



M AINTENANCE I NSTRUCTION

AIR COMPRESSOR RELIEF VALVE 8147515

DESCRIPTION

The air compressor relief valve is used to protect the air compressor from excessive pressure in the event all other controls and safety devices fail. There have been two variations of this valve, the differences being in the body casting. Earlier valves, Fig. 1, had a threaded opening where the deflecting elbow was screwed in. The newest valves, Fig. 2, have a deflector cast into the valve body.

OPERATION AND TEST

The valve is set to relieve at a pressure between 170 and 176 lbs. per

square inch, static air pressure. The valve should flow a minimum of 300 c.f.m. of free air with less than 10% over setting pressure. After fully opening, the valve must blow down and reseal at a pressure not lower than 10% below the opening pressure setting.

In testing the valve, it is essential that the air supply be adequate (at least 20,000 cubic inches in reservoir), with piping to valve not less than one inch in diameter. If restricted feed to valve line is used, restriction cannot be less than 7/16" in diameter. Lack of volume or feed will not permit the valve to open fully, and therefore will give erroneous blowdown.

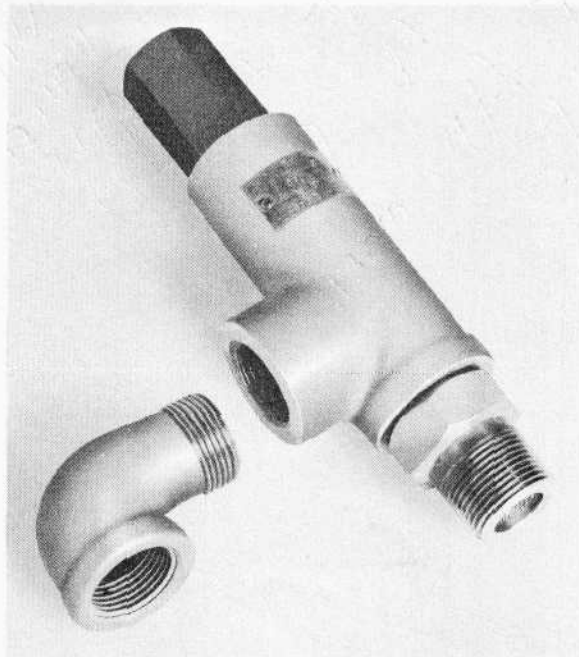


Fig. 1 - Old Style Compressor Relief Valve



Fig. 2 - New Style Compressor Relief Valve

* THIS BULLETIN SUPERSEDES ALL ISSUES OF M. I. 1026.

MAINTENANCE

Lapping

In most cases, the only maintenance necessary on this valve is a slight lapping of both the base and the disc, which may become damaged due to the trapping of foreign matter or unusual wear, caused by continuous operation.

The base seat should be lapped to exactly 45° using lapping tool 8189510. To determine the perfection of the seat after lapping, remove the compound and rub lapping tool into seat with light oil. The disc seat should be lapped to exactly 42° with lapping tool 8189513 and then checked in the same manner as the base seat.

After lapping the correct angles on base and disc, assemble disc to base and lap in very lightly using only finish lapping compound. To determine the seating contact, remove the compound and rub seats together with light oil. The seat bearing should be uniform and the width should not exceed $1/64''$.

Remachining

When the disc and base seats are damaged or worn beyond the point where they can be reclaimed by lapping, they should be remachined as follows:

The base seat should be remachined to a 45° angle with a width of $.067''$. The width of seat to be reduced by lowering top of seat only. See Fig. 3.

The disc seat should be remachined to a 42° angle with lower corner of seat broken an additional 4° for a distance not greater than $.010''$.

After machining the disc, the clearance of the disc flange to the outlet ports should be about $.050''$. If accumulated tolerances shorten this dimension, the lower face of the flange on the disc should be machined to provide this clearance.

After machining, lap both base and disc as instructed under "Lapping" and grind the two seats together.

Assembly

Before assembling the valve, be sure that the inlet port is clear and that all grinding material is removed from both the base and disc. Use a small amount of graphite and oil at the bearing points between the spindle and disc, spring washer and spindle, and spring washer and adjusting screw. Assemble the bonnet to the base, and the adjusting screw and adjusting screw nut to the bonnet. Test and set valve as instructed under "Operation and Test." After valve is set, apply the cap and seal.

REPAIR TOOLS

Disc Lap Assembly	8189513
Disc Lap Insert	8189512
Disc Lap Body	8189511
Nozzle Lap	8189510

The above valve laps may be purchased from our Parts Department under the numbers listed. The valve laps must be checked frequently to maintain correct angles. It is recommended that they be remachined or discarded after approximately one hundred lapping operations.

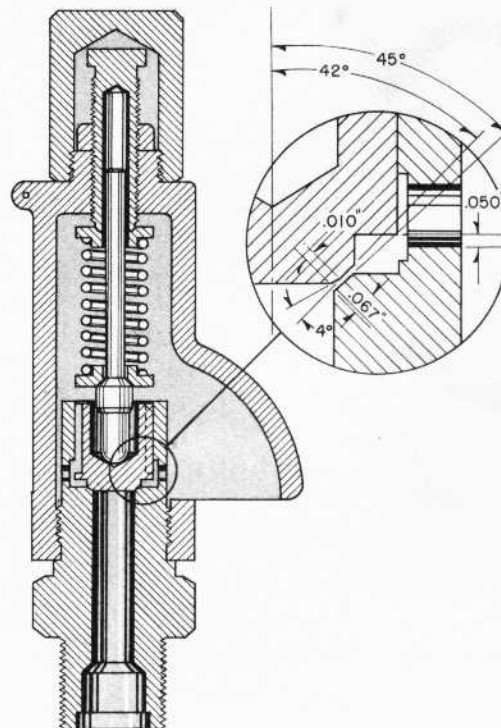


Fig. 3 - Cross-Section Compressor Relief Valve