

Series: hydraulic-type force with compressed air

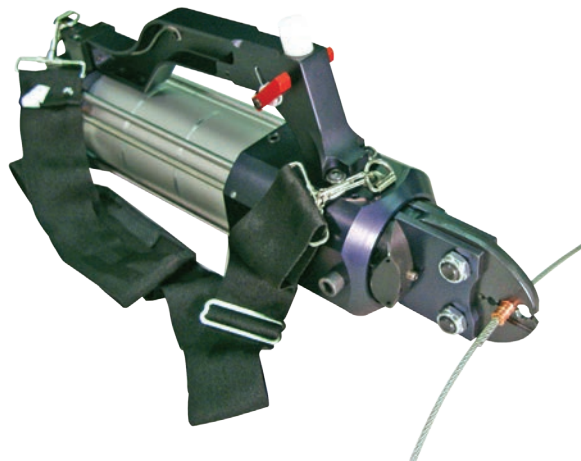
FABCO-AIR

*Crimp tools for automating manufacture
of cable and wire rope assemblies*

FABCO-AIR – www.fabco-air.com – phone 1-352-373-3578

New air tools drastically reduce assembly time

The next generation of automated pneumatic crimping tools for wire rope is here. Of course it's from **FABCO-AIR**, the company that pioneered the Multi-Power® air cylinder concept.



Handled Crimp Tool in Splicing Application

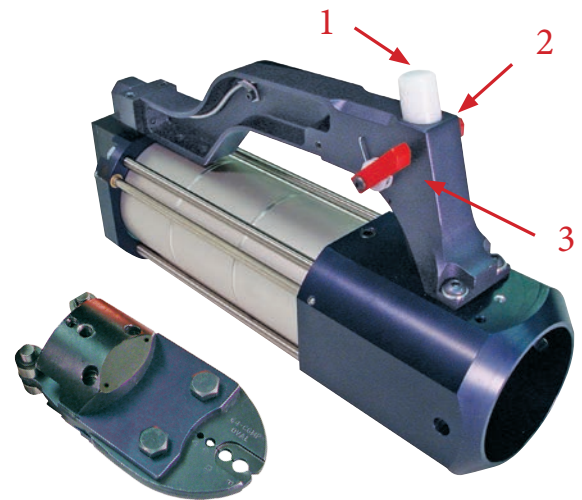
These new crimp tools drastically reduce cable assembly time thereby lowering your "total installed cost". The tools are available as both hand held and bench mounted models, so you can bring the tool to the work or centralize production assembly work at a bench. Since the units are light weight and completely portable, production lines can be readily moved and adjusted to optimize production.

The **FABCO-AIR** tools tackle the broadest range of wire sizes in the industry, 1/32" through 3/8" diameters. They run on standard shop air pressure of 85 to 95 psi. Dual triggers allow the tool to be operated using either the left or right hand with or without gloves.

Ergonomically balanced at the triggers, the tool minimizes operator fatigue. A convenient shoulder strap allows one hand operation.

Power Heads

A wide selection of single groove and multi-groove power heads is available. The power heads can be interchanged in less than a minute on either bench mounted or portable tools. If you provide details of your application, Fabco will respond with specific recommendations for power head type and sizes.



Multi-groove power head

Tool with head removed

Making the Crimp

Depressing the white button (1) at the top of the handle opens the jaws to receive the workpiece. Releasing the button allows the jaws to spring closed and grip the parts securely. Pulling either of the red triggers (2 or 3) releases a lock so the valve can be tripped by squeezing the index finger. This actuates the power cylinder driving the cam operated jaws into their closed crimping position.

Making Lap or Running Splices

Lap or running splices can be made with **OVAL SLEEVES** when lengthening cable or making grommet slings. Oval sleeves are widely available in a variety of materials including aluminum, copper, zinc/copper, tin/copper and stainless steel.

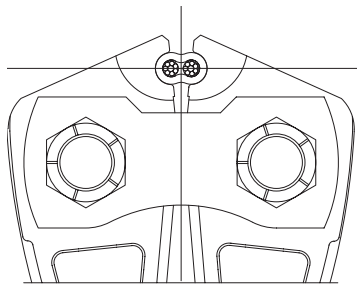


Typical oval sleeve designs.



Lap splice assembly

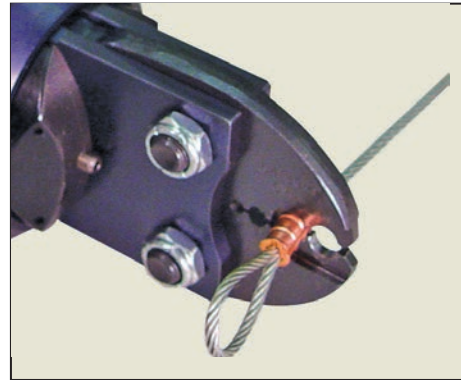
Generally two sleeves are needed to develop a splice equal to the breaking strength of the wire. Pull the ends of both cables through both sleeves. Leave a little space between sleeves to allow for extrusion of the sleeves during crimping. Also, the finished crimp should have some space between sleeves to provide cable flexibility. Line up the sleeve between the tool jaws with the long axis crosswise to the jaws as shown in the sketch below.



Sleeve/cable crimping position

Making Eye Splices

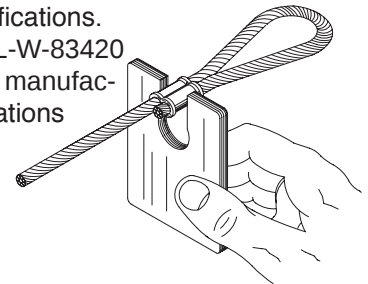
For eye splices usually only one oval sleeve is required. Pull enough cable through the sleeve so that the end will still protrude from the sleeve after crimping. Again, follow the same procedure aligning the sleeve across the jaw closing motion.



Multi-groove jaws with completed eye splice

Gauging the Results

“Go” gauges are provided by sleeve manufacturers to assure that your crimps will meet specifications. (Reference MIL-W-83420 and the sleeve manufacturer's specifications for use with aircraft cable.)



Handled Models can be converted for Bench Mounted Operation

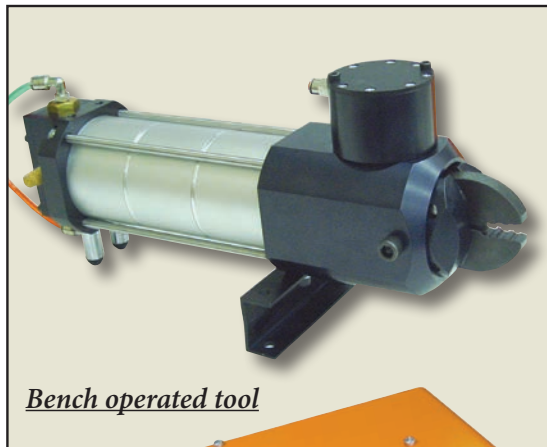
Handled tools can be converted with the optional foot operated control box shown below and described in the next section.



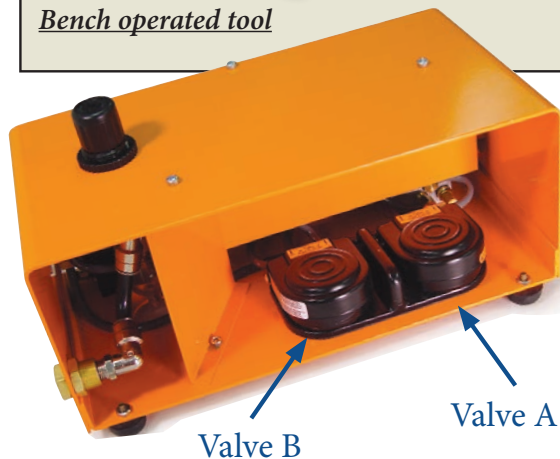
*Front and Rear Views of a
Foot Operated Control Box*

Bench-mounted tools

As with the handled models, crimping jaws for bench models are spring loaded normally closed for safety.



Bench operated tool



Foot operated control box

Foot pressure on **Valve A**, shown in the photo above, opens the jaws for the wire and sleeve assembly to be inserted in the jaws. Releasing **Valve A** allows the crimp jaws to close lightly and hold the assembly securely in place.

Next, foot pressure on **Valve B** actuates the heart of the tool, a force-multiplying air cylinder that powers the cam operated jaws to the closed crimping position. (See construction views of power unit on page 4.)

Built-in quality control

The circuitry in the foot operated control box includes a pressure sensing valve that can be adjusted for various crimp pressures. The valve is extremely accurate and in essence delivers continuous QC.

For example, if the supply pressure should fall below the sensing valve's pressure setting, the valve will not provide a "crimp" signal to the tool. Thus the tool will stall at this point without making a bad crimp and without ruining the parts.

Once pressure is restored, the cycle will continue. The parts that were in the jaws will then be finished as a "good assembly".

Booster Accessory Installs Quickly

Larger cables may require higher forces for proper crimping. An optional booster accessory is available to increase the supply air pressure to an acceptable level. It is attached with four allen bolts to the rear of any Fabco-Air crimping tool. Change-over takes only minutes.

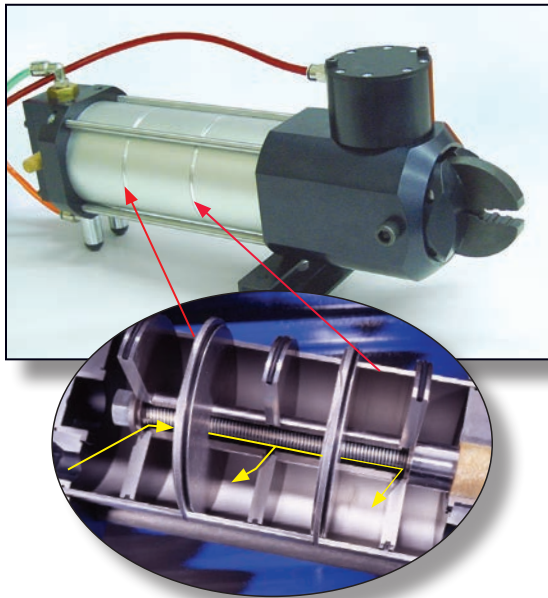


Optional boosters attach to the rear of the portable tool (shown here) or to the bench mounted tool.

EPILOG

Principle of Operation

The power unit is a Multi-Power® cylinder with multiple pistons attached to a common shaft as illustrated in the cut-away view shown below. Each piston is isolated within its own chamber by means of baffles (indicated with red arrows) integral with the outer cylinder wall.



Special internal porting through the rod (power stroke path is shown with yellow arrows) allows air pressure to simultaneously energize all pistons to produce over 1700 pounds force directly to the cam and power head. Force is increased through the cam and jaws to approximately 4000 pounds at 1" away from the tool and approximately 2500 lbs at a 2" distance.

More than a crimping tool

The **FABCO-AIR** 300 Series of pneumatic assembly tools has the functionality to perform any number of manufacturing operations, improving product quality and increasing productivity on the production line.



A variety of quick-change power heads is available for diverse assemblies.

Now, in addition to wire and cable applications, you can tackle a variety of assembly applications with confidence.

Typical applications include:

- ✓ Making plumbing assemblies
- ✓ Crimping electrical terminals and connectors
- ✓ Swaging mechanical fasteners
- ✓ Staking, punching, piercing and flaring subassembly components
- ✓ Sealing, embossing and notching
- ✓ Clamping and holding assemblies
- ✓ Special custom applications



Nice to Know

The circuitry incorporated in the foot operated control uses Fabco's "RV" Valve that senses the pressure being applied to it and opens at a pre-adjusted set point to provide a pilot signal for circuit control.



Cut-away view of a Fabco-Air RV Sequence Valve

Read more about it in either of these white papers at www.fabco-air.com

[Maintaining exact forces for best results with a pneumatic press.](#)

[Controlling force with a pressure sensing valve.](#)