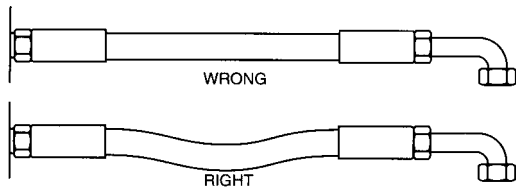


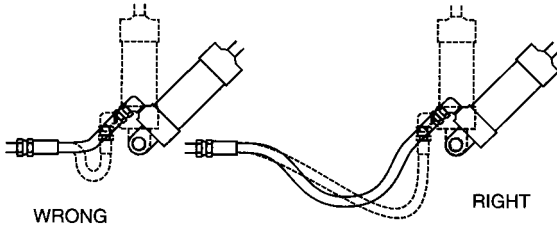
Hose Assembly Routing Tips

Proper hose installation is essential for satisfactory performance. If hose length is excessive, the appearance of the installation will be unsatisfactory and unnecessary cost of equipment will be involved. If hose assemblies are too short to permit adequate flexing and changes in length due to expansion or contraction, hose service life will be reduced.

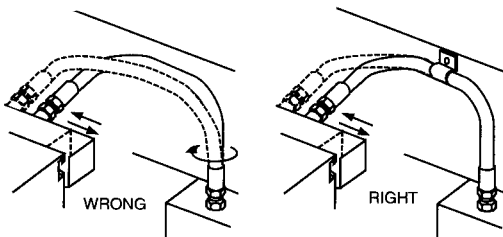
The following diagrams show proper hose installations which provide maximum performance and cost savings. Consider these examples in determining length of a specific assembly.



When hose installation is straight, allow enough slack in hose line to provide for length changes which will occur when pressure is applied.



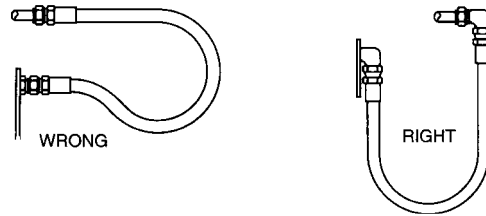
Adequate hose length is necessary to distribute movement on flexing applications and to avoid abrasion.



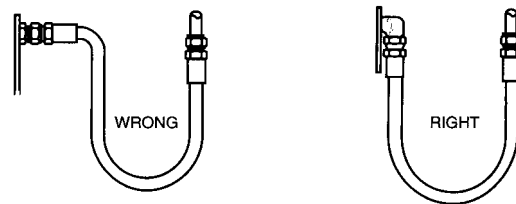
Avoid twisting of hose lines bent in two planes by clamping hose at change of plane.



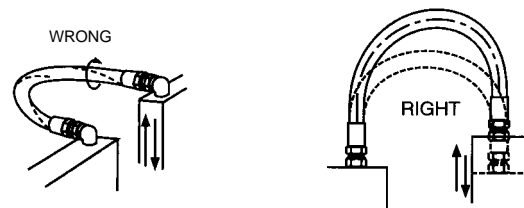
Reduce number of pipe thread joints by using hydraulic adapters instead of pipe fittings.



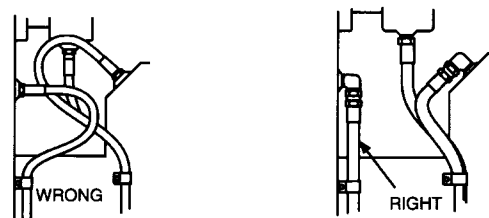
When radius is below the required minimum, use an angle adapter to avoid sharp bends.



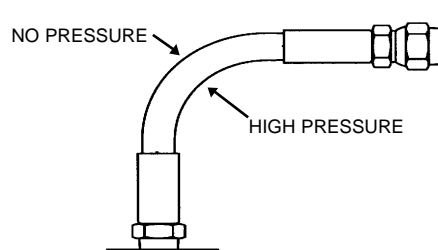
Use proper angle adapters to avoid tight bend in hose.



Prevent twisting and distortion by bending hose in same plane as the motion of the port to which hose is connected.



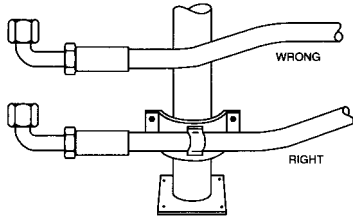
Route hose directly by using 45° and/or 90° adapter and fittings. Avoid excessive hose length to improve appearance.



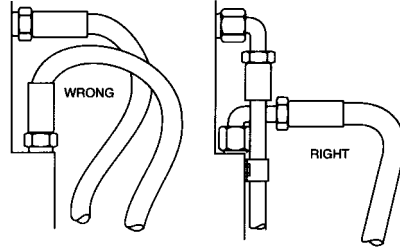
To allow for length changes when hose is pressurized, do not clamp at bends so that curves will absorb changes. Do not clamp high and low pressure lines together.

Hose & Coupling Selection

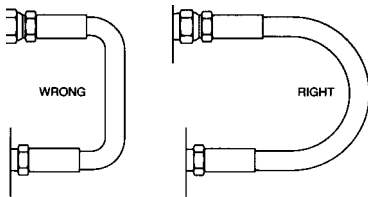
Hose Assembly Routing Tips – con't.



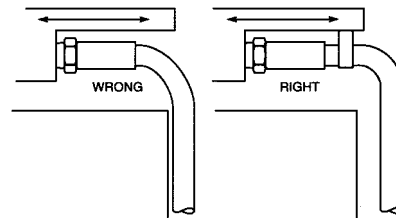
High ambient temperatures shorten hose life, so make sure hose is kept away from hot parts. If this is not possible, insulate hose.



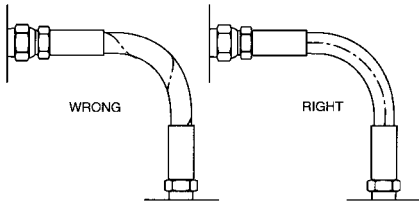
Elbows and adapters should be used to relieve strain on the assembly, and to provide neater installations which will be more accessible for inspection and maintenance.



To avoid hose collapse and flow restriction, keep hose bend radii as large as possible. Refer to hose specification tables for minimum bend radii.



Run hose in the installation so that it avoids rubbing and abrasion. Often, clamps are required to support long hose runs or to keep hose away from moving parts. Use clamps of the correct size. A clamp too large allows hose to move inside the clamp and causes abrasion.



When installing hose, make sure it is not twisted. Pressure applied to a twisted hose can result in hose failure or loosening of connections.

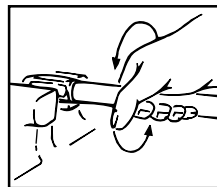
Hydraulic Flareless Assembly Procedure (per SAE J514 6.1.3 & 6.1.4)

1. Bottom the tube in the coupling, and tighten the nut until the ferrule just grips the tube. With a little experience, the technician can determine this point by feel. If the couplings are bench assembled, the gripping action can be determined by rotating the tube by hand as the nut is drawn down. When the tube can no longer be turned by hand, the ferrule has started to grip the tube.
2. After the ferrule grips the tube, tighten the nut one full turn. This may vary slightly with different tubing materials, but for general practice, it is a good rule for the technician to follow.

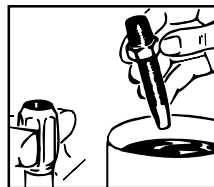
Assembly of Field Attachable Couplings — Five Easy Steps



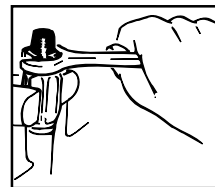
1. Be sure to thoroughly oil hose.



2. Put socket in vise as shown. Turning counter-clockwise, thread hose into socket. Leave a gap of 1/32" to 1/16" between end of hose and inside shoulder of socket.



3. Oil insert thread on nipple thoroughly.



4. With clockwise motion, thread nipple into socket until nipple hex shoulders against ferrule.



5. Inspect assembly internally for cut or bulged tube obstructions and cleanliness.