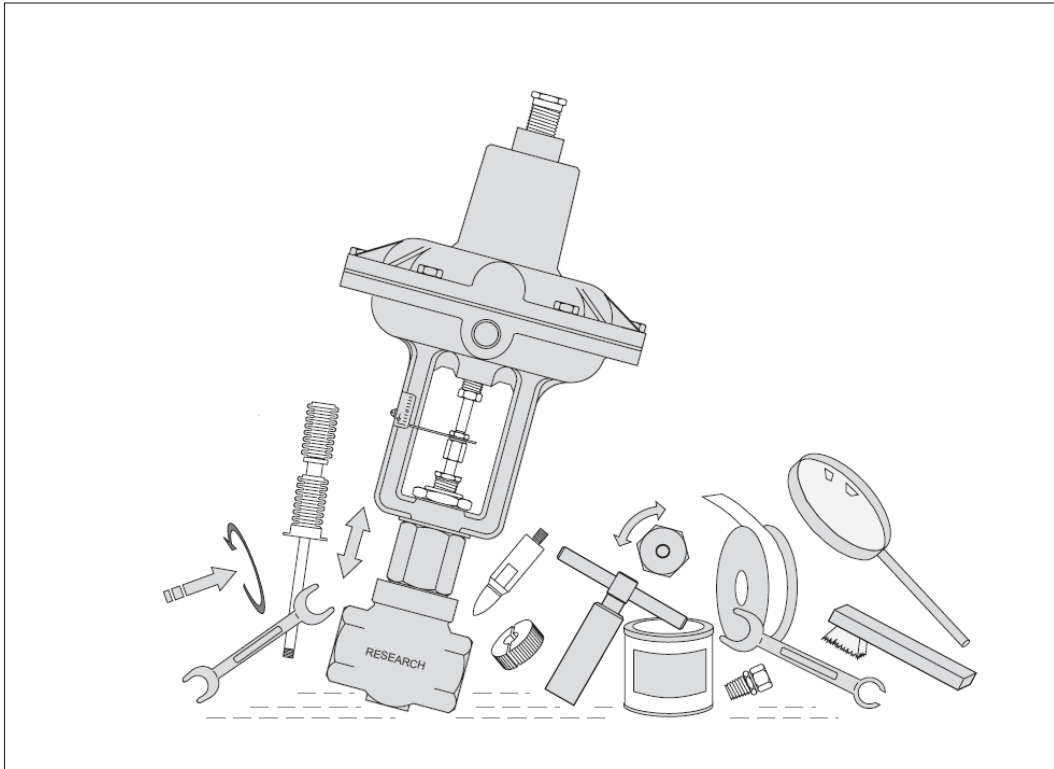


# Instruction Manual

## Manual de Instruções

### RESEARCH CONTROL® VALVES



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**Badger Meter Europa GmbH**

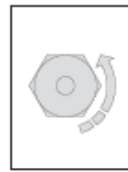
08/01

Nürtinger Str. 76  
72639 Neuffen (Alemanha)  
Tel. 0049 – (0)7025 – 9208- 0  
Fax. 0049 – (0)7025 – 9208 -15

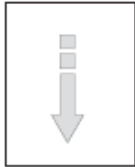
## SYMBOLS - SÍMBOLOS



**Remove or Separate**  
Remover ou Separar



**Turn (counter clockwise)**  
Gire (no sentido contrário ao dos ponteiros do relógio)



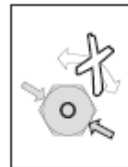
**Install or Insert**  
Instalar ou Inserir



**Turn (clockwise)**  
Gire (no sentido dos ponteiros do relógio)



**Use standard wrench or tool**  
Use ferramenta ou chave de porcas normal



**DO NOT rotate or turn**  
NÃO gire nem rode



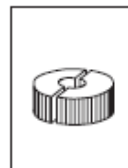
**Use special wrench or tool**  
Use ferramenta ou chave de porcas especial



**Examine**  
Examine

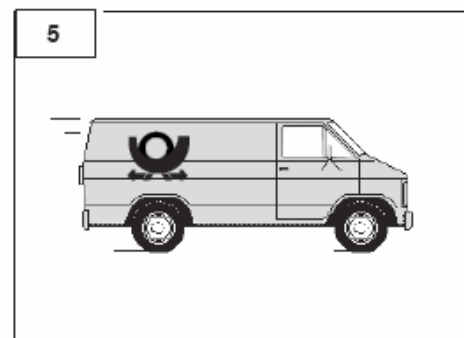
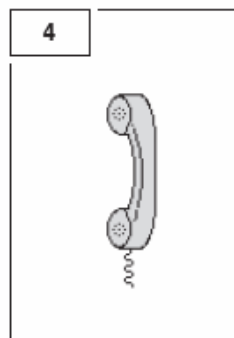
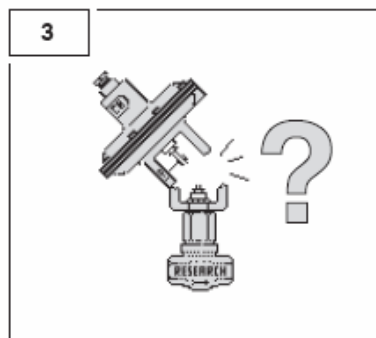
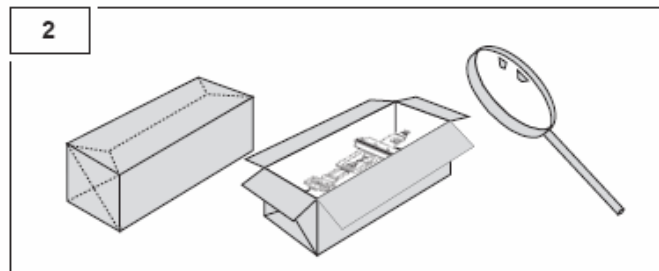
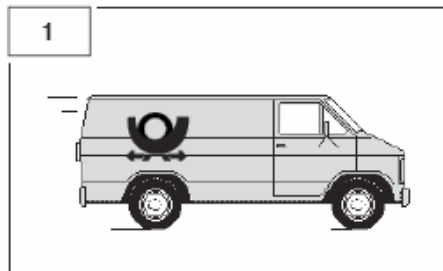


**Lubricant**  
Lubrificante



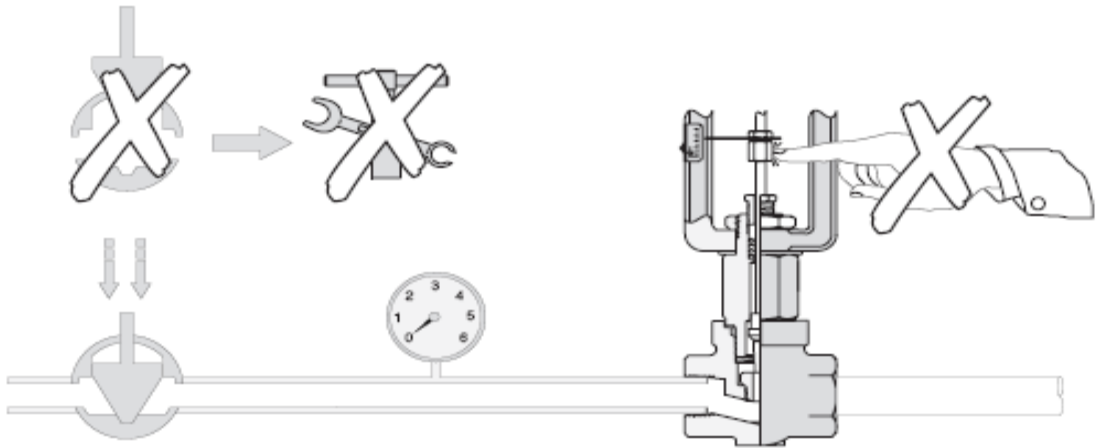
**Special tool (brass)**  
Ferramenta especial (bronze)

## UNPACKING - DESEMBALAR

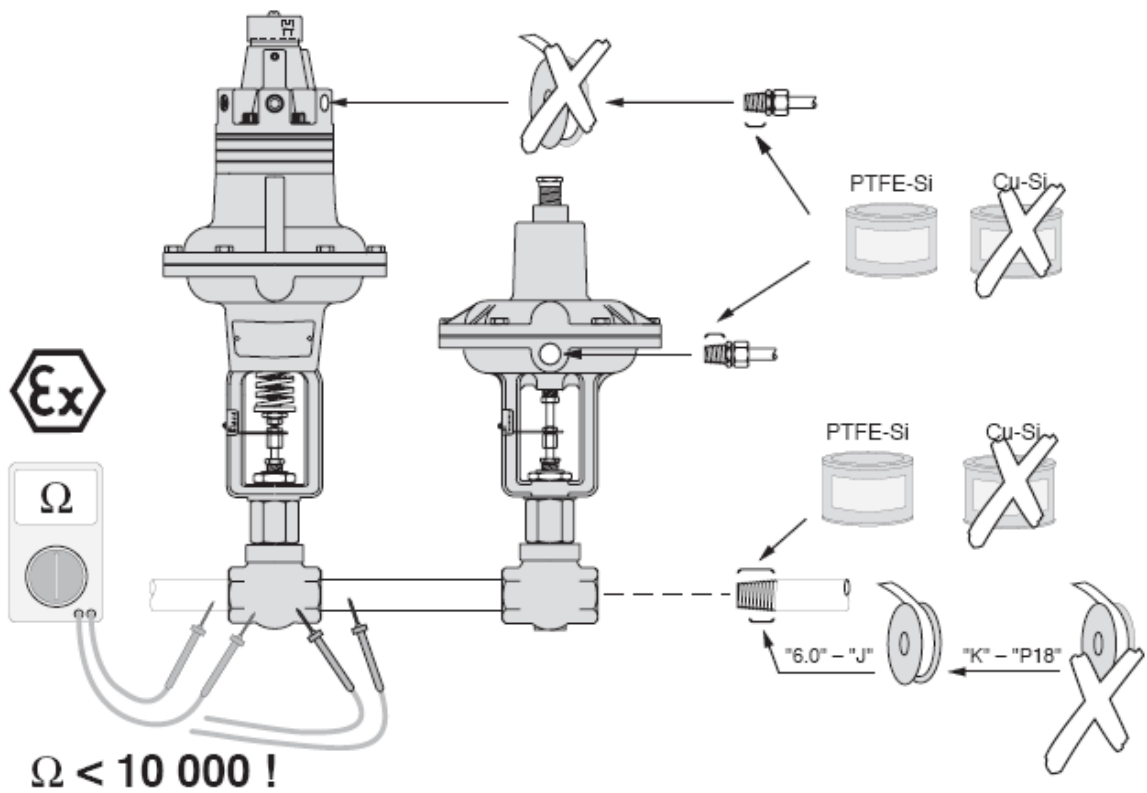


**Shut off pressure before taking valve apart**  
Retire a pressão antes de separar a válvula

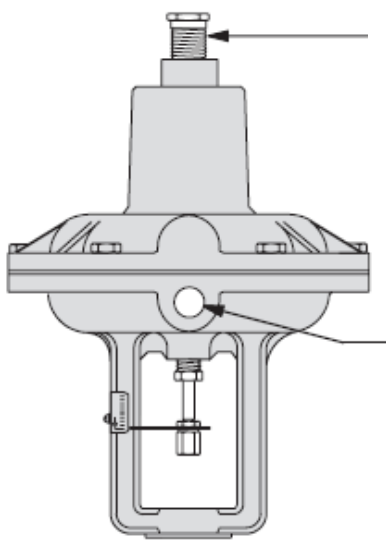
**Keep hand clear when valve is in operation**  
Mantenha as mãos afastadas quando a válvula estiver em funcionamento



## INSTALLING – INSTALAÇÃO



**AIR TO OPEN – Increasing air opens the valve**  
ABERTURA DE AR – Aumentar o ar abre a válvula



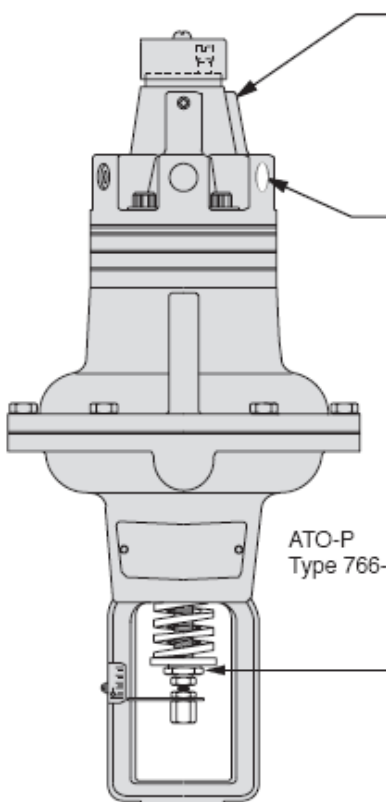
**Spring Adjustor: Sets the open/closing position of the valve**  
Regulador de Mola: Define a posição aberto/fechado da válvula

ATO  
Type 754

**Air Connection**  
Ligação de Ar

**Signal Pressure**  
Pressão de Sinal

DN 1/4" 1/8" NPT  
DN 1/2"-1" 1/4" NPT



**Top Mounted Positioner**  
Posicionador do Topo

**Air Connection**  
Ligação de Ar

**Signal Pressure 0.2 – 1 bar**  
Pressão de Sinal 0,2 – 1 bar

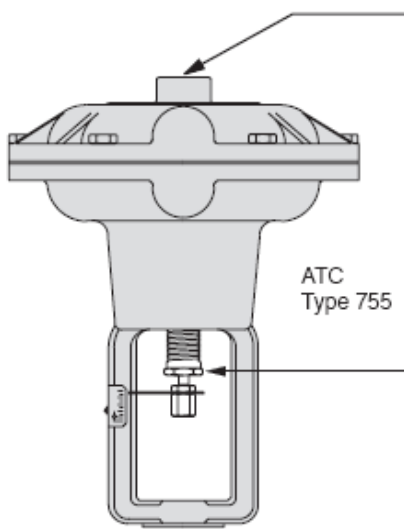
DN 1/4"-1" 1/4" NPT

**Max. Supply Pressure 4.2 bar**  
Pressão Máx. de Abastecimento 4,2 bar

ATO-P  
Type 766-BLRA

**Spring Adjustor: Sets closing spring force**  
Regulador de Mola: Define a força de fecho da mola

**AIR TO CLOSE – Increasing air closes the valve**  
**AR PARA FECHAR – Aumentar o ar fecha a válvula**



**Air Connection**  
 Ligação de Ar

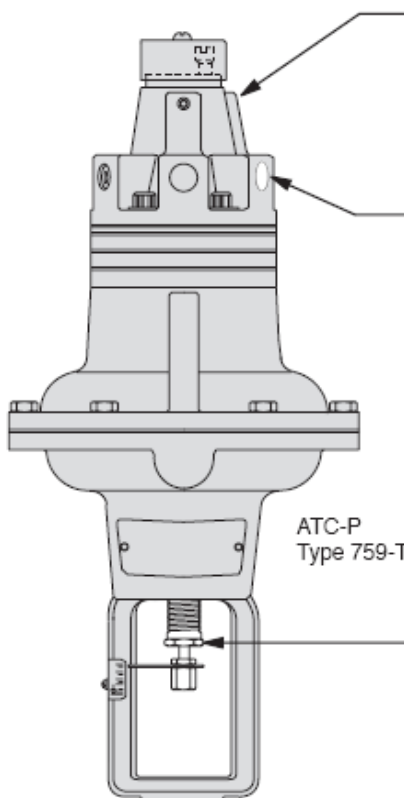
**Signal Pressure 0.2 – 1 bar**  
 Pressão de Sinal 0,2 – 1 bar

DN 1/4"	1/8" NPT
DN 1/2"-1"	1/4" NPT

ATC  
 Type 755

**Spring Adjustor: Sets the open/closing position of the valve**

Regulador de Mola: Define a posição aberto/fechado da válvula



**Top Mounted Positioner**  
 Posicionador do Topo

**Air Connection**  
 Ligação de Ar

**Signal Pressure 0.2 – 1 bar**  
 Pressão de Sinal 0,2 – 1 bar

DN 1/4"-1"	1/4" NPT
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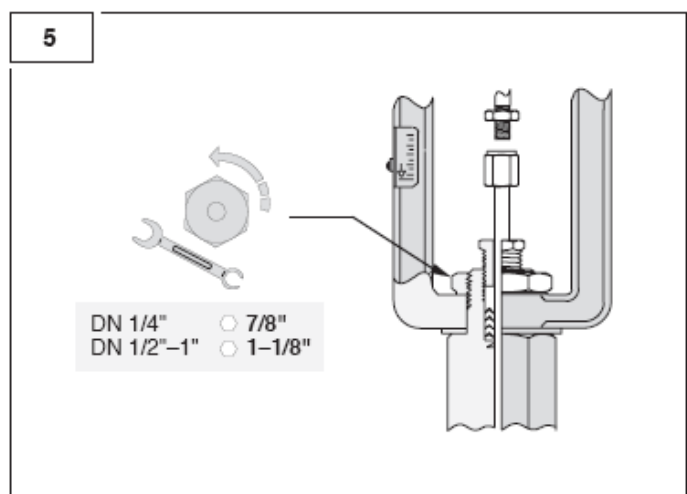
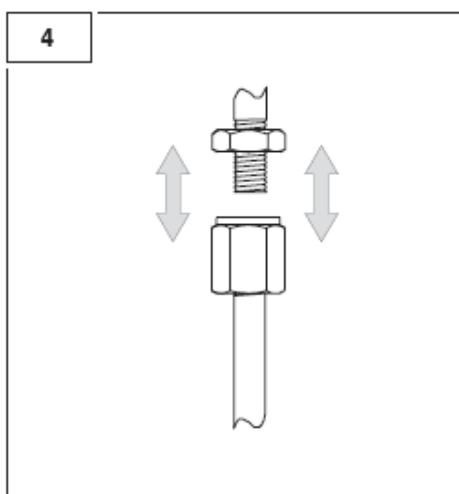
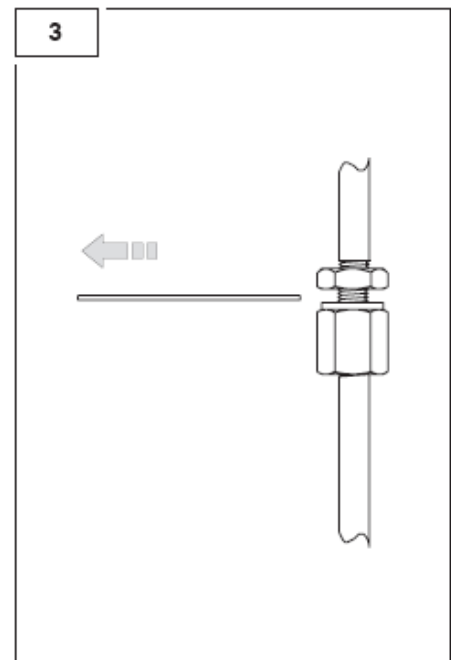
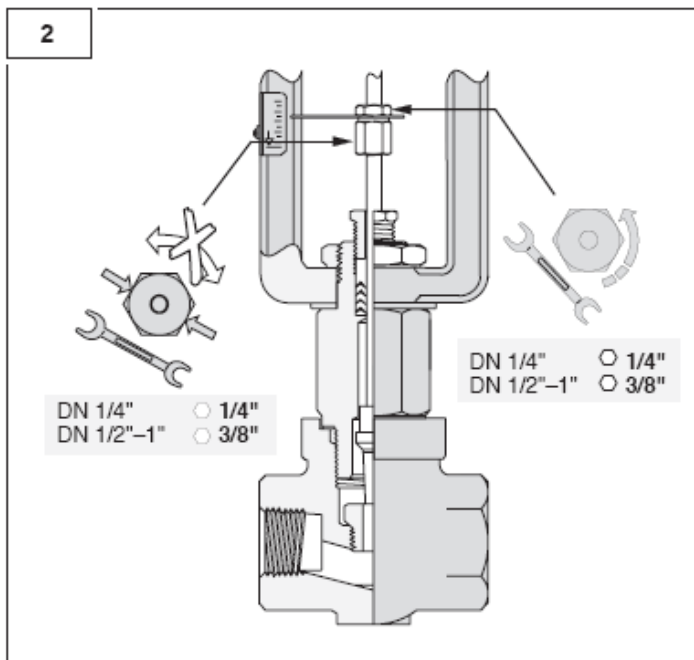
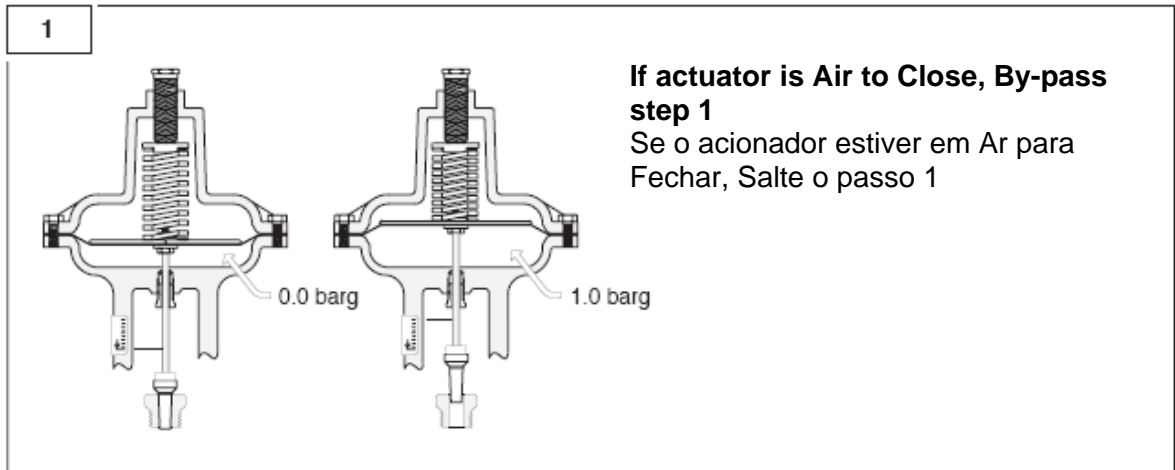
**Max. Supply Pressure 4.2 bar**  
 Pressão Máx. de Abastecimento 4,2 bar

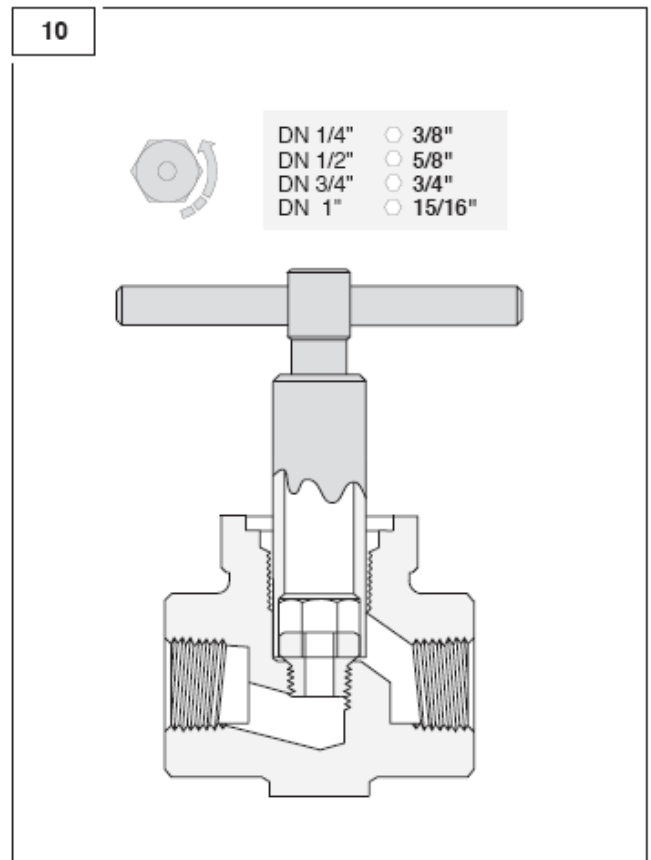
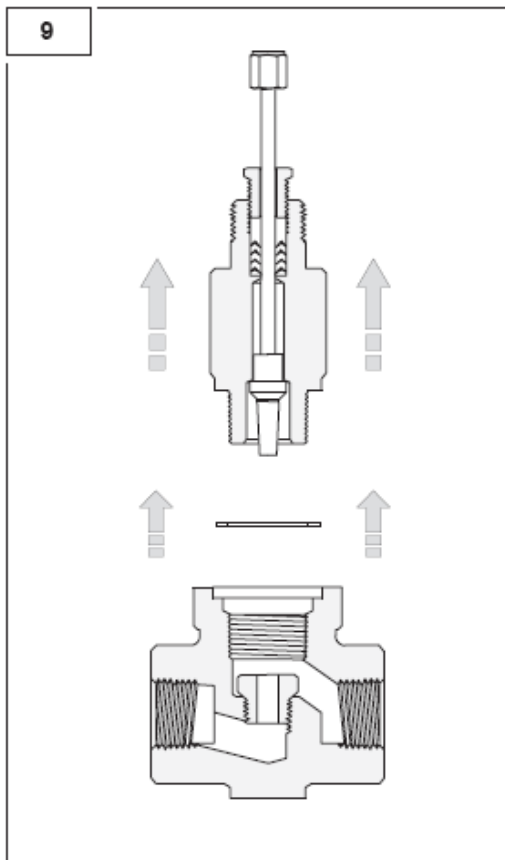
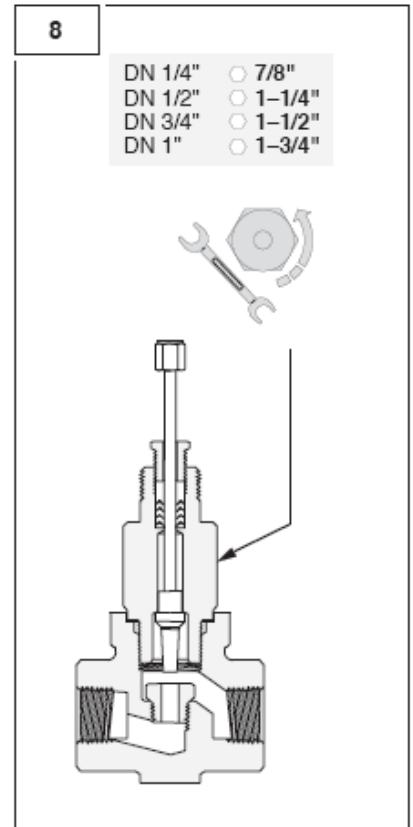
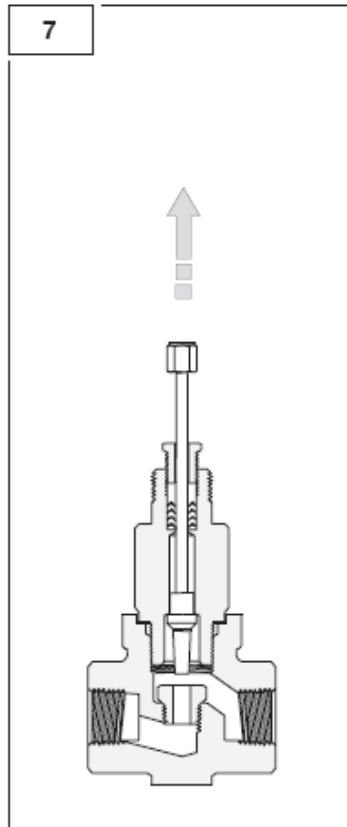
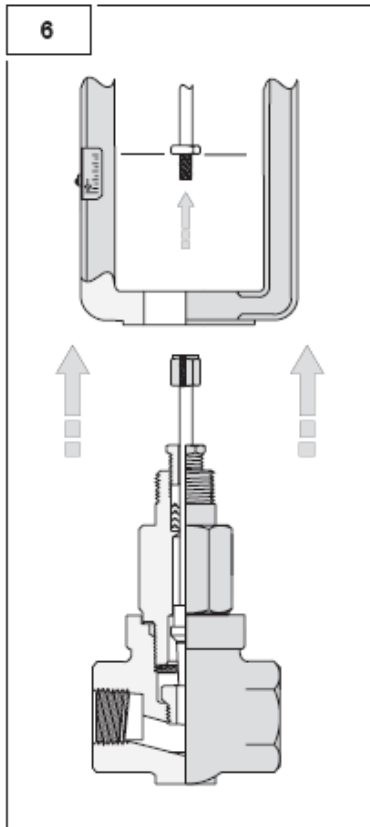
ATC-P  
 Type 759-TLDA

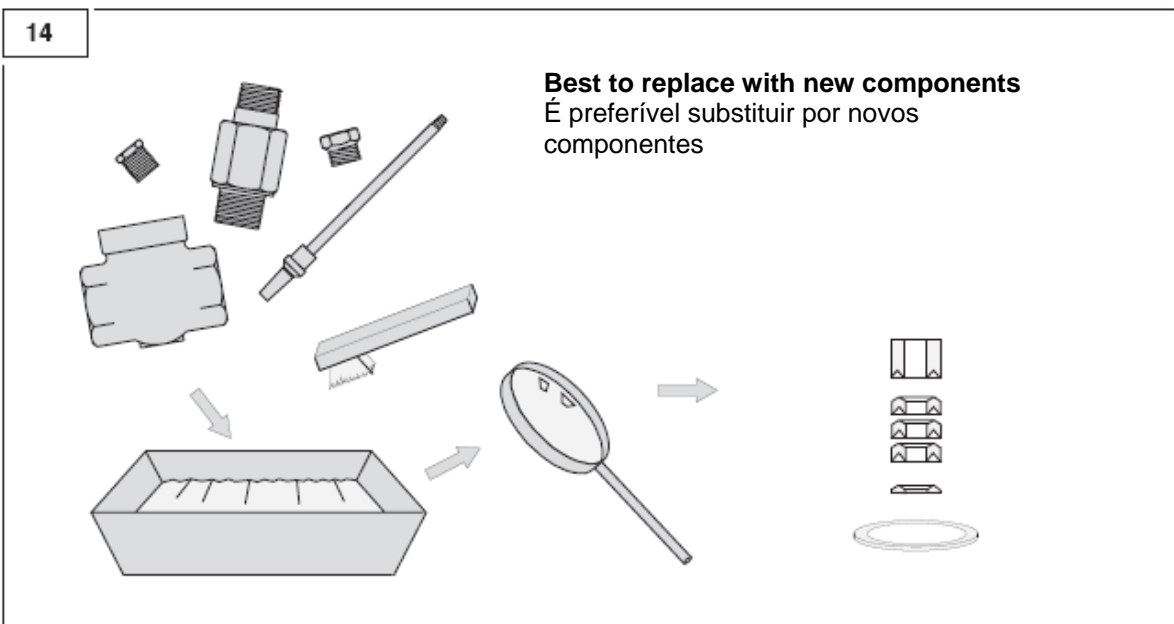
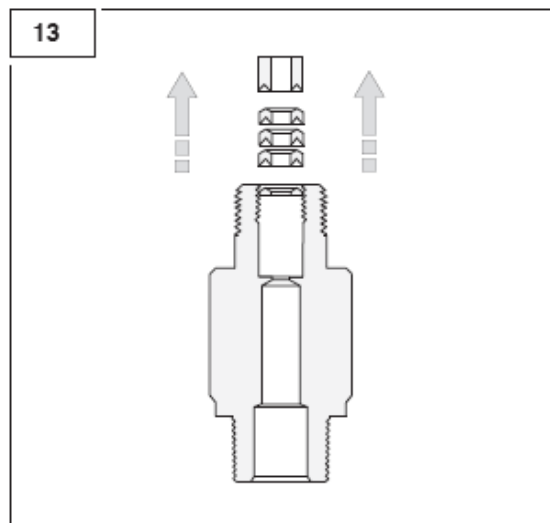
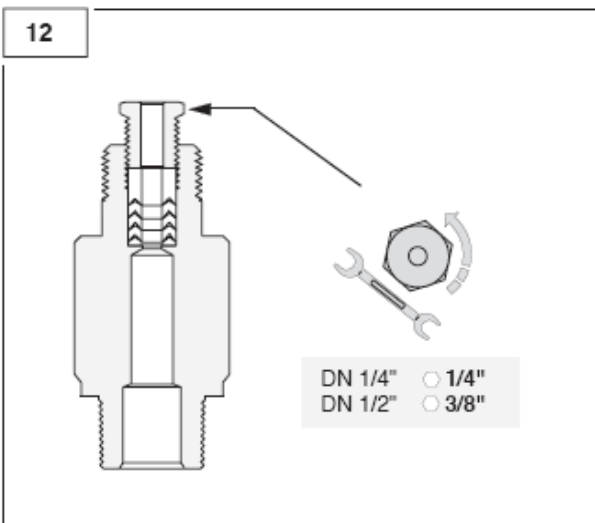
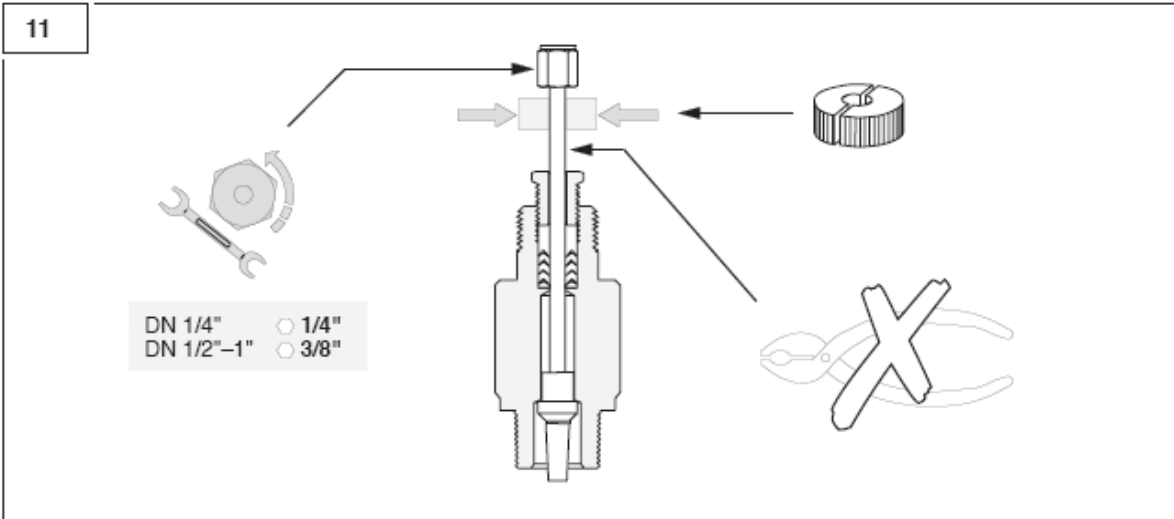
**Spring Adjustor: Sets closing spring force**

Regulador de Mola: Define a força de fecho da mola

## DIS-ASSEMBLY – DESMONTAGEM

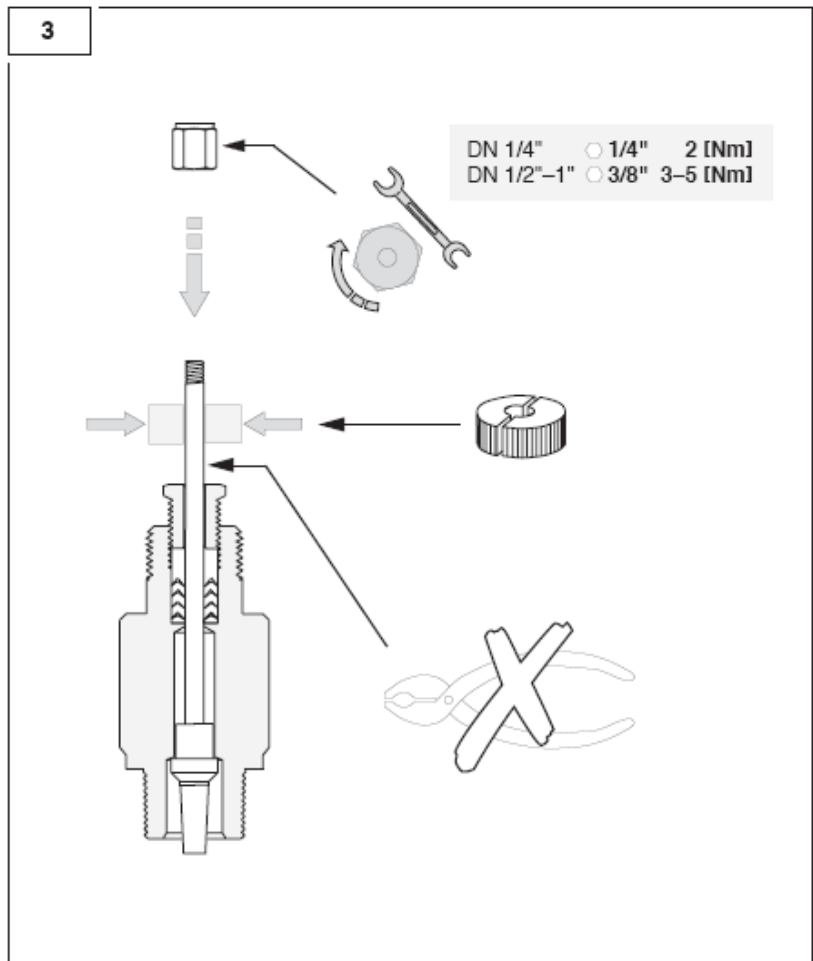
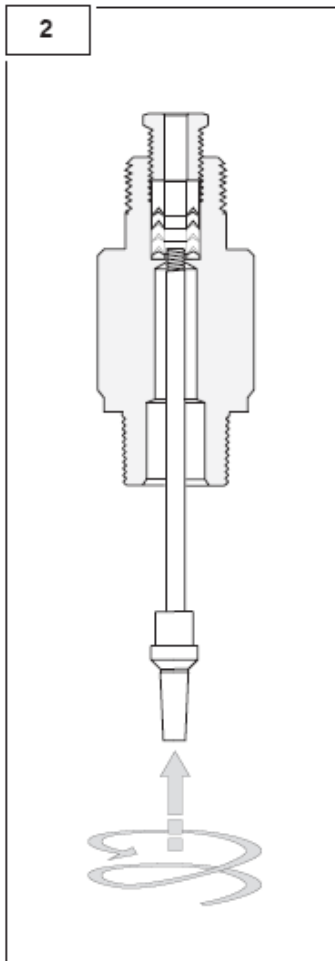
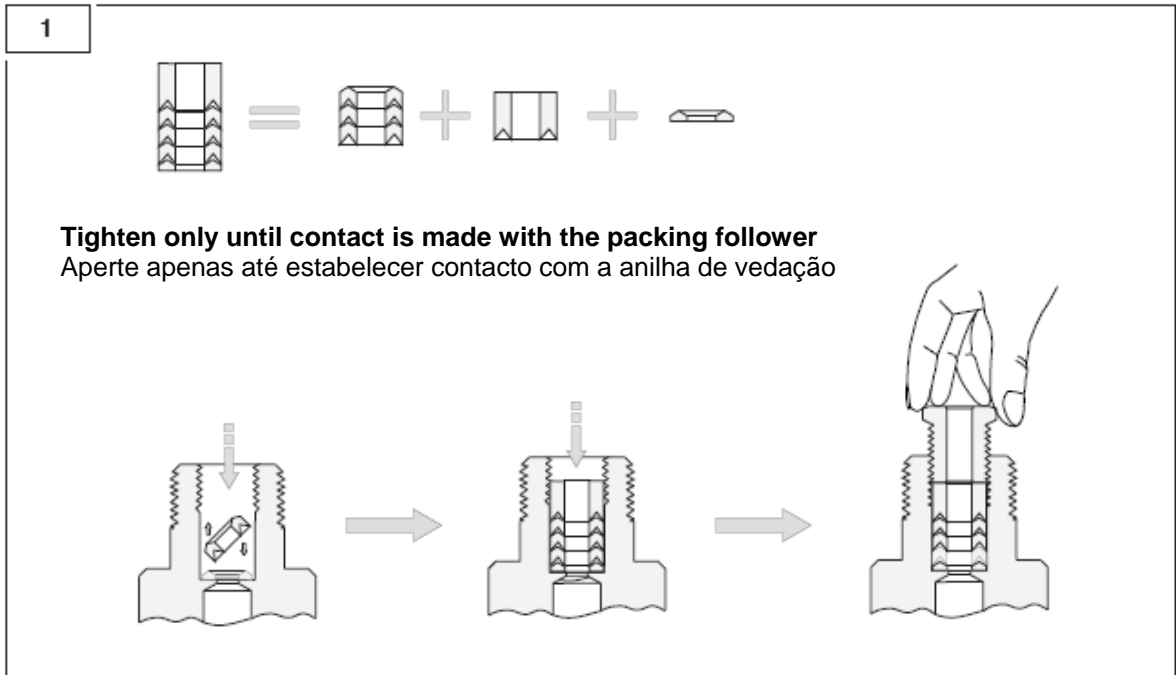


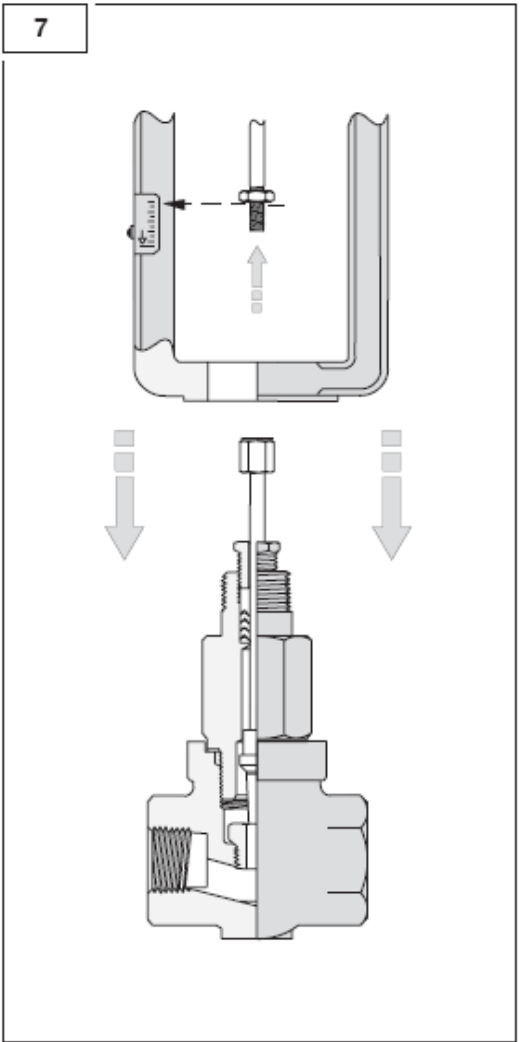
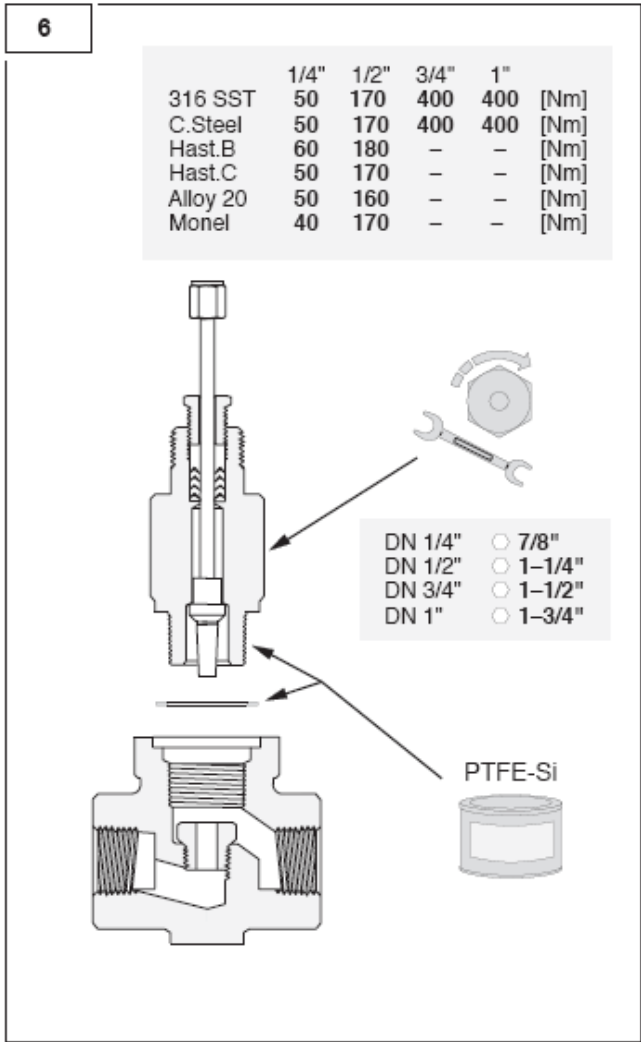
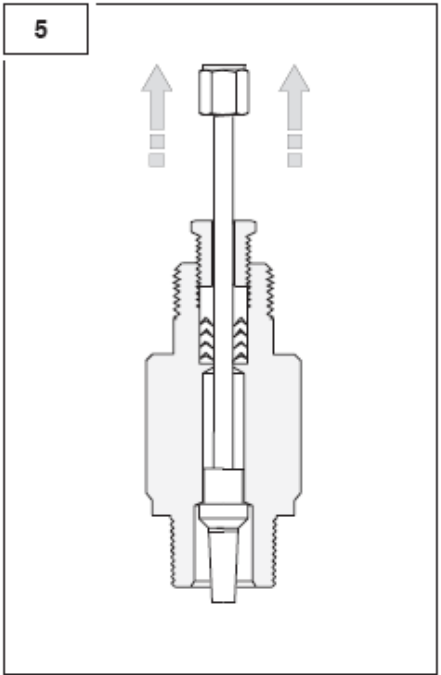
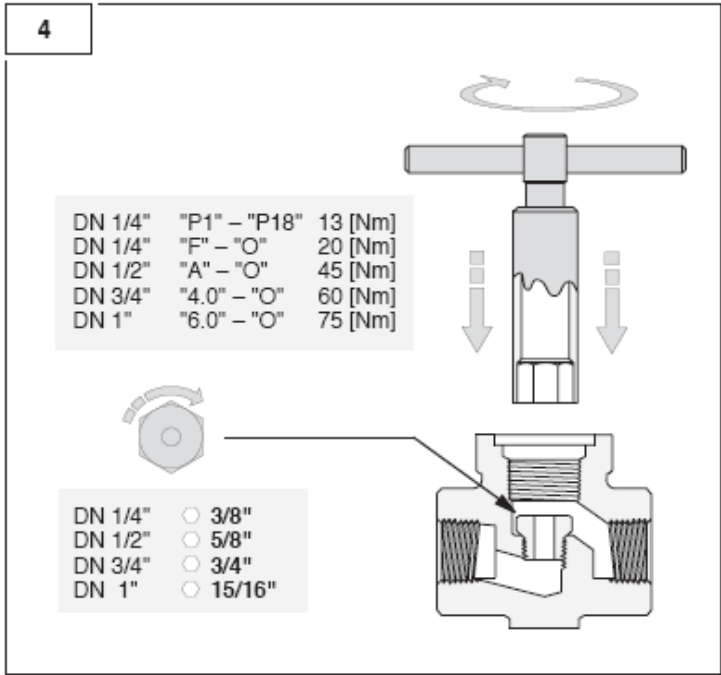


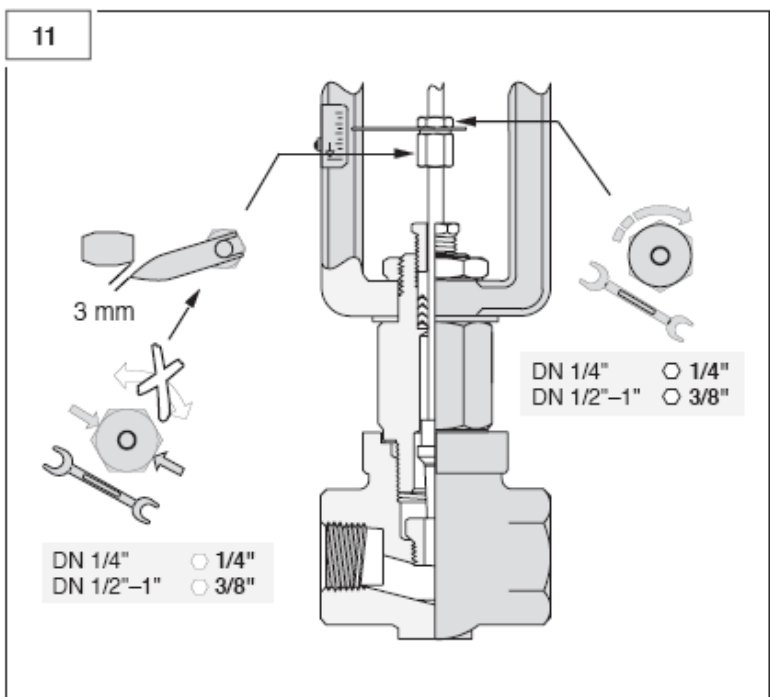
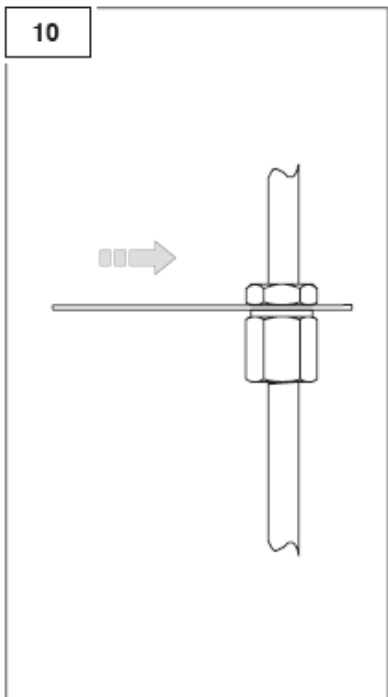
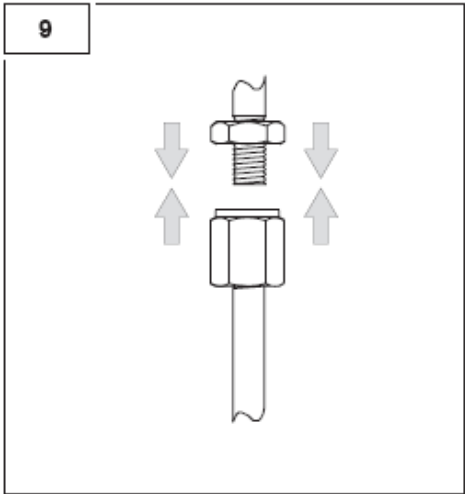
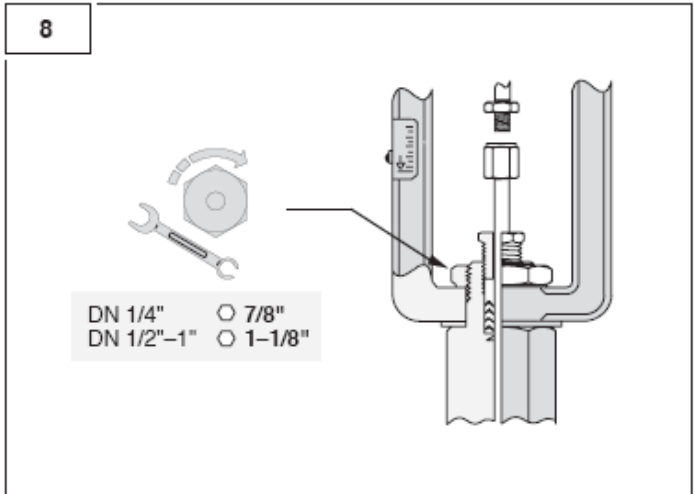




## ASSEMBLY – MONTAGEM

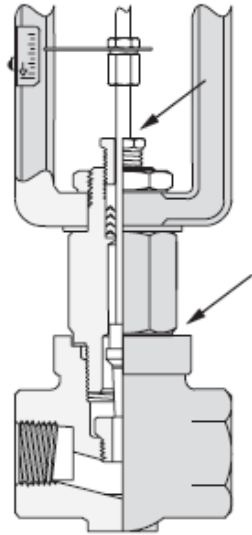






## TESTING - TESTAGEM

1



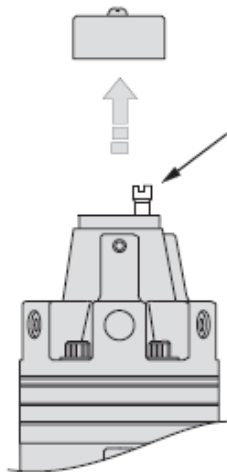
**Check for leakage**  
Verifique se há fugas

**If packing leaks, tighten just enough to stop leakage. Test packing by tightening gland ¼ turn past finger tight**

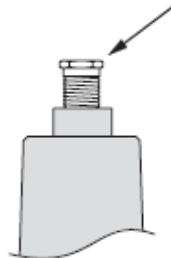
Se a vedação tiver uma fuga, aperte apenas o suficiente para parar a fuga. Teste a vedação, apertando o buçim ¼ de volta acima do aperto manual

2

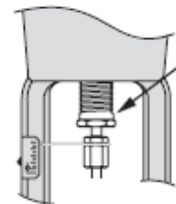
**Zero Adjustment: Sets Opening/Close position**  
Ajustamento Zero: Define a posição Aberto/Fechado



ATO-P Type 766-BLRA  
ATC-P Type 759-TLDA



ATO Type 754



ATC Type 755

## REPLACING BELLOWS – SUBSTITUIÇÃO DE FOLES

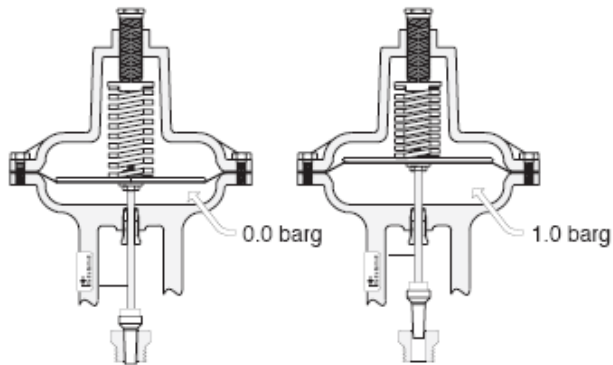
1

### Caution – Atenção

**Extreme care should be exercised in removing or installing the bellows assembly. Excess torsion will twist and deform the convolutions damaging the bellows assembly.**

Deve ter muito cuidado ao remover ou instalar o conjunto de foles. Torção em excesso torcerá e deformará as circunvoluções, danificando o conjunto de foles.

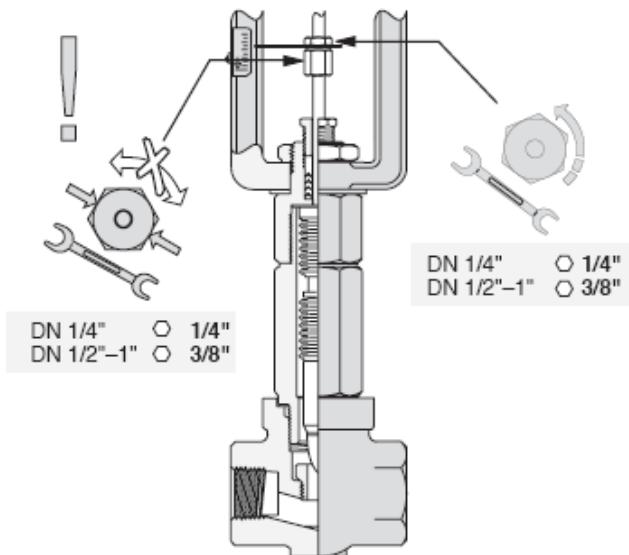
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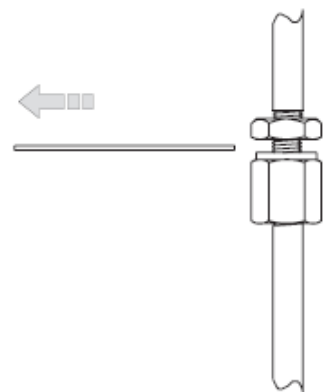
**If actuator is Air to Close, by-pass step 2**

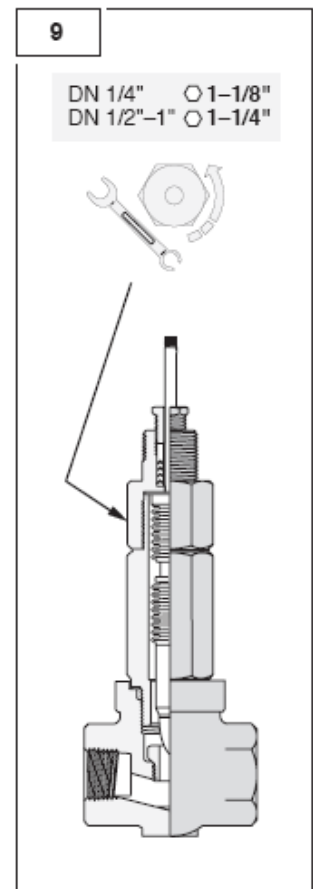
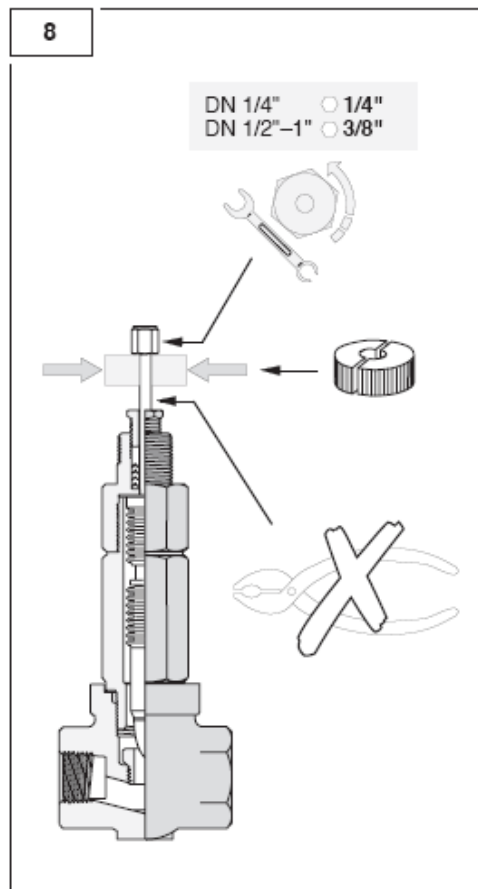
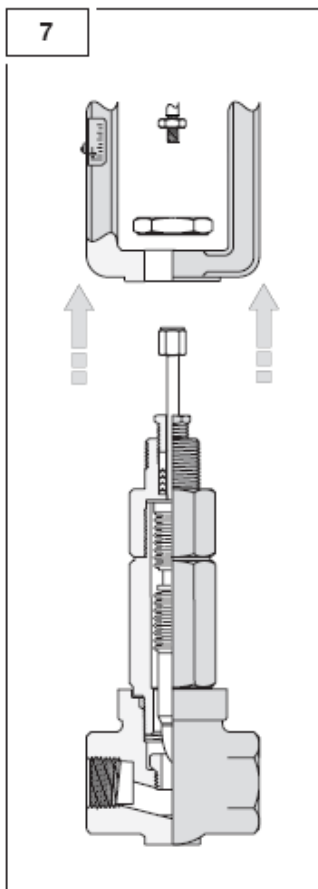
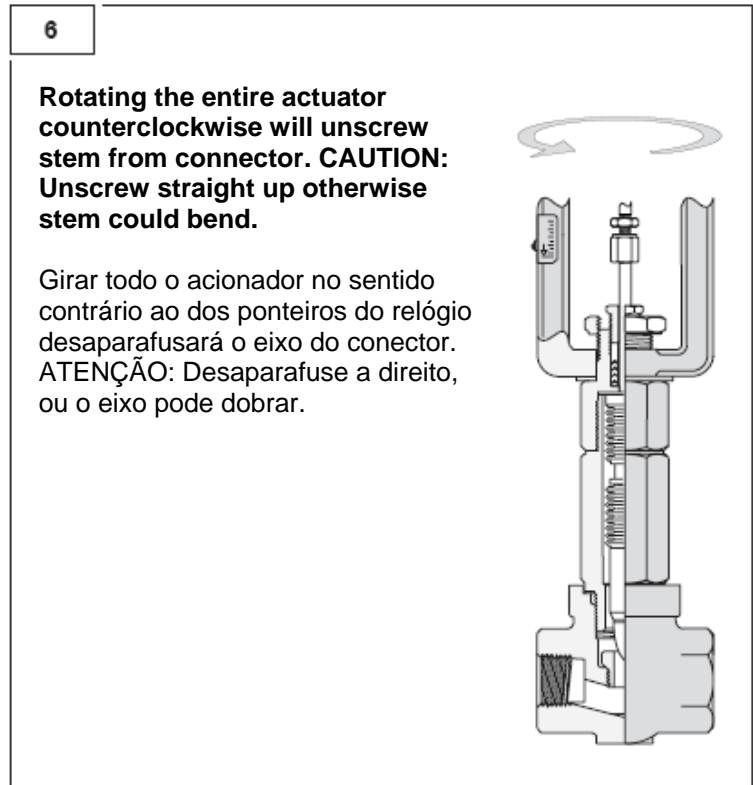
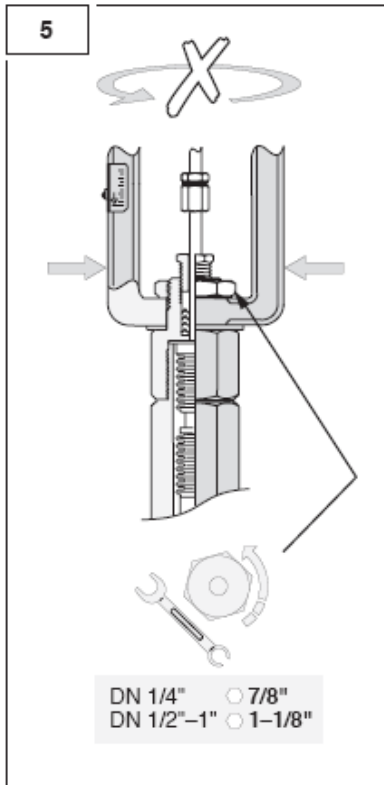
Se o acionador estiver em Ar para Fechar, salte o passo 2

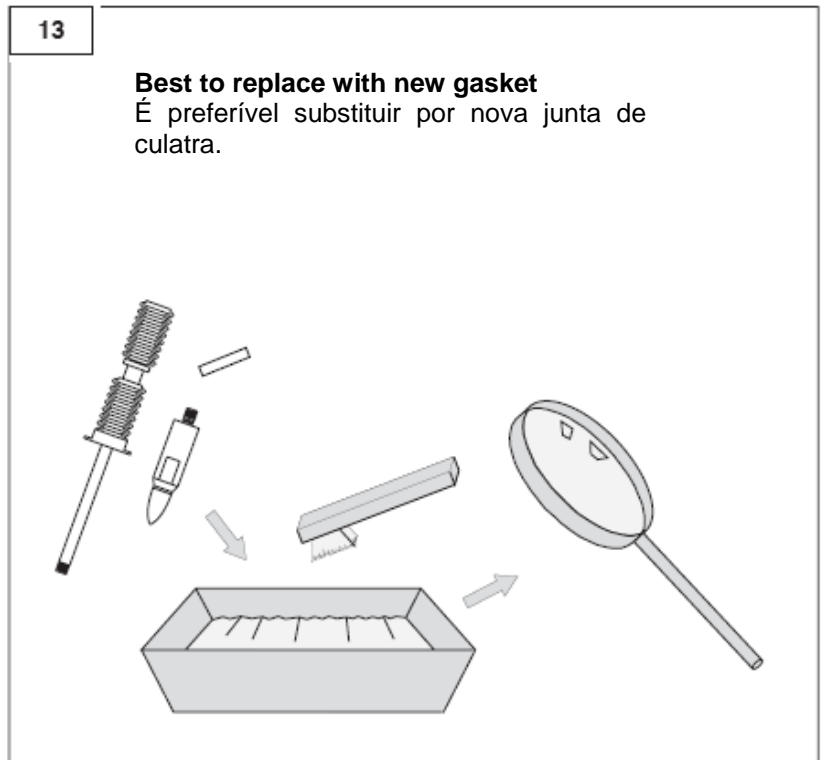
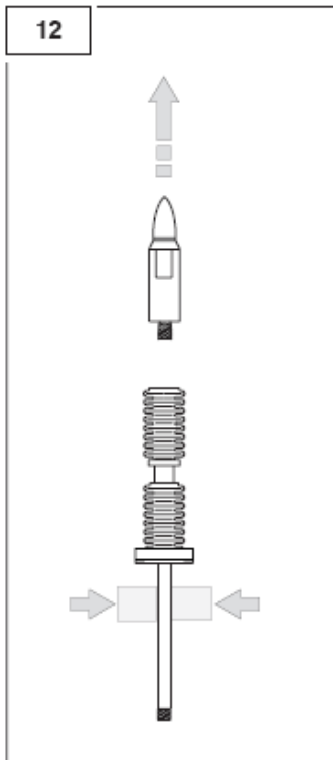
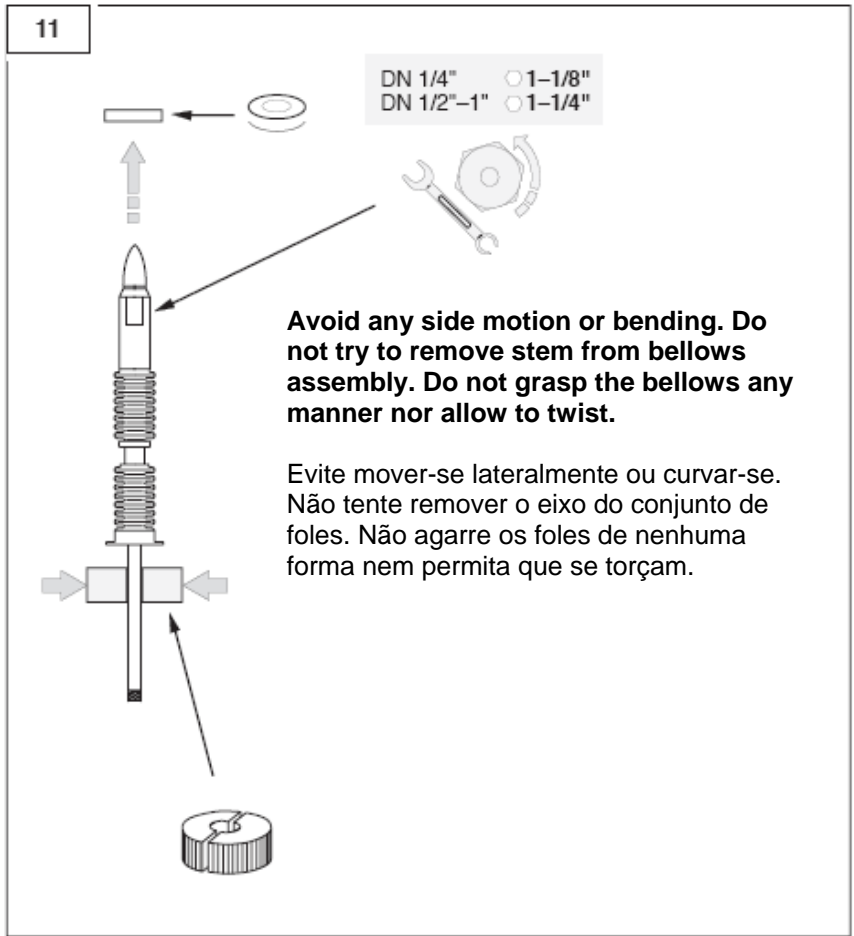
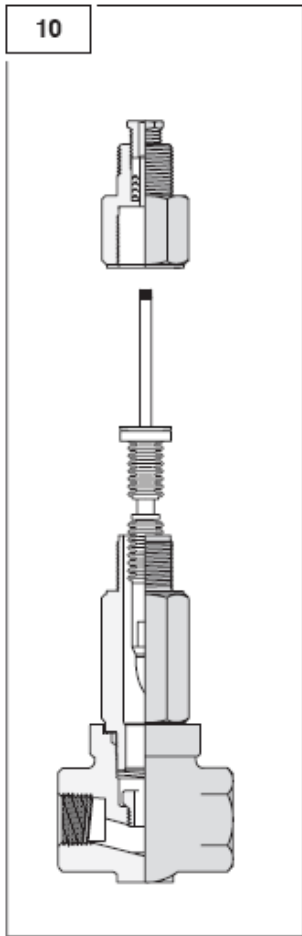
3

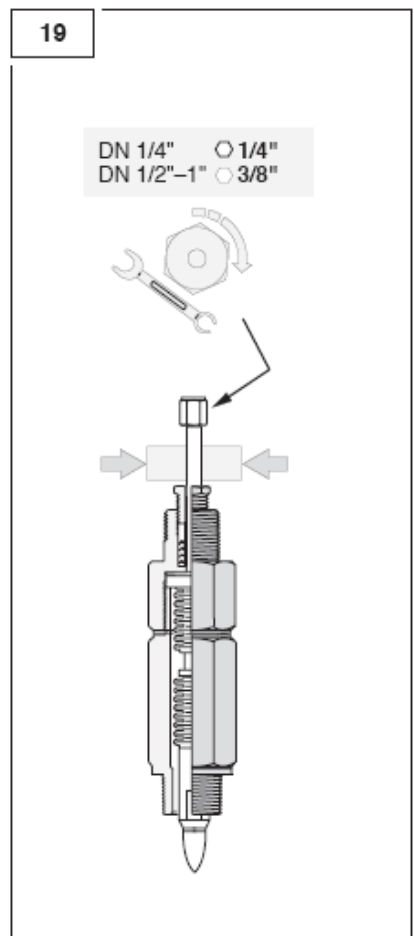
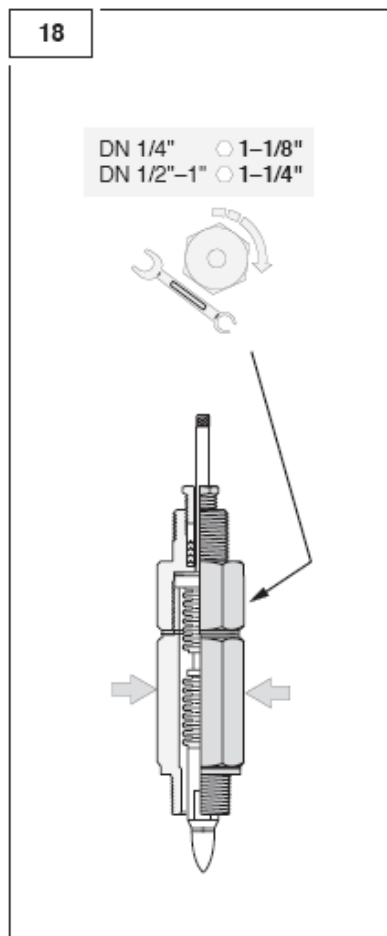
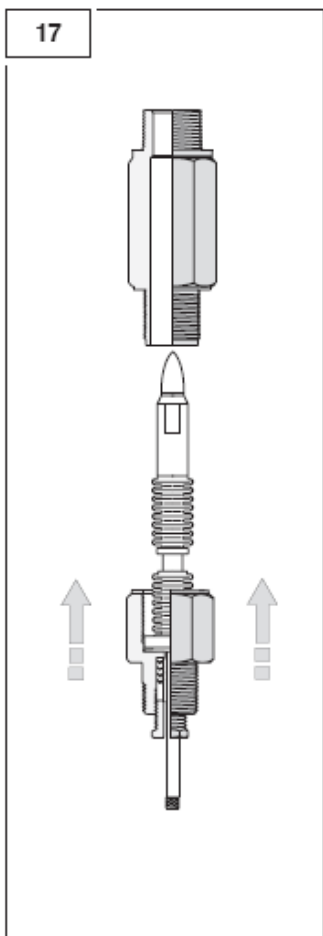
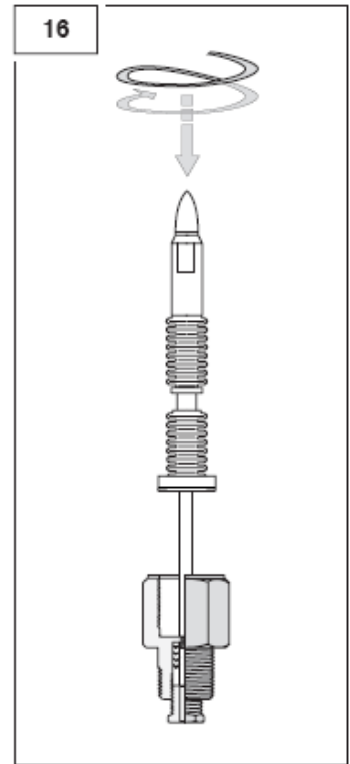
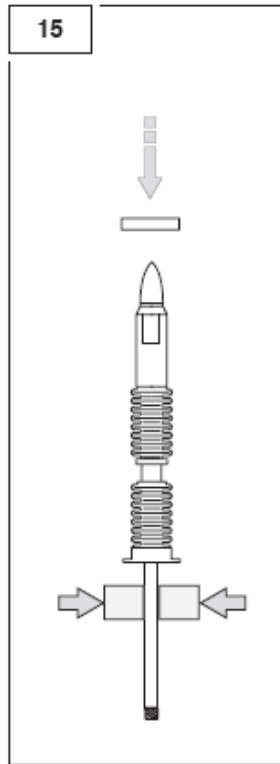
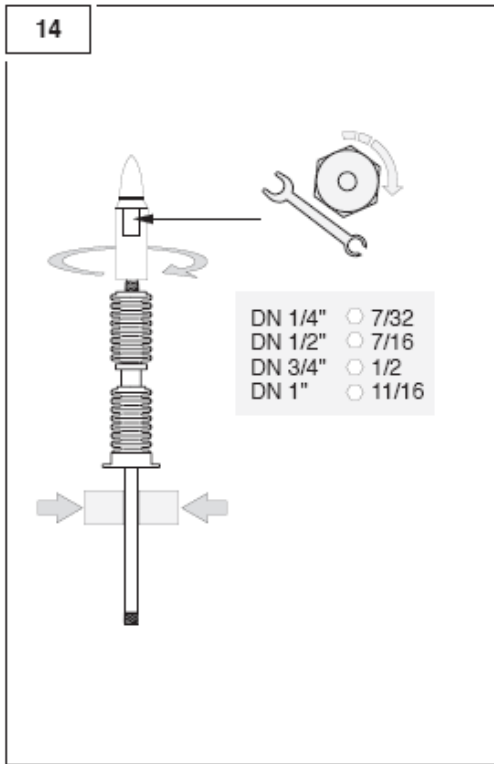


4



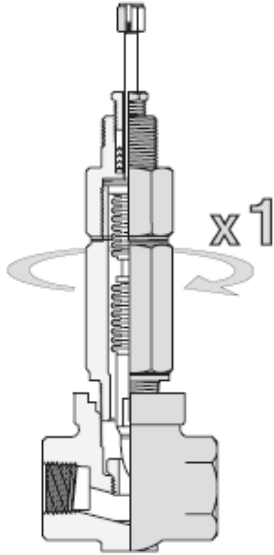






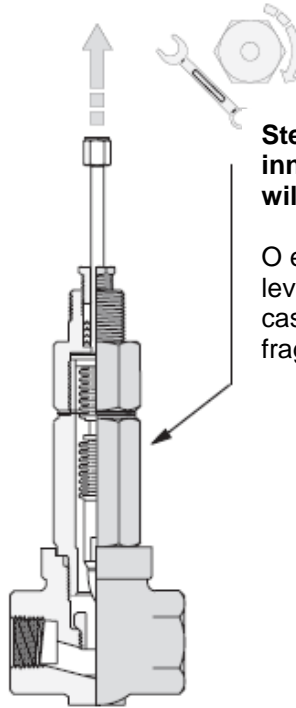


20



21

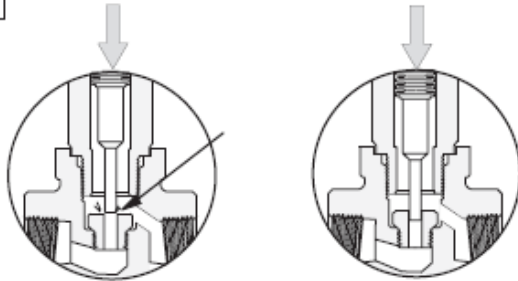
DN 1/4" ○ 1-1/8"  
DN 1/2"-1" ○ 1-1/4"



**Stem MUST be pulled up, lifting innervalue up, otherwise the plug will gall in the seat.**

O eixo TEM DE ser puxado para cima, levantando a válvula interior para cima caso contrário a bucha pode fragmentar-se na base.

22

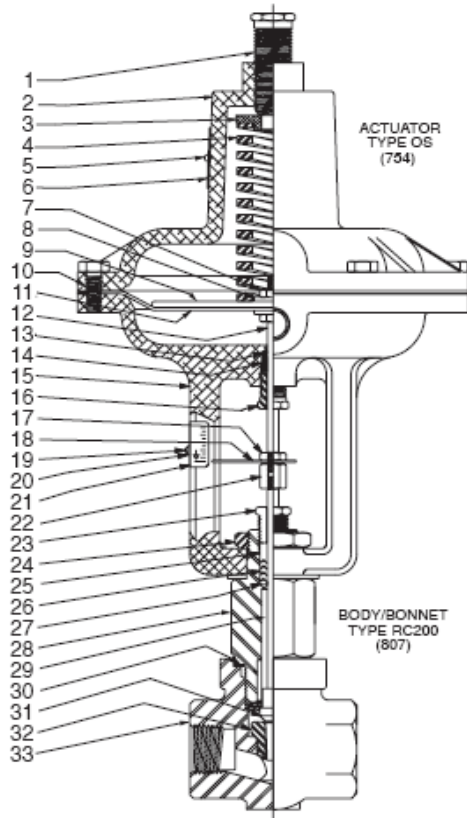


**CAUTION: With valves having "P" -trims, be sure the plug enters the seat before starting the bonnet thread into the body.**

ATENÇÃO: Com válvulas em forma de "P", certifique-se de que a bucha entra na base antes de empurrar o tampo para dentro do corpo.

**Next steps according to sections: ASSEMBLY Step 7 to 11 TESTING Step 1 and 2**

Próximos passos de acordo com as secções:  
MONTAGEM – Passo 7 a 11  
TESTAGEM – Passo 1 e 2



- |                      |                                  |
|----------------------|----------------------------------|
| 1. Spring adjustor   | 1. Regulador de mola             |
| 2. Spring case       | 2. Compartimento de mola         |
| 3. Spring seat       | 3. Base de mola                  |
| 4. Spring            | 4. Mola                          |
| 5. Drive screw       | 5. Parafuso do acionador         |
| 6. Nameplate         | 6. Placa de identificação        |
| 7. Stem nut          | 7. Bucha rosqueada               |
| 8. Washer            | 8. Anilha                        |
| 9. Diaphragm plate   | 9. Placa de diafragma            |
| 10. Hex Head screw   | 10. Parafuso de cabeça sextavada |
| 11. Diaphragm        | 11. Diafragma                    |
| 12. Actuator stem    | 12. Eixo do acionador            |
| 13. O-Ring           | 13. Anel em O                    |
| 14. O-Ring follower  | 14. Seguidor de Anel em O        |
| 15. Pressure case    | 15. Compartimento de Pressão     |
| 16. O-Ring gland     | 16. Bucim de Anel em O           |
| 17. Stem nut         | 17. Bucha rosqueada              |
| 18. Travel pointer   | 18. Jogo da válvula              |
| 19. Screw            | 19. Parafuso                     |
| 20. Flat washer      | 20. Anilha lisa                  |
| 21. Travel scale     | 21. Indicador de curso           |
| 22. Connector        | 22. Conector                     |
| 23. Packing gland    | 23. Bucim de vedação             |
| 24. Yoke locknut     | 24. Contraporca dupla            |
| 25. Packing follower | 25. Anilha de vedação            |
| 26. Packing set      | 26. Conjunto de vedação          |
| 27. Packing adaptor  | 27. Adaptador de vedação         |
| 28. Std bonnet       | 28. Tampo padrão                 |
| 29. Stem             | 29. Eixo                         |
| 30. Gasket           | 30. Junta de culatra             |
| 31. Plug             | 31. Bucha                        |
| 32. Seat             | 32. Base                         |
| 33. Globe body       | 33. Corpo em esfera              |

#### Basic safety advices

The control valve must be used for the control of fluids and gases only. The control valves described in this manual are not safety devices in the meaning of the Pressure Equipment Directive 97/23/EG. The manufacturer is not liable for damage that result from improper use or any use not in accordance with the specifications. All valves are built to current technology and safety regulations and are tested before leaving the factory.

The mounting, mechanical installation, electrical installation and maintenance of the valve must only be carried out by authorized personnel. It is the responsibility of the operating authority to ensure that all operators have been trained in the operation and use of the valves and that the instructions of this manual are followed.

Authorized personnel must also pay attention to any local regulations where the valves are installed concerning the opening and repairing of electrical equipment.

#### Conselhos de segurança básicos

A válvula de controlo deve ser usada apenas para o controlo de fluídos e gases. As válvulas de controlo descritas neste manual não são aparelhos de segurança no sentido contido na Diretiva de Equipamento de Pressão 97/23/EG. O fabricante não é responsável por danos que possam ser causados pelos uso inadequado ou qualquer uso que não esteja de acordo com as especificações. Todas as válvulas são construídas com tecnologia e regulamentações de segurança atuais e são testadas antes de saírem da fábrica.

A montagem, instalação mecânica, instalação elétrica e manutenção da válvula deve ser realizada apenas por pessoal autorizado. É responsabilidade da autoridade competente assegurar que todos os operadores tiveram formação para operar com e utilizar as válvulas e que as instruções deste manual são seguidas. O pessoal autorizado deve também de prestar atenção a quaisquer regulamentações locais em relação à instalação das válvulas no que diz respeito à abertura e reparação de equipamento elétrico.

**Return of goods for repair / Harmlessness declaration**

Devolução de bens para reparação / Declaração de inocuidade

**Please refer to our claims return form/harmlessness declaration under [www.badgermeter.de/service/return of goods](http://www.badgermeter.de/service/return_of_goods).**

Queira consultar o nosso formulário de devoluções/declaração de inocuidade em [www.badgermeter.de/service/return of goods](http://www.badgermeter.de/service/return_of_goods).

# Linha direta

Tel. +49-7025-9208-0 ou -36 ou -19  
Fax +49-7025-9208-15



## **Badger Meter Europa GmbH**

Subsidiary of Badger Meter, Inc.  
Nürtinger Strasse 76  
72639 Neuffen (Alemanha)  
E-mail: [badger@badgermeter.de](mailto:badger@badgermeter.de)  
[www.badgermeter.de](http://www.badgermeter.de)