

# TWIN CITY HOSE, INC.

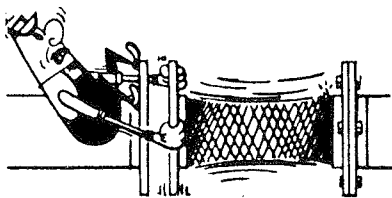
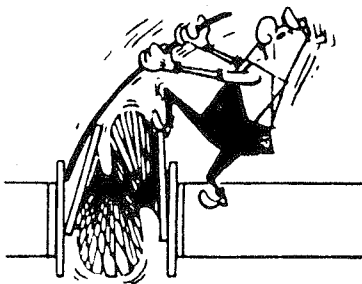
## Eight installation hints for you to get the most from Flexible Pipe Connectors

A flexible metal pipe connector (or flexible hose) is a relatively expensive part of your piping system. Fabricated of thin-wall tubing, it cannot take as much abuse as pipe of the same nominal diameter. The connectors are designed to do a specific job, and will give excellent service *if they are installed properly*. Carelessness and lack of foresight have proven costly in many jobs.

Although presented in humorous form, the cartoons carry a serious message: *install it right, if you want it to work right!* Read the manufacturer's literature and follow his instructions. You'll be rewarded by many years of trouble-free service from your flexible pipe connectors.

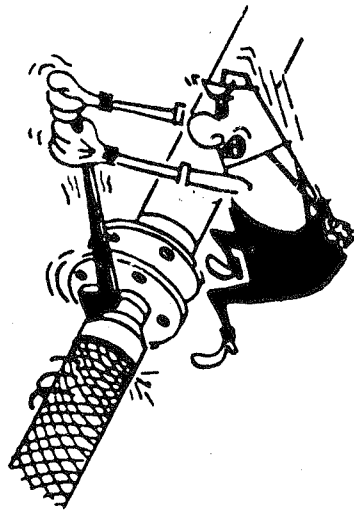
**DON'T COMPRESS** a flexible connector to make it fit! Installing it under compression stresses corrugated element, slackens braid pressure-restrainer, reduces further compressive movement, and generally results in early failure.

**DO** be sure to install it at exact normal free length as supplied. If connector is too long, shorten piping.



**DON'T STRETCH** connector to fit a gap longer than its factory-furnished length. Stretching places excessive residual stresses on braid and fittings. Result? Early rupture.

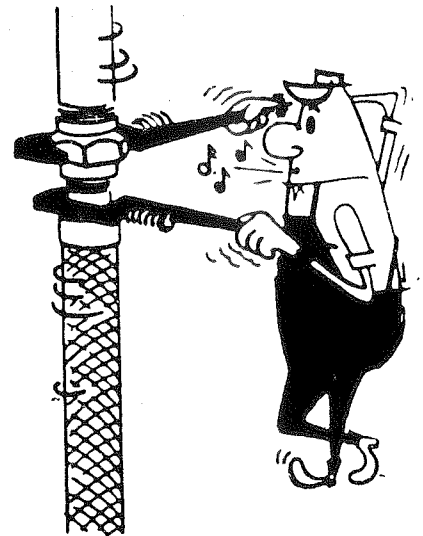
**DO** measure carefully to be sure connecting pipe is cut to exact length.



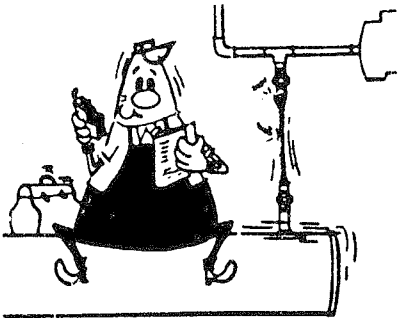
**DON'T FORCE-ROTATE** one end of connector to match bolt holes in mating flange. This sets up residual torque-stress in connector, which causes cracking of corrugations or fitting joint. A flexible connector absorbs vibration, or slow movement perpendicular to its axis. It is NOT capable of withstanding torque.

**DO** be sure all bolt holes are perfectly lined up before welding pipe flange into place. Best insurance is use of one floating flange, to ease matching of bolt holes, speed up job.

**DON'T IMPOSE TORQUE** on connector when making up fittings, and don't use a wrench on the ferrule or on the braid. Where a hex end is provided, use it. If not, use the wrench on the fitting length provided. Always use two wrenches, to keep the hose from being torqued as the joint is made up.



**DON'T** let welding sparks hit the braid; they may burn some of the braid strands. Protect braid with asbestos cloth or place other non-flammable material in front of it when piping must be welded very close near-by.

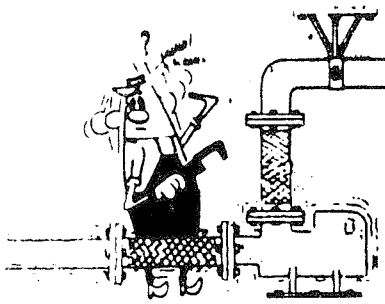


**DON'T LET HOSE** support any weight except its own. Its light wall was designed to contain internal pressure, but not to carry external loads. Extra weight will stress and stretch it.

**DO** use hangers on all adjacent piping. Install hangers before installing hose, to be certain weight of pipe is on hangers.

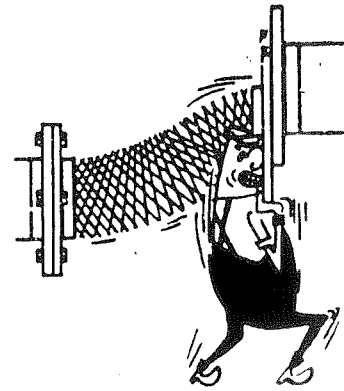


**DON'T BEND HOSE** sharply near fittings. Fitting end or flange face must always remain perfectly perpendicular to axis of hose. If piping meets at an angle, install hose with a shallow curve along its entire length, leaving small straight section at each end. This kind of installation generally requires a longer hose. Consult the manufacturer.



**DON'T FAIL TO ANCHOR.** Anchor piping close to flexible connector, at end opposite source of vibration. If not, hose will transmit all vibration to pipe line, may even amplify it.

Anchor flexible metal hose at the piping end, never at the equipment end. If hose is not securely anchored, it will transmit all vibration to the piping system. Not only that, it will often act like a spring and actually amplify the vibrations. Whenever possible, install flexible connector to pump, compressor, or other vibrating equipment - before valves, pipeline, fittings - so that most vibration is absorbed and isolated instead of being transmitted.



**DON'T FORCE HOSE** into too much lateral offset. This puts it under great strain. Also, it cannot then handle any movement of any kind. Avoid excessive force.

**DO** check manufacturer's literature and installation manual, and do not exceed maximum permissible offset.

## Installation Checklist

In summary, you will get best results with flexible pipe connectors if you answer these questions before ordering.

The manufacturer can give you the best flexible pipe connector for the job only if he knows what the connector has to do. This check list will help you assemble the necessary information.

1. Pipe *size*, and *material* of pipeline and equipment?
2. Specify liquid or gas conveyed?
3. Make, model, and size of the pump, compressor or other equipment to be used?
4. Working *pressure* (if known). Minimum? Normal Working? Maximum? Static? Pulsating? Shock?
5. Kind of *valve* in the line closest to the connector? (Permits hose manufacturer to determine if there may be sudden closings or openings which can cause water hammer or shock waves.)
6. *Temperatures* (if known)? Minimum? Working? Maximum? Ambient? Will maximum pressure and maximum temperature occur at the same time?
7. Any special space limitations?
8. How much *vibration* anticipated? Amplitude, cycles, frequency?
9. Will equipment be mounted on *vibration-isolating mounts*? Describe.
10. How much *pipeline thermal growth*? (If unknown, furnish a rough piping schematic, plus temperature fluctuations.)
11. What are general *working conditions*? Location of equipment, job it has to do, type of building, etc.?
12. Which types of end fittings are preferred?
13. Who will be the *mechanical engineer* to contact in case of technical problems or approvals?