



The Right Connection™

Flexible Hose Assembly Installation, Maintenance & Safety Guidelines

Provided the correct and full conditions of use have been given at the time of order placement and the assembly is subsequently installed within its design parameters, the flexible hose assembly (FHA) or pressure equipment can give many years of satisfactory service life. To help maximise this service life the following guidelines should be followed.

1. Integrity

The integrity of FHAs is very dependant on the correct selection of hose product and adherence to the installation procedures. Dixon suggest that all personnel required to install, inspect and maintain FHAs should be formally authorised, and fully conversant with the appropriate installation, test and maintenance procedures, failure criteria etc.

2. Safety Considerations

- FHAs should not be used where it is safer to install permanent pipework.
- Design – FHA's suitability with systems piping and equipment.
- Application – suitability of the FHA in relation to media, pressures, temperature and when used in suction applications, ability to withstand vacuum.
- External Environment - FHAs should only be used for duties for which they are approved.
- Installation - FHA's should be adequately supported and installed to the manufacturer guidelines, as applicable and consistent with the best practice principles contained within this guidance document.
- Length – FHA's should be kept to a minimum, consistent with flexibility and required function.
- Electricity – dangers of static electricity in the application and effects on all components associated with FHA's continuity requirements.

3. Vibration/Movement

FHAs may eliminate the transmission of vibration or movement in a specific application. FHAs will only efficiently eliminate the transmission of vibration, movement or noise if the adjacent pipework is properly anchored on the downstream side of the hose. In the worst cases, failure to ensure this can lead to uncontrolled movement of the FHAs and premature failure.

4. Misalignment

FHAs should not be used as a remedy for poor design or installation, eg to correct misalignment of rigid components.

5. Degradation

Degradation of FHAs can be accelerated due to heat, environmental conditions or contamination of the outer coverings and braids due to chemicals, ultraviolet light, ozone, salt, water etc. It should be noted that the fluid composition could change over the expected lifecycle.

Note: *Heat tracing and insulation can considerably accelerate any corrosion mechanisms.*

6. Storage

All FHAs should be stored in clean, dry conditions and hoses of rubber and composite construction should be kept in a cool atmosphere protected from direct sunlight. Some hose linings, if not protected prior to putting into service, have a finite shelf-life.

7. Cleaning and Flushing

All components used in a system that includes a FHA should be cleaned and flushed prior to use, to prevent debris being carried, damaging the liner of the hose.

8. Operations, Maintenance, Inspection & Testing

Users should ensure that all FHAs are subject to a periodic inspection routine. Only authorised, competent personnel should be permitted to install, inspect and maintain flexible hose lines. Visual inspection of the hose body for cuts, kinks, bulges, signs of abrasion, corrosion products etc. Particular attention should be focused close to the end coupling for signs of over-bending or leakage.

9. Changing Conditions

The user should be aware of changing conditions, which may move the FHAs away from the original design intent. Changes can include, but are not limited to: pressure, temperature, flow, media etc.

10. User's/Purchaser's Responsibility to Define Requirements

The user or purchaser of any FHA should always ensure that the following information is provided as applicable:

Always consider and properly define the application of the FHA by referring to:

STAMPED: Size, Temperature, Application, Media, Pressure, Ends, Dixon. In addition consider static or dynamic use of hose and the working environment.

11. Legal Requirements

It is a legal requirement under health and safety law, power regulations and the Pressure Equipment Directive 97/23/EC that those responsible for work activities ensure that hazards are adequately identified risks are adequately assessed and that suitable control measures are put into place.



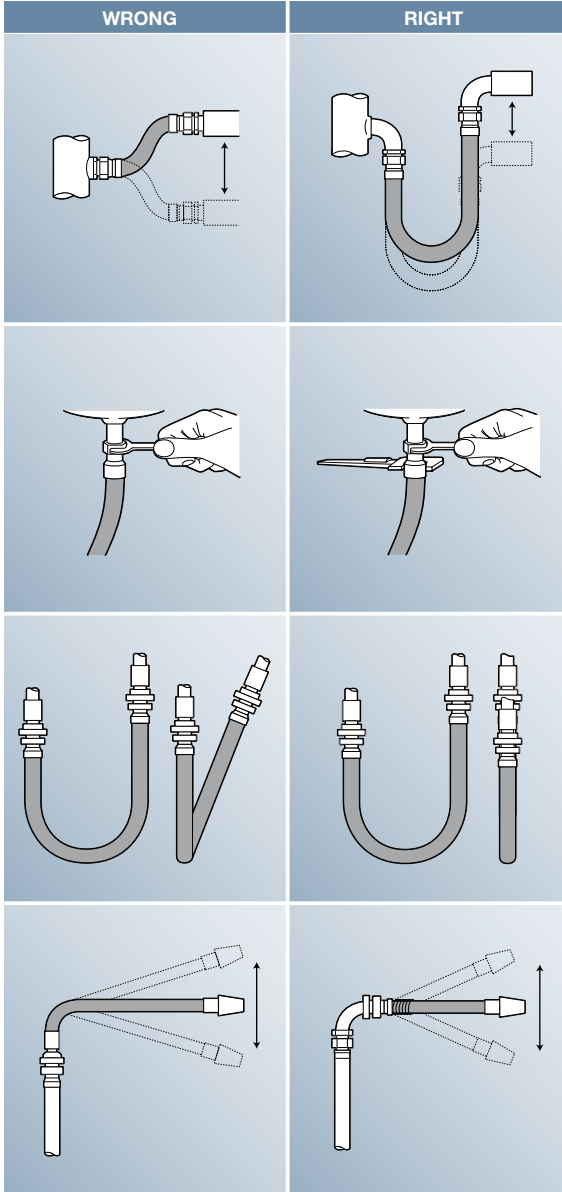
**Dixon Group Europe are Certified to PED 97/23/EC Module D1
by Lloyds Register Quality Assurance. Notified Body 0038**



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INSTALLATION



Note: Poor installation can cause leaks and contamination

Flexible Hose Assemblies (FHAs) should always be handled with reasonable care, and should not be subjected to over straining. The design of hose supports and saddles should be to ensure that the minimum bend radius is not compromised.

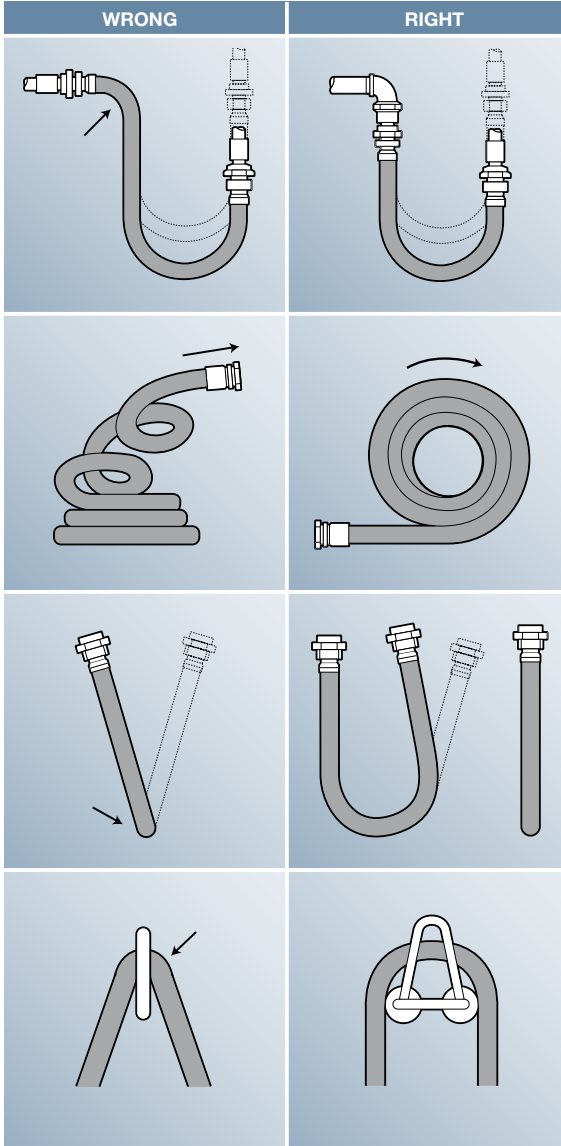
FHAs should never be forcefully deformed, crushed, twisted or subject to flow shut-off by kinking. Avoid routing or dragging FHAs over sharp or abrasive surfaces.

FHAs should not be allowed to hang between equipment that can move and cause FHAs to become over-stretched or bent.

The following considerations should be taken into account before the FHA is installed in either a static or flexing application.

- It is essential that the mating couplings are completely free from foreign matter, burrs etc. Damage, corrosion or contamination to the mating surfaces will cause joint failure in service.
- The installed bend radius of the FHA must not be less than the minimum bend radius specified.
- Union Nuts should be hand tightened at both ends and the FHA be allowed to adopt its natural position prior to tightening.
- FHAs should not be installed in a twisted condition, since this puts unbalanced tension on the hose and reduces the working life of the assembly.
- FHAs should not be installed in applications where compression, axial extension, or torsion could occur.
- Dixon always recommends the use of a 'King' Hose Safety Restraint Cable on FHAs.

TAKING FLEXIBLE HOSE ASSEMBLIES OUT OF SERVICE



FHA's which have been taken out of service for a temporary period to be subsequently re-used at another time, should always have the media drained from the hose. The FHA should also be cleaned and flushed if required.

The FHA should then be stored in clean, dry conditions. FHA's of rubber and composite construction should be kept in a cool atmosphere protected from direct sunlight.

FHA's which have been identified as being unfit for purpose should have the end couplings removed, and the main carcass of the hose marked as 'Scrap'. It should then be disposed of in line with regional disposal segregation procedures, taking into account decontamination requirements.

For additional advice regarding installation, maintenance and the safe operational use of Flexible Hose Assemblies, please contact a member of the Dixon Sales Team

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BE SAFE - ALWAYS SPECIFY DIXON PRODUCT

Note: Poor installation reduces hose life and can be potentially hazardous