

USA

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Operation and assembly instruction



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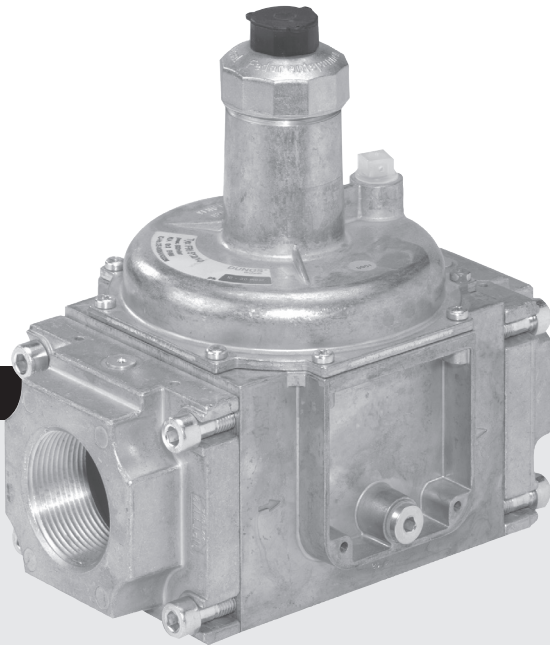
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Betriebs- und Montageanleitung
Operation and assembly instruction
Notice de fonctionnement et de montage
Istruzioni di esercizio e di montaggio



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Approvals

 **CSA Certified: ANSI Z21.18 / CSA 6.3**
Gas Appliance Pressure Regulator / File # 1135455

UL Unlisted Component
File # MH 16727 (sp)

 **European Community**
EN 88-1 for EN 746-2 applications only

Commonwealth of Massachusetts Approved Product Approval code G1-1107-35

Attention



The installation and maintenance of this product must be done under the supervision of an experienced and trained specialist. Never perform work if gas pressure or power is applied, or in the presence of an open flame.

Safety
first
O.K.

On completion of work on the pressure regulator, perform a leakage and function test.



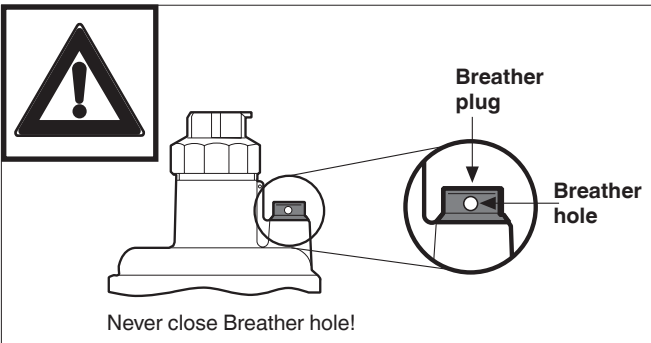
Please read the instruction before installing or operating. Keep the instruction in a safe place. You find the instruction also at www.dungs.com. If these instructions are not heeded, the result may be personal injury or damage to property.

IFGC
UL **CSA**
ANSI
NFPA

This product is intended for installations covered by, but not limited to, the following codes and standards: NFPA 86, CSD-1, ANSI Z21.13, UL 795, NFPA 85, CSA B149.3, NFPA 37 or CSA B149.1.



Any adjustment and application-specific adjustment values must be made in accordance with the equipment manufacturers instructions.



Explanation of symbols

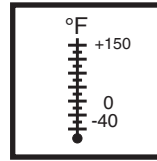
1, 2, 3 ... = Action
• = Instruction

Specification

FRI/6 Gas pressure regulator (lock-up type) with integrated gas filter in one housing. The FRI/6 series regulator mounts directly to the DMV 701, 702 and 703 series valves. Suitable as stand-alone when using two flanges.



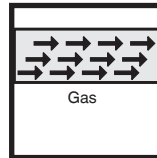
Max. Operating Pressure (MOP)
7 PSI (50 kPa / 500 mbar) UL & CE
5 PSI (35 kPa / 350 mbar) CSA
Max. Body Pressure (MOP)
15 PSI (100 kPa / 1 bar)



Ambient / Fluid Temperature
CSA Certified*: -10 °F to +150 °F
Factory Declaration**: -20 °F to +150 °F
CE Marking: -15 °C to +70 °C



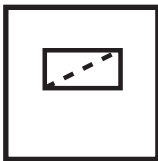
Maximum pressure drop and gas velocity
The maximum pressure drop is limited by the velocity of the gas. Do not exceed a gas velocity of 30 meters/s.



Gases
Dry, natural gas, propane, butane; other noncorrosive gases. Suitable for up to 0.1% by volume, dry H₂S. A "dry" gas has a dew point lower than +15 °F and its relative humidity is less than 60 %.

Materials in contact with Gas

Housing: Aluminum
Sealings on valve seats: NBR-based rubber



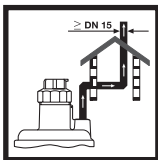
Strainer
23 Mesh, installed in the housing
Filter
Mesh <0.05 mm, installed in the housing



Hysteresis and Droop
Hysteresis/repeatability is less than 10 % for up to 7 PSI inlet. Average droop at 20:1 turndown is 10 % for up to 7 PSI

Lock-Up Rating

- The FRI meets the ANSI Z21.80/ CSA 6.22 as Class I, which allows lockup rating not more than 150 % or 5 in. W.C., whichever is greater.
- The FRI meets EN 88-1 as SG30, which allows lock-up as high as + 30 % of the outlet pressure.
- See lock-up Pressure Parameter on page 2 for more details



Vent Limiting Device and Vent Line Connection
The FRI/6 has an internal, factory installed vent limiter, which limits the escape of gas to less than 0.5 CFH @ 5 PSI in case atmospheric diaphragm ruptures. Vent limiting device also complies with EN 88-1 & ISO 23551-2. Venting required unless otherwise accepted by the authority having jurisdiction.

Body Size	Size
FRI 705/6 & 707/6	1/2" - 1" NPT
FRI 710/6 & 712/6	1" - 2" NPT

Ambient / Fluid Temperature

* The CSA rating is limited to -10 °F because of an opening characteristic test, which essentially states that at the low ambient temperature rating the outlet pressure of the regulator:

- Shall shift no higher than 20 % above the room temperature outlet pressure setting, and
- Shall reach 20 % of its outlet pressure within 1s of start of flow.

This test is done with the regulator starting at a no-flow condition followed by an immediate (within 1 s) flow condition, which is specified by the manufacturer.

** During the opening characteristic test at this temperature, the outlet pressure could shift approximately 40 % higher than the room temperature setpoint, and the outlet pressure will reach 20 % of its outlet pressure within 10 s of start of flow.

Lock-up Pressure Parameters

Per ANSI Z21.80, lock-up is defined as an outlet pressure not more than 150 % or 5 in. W.C, whichever is greater, above the setpoint after a downstream safety shutoff valve closes within 2 seconds, and the two following conditions exist:

1. outlet pressure is set to the highest set point of the spring, and
2. the regulator is set to maximum capacity or flow at which the regulator will control lockup pressure within the acceptable limits.

This means that in a given application, a lockup greater than 150% or 5 in. W.C could occur, depending out the inlet pressure, the outlet pressure of the regulator, the flow rate of the regulator, and the pipe volume downstream the regulator and upstream the safety shutoff valve.

Per DUNGS, lock-up is +30 % of the outlet pressure setting

after downstream shutoff valve slowly closes within 30 seconds. Therefore, in a given application, a lockup greater than +30% or 5 in. W.C could occur, depending on the inlet pressure, the outlet pressure of the regulator, the flow rate of the regulator, and the pipe volume downstream the regulator and upstream the safety shutoff valve.

If in a given application the lock-up pressure is too high, employing one or more of the following should reduce the lock-up pressure:

1. Increase the size of the regulator.
2. Increase the pipe volume downstream the regulator and upstream the safety shutoff valve.
3. Decrease the inlet pressure.
4. Decrease the outlet pressure.
5. Reduce the flow rate.
6. Remove vent line, if installed.

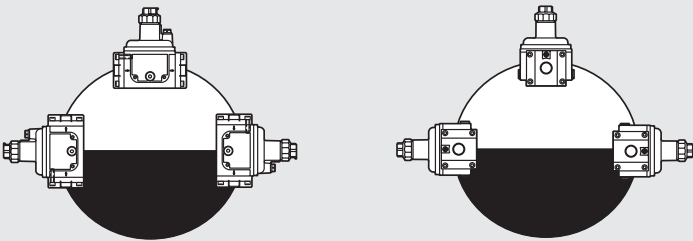
Regulator Orifice Diameters

Regulator Type	Orifice Diameter (mm)
FRI 705/6	17.0
FRI 707/6	24.0
FRI 710/6	29.0
FRI 712/6	37.5

Mounting

Recommended Mounting Procedure

Regulator dome from vertically upright to lying horizontally



 If the flow is not in the same direction of the arrows, the regulator will not operate properly.

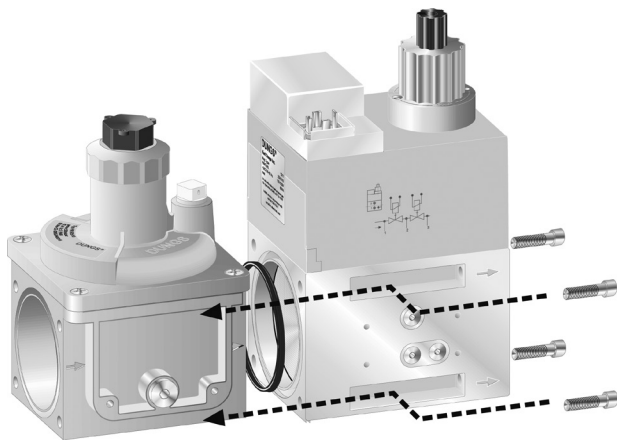
Mounting & Installation

- The regulator can be mounted either upstream or downstream of the DMV. It can also be mounted as a stand alone regulator using two flanges and the flange mounting kit.
- The main gas supply must be shut off before starting the installation.
- Examine the regulator for shipping damage.
- The inside of the regulator and piping must be clean and free of dirt.

Recommended Procedure to Mount the FRI/6 regulator to a DMV 701, 702, or 703 series safety shutoff valve.

1. Replace the o-ring in the groove on the side of the DMV body with the oval o-ring supplied with the mounting kit.
2. Make sure the oval o-ring and the groove are clean and in good condition.
3. Install the FRI/6 regulator and DMV series valve with the gas flow matching the direction indicated by the arrows on the body.
4. Attach the regulator to the DMV series valve body using the socket cap bolts supplied in the FRI/DMV mounting kit.
5. Use a 5mm Allen wrench for the FRI 705/6 & 707/6.
6. Use a 6mm Allen wrench for the FRI 710/6 & 712/6.
7. Tighten the bolts in crisscross pattern.
8. Do not overtighten the bolts. Follow the maximum torque values listed below.
9. After installation is complete, perform a leak test to verify that no leakage occurs.

Recommended Torque for Mounting Bolts		
M6	M8	Bolt Size
62	134	[lb-in]

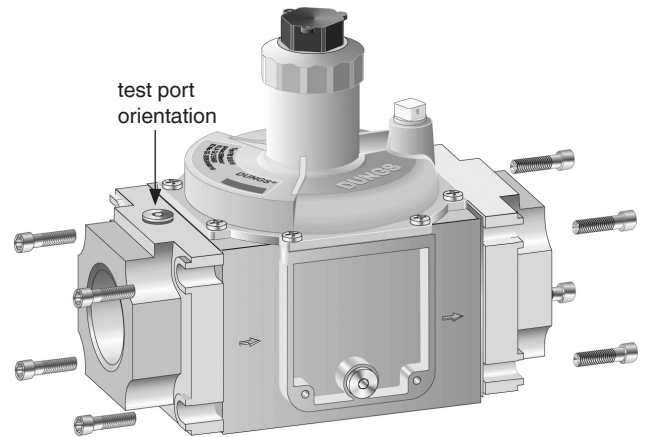


Recommended Procedure to Mount Flanges

1. Make sure the o-rings and the grooves are clean and in good condition.
2. Install the FRI/6 with the gas flow matching the direction indicated by the arrows on the casting.
3. Mount the FRI/6 vertical upright to horizontal.
4. Clean the mounting surface of the flanges. Make sure they are in good condition.
5. Attach the FRI/6 to the flanges using the appropriate M6 or M8 socket cap bolts supplied.

6. Use a 5 mm Allen wrench for the FRI 705/6 & 707/6.
7. For the FRI 710/6 & 712/6, there two options for bolts:
For 1" and 1 1/4" flanges, the M8 x 35 mm bolts must be used.
For 1 1/2" and 2" flanges, the M8 x 40 mm bolts must be used.
8. Tighten the bolts in a crisscross pattern.
9. Do not overtighten the bolts. Follow the maximum torque values below.
10. After installation is complete, perform a leak test.

Recommended Torque Bolts		
M6	M8	Blot Size
62	134	[lb-in]



If the flow is not in the same direction of the arrows the regulator will not operate properly.

Recommended Piping Procedure & Applying Pressure

- Use new, properly reamed and threaded pipe free of chips.
- Apply good quality pipe sealant, putting a moderate amount on the male threads only. If pipe sealant lodges on the regulator seat, it will prevent proper operation. If using LP gas, use pipe sealant rated for use with LP gas.
- Do not thread pipe too far. Valve distortion and/or malfunction may result from excess pipe in the valve body.
- Apply counter pressure using a parallel jaw wrench only to the flats on the flange when screwing the pipe into the flanges.
- Do not overtighten the pipe. Follow the maximum torque values listed below.



When first applying pressure, open the inlet manual shutoff valve slowly. Quickly opening the inlet manual shutoff valve can permanently rupture the internal, balancing diaphragm.

- After installation is complete and pressure is applied, perform a leak test.

Recommended Torque for Piping						
1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	NPT pipe
375	560	750	875	940	1190	[lb-in]

Pressure Taps

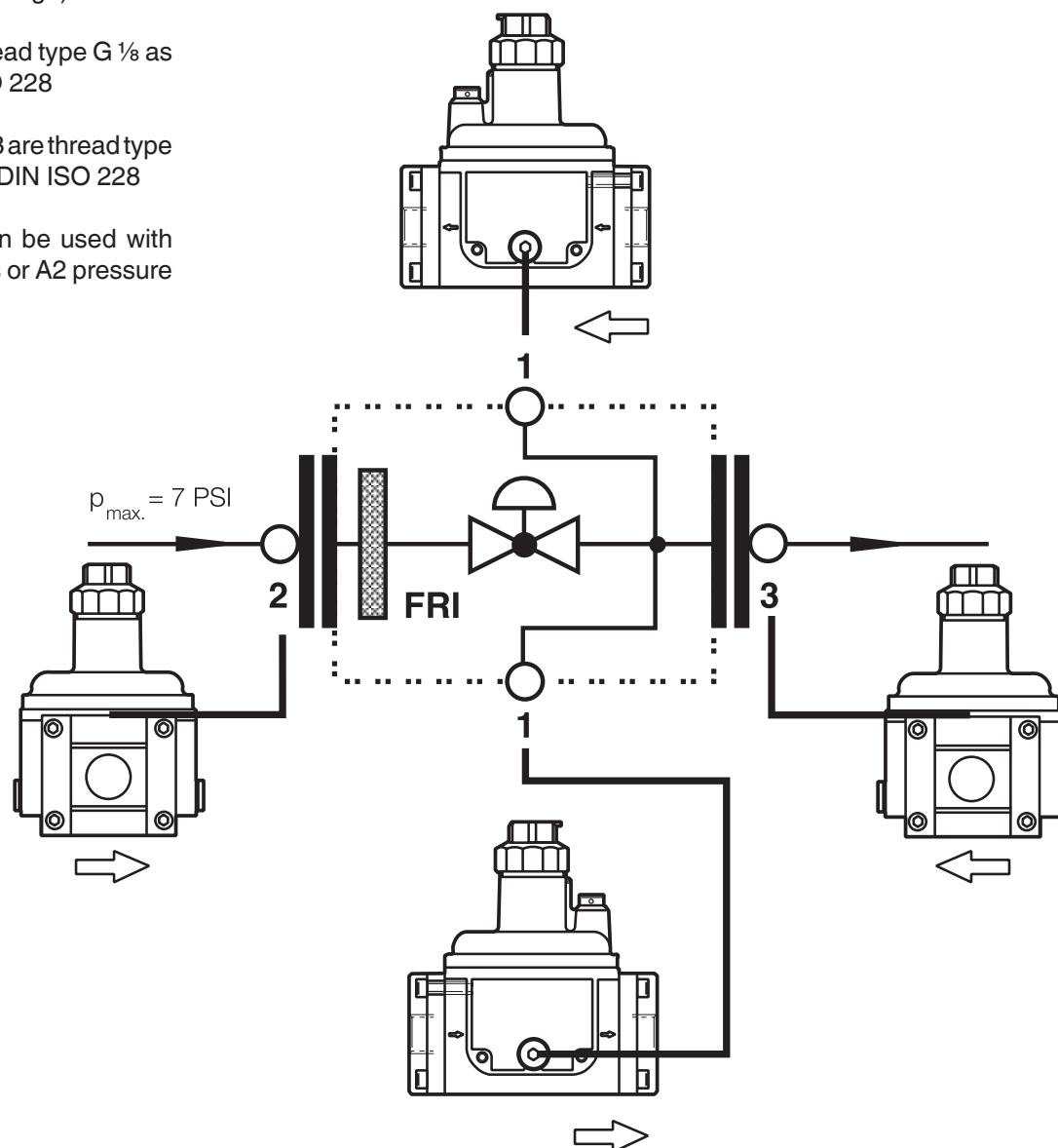
FRI pressure ports

1, 2, 3 (Ports 2 and 3 are located on flange)

Port 1 is thread type G $\frac{1}{8}$ as per DIN ISO 228

Ports 2 and 3 are thread type G $\frac{1}{8}$ as per DIN ISO 228

All ports can be used with accessories or A2 pressure switches.



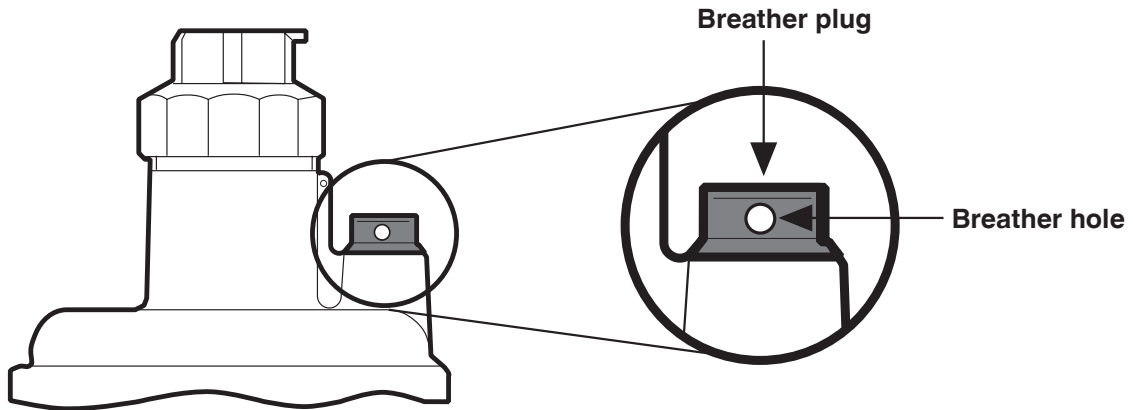
Breather Plug

- All FRI's have a breather plug that threads into the regulators's vent connection.

Do not removed plastic breather plug unless venting outdoors is required.

This plug is not the vent limiter, and it prevents debris from entering the upper chamber of the regulator. Debris in the upper chamber of the regulator will adversely affect regulator performance.

- The FRI regulator must also be able to exchange air through the breather hole in order to properly regulate. Do not plug the breather hole, and clean it out if necessary.



Vent Limiting Device & Vent Line Connection

Vent Limiting Device

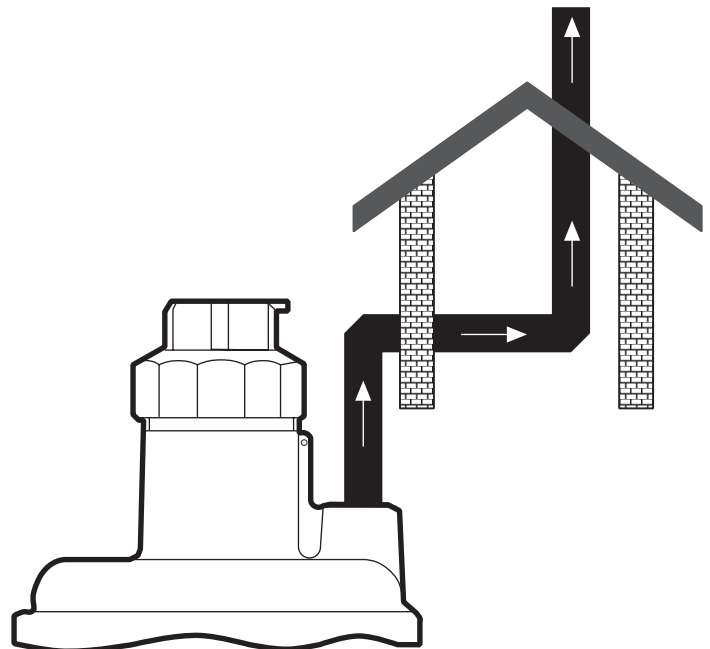
The FRI/6 series regulator contains an internal, factory installed vent limiting device, which limits the escape of gas to less than 0.5 CFH @ 5PSI in case atmospheric diaphragm ruptures. Venting required unless accepted by the authority having jurisdiction.

Vent Line Requirements

- Follow the local code for vent sizing and termination requirements. In the absence of local codes, follow National Fuel Gas Code NFPA 54, the International Fuel Gas Code or the CSA B149.1 installation code for venting requirements.
- Terminate the vent to an approved location.
- At the point of termination, the vent line must be protected from insects and water intrusion. It is highly recommend to install an insect screen and terminate the pipe with the exit facing downwards to prevent rain water from entering.

Installation Procedure

- If venting is required, the vent line is to be connected to the upper dome of the FRI regulator as illustrated.
- Remove the beather plug.
- On indoor installations requiring venting outdoors, run the piping as short and as direct as possible.
- The vent connection is G 1/4. G 1/4 to 1/4"NPT adapter is available: (P/N 231944) with replaceable gasket (P/N 171260).



In the absence of venting codes and where venting is required, each regulator must be vented separately from all other vents.

Operation & Maintenance

Start-Up

- The inlet and outlet shut off valves should both be closed.



Quickly opening the inlet manual shutoff valve can permanently rupture the internal, balancing diaphragm.

- Slowly open the inlet manual shutoff valve just enough to allow inlet pressure to gradually build up to the inlet of the regulator until the system is fully pressurized.
- Slowly open the outlet shut off valve(s) to allow a small flow.

Set-Point Adjustment

1. Remove the black adjustment cover.
2. To increase the outlet pressure set point, turn the adjustment spindle clockwise with a screw driver.
3. To decrease the outlet pressure set point, turn the adjustment spindle counterclockwise with a screw driver.
4. Always use an accurate pressure gauge connected downstream from the regulator to measure the actual outlet pressure.
5. Re-install black adjustment cover.
6. After adjusting the set point for normal operation verify that the gas pressure regulator operates as intended.



During start-up, a pressure gauge must be used to read the setpoint of the regulator outlet pressure. After the safety shutoff valves are closed, the outlet pressure must not exceed the setpoint by more than 30 %. If the outlet pressure exceeds 30 % of the setpoint, see section on page 2 for lock-up pressure.



While adjusting the outlet pressure of the regulator, confirm that adjusting the outlet pressure does not create a hazard to the burner.

Outlet Pressure Spring Replacement



Head Injury Risk:
Never have head above or near the aluminum cap when removing regulator spring. The spring tension can be high enough to rapidly eject the aluminum cap with a large force.

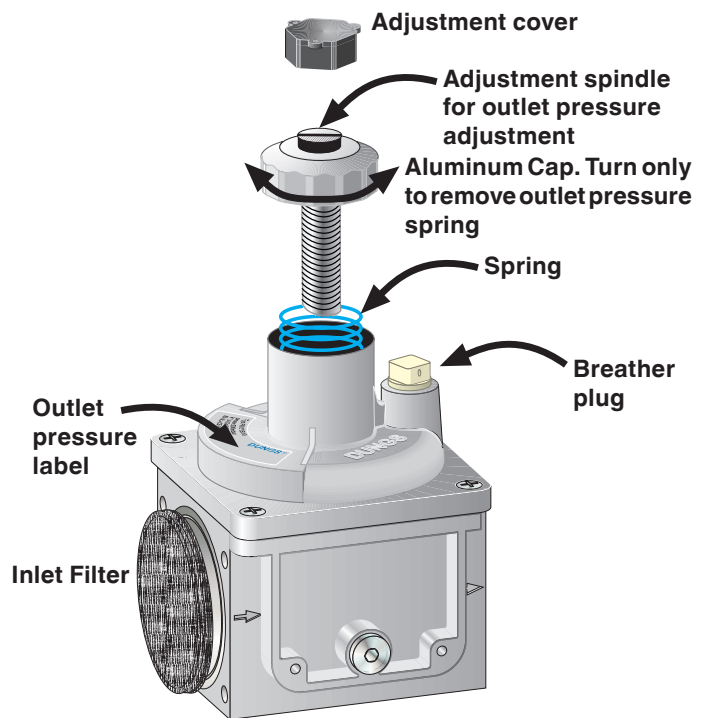
1. Remove the black adjustment cover.
2. Release spring tension by turning the adjustment spindle completely counterclockwise with a screwdriver.
3. Remove the aluminum cap.
4. Remove existing spring and insert new spring.
5. Re-install adjustment spindle (hand tighten only) and adjust to desired outlet pressure. Follow the setpoint adjustment instructions.
6. Re-install the adjustment cover, and apply the new outlet pressure label provided with new outlet pressure range onto the name plate.

Filter

- Inspect the filter at least once a year.
- Replace the filter if the pressure drop across the filter is more than 4" W.C.
- Replace the filter if the pressure drop across the filter is more than twice as high as the first installation inspection.

Filter Change

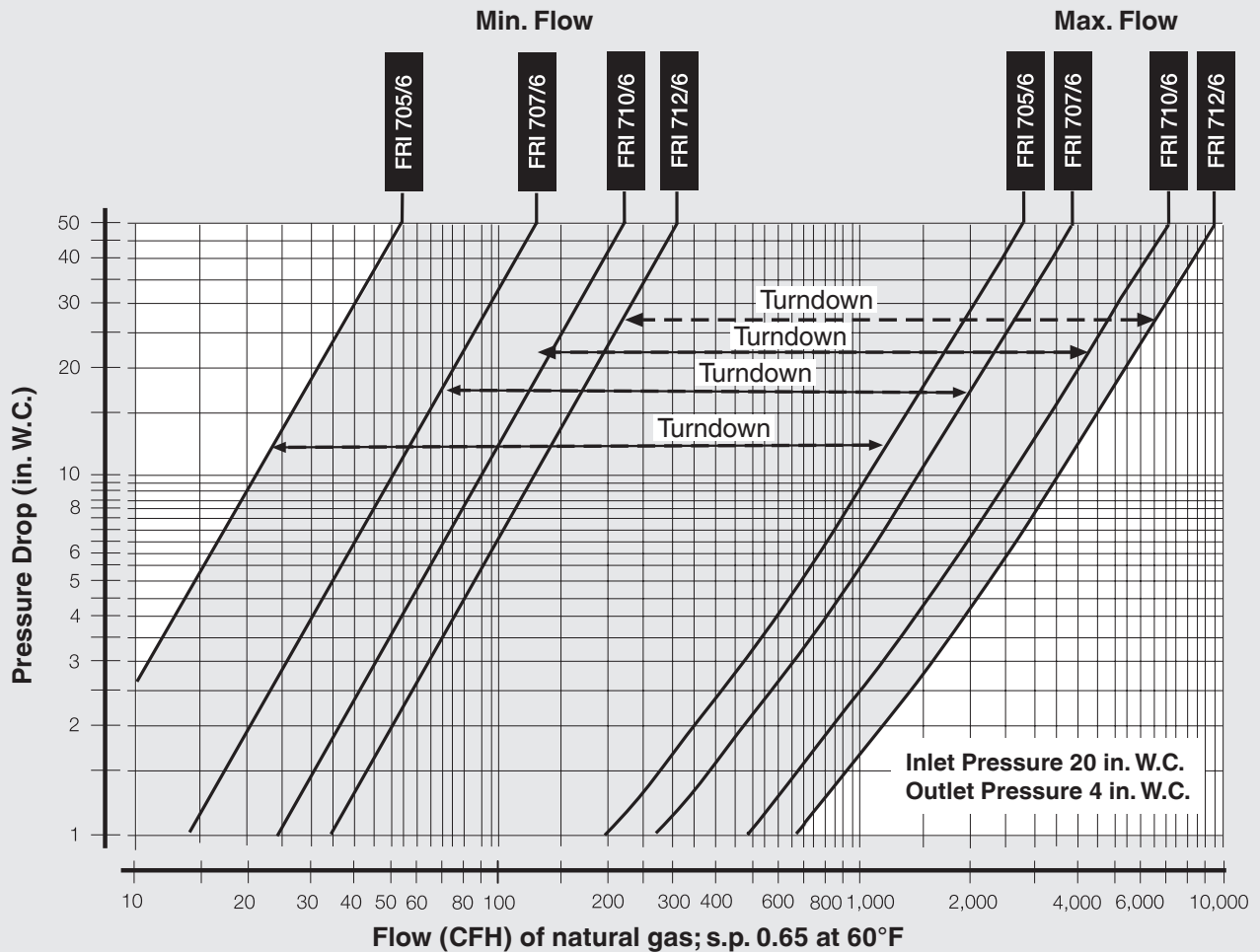
1. Remove the FRI/6 by following the mounting instructions in reverse order.
2. Remove the support ring.
3. Remove the filter insert.
4. Insert a new filter insert.
5. Press in the support ring.
6. Re-install the FRI/6 following the mounting instructions.
7. Perform a function and leak test.



Flow Curve

Regulator turndown characteristics
with gas filter / in regulated state.

Inlet pressure is 20 in. W.C. and outlet is set to 4 in. W.C.



Aproximate flow increase in CFH (natural gas) when removing the integral filter from the FRI.

At a pressure drop of:	FRI 705/6	FRI 707/6	FRI 710/6	FRI 712/6
0.8 in. W.C.	25 CFH	50 CFH	390 CFH	765 CFH
2.0 in. W.C.	35 CFH	70 CFH	480 CFH	940 CFH
4.0 in. W.C.	35 CFH	75 CFH	575 CFH	1180 CFH
8.0 in. W.C.	35 CFH	80 CFH	700 CFH	1510 CFH

Determining equivalent flow through valves using another gas

$$\dot{V}_{\text{gas used}} = \dot{V}_{\text{Natural gas}} \times f$$

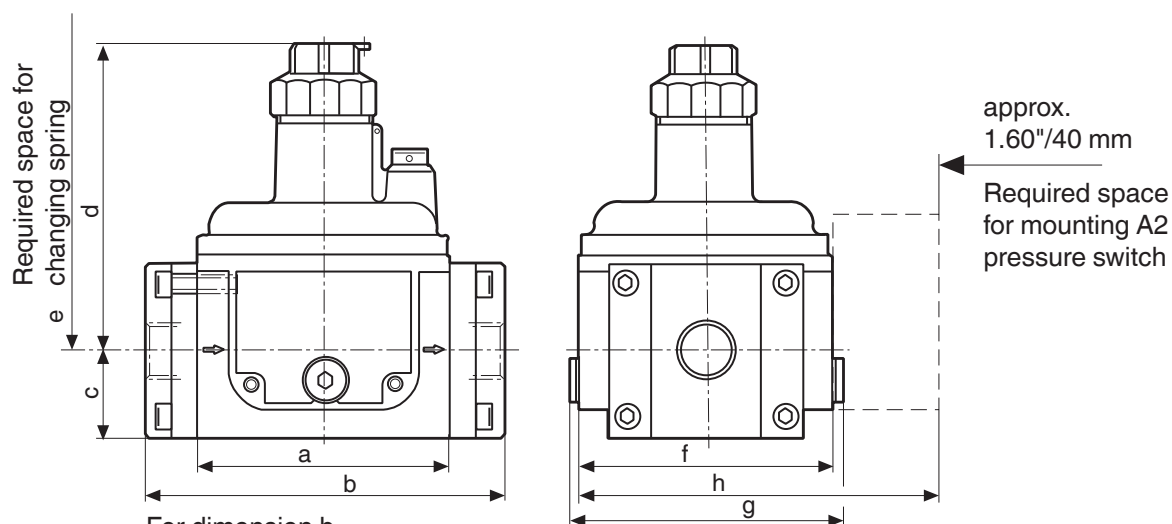
$$f = \sqrt{\frac{\text{Density of Natural gas}}{\text{Density of gas used}}}$$

Type of gas	Density [kg/m³]	s.g.	f
Natural gas	0.81	0.65	1.00
Butane	2.39	1.95	0.58
Propane	1.86	1.50	0.66
Air	1.24	1.00	0.80

Outlet pressure springs

Spring #	1	2	3	4	5	6	7	8	9
Spring Range (W.C.)	1 to 3.6	2 to 5	2 to 8	4 to 12	10 to 22	12 to 28	24 to 44	40 to 60	60 to 80
Spring color	brown Not CSA Not CE	white Not CE	orange	blue Standard	red	yellow	black	pink	grey Not CSA
FRI 705/6 - 707/6	229817	229818	229820	229821	229822	229823	229824	229825	229826
FRI 710/6 - 712/6	229842	229843	229844	229845	229846	229847	229848	229849	229850

Dimensions & Part Numbers



For dimension b
FRI 710/712: 1, 1 1/4 in. NPT = 6.93"
FRI 710/712: 1 1/2, 2 in. NPT = 8.11"



Order flanges separately.

Type	Mounts to DMV Type	NPT Flan- ges	Order No.	Dimensions [inch] Dimensions [mm]								Weight [lbs] [kg]
				a	b	c	d	e	f	g	h	
FRI 705/6	DMV 701	1/2" - 1"	230472	3.8 96	5.6 141	1.3 33	6.0 152	7.7 195	3.8 96	4.1 104	5.5 139	2.0 0,9
FRI 707/6	DMV 701	1/2" - 1"	230473	3.8 96	5.6 141	1.3 33	6.0 152	7.7 195	3.8 96	4.1 104	5.5 139	2.0 0,9
FRI 710/6	DMV 702/3	1" - 2"	230474	5.0 126	6.9/8.1 176/206	1.8 45	6.9 175	9.3 235	5.0 126	5.3 135	6.7 169	3.5 1,6
FRI 712/6	DMV 702/3	1" - 2"	230475	5.0 126	6.9/8.1 176/206	1.8 45	6.9 175	9.3 235	5.0 126	5.3 135	6.7 169	3.5 1,6

Accessories & Replacement

Flanges Type	Mounts to DMV Type	Flange NPT	Order No.
FRI 705/6 -FRI 707/6	DMV 701	1/2"	222371
FRI 705/6 -FRI 707/6	DMV 701	3/4"	222368
FRI 705/6 -FRI 707/6	DMV 701	1"	221999
FRI 710/6 -FRI 712/6	DMV 702 or DMV 703	1"	222369
FRI 710/6 -FRI 712/6	DMV 702 or DMV 703	1 1/4"	222370
FRI 710/6 -FRI 712/6	DMV 702 or DMV 703	1 1/2"	222003
FRI 710/6 -FRI 712/6	DMV 702 or DMV 703	2"	221997

Stand alone mounting kit (one kit included in each FRI box)	Order No.	Includes
FRI 705/6 & FRI 707/6	224093	Consists of 8 bolts: M6 x 30; 2 x o-rings.
FRI 710/6 & FRI 712/6	224094	Consists of 8 bolts: M8 x 35 for 1" NPT and 1 1/4" NPT, and 8 bolts: M8 x 40 for 1 1/2" NPT and 2". 2 o-rings

DMV mounting kit (one kit included in each FRI box)	Order No.	Includes
FRI 705/707 on DMV 701	219967	4 bolts: M6 x 30 and 1 o-ring.
FRI 710/6 & FRI 712/6	219968	4 bolts: M8 x 45 and 1 o-ring

Filter & Strainer	Order No.	Includes
FRI 705/6 & FRI 707/6	230440	Strainer & Filter
FRI 710/6 & FRI 712/6	230441	Strainer & Filter

We reserve the right to make modifications in the course of technical development.

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**EU-Konformitäts-
erklärung**

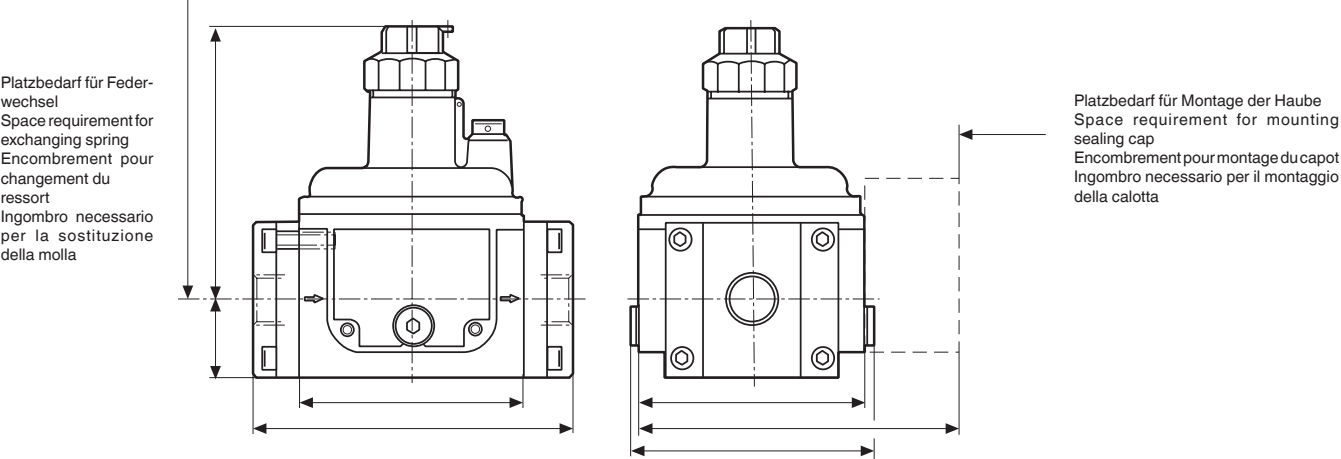
**EU Declaration of
conformity**

**Déclaration de
conformité UE**

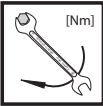
**Dichiarazione di
conformità UE**

Produkt / Product Produit / Prodotto	FRI	Gas-Druckregelgerät Gas pressure regulator Régulateur de pression de gaz Regolatore di pressione gas	
Hersteller / Manufacturer Fabricant / Produttore	Karl Dungs GmbH & Co. KG · Karl-Dungs-Platz 1 · D-73660 Urbach/Germany		
bescheinigt hiermit, dass die in dieser Übersicht genannten Produkte einer EU-Baumusterprüfung (Baumuster) unterzogen wurden und die wesentlichen Sicherheitsanforderungen der: • EU-Gasgeräteverordnung (EU) 2016/426 in der gültigen Fassung erfüllen. Bei einer von uns nicht freigegebenen Änderung des Gerätes verliert diese Erklärung ihre Gültigkeit. Der oben beschriebene Gegenstand der Erklärung entspricht den einschlägigen Harmonisierungsrechtsvorschriften der Union. Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller.	certifies herewith that the products named in this overview were subjected to an EU-Type Examination (production type) and meet the essential safety requirements: • EU-Gas Appliances Regulation (EU) 2016/426 as amended. In the event of an alteration of the equipment not approved by us this declaration loses its validity. The object of the declaration described above conforms with the relevant Union harmonisation legislation. This declaration of conformity is issued under the sole responsibility of the manufacturer.	certifie par la présente que le produit mentionné dans cette vue d'ensemble a été soumis à un examen UE de type (type de fabrication) et qu'il est conforme aux exigences en matières de sécurité des dernières versions en vigueur de : • Règlement européen sur les appareils brûlant des combustibles gazeux (UE) 2016/426 Ce communiqué n'est plus valable si nous effectuons une modification libre de l'appareil. L'objet décrit ci-dessus de la présente déclaration correspond aux prescriptions légales applicables en matière d'harmonisation de l'Union. Le fabricant porte l'entière responsabilité pour l'établissement de la présente déclaration de conformité.	Con la presente si certifica che i prodotti citati in questa panoramica sono stati sottoposti a una prova di esame UE del tipo (tipo di produzione) e che i requisiti di sicurezza essenziali: • Regolamento UE sugli apparecchi a gas (UE) 2016/426 sono soddisfatti nella versione valida. In caso di modifica dell'apparecchio non ammessa, questa dichiarazione perde di validità. L'oggetto della dichiarazione di cui sopra descritta è conforme alla pertinente normativa di armonizzazione dell'Unione. La presente dichiarazione di conformità è rilasciata sotto la responsabilità esclusiva del fabbricante.
Prüfgrundlage der EU-Baumusterprüfung (Baumuster) Specified requirements of the EU type examination (production type) Base d'essai de l'examen UE de type (type de fabrication) Criteri di prova dell'omologazione esame UE del tipo (tipo di produzione)		EN 88-1 EN 13611	
Gültigkeitsdauer / Bescheinigung Term of validity / attestation Validité / certificat Durata della validità / Attestazione		2035-05-25 CE-0123DQ1012	
Notifizierte Stelle Notified Body Organisme notifié Organismo notificato		(EU) 2016/426 TÜV SÜD Product Service GmbH Zertifizierstellen Ridlerstraße 65 D-80339 München, Germany Notified Body number: 0123	
Überwachung des QS-Systems Monitoring of the QA system Contrôle du système d'assurance qualité Monitoraggio del sistema QS		Gewähltes Konformitätsverfahren Modul B+D Conformity process adopted: Module B+D Procédure de conformité sélectionnée : module B+D Procedura di conformità selezionata: modulo B+D	
B.Sc., MBA Simon P. Dungs, Geschäftsführer / Chief Operating Officer / Directeur / Amministratore Urbach, 2025-06-10			

Einbaumaße / Dimensions / Cotes d'encombrement / Dimensioni [mm]



Typ		NT	Bestell-Nummer Order No. No. de commande Codice articolo	Einbaumaße / Dimensions / Cotes d'encombrement / Dimensioni								Gewicht Weight Poids Peso [kg]
Type	Type			a	b	c ^[mm]	d	e	f	g	h	
FRI	705/6	1/2-1	230 472	96	141	33	152	195	96	104	139	0,9
FRI	707/6	1/2-1	230 473	96	141	33	152	195	96	104	139	0,9
FRI	710/6	1-2	230 474	126	176/206	45	175	235	126	135	169	1,6
FRI	712/6	1-2	230 475	126	176/206	45	175	235	126	135	169	1,6
Flansch mit G 1/8 Flange with G 1/8 Bride avec G 1/8 Flangia con G 1/8				für FRI Typ for FRI type pour type FRI per tipo FRI								
Rp 1/2			231 565	NPT 1/2"		222 371		FRI 705/6 - FRI 707/6				
Rp 3/4			231 566	NPT 3/4"		222 368		FRI 705/6 - FRI 707/6				
Rp 1			231 567	NPT 1"		221 999		FRI 705/6 - FRI 707/6				
Rp 1			231 568	NPT 1"		222 369		FRI 710/6 - FRI 712/6				
Rp 1 1/4			231 569	NPT 1 1/4"		222 370		FRI 710/6 - FRI 712/6				
Rp 1 1/2			231 570	NPT 1 1/2"		222 003		FRI 710/6 - FRI 712/6				
Rp 2			231 572	NPT 2"		221 997		FRI 710/6 - FRI 712/6				

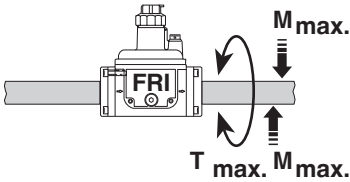


max. Drehmomente / Systemzubehör
max. torque / System accessories
couple max. / Accessoires du système
max. coppie / Accessorio di sistema

M 4	M 5	M 6	M 8	G 1/8	G 1/4	G 1/2	G 3/4
2,5 Nm	5 Nm	7 Nm	15 Nm	5 Nm	7 Nm	10 Nm	15 Nm



Geeignetes Werkzeug einsetzen!
Please use proper tools!
Utiliser des outils adaptés!
Impiegare gli attrezzi adeguati!
Stringere le viti incrociate!
Tighten screws crosswise!
Serrer les vis en croisant!
Stringere le viti incrociate!



Gerät darf nicht als Hebel benutzt werden
Do not use unit as lever.
Ne pas utiliser l'appareil comme un levier.
L'apparecchio non deve essere usato come leva.

DN	10	15	20	25	32
M _{max.} [Nm] t ≤ 10 s	70	105	225	340	475
T _{max.} [Nm] t ≤ 10 s	35	50	85	125	160

Gewindeflanschführung
FRI 705/6 - FRI 712/6
Ein- und Ausbau

Threaded flange version
FRI 705/6 - FRI 712/6
Mounting and dismantling

Version à bride taraudée
FRI 705/6 - FRI 712/6
Pose et dépose

Esecuzione con flangia filettata
FRI 705/6 - FRI 712/6
Montaggio e smontaggio

1. Schraube A und B lösen -
nicht ausschrauben.
Bild 1 und 2

1. Loosen screws A and B
do not remove.
Figs 1 and 2

1. Desserrer les vis A et B **sans** les
dévisser totalement.
Figures 1 et 2

1. Allentare le viti A e B **non** svitare.
Figure 1 e 2

2. Schraube C und D aus-
schrauben.
Bild 1 und 2

2. Remove screws C and D.
Figs 1 and 2

2. Dévisser les vis C et D
Figures 1 et 2

2. Svitare le viti C e D
Figure 1 e 2

3. Gas-Druckregelgerät zwischen
den Gewindeflanschen heraus-
ziehen.
Bild 3 und 4

3. Remove gas pressure regulator
between the threaded flanges.
Figs 3 and 4

3. Extraire le régulateur de pression
entre les brides taraudées.
Figures 3 et 4

3. Estrarre il regolatore di
pressione gas fra le flange
filettate.
Figure 3 e 4

4. Nach Einbau Dichtheits- und
Funktionskontrolle durchführen.
 $p_{\text{Prüf}} \leq 500 \text{ mbar}$

4. After mounting, perform leak-
age and functional tests.
 $p_{\text{test}} \leq 500 \text{ mbar}$

4. Après pose, procéder à un
contrôle de l'étanchéité.
 $p_{\text{test}} \leq 500 \text{ mbar}$

4. Dopo il montaggio, effettuare il
controllo di tenuta e di
funzionamento. $p_{\text{test}} \leq 500 \text{ mbar}$

Achtung!

Es ist sicherzustellen, daß beim
Ein- und Ausbau keine Verun-
reinigungen (z.B. Metallspäne,
Gewindeschneidöl etc.) in das FRI
eindringen.
Bei Nichtbeachtung besteht
Gefahr der Fehlfunktion oder
Ausfall des Gerätes.

Caution!

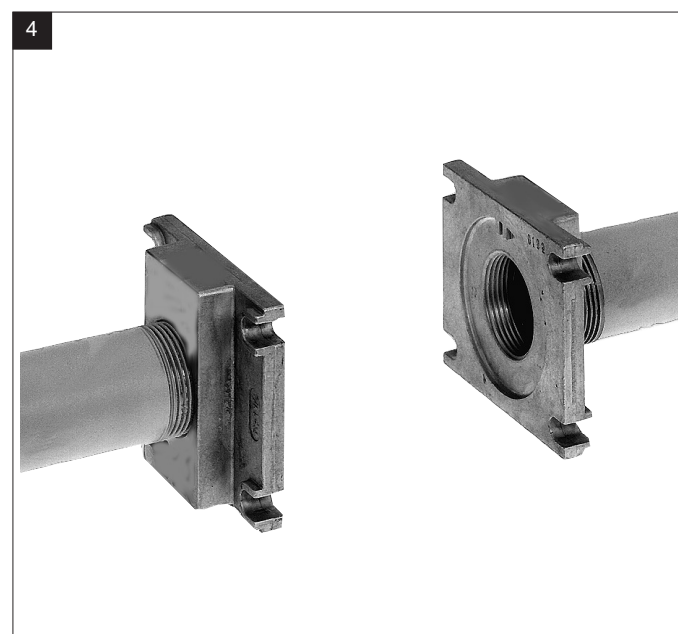
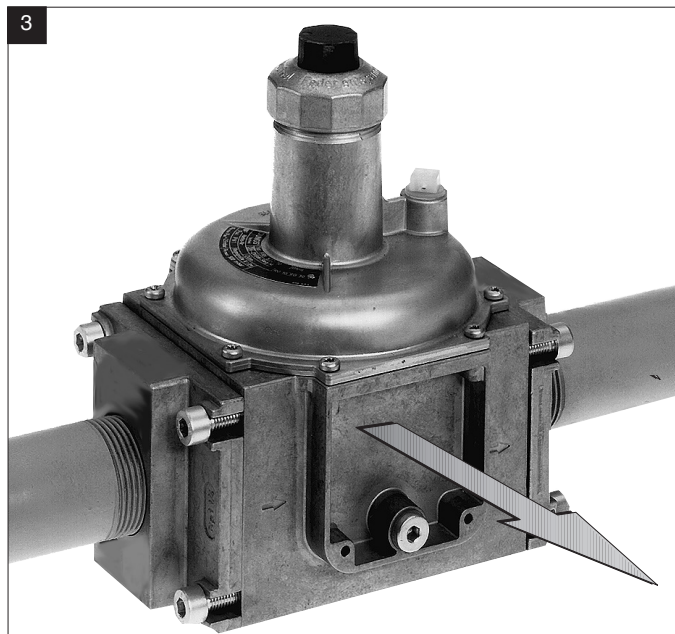
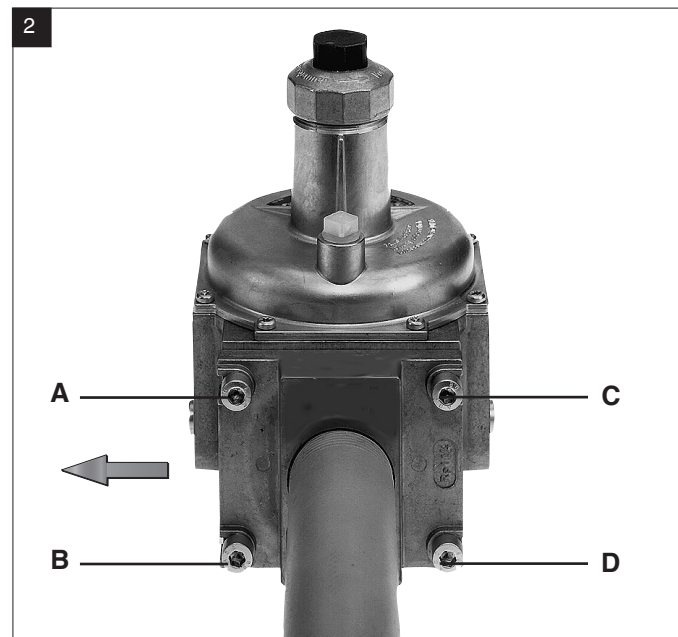
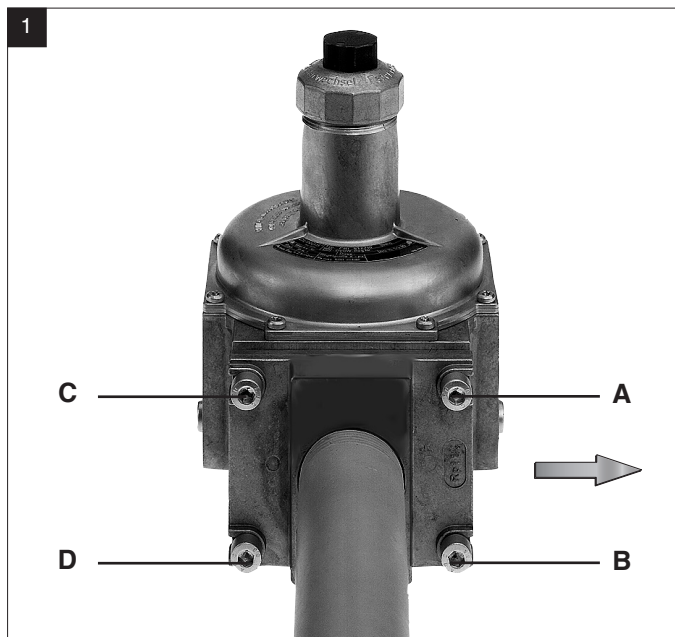
Make sure that no dirt (e.g. metal
chips, thread cutting oil, etc.) pen-
etrates the FRI during installation
and removal. Nonobservance of
these instructions may result in mal-
function or failure of the equipment

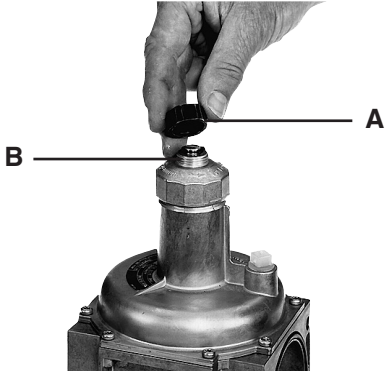
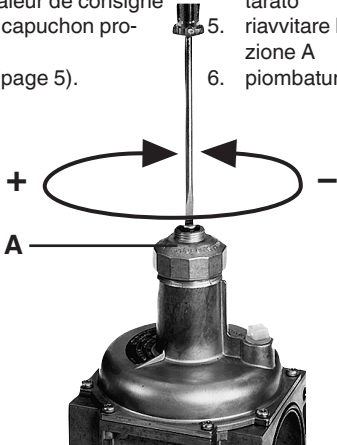
Attention!

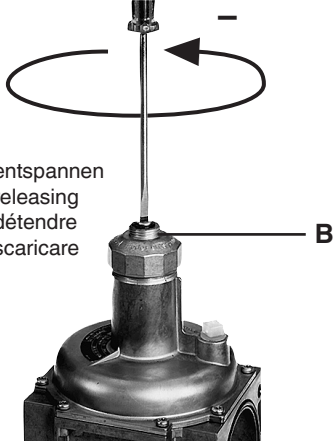
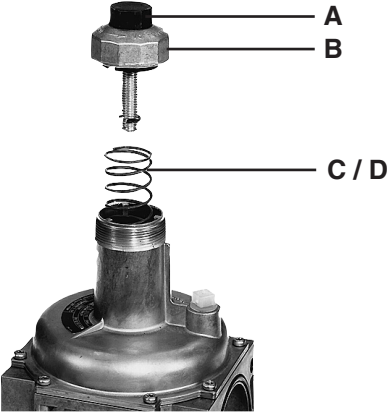
S'assurer qu'aucune impureté (co-
peaux de métal, huile de coupe) ne
pénètre dans le FRI lors du montage
et du dé montage.
Le non-respect de cet avertisse-
ment entraîne un risque de
mauvais fonctionnement ou de
panne de l'appareil.

Attenzione!

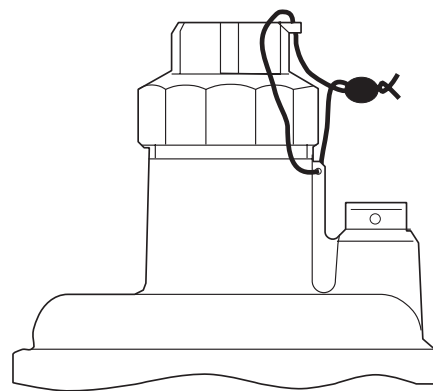
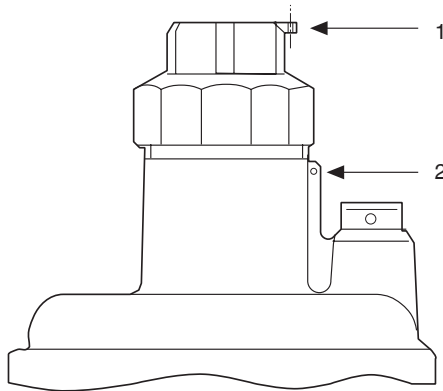
Ci si dovrà assicurare che durante
il montaggio e lo smontaggio non si
infiltri alcuna sporcizia nel FRI (ad
es. trucioli in metallo, olio da taglio,
ecc). La non osservanza di questa
precauzione può comportare danni
al funzionamento o all'apparecchio.



Justage des Ausgangsdrucks (Sollwerteinstellung)	Adjustment of outlet pressure (setpoint adjustment)	Réglage de la pression de sortie (réglage de la valeur de consigne)	Taratura fine della pressione di uscita (regolazione valore nominale)
Werkseinstellung: Standardfeder p_2 10 - 30 mbar	Factory setting: Standard spring p_2 10 - 30 mbar	Réglage d'usine: ressort standard p_2 10 à 30 mbar	Taratura in fabbrica: molla standard p_2 10 - 30 mbar
- Schutzkappe A abschrauben. - Justage (+) Verstellspindel B "Rechtsdrehen" = Vergrößerung des Ausgangs- druckes (Sollwertes) oder Justage (-) Verstellspindel B "Linksdrehen" = Verkleinerung des Ausgangsdruckes (Sollwertes). - Überprüfen des Sollwertes. - Schutzkappe A aufschrauben - Plombierung (Seite 5).	- Unscrew protective cap A. - Adjustment (+) Setting spindle B "Turn clockwise" = Increasing outlet pressure (setpoint) or Adjustment (-) Setting spindle B "Turn counter-clockwise" = Reducing outlet pressure (setpoint). - Check setpoint. - Screw on protective cap A. - Attach lead seal (Page 5).	- Dévisser le capuchon protecteur A. - Réglage (+) tige de réglage B "tourner vers la droite" = augmentation de la pression de sortie (valeur de consigne) ou bien Réglage (-) tige de réglage B "tourner vers la gauche" = diminution de la pression de sortie (valeur de consigne) - Vérifier la valeur de consigne - Revisser le capuchon pro- tecteur A - Plombage (page 5).	- svitare la calotta A di prote- zione - Taratura (+) 'ruotare a destra il la vite di regolazione B = Aumento della pressione d'uscita (valore nomina- le) oppure Taratura (-) ruotare verso sinistra il la vite B = diminuzione della pressione d'uscita (valore nominale) - controllare il valore nominale tarato - riavvitare la calotta di prote- zione A - piombatura (vedere pag. 5)
			
			

Federwechsel	Spring exchange	Changement du ressort	Cambio della molla
- Schutzkappe A entfernen. Durch Linksdrehen der Ver- stellspindel B die Feder ent- spannen. Bis gegen den An- schlag drehen. - Komplette Verstelleinrichtung B abschrauben und Feder C entnehmen. - Neue Feder D einsetzen. - Komplette Verstelleinrichtung montieren und gewünschten Ausgangsdruck justieren. - Schutzkappe A aufschrauben. Klebeschild E auf das Typen- schild aufkleben. - Plombierung	- Remove protective cap A. Release spring by turning ad- justment spindle B counter-clock- wise. Turn spindle to stop. - Unscrew complete adjustment device B and remove spring C. - Insert new spring D. - Assemble complete adjustment device and adjust desired outlet pressure. - Screw on protective cap A. Stick adhesive label E onto nameplate. - Attach lead seal.	- Enlever le capuchon protecteur A. Détendre le ressort en tournant vers la gauche la tige de réglage. - Tourner jusqu'à la butée. - Insérer le nouveau ressort D. - Monter le dispositif de réglage complet et régler la pression de sortie souhaitée. - Visser le capuchon protecteur A. Coller l'autocollant E sur la plaque de type. - Plombage	- Togliere la calotta A. Ruotando a sinistra la vite B la molla si libera. Ruotare fino contro l'arresto - Svitare completamente il dis- positivo B e sfilare la molla C - Inserire la nuova molla D - Montare il dispositivo completo e tarare la pressione d'uscita desiderata - Riavvitare la calotta A. Incollare l'adesivo E sulla targhetta - Piombatura
			
			

Plombierung
Attaching lead seal
Plombage
Piombatura



1
 Plombierungsöse in der Verschlusskappe $\varnothing$ 1,5 mm.

1
 $\varnothing$ 1.5 mm dia. lead seal eye in sealing cap.

1
 Oeillet de plombage dans le capuchon obturateur $\varnothing$ 1,5 mm.

1
 Occhiello per piombatura nella calotta di chiusura $\varnothing$ 1,5 mm.

2
 Plombierungsöse im Reglergehäuse $\varnothing$ 1,5 mm.

2
 $\varnothing$ 1.5 mm dia. lead seal eye in regulator housing.

2
 Oeillet de plombage dans le boîtier du régulateur $\varnothing$ 1,5 mm.

2
 Occhiello per piombatura sull'involucro del regolatore $\varnothing$ 1,5 mm.

Nach Einstellung des gewünschten Drucksollwertes:

After setting desired pressure setpoint:

Après réglage de la pression de consigne souhaitée:

Dopo la regolazione del valore nominale desiderato:

1. Schutzkappe aufschrauben.
2. Draht durch 1 und 2 ziehen.
3. Plombe um Drahtenden drücken, Drahtschleife kurz halten.

1. Screw on protective cap.
2. Pull wire through 1 and 2.
3. Press lead seal around wire ends, keep wire loop small

1. Visser le capuchon protecteur
2. Faire passer le fil entre 1 et 2
3. Comprimer le plomb et les extrémités du fil. Maintenir la boucle courte.

1. avvitare la calotta di chiusura
2. tirare il filo attraverso i punti 1 e 2
3. Piombare le estremità del filo lasciando corto l'anello passante.

Außerbetriebsetzung
Blockierung der Reglerfunktion

Putting out of operation
Blocking regulator function

Mise hors service
Blocage de la fonction de réglage

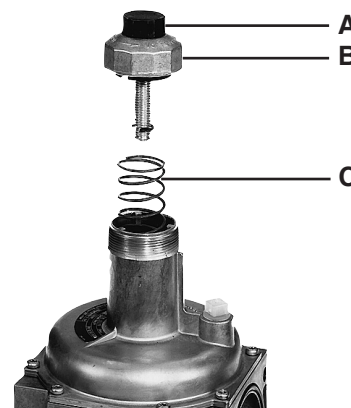
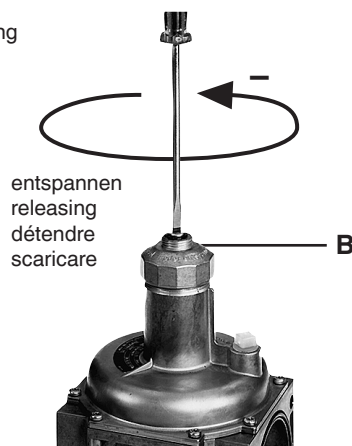
Messa fuori servizio
Bloccaggio della funzione del regolatore

1. Schutzkappe A entfernen. Durch Linksdrehen der Verstellspindel B die Feder entspannen. Bis gegen den Anschlag drehen.
2. Komplette Verstellereinrichtung B abschrauben und Feder C entnehmen.
3. **Für $p_1 \leq 150$ mbar**
 Feder Nr. 8 (Farbe: rosa) einsetzen.
Für $p_1 > 150$ mbar
 Blockierhülse einsetzen
4. Komplette Verstellereinrichtung wieder montieren und bis an den unteren Anschlag drehen. Keine Gewalt anwenden.
5. Schutzkappe A aufschrauben. Regler kennzeichnen "Blockiert"
6. Plombierung

1. Remove protective cap A. Release spring by turning adjustment spindle B counterclockwise. Turn the spindle to stop
2. Unscrew complete adjustment device B and remove spring C.
3. **For $p_1 \leq 150$ mbar**
 Insert spring no. 8 (colour: pink).
For $p_1 > 150$ mbar
 Insert blocking sleeve.
4. Re-assemble complete adjustment device and turn to bottom stop.
5. Screw on protective cap A. Mark regulator "blocked".
6. Attach lead seal.

1. Enlever le capuchon protecteur A. Détendre le ressort en tournant vers la gauche la tige de réglage B. Tourner jusqu'à la butée.
2. Dévisser l'ensemble du dispositif de réglage B et extraire le ressort C.
3. **Pour $p_1 \leq 150$ mbar**
 Monter le ressort no. 8 (couleur rose)
Pour $p_1 > 150$ mbar
 Insérer la douille de blocage.
4. Remonter le dispositif complet de réglage et tourner jusqu'à la butée inférieure. Ne pas forcer.
5. Visser le capuchon protecteur A. Marquer le régulateur "bloqué".
6. Plombage.

1. Togliere la calotta di chiusura. Ruotando in senso antiorario la vite B la molla si libera. Ruotare fino contro l'arresto.
2. Svitare completamente il dispositivo B e sfilare la molla C
3. **Per $p_1 \leq 150$ mbar**
 Inserire la molla nr. 8 (colore rosa)
Per $p_1 > 150$ mbar
 inserire il cilindretto di bloccaggio
4. rimontare il dispositivo completo di regolazione e ruotare fino all'arresto inferiore. Non effettuare alcuna forzatura
5. Avvitare la calotta A e siglare il regolatore con la voce "bloccato"
6. Piombatura



Filterwechsel

1. FRI ausbauen
2. Stützring A abziehen
3. Filtereinsatz B entnehmen
4. Sieb C entfernen
5. Neues Sieb einsetzen
6. Neuen Filtereinsatz B einsetzen
7. Stützring A eindrücken
8. FRI in die Gasleitung einbauen.
9. Funktions- und Dichtheitskontrolle durchführen.

Filter exchange

1. Remove FRI
2. Remove supporting ring A.
3. Remove filter insert B.
4. Remove sieve C.
5. Insert new sieve.
6. Insert new filter insert B.
7. Press in supporting ring A.
8. Install FRI in gas line.
9. Perform function and leak test.

Changement du filtre

1. Déposer le FRI.
2. Extraire la bague d'appui A.
3. Enlever l'élément filtrant B.
4. Enlever le filtre C.
5. Monter le filtre neuf.
6. Monter le nouvel élément filtrant B
7. Enfoncer la bague d'appui A.
8. Monter le FRI dans la conduite de gaz.
9. Procéder à un contrôle de fonctionnement et d'étanchéité.

Sostituzione del filtro

1. smontare l'apparecchio FRI
2. estrarre l'anellino A
3. togliere il pezzo del filtro B
4. togliere il filtrino C
5. inserire il nuovo filtrino
6. inserire il nuovo pezzo del filtro B
7. inserire l'anellino A
8. rimontare nella linea del gas l'apparecchio FRI
9. effettuare un controllo del funzionamento e della tenuta



Filterkontrolle
mindestens einmal jährlich!

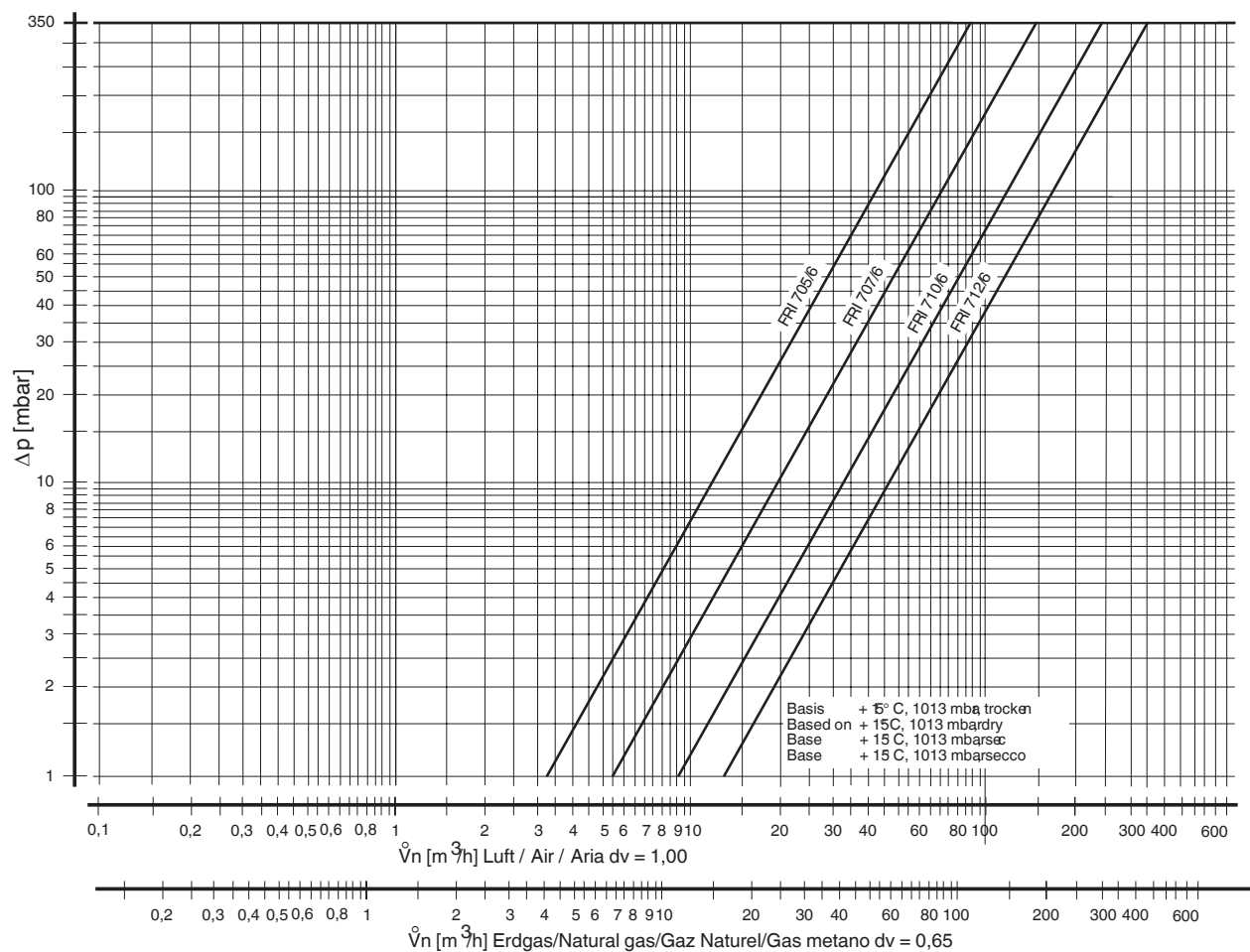
Inspect filter
at least once a year.

Contrôler le filtre au moins une
fois par an.

Controllare il filtro almeno una
volta all'anno!

Durchfluß-Diagramm 1 / Flow Diagram 1 / Courbe des débits 1 / Diagramma di portata 1

mechanisch offen / mit Feinfilter / für Geräteauswahl FRI Durchflußdiagramm 1 anwenden
mechanical open / with micro filter / use flow diagram 1 for equipment selection FRI
mécaniquement ouvert / avec filtre fin / pour sélectionner un FRI, utiliser la courbe des débits 1
aprire meccanicamente / con filtro fine / per scelta dell'apparecchio FRI utilizzare diagramma portata 1



$$\dot{V}_{\text{verwendetes Gas/gas used/ gaz utilisé/gas utilizzato}} = \dot{V}_{\text{Luft/air/aria}} \times f$$

f =

spez. Gewicht Luft
Spec. weight air
poids spécifique de l'air
peso specifico aria

spez. Gewicht des verwendeten Gases
Spec. weight of gas used
poids spécifique du gaz utilisé
peso specifico del gas utilizzato

Gasart
Type of gas
Type de gaz
Tipo di gas

Spez. Gewicht
Spec. Wgt.
poids spécifique
Peso specifico
[kg/m³]

dv

f

Erdgas/Nat. Gas/
Gaz naturel/Gas metano

0.81

0.65

1.24

Stadtgas/City gas/
Gaz de ville/Gas città

0.58

0.47

1.46

Flüssiggas/LPG/
Gaz liquide/Gas liquido

2.08

1.67

0.77

Luft/Air/
Air/Aria

1.24

1.00

1.00

Ersatzteile / Zubehör Spare parts / Accessories Pièces de rechange / access. Parti di ricambio / Accessori	Bestell-Nummer Order No. No. de commande Codice articolo
Verschlußschraube mit Dichtring Locking screw and sealing ring Bouchon fileté avec joint d'étan- chéite Tappo a vite con guarnizione G 1/8	5 Stück/Set 5 Pieces/Set 5 Pièces/Set 5 Pezzi/Set 230 395
Schmutzfänger, Sieb + Feinfiltereinsatz Dirt trap, sieve + Microfilter insert Filtre, tamis + Élément filtrant Filtro antipolvere, reticella + Inserto filtro fine FRI 705/6 FRI 707/6 FRI 710/6 FRI 712/6	1 Stück/Set 1 Pieces/Set 1 Pièces/Set 1 Pezzi/Set 230 440 230 440 230 441 230 441
O-Ring, EN geprüft O-ring, EN-tested Join torique, testé EN O-Ring, collaudato a norme EN FRI 705/6 + 707/6 57,00 x 3,00 FRI 710/6 + 712/6 75,00 x 3,50	2 Stück/Set 2 Pieces/Set 2 Pièces/Set 2 Pezzi/Set 230 443 230 444
Meßstutzen mit Dichtring Set of setscrews Prise de pression avec joint Attacco di misurazione con anello di tenuta G 1/8	5 Stück/Set 5 Pieces/Set 5 Pièces/Set 5 Pezzi/Set 230 397
Schutzkappe mit Plombier- möglichkeit Protective cap with lead seal option Capuchon Calotta di protezione con possi- bilità di piombatura FRI 705/6 - 712/6	5 Stück/Set 5 Pieces/Set 5 Pièces/Set 5 Pezzi/Set 230 400

Ersatzteile / Zubehör Spare parts / Accessories Pièces de rechange / access. Parti di ricambio / Accessori	Bestell-Nummer Order No. No. de commande Codice articolo
Federauswahl FRI 705/6 - 707/6 Selection of springs FRI 705/6 - 707/6 Sélection de ressorts FRI 705/6 - 707/6 scelta della molla x FRI 705/6 - 707/6 Nr. 3 5 - 20 mbar orange/orange/orange/arancione Nr. 4 10 - 30 mbar blau/blue/bleu/blu Nr. 5 25 - 55 mbar rot/red/rouge/rosso Nr. 6 30 - 70 mbar gelb/yellow/jaune/giallo Nr. 7 60 - 110 mbar schwarz/black/noir/nero Nr. 8 100 - 150 mbar rosa/pink/rose/rosa Nr. 9 140 - 200 mbar grau/grew/gris/grigio	229 820 229 821 229 822 229 823 229 824 229 825 229 826
Federauswahl FRI 710/6 - 712/6 Selection of springs FRI 710/6 - 712/6 Sélection de ressorts FRI 710/6 - 712/6 scelta della molla x FRI 710/6 - 712/6 Nr. 3 5 - 20 mbar orange/orange/orange/arancione Nr. 4 10 - 30 mbar blau/blue/bleu/blu Nr. 5 25 - 55 mbar rot/red/rouge/rosso Nr. 6 30 - 70 mbar gelb/yellow/jaune/giallo Nr. 7 60 - 110 mbar schwarz/black/noir/nero Nr. 8 100 - 150 mbar rosa/pink/rose/rosa Nr. 9 140 - 200 mbar grau/grew/gris/grigio	229 844 229 845 229 846 229 847 229 848 229 849 229 850
Montageset FRI FRI assembly kit Kit de montage FRI Set di montaggio per FRI FRI 705/6 FRI 707/6 FRI 710/6 FRI 712/6	224 093 224 093 224 094 224 094
Montageset FRI + DMV FRI + DMV assembly kit Kit de montage FRI + DMV Set di montaggio per FRI + DMV FRI 705/707/6 an/to/sur/al DMV 701/6.. FRI 710/712/6 an/to/sur/al DMV 702/6..+ DMV 703/6..	219 967 219 968

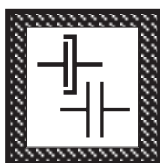


Arbeiten am Gas-Druckregelgerät dürfen nur von Fachpersonal durchgeführt werden.

Work on the gas pressure regulator may only be performed by specialist staff.

Seul du personnel spécialisé peut effectuer des travaux sur le régulateur de pression.

Qualsiasi operazione effettuata sul regolatore di pressione gas deve essere fatta da parte di personale competente.

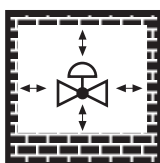


Flanschflächen schützen. Schrauben kreuzweise anziehen.

Protect flange surfaces. Tighten screws cross-wise

Protéger les surfaces de brides. Serrer les vis en croisant.

Proteggere le superfici della flangia. Stringere le viti in modo incrociato.

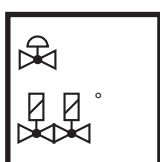


Direkter Kontakt zwischen dem Gas-Druckregelgerät und aushärtendem Mauerwerk, Betonwänden, Fußböden ist nicht zulässig.

Do not allow any direct contact between the gas pressure regulator and hardened masonry, concrete walls or floors.

Eviter tout contact direct entre le régulateur de pression et la maçonnerie, les cloisons en béton et planchers en cours de séchage.

Non é consentito il contatto diretto fra il regolatore di pressione gas e murature invecchiate, pareti in calcestruzzo, pavimenti.

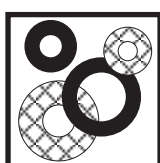


Nennleistung bzw. Drucksollwerte grundsätzlich am Gas-Druckregelgerät einstellen. Leistungsspezifische Drosselung über das Doppelmagnetventil.

Always adjust nominal output or pressure set points on the gas pressure regulator and performance-specific throttling using the solenoid valve.

Régler toujours le débit nominal ou les pressions de consigne sur le régulateur de pression. Limitation au niveau de vanne, en fonction du débit.

Effettuare in linea di massima la regolazione di portata nominale e valori nominali di pressione sul regolatore di pressione gas. La regolazione specifica di portata va fatta attraverso la valvola.

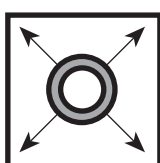


Grundsätzlich nach Teileausbau/-umbau neue Dichtungen verwenden.

Always use new seals after dismounting and mounting parts.

Après un démontage ou une modification, utiliser toujours des joints neufs.

In linea di massima, dopo lo smontaggio e il rimontaggio di alcune parti, utilizzare nuove guarnizioni.



Rohrleitungsdichtheitsprüfung: Kugelhahn vor den Armaturen/Gas-Druckregelgerät schließen.

Pipeline leak test: close ball cock upstream of fittings/FRI.

Contrôle de l'étanchéité de la conduite: fermer le robinet à boisseau sphérique avant les robinetteries / FRI.

Per la prova di tenuta delle tubature: chiudere il rubinetto a sfera davanti alle valvole / FRI.

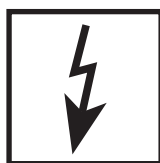


Nach Abschluß von Arbeiten am Gas-Druckregelgerät: Dichtheitskontrolle und Funktionskontrolle durchführen.
 $p_{\text{Prüf}} \leq 500 \text{ mbar}$

On completion of work on the FRI, perform leak and function test.
 $p_{\text{test}} \leq 500 \text{ mbar}$

Une fois les travaux sur le FRI terminés, procéder toujours à un contrôle d'étanchéité et de fonctionnement.
 $p_{\text{test}} \leq 500 \text{ mbar}$

Al termine dei lavori effettuati su un FRI: predisporre un controllo sia della tenuta che del funzionamento. $p_{\text{test}} \leq 500 \text{ mbar}$



Niemals Arbeiten durchführen, wenn Gasdruck oder Spannung anliegt. Offenes Feuer vermeiden. Öffentliche Vorschriften beachten.

Never perform work if gas pressure or power is applied. No naked flame. Observe public regulations.

Ne jamais effectuer des travaux sous pression et ou sous tension. Eviter toute flamme ouverte. Observer les réglementations.

In nessun caso si debbono effettuare lavori in presenza di pressione gas o di tensione elettrica. Evitare i fuochi aperti e osservare le prescrizioni di sicurezza Pocali.



Bei Nichtbeachtung der Hinweise sind Personen- oder Sachfolgeschäden denkbar.

If these instructions are not heeded, the result may be personal injury or damage to property.

En cas de non-respect de ces instructions, des dommages corporels ou matériels sont possibles.

La non osservanza di quanto suddetto può implicare danni a persone o cose.

Änderungen, die dem technischen Fortschritt dienen, vorbehalten / We reserve the right to make any alterations in the course of technical progress
Sous réserve de toute modification constituant un progrès technique / Ci riserviamo qualsiasi modifica tecnica e costruttiva

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Die Druckgeräterichtlinie (PED) und die Richtlinie über die Gesamtenergieeffizienz von Gebäuden (EPBD) fordern eine regelmäßige Überprüfung der Wärmeerzeuger zur langfristigen Sicherstellung von hohen Nutzungsgraden und somit geringster Umweltbelastung.

Es besteht die Notwendigkeit sicherheitsrelevante Komponenten nach Erreichen ihrer Nutzungsdauer auszutauschen:

The Pressure Equipment Directive (PED) and the Energy Performance of Buildings Directive (EPBD) require a periodic inspection of heat generators in order to ensure a high degree of efficiency over a long term and, consequently, the least environmental pollution.

It is necessary to replace safety-relevant components after they have reached the end of their useful life:

La directive équipements sous pression (PED) et la directive sur la performance énergétique des bâtiments (EPBD) exigent une vérification régulière des générateurs de chaleur afin de garantir à long terme des taux d'utilisation élevés et par conséquent une charge environnementale minimum.

Il est nécessaire de remplacer les composants relatifs à la sécurité lorsqu'ils ont atteint la fin de leur vie utile :

La direttiva per apparecchi a pressione (PED) e la direttiva per l'efficienza dell'energia totale per edifici (EPBD), esigono il controllo regolare dei generatori di calore per la garanzia a lungo termine di un alto grado di rendimento e quindi di basso inquinamento ambientale.

Ciò rende necessaria la sostituzione di componenti rilevanti dal punto di vista della sicurezza alla scadenza della loro durata di utilizzazione:

Sicherheitsrelevante Komponente Safety-relevant component Composant relatif à la sécurité Componenti rilevanti per la sicurezza	Konstruktionsbedingte Lebensdauer Design-related service life Durée de vie prévue Durata di vita di progetto		Norm Standard Norme Norma	Dauerhafte Lagertemperatur Permanent storage temperature Température de stockage permanente Temperatura di stoccaggio permanente
	Zyklenzahl Operating cycles Cycle d'opération Numero di cicli di funzionamento	Jahre Years Années Anni		
Ventilprüfsysteme / Valve testing systems / Systèmes de contrôle de vanne / Sistemi di controllo valvole	250 000	10	EN 1643	0...45 °C 32...113 °F
Gas / Gas / Gaz / Gas Druckwächter / Pressure switch / Manostat / Pressostato	50 000	10	EN 1854	
Luft / Air / Air / Aria Druckwächter / Pressure switch / Manostat / Pressostato	250 000	10	EN 1854	
Gas mangelschalter / Low gas pressure switch / Pressostat gaz basse pression / Pressostato gas di minima pressione	N/A	10	EN 1854	
Feuerungsmanager / Automatic burner control / Dispositif de gestion de chauffage / Gestione bruciatore	250 000	10	EN 298 EN 230	
UV-Flammenfühler ¹ UV flame sensor ¹ Capteur de flammes UV ¹ Sensore fiamma UV ¹	N/A	10 000 h ³	---	
Gasdruckregelgeräte ¹ Gas pressure regulators ¹ Dispositifs de réglage de pression du gaz ¹ Regolatori della pressione del gas ¹	N/A	15	EN 88-1 EN 88-2	
Gasventil mit Ventilprüfsystem ² Gas valve with valve testing system ² Vanne de gaz avec système de contrôle de vanne ² Valvola del gas con sistema di controllo valvola ²	nach erkanntem Fehler after error detection après détection d'erreur dopo segnalazione di errore		EN 1643	
Gasventil ohne Ventilprüfsystem ² Gas valve without valve testing system ² Vanne de gaz sans système de contrôle de vanne ² Valvola del gas senza sistema di controllo valvola ²	DN ≤ 25 200 000 25 < DN ≤ 80 100 000 80 < DN ≤ 150 50 000	10	EN 161	
Gas-Luft-Verbandsysteme / Gas-air ratio control system / Systèmes combinés gaz/air / Sistemi di miscelazione gas-aria	N/A	10	EN 88-1 EN 12067-2	
¹ Nachlassende Betriebseigenschaften wegen Alterung / Performance decrease due to ageing / Réduction de performance due au vieillissement / Riduzione delle prestazioni dovuta all'invecchiamento ² Gasfamilien II, III / Gas families II, III / Familles de gaz II, III / per i gas delle famiglie II, III ³ Betriebsstunden / Operating hours / Heures de service / Ore di esercizio N/A nicht anwendbar / not applicable / non applicable / non applicabile				

Lagerzeiten / Storage times / Périodes de stockage / Tempi di stoccaggio

Lagerzeiten ≤ 1 Jahr verkürzen nicht die konstruktionsbedingte Lebensdauer.

Storage time ≤ 1 year does not reduce the design-related service life.

Les périodes de stockage ≤ 1 an ne réduisent pas la durée de vie liée à la conception.

I tempi di stoccaggio ≤ 1 anno non riducono la durata di vita di progetto.

DUNGS empfiehlt eine **maximale Lagerzeit von 3 Jahren**.

DUNGS recommends a **maximum storage time of 3 years**.

DUNGS recommande une **durée de stockage maximale de 3 ans**.

DUNGS raccomanda un **tempo massimo di stoccaggio di 3 anni**.

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