



SERVICE BULLETIN No.1189

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COACH MODEL	: C2045
BULLETIN TYPE	: Product Improvement
SECTION	: Section 6 - Air system
DATE	: July 19, 2006
SUBJECT	: Solenoid valve fittings
TERMS & CONDITIONS	: No claims will be accepted with reference to this Bulletin.

APPLICATION:

The product improvement subject of this Bulletin has been cut into production as from following units:

Model	Engine	VIN
C2045	Cummins	46030 →
	Detroit Diesel	46657 →
	Caterpillar	47152 →

DESCRIPTION:

- In the compartment below the driver's seat some fitting and tubing changes have been cut into production to standardize and facilitate manufacturing and to prevent the possibility of air leaks (refer to sidebar on page 9).
- DIN compression fittings and 6-mm diameter tubing now replace the previously installed SAE compression fittings and 3/8-inch diameter tubing (see parts list).
- The changes concern (see Figure 1):
 1. the compressed air supply line from the junction block to...
 2. the auxiliaries solenoid valve bank, and...
 3. the line running from solenoid air valve V543 to the air horn.
- Because of regulations, no changes have been made to the brake interlock solenoid valve fittings (see Figures 8 and 9).
- To address possible air leakage at the brake interlock solenoid valve port a thick-wall adapter (VH 10786814) has been made available as a replacement part for adapter VH 637315720. A procedure has been included explaining how to exchange these.

Service personnel: please read, initial and circulate.

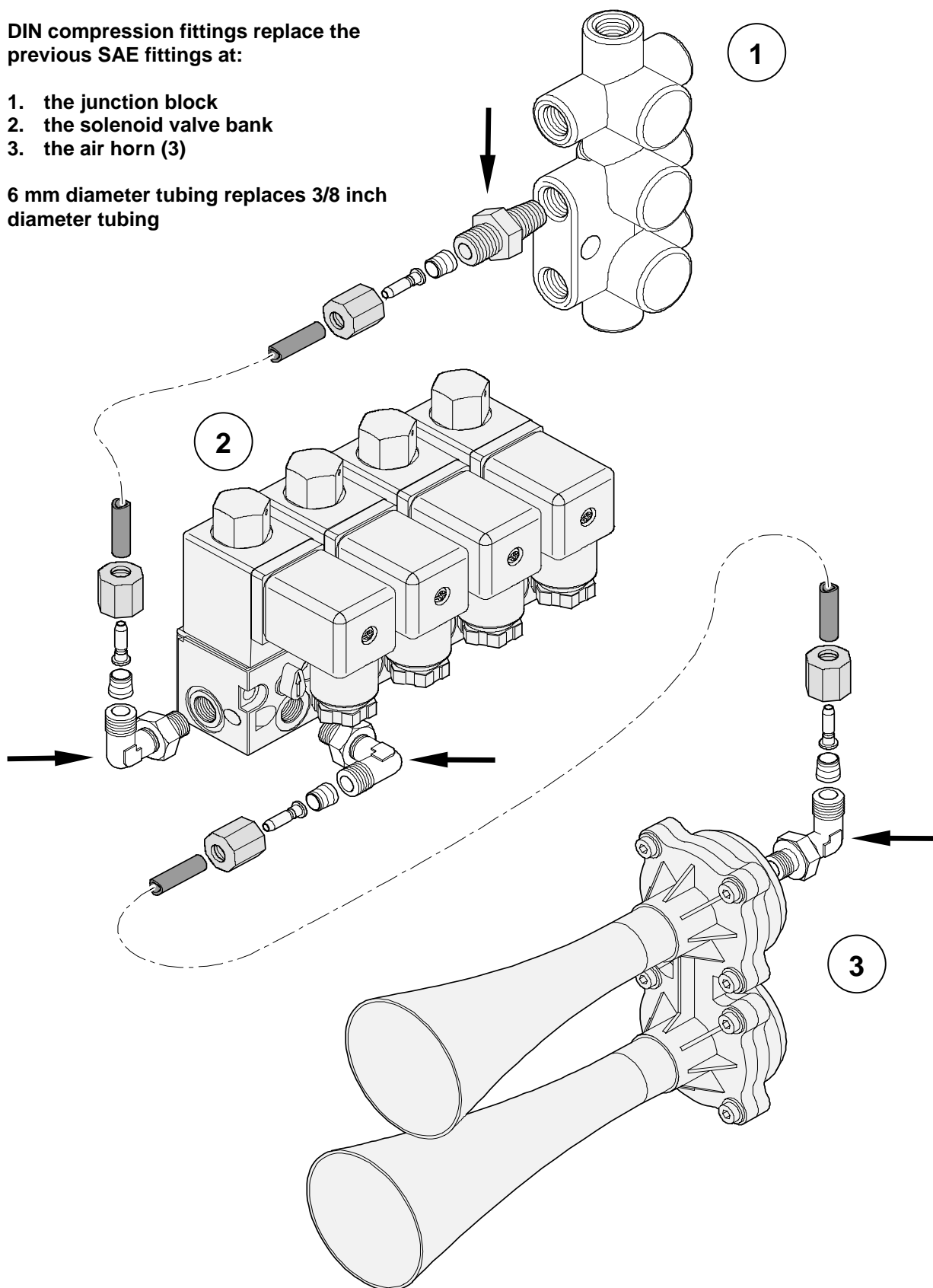
Service Manager	Parts Manager	Warranty Administrator	Workshop Foreman	Service Technician

Figure 1:

DIN compression fittings replace the previous SAE fittings at:

- 1. the junction block**
- 2. the solenoid valve bank**
- 3. the air horn (3)**

6 mm diameter tubing replaces 3/8 inch diameter tubing



PARTS AND PRODUCTS:

1. Junction block:

Old parts

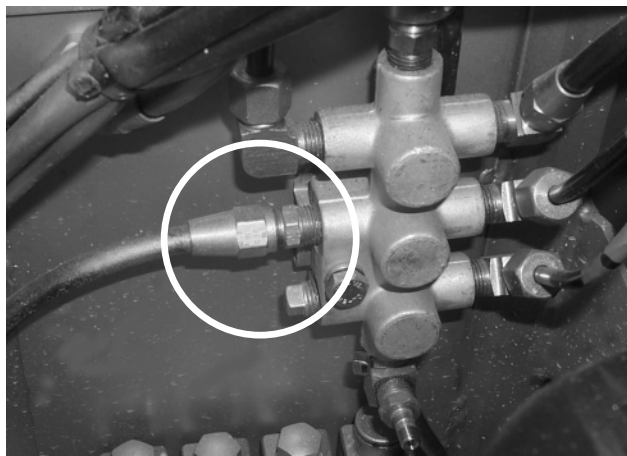


Figure 2 - Old junction block fittings:
VH 660556402 + VH 637309780 +
VH 660555504 + VH 637308240 +
VH 634201870

VH reference	Description	Qty.
VH 637309780	Nut, 3/8"	1
VH 660555504	Cutting ring, 3/8"	1
VH 637308240	Insert, 3/8"	1
VH 660556402	Fitting, straight, 1/4" NPTx 3/8" tubing	1
VH 634201870	Tubing, nylon, 3/8" DOT – SAE J844	#

New parts

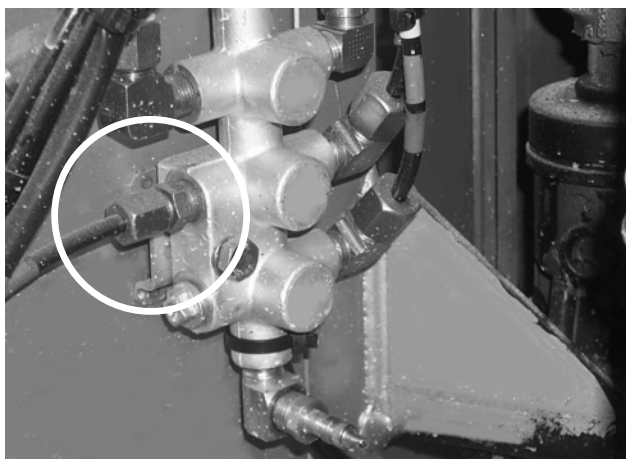


Figure 3: New junction block fittings:
VH 637310630 + VH 637314350 +
VH 637307060 + VH 637307010 +
VH 660515907

VH reference	Description	Qty.
VH 637314350	Nut, 6 mm	1
VH 637307060	Cutting ring, 6 mm	1
VH 637307010	Insert, 6 mm	1
VH 637310630	Fitting, straight, 1/4" NPTx 6 mm tubing	1
VH 660515907	Tubing, nylon, 6 x 1 mm	#

2. Solenoid valve bank:

Old parts

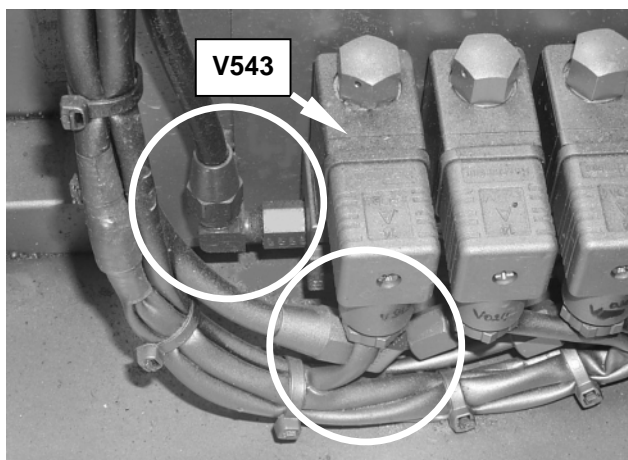


Figure 4 - Old solenoid valve bank fittings:
VH 637315720 + VH 637312880 +
VH 637309780 + VH 660555504 +
VH 637308240 + VH 634201870

VH reference	Description	Qty.
VH 637315720	Adapter, 1/8" BSP x 1/8" NPT	2
VH 637312880	Fitting, elbow, 1/8" NPT x 3/8" dia. tubing	2
VH 637309780	Nut, 3/8"	2
VH 660555504	Cutting ring, 3/8"	2
VH 637308240	Insert, 3/8"	2
VH 634201870	Tubing, nylon, 3/8" DOT – SAE J844	#

New parts

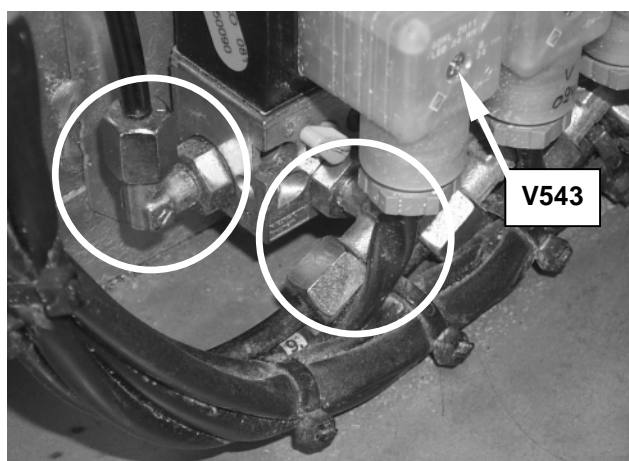


Figure 5 - New solenoid valve bank fittings:
VH 637317610 + VH 637314350 +
VH 637307060 + VH 637307010 +
VH 660515907

VH reference	Description	Qty.
VH 637317610	Fitting, elbow, adjustable, 1/8" BSP x 6 mm dia tubing, includes O-ring and jam nut	2
VH 637314350	Nut, 6 mm	2
VH 637307060	Cutting ring, 6 mm	2
VH 637307010	Insert, 6 mm	2
VH 660515907	Tubing, nylon, 6 x 1 mm	#

3. Air horn:

Old parts



Figure 6 - Old air horn fittings:
VH 637312880 + VH 637309780 +
VH 660555504 + VH 637308240 +
VH 634201870

VH reference	Description	Qty.
VH 637312880	Fitting, elbow, 1/8" NPT x 3/8" dia. tubing	1
VH 637309780	Nut, 3/8"	1
VH 660555504	Cutting ring, 3/8"	1
VH 637308240	Insert, 3/8"	1
VH 634201870	Tubing, nylon, 3/8" DOT – SAE J844	#

New parts

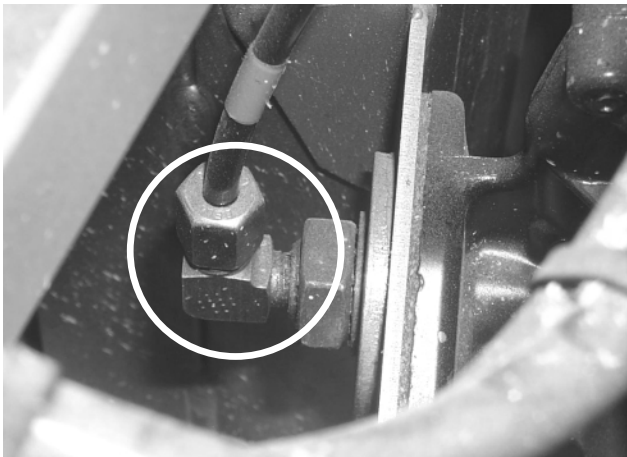
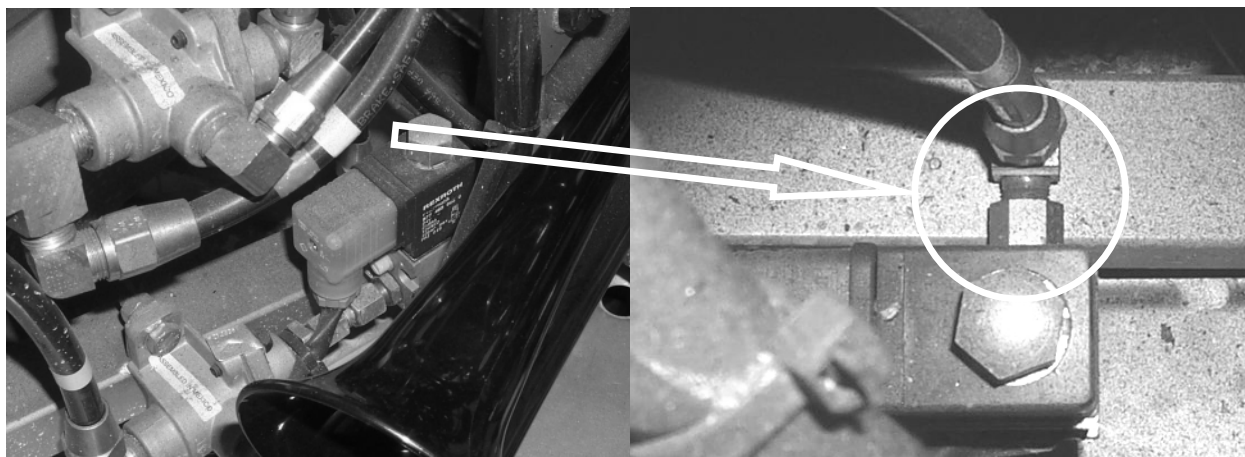


Figure 7 - New air horn fittings:
VH 637310770 + VH 637314350 +
VH 637307060 + VH 637307010 +
VH 660515907

VH reference	Description	Qty.
VH 637310770	Fitting, elbow, 1/8" NPT x 6 mm dia. tubing	1
VH 637314350	Nut, 6 mm	1
VH 637307060	Cutting ring, 6 mm	1
VH 637307010	Insert, 6 mm	1
VH 660515907	Tubing, nylon, 6 x 1 mm	#

4. Brake interlock solenoid valve

Fittings remain unchanged, but a thick wall alternative for VH 637315720 is available.



**Figures 8 and 9 - The brake interlock solenoid valve fittings remain unchanged:
VH 637315720 + VH 637312880 + VH 637309780 + VH 660555504 + VH 637308240 + VH 634201870**

Parts

VH reference	Description	Qty.
VH 637315720	Adapter, 1/8" BSP x 1/8" NPT	1
VH 637312880	Fitting, elbow, 1/8" NPT x 3/8" dia. tubing	1
VH 637309780	Nut, 3/8"	1
VH 660555504	Cutting ring, 3/8"	1
VH 637308240	Insert, 3/8"	1
VH 634201870	Tubing, nylon, 3/8" DOT – SAE J844	#

Alternative parts for units with interlock brake option (kneeling and/or ADA wheel chair lift equipped)

VH reference	Description	Qty.
VH 10786814	Thick-wall alternative for VH 637315720	#
VH 637318250	O-ring, spare, for VH 637317610	#
Local purchase	Pipe sealant, Loctite 577	#

- Old and new parts are interchangeable and will be available as service replacements.
- Parts may be purchased from your nearest ABC Customer Care & Parts Source service center.
- Parts and products disposition: discard according to applicable environmental regulations.

PROCEDURE:

If you do not have the expertise to perform present procedure, do not hesitate to go to your nearest ABC Customer Care & Parts Source dealership.

1. General:

- This job should be executed by an automotive technician having experience with air system service.
- For more information refer to the Pneumatic Diagram Booklet that comes with the coach, the Maintenance Manual and the Operator's Guide Book.

2. Special tools, equipment or services:

- No special tools, equipment or services are required.

3. Preparations:

- Park the coach on a level surface service with the front wheels straight. Apply the parking brake and shut down the engine.
- Switch off all systems and turn off the battery master switch.
- Put a "DO NOT OPERATE" tag on the instrument panel.
- Bleed the auxiliaries air tank.
- Read the entire procedure before beginning to work.

CAUTION: Observe safe shop practices at all times.

4. To replace adapter VH 637315720 by thick-wall adapter (VH 10786814):

NOTE: All compressed air tubing has been color-coded.

- 1) Open the service door below the driver's compartment.
- 2) Locate the leaking adapter at solenoid valve bank V543 (see Figure 3) or the brake interlock solenoid valve (see Figure 8).
- 3) If applicable cut the tie wraps making up the tube bundles and identify the lines (color-coded).
- 4) At the valve (bank), undo the fitting nut connecting the line to the elbow fitting. Tap the nut lightly with a wrench to dislodge the cutting ring from the seat of the fitting and disconnect the line.
- 5) If applicable undo and remove the two Allen bolts securing the valve bank to the bulkhead.
- 6) Unscrew and remove the elbow fitting and adapter from the valve (bank).
- 7) Inspect the solenoid valve port(s) of valve for damage. Damaged threads can be restored. Cracked ports require the valve to be replaced.
- 8) Separate the elbow fitting from the adapter. Discard the adapter.

Inspect the elbow fitting thread for damage.
Replace as required.

- 9) Apply a drop of pipe sealant (Loctite 577) on the male thread of the adapter.
Install thick-wall adapter VH 10786814 into the valve port.
Secure hand tight.
- 10) Apply a drop of pipe sealant on the tapered thread of the elbow fitting.
Holding the adapter steady with one wrench, run the elbow up the thick-wall adapter until resistance is felt.
Rotate the elbow further clockwise to receive the incoming tubing.
If applicable reattach the valve bank to the bulkhead with the Allen bolts.
Secure hand tight.
- 11) Reconnect the tubing to the elbow fitting.
Run-up the fitting nut to finger tight.
Holding the elbow steady with one wrench nip-up the nut.
- 12) Pressurize the auxiliaries pneumatic circuit and check the new installation for leaks with a soapy solution.
Correct installation as necessary.
- 13) If applicable reassemble the tube bundle with tie wraps.
- 14) Close the service door below the driver's compartment.

Procedure complete.

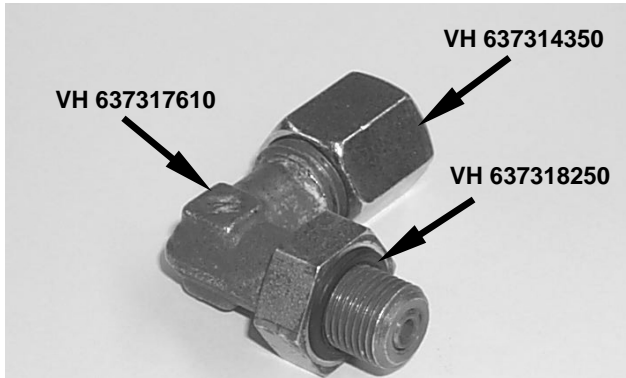
DISCLAIMER:

The procedures contained herein are not exclusive. Van Hool cannot possibly know, evaluate, or advise the transportation industry of all conceivable ways in which a procedure may be undertaken or of the possible consequences of each such procedure. Other procedures may be as good, or better, depending upon the particular circumstances involved.

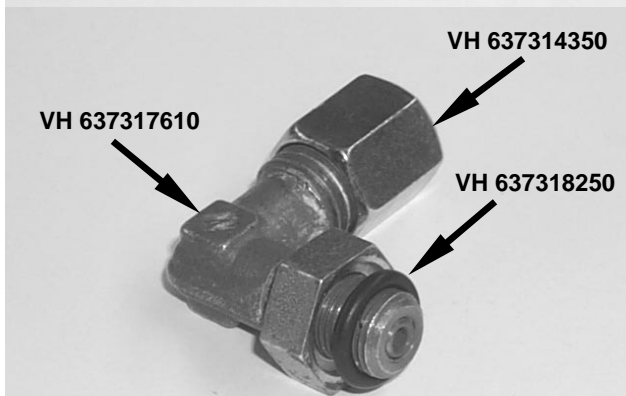
Each carrier who uses the procedures herein must first satisfy itself thoroughly that neither the safety of its employees or agents, nor the safety or usefulness of any products, will be jeopardized by any procedure selected.

SERVICE INFORMATION:

Service Bulletins are issued to supplement or supersede information in the Van Hool manuals. Note Service Bulletin number, date and subject on the register at the end of the relevant chapter(s). File Service Bulletin separately for future reference.



O-ring fully installed



O-ring before assembly

How they seal

Straight threaded BSP fittings

Adjustable standpipe elbow fittings having straight threads, either BSP (part # VH 637317610) or metric, can be run up the solenoid valve port and set at any desired angle to accept the incoming tubing. This is possible because they have a jam nut with a recess, in which an O-ring is installed (VH 637318250).

Unlike pipe threaded fittings they do not seal on the thread, but on the O-ring.

To install, run the fitting up the port until a few threads remain.

Adjust the fitting position to face the incoming tubing.

Install the tubing and tighten nut VH 637314350.

Tighten the jam nut with the O-ring to obtain an air tight seal and keep the fitting in position.

If leakage occurs, further tighten the nut. Should leakage persist, replace the damaged O-ring.

Pipe threaded (NPT) fittings

When working with pipe threaded fittings an adapter is required to connect the straight BSP threaded solenoid valve port to the NPT elbow fitting.

NPT fittings can seal joints pressure tight. The pipe thread roots are wider than the crests. When the threads are wrenched together, the roots crush the sharper crests of the mating threads.

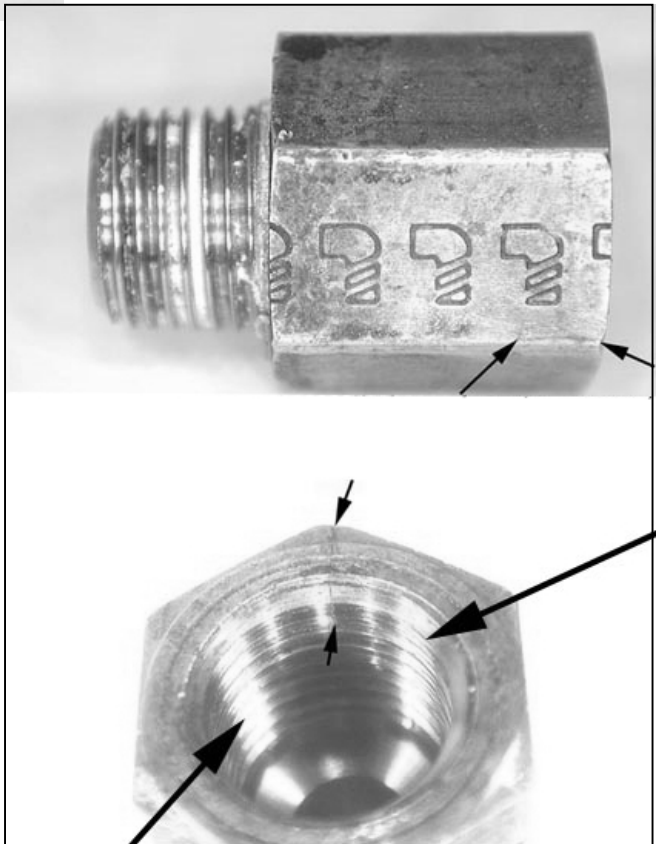
This forms a metal-to-metal seal.

To further ensure tightness, a thread sealant is used.

When installing the NPT elbow fitting into the solenoid valve adapter shown on the right a problem may arise when trying to line up the fitting with the incoming tubing. There are cases that it is necessary to complete almost one more turn to achieve line-up.

Doing so can split the adapter and cause leaks (see arrows).

To cure the problem a thick-wall adapter VH 10786814 has been introduced, which is able to withstand the extra wrenching.



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