



AIR FEED OPERATING INSTRUCTIONS

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RAPID-AIR PRESS FEEDS

OPERATING INSTRUCTIONS AND SAFETY

PRECAUTIONS NO. 105

REVISED 8/16/99

INSTALLATIONS - The Rapid-Air Feed will perform best when installed and adjusted in accordance with the following instructions.

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.

LUBRICATION - Use paraffin base hydraulic oil approximately #10 SAE viscosity 140-170 SSU at 100°F. API gravity 29.5 minimum and aniline point between 150°F and 210°F. Do not use a motor oil or spindle oil. Contact Rapid-Air for recommendations on a specific oil.

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. An adjustable bracket to mount on the punch holder is provided to actuate the feed. This bracket may be mounted either on the upper or lower face of the punch holder. Place the cap screw (furnished) into one of the holes and secure it with two nuts and washers, one on each side. Adjust the position of the screw so that it contacts the center of the actuating valve control on the feed; then bolt the bracket firmly to the punch holder.

ADJUSTMENT - Adjust the height of the actuating screw so that there is approximately 1/16 inch clearance between the valve control and the main body when the cam of the press is at the bottom of its 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. The feed guide rollers are adjusted by loosening the screws and moving the roller along the slot to the desired position, then tightening the screw. For best results, the stock should be centrally located in the feed. Washers are included for adjustment to feed thicker material. Change the position of these washers from the top to the under side of the clamps. Do not allow feed to operate with loose feed and stock clamps. The notches in the guide rails provide for coarse adjustments of the stop block. The final adjustment for stroke length is made by the set screw in center of the stop block. After final adjustment is made, secure adjusting screw with locking nut located at the rear of the stop block.

STARTING - With the air off, insert the stock between the guide rollers. Pass the stock under the feed clamp. Lift the stock clamp and push the stock through to starting position. Turn air on, put safety guards in place and feed is ready to operate.

SPEED ADJUSTING VALVE - The speed adjusting valve on all Rapid-Air feeds adjusts the forward speed of the slide block when feeding stock into the die. High accuracy under special conditions can thus be maintained by eliminating inertial slippage caused by oily or heavy stock. The valve is located above the alternate air inlet on top of the feed on the side opposite the main valve. Adjust for slower speeds by turning screw clockwise. Rapid-Air feeds are shipped with the speed adjusting valve set to provide the best operating conditions for the majority of situations.

SAFETY REQUIREMENTS - The use of a safety guard is recommended to prevent operator injury. Refer the to Rapid-Air catalog or install a shield similar to the shield that guards to press. When using an electric valve, have a safety switch handy for the operator to disconnect power when servicing the 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 on air. If an electric valve or 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 applied as a slave to the press.

Note: These instructions should be placed in the area of the feed so they are available at any time for the setup man, maintenance or the operator.

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PUNCH PRESS FEEDS SET UP

The feed unit may be mounted either on the die set, the bolster plate of the press or to any convenient pad or surface on a special machine. The top surface of the feed should be flush with the lower die face. Care should be taken in providing at least 1/8" clearance beneath the slide block to avoid interference of the moving parts. Mounting is easily accomplished by using the two mounting holes provided on each feed. Avoid using dowel pins or other rigid location devices since these prevent sideways and angular adjustment, which often differ for each application.

The Rapid-Air feed is exceptionally versatile in feeding presses from either side and front or back depending on the die and press construction. A point to consider in mounting is when a feed is mounted on the bolster plate it permits changing die sets without dismounting the feed.

An adjustable bracket to mount on the punch holder is provided to actuate the valve control. The bracket may be mounted either on the upper or lower face of the punch holder. However, if this bracket does not meet your needs, a suitable bracket can be made from a piece of steel. A furnished cap screw is then adjusted into position so that it contacts the center of the valve control.

Careful adjustment of the height of the actuating screw will assure proper sequencing and maximum efficiency. Valve action is completed when the valve control is depressed approximately 3/16 of an inch. The continued downward motion is over travel. The adjustment should be made so that valve action takes place at approximately halfway through its upward stroke the valve action should reverse and stock fed into the die on the last part of the upward stroke of the ram. On long stroke presses; with dies having long punches, or when feeding on the extreme upper part of the stroke, it may be necessary to increase the effective length of the air spring in the valve control. A spring loaded actuating screw can be made.

If the stroke of the press becomes extremely short or long or if special conditions exist, electrical actuation may be important. If mounting of the valve directly on the feed causes interference of operation care should be taken in relocating so that the valve is as close to the feed as possible. The external valve must be triggered by a micro switch mounted so as to be operated by a rotary cam on the crankshaft or a linear cam on the ram of the press. The actuation calls for greater care in the selection of the actual feeding and retraction signals. A general rule is to allow 40-60 of the cycle for feeding and 40-50 for retraction.

The feed guide rollers are adjustable by loosening the machine screws and moving the rollers to the desired position. For best results the stock should be centrally located in the feed.

The notches in the guide rails provide for coarse adjustment of the stop block. Final adjustment for stroke length is made by the screw in the center of the stop block. The final adjustment is aided by the use of accurately dimensioned spacers or joe blocks placed between the adjusting screw and the main cushion bolt, and with the air pressure on keeping the slide block tight against the main body.

With the air pressure off, the material is then inserted between the guide rollers and passed under the feed clamp. Lift the stock clamp and push the material through to the starting position. Turn on the air (75-120 P.S.I.) and the feed is ready to operate.

The last adjustment if necessary would be the speed adjusting valve. The valve adjustment is located on top of the main body on the opposite side of the actuating valve. Adjust the screw for minimum impact by turning clockwise and for faster speed by turning counterclockwise. When the impact is high slippage is possible resulting in poor repeatability and also part fatigue.

RAPID-AIR PRESS FEEDS LUBRICATION OF THE O-RINGS

The "O" Rings furnished with Rapid-Air Feeds are made of Buna N compound designed to give long life on service with air, oil and water. This rubber compound features high abrasion resistance and good dimensional stability if the recommendations listed below are followed. A filter and lubricator should be used; the filter to remove grit that would otherwise act as an abrasive, and the lubricator to provide an adequate quantity of oil. For best results, avoid an excess of oil.

Paraffin base 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.

Detergent motor oils and all other oils designed for automotive use are generally unreliable in chemical makeup for use with rubber compounds. Spindle oils are too low in viscosity.

The group of oils listed below are generally recommended for Buna N Compound 366Y "O" rings. This grouping is given in good faith and because of the constant changes made on oils by the manufacturers, we cannot guarantee any consistency of chemical makeup. All of these oils have an aniline point of 210, an API gravity of 29.5 minimum and a viscosity of 140-170 S.U. The base stock is paraffin.

Recommended:

Air Feeds: 10W paraffin base hydraulic oil such as Mobile DTE Light. **Reels, Straighteners and P1V** gear boxes: Mobil 600W. **PMDs and Servos:** Mobil SHC 630 Syn.