



# RAPID-AIR

## OPERATING INSTRUCTIONS FOR AIR FEED

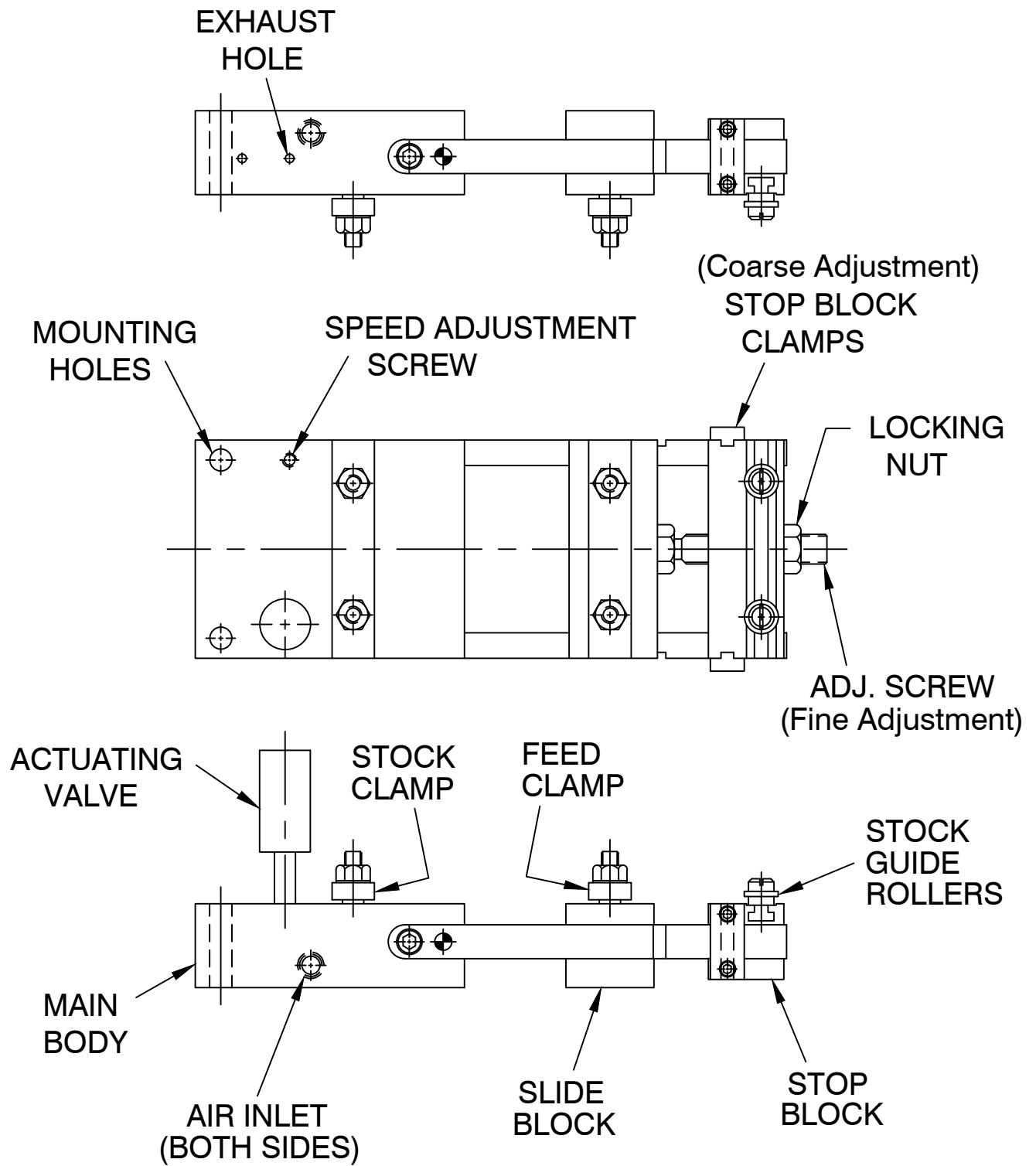
RAPID-AIR  
4601 KISHWAUKEE ST.  
ROCKFORD , IL. 61109-2925  
PHONE: (815) 397-2578  
FAX: (815) 398-3887  
WEB SITE: [www.rapidair.com](http://www.rapidair.com)

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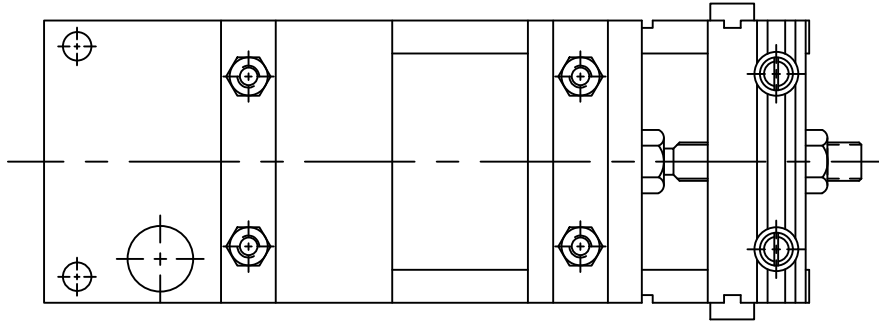
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# AIR FEED DESCRIPTION



## INSTALLATION & OPERATING INSTRUCTIONS

Mounting: Bolt the feed down solidly using the two holes provided in the feed main body. The top of the Rapid-Air feed should be flush with the lower die face.



	MODELS	MOUNTING SCREW SIZE
Socket Head Cap Screw	A, B	5/16
	C, D	3/8
	W	1/2
	F, H, FX, L, P, LX	5/8

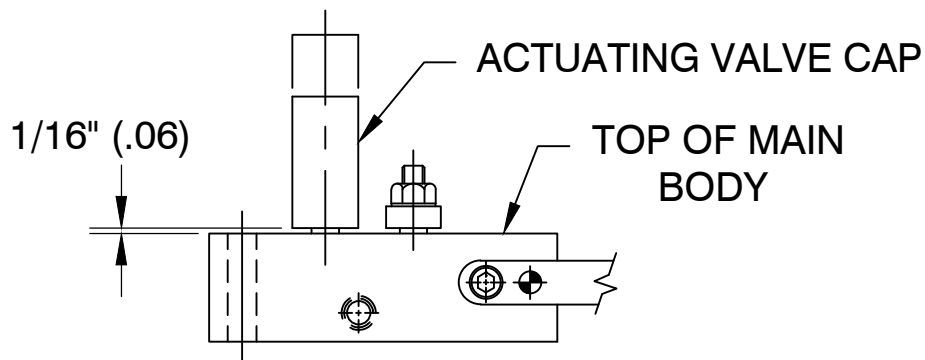
Air Supply: A clean, lightly oiled air, with pressure set between 75-120 PSI is recommended to maintain feed in proper operating condition. Do not use feed with air pressure over 125 PSI. A filter/lubricator/regulator should be used for trouble free service.

MODELS	AIR INLET
A, B	1/8 NPT
C, D, W, F, H	1/4 NPT
FX, L, P, LX	1/2 NPT

## INSTALLATION & OPERATING INSTRUCTIONS

Lubrication: The "O"rings furnished with all Rapid-Air feeds are made of a Buna N compound. This rubber compound features high abrasion resistance and good stability if the recommendations listed below are followed. Paraffin based oils in general will give the best service. The viscosity should be 140-175.S.U., the API gravity 29.5 minimum and the aniline point between 150°F and 210°F. Variation of the aniline point from the limits given is likely to cause either shrinkage or stretching of the "O"rings. Do not use detergent motor oils or any other oils designed for automotive use as they are generally unreliable in chemical makeup for use with rubber compounds. Do not use spindle oils as they are too low in viscosity. A recommended oil would be Mobil DTE-24 or equivalent light lubricating oil at one drop every 3-5 minutes of operation.

Actuating Valve Adjustment: Adjust the height of the actuating valve cap so that there is approximately 1/16" (.06) clearance between the bottom of the actuating valve cap and the top of the main body when the cam of the press is at the bottom of it's stroke. This will be the proper adjustment for the majority of cases, however it may be necessary to increase the clearance because of special conditions such as short stroke presses or special set-ups. See the following diagram.



## INSTALLATION & OPERATING INSTRUCTIONS

**Stock Guide Rollers:** The stock guide rollers are adjusted by loosening the screws and moving the rollers along the slot to the desired position, then re-tightening the screws. For best results the stock should be centrally located in the feed.

**Clamp Washers:** Rapid-Air feeds are shipped with the clamp washers on the top side of the clamps. These washers can be changed from the top side of the clamps to the under side of the clamps to accommodate thicker materials. Do not operate the feed with loose feed and stock clamps.

**Feed Length Adjustment:** The notches in the guide rail provide for coarse adjustment. Remove stop block clamps and move stop block to desired location, then re-install clamps. The final (fine adjustment) is made by the adj. screw in the stop block. After final adjustment has been made, secure adj. screw with locking nut located at the rear of the stop block.

**SETUP:** With air off, insert stock between the stock guide rollers and then pass the stock under the feed clamp. Lift the stock clamp and push the stock through to the starting position. Turn air on, install safety guards, your feed is now ready for operation.

**SPEED ADJUSTMENT:** The speed adjusting screw on all Rapid-Air feeds adjusts the forward speed of the slide block when feeding stock into a die. High accuracy under special conditions can thus be maintained by eliminating inertial slippage caused by oily or heavy stock. The speed adjusting screw is located on the top of the main body, opposite the actuating valve. Adjust for slower speeds by turning the screw clockwise. Rapid-Air feeds are shipped with the speed adjusting screw set to provide the best operating conditions for the majority of applications.

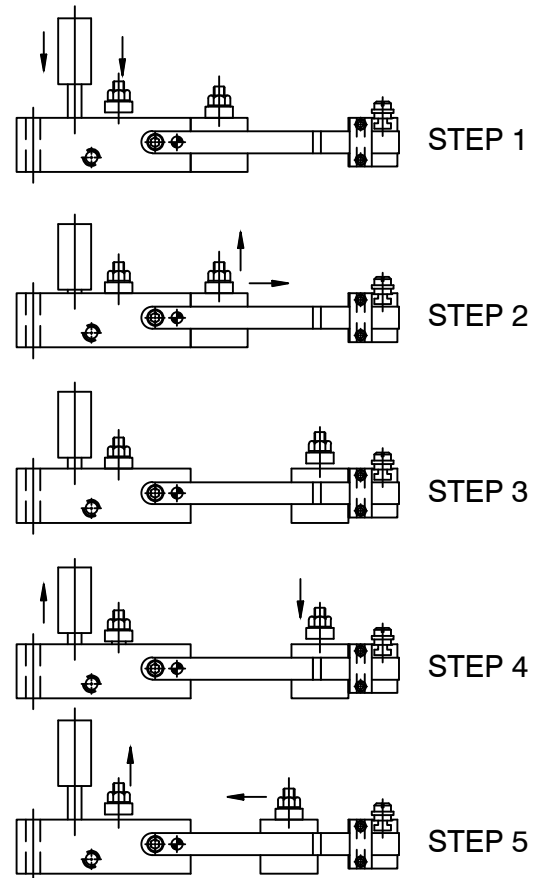
## INSTALLATION & OPERATING INSTRUCTIONS

**Safety requirements:** The use of a safety guard is recommended to prevent operator injury. Rapid-Air manufactures safety guards for all Rapid-Air model air feeds. When using an electric valve, a safety switch is recommended for the operator to disconnect power when servicing equipment. The use of a 3 way shut-off valve is required to be installed at the feed so the operator can shut off air and purge the feed of air before servicing the feed or press. A 2 way valve is not sufficient as it will only shut off air and not release the air in the feed. A quick disconnect coupling should also be used behind the shut-off valve for easy removal of the feed from the press. Make certain the slide block is forward (at main body) before turning air on. If an electric valve or an electrical circuit is used on or with the feed, it must be wired through the safety disconnects of the press it is used on. The feed should always be controlled by the press.

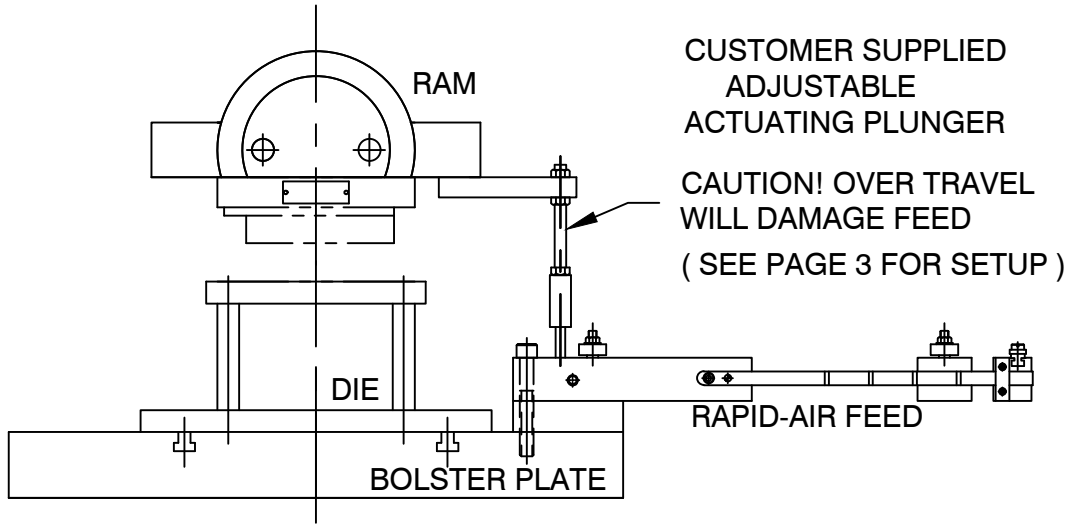
### AIR FEED OPERATING SEQUENCE

STEP	ACTUATING VALVE STATUS	STOCK CLAMP STATUS	FEED CLAMP STATUS	SLIDE BLOCK STATUS
1	STARTS DOWN	CLOSES	CLOSED *	FORWARD
2	DOWN	CLOSED	OPEN	STARTS RETRACTING
3	DOWN	CLOSED	OPEN	RETRACTED
4	STARTS UP	CLOSED *	CLOSES	RETRACTED
5	UP	OPEN	CLOSED	FEEDING

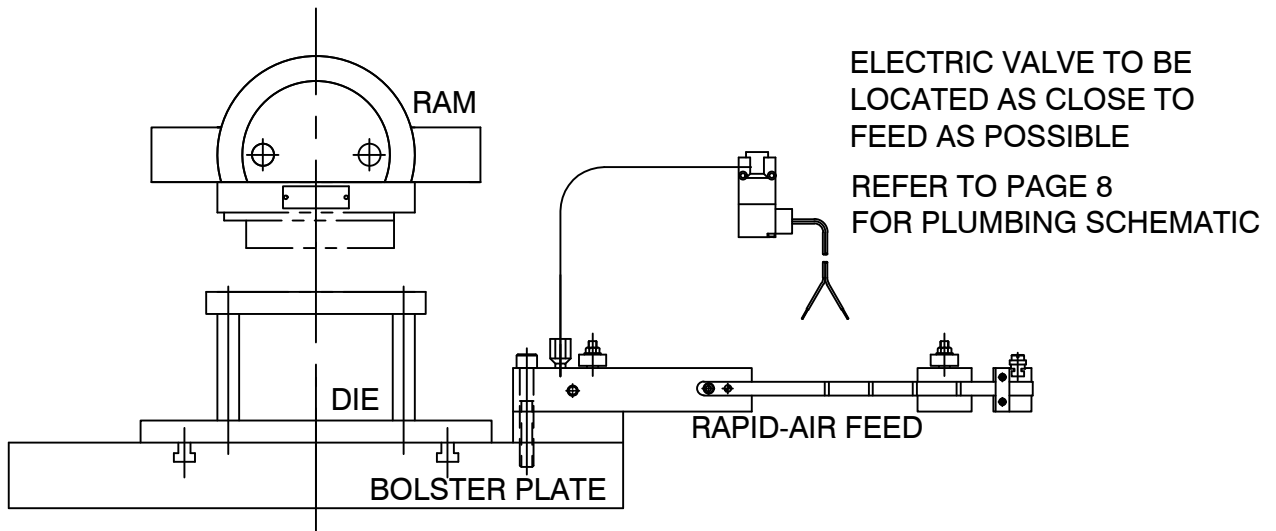
\* TEMPORARILY



## FEED ACTUATION



## WITH MANUAL ACTUATING VALVE

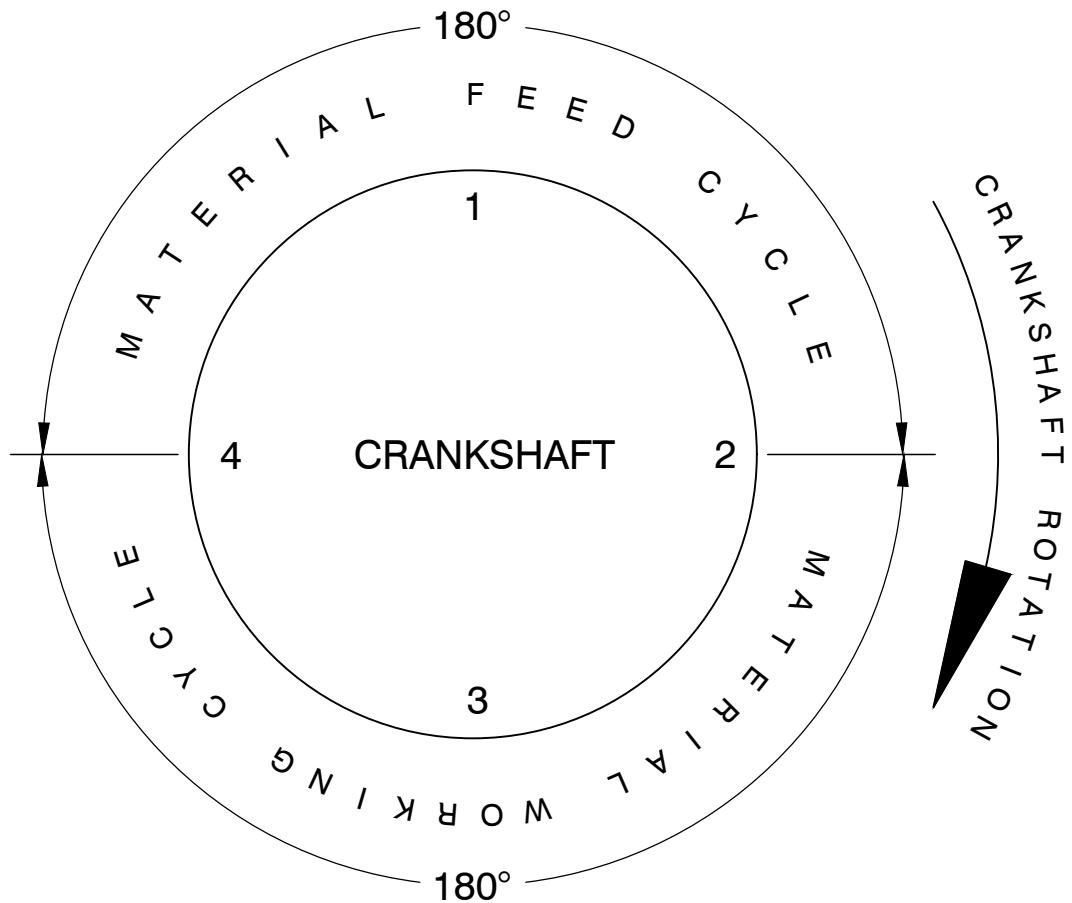


## WITH ELECTRIC ACTUATING VALVE



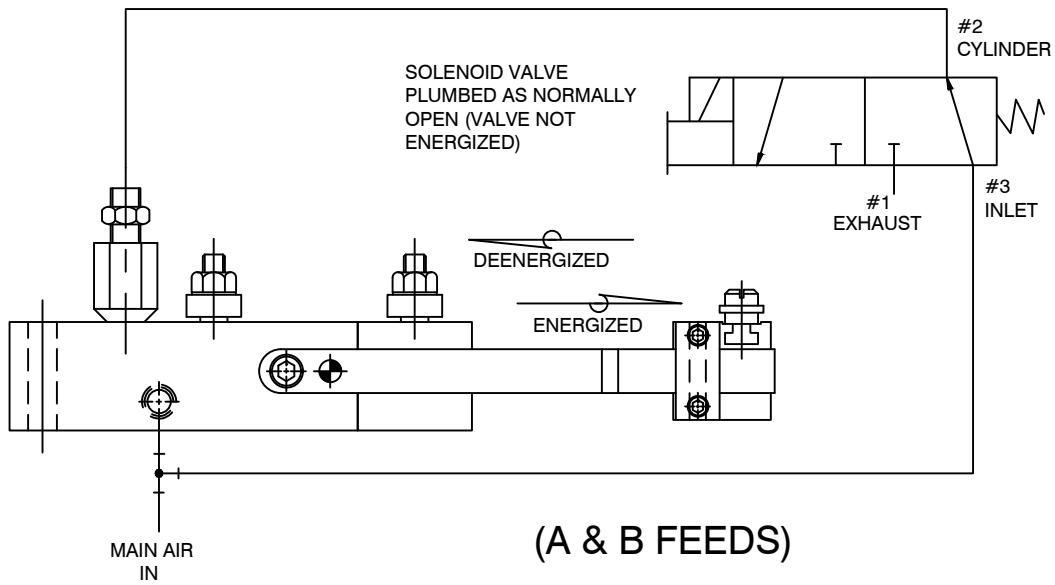
## TIMING

Your Rapid-Air feeder must be timed to the crankshaft rotation of the press. It is recommended that you allow 180° rotation of the press crankshaft for the feeding of material. See diagram below.

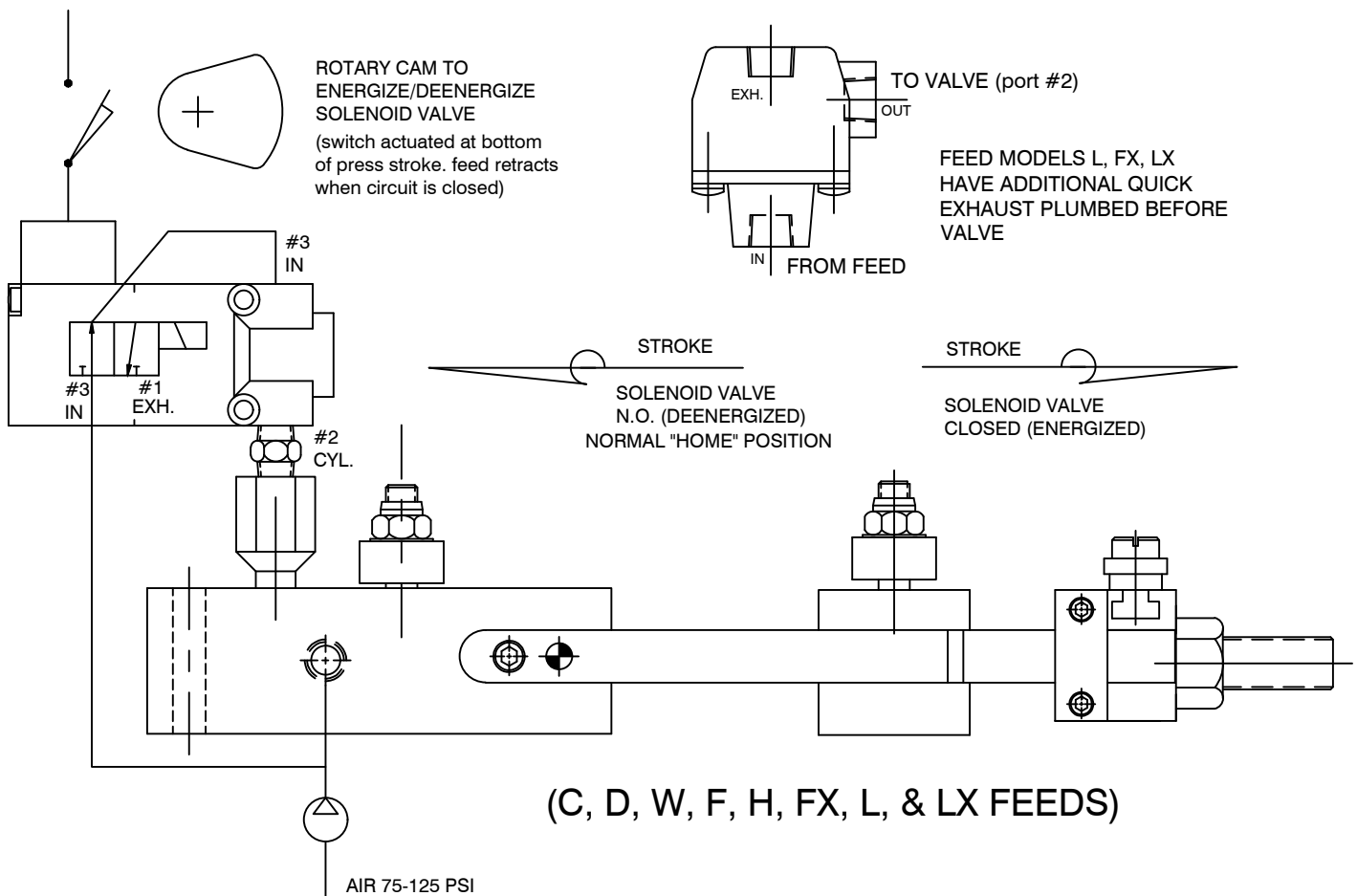


- |             |                                     |
|-------------|-------------------------------------|
| POSITION #1 | PRESS CRANKSHAFT TOP DEAD CENTER    |
| POSITION #2 | END MATERIAL FEED CYCLE             |
| POSITION #3 | PRESS CRANKSHAFT BOTTOM DEAD CENTER |
| POSITION #4 | START MATERIAL FEED CYCLE           |

# ELECTRIC VALVE SCHEMATIC



LINE VOLTAGE



## TROUBLESHOOTING

Note: Refer to Rapid-Air exploded parts drawing of Air Feeds to identify item numbers listed below

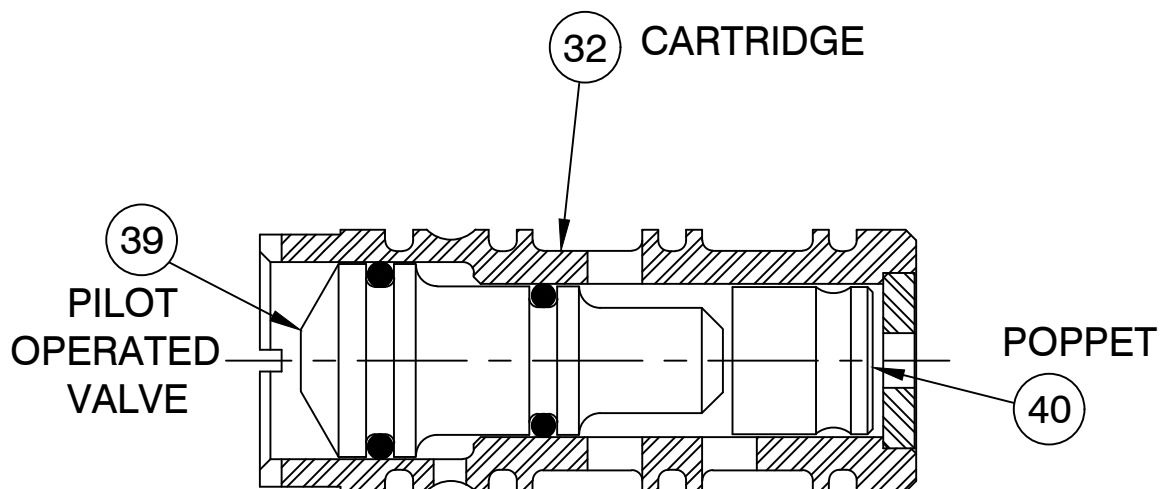
1. Feed and stock clamps work, but slide block does not move when actuating valve is depressed.
  - a. Pilot operated valve (item #39) is stuck, either by grit, swollen nylon or swollen "O"rings.
2. Excessive leakage of air from exhaust hole beneath speed adjusting screw when actuating valve is in up position.
  - a. Poppet (item #40) not seating on bottom of cartridge hole - check for grit or chips
  - b. Leaking "O" rings #84, #85, #88, #90, #100 and #103, check for wear.
3. Excessive leakage of air from exhaust hole, also sluggish operation of feed clamp pistons with actuating valve in up position.
  - a. Leaking of "O"rings #85 & #90, check for wear.
4. Excessive leakage of air from exhaust hole when actuating valve is in down position. (Note:a slight amount of air leakage is normal in this position.)
  - a. Tight "O" rings or grit around pilot operated valve (item #39) may prevent it from moving it's full stroke.
  - b. Worn poppet (item #40).
  - c. Poppet (item #40) is install backwards.
5. Stock clamp does not move up and down when actuating valve is depressed. Other operations appear normal.
  - a. Worn "O"ring (item #96) around O.D. of stock clamp pistons.
6. Excessive leakage of air from actuating valve vent hole when actuating valve is in the up position.
  - a. "O" ring (item #103) beneath actuating valve retainer (item #31c) is leaking. Install "O"ring beneath retainer, not in air groove.

## TROUBLESHOOTING

7. Gradually reduced speed.
  - a. Lack of oil.
  - b. Low viscosity oil.
  - c. Speed adjusting screw (item #67) turned in too far.
  - d. Oversized poppet (item #40).
8. Excessive leakage of air from pilot operated valve vent hole on side of feed.
  - a. Leaking of "O"rings items #100, #101 or #102.
9. Cushion pistons (item #34) act too slow and provide too much cushion.
  - a. Excessive oil , reduce supply.
10. Mist of oil coming from exhaust hole.
  - a. Excessive oil , reduce supply.
11. Feed has difficulty pushing last part of progression.
  - a. Feed is not in line with die. A slight angular adjustment of the feed will reduce the binding of the stock on the die, guides.
12. Under feeding.
  - a. Insufficient air pressure.
  - b. Feed is not in line with die.
  - c. Stock and feed clamps are loose.
  - d. Feed is not lubricated.
  - e. Stock excessively dirty - dirt maybe present between slide block and main body.
  - f. Feed may be feeding before punches are clear from stock or die. Adjust amount of depression of actuating valve.
  - g. Feed may be operating too slow. Turn speed adjusting screw counter-clockwise to increase speed.
  - h. Cambered stock. Use special stock clamp.
  - i. Interference of feed clamp pistons not allowing sufficient clamp pressure.

## TROUBLESHOOTING

13. Over feeding.
  - a. Stock is excessively dirty or oily.
  - b. Feed is operating too fast. Turn speed adjusting screw clockwise to slow feed down.
  - c. Stock has large slitting burr. Check clearance between clamps and stock.
  - d. Stock and feed clamps may be loose.
14. Slide block will move out but will not return without hesitation.
  - a. Check speed adjusting screw (item #67).
  - b. Check pilot operated valve (item #39). Swollen "O" ring could be binding, until pressure build up breaks it free. Check poppet (item #40).
15. Feed acts sluggish on start up, acts fine after running for a while.
  - a. Check pilot operated valve (item #39) for "O"ring binding. Valve should move freely in cartridge (item #32)



Section through cartridge in Rapid-Air feed

A & B SERIES EXPLODED PARTS DRAWING

C, D, W, F, H, FX, L, P & LX SERIES EXPLODED PARTS DRAWING