Installation and Operation Manual

Expansion Joint / Flexible Hose

Mechanical Services & HVAC Products

F83MJ16 | F83MJ25 |F83MH16 | F83MH25 | F85MH16 | F85MH25

This manual is also available online.

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SAFETY PRECAUTIONS

Caution

Read and understand carefully this document prior attempting to install Fivalco® products. Failure to follow these instructions could cause severe injury, product and/or property damage.

Installation, maintenance and replacement of Fivalco® products must be implemented by an experienced, well trained installer. Wear safety glasses, helmet, hand and foot protection during installation.

The owner is responsible for maintaining the system in proper operation condition.

Fivalco shall not be held responsible for any incidents arising from improper installation, operation and maintenance work. The responsibility for this must rest with the installer and user.

Disclaimer

This manual serves as a general guideline and reference to the installers and users. Every effort has been made to ensure the information contained in this manual is accurate at the time of publication. Fivalco Limited assumes no responsibility or liability for any errors and/or misinterpretation of the information. Contact your local vendor, distributor or Fivalco Limited for detail technical data and specification of each model, and if any additional information is required. We reserve the right to alter this manual without notice.

"THE QUALITY GOES IN BEFORE OUR NAME GOES ON"

fivalco®

CONTENTS

Expansion Joint / Flexible Hose

EXPANSION JOINT / FLEXIBLE HOSE

1 GENERAL

Expansion joint is designed to absorb the piping thermal expansion or contraction while flexible hose is designed to undertake the lateral movement, to compensate for pipe misalignment and movement, see figure 1. Both of the products are used to accommodate vibration, reduce noise, relief stress and prevent system shock. Expansion joint shall not be used to align the pipe line.

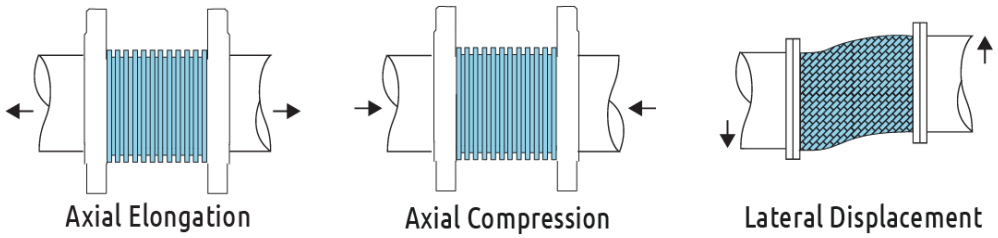

Figure 1: Expansion joints are used to compensate axial elongation and axial compression while flexible hose is designed to accommodate the lateral displacement.

2 UNLOADING & TRANSPORTATION

A vital consideration in handling metal joints and hoses should be to avoid corrosion on the metal body.

Joints and hoses should be unloaded carefully. Each of them should be carefully lowered from the truck to the ground; it should not be dropped. In the case of larger size, forklifts or slings around the body of the joints and hoses or under the skids should be used for unloading. Only hoists and slings with adequate load capacity to handle the weight of the joints and hoses should be used. Only hoists and slings with adequate load capacity to handle the weight of the joint and hose should be used. Failure to carefully follow these recommendations is likely to result in damage to the joints or hoses.

3 STORAGE

In order to prevent the entry of foreign material that could cause damage to the surface, or joint or hose interior, do not remove the protection wrapper or unbox the joint or hose until installation. Whenever practical, the product should be stored indoors under dry, cool conditions, away from direct sunlight and corrosive or otherwise chemically active atmosphere. Storage temperature should not exceed -10˚ C and 50˚ C. They should be stored flat on the flange face with no excessive weight on top of them.

4 INSPECTION PRIOR TO INSTALLATION

Metal joints and hoses should be inspected at the time of receipt for damage in shipment. The initial inspection should be to verify compliance with specifications (type, size, material, pressure and temperature ratings), and type of end connections. Inspection personnel should look for any crack line, impurity or damage on the body and/or flanges, and any

other evidence of mishandling during shipment. Contact your vendor or local representative immediately if any disorder is found.
Check the joints and hoses you are installing is compatible with the medium it might handle. The special medium is prohibited to be used as it can cause chemical reaction on the joints and hoses.

Check that the joints and hoses rated temperature, pressure and allowable movement will not be exceeded.

Contact your vendor or local representative immediately if any disorder is found.

5 INSTALLATION

At the jobsite prior to installation, each metal joint and hose should be visually inspected and any foreign material in the interior of the body should be removed.

Ensure that the system is supported so that the joints or hoses does not carry the weight of the piping. Expansion joints shall not be used to compensate for mis-aligned piping connection.

Before being installed, the joints and hoses need to be cleaned so as to eliminate the dust caused during the transportation and storage. Confirm the type of connection and standard before starting the installation work.

Make sure to provide sufficient space for joints and hoses for easy installation, maintenance, inspection and replacement.

During installation, it is essential to ensure an accurate centering between flanges and in a well aligned position to minimize the stress that would be acting on the joints or hoses.

Bolts should be installed from the bellows side to ensure that the bolts do not interfere with the bellows during periods of compression.

Make sure that the sealing faces of the joint or hose, bear against mating flanges that are flat and clean over the whole width of the body. All bolts or couplings should be checked for proper tightness and protected by the installer to prevent corrosion, either with a suitable paint or by polyethylene wrapping.

If the flexible hose is equipped with a braid, the hose cannot be extended beyond their maximum allowed length. The flexible hose repetitively bents times number will determine the life span. Also, if bent in excess of its allowable minimum radius, the pressure resistance ability of the flexible hose will be reduced. Do not install the flexible hose while the hose assembly is in twisted status.

Bolts must be tightening in a crosswise pattern (see figure 2). Installer should ensure that the valve flanges are well aligned and an even pressure on the gasket surface is applied.

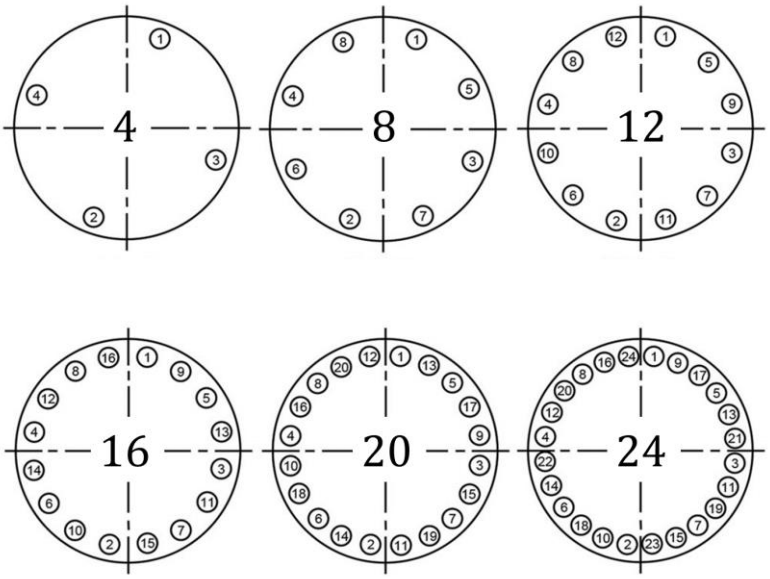

Figure 2: Crosswise pattern for tightening or loosening bolts.

On completion of the installation, joint and hose location, size, make, type, date of installation, and other information deemed pertinent should be entered on permanent records.

Installation guide for screwed end flexible hose
(F85MH16 | F85MH25)
Metal flexible hose should always be handled with reasonable care, and should not be subject to over straining and twisting.

The design of hose supports and saddles should be to ensure that the minimum bend radius is not compromised. It should not be allowed to hang between equipment that can move and cause metal flexible hose to become over-stretched or bent.

Metal flexible hoses should not be installed in applications where compression, axial extension, or twisting could occur.

Sealing compounds may be used but excessive use of hemp type materials should be avoided as this increase thread interference and may cause overstressing of the body ends.

Ensure the threads are properly engaged and proceed to tighten the flexible hose onto the pipe. The wrench must be used to tighten the socket at the counter pipe side to avoid distortion of the hose and the flexible hose should be allowed to adopt its natural position prior to tightening.

For the other end of the flexible hose, use the same methods as the above. When the equipment is operated after the installation, the bolts are possible to be loosened due to the vibration. Remember to check and tighten up the loosen bolts.

6 OPERATION OF HOSES AND JOINTS

Expansion joint is used to compensate axial elongation and axial compression while flexible hose is designed to accommodate the lateral movement.

Installers and users should ensure that the metal joint and hose are used and operated within its allowable tolerance at all time. Casual check on elongation, compression, lateral displacement and angular movement should be carried out frequently to ensure its efficiency and functionality. Please refer to our catalogues for the dimensions and allowable movements.

7 MAINTENANCE

If the metal joint or hose is installed according to our standard procedures, it is maintenance free. However, for every 4-5 years, we recommend that you carry out a routine check for leaks around the flange gaskets. All seals will in the course of time be influenced by air and sunshine, frequent and careful checks can reveal leaks. Moreover, we recommend you to adjust the bolts in the flange connections, as the compression of the flange gaskets may be reduced in the course of time and thus leaks may arise.

8 WARNINGS

The working pressure, temperature, suitable media of metal joint and hose must be accord with the regulation of the illumination, or that maybe dangerous.

Prior to any maintenance work that requires disassembly make sure that the pressurized line involved is isolated, depressurized and drained before starting any dissembled. Failure to do so may result in sudden pressure release and subsequent severe injury or death. If the pressure exceed regulation, the metal joint and hose maybe leak and the body maybe explode of craze.

WARRANTY STATEMENT

Fivalco's products are designed, engineered and manufactured within its specification of intended use, under the highest quality control possible. Commitment on quality and performance is always at the top of our agenda.

Fivalco warrants that for a period of thirty-six (36) months following delivery, the Fivalco products will perform in accordance with published specifications, and will be free from defects in material or workmanship provided that the products are stored and installed in accordance with recommendations in our catalogues.

Fivalco's obligation shall be to replace any product found to be defective in design, material or workmanship during the warranty period. Fivalco shall not be obligated to refund the purchase price and other liabilities on monetary compensation, nor shall it be obligated to pay for any labor or costs associated with the removal of the defective products or the reinstallation of those products. No warranty coverage will be provided for products that have been altered and / or used for a purpose other than that for which they were designed or installed contrary to Fivalco's guidelines.