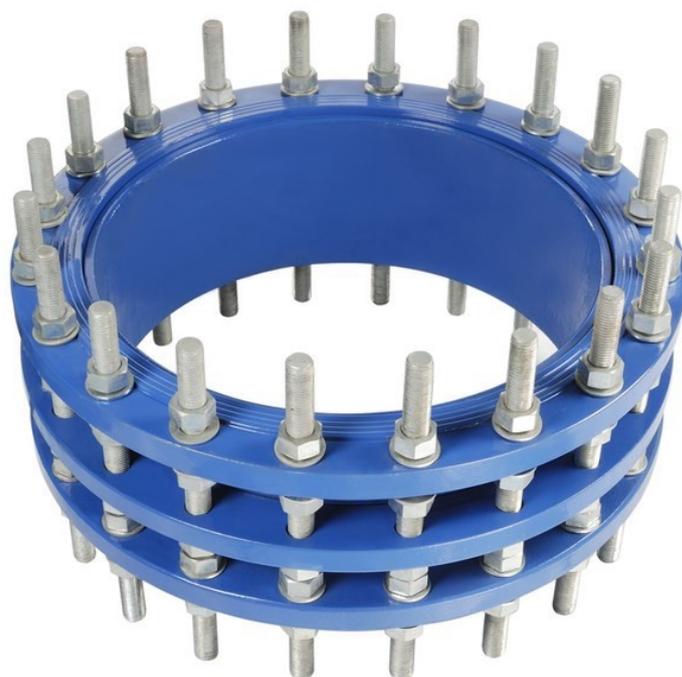




**OPERATING AND MAINTENANCE INSTRUCTIONS FOR
DISMANTLING JOINT RIGID TYPE**

Art. N325-N326-N327 TIS1





OPERATING AND MAINTENANCE INSTRUCTIONS FOR DISMANTLING JOINT RIGID TYPE

INDEX

	Pag.
0. General	3
1. Safety	5
2. Transport and storage	5
2.1. Transport	5
2.2. Storage	6
3. Identification	6
4. Proper use and function description	7
5. Installation	7
5.1. Installation in a pipeline	8
5.2. Removal of valve from the pipeline by a D.J.	9
6. Modes of operation	10
7. Maintenance	10
8. Disposal and recycling	10
9. Contacts	10



0. General

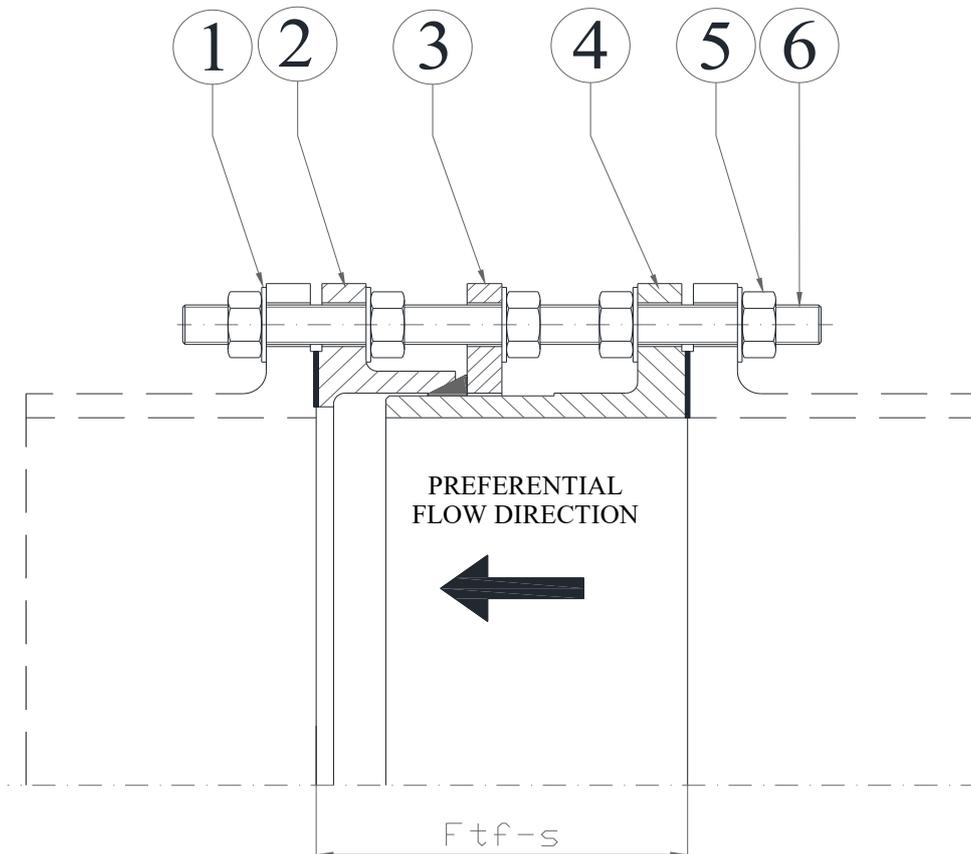
Observing these operation and maintenance instructions, helps you to improve the operational safety and useful life of the equipment, prevent hazards and reduce repair costs and down-time of the product.

ANY OPERATION PERFORMED NOT RESPECTING THIS OPERATION AND MAINTENANCE INSTRUCTIONS, COULD GIVE RISE TO DANGERS AND INVALIDATE THE MANUFACTURER'S WARRANTY.

Dismantling joints are designed to facilitate the removal of flanged valves from pipelines and are used in pipelines where valves may need to be removed for future maintenance/replacement.

For any deviating operating conditions and applications, the manufacturer's written approval must be obtained.

TECHNICAL DESCRIPTION OF VALVES			
VALVES CODES	N325 TIS1 - N326 TIS1 - N327 TIS1		
NOMINAL DIAMETER SIZE	DN80 to DN2000 (PN10-PN16), DN80 to DN1800 (PN25)		
FACE-TO-FACE DIMENSIONS	-		
FLANGE TYPE	EN 1092-2		
WORKING PRESSURE	PN10 - PN16 - PN25		
WORKING TEMPERATURE	Max +70°C		
COATING	EPOXY		
APPLICATION	DRINKABLE WATER	COOLING WATER	WARM WATER
TEST STANDARDS	EN 12266-1		
OPERATING	-		



Dismantling joint consist of the following main parts:

- 1) Washer;
- 2) Downstream flanged spigot;
- 3) Central flange;
- 4) Upstream flanged spigot;
- 5) Nut;
- 6) Tie-rod.

Dismantling joints are supplied fully assembled and ready for installation.



1. Safety

TIS dismantling joints are designed and manufactured to the highest standards and their safety of operation is generally ensured.

However, dismantling joints may be potentially dangerous if they are operated improperly or are not installed for their intended use; unauthorized, unintentional and unexpected actuation as well as any hazardous movements caused by stored energy (pressurized air, water under pressure) must be prevented.

Arbitrary alterations of this product and the parts supplied with it are **forbidden**.

La TIS Service S.p.A. will not assume any liability for consequential damage due to non-compliance with these instructions. When using this joint, the generally acknowledged rules of technology have to be observed. However, these joints can be a danger when handled by untrained staff, so:

installation, servicing, maintenance and inspection work (as well as the replacement of spare parts of the valve) is forbidden for not qualified staff.

Plant manager is responsible for determining the suitability and for ensuring the relevant qualifications of the staff. In addition to this, the plant operator needs to ensure that all employees have understood these operation and maintenance instructions.

Before performing any operation on the pipe or on the valve/joint, make sure that the pipeline section be free of hydraulic loads; couplings and connections must never be disassembled when they are under pressure.

Before dismantling the joint, the pipeline must be completely emptied; carry out the complete emptying of all the duct concerned, special care needs to be taken in case of residue which may continue flowing.

After completing the maintenance works and before resuming operation, check all connections for tightness.

If works are carried out next to the joint, which leads to soiling (concrete work, masonry, painting, sandblasting), the joint must be well protected.

2. Transport and storage

2.1. Transport

Transport has to be carried out carefully; inexperienced handling may cause damages to the joint.

For transportation to its installation site, the joint must be packed in stable packaging material suitable for the size of the joint. It must be ensured that the joint is protected against atmospheric influences and external damage.

When the joint is shipped under specific climatic conditions (e.g. overseas transport), it must be specially protected and wrapped in plastic film and a desiccant must be added.

The factory-applied corrosion protection and any assemblies must be protected against damage by external influences during transport and storage.

For transport purposes and also to support assembly, eye bolts can be used for lifting if present. If not, for manipulation should be used transport belts. The length and positioning of the cables/belts must ensure that the operator and the joint are in safety during the entire lifting procedure.

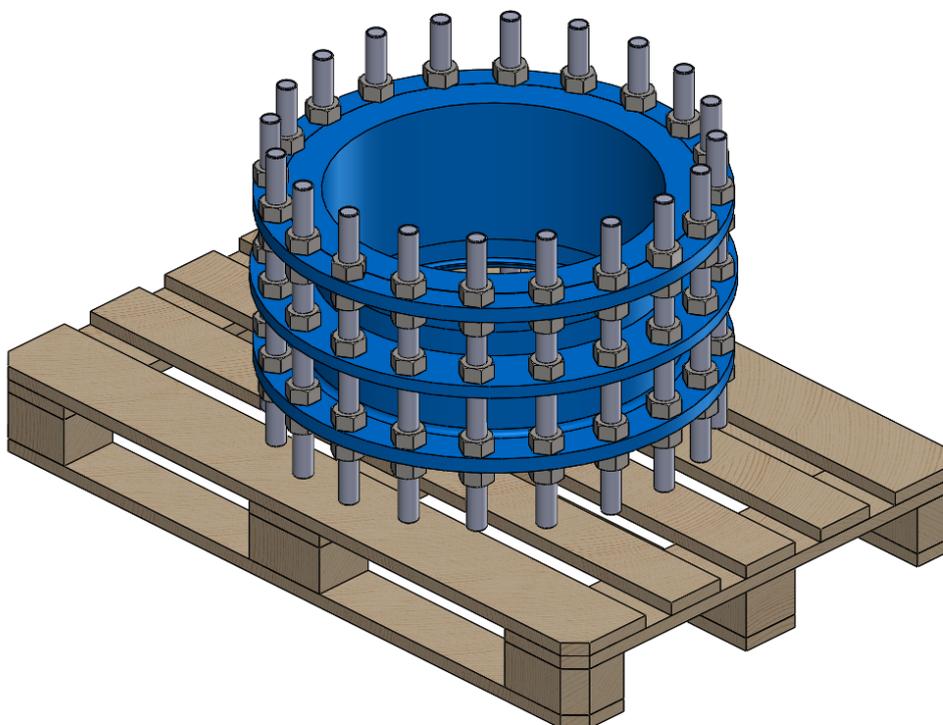
A joint without visible transport damages should be left in the factory packaging during storage and transport, and only unpacked immediately before installation in the pipe section.

Prior to mounting, such damages are to be repaired in an appropriate manner.



2.2. Storage

The elastomeric parts (seals) must be protected against direct sunlight and/or UV light as otherwise their long-term sealing function cannot be guaranteed. Store the joint in a dry and well aerated place and avoid direct heat. Protect any assembly units important for proper function against dust and other dirt by adequate covering. The valve can be stored in ambient temperatures from -10°C to $+50^{\circ}\text{C}$. If the joint is stored at temperatures below 0°C , it should be warmed up to at least $+5^{\circ}\text{C}$ before installation and before it is put into operation.



3. Identification

According to EN 19, on all the joints is casted the nominal diameter (DN), the nominal pressure (PN), the body material and the manufacturer's logo.



4. Proper use and function description

The dismantling joint is designed for installation in pipelines with media temperature up to +70°C. It is not permissible to use the joint with oil or gas media; it can be used for water, raw and cooling water (with appropriate corrosion protection). It is recommended to use only media without risk of clogging.

The dismantling joints are rigid and transmit the full axial thrust of the pipeline as a rigid pipe connection. Changing the length or the angle is not possible during operation. When the dismantling joints flanged spigots (pos.2 and pos.4 pag.4) has been assembled, the axis can be adjusted by $s = 50\text{mm}$ and an angular adjustment by ± 1.5 degrees is possible in central position.

For any deviating operating conditions and applications, the manufacturer's written approval must be obtained!

5. Installation

Possible damages may occur during transport and storage, so, before putting the joint and the equipment into operation, perform a visual inspection of all functional parts.

During the installation, sufficient space for function checks and maintenance work has to be provided.

In case of works around the valve causing dirt (e.g. painting, masonry or working with concrete), the joint must be protected by adequate covering.

Welding works on the pipeline must be performed before the joint are installed to prevent damage to the seals and to the corrosion protection.

Newly installed pipeline systems should first be thoroughly purged to remove all foreign particles.

Residue or dirt particles present in the pipeline may impair the function of the joint.

In particular after repair work or upon the commissioning of new equipment, the pipeline system should be purged again. If detergents or disinfectants are used it must be ensured they do not attack the joint materials.

Welding residue must be removed before the equipment is put into operation.

La TIS Service S.p.A. does not assume any liability for consequential damage caused by dirt, shot-blasting, gravel residues, etc.

For assembly in drinking water pipelines, suitable sealing materials, lubricants and process materials must be used which are approved for use in drinking water pipelines.

Do not over-tighten the bolts of the flanges as this may result in the flanges cracking.

If the joints are installed in the open, it must be protected against atmospheric influences (e.g. formation of ice) by adequate covers.

The elastic profile gaskets used here are made of NBR (as standard) and have sealing volumes proportional to the size of the dismantling piece. The gasket absorbs the main tension differences and transfers tension peaks due to its elasticity and elastic deformation properties.

Elastic seals should therefore only be pre-tensioned until tight sealing is achieved and/or should be re-tensioned after deformation.



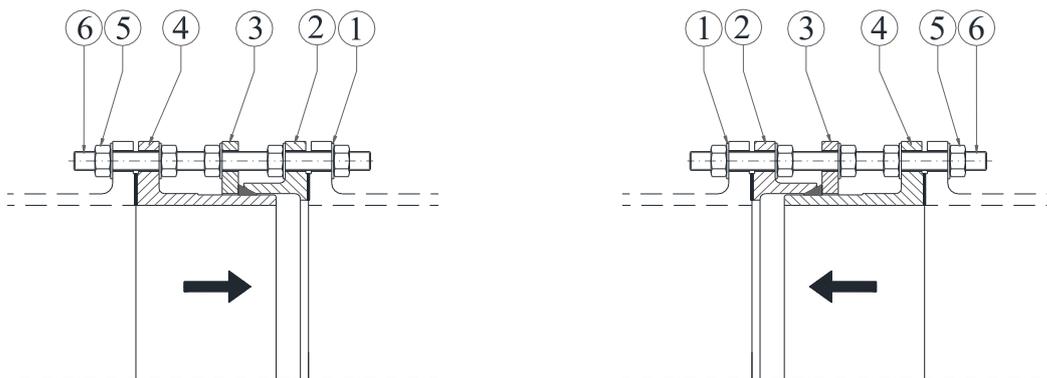
5.1 Installation in a pipeline

For ease of understanding we assume that we are “working” in a new installation and the plant layout is:

upstream pipeline + valve + dismantling joint + downstream pipeline.

Dismantling joints are delivered in their MAXIMUM Face-to-Face length.

1. Unscrew the nuts and washers provided on the external part of the dismantling joint to allow insertion of the tie-rods into the matching upstream valve flange to one end and into the down-stream pipeline flange to the other.
2. Supposing the valve already installed upstream from the dismantling joint, insert the dismantling joint upstream tie-rod ends into the matching valve flange.
3. Insert the gasket (not supplied unless otherwise agreed) in between the two matching flanges and fasten them together by means of the provided nuts and washers previously removed from the tie-rods on that side.
4. Do not fasten the 2 flanges together firmly to allow further adjustment in case of need, but enough to make the joint self-supporting.
5. Extend/withdraw the downstream spigot (2) in order to cover the gap originally existing between the upstream spigot and the matching downstream pipeline flange taking into consideration that some space must be left for insertion of the gasket.
6. Insert the gasket (not supplied unless otherwise agreed) in between the two downstream matching flanges and fasten them together by means of the provided nuts and washers previously removed from the tie-rods on that side.
7. Unscrew the nuts which are no longer in contact with the downstream flange (2) and their washers until they engage the matching flange again.
8. Fasten firmly all the nuts provided at both ends of the dismantling joint both internally and externally. Take care, as it is good practice in hydraulics, to fasten the nuts crosswise moving the spanner from the first nut to the next placed at 180° so as to distribute the load evenly.
9. The dismantling joint is not completely installed yet, since the central flange (3) must be pressed against the downstream spigot. To achieve that, screw the nuts and washers towards the central flange until they come in contact with the flange itself. Do the same with all other nuts, crosswise again.
10. Do not squeeze the sealing element out of its seat (do not apply too much force in doing that) since final adjustments will be necessary as soon as the pipeline is filled with water and operative. At this stage further adjustments by means of a spanner could be necessary.





5.2 Removal of valve from the pipeline by a dismantling joint

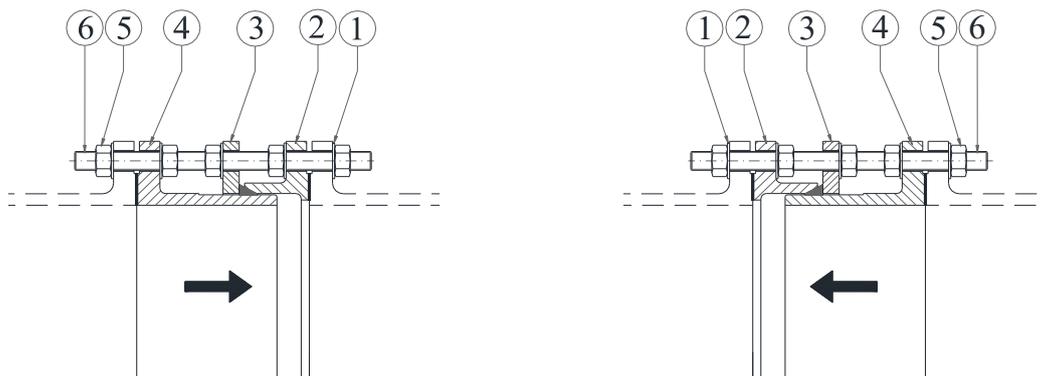
For ease of understanding we consider the following plant configuration:

upstream pipeline + valve + *dismantling joint* + downstream pipeline.

Whenever the valve is to be removed from the pipeline for maintenance purposes, we must intervene on the DJ to allow the necessary room for the in-field operations.

(Refer to pictures below to better understand the operations).

1. Make certain that the pipeline is empty for safety reasons.
2. Unfasten the nuts of the central flange and move them backwards for 30 mm plus the length of the tie-rod protruding from the downstream valve flange plus the thickness of the flange itself or more.
3. Make the central flange slide backward to touch the previously moved nuts.
4. Unscrew and remove the external nuts used to tighten the two upstream matching flanges.
5. Unscrew the internal nuts of the dismantling joint downstream flange to 30 mm plus the length of the tie-rod protruding from the downstream pipeline flange plus the thickness of the flange itself or more.
6. Slide the dismantling joint downstream spigot towards the upstream one
7. From this moment take the necessary precautions when handling the dismantling joint which is becoming looser since it is possible that one part could fall and hit the operator.
8. Hold the joint in position by means of any available crane or hoisting device use the right one according to the size and weight of the dismantling joint being handled.
9. Unscrew the internal nuts of the upstream flange for 30 mm plus the length of the tie-rod protruding from the downstream valve flange plus the thickness of the flange itself or more.
10. Slide the tie-rods upstream one by one, until the downstream valve flange is disengaged from the dismantling joints.
11. At this point fix the dismantling joint firmly in this position and operate on the valve to disassemble or maintain it.
12. To restore the original configuration, refer to the above chapter (Installation of the dismantling joints in a pipeline).





6. Modes of operation

Do not exceed the maximum admissible temperature of the equipment.

Do not exceed the maximum admissible operating overpressure.

Do not use aggressive medium because of surface protection damages and corroding of vital parts of the joint.

In phase of maintenance/repair the valve, use only spare parts approved from La T.i.S. SERVICE; any other parts without original would void the manufacturer's warranty.

User is responsible for ensuring with appropriate safety devices to not exceed the maximum design pressure of the joint.

7. Maintenance

If assembled properly, dismantling pieces do not require particular maintenance. This does not include the corrosion protection cover whose wear and tear depends on the exterior and interior stress it is exposed to.

All the maintenance operations have to be done after the total emptying of pipeline to avoid every risk to the people during this operation.

8. Disposal and recycling

TIS valves are designed and constructed to ensure extremely long lifetime.

At the end of their life, they have to be removed/replaced so the valve must be disassembled and each component separated and sorted according to materials, i.e. :

- various metals
- plastics components
- greases and oils
- electronic components.

Generally applies the following:

- During disassembly phase, carefully collect greases and oils; these substances are hazardous to water and must not be released into the environment
- Arrange for controlled waste disposal or for separate recycling according to materials

! **Observe the regional regulations for waste disposal/recycling.**

9. Contacts

Spare parts can be obtained from La T.i.S. SERVICE Sales departments.

LA T.I.S. SERVICE S.P.A.

Via Lago d'Iseo 4/6 - 24060 - Bolgare (BG) ITALY

Tel.+39 / 035 / 8354 811 Fax. +39 / 035 / 8354 888

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We reserve the right to technical modifications of the data contained in these Operating instructions in case this should be necessary for improving the valves.

Illustrations and drawings concerning the products in this catalogue are merely indicative. They are shown for the only purpose of rendering an exemplified and indicative configurations of the valve.