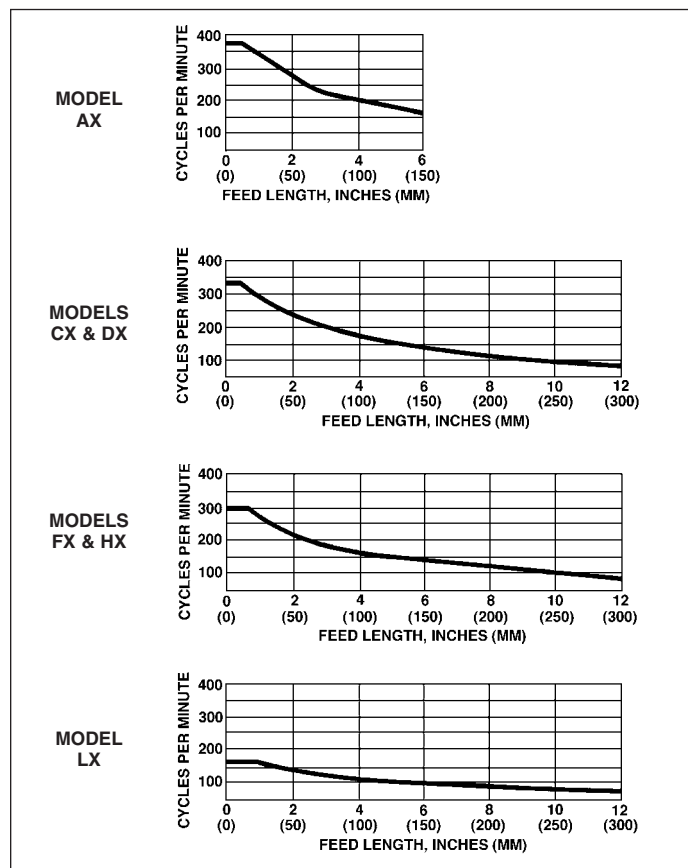
The Speed Adjustment Screw is located on the side opposite the air inlet. It provides material velocity control during the feeding direction of the Feed Slide.

HOW TO SET

1. Cycle the Feed manually, turning the Speed Adjustment Screw clockwise until the Feed motion becomes erratic or incomplete.
2. Turn the Speed Adjustment Screw counter-clockwise until Feed Slide makes a complete forward motion.
3. Turn the Speed Adjustment Screw an additional half turn counter-clockwise.
4. If the material slips forward under the Clamp upon impact with the Main Body, turn the Speed Adjustment Screw clockwise 1/4 turn or until slippage stops.



SAFE WORKING SPEEDS AT VARYING LENGTHS



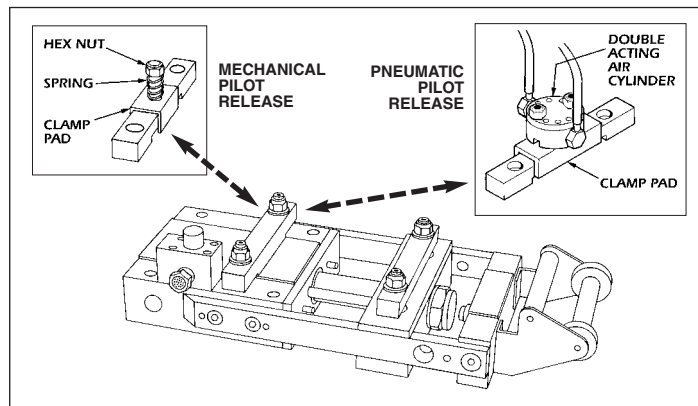
THREE PILOT RELEASE METHODS

MECHANICAL PILOT RELEASE

The Mechanical Spring-Loaded Pilot Release Clamp is installed in place of the standard Stock Clamp. Turn the Hex Nut to compress the Spring for the desired clamp and material pressure. Not available on LX.

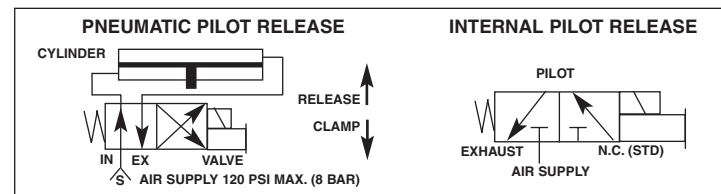
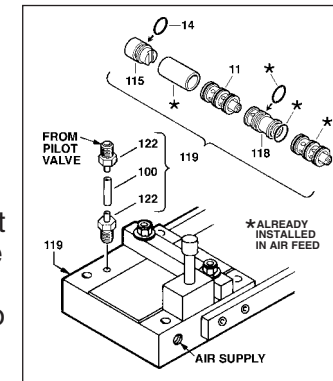
PNEUMATIC PILOT RELEASE

The Pneumatic Pilot Release can be used for those applications that require more sensitive clamping pressure, or that the Clamp pad be completely free of the material. With this system, the clamping pressure may be adjusted by regulating the air supply to the valve. The clamp pad is fitted with a quick-response cylinder for positive stock grip and release. Timing is controlled by an external 4-way Solenoid valve or spool valve.



INTERNAL PILOT RELEASE (IPR)

This internal valving system provides up to 270 pounds of clamping force with the standard clamp and is available on all FX, HX, and LX models. The Internal Pilot Release controls the release of the Stock Clamp with a timed air signal connected to the 1/8" NPT port. This feature gives you the option of using pilot release, or not, without the downtime necessary for changing clamps. One switch turns the system on or off. The IPR requires an external 3-Way Spool or Solenoid Valve.

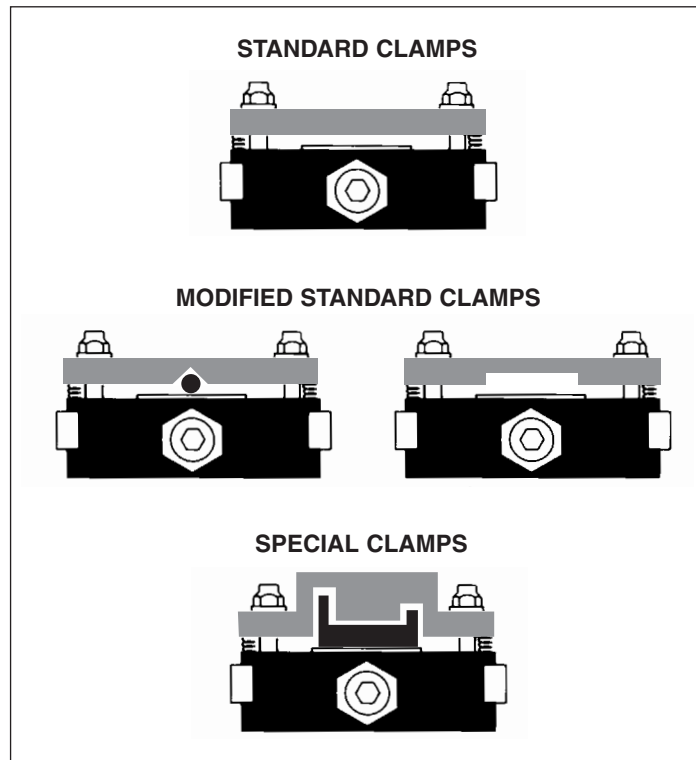


ADJUSTMENTS

For most pilot release applications, set the Feed Pitch approximately .005" (.1mm) short and the Pilot Release Stock Clamp will allow the pilot pin to pull the material under the clamp pad into the proper position.

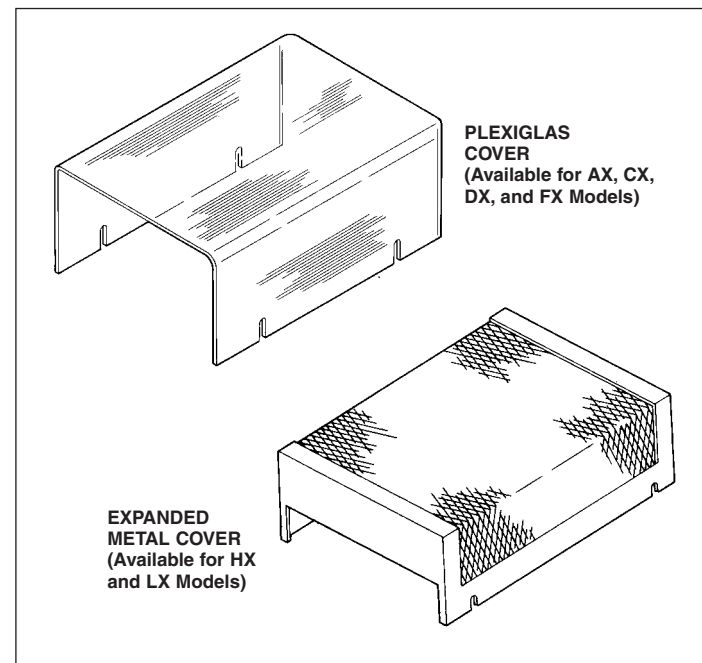
FEEDING SHAPED MATERIAL

By machining the grip side of the Clamps to the desired contour, any kind of material or preformed parts like electronic contacts, terminals, or wire, tubing, and channel can be easily handled.



PROTECTIVE COVERS

P/A Industries **strongly recommends** our rugged, see-through Cover of Plexiglas or Expanded Metal for operator protection. Pre-drilled holes in the Feed Guide Rail accept the Slip-Fit Fasteners that secure the Cover over the top and sides of the Feed. These Protective Covers further protect the Feed from dirt, oil, chips, and other harmful materials.



MODEL AX PARTS LIST

() Indicates quantity used if more than one

Item	Description	AX
1	Valve Block	14261
2	O-Ring	14208-011 (2)
3	Ring Insert	14295-01 (2)
4	Valve Stem	14260
5	Valve Disc	14263-01
6	O-Ring	14208-008
7	Hex Nut	943010ZP
8	Screw	900006-08LA (4)
9	Gasket, Valve Block	14262
11	Cartridge Valve	12110-12
12	Valve Plug	15488-01
13	O-Ring	14208-011
14	O-Ring	14208-012
15	Screw	901010-03LA (2)
16	Washer	DIN-125-M5B0 (2)
17	Collar, Spacer - Loctite #609	14571-06 (2)
18	O-Ring	14208-011 (2)
20	Screw	905010-02.5LA
21	Stock Clamp Piston	14287-04 (2)
22	O-Ring	14208-114 (2)
23	Spring, Compression	12442-18 (2)
24	Pilot Release Clamp	15856
25	Spring Stud	15832
26	Spring Clamp	15857
27	Spring Sleeve	15833
28	Spring, Compression	12442-36
29	Hex Nut	943031ZP
31	Hex Nut, Nylock	943031ZP (4)
32	Speed Adj. Screw	15787
33	O-Ring	14208-006
34	Silencer (Body)	12024-11
36	Spring Pin	972018-04 (2)
37	Shoulder Screw	919032-03 (4)
40	Ring	14271-01
41	Piston Seal	14245-01
42	Spacer	14272-01
43	Locknut - Loctite #242	947038ZP
45	Retaining Plate	14274
46	Guide Bushing - Loctite #324	14298
47	O-Ring	14208-113
49	O-Ring	14208-008
50	Dowel Pin	970012-03 (2)
51	Gasket, Retaining Plate	14273
52	Screw	900008-03LA (4)
53	Feed Slide	16278
56	Feed Clamp Piston	14287-08 (2)
57	O-Ring	14208-117 (2)
58	Rod Guide	16283 (2)
59	O-Ring	14208-020 (2)
61	O-Ring	14208-012 (2)
62	Cover Plate	16279
63	Screw	900008-03LA (4)
64	Spring, Compression	12442-16 (2)
65	Feed Clamp	14289-01
67	Stop Anvil - Loctite #242	14283
74	Stop Block	16311
75	Wear Strip	15874-01

Item	Description	AX
77	Stop Screw	16312
78	Hex Nut	941044B0
79	Roller Bracket, Left	15858-03
80	Roller Bracket, Right	15858-04
81	Screw	902025-02LA (4)
82	Roller Shaft	15859-01 (2)
84	Roller Stock Guide	12441-25 (2)
89	Cartridge Guide P.O.V.	12110-13
90	Valve Block P.O.V.	15486
91	Piston Oper. Valve Assy.	15507
92	Mechanical Valve Assy.	14304
93	P.R.S.C. Assy.	15806
94	Stock Clamp	14289-05
97	Dowel Pin - Loctite #609	970006-01 (2)
98	Flanged Bushing	12128-52 (4)
100	Air Line Tubing (10 Ft.)	15676-02
101	Fitting	12032-13
102	Cylinder	12111-23
103	Clamp Pad	16507
105	Clamp, Pneu. Release	16508
106	Screw	904006-10
107	Screw	905010-05LA
108	Spool Valve 3-Way	12110-10
109	Spool Valve 4-Way	12110-18
110	Solenoid Valve 3-Way (120 VAC, 50/60 Hz)	12039-31
	Solenoid Valve 3-Way (240 VAC, 50/60 Hz)	12039-39
	Solenoid Valve 3-Way (24 VDC)	12039-60
111	Solenoid Valve 4-Way (120 VAC, 50/60 Hz)	12039-59
	Solenoid Valve 4-Way (240 VAC, 50/60 Hz)	12039-58
	Solenoid Valve 4-Way (24 VDC)	12039-61
112	3-Way On/Off Exhaust	12110-02
113	Linear Cam	14170
114	Limit Switch	12031-02
116	Nut	942006ZP
117	Pneu. Pilot Release Assy.	16604
122	Fitting, Straight	12032-12

Item	Description	AX2	AX4	AX6
10	Main Body	15546-01	15546-02	15546-03
19	Wear Strip, Body	15841-01	15841-02	15841-03
35	Guide Rail	15733-01 (2)	15733-02 (2)	15733-03 (2)
38	Main Piston Rod	14269-01	14269-02	14269-03
55	Tubes w/Loctite #609	15844-01 (2)	15844-02 (2)	15844-03 (2)
121	Protective Cover	14222-01	14222-02	14222-03

REPAIR KITS

Model AX – P/A No. 15925

Repair Kits include these Item Numbers:

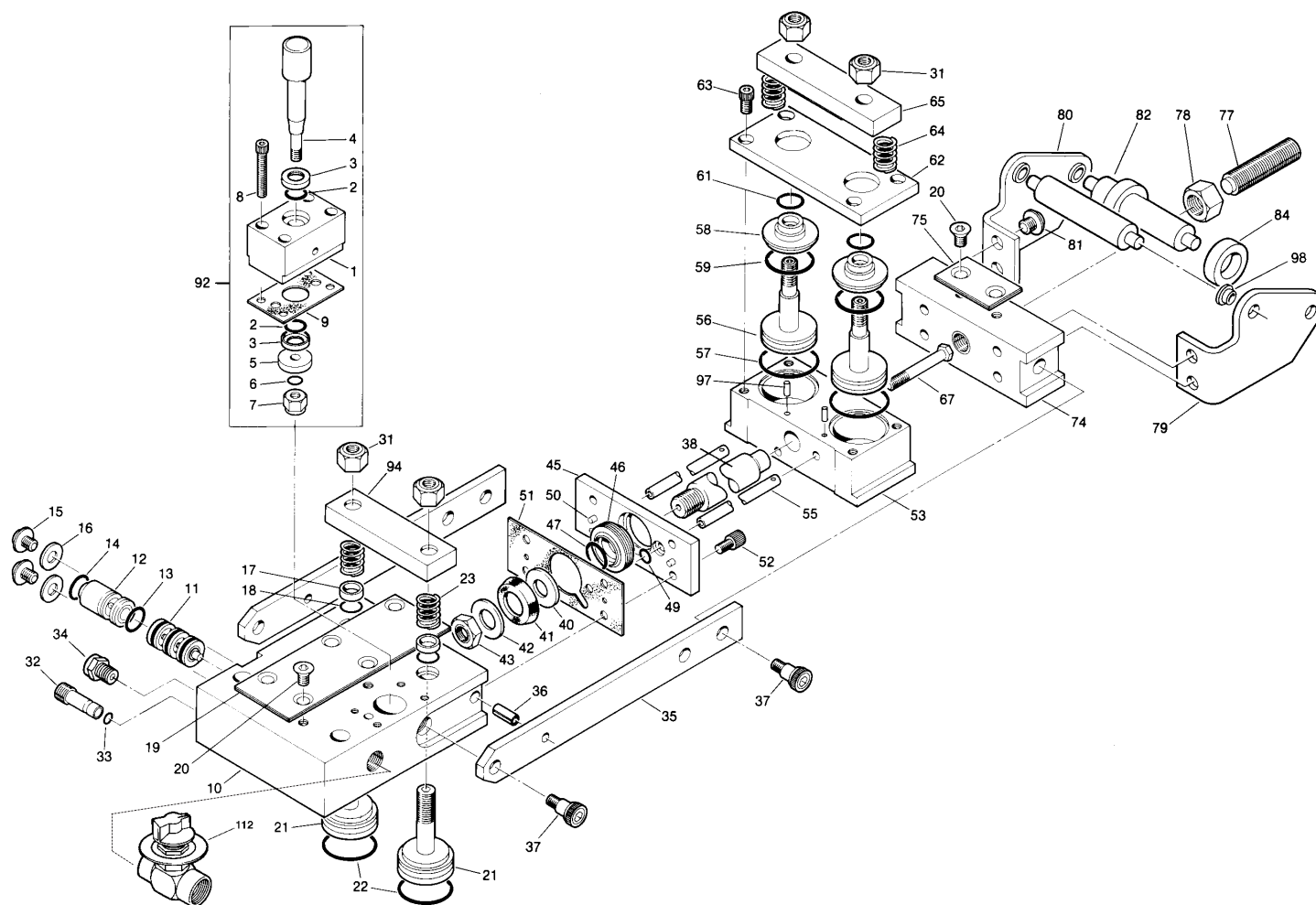
2, 5, 6, 9, 11, 13, 14, 18, 22, 23, 28, 31, 33, 34, 41, 46, 47, 49, 51, 57, 59, 61, 64, 98

REPAIR KIT includes a complete set of O-Rings, Cartridge Valve, Gaskets, Piston Seal, Guide Bushing, Springs, Valve Disc, and Exhaust Silencers.

Note: O-Rings may be ordered from a local supplier by specifying the 3-digit number which conforms with ARP Universal series numbers.
(Example: Model AX item 2, specify -011).

Note: Item Number 31, Nylock Hex Nut, **MUST** be replaced after disassembly.

Note: Assemble Guide Bushing (Item #46) with outer rim slot aligned with slot in Gasket (Item #51)



MODELS CX, DX PARTS LIST

() Indicates quantity used if more than one

Item	Description	CX	DX
1	Valve Block	15783	15783
2	O-Ring	14208-012 (2)	14208-012 (2)
3	Ring Insert	14295-03 (2)	14295-03 (2)
4	Valve Stem	14325	14325
5	Valve Disc	14263-02	14263-02
6	O-Ring	14208-008	14208-008
7	Hex Nut	943010ZP	943010ZP
8	Screw	900008-12LA (4)	900008-12LA (4)
9	Gasket, Valve Block	14327	14327
11	Cartridge Valve	12110-12	12110-12
12	Valve Plug	15488-02	15488-03
13	O-Ring	14208-011	14208-011
14	O-Ring	14208-012	14208-012
15	Screw	901010-03LA (2)	901010-03LA (2)
16	Washer	DIN-125-M5BO (2)	DIN-125-M5BO (2)
17	Piston Guide	16375 (2)	16375 (2)
18	O-Ring	14208-014 (2)	14208-014 (2)
20	Screw	905010-02.5LA	905010-02.5LA
21	Stock Clamp Piston	14287-05 (2)	14287-05 (2)
22	O-Ring	14208-214 (2)	14208-214 (2)
23	Spring, Compression	13453-04 (2)	13453-04 (2)
24	Pilot Release Clamp	16177	16178
25	Spring Stud	15832	15832
26	Spring Clamp	15831	15805
27	Spring Sleeve	15833	15833
28	Spring, Compression	12442-36	12442-36
29	Hex Nut	943031ZP	943031ZP
30	Insert, Clamp	14272-05 (4)	14272-05 (4)
31	Hex Nut, Nylock	943038ZP (4)	943038ZP (4)
32	Speed Adj. Screw	15787	15787
33	O-Ring	14208-006	14208-006
34	Silencer (Body)	12024-11	12024-11
36	Spring Pin	972018-06 (4)	972025-06 (4)
37	Screw	900031-06LA (4)	900031-06LA (4)
39	O-Ring	14208-016	14208-016
40	Ring	14271-02	14271-02
41	Piston Seal	14245-02	14245-02
42	Spacer	14272-02	14272-02
43	Locknut - Loctite #242	14317-02	14317-02
45	Retaining Plate	15485	15609
46	Guide Bushing - Loctite #324	14338-01	14338-01
47	O-Ring	14208-116	14208-116
48	O-Ring	14208-010 (2)	14208-010 (2)
49	O-Ring	14208-011 (2)	14208-011 (2)
50	Dowel Pin - Loctite #609	970012-03 (2)	970012-03 (2)
51	Gasket, Retaining Plate	15794	15811
52	Screw	901010-05LA (6)	901010-05LA (6)
53	Feed Slide	15484-01	15484-02
54	Hard Disc - Loctite #324	15770 (2)	15770 (2)
56	Feed Clamp Piston	14287-06 (2)	14287-06 (2)
57	O-Ring	14208-217 (2)	14208-217 (2)
58	Rod Guide	15492 (2)	15492 (2)
59	O-Ring	14208-027 (2)	14208-027 (2)
60	O-Ring	14208-016 (2)	14208-016 (2)
61	O-Ring	14208-112 (2)	14208-112 (2)
62	Cover Plate	14330	14349
63	Screw	901010-03LA (6)	901010-03LA (6)

Item	Description	CX	DX
64	Spring, Compression	12442-17 (2)	12442-17 (2)
65	Feed Clamp	15830	15804
68	Buffer Housing	14335	14352
69	Buffer Piston	14316-02	14316-03
70	O-Ring	14208-011	14208-110
71	Striker Plate	14333	14333
72	Screw	900006-02LA (3)	900006-02LA (3)
73	O-Ring	14208-018	14208-018
74	Stop Block	15862	15863
75	Wear Strip	15874-02	15874-03
76	Shoulder Screw	919039-04 (2)	919039-04 (2)
77	Stop Screw	14331	14331
78	Hex Nut	941062BO	941062BO
79	Roller Bracket, Left	15858-01	15858-01
80	Roller Bracket, Right	15858-02	15858-02
81	Screw	902025-04LA (4)	902025-04LA (4)
82	Roller Shaft	15859-02 (2)	15859-03 (2)
84	Roller Stock Guide	12441-25 (2)	12441-25 (2)
86	Buffer Piston	15491-01 (2)	15491-01 (2)
87	O-Ring	14208-110 (2)	14208-110 (2)
88	E-Ring	12013-20	12013-20
89	Cartridge Guide P.O.V.	12110-13	12110-13
90	Valve Block P.O.V.	15487	15487
91	Piston Oper. Valve Assy.	15508	15508
92	Mechanical Valve Assy.	14307	14307
93	P.R.S.C. Assy.	15807	15808
94	Stock Clamp	15830	15804
96	Silencer (Valve Block)	12024-11	12024-11
97	Dowel Pin - Loctite #609	970012-02 (2)	970012-02 (2)
98	Flanged Bushing	12128-52 (4)	12128-52 (4)
100	Air Line Tubing (10 Ft.)	15676-02	15676-02
101	Fitting	12032-10	12032-10
102	Cylinder	12111-24	12111-24
103	Clamp Pad	16514	16514
105	Clamp, Pneu. Release	16504	16505
106	Screw	905010-10LA	905010-10LA
107	Screw	905031-05LA	905031-05LA
108	Spool Valve 3-Way	12110-10	12110-10
109	Spool Valve 4-Way	12110-18	12110-18
110	Solenoid Valve 3-Way (120 VAC, 50/60 Hz)	12039-31	12039-31
	Solenoid Valve 3-Way (240 VAC, 50/60 Hz)	12039-39	12039-39
	Solenoid Valve 3-Way (24 VDC)	12039-60	12039-60
111	Solenoid Valve 4-Way (120 VAC, 50/60 Hz)	12039-59	12039-59
	Solenoid Valve 4-Way (240 VAC, 50/60 Hz)	12039-58	12039-58
	Solenoid Valve 4-Way (24 VDC)	12039-61	12039-61
112	3-Way On/Off Exhaust	12110-02	12110-02
113	Linear Cam	14170	14170
114	Limit Switch	12031-02	12031-02
116	Nut	943010ZP	943010ZP
117	Pneu. Pilot Release Assy.	16605	16606
122	Fitting, Straight	12032-12	12032-12

REPAIR KITS

Model CX – P/A No. 15926
Model DX – P/A No. 15927

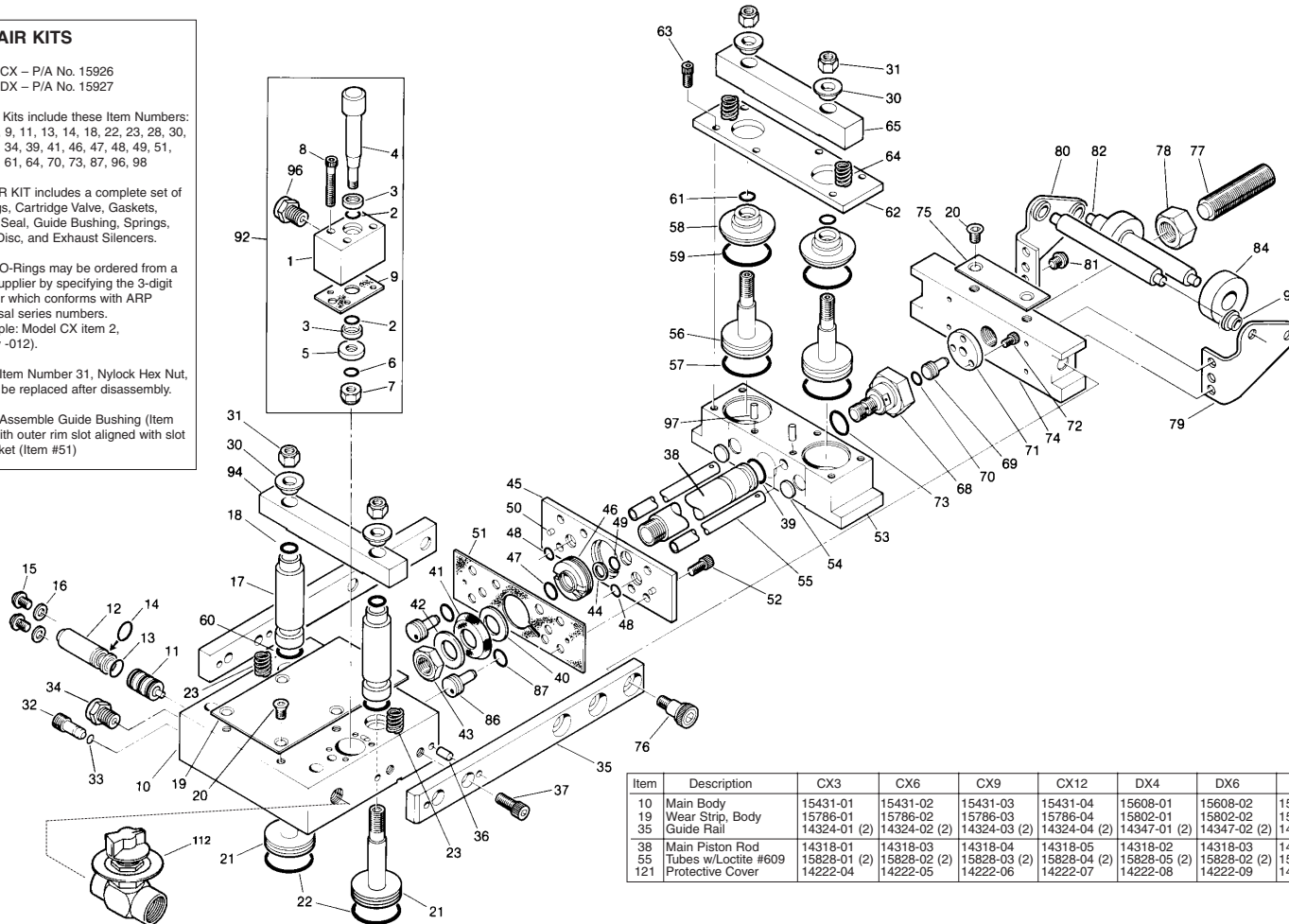
Repair Kits include these Item Numbers:
2, 5, 6, 9, 11, 13, 14, 18, 22, 23, 28, 30,
31, 33, 34, 39, 41, 46, 47, 48, 49, 51,
57, 59, 61, 64, 70, 73, 87, 96, 98

REPAIR KIT includes a complete set of
O-Rings, Cartridge Valve, Gaskets,
Piston Seal, Guide Bushing, Springs,
Valve Disc, and Exhaust Silencers.

Note: O-Rings may be ordered from a
local supplier by specifying the 3-digit
number which conforms with ARP
Universal series numbers.
(Example: Model CX item 2,
specify -012).

Note: Item Number 31, Nylock Hex Nut,
MUST be replaced after disassembly.

Note: Assemble Guide Bushing (Item
#46) with outer rim slot aligned with slot
in Gasket (Item #51)



Item	Description	CX3	CX6	CX9	CX12	DX4	DX6	DX12
10	Main Body	15431-01	15431-02	15431-03	15431-04	15608-01	15608-02	15608-03
19	Wear Strip, Body	15786-01	15786-02	15786-03	15786-04	15802-01	15802-02	15802-03
35	Guide Rail	14324-01 (2)	14324-02 (2)	14324-03 (2)	14324-04 (2)	14347-01 (2)	14347-02 (2)	14347-03 (2)
38	Main Piston Rod	14318-01	14318-03	14318-04	14318-05	14318-02	14318-03	14318-05
55	Tubes w/Locite #609	15828-01 (2)	15828-02 (2)	15828-03 (2)	15828-04 (2)	15828-05 (2)	15828-02 (2)	15828-04 (2)
121	Protective Cover	14222-04	14222-05	14222-06	14222-07	14222-08	14222-09	14222-13

MODELS FX, HX, LX PARTS LIST

() Indicates quantity used if more than one

Item	Description	FX	HX	LX
1	Valve Block	15783	15783	15783
2	O-Ring	14208-012 (2)	14208-012 (2)	14208-012 (2)
3	Ring Insert	14295-03 (2)	14295-03 (2)	14295-03 (2)
4	Valve Stem	14325	14325	14325
5	Valve Disc	14263-02	14263-02	14263-02
6	O-Ring	14208-008	14208-008	14208-008
7	Hex Nut	943010ZP	943010ZP	943010ZP
8	Screw	900008-12LA (4)	900008-12LA (4)	900008-12LA (4)
9	Gasket, Valve Block	14327	14327	14327
11	Cartridge Valve	12110-13	12110-13	12110-13
12	Valve Plug	15769	15769	15769
13	O-Ring	14208-015	14208-015	14208-015
14	O-Ring	14208-113 (3)	14208-113 (3)	14208-113 (3)
15	Screw	901010-03LA (2)	901010-03LA (2)	901010-03LA (2)
16	Washer	DIN-125-M5BO (2)	958010 (2)	958010 (2)
17	Piston Guide	16375 (2)	16375 (2)	16375 (2)
18	O-Ring	14208-014 (2)	14208-014 (2)	14208-014 (2)
20	Screw	905P010-02.5LA	905P010-02.5LA	905010-03LA
21	Stock Clamp Piston	14287-05 (2)	14287-05 (2)	14287-10 (2)
22	O-Ring	14208-214 (2)	14208-214 (2)	14208-220 (2)
23	Spring, Compression	13453-04 (2)	13453-04 (2)	12442-43 (2)
24	Pilot Release Clamp	16179	16767	N/A
25	Spring Stud	15832 (2)	15832 (2)	N/A
26	Spring Clamp	15824	15824	N/A
27	Spring Sleeve	15833 (2)	15833 (2)	N/A
28	Spring, Compression	12442-36 (2)	12442-36 (2)	N/A
29	Hex Nut	943031ZP (2)	943031ZP (2)	N/A
30	Insert, Clamp	14272-05 (4)	14272-05 (4)	14272-06 (4)
31	Hex Nut, Nylock	943038ZP (4)	943038ZP (4)	943050ZP (4)
32	Speed Adj. Screw	15787	15787	15787
33	O-Ring	14208-006	14208-006	14208-006
34	Silencer (Body)	12024-12	12024-12	12024-12
36	Spring Pin	972025-06 (4)	972025-06 (4)	972025-06 (4)
37	Screw	900031-06LA (4)	900031-06LA (4)	900031-06LA (4)
39	O-Ring	14208-016	14208-016	14208-016
40	Ring	14271-03	14271-03	14271-06
41	Piston Seal	14245-03	14245-03	14245-04
42	Spacer	14272-03	14272-03	14272-07
43	Locknut - Loctite #242	14317-02	14317-02	14317-02
44	Ring Insert	N/A	N/A	14295-01 (2)
45	Retaining Plate	15818	16752	16938
46	Guide Bushing - Loctite #324	14338-02	14338-02	14338-02
47	O-Ring	14208-116	14208-116	14208-116
48	O-Ring	14208-010 (2)	14208-010 (2)	14208-010 (2)
49	O-Ring	14208-011 (2)	14208-011 (2)	14208-011 (2)
50	Dowel Pin - Loctite #609	970012-03 (2)	970012-03 (2)	970012-03 (2)
51	Gasket, Rtnng Plate	15819	16753	16939
52	Screw	901010-05LA (6)	901010-05LA (8)	901010-05LA (12)
53	Feed Slide	15671	16754	16940
54	Hard Disc - Loctite #324	15770 (2)	15770 (2)	15770 (2)
56	Feed Clamp Piston	14287-07 (2)	14287-07 (2)	14287-09 (2)
57	O-Ring	14208-223 (2)	14208-223 (2)	14208-228 (2)
58	Rod Guide	15771 (2)	15771 (2)	16951 (2)
59	O-Ring	14208-031 (2)	14208-031 (2)	14208-036 (2)
60	O-Ring	14208-016 (2)	14208-016 (2)	14208-016 (2)
61	O-Ring	14208-112 (2)	14208-112 (2)	14208-114 (2)
62	Cover Plate	14361	16755	16941

Item	Description	FX	HX	LX
63	Screw	900025-04LA (6)	900025-04LA (8)	900025-04LA (12)
64	Spring, Compression	12442-21 (2)	12442-21 (2)	12442-42 (2)
65	Feed Clamp	15850	16756	16942
68	Buffer Housing	14631	14631	14631
69	Buffer Piston	14316-03	14316-03	14316-03
70	O-Ring	14208-110	14208-110	14208-110
71	Striker Plate	14333	14333	14333
72	Screw	900006-02LA (3)	900006-02LA (3)	900006-02LA (3)
73	O-Ring	14208-018	14208-018	14208-018
74	Stop Block	15864	16758	16943
75	Wear Strip	15874-4	15874-5	16584
76	Shoulder Screw	919051-04 (2)	919051-04 (2)	919051-04 (2)
77	Stop Screw	14331	14331	16945
78	Hex Nut	941062BO	941062BO	947075BO
79	Roller Bracket, Left	15858-01	15858-01	15858-05
80	Roller Bracket, Right	15858-02	15858-02	15858-06
81	Screw	902025-02LA (4)	902025-02LA (4)	902025-02LA (4)
82	Roller Shaft	15859-04 (2)	15859-05 (2)	15859-06 (2)
84	Roller Stock Guide	12441-25 (2)	12441-25 (2)	12441-22 (2)
86	Buffer Piston	15491-01 (2)	15491-01 (2)	15491-01 (2)
87	O-Ring	14208-110 (2)	14208-110 (2)	14208-110 (2)
88	E-Ring	12013-20	12013-20	12013-20
89	Cartridge Guide P.O.V.	12110-13	12110-13	12110-13
90	Valve Block P.O.V.	15487	15487	15487
91	Piston Oper. Valve Assy.	15508	15508	15508
92	Mechanical Valve Assy.	14307	14307	14307
93	P.R.S.C. Assy.	15809	16762	N/A
94	Stock Clamp	15823	16761	16946
96	Silencer (Valve Block)	12024-11	12024-11	12024-11
97	Dowel Pin - Loctite #609	970012-02 (2)	970012-02 (2)	N/A
98	Flanged Bushing	12128-52 (4)	12128-52 (4)	12128-60 (4)
100	Air Line Tubing (10 Ft.)	15676-02	15676-02	15676-02
101	Fitting, Elbow	12032-10	12032-10	12032-10
102	Cylinder	12111-24	12111-24	12111-24
103	Clamp Pad	16512	16512	16950
105	Clamp, Pneu. Release	16506	16763	16947
106	Screw	905010-10LA	905010-10LA	905010-10LA
107	Screw	905031-05LA	905031-05LA	905031-06LA
108	Spool Valve 3-Way	12110-10	12110-10	12110-10
109	Spool Valve 4-Way	12110-18	12110-18	12110-18
110	Solenoid Valve 3-Way (120 VAC, 50/60 Hz)	12039-31	12039-31	12039-31
	Solenoid Valve 3-Way (240 VAC, 50/60 Hz)	12039-39	12039-39	12039-39
	Solenoid Valve 3-Way (24 VDC)	12039-60	12039-60	12039-60
111	Solenoid Valve 4-Way (120 VAC, 50/60 Hz)	12039-59	12039-59	12039-59
	Solenoid Valve 4-Way (240 VAC, 50/60 Hz)	12039-58	12039-58	12039-58
	Solenoid Valve 4-Way (24 VDC)	12039-61	12039-61	12039-61
112	3-Way On/Off Exhaust	12110-15	12110-15	12110-21
113	Linear Cam	14170	14170	14170
114	Limit Switch	12031-02	12031-02	12031-02
115	Cap	16956	16956	16956
116	Nut	943010ZP	943010ZP	943010ZP
117	Pneu. Pilot Release Assy.	16607	16764	16948
118	Valve Plug	16955	16955	16955
119	Internal Pilot Release Kit	16957-01	16957-02	16957-03
120	Spacer	N/A	16772-01	16772-02
122	Fitting, Straight	12032-12	12032-12	12032-12

MODELS FX, HX, LX

REPAIR KITS

Model FX – P/A No. 15928
Model HX – P/A No. 16751
Model LX – P/A No. 16935

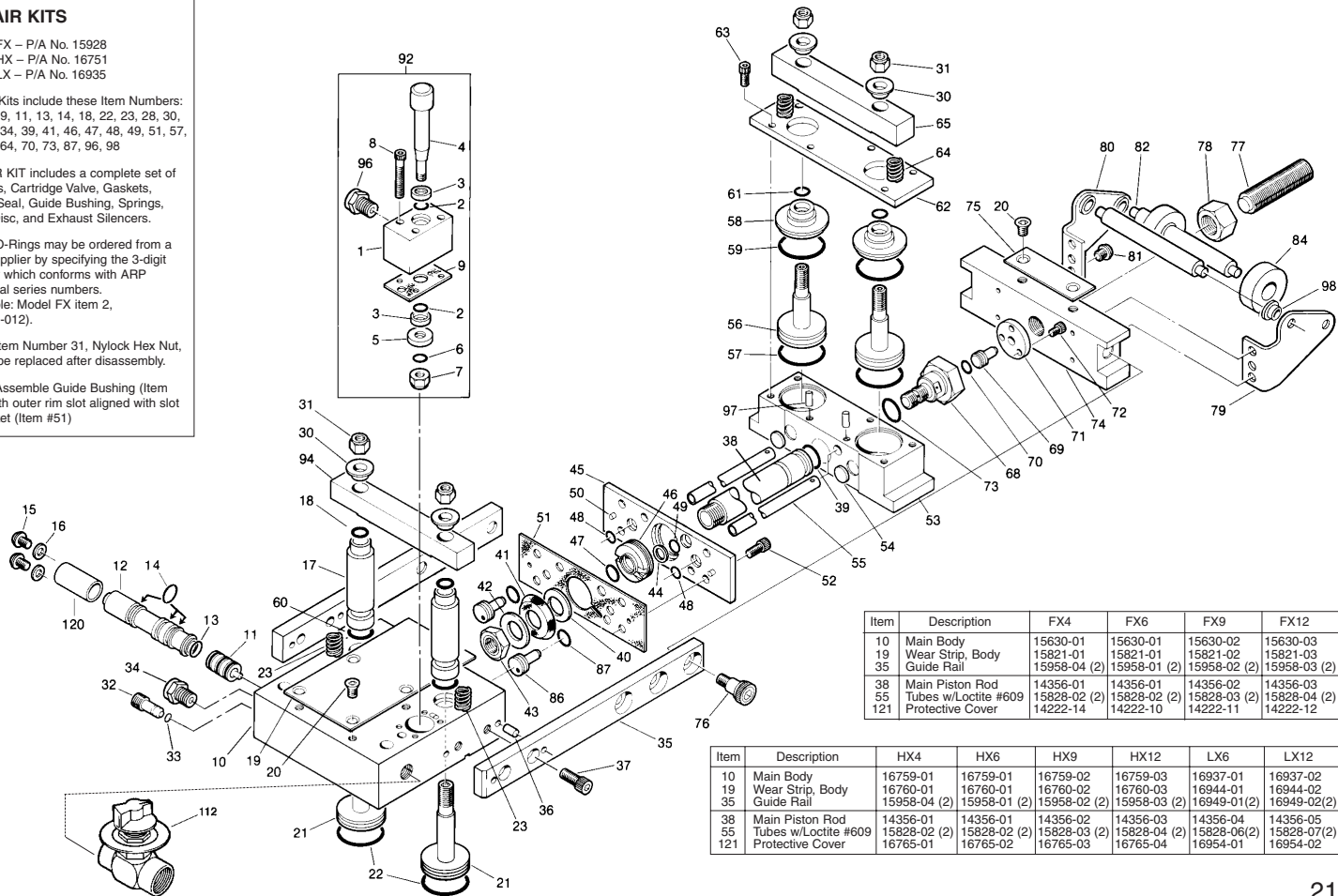
Repair Kits include these Item Numbers:
2, 5, 6, 9, 11, 13, 14, 18, 22, 23, 28, 30,
31, 33, 34, 39, 41, 46, 47, 48, 49, 51, 57,
59, 61, 64, 70, 73, 87, 96, 98

REPAIR KIT includes a complete set of
O-Rings, Cartridge Valve, Gaskets,
Piston Seal, Guide Bushing, Springs,
Valve Disc, and Exhaust Silencers.

Note: O-Rings may be ordered from a
local supplier by specifying the 3-digit
number which conforms with ARP
Universal series numbers.
(Example: Model FX item 2,
specify -012).

Note: Item Number 31, Nylock Hex Nut,
MUST be replaced after disassembly.

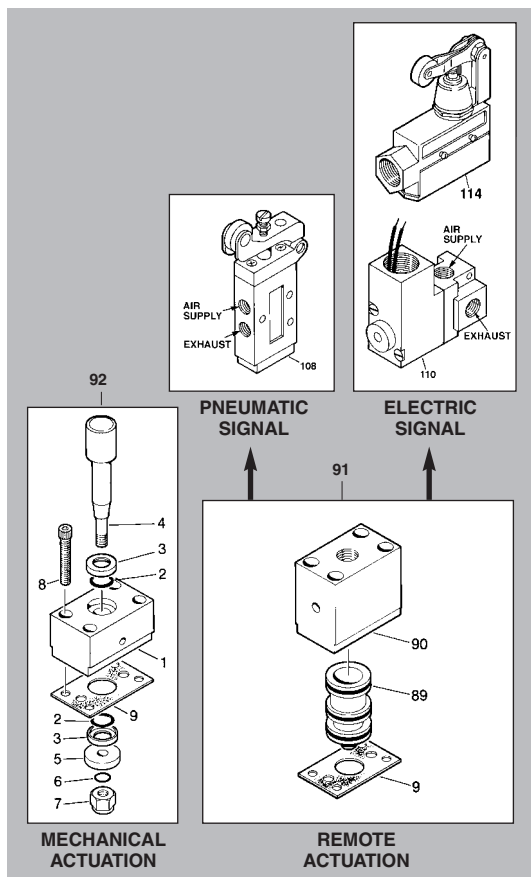
Note: Assemble Guide Bushing (Item
#46) with outer rim slot aligned with slot
in Gasket (Item #51)



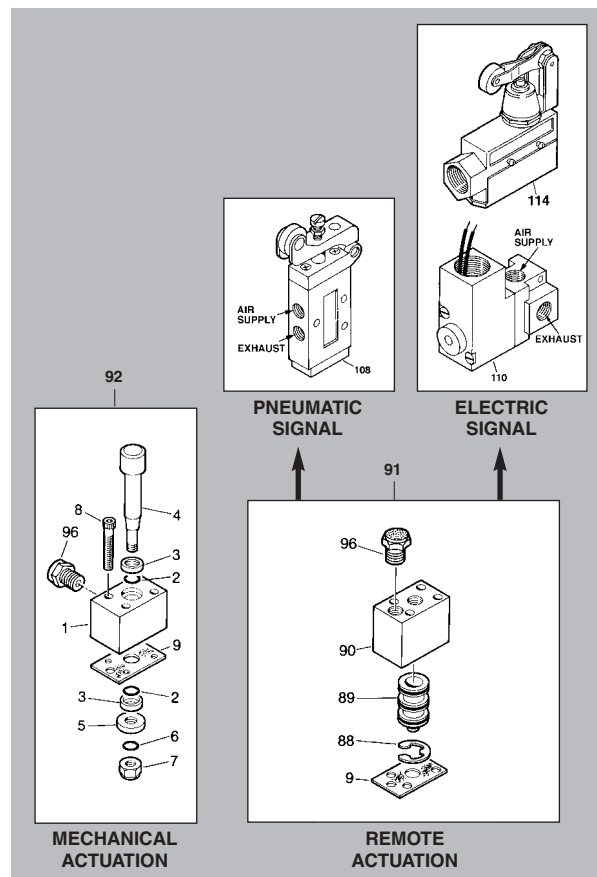
FEED ACTUATION METHODS

See pages 9 and 10 for schematics

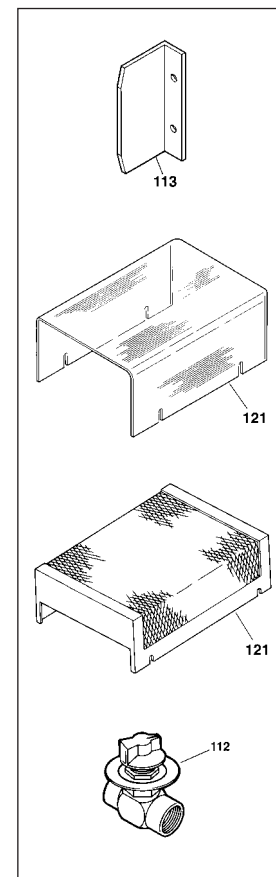
ACCESSORIES



MODEL
AX

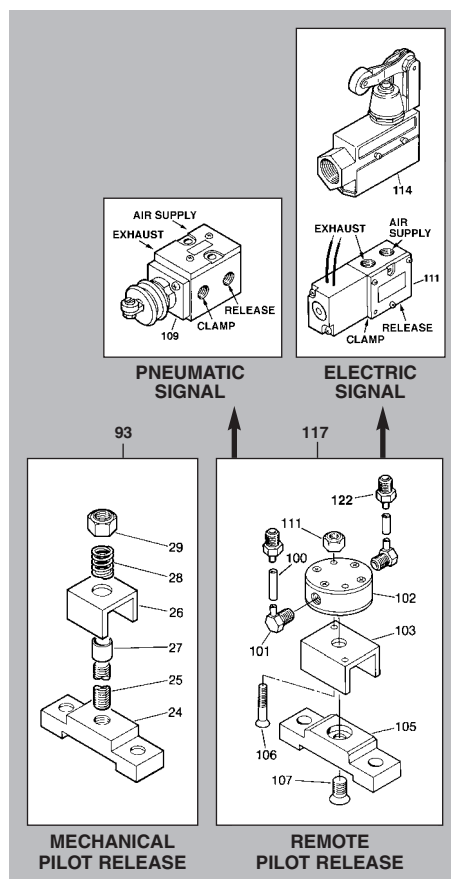


MODELS
CX, DX, FX, HX, LX

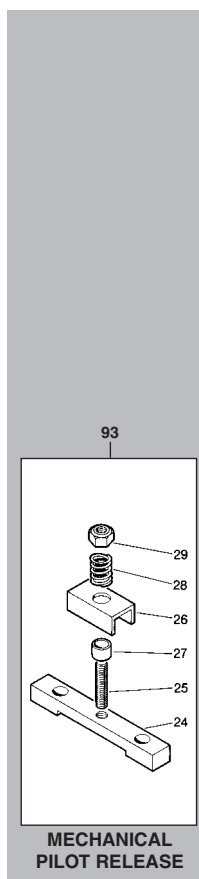


PILOT RELEASE ACTUATION METHODS

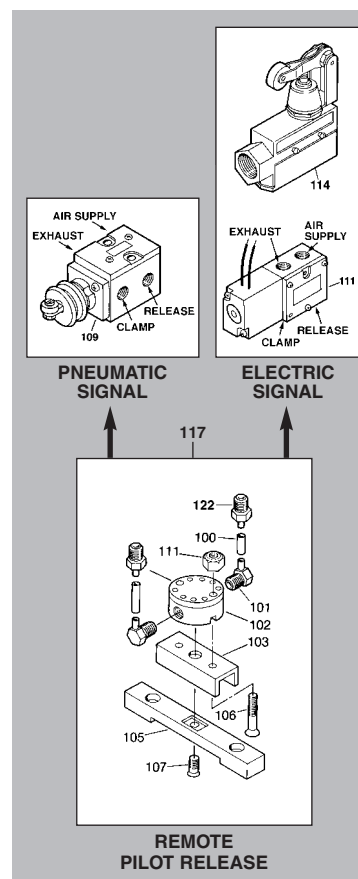
See page14 for schematics



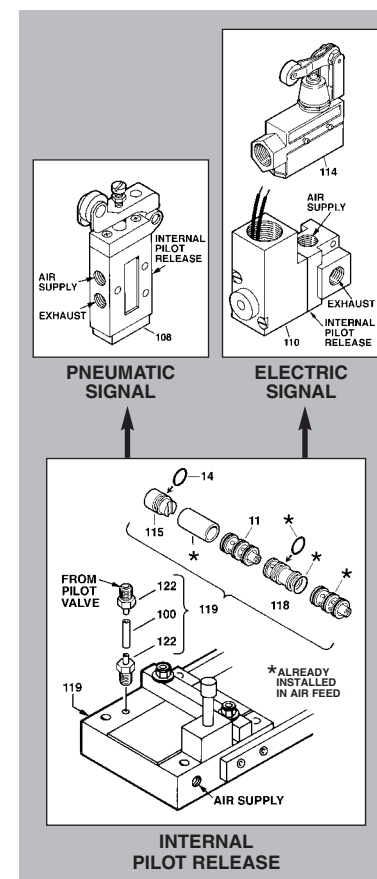
MODEL
AX



MODELS
CX, DX, FX, HX



MODELS
CX, DX, FX, HX, LX



MODELS
LX

TROUBLE SHOOTING CHART

	FEEDS SHORT				FEEDS LONG		FEEDS LONG AND SHORT	FEED SLIDE		AIR LEAKAGE		
	Strip Moves Under Feed Clamp	Strip Moves Under Stock Clamp	Feed Slide Not Making Full Stroke	Feed Slide Moves Before Feed Clamp Closes	Strip Moves Under Feed Clamp	Strip Moves Under Stock Clamp	Stock Buckles	Moves To Stop Screw	No Motion	Valve Block	Exhaust Port Main Body	Air Tubes
SET-UP & OPERATION												
Air Pressure or Volume Too Low	✓	✓	✓				✓		✓			
Feed Mounted Loose or Misaligned	✓		✓		✓		✓					
Obstruction within Die: Slugs, Scrap	✓		✓				✓					
Camber, Burrs, Unstraightened Coil	✓		✓				✓					
Oily, Slippery Strip	✓				✓		✓					
Stock Reel Drag or Tight Loop	✓	✓	✓				✓					
Feed Timing Incorrect	✓		✓		✓	✓	✓					
Forming Die Pulls Strip Forward						✓	✓					
Shearing Die Pushes Strip Backward		✓					✓					
Speed Adjust Screw Set Wrong			✓		✓		✓		✓			
Clamp Clearance Set Wrong	✓	✓		✓	✓	✓						
MAINTENANCE												
Water or Dirt in Air Line	✓	✓	✓	✓	✓	✓	✓				✓	
Cartridge Valve Malfunction	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	
Clamp Pistons O-Rings Leaking	✓	✓		✓	✓	✓				✓		
Main Piston Cup Seals Leaking			✓								✓	
Air Tube O-Rings Leaking				✓	✓							✓
Valve Disc Broken								✓		✓		
Gasket Failure Under Valve								✓		✓		
Worn or Broken Clamp Springs	✓						✓					
Feed or Stock Clamp Springs Reversed	✓				✓		✓					
Not Enough Air Line Oil			✓	✓								
Retaining Plate Gasket Leaking			✓							✓		✓
Cushions Filled with Oil or Dirt	✓		✓		✓		✓					

WARRANTY

We warrant our new parts against defects under normal use and service for a period of 2 years 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.

WARNING !

This equipment offers various means of operating metal forming machines, delivers material or parts to the machine, or removes material, parts, or scrap from the machine. The operator's hands 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 on the press with proper warnings for his machine and the specific application to which the machine and equipment are being applied. If the EMPLOYER requires help in preparing wording for his application after he has determined the details of that application, he is invited to contact P/A Industries for such help.

The EMPLOYER must meet all OSHA regulations including, but not limited to, 1910.211, 1910.212, 1910.217 and all applicable state laws. All equipment manufactured by P/A Industries is designed to meet the construction standards of OSHA in effect at the time of sale, but the EMPLOYER installs the equipment, and therefore the EMPLOYER is responsible for installation, use, application, training, and maintenance, as well as adequate signs on the press or other machine onto which this equipment will be installed.

All P/A products are sold for use only in accordance with our installation and operating instructions which accompany the products. P/A accepts no responsibility for any use or application not in accordance with our instructions, or for any modification or alteration of the product.

Accident-free press operation will result from a well developed, management-sponsored and enforced press safety program. P/A Industries is not responsible for notifying the user of this equipment of further changes in State or Federal laws, construction standards, or changes in P/A designed and built products.



®

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