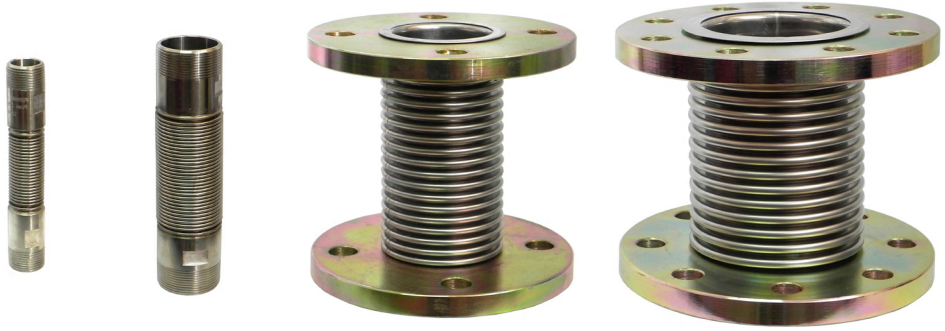
GIUNTI COMPENSATORI/ANTIVIBRANTI
ANTI-VIBRATING FLEXIBLE AND COMPENSATION JOINT
JOINTS COMPENSATEURS/ANTIVIBRATIONS
ACOPLAMIENTOS DE COMPENSACIÓN/ANTIVIBRATORIOS



CE 0408

ZSTS/SWZE/3948

	IT	EN	FR	ES
Pressione massima di esercizio Maximum operating pressure Pression maximum de fonctionnement Presión máxima de funcionamiento	**3 bar (300 kPa)**			
Attacchi filettati / Threaded connections Raccords filetés / Conexiones roscadas	**1/2 - 3/4 - 1 - 1 1/4 - 1 1/2 - 2**			
Attacchi flangiati/ Flanged connections Raccords à brides / Conexiones embridadas	**DN 40 - DN 50 - DN65 - DN 80 - DN 100 - DN 125 - DN 150 DN 200 - DN 250 - DN 300**			
In conformità a In conformity with Conforme a Conforme	Direttiva PED 2014/68/UE	PED Directive 2014/68/EU	Directive PED 2014/68/UE	Directiva PED 2014/68/UE

1.0 - GENERAL INFORMATION

This manual shows you how to safely install, operate and use the device.
The instructions for use **ALWAYS** need to be available in the facility where the device is installed.

ATTENTION: installation/maintenance needs to be carried out by qualified staff (as explained in section 1.3) by using suitable personal protective equipment (PPE).

For any information pertaining to installation/maintenance or in case of problems that cannot be solved with the instructions, contact the manufacturer by using the address and phone numbers provided on the last page.

1.1 - DESCRIPTION

The compensating/vibration damping joints are used to absorb pipe vibrations and changes in length due to thermal dilation, misalignment and angular shifting. This function is carried out by a metal bellow inserted between the two connections.
With all versions, the parts that come into contact with the gas are stainless steel.
With flanged versions, the flanges are swivel, therefore it is possible to adapt them more easily to the plant's counter-flanges, thereby avoiding unnecessary mechanical strain on the bellow.

1.2 - KEY TO SYMBOLS

DANGER: Failure to observe this may cause damage to tangible goods.

DANGER: Failure to observe this may cause damage to tangible goods, injury to people and/or pets.

ATTENTION: Attention is drawn to the technical details intended for qualified staff.

1.3 - QUALIFIED STAFF

These are people who:
- Are familiar with product installation, assembly, start-up and maintenance;
- Know the regulations in force in the region or country pertaining to installation and safety;
- Have first-aid training.

1.4 - USING NON-ORIGINAL SPARE PARTS

- To perform maintenance or change spare parts **ONLY** manufacturer-recommended parts can be used. Using different parts not only voids the product warranty, but could compromise correct operation of the device.
- The manufacturer is not liable for malfunctions caused by unauthorised tampering or use of non-original spare parts.

1.5 - IMPROPER USE

- The product must only be used for the purpose it was built for.
- It is not allowed to use fluids other than those expressly stated.
- The technical data set forth on the rating plate must not, under any circumstances, be exceeded. The end user or installer is in charge of implementing proper systems to protect the device, which ensure the maximum pressure indicated on the rating plate is not exceeded.
- The manufacturer is not responsible for any damage caused by improper use of the device.

2.0 - TECHNICAL DATA

- Use : gases of the three families (dry gases), biogas and air
- Ambient temperature (TS) : -40 ÷ +80 °C
- Maximum operating pressure : 3 bar (300 kPa)
- R malethreaded connections : (1/2 - 3/4 - 1 - 1 1/4 - 1 1/2 - 2) according to EN 10226
- Female (VDJF) threaded connections : request feasibility
- Flanged connections
  that can be coupled to PN 16 flanges : (DN 40 - DN 50 - DN65 - DN 80 - DN 100 - DN 125 - DN 150 - DN 200 - DN 250 - DN 300) according to EN 1092-1
- NPT threaded or ANSI 150 threaded connections : request feasibility
- In compliance with : PED Directive 2014/68/EU

***** *The device, even if not included in the PED Directive 2014/68/EU, for the 1/2 - 3/4 - 1 connections is not subject to the CE marking as it is excluded from art. 4/3 of the same Directive.*

3.0 - COMMISSIONING THE DEVICE

3.1 - OPERATIONS PRIOR TO INSTALLATION

- It is necessary to close the gas upstream of the device prior to installation;
- Make sure that the line pressure **DOES NOT EXCEED** the maximum pressure declared on the product label;
- Protective caps (if any) must be removed prior to installation;
- The pipes and inside of the device must be clear of any foreign bodies;
- Avoid installing the device in adverse conditions that exceed the values (axial / sideways / angular movement) stated in table 1a and 1b.
- Adopt the necessary precautions to avoid any possible damage to the bellow (**2**).
- The safety regulations on handling loads in force in the country of installation must be complied with. If the device to be installed exceeds the weight allowed, suitable mechanical equipment and adequate slings must be used. Necessary precautions must be taken during the handling phases in order not to damage/ruin the external surface of the device.
- With outdoor installation, it is advisable to install a protective roof to prevent rain from oxidising or damaging parts of the device.

- According to the plant geometry, check the risk of an explosive mixture arising inside the piping;
- Provide a protection against impacts or accidental contacts if the device is accessible to unqualified personnel.

3.2 - INSTALLATION

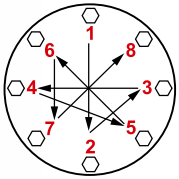
Threaded devices:

- Assemble the device by screwing it, with the due seals, onto the plant with pipes and/or fittings whose threads are consistent with the connection being attached.

Flanged devices:

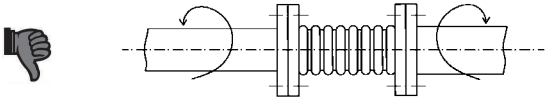
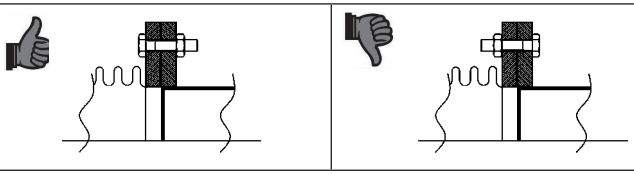
- With regard to tightening operations, equip yourself with one or two calibrated torque wrenches or other controlled locking tools;
- Assemble the device by flanging it, with the due seals, onto the plant with pipes whose flanges are consistent with the connection being attached. The gaskets must be free from defects and must be centred between the flanges;
- Calculate the space for inserting the sealing gaskets: if, after installing the gaskets, there is still an excessive space in between (see table 1b), do not try to reduce said gap by excessively tightening the bolts of the device;
- Insert the relative washers inside the bolts in order to prevent damage to the flanges during tightening;
- When tightening, be careful not to “pinch” or damage the gasket;

- Tighten the nuts or bolts gradually, in a “cross” pattern (see the example below);
- Tighten them, first by 30%, then by 60% and finally 100% of the maximum torque (see the table below according to EN 13611);



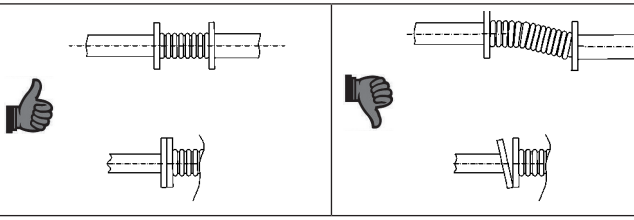
Diameter	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN >150
Max. torque (N.m)	50	50	50	50	80	160	160	160

- Tighten each nut and bolt again clockwise at least once, until the maximum torque has been achieved uniformly;

Do not tighten the joint by twisting it to make it match the holes of the coupling flange. Twisting the bellows seriously reduces its operating capacity and could lead to early failure of the expansion joint.	
Turn the bolts in the direction shown in the figure when tightening them	

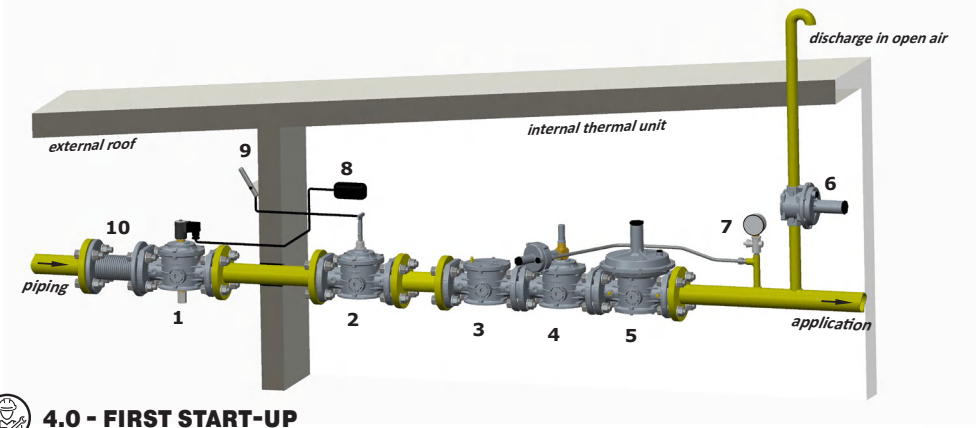
Common procedures (threaded and flanged devices):

- The compensating/vibration damping joints can be installed in any position without jeopardising correct operation;
- During installation, avoid debris or metal residues from getting into the device;
- If the device is to be installed in a ramp, it is the installer’s responsibility to provide suitable supports or correctly sized supports, to properly hold and secure the assembly. Never, for any reason whatsoever, leave the weight of the ramp resting only on the connections (threaded or flanged) of the individual devices;
- In any case, following installation, check the tightness of the plant;
- Only one expansion joint can be installed between the two fixed points (see sample installation in 3.4). If the pipeline moves more than one joint can absorb, the pipeline must be divided into sections, creating further fixed points.

Do not use joints to correct misalignments of the pipelines larger than those allowed (tables 1a - 1b).	

3.4 - GENERIC EXAMPLE OF AN INSTALLATION

1. M16/RM N.C. Manual reset solenoid valve
2. SM jerk ON/OFF valve
3. FM gas filter
4. OPSO series MVB/1 MAX shut off valve
5. RG/2MC pressure regulator
6. MVS/1 relief valve
7. Pressure gauge and relative button
8. Gas detector
9. SM remote jerk ON/OFF valve lever control
10. **Expansion joint/anti-vibration mount**



4.0 - FIRST START-UP

- Before start-up, make sure that all the instructions on the rating plate are observed;
- After having gradually pressurised the system, check the tightness and operation of the device.

4.1 - RECOMMENDED PERIODIC CHECKS

- Check the tightness of the flanged/threaded connections on the system;

The final user or installer is responsible for defining the frequency of these checks based on the severity of the service conditions.

5.0 - MAINTENANCE

- No maintenance is required

6.0 - TRANSPORT, STORAGE AND DISPOSAL

- During transport the material needs to be handled with care, avoiding any impact or vibrations to the device;
- If the product has any surface treatments (ex. painting, cataphoresis, etc.) it must not be damaged during transport;
- The transport and storage temperatures must observe the values provided on the rating plate;
- If the device is not installed immediately after delivery it must be correctly placed in storage in a dry and clean place;
- In humid facilities, it is necessary to use driers or heating to avoid condensation.
- At the end of its service life, the product is to be disposed of in compliance with the legislation in force in the country where this operation is performed.

7.0 - WARRANTY

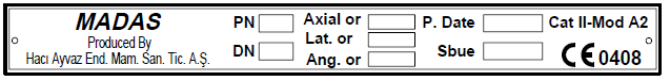
The warranty conditions agreed with the manufacturer at the time of the supply apply.
Damage caused by:

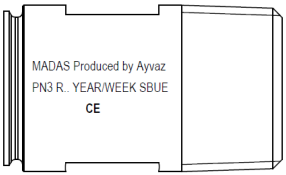
- Improper use of the device;
- Failure to observe the requirements described in this document;
- Failure to observe the regulations pertaining to installation;
- Tampering, modification and use of non-original spare parts;

is not covered by the rights of the warranty or compensation for damage.
The warranty also excludes maintenance work, the assembly of devices of other manufacturers, making changes to the device and natural wear.

8.0 - RATING PLATE DATA

The rating plate data (see example below) includes the following:





- Manufacturer's name/logo and address (possible distributor name/logo)
- Cat / Mod (if applicable) = Category and module according to PED Directive 2014/68/EU
- CE (if applicable) = Compliance with PED Dir.
- CE 0408 (if applicable) = Compliance with PED Dir. followed by the no. of the Notified Body for Cat. II
- PN = Maximum pressure at which product operation is guaranteed
- R / DN = Connection diameter
- Axial or: = Axial movement
- Lat. or: = Lateral movement
- Ang. or: = Angular movement
- P. Date = Production date (E.g. 20/50 =year 2020 week no. 50)
- Sbue = Progressive number

fig. 1
(R 1/2 ÷ 2)

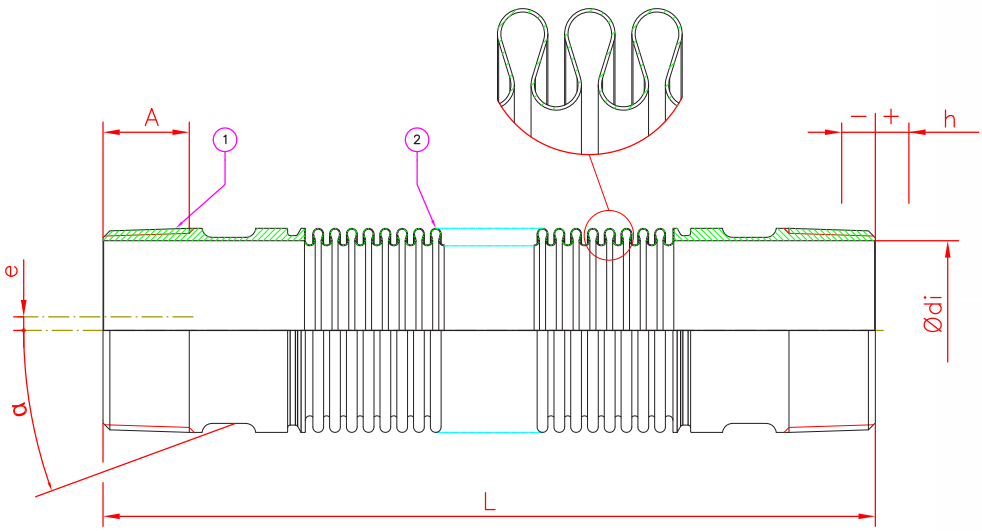


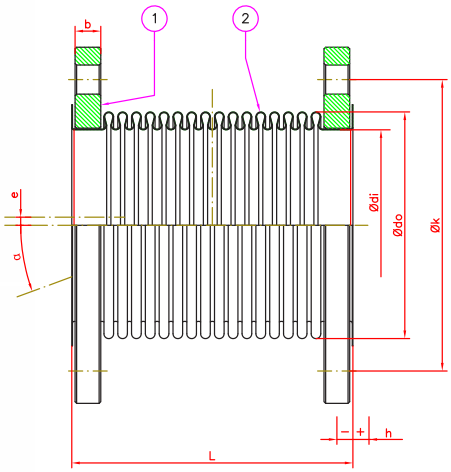
Tabella 1a - Table 1a - Tableau 1a - Tabla 1a

Dimensioni di ingombro in mm - Overall dimensions in mm - Mesures d'encombrement en mm - Medidas de estorbo en mm

Codice Code Code Código	Attacco Connection Raccord Conexiones	Lunghezza Lenght Longueur Longitud	Lunghezza filetto Thread length Longueur filet Longitud rosca	Diametro interno Internal diameter Diamètre interne Diámetro interno	Movimento assiale Axial movement Mouvement axial Movimiento axial	Movimento laterale Lateral movement Mouvement latéral Movimiento lateral	Movimento angolare Angular movement Mouvement angulaire Movimiento angular
	DN	L (mm)	A (mm)	Ødi (mm)	h± (mm)	e± (mm)	α± (°)
VDJ02	R 1/2	145±5	15	16	10	8	30
VDJ03	R 3/4	150±5	16,3	21	10	8	30
VDJ04	R 1	165±5	19,1	27	10	8	30
VDJ05	R 1 1/4	165±5	21,4	35,2	12	12	30
VDJ06	R 1 1/2	210±5	21,4	41,2	15	12	30
VDJ07	R 2	230±5	25,7	53	15	12	30

Le dimensioni sono indicative, non vincolanti - The dimensions are provided as a guideline, they are not binding
Les dimensions sont indicatives et non contractuelles - Las dimensiones son indicativas, no vinculante

fig. 2
(DN 40 ÷ DN 300)



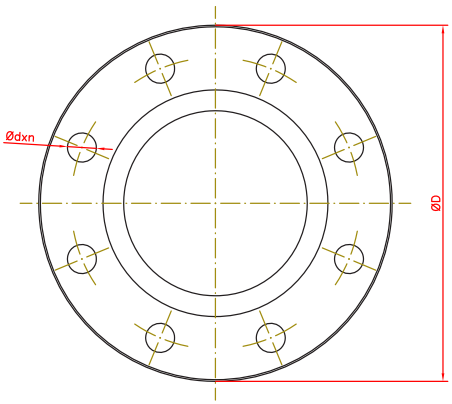


Tabella 1b - Table 1b - Tableau 1b - Tabla 1b

Dimensioni di ingombro in mm - Overall dimensions in mm - Mesures d'encombrement en mm - Medidas de estorbo en mm

Codice Code Code Código	Attacchi flangiati Flanged connections Raccords à brides Conexiones embridadas	Lunghezza Lenght Longueur Longitud	Movimento assiale Axial movement Mouvement axial Movimiento axial	Movimento laterale Lateral movement Mouvement latéral Movimiento lateral	Movimento angolare Angular movement Mouvement angulaire Movimiento angular
		L	h±	e±	α
	DN	(mm)	(mm)	(mm)	(°)
VDJ40	DN 40	135	15	12	20
VDJ50	DN 50	155	15	12	20
VDJ08	DN 65	155	20	13	19
VDJ09	DN 80	165	25	15	19
VDJ10	DN 100	175	35	17	18
VDJ11	DN 125	195	35	15	15
VDJ12	DN 150	200	35	15	15
VDJ13	DN 200	220	35	13	12
VDJ14	DN 250	225	25	8	9
VDJ15	DN 300	225	25	7	8

Le dimensioni sono indicative, non vincolanti - The dimensions are provided as a guideline, they are not binding
Les dimensions sont indicatives et non contractuelles - Las dimensiones son indicativas, no vinculante

IT

fig. 1 e 2

1. Filettatura maschio
2. Soffietto

EN

fig. 1 and 2

1. Male threading
2. Bellow

FR

fig. 1 et 2

1. Filetage mâle
2. Soufflet

ES

fig. 1 y 2

1. Roscado macho
2. Fuelle

FLANGE GIREVOLI EN 1092-1 PN16 FLOATING FLANGES EN 1092-1 PN16 BRIDES TOURNANTES EN 1092-1 PN16 BRIDAS GIRATORIAS EN 1092-1 PN16				SOFFIETTO BELLOW SOUFFLET FUELLE			
ØD	Øk	b	Ødxn	ØDi	Ødo	Spessore Wall thickness Épaisseur Grosor	Numero di rivoluzioni Number of convolution Nombre de révolutions Número de revoluciones
(mm)	(mm)	(mm)	(mmxn)	(mm)	(mm)	(mm)	(n)
150	110	14	Ø 18x4	48,3	61	0,30	20
165	125	14	Ø 18x4	60,3	76	0,40	18
185	145	14	Ø 18x4	76,1	95	0,40	18
200	160	16	Ø 18x8	88,9	111	0,40	14
220	180	16	Ø 18x8	114,3	140	0,40	15
250	210	18	Ø 18x8	139,7	164	0,40	15
285	240	18	Ø 23x8	168,3	200	0,50	13
340	295	20	Ø 23x12	219,1	250	0,50	14
405	355	22	Ø 27x12	273	314	0,60	11
460	410	22	Ø 27x12	323,9	368	0,60	10

Codifica prodotto / Product encoding / Codification du produit / Codificación del producto

IT

ATTACCHI FILETTATI NPT / NPT THREADED CONNECTIONS
RACCORDS FILETÉS NPT / CONEXIONES ROSCADAS NPT
richiedere fattibilità / request feasibility / demander la faisabilité / consulte la disponibilidad

Aggiungere la lettera "**N**" dopo le cifre indicanti gli attacchi	Add the letter "**N**" after figures denoting the connection	Ajouter la lettre "**N**" après les chiffres indiquant les connexions	Añadir la letra "**N**" a continuación de las cifras que indican los diámetros de conexión	Es. / E.g. / Ex. / Ej. VDJ07**N**

EN

ATTACCHI FLANGIATI ANSI 150 / ANSI 150 FLANGED CONNECTIONS
RACCORDS À BRIDES ANSI 150 / CONEXIONES EMBRIDADAS ANSI 150
richiedere fattibilità / request feasibility / demander la faisabilité / consulte la disponibilidad

Aggiungere la lettera "**A**" dopo le cifre indicanti gli attacchi	Add the letter "**A**" after figures denoting the connection	Ajouter la lettre "**A**" après les chiffres indiquant les connexions	Añadir la letra "**A**" a continuación de las cifras que indican los diámetros de conexión	Es. / E.g. / Ex. / Ej. VDJ50**A**

NOTA: É consigliato chiedere SEMPRE la fattibilità.

NOTE: We suggest to ask ALWAYS for the feasibility.

NOTE: Il est recommandé de TOUJOURS demander la faisabilité.

NOTA: Se aconseja consultar SIEMPRE la viabilidad.

FR

ES

Foto Photo Photo Foto	P. max	Attacchi filettati Threaded connections Raccords filetés Conexiones roscadas	Codice Code Code Código
	3 bar (300 kPa)	1/2	VDJ02
		3/4	VDJ03
		1	VDJ04
		1 1/4	VDJ05
		1 1/2	VDJ06
		2	VDJ07

Foto Photo Photo Foto	P. max	Attacchi flangiati Flanged connections Raccords à brides Conexiones embridadas	Codice Code Code Código
	3 bar (300 kPa)	DN 40	VDJ40
		DN 50	VDJ50
		DN 65	VDJ08
		DN 80	VDJ09
		DN 100	VDJ10
		DN 125	VDJ11
		DN 150	VDJ12
		DN 200	VDJ13
		DN 250	VDJ14
		DN 300	VDJ15