High Pressure Equipment

Tooling

To ensure safe and leak-free operation of your pressure system, High Pressure Equipment Company provides complete installation instructions for the make-up of a coned and threaded connection. In addition to outlining the correct procedures, we offer coning and threading tools and female tubing connection tools.



Index

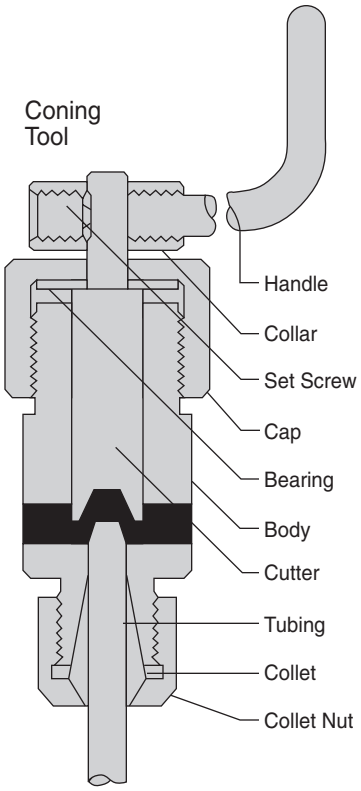
	Page
Reseating Tools	9.2
Coning Tools	9.3
Threading Tools	9.3
Coning & Threading Instructions	9.4

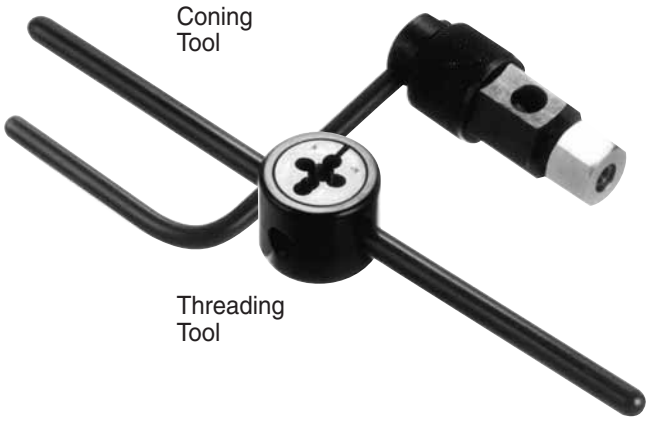
Tooling

The coned and threaded tubing ends for the medium, high and ultra high pressure connections may be supplied by any of the following:

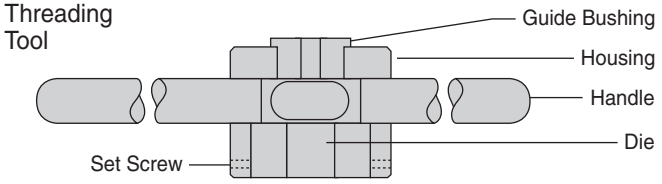
1. Standard length tubing nipples with ends prepared. Maintained in stock—ready for shipment.
2. Special length tubing nipples with ends prepared. Specify length required (up to 22 feet long). Add coning and threading charge to tubing price. (While not in stock, special length nipples can be furnished quickly for prompt delivery).
3. Preparation of tubing ends at your own facility by hand tooling as described in this section.

The coning and threading tools are designed for simple yet accurate preparation of tubing ends for the medium, high and ultra high pressure connections. A liberal amount of cutting fluid should be used, and a supply is furnished with each order for tooling. Interchangeable spare parts allow easy change over from one size tubing to another on both the coning and threading tools. Note that the reseating tool is not required for tubing preparation.





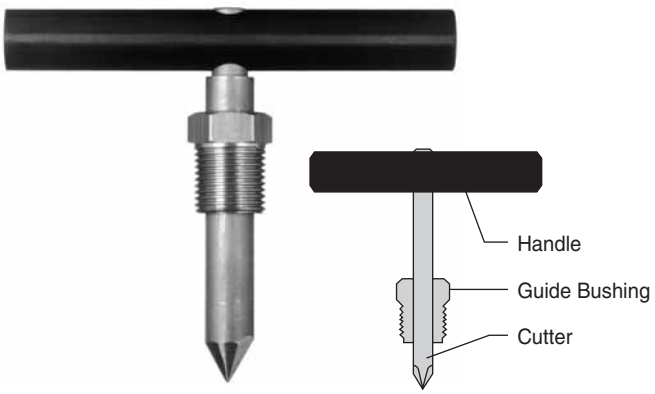




Reseating Tools

The reseating tools are available for repairing old or damaged tubing connection seats in valves or fittings. This tool is not required for tubing preparation.

Catalog No.	For Tubing Connection
RTLF4	LF4
RTLF6	LF6
RTLF9	LF9
RTHF2	HF2
RTHF4	HF4
RTHF6	HF6
RTHF9	HF9
RTXF4	XF4
RTXF6	XF6

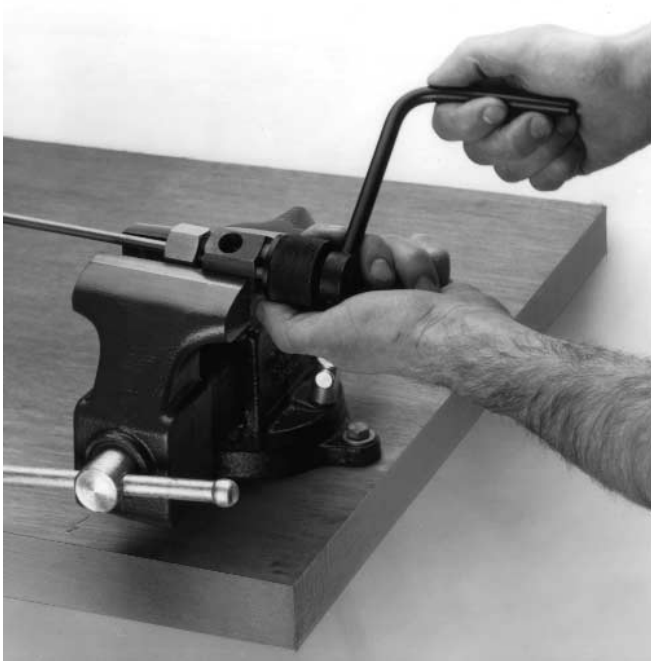


Coning Tools

The coning tool is designed for preparing a “cone” on the ends of Medium, High and Ultra High Pressure tubing. Included angle of the cone is approximately 57 to 59 degrees. The cutter and collet are interchangeable on all of the assemblies (except 2-HF9 and 2-LF9) to permit changing from one size tubing to another.

Catalog No.	Tubing Size	Spare Cutter	Spare Collet
2-LF4	(1/4" O.D. x .109" I.D. (20.000 psi)	2-LF4L	2-LF4P
2-LF6	(3/8" O.D. x .203 I.D. (20,000 psi)	2-LF6L	2-LF6P
2-LF9	(9/16" O.D. x .312 I.D. (20,000 psi)	2-LF9L*	2-LF9P
2-HF2	(1/8" O.D. x .020 I.D. (60,000 psi) (1/8" O.D. x .040 I.D. (30,000 psi)	2-HF2L	2-HF2P
2-HF4	(1/4" O.D. x .083 I.D. (60,000 psi)	2-HF4L	2-HF4P
2-HF6	(3/8" O.D. x 1/8" I.D. (60,000 psi)	2-HF6L	2-HF6P
2-HF9	(9/16" O.D. x 3/16" I.D. x (60,000 psi)	2-HF9L*	2-HF9P
2-XF4	(1/4" O.D. x 1/16" I.D. (100,000 psi)	2-XF4L	2-XF4P
2-XF6	(3/8" O.D. x 1/16" I.D. (150,000 psi)	2-XF6L	2-XF6P

* Not interchangeable

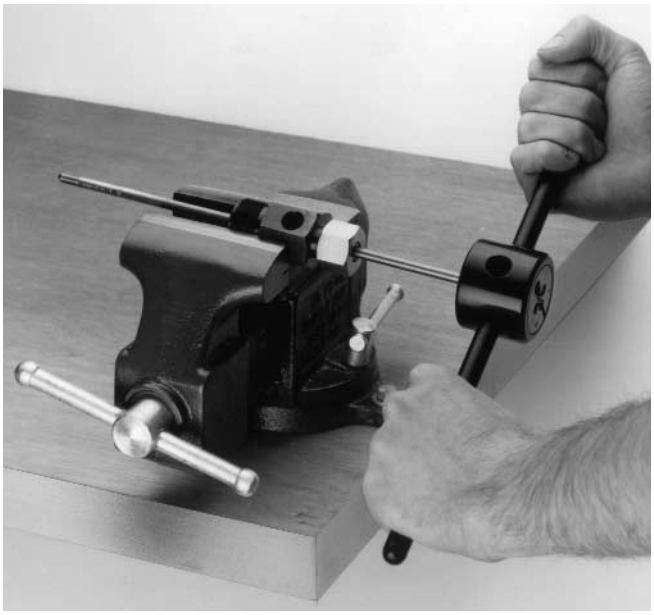


Threading Tools

The threading tool is designed for preparing a left-hand thread onto Medium, High and Ultra High Pressure tubing ends. The threaded die and guide bushings are interchangeable on all of the assemblies (except 2-MHF2) to permit changing from one size tubing to another.

Catalog No.	Tubing Size	Spare Threading Die	Spare Guide Bushing
2-MLF4	1/4" O.D.	1/4"- 28LH	2-MLF4P
2-MLF6	3/8" O.D.	3/8"- 24LH	2-MLF6P
2-MLF9	9/16" O.D.	9/16"- 18LH	2-MLF9P
2-MHF2	1/8" O.D.	1/8"- 40LH*	2-MHF2P*
2-MHF4	1/4" O.D.	1/4"- 28LH	2-MHF4P
2-MHF6	3/8" O.D.	3/8"- 24LH	2-MHF6P
2-MHF9	9/16" O.D.	9/16"- 18LH	2-MHF9P
2-MXF4	1/4" O.D.	1/4"- 28LH	2-MXF4P
2-MXF6	3/8" O.D.	3/8"- 24LH	2-MXF6P

* Not interchangeable



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Coning and Threading Instructions

Coning Tubing Ends

The coning tool is designed for preparing a "cone" having an included angle of approximately 57 to 59 degrees on the ends of tubing. Operation is as follows:

1. Secure coning tool body in suitable vise. You may wish to angle the tool in the vise in order to facilitate access to the collet nut and knurled cap.
2. Cut off tubing to desired length and deburr ends.
3. Rotate knurled cap clockwise into tool as far as it will go.
4. "Back off" knurled cap by rotating counterclockwise a number of complete rotations as indicated in the chart below. (A mark on the knurled cap may be useful).

Tubing Size	"Back Off Turns"
1/8" O.D.	3 turns
1/4" O.D.	4 1/2 turns
3/8" O.D.	4 1/2 turns
9/16" O.D.	8 turns

5. Insert tubing thru collet nut and collet until tubing stops up against inside cutter.
6. Tighten collet nut to secure tubing into position.
7. Turn knurled cap counterclockwise to remove cap and cutter from tool.
8. Apply a very liberal amount of "Sulflo" (sulphur based cutting compound) to the end of the cutter.
9. Screw cap and cutter back into the body until the cutter contacts the end of the tubing.
10. Rotate handle of cutting tool clockwise fairly rapidly with one hand while slowly rotating the knurled cap clockwise with the other hand in order to continuously feed the cutter into the tubing. Do not overly force the cutter against the tubing as it will bind. (You will quickly develop the proper feel). You will need to rotate the knurled cap a complete number of turns as per the chart below in order to complete the cone on the end of the tubing.

Tubing Size	"Back Off Turns"
1/8" O.D.	2 1/2 turns
1/4" O.D.	3 1/2 turns
3/8" O.D.	4 turns
9/16" O.D.	7 1/2 turns

11. After coning the tubing end, loosen the collet nut and remove tubing from the tool. Remove the knurled cap and cutter from the tool in order to clean off the Sulflo compound and steel chips in preparation for the next tube.

NOTES:

A. Steps 3 and 4 (on left) are primarily a help in properly positioning the tubing in the tool. As you gain experience with the tool, you will be able to judge the proper position by sight in order to eliminate these steps.

B. The 1/4" O.D. and 3/8" O.D. tubing sizes are relatively easy to cone. The 1/8" O.D. size is "delicate" (be especially careful not to force the cutter). The 9/16" O.D. size requires the most amount of firmness in the cutting.

C. As with other tools, it is not uncommon for a collet to "stick" even after the collet nut has been released. Should this occur, simply tap the side of the collet nut firmly with the wrench to release the collet.

Threading the Tubing

The threading tool is designed to put a left hand thread onto the end of the tubing. Operation is as follows:

1. The coning tool (with the knurled cap and cutter removed) provides an ideal way to hold the tubing for the threading operation (see photo).
2. After securing the tubing, apply a liberal amount of Sulflo to the end of the tubing.
3. Place the threading tool (guide bushing side first) onto the tubing.
4. Place the palm of your hand firmly against the center of the threading tool and rotate your wrist counterclockwise. This will help "start" the die onto the tube. After you feel the die start onto the tubing, continue to rotate the threading tool using the handles.
5. Remove the threading tool and clean off Sulflo and chips.

NOTE:

The tubing collar should easily screw onto the tubing. If it feels too tight or loose, the die should be adjusted accordingly. Simply remove the die from the holder by loosening the outer set screw. The small adjustment screw located on the side of the die can be turned to precisely set the die.