

PRESS ACCESSORIES



ACAT

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PRECISION AIR FEEDS

OVER FIFTY 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

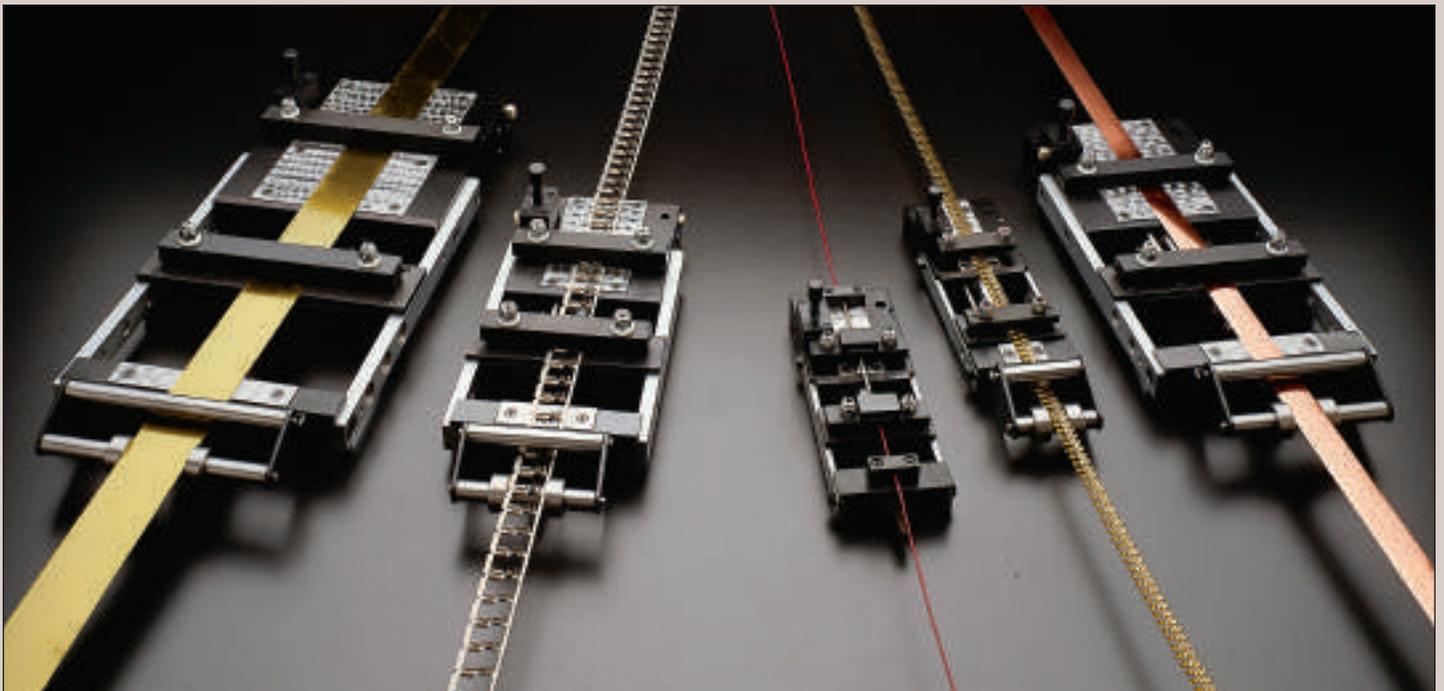
P/A is the only Air Feed manufacturer that provides **low maintenance, high-cycle life cup wiper seals** on the main cylinder. This is the same technology that air cylinder manufacturers utilize. Cup seals reduce friction and heat which increases cycle life and performance by a conservative factor of 50 times.

FASTER SPEEDS

Our patented system sequences high speed models up to 400 cycles per minute for faster and more accurate feeding.

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, consider leaving the feed permanently mounted on the tool to decrease set up time and increase productivity.

HANDLES VARIETY OF MATERIALS

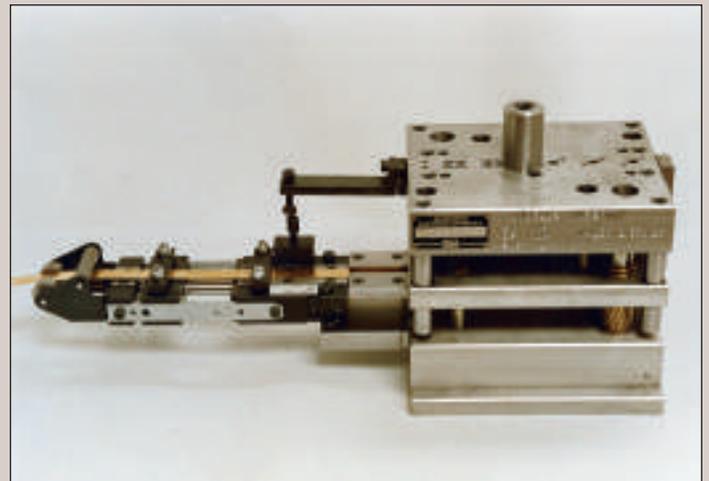
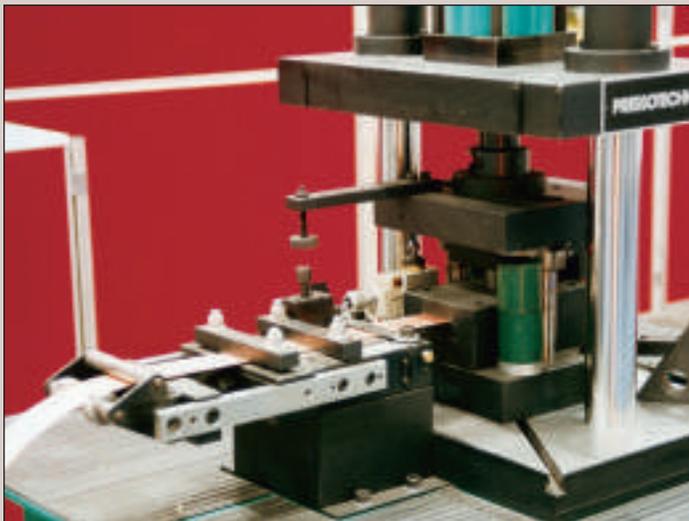
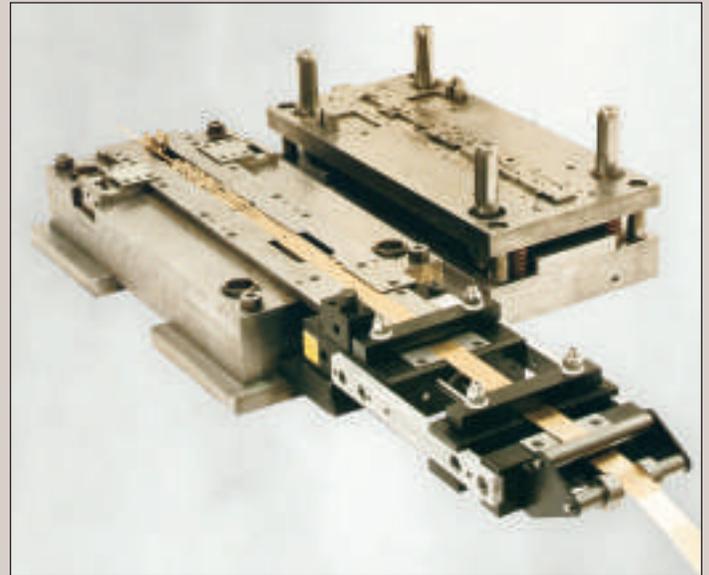
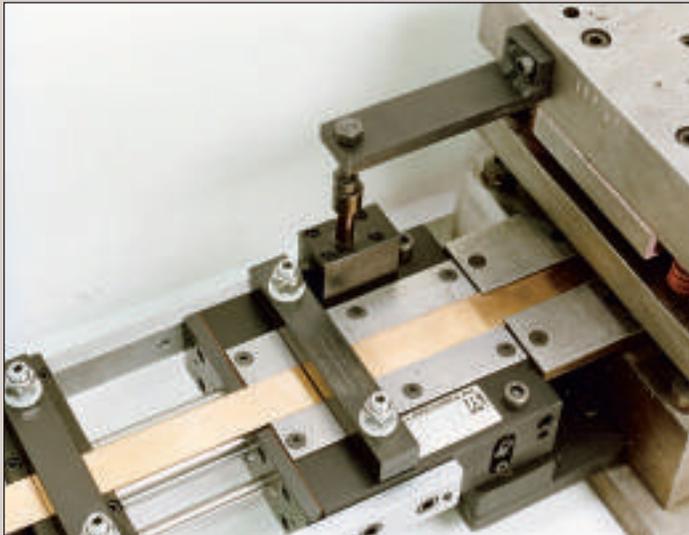
Paper, plastic, foil, fabric, wire, tubing . . . You name it and P/A will feed it. Highly polished materials or extrusions, preformed or irregularly shaped materials – all can easily be adapted with special clamps.

SIMPLE INSTALLATION

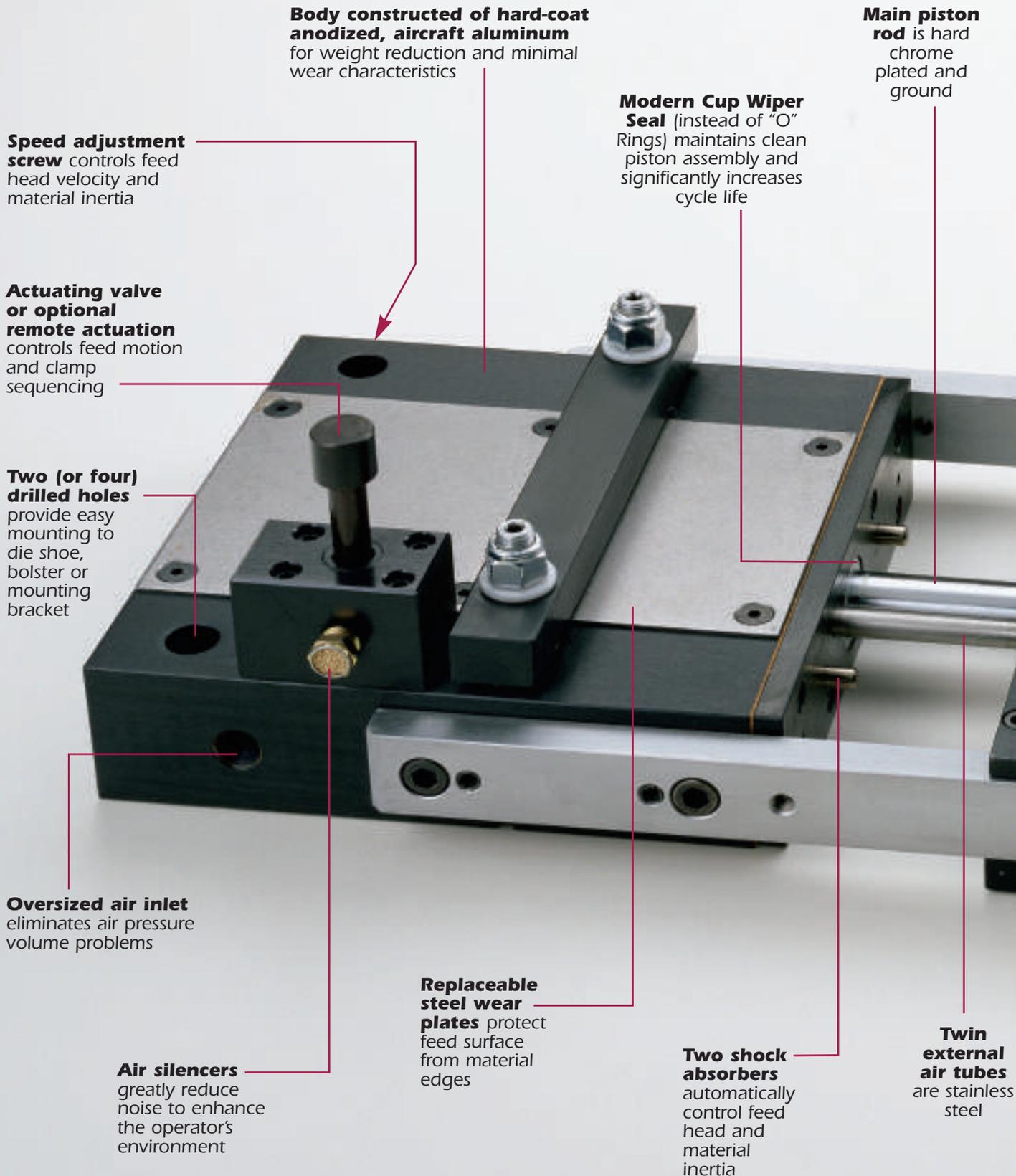
Our feeds are extremely easy to mount. Two (or four) mounting bolts and a single air line connection are all that's necessary. Compact, clean design permits the P/A Air Feed to be mounted right on the die set.

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 locknut. 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.



PRECISION AIR FEED



Body constructed of hard-coat anodized, aircraft aluminum for weight reduction and minimal wear characteristics

Main piston rod is hard chrome plated and ground

Speed adjustment screw controls feed head velocity and material inertia

Modern Cup Wiper Seal (instead of "O" Rings) maintains clean piston assembly and significantly increases cycle life

Actuating valve or optional remote actuation controls feed motion and clamp sequencing

Two (or four) drilled holes provide easy mounting to die shoe, bolster or mounting bracket

Oversized air inlet eliminates air pressure volume problems

Replaceable steel wear plates protect feed surface from material edges

Air silencers greatly reduce noise to enhance the operator's environment

Two shock absorbers automatically control feed head and material inertia

Twin external air tubes are stainless steel

Nylock hex nut used in aircraft engines to absorb vibration and eliminate loosening

Large adjusting bolt and lock nut provide vernier feed length control

Shock absorber stops slamming and reduces noise

Combination stock dampener and adjustable guide rollers provide vibration free material to the feed



TWO YEAR WARRANTY

At P/A, our goal is to provide the best production Air Feed available anywhere in the world. To back this up, we provide a Two Year Warranty on our Air Feeds – the only one in the industry.

FREE REPAIR & SERVICE CERTIFICATE

In addition, we enclose a Free Repair & Service Certificate with every Feed we ship. This Certificate can be used at any time.

High strength, chrome plated, steel guide rails maintain feed head alignment throughout its stroke

Counterbored holes and precision ground shoulder screws provide coarse feed length adjustment and secure rigid alignment



Covered by one or more of the following U.S. Patent Numbers:

- 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.

AIR FEED SPECIFICATIONS

USA

Model	Max. Stock Width (In.)	Feed Length (In.)	Pulling Power at 100 PSI (Lbs.)	Thickness (In.)	Speed See Note 3 (SPM)	Air Consumption Per Cycle (CF)	Shipping Weight (Lbs.)
AX2	1.5	0-2	25	.050	280	.001	7.5
AX4	1.5	0-4	25	.045	220	.002	9
AX6	1.5	0-6	25	.040	180	.003	11
CX3	3	0-3	50	.080	220	.003	20
CX6	3	0-6	50	.075	160	.005	25
CX9	3	0-9	50	.070	110	.008	29
CX12	3	0-12	50	.065	95	.010	32
DX4	4	0-4	50	.075	195	.004	25
DX6	4	0-6	50	.070	145	.006	30
DX12	4	0-12	50	.065	85	.012	38
FX4	6	0-4	110	.085	160	.006	38
FX6	6	0-6	110	.080	140	.008	40
FX9	6	0-9	110	.075	110	.011	45
FX12	6	0-12	110	.070	80	.014	51
HX4	9	0-4	110	.075	145	.006	55
HX6	9	0-6	110	.070	125	.008	60
HX9	9	0-9	110	.065	100	.011	65
HX12	9	0-12	110	.065	70	.014	70
LX6	12	0-6	175	.090	100	.013	130
LX12	12	0-12	175	.080	60	.023	155

METRIC

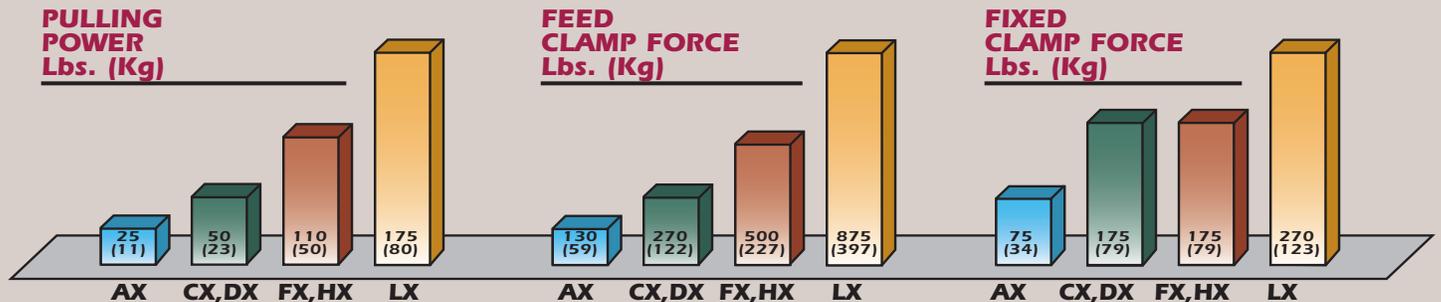
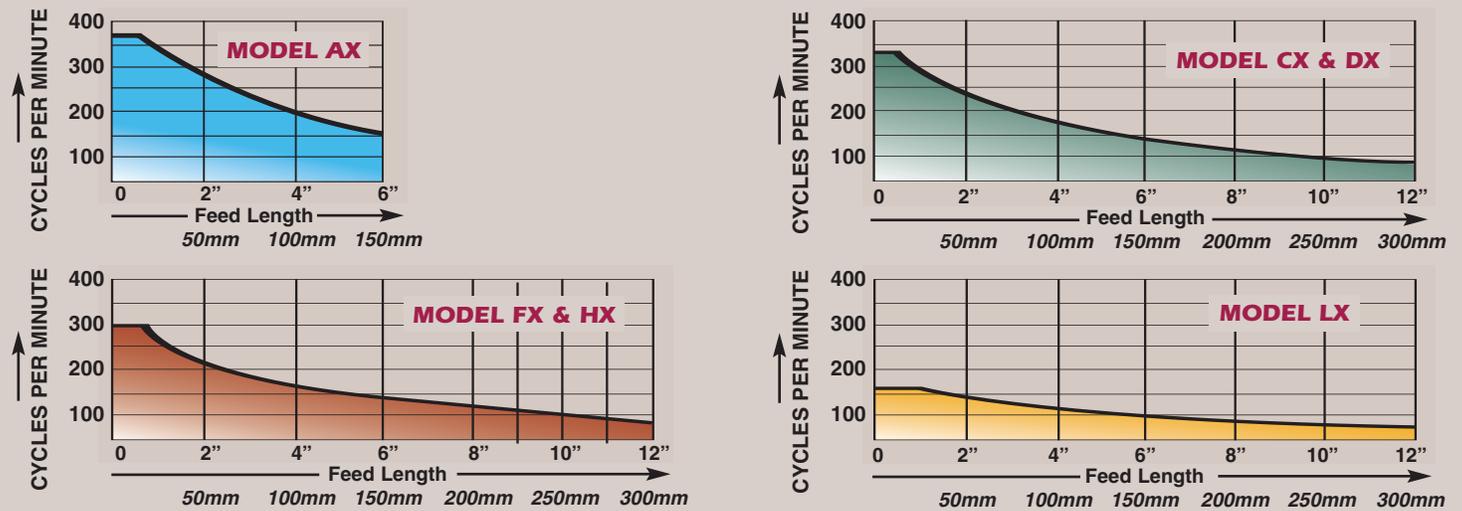
Model	Max. Stock Width (mm)	Feed Length (mm)	Pulling Power at 7 Bar (Kg)	Thickness (mm)	Speed See Note 3 (SPM)	Air Consumption Per Cycle (LTR)	Shipping Weight (Kg)
AX2	38	0-50	11,4	1,2	280	0,03	3,5
AX4	38	0-100	11,4	1,1	220	0,06	4,0
AX6	38	0-150	11,4	1,0	180	0,09	5,0
CX3	76	0-76	23	2,0	220	0,09	9,0
CX6	76	0-150	23	1,9	160	0,14	11,0
CX9	76	0-230	23	1,8	110	0,23	13,0
CX12	76	0-300	23	1,7	95	0,28	14,5
DX4	100	0-100	23	1,9	195	0,11	11,0
DX6	100	0-150	23	1,8	145	0,17	13,5
DX12	100	0-300	23	1,6	85	0,34	17,0
FX4	150	0-100	50	2,1	160	0,17	18,0
FX6	150	0-150	50	2,0	140	0,23	19,0
FX9	150	0-230	50	1,9	110	0,31	20,0
FX12	150	0-300	50	1,8	80	0,40	23,0
HX4	230	0-100	50	2,0	145	0,17	25,0
HX6	230	0-150	50	1,9	125	0,23	27,0
HX9	230	0-230	50	1,8	100	0,31	29,5
HX12	230	0-300	50	1,7	70	0,40	31,8
LX6	300	0-150	80	2,3	100	0,37	59,0
LX12	300	0-300	80	2,0	60	0,65	70,0

Note 1: Recommended Operating Pressure 80 to 120 PSI (6 to 8 Bar).

Note 2: Capacity for stock thickness increases as stock width decreases to a maximum of 150%.

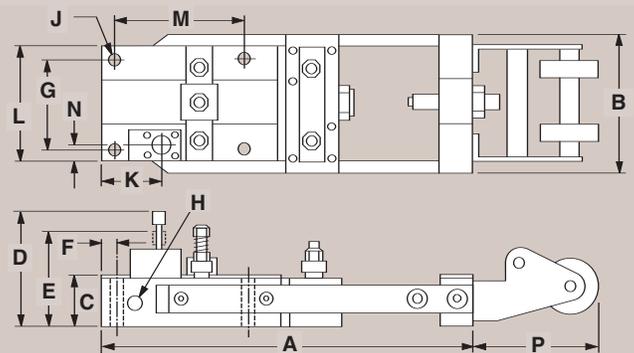
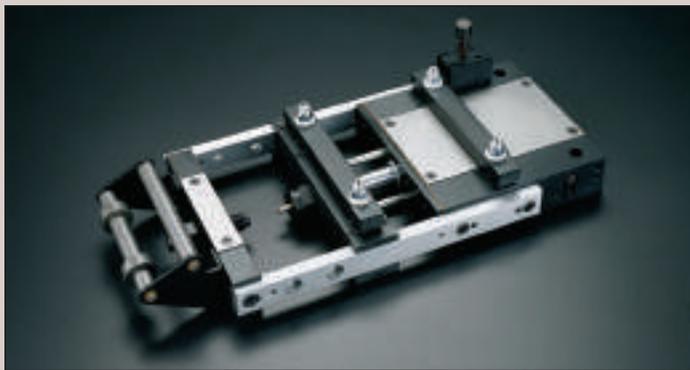
Note 3: Approximate speed at maximum feed length. Speed will decrease as the weight of the material being fed increases.

SAFE WORKING SPEEDS AT VARYING LENGTHS



Note: All Calculations at 100 PSI (7 Bar)

AIR FEED DIMENSIONS



DIMENSIONS – inches

Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P
AX2	9.38	3.62	1.29	3.55	2.84	.83	2.62	1/8 NPT	.33	2.17	3.46	–	.50	3
AX4	13.38	3.62	1.29	3.55	2.84	.83	2.62	1/8 NPT	.33	2.17	3.46	–	.50	3
AX6	17.38	3.62	1.29	3.55	2.84	.83	2.62	1/8 NPT	.33	2.17	3.46	–	.50	3
CX3	12.25	6.50	1.79	4.61	3.64	.83	4.5	1/4 NPT	.39	2.33	5.50	–	.56	3
CX6	18.25	6.50	1.79	4.61	3.64	.83	4.5	1/4 NPT	.39	2.33	5.50	–	.56	3
CX9	24.25	6.50	1.79	4.61	3.64	.83	4.5	1/4 NPT	.39	2.33	5.50	–	.56	3
CX12	30.25	6.50	1.79	4.61	3.64	.83	4.5	1/4 NPT	.39	2.33	5.50	–	.56	3
DX4	14.61	7.75	1.79	4.61	3.64	.90	5.5	1/4 NPT	.53	2.65	6.75	–	.56	3
DX6	18.61	7.75	1.79	4.61	3.64	.90	5.5	1/4 NPT	.53	2.65	6.75	–	.56	3
DX12	30.61	7.75	1.79	4.61	3.64	.90	5.5	1/4 NPT	.53	2.65	6.75	–	.56	3
FX4	17.25	9.75	2.04	4.89	3.92	.97	7.5	3/8 NPT	.66	2.80	8.75	6	.56	3
FX6	19.25	9.75	2.04	4.89	3.92	.97	7.5	3/8 NPT	.66	2.80	8.75	6	.56	3
FX9	25.25	9.75	2.04	4.89	3.92	.97	7.5	3/8 NPT	.66	2.80	8.75	6	.56	3
FX12	31.25	9.75	2.04	4.89	3.92	.97	7.5	3/8 NPT	.66	2.80	8.75	6	.56	3
HX4	17.25	12.75	2.04	4.89	3.92	.97	10.5	3/8 NPT	.66	2.80	11.75	6	.56	3
HX6	19.25	12.75	2.04	4.89	3.92	.97	10.5	3/8 NPT	.66	2.80	11.75	6	.56	3
HX9	25.25	12.75	2.04	4.89	3.92	.97	10.5	3/8 NPT	.66	2.80	11.75	6	.56	3
HX12	31.25	12.75	2.04	4.89	3.92	.97	10.5	3/8 NPT	.66	2.80	11.75	6	.56	3
LX6	21.12	16.75	2.30	5.15	4.18	1.00	14.0	1/2 NPT	.66	3.00	15.75	6	.56	3.62
LX12	33.12	16.75	2.30	5.15	4.18	1.00	14.0	1/2 NPT	.66	3.00	15.75	6	.56	3.62

DIMENSIONS – mm

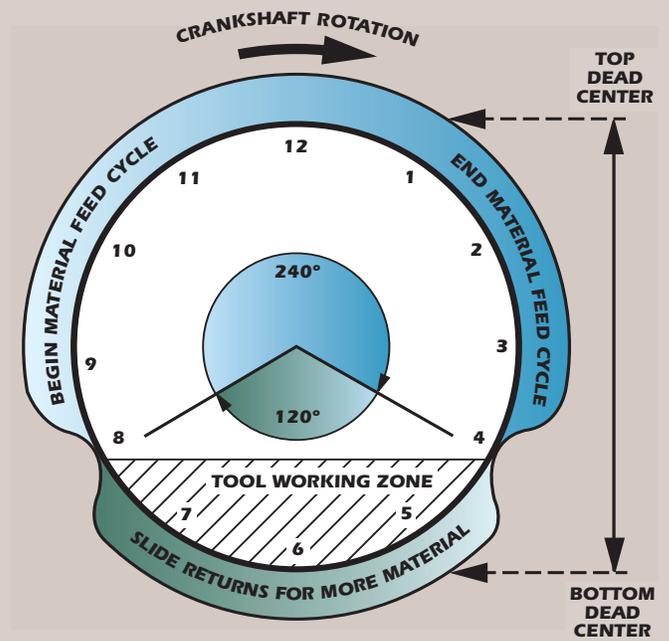
Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P
AX2	238	92	33	90	72	21	66,5	1/8 NPT	8,4	55	88	–	13	80
AX4	339	92	33	90	72	21	66,5	1/8 NPT	8,4	55	88	–	13	80
AX6	441	92	33	90	72	21	66,5	1/8 NPT	8,4	55	88	–	13	80
CX3	311	165	45,5	117	92	21	114	1/4 NPT	10	59	140	–	14	80
CX6	464	165	45,5	117	92	21	114	1/4 NPT	10	59	140	–	14	80
CX9	616	165	45,5	117	92	21	114	1/4 NPT	10	59	140	–	14	80
CX12	769	165	45,5	117	92	21	114	1/4 NPT	10	59	140	–	14	80
DX4	371	197	45,5	117	92	23	140	1/4 NPT	13,5	67	172	–	14	80
DX6	473	197	45,5	117	92	23	140	1/4 NPT	13,5	67	172	–	14	80
DX12	777	197	45,5	117	92	23	140	1/4 NPT	13,5	67	172	–	14	80
FX4	438	248	52	124	100	24,6	190,5	3/8 NPT	16,7	71	223	152,4	14	80
FX6	489	248	52	124	100	24,6	190,5	3/8 NPT	16,7	71	223	152,4	14	80
FX9	641	248	52	124	100	24,6	190,5	3/8 NPT	16,7	71	223	152,4	14	80
FX12	794	248	52	124	100	24,6	190,5	3/8 NPT	16,7	71	223	152,4	14	80
HX4	438	329	52	124	100	24,6	267	3/8 NPT	16,7	71	299	152,4	14	80
HX6	489	329	52	124	100	24,6	267	3/8 NPT	16,7	71	299	152,4	14	80
HX9	641	329	52	124	100	24,6	267	3/8 NPT	16,7	71	299	152,4	14	80
HX12	794	329	52	124	100	24,6	267	3/8 NPT	16,7	71	299	152,4	14	80
LX6	536	425	58,4	131	106	25,4	355,6	1/2 NPT	16,7	76	400	152,4	14	92
LX12	841	425	58,4	131	106	25,4	355,6	1/2 NPT	16,7	76	400	152,4	14	92

PRESS FEED TIMING & SEQUENCE

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 initiates 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.

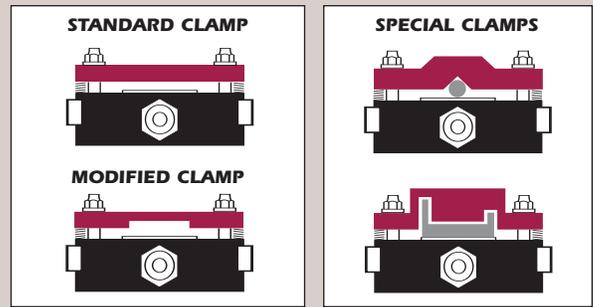


FEEDING SHAPED MATERIAL

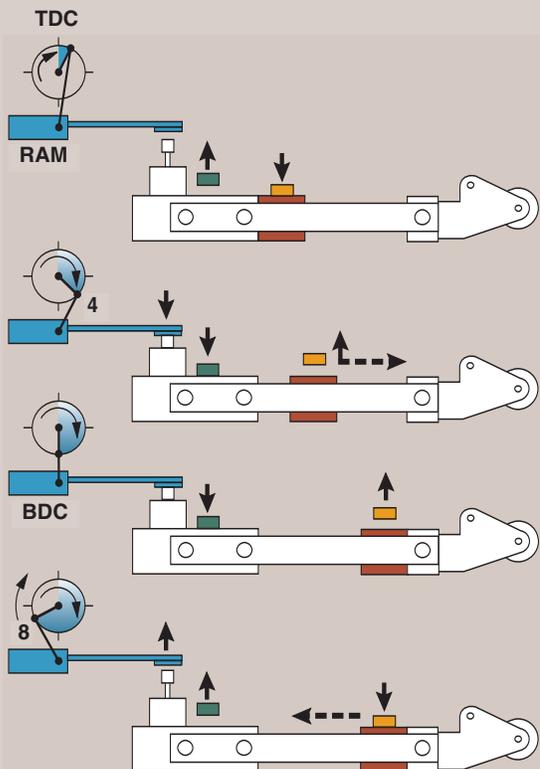
The Feed and Stock Clamps can be modified by machining to accommodate different material shapes and configurations. Round or square tubing, wire, or any pre-stamped product like electrical terminals and contacts can be easily handled.

Damage to delicate, pliable materials can be avoided by inserting leather, rubber or nylon into the machined clamps.

You can fabricate oversized clamps for special materials such as channel, extrusions, bars and other irregularly shaped materials.



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

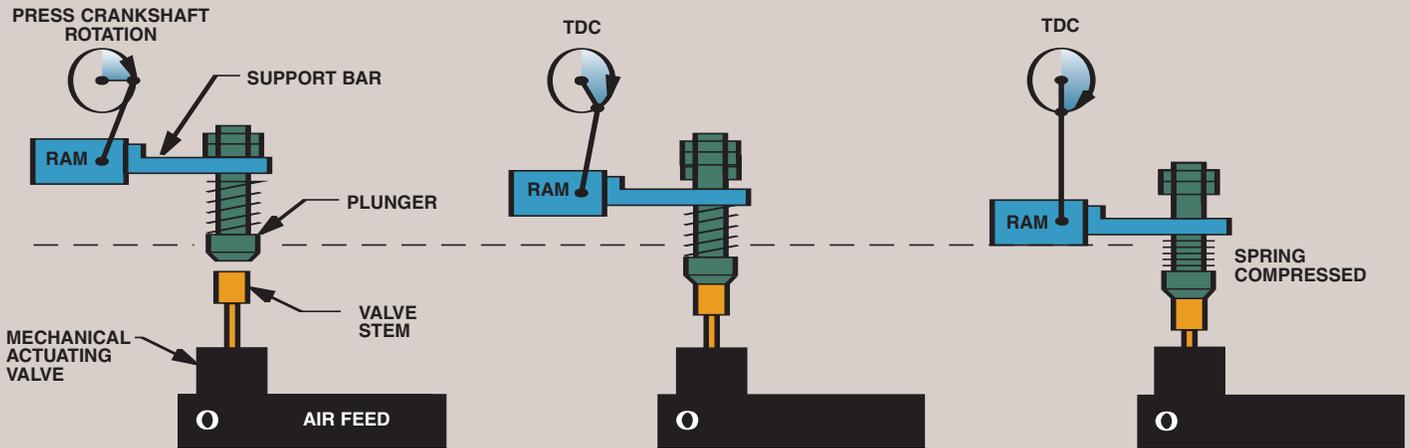
AT END OF NON-FEED STROKE

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

AT BEGINNING OF FEED STROKE

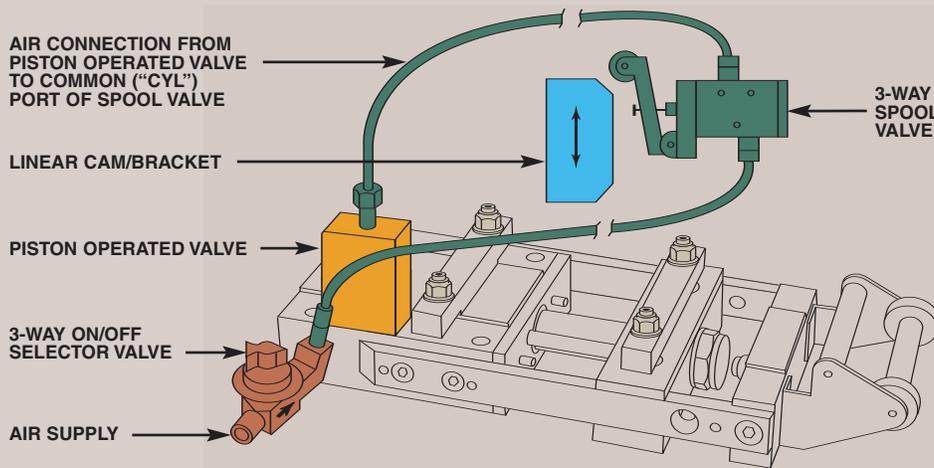
METHODS OF CONTROLLING THE FEED

1. MECHANICAL ACTUATION

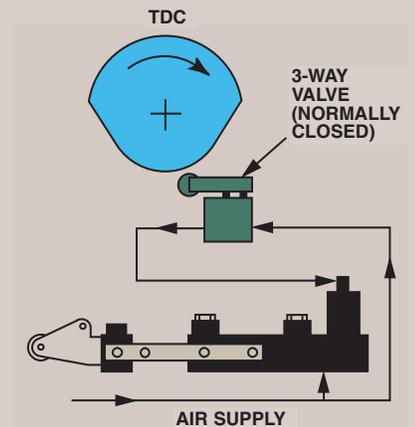


2. REMOTE PNEUMATIC ACTUATION

LINEAR CAM OPERATION

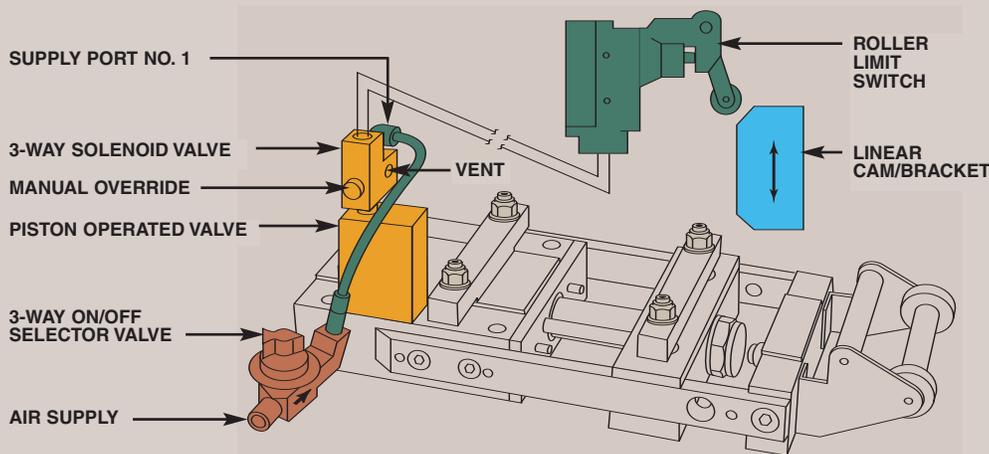


ROTARY CAM OPERATION

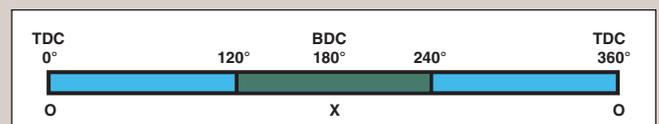
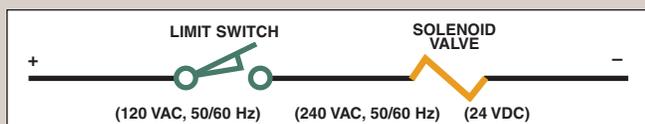
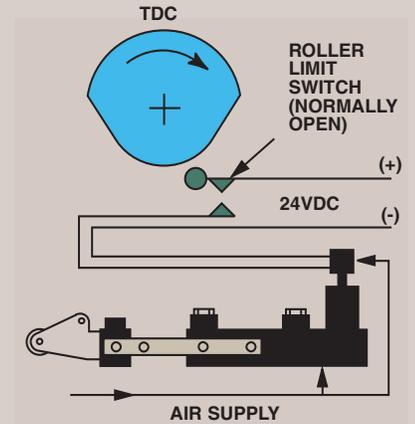


3. REMOTE ELECTRIC ACTUATION

LINEAR CAM OPERATION



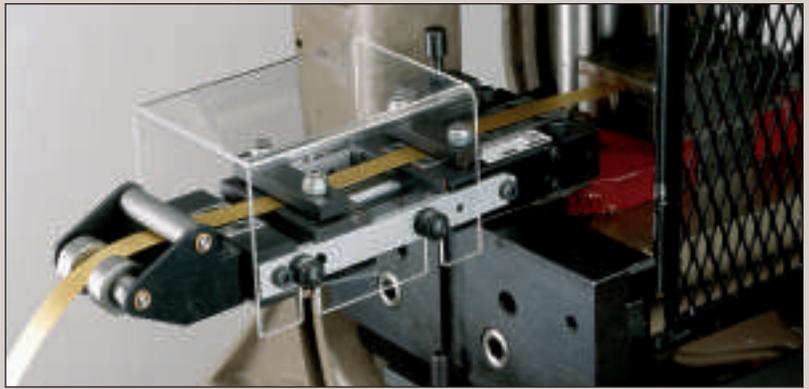
ROTARY CAM OPERATION



PROTECTIVE COVER

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

AX, CX, DX, and FX models are Plexiglas while HX and LX models are made of rugged, expanded metal.



COIL SET ELIMINATOR

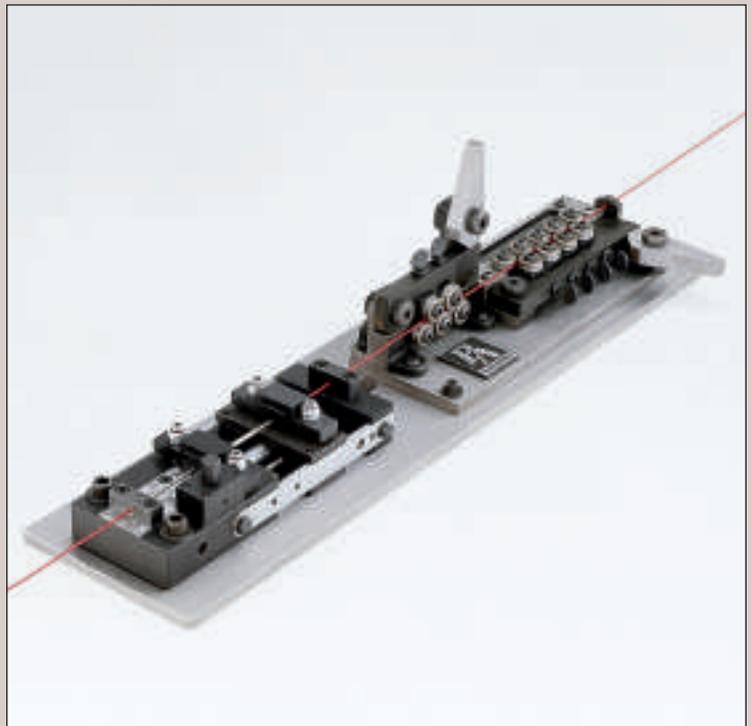
The Coil Set Eliminator uses a unique method of removing the natural curve from coiled materials. Steel mills use the same principle of bending the material beyond its yield point to remove the set. This is different from conventional stock straighteners. These inexpensive units can be mounted on the back of any type of press feed and require very little pulling power. Specify material width and thickness with order. Note: This unit is not recommended for material thickness greater than .030" (0.7mm).



WIRE FEED

The installation of stainless steel telescoping tubes with specially sized guide bushings, enable the Air Feed to carry wire smoothly and accurately to the machine. Whip and buckling problems disappear when using the Wire Feed for round, or nearly round materials, over both long and short progressions. Used on AX and CX models only. Wire Straightener sold separately.

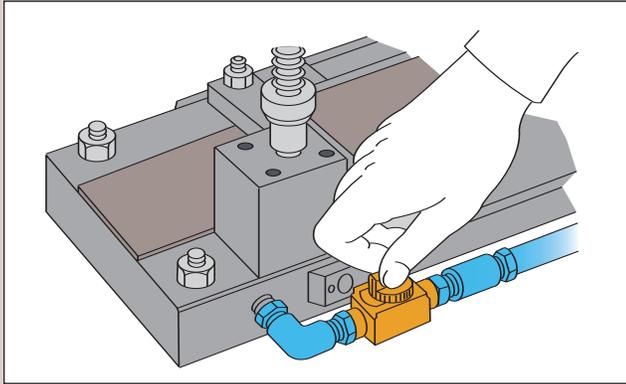
Model	Bushing Size (In.)	Max. Feed Length (In.)	Bushing Size (mm)	Max. Feed Length (mm)
AX2	.014 – .023	1.750	0,35-0,59	44
AX2	.024 – .035	1.750	0,60-0,89	44
AX2	.036 – .059	1.750	0,90-1,50	44
AX4	.014 – .023	3.500	0,35-0,59	89
AX4	.024 – .035	3.500	0,60-0,89	89
AX4	.036 – .059	3.500	0,90-1,50	89
AX6	.014 – .023	5.375	0,35-0,59	136
AX6	.024 – .035	5.375	0,60-0,89	136
AX6	.036 – .059	5.375	0,90-1,50	136
CX3	.036 – .059	2.625	0,90-1,50	66
CX3	.060 – .090	2.625	1,50-2,29	66
CX3	.085 – .132	2.625	2,15-3,35	66
CX6	.036 – .059	5.500	0,90-1,50	139
CX6	.060 – .090	5.500	1,50-2,29	139
CX6	.085 – .132	5.500	2,15-3,35	139
CX9	.036 – .059	8.000	0,90-1,50	203
CX9	.060 – .090	8.000	1,50-2,29	203
CX9	.085 – .132	8.000	2,15-3,35	203
CX12	.036 – .059	11.375	0,90-1,50	289
CX12	.060 – .090	11.375	1,50-2,29	289
CX12	.085 – .132	11.375	2,15-3,35	289



AIR FEED ACCESSORIES

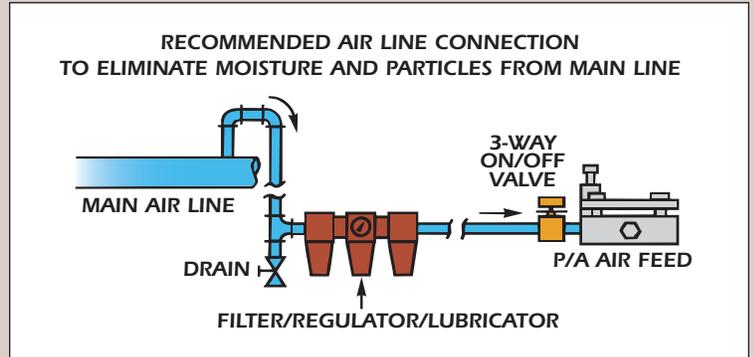
3-WAY ON/OFF EXHAUST VALVE

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



FILTER/REGULATOR/LUBRICATOR

The Filter/Regulator/Lubricator (FRL) supplies clean filtered air, regulates pressure, and provides oil mist lubrication for maintenance-free operation.



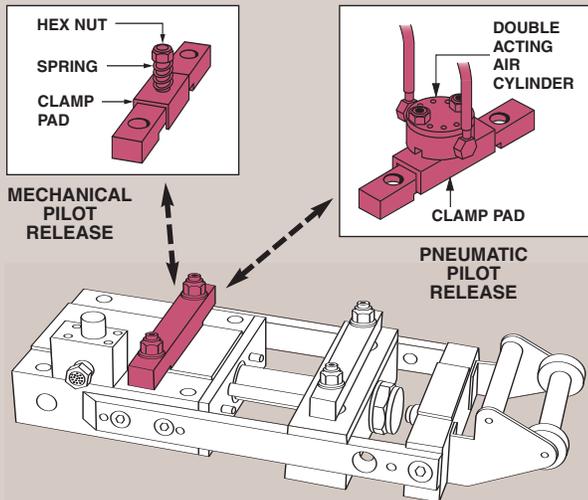
PILOT RELEASE METHODS

Mechanical Pilot Release

Standard on P/A Air Feeds, this Adjustable Spring Clamp provides pressure to the material, holding it until the pilot pin pulls into position. Note: Not available on LX models.

Pneumatic Pilot Release

For those applications that require more sensitive clamping pressure, or that the Clamp pad be completely free of the material, use the Pneumatic Pilot Release with all P/A Air Feeds. The Clamp Pad is fitted with a quick-response cylinder for positive stock grip and release. Timing is controlled by a 4-Way Solenoid Valve or Spool Valve.

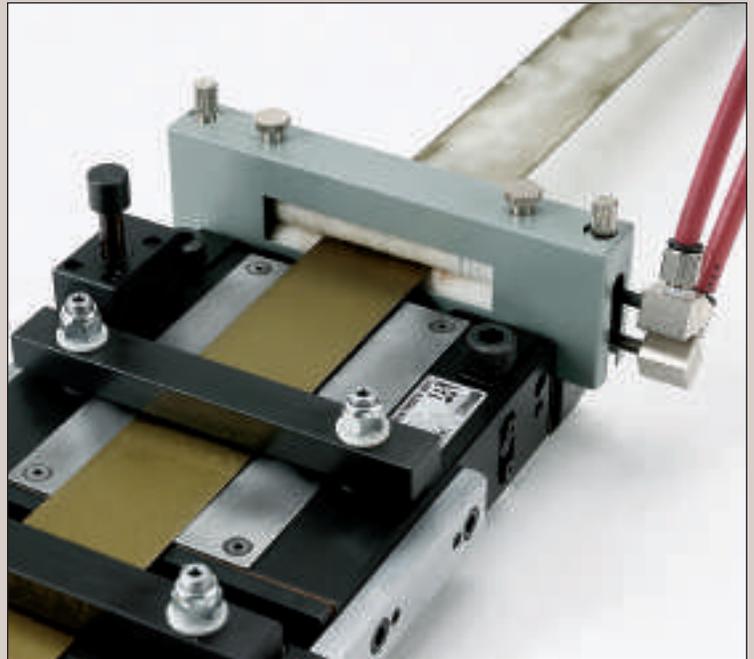


Internal Pilot Release

This internal valving system provides up to 270 lbs. (120 Kg) of clamping force with the standard clamp and is available on the LX model. 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.

SLIM LINE STOCK OILER

A Gravity Fed Stock Oiler can be mounted on the main body of the Feed to apply stamping and drawing oils to the material as it is fed into the die. When you apply an even coat of oil on the strip after the material passes through the feed clamps, the misfeeding caused by hydroplaning is avoided. The Slim Line Oilers were designed specifically for our Air Feeds and come with feed mounting brackets for CX, DX, FX, and HX Models.



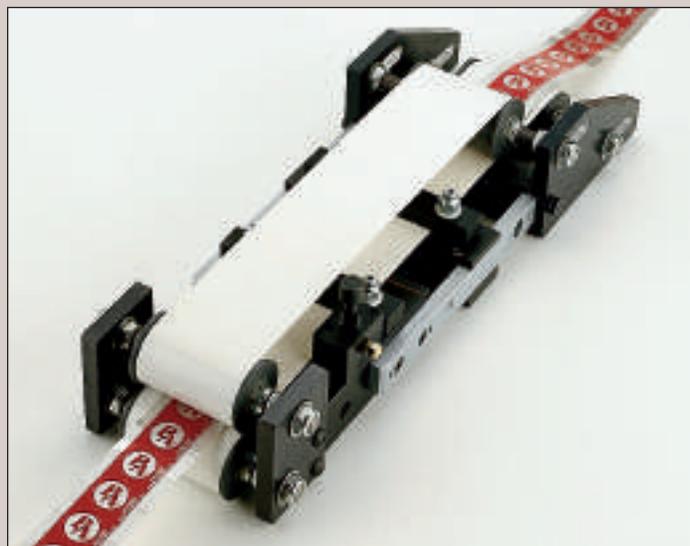
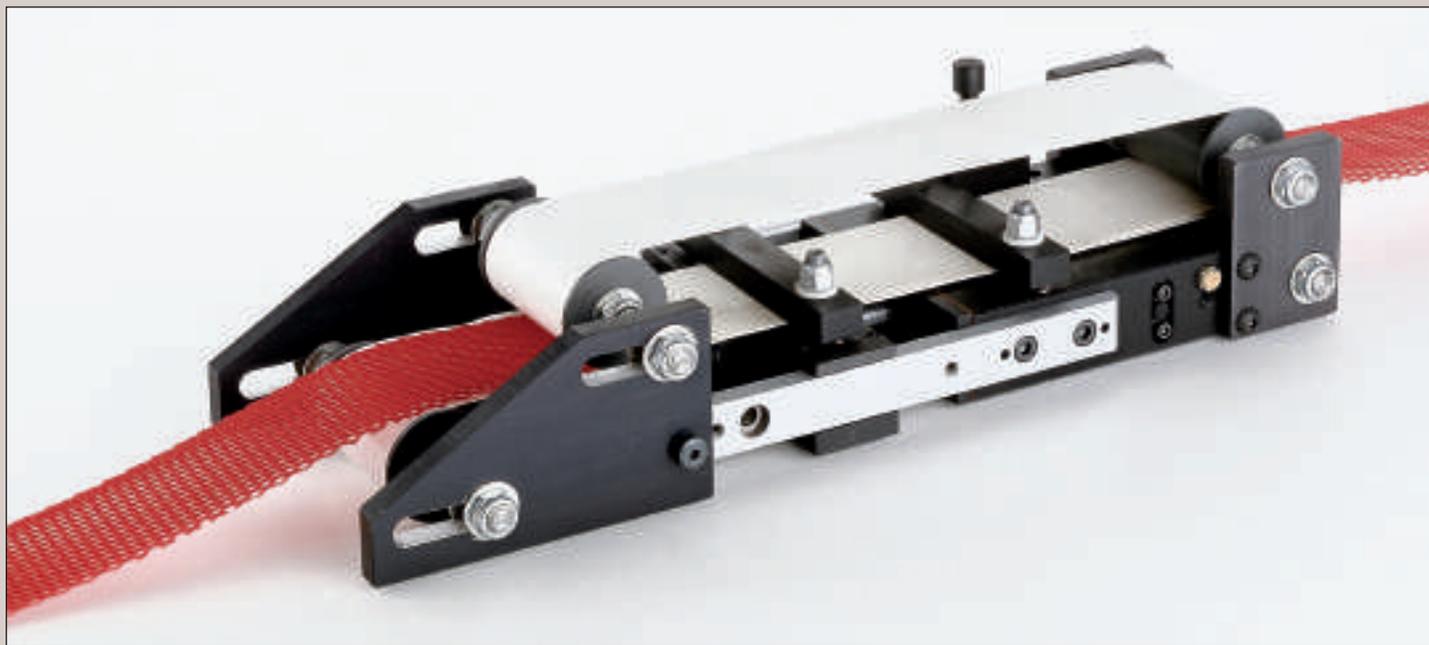
REPEATER CONTROL SYSTEM

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.

BAND FEED

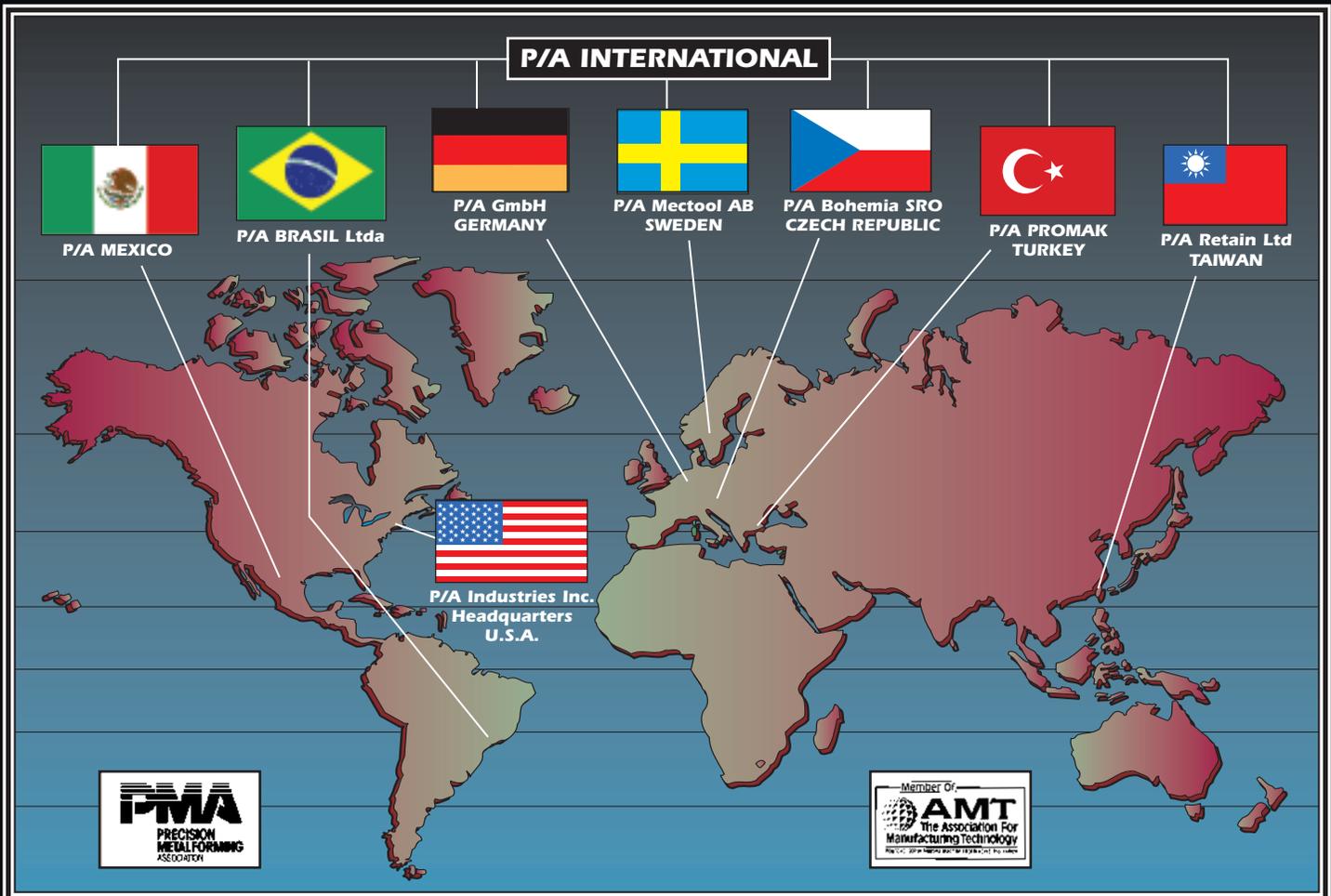
Over two decades ago, P/A engineers came up with this innovative approach to solving the problems of indexing very limp and delicate materials. Material such as foil, film, paper, fabric, mylar, and teflon are easily handled by the Band Feed.

Thin, delicate material is sandwiched between two endless belts which the Air Feed then clamps and feeds. Marking, tearing, and buckling are completely eliminated while moving the material into, or out of, the work station accurately — cycle after cycle.



SPECIFICATIONS – USA				
Model	Width (In.)	Length (In.)	Pulling Force (Lbs.)	Speed (SPM)
BFCX3	3	3	50	180
BFCX6	3	6	50	120
BFCX9	3	9	50	80
BFCX12	3	12	50	70
BFFX6	6	6	110	100
BFFX9	6	9	110	70
BFFX12	6	12	110	60
BFHX6	9	6	110	80
BFHX12	9	12	110	50

SPECIFICATIONS – METRIC				
Model	Width (mm)	Length (mm)	Pulling Force (Kg)	Speed (SPM)
BFCX3	76	76	23	180
BFCX6	76	150	23	120
BFCX9	76	230	23	80
BFCX12	76	300	23	70
BFFX6	150	150	50	100
BFFX9	150	230	50	70
BFFX12	150	300	50	60
BFHX6	230	150	50	80
BFHX12	230	300	50	50



WARRANTY

We warrant our mechanical parts against defects under normal use and service for a period of 1 year after date of shipment. We warrant all components installed, but not manufactured by P/A, for 1 year 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, 1910.147, 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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