MIV

Metalska industrija Varaždin d.d.

MIV Dismantling Joints

Operating, installation and maintenance instructions

Edition 1 - / December 2014

Metalska industrija Varaždin d.d.

Table of contents

1 Overview

Read the entire instructions carefully before commencing the dismantling joints installation and start-up work.

The warranty only covers manufacturing and material faults. MIV takes no responsibility for any damage caused by improper installation, maintenance or storage.

Explanation of symbols

This sign describes caution, warning or hazard.

This sign describes mandatory action.

2 General

This operating, installation and maintenance instructions explains how to operate and handle the dismantling joints, and describes only standard type of dismantling joints.

MIV Dismantling Joints allow easy installation and removal of the valves

MIV Dismantling Joints can be used for the following media:

- Water;
- Drinking water;
- Sea water;
- Sewage water;
- Effluent;
- Steam and hot water;
- Air.

For any additional information, please contact the manufacturer.

If the dismantling joint is to be operated under deviating operating conditions and in other fields of application, the manufacturer should be consulted.

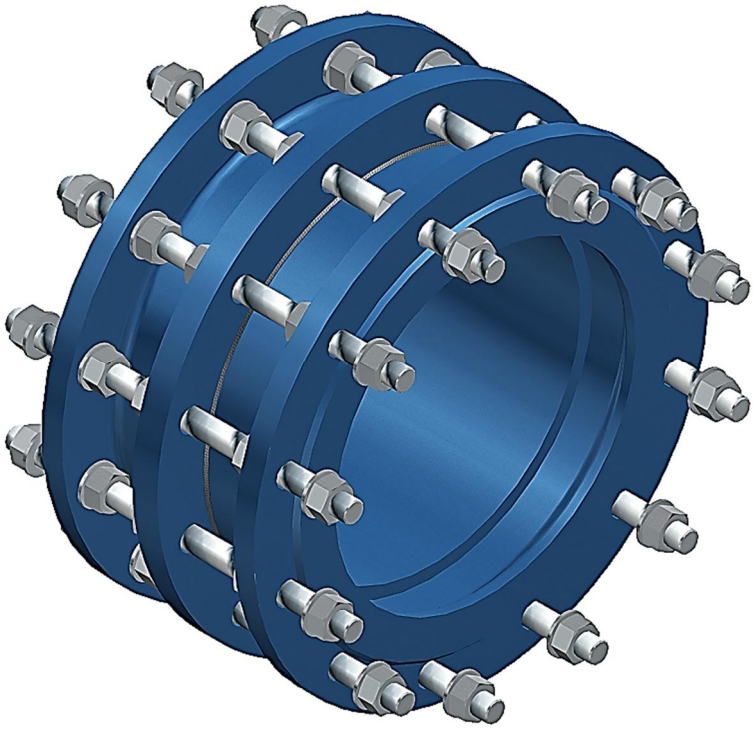

Figure 1: Standard MIV Dismantling Joint

2.1 Safety

These operating and maintenance instructions have to be observed at all times.

Non-compliance with this operating and maintenance instructions may cause:

- Serious personal injuries
- Damaging nearby equipment

It is not allowed for the user to modify the product or the mounting parts/fittings supplied with it. MIV does not assume any warranty or liability for consequential damage arising from the non-compliance with these instructions.

Unauthorized, unintentional and unexpected operation as well as dangerous movement caused by stored energy (compressed air, pressurized fluids) should be avoided.

Installation, maintenance and other activities performed on the dismantling joints should be done only by qualified and specially trained personnel. For further specifications and information such as dimensions, materials and fields of applications, please refer to the related documentations (V7-10, V7-10C, V7-10D, V7-10F, V7-10T)

2.2 Proper use

The standard model can be used to allow the easy, efficient and quick removal or installation of the dismantling joint.

The maximum operating temperatures and pressures stated in the MIV catalog and in these instructions should not be exceeded. The dismantling joint should only be exposed to pressures within the range of its nominal pressure.

For any deviating operating conditions and applications the user should obtain the manufacturer's prior written approval.

In case of any uncertainty referred to this operating, installation and maintenance instructions, please contact the manufacturer.

3 Transportation, receiving and storage

3.1 Transportation

To transport the dismantling joints to its installation site, it should be packed in a stable, properly sized container. The container also needs to ensure that the dismantling joints are protected against weather influences and damage. When the dismantling joints are transported long distance (e.g. overseas) and exposed to special climatic conditions, it needs to be protected by sealing it in plastic wrapping and adding a desiccant.

3.2 Receiving

Upon receipt of product, it is important to follow these unpacking and inspection procedures. If external damage to the shipping container is evident upon receipt of product, please request that a representative of the shipping carrier be present before unpacking the product.

Carefully open the shipping container, following any instructions that may be marked on the container. Remove all packing material surrounding the dismantling joints and carefully lift it from the container. It is recommended to keep the shipping container and all packing material for reuse in storage or reshipment.

Visually inspect the dismantling joints for any signs of damage including scratches, loose parts, broken parts or any other physical damage that may have occurred during shipment. If damage is observed, immediately file a claim with the shipping carrier. If applicable, please photograph the damage detected on the dismantling joints. Dismantling joints that are damaged during transportation are the responsibility of the customer.

3.3 Storage

During storage, the dismantling joints should be protected against sand, dust and any other impurities, and therefore the dismantling joints should be stored in a dry, well-ventilated area. Avoid long-term storage of the dismantling joints outdoors exposed to the effects of rain, sunlight or frost. The direct exposure of the dismantling joints to radiation heat emitted by radiators should be avoided. It is also recommended to utilize the original shipping container and packing materials to properly store the dismantling joints.

When hoisting the dismantling joint, always use lifting straps threaded around the dismantling joint body. Avoid hoisting the dismantling joint with the lifting straps threaded around bolts. Use special caution when hoisting, transporting and installing the dismantling joint. Even minor impacts may damage the dismantling joint adjustments.

Take the weight and size of the dismantling joints into account when handling it.

4 Technical data

4.1 Design

Dismantling joints are designed for the easy assembly and disassembly of pipe sections and valves. Without dismantling joints it would be almost impossible to longitudinal adjust the valve or similar items with the pipeline when they are installed. This helps with the maintenance or replacement of pumps, valves or similar items. Each fitting has a standard range of length adjustment of up to 50 mm and can accommodate limited lateral and angular misalignment.

4.2 Operating conditions

The range of nominal diameters is from DN 40 to DN 1600 for PN 10 and 16 bar.

Using the fitting above temperature and pressure limits can damage the internal and external elements of the dismantling joint.

Ultimate responsibility for material selection rest with the customer, as only the customer knows the particular use of the dismantling joint and the exact operating parameters to which it will be subjected.

In case of any uncertainty referred to the fitting design specifications, please contact the manufacturer.

5 Installation in the pipeline

5.1 General installation instructions

Incorrect installation may result in serious personal injury as well as malfunction of the equipment. These instructions should therefore be followed carefully when installing the dismantling joint. These instructions do not cover all possible operating scenarios.

For any specific operating condition guidance, please contact the manufacturer.

5.2 Site requirements

Before the dismantling joint is installed, it should be checked for any transport or storage damage. While being stored on the construction site before its installation, the dismantling joint should be protected against dirt by an appropriate cover. When the dismantling joint is installed it should be free of dirt and dust. MIV does not assume any liability for consequential damage caused by dirt, grit etc.

It is also advisable to check that the dismantling joint is free from any impurities induced by transportation and storage.

The installation of the dismantling joint in the pipeline should be a stressfree as possible. When work is done in the valve area which may cause dirt (e.g. painting, erection of brick walls or concrete work) the valve should be protected by a suitable cover.

Before installation, review the application and chemical compatibility of the operating fluid to the materials of construction of the dismantling joint.

5.3 Place of installation

The requirements for the place of installation are:

- to ensure there is enough space to allow function checks.
- to ensure there is enough space to allow maintenance work (e.g. retighten the nuts on the dismantling joint).

In case of open-air installation, the dismantling joint should be protected against extreme weather conditions by covering it properly.

5.4 Installation of the dismantling joint

When the dismantling joint is installed between pipeline flanges, the flanges should be plane-parallel and in true alignment. Misaligned pipelines should be put into a true alignment position before the dismantling joint is installed. Otherwise the body may be exposed to impermissibly high loads and strain during operation which may even cause the body to break. The components referred to the installation instructions are set out in ***Appendix I***.

The dismantling joint should be installed only by authorized personnel.

Before installation dismantling joint pre-installation checklist should be reviewed as followed:

- Ensure that the pipeline is pressureless and free from any tensions and electric current.
- Ensure that the working pressures and temperatures are within the specified capacity of the product being installed.
- Ensure that the construction material of the dismantling joint is compatible with the media flowing in the pipeline.
- Ensure that the pipeline's mating flanges are the same type as the valve being installed. Raised face flange ends cannot be mated to flat face flange ends.

Step 1.:Carefully unpack the dismantling joint.
Step 2.:Inpect the dismantling joint to ensure that no damage occured during transport and no parts
Step 3.:Place the dismantling joint into position avoiding contact or impact with other equipment.
Step 4.:Check the mating flanges to insure that they match the flange drilling of the dismantling joint. Also, confirm that the flange misalignment or offset is within the tolerance that the dismantling joint will accommodate;
Step 5.:Unpack the fitting. Loosen the end ring nuts (Pos. 6) to allow the flange adapter (Pos. 2) to move freely within the flange coupling body.
Step 6.:Lift the dismantling joint into position with the flanged coupling assemblies intact.
Step 7.: Install standard flange threaded rods through remaining holes in flanges. Evenly tighten the threaded rods around the flange by diametrically alternating opposite positions at approximately 35 Nm increments until the recommended torque (shown in table below) has been achieved. Wait ten minutes and retighten the bolts. Force preload and tightening torques for joints with bolts of strength class 8.8 in accordance with standards HRN EN ISO 4014:2012; HRN EN ISO 4017:2012 and HRN EN ISO 4032:2005.

Torque recommendation		**Torque recommendation**	
Bolt size	Torque [Nm]	Bolt size	Torque [Nm]
M16	190	M33	
M20	340	M36	2100
M24	600	M39	
M27	940	M45	
M30	1240	M52	

Step 8.:Once both flange joints are assembled and properly tightened, make sure the pipe spool is centered between the flanged coupling bodies. The end ring and gaskets should already be loosely assembled, but if they are not, slide the flange coupling gasket into position with the beveled edge engaging the beveled end of flange coupling body and slide the end ring against the gasket.

Step 9.:Tighten the end ring nuts evenly by alternating to diametrically opposite position.

PRECAUTIONS:

1. Check flanges to make sure you are using the correct size; also check the length of dismantling joint to make sure it will fit in the space allocated
2. Make sure no foreign materials lodge between gasket and spool
3. Avoid loose fitting wrenches, or wrenches too short to achieve proper torque
4. Keep threads free of foreign material to allow proper tightening
5. Take extra care to follow proper bolt tightening procedures and torque recommendations. Bolts are often not tighten enough when a torque wrench is not used
6. Pressure test for leaks before backfilling
7. Backfill and control carefully around pipe and fittings for leaking.

COMMON INSTALLATION PROBLEMS

1. Bolts are not tighten on the proper torque
2. Rocks or debris between spool and gasket
3. Dirt on threads of bolts or nuts
4. Not enough pipe insertion
5. Incorrect mating flange
6. Not having spool piece centered
7. Over-tightened rod nuts

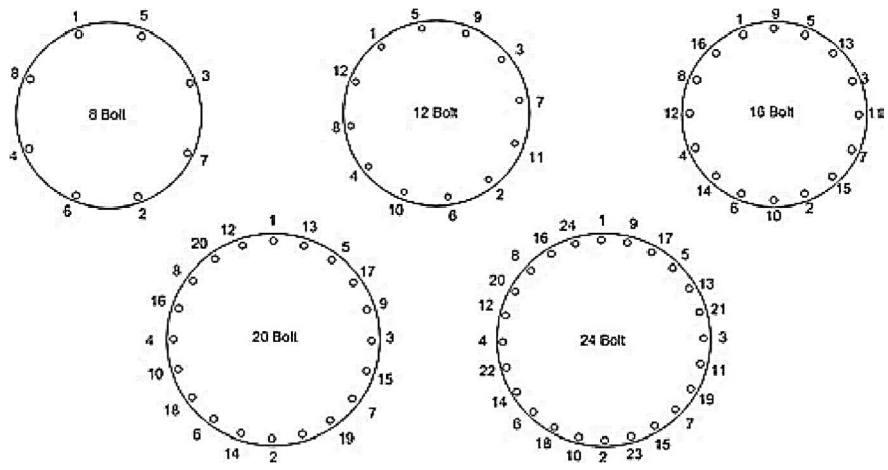

Figure 2: Example of bolting sequence pattern

6 Maintenance and servicing

6.1 General safety instructions

Prior to any inspection and maintenance work to be performed on the dismantling joint the pressurized pipeline should be shut off, the pressure should be relieved and the system should be secured against unintentional switching on. Depending on the kind and criticality of the medium or fluid conveyed, all the required safety regulations must complied with.

Maintenance work on electrical system and components can be performed only by qualified electricians.

Before carrying out maintenance, cleaning or repair work, switch off the power supply and secure it to prevent restarting.

Upon completion of the maintenance work and prior to resuming operation, all connections should be checked for proper fastening and leak-freeness.

6.2 Inspection intervals

The leak-freeness, smooth operation and corrosion protection of the dismantling joint should be checked at least once per year.

Under extreme operating conditions, inspection needs to be done at shorter intervals. The seals can be replaced, if required, depending on the type of fluid conveyed.

If any defect is detected during the inspection, adequate maintenance action should be taken.

In case of any uncertainty referred to the dismantling joint maintenance work, please contact the manufacturer.

6.3 Maintenance and replacement of parts

The components referred to the maintenance instructions are set out in ***Appendix I***.

Prior to any maintenance work, follow the general safety instructions given in section 6.1.

Dismantling joint is durable and dependable in operation and requires very little maintenance during its life cycle. Only the nuts (Pos. 6) should be retightened.

If the leakage is still present after the nuts (Pos. 6) are tighten, the seal (Pos. 4) should be replaced.

All the maintenance work can be done only by authorized personnel.

For all additional maintenance work instructions, please contact the manufacturer

7 Ordering and delivery

7.1 Ordering of the dismantling joint

Order of the dismantling joint should include following data:

- Article number – for example V7-10;
- Nominal diameter – for example DN 400;
- Nominal pressure – for example PN 10;
- Working temperature;
- Inside and outside surface protection (coating).

7.2 Flanges

Connecting dimensions of flanges are according to EN 1092-2 standard for PN 10 and PN 16.

- Thickness of flanges is according to EN 1092-2 standard.
- Connecting dimensions of flanges can also be done according to ANSI, BS, and other norms on special demand.

7.3 Delivery of the dismantling joint

Delivered dismantling joints are ready for installation without additional testing and control.

Standard construction of the dismantling joint is delivered with flanges drilled according to EN 1092-2 for PN 10 and PN 16.

In case of any uncertainty referred to this ordering and delivery instructions, please contact the manufacturer.

8 How to contact us

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APPENDIX I: Parts list and standard materials

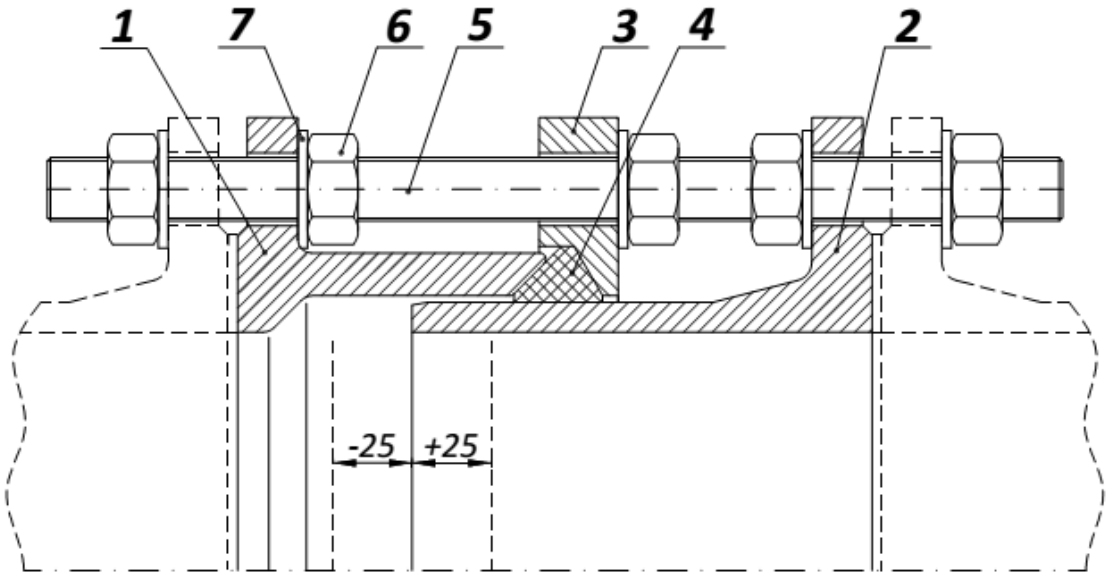

Figure 3: MIV Dismantling Joint design

	PART
1	Body
2	Flange adapter
3	End ring
4	Profile sealing ring
5	Threaded rod
6	Nut
7	Washer

If any other materials are required, please contact the manufacturer.