4.4 Peças de Reposição

4.4.1 Peças de Reposição - Dynafluid	
Conjunto de Vedação	A
Conj. Tampa Válv. Água Fria	B
Conjunto da Cabeça da Sede	C
Conjunto Alongamento da Sede	D

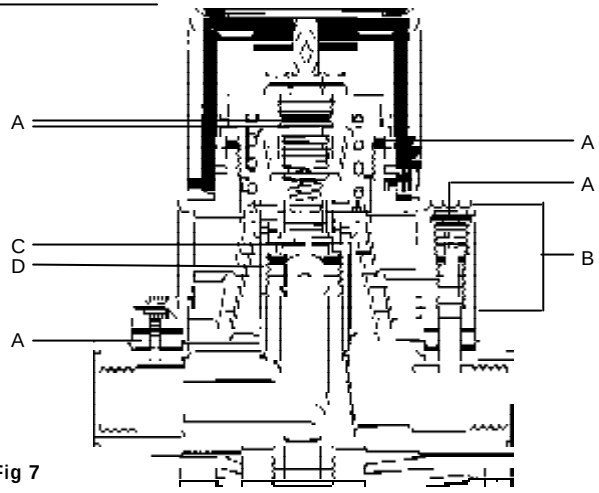

Fig 7

4.4.2 Peças de Reposição -

½"	Quick Release nipple
½"	Quick Release Hose Tail
½"	Quick Release nipple
¾"	Quick Release Hose Tail

WARNING NOTICE

Please note that when screwing the nipple into the Gun, please use a Hex Allen Key for tightening. The use of a wrench on outside of the nipple will seriously affect the safety performance of the coupling.

4.4.3 Peças de Reposição - Watergun

Capa de Borracha do Corpo	1
Gatilho	2

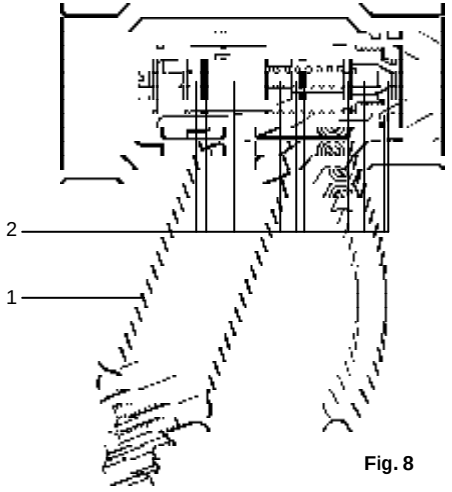

Fig. 8

Spirax Sarco Ind.e Com.Ltda.
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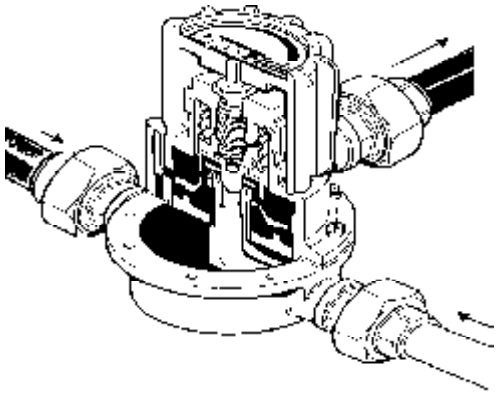
spirax sarco

Válvulas Misturadora Dynafluid - Watergun

Manual de Instalação e Manutenção



1. Geral

2. Como Dimensionar

3. Instalação

4. Manutenção

1. Geral

1.1 Use

The Spirax Sarco Steam/Water Mixing Station is designed to provide instantaneous hot water economically by blending steam and cold water to the required user temperature through simple rotation of the hand wheel. The mixing valve has fail safe operation. If the cold water supply stops the steam supply is automatically turned off preventing live steam reaching the outlet. Each Steam/Water Mixing Station is supplied with Isolation Valves, Check Valves, Union joints, Strainers and Thermometer. (See Fig. 1)

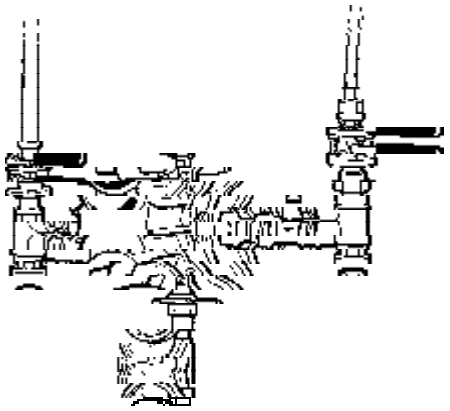


Fig 1

1.2 Technical data

1.2.1 Minimum flow (to open steam valve) & Spring selection chart.

A restricted outlet can cause back pressure reducing the water flow through the mixing valve which may prevent a sufficient amount of steam entering the mixing chamber. The minimum flow for each size of mixing valve is shown in Fig. 2 below.

Note when the valve is used on a closed loop circuit a minimum pressure drop of 1 bar is required on the down-stream outlet to allow the steam valve to lift off its seat.

Diâm.	Tipo de Mola	Cor da Mola	Pressão de Vapor			Mím. vazão p/ abrir a válvula de vapor		Spring notch marking
			psi	bar	kg/cm	g/min	l/min	
½"	Alta	Amarela	100 - 150	7.00 - 10.5	7.03 - 10.55	1.0	4.546	Três
½"	Média	Verde	50 - 100	3.50 - 7.0	3.52 - 7.03	0.6	2.727	Duas
½"	Baixa	Preta	5 - 50	0.35 - 3.5	.35 - 3.52	0.5	2.273	Uma
¾"	Alta	Vermelha	100 - 150	7.00 - 10.5	7.03 - 10.55	1.8	8.182	Três
¾"	Média	Azul	50 - 100	3.50 - 7.0	3.52 - 7.03	1.5	6.819	Duas
¾"	Baixa	Branca	5 - 50	0.35 - 3.5	.35 - 3.52	6	6.819	Uma
1"	Alta	Vermelha	100 -150	7.00 - 10.5	7.03 - 10.55	8	36.3	Três
1"	Média	Azul	50 - 100	3.50 - 7.0	3.52 - 7.03	7	31.8	Duas
1"	Baixa	Branca	5 - 50	0.35 - 3.5	.35 - 3.52	6	27.2	Uma
1½"	Alta	Vermelha	100 - 150	7.00 - 10.5	7.03 - 10.55	12	54.4	Três
1½"	Média	Azul	50 - 100	3.50 - 7.0	3.52 - 7.03	12	54.4	Duas
1½"	Baixa	Branca	5 - 50	0.35 - 3.5	.35 - 3.52	12	54.4	Uma

Fig. 2

1.2.2 Opções de Kits Misturadores para ½" e ¾"

1.2.2.1 Hose

Range de Temperatura:-
-35°C à + 164°C para vapor saturado.
+ 95°C para água quente.

Fator de Segurança: 10:1 para vapor 3.15:1 até 18 bar (pressão de Trabalho).

Tubo: NBR, branco, smooth, qualidade alimentícia, grease/oil resistant.

Reinforcement: textile, wrapped.

Cover: NBR, blue, smooth, grease/oil resistant,
with cloth print.

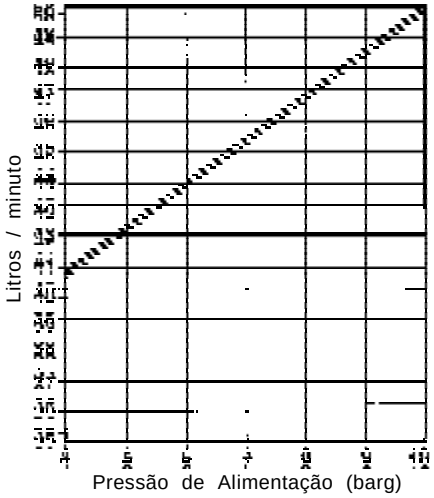
Identification:
Continuous white layline SPIRAX SARCO LM 3 Food/Steam/Uni Milch PN 6 bar 164°C
''Made in Austria".

1.2.2.2 Watergun

A Watergun é somente recomendada para o uso com válvulas de ½" e ¾". There is insufficient flow through the gun to operate the larger valves. (veja Fig. 3)

Temperatura 100°C
Pressão Máx. 10 bar g
Capacidade: 42 l/min até 5 bar com Wide Spray
25 l/min até 5 bar com Jet Spray

Capacidades (aproximadas)



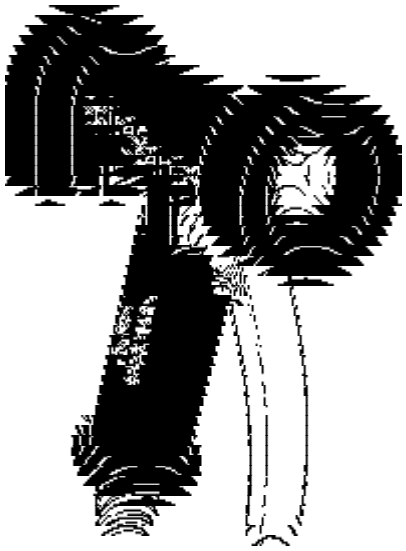


Fig 3

1.3 Segurança

CUIDADO

Please note that when screwing the nipple into the Gun, please use a Hex Allen Key for tightening. The use of a wrench on outside of the nipple will seriously affect the safety performance of the coupling.

This product must only be installed and commissioned by qualified personnel.

QUALIFIED PERSONNEL

For the purposes of these operating instructions Qualified Personnel are persons who are experienced in the installation, commissioning and operation of this product and who are suitably qualified to perform their duties, e.g.

? **Have received training or instruction in the maintenance and use of appropriate safety equipment according to current safety standards.**

? **Have received training in first-aid.**

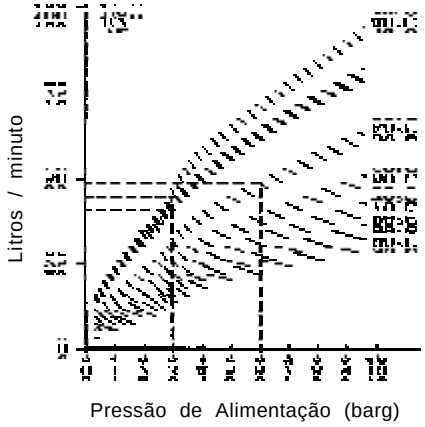
DANGER OF INJURY

Should you intend to use our products for new or not tested media or for applications not described in our product information please contact the Spirax Sarco applications department or our local sales engineer for written advice.

All hose assemblies are to be tested for operational safety from time to time. If damage occurs (this also applies to the cover) the hose assemblies must be renewed, for safe working.

2. Como Dimensionar

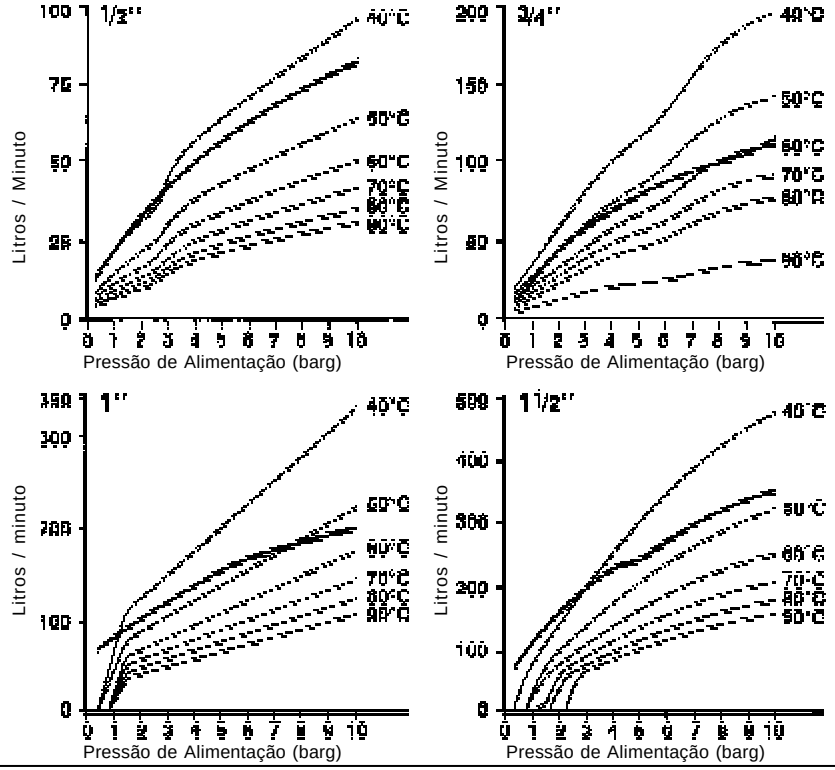
O gráfico indica a máxima vazão de água quente até variar a temperatura para gerar pressão de alimentação de vapor. The bold line shows the maximum cold water flow for a given water supply pressure. When sizing the valve, ascertain the hot water temperature and quantity required, and the water and steam pressure available.
Plot the cold water supply pressure and read off from the bold line the maximum flow of cold water. Plot the steam supply pressure against the running temperature required and read off the maximum flow of heated water. For sizing purposes always select the lowest of the two valves because depending on the supply pressures, there can be an imbalance in the amount of either water or steam heat available. The effect of selecting different supply pressures or different sizes of valve can easily be compared.



Exemplo:
Para água fria, alimentação de 3 bar g de pressão e vazão máxima de água fria é de 40 l/min.

Para vapor, alimentação de 6 bar g de pressão com temperatura de água quente de 50°C e vazão máxima 46 l/min.

Capacidades



3. Instalação

3.1 Geral
The steam/water mixing valve should be carefully unpacked and the contents checked against the packing list. See Fig.4.

3.2 Instalação em circuitos fechados
Remove the screw fixing spider from the mixing valve, screw the spider to the wall in the final position, using suitable fitting. Thread the valve onto the spider.
The pipework should be assembled according to Fig. 4 using a suitable thread sealing medium.
NOTA: The Steam and Water supplies may have a minimum of 1.4 bar g and a maximum pressure of 10 bar g and are not required to be the same pressure.
The outlet "H" from the thermometer outlet should be connected to the supply pipework.

The Steam and Water Mixing Valve is supplied with the intermediate spring fitted.
To change the fixed loaded spring. Turn the control knob (12) see Fig. 5, to the full high temperature position, loosen screw (10) and remove the knob. Remove upper head cap (1) by unscrewing counter-clockwise, lift out the large spring and replace with correct one. When reassembling make sure that the small spring is recessed correctly into the spindle and does NOT lie flat in the valve body.
The installation should be completed so as to comply with any Local or National Bye Laws pertaining to this type of appliance. Particular attention should be to providing double isolation of the steam supply and double Non Return Valves on the cold water supply if required. Double isolation/non return facility is not provided as standard with the station.

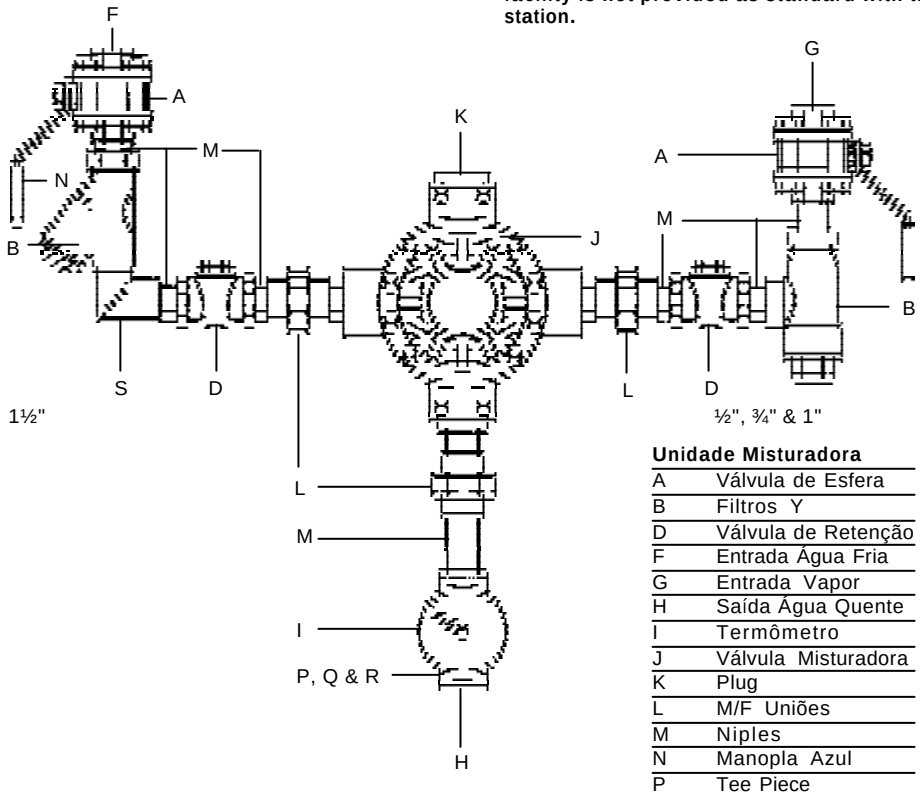


Fig. 4

Unidade Misturadora	
A	Válvula de Esfera
B	Filtros Y
D	Válvula de Retenção
F	Entrada Água Fria
G	Entrada Vapor
H	Saída Água Quente
I	Termômetro
J	Válvula Misturadora
K	Plug
L	M/F Uniões
M	Niples
N	Manopla Azul
P	Tee Piece
Q	Termômetro
R	Redução
S	Cotovelo

3.3 Instalação para hosedown purposes

The Hosedown Station should be carefully unpacked and the contents checked against the packing list. See Fig. 4.
Remove the screw fixing spider from the mixing valve, insert mixing valve boss through the Hose Rack and re-fix the spider and tighten on to the valve.

NOTE The Steam and Water supplies may have a minimum of 1.4 bar g and a maximum pressure of 10 bar g and are not required to be the same pressure.
Connect the pipework fittings as far as the hose socket, according to Fig. 4 using a suitable thread sealing medium.
Disconnect the union, and screw the solid Hose tail into the socket and then reassemble the union. The hose may then be coiled onto the Rack (if used). The Heavy Duty Pistol should be fixed to the hose using the quick release connection. See Fig.4A.

WARNING NOTICE

Please note that when screwing the nipple into the Gun, please use a Hex Allen Key for tightening. The use of a wrench on outside of the nipple will seriously affect the safety performance of the coupling.

The Steam and Water mixing valve is supplied with the intermediate spring fitted.
To change the fixed loaded spring. Turn the control knob (12) see Fig. 5, to the full high temperature position, loosen screw (10) and remove the knob. Remove upper head cap (1) by unscrewing counter-clockwise, lift out the large spring and replace with correct one. When reassembling make sure that the small spring is recessed correctly into the spindle and does NOT lie flat in the valve body.
The installation should be completed so as to comply with any Local or National Bye Laws pertaining to this type of appliance. Particular attention should be to providing double isolation of the steam supply and double Non Return Valves on the cold water supply if required. Double isolation/non return facility is not provided as standard with the station.

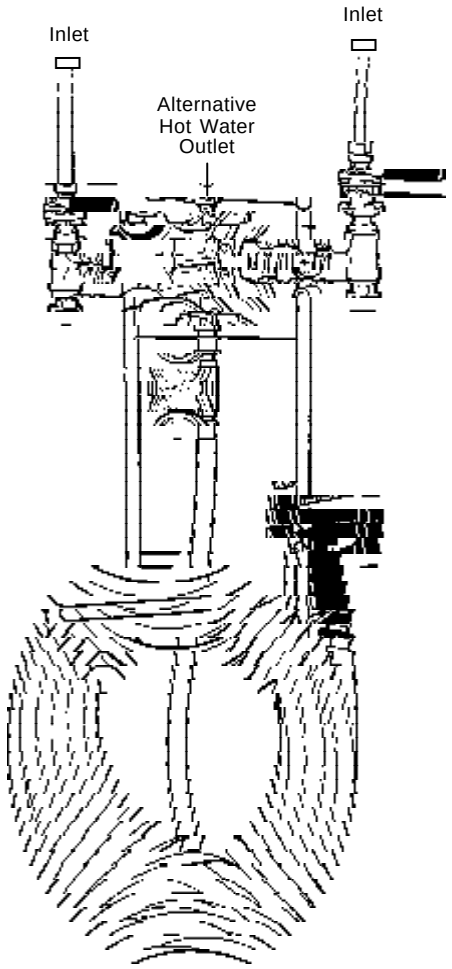


Fig. 4A

3.4 Start-Up

Instale corretamente e ajuste a temperatura seguindo os passos abaixo:

a) Remova o parafuso de fixa'xão da canopla (10) e a canopla (12) no sentido anti-horário.

b) Remova o parafuso (9)

c) Regule a válvula de água fria (8) no sentido anti-horário

d) Turn on the Steam and Water and check the hot water temperature turn the by-pass screw. (8) anti clockwise until the required maximum temperature is reached.
NOTA :
If using the standard hand gun the maximum hot water temperature is 100°C.

e) If a lower temperature is required turn the handwheel (12) anti clockwise.

f) Recoloque os parafusos (9 e 10)

1	Tampa Superior
2	Mola de Regulagem de Vapor
3	Corpo
4	Pistão
5	Tampa Base
6	Válvula de Admissão de Vapor
7	Diffusion chamber
8	Válvula de Água Fria
9	Parafuso
10	Parafuso de Fixação da Canopla
11	Mola
12	Canopla

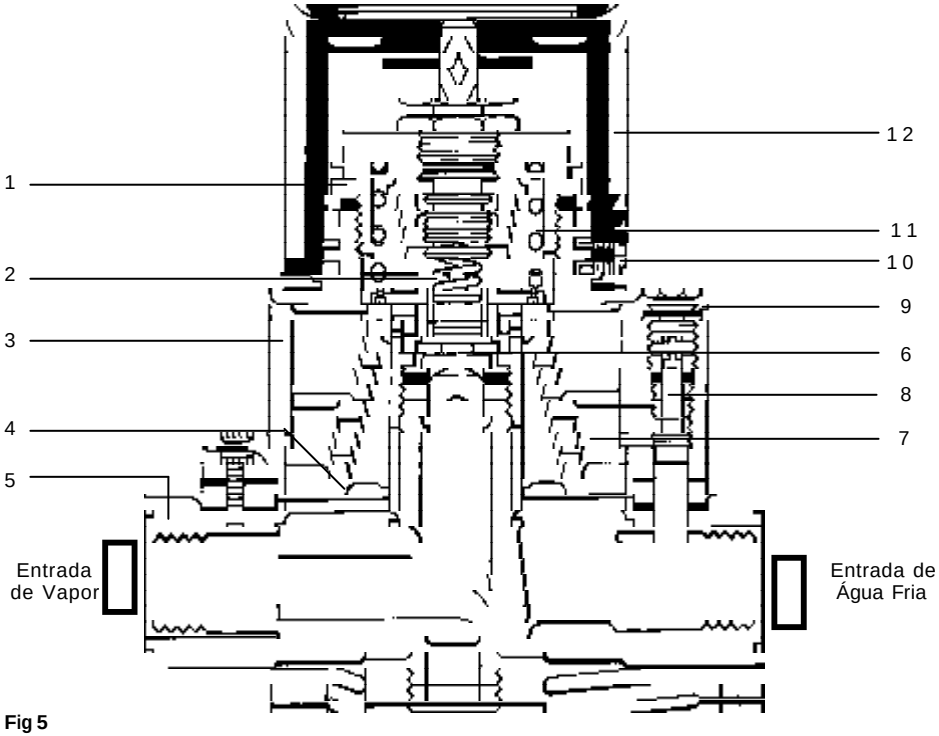


Fig 5

3.5 Análise de Falhas

Before investigating further it is always advisable to check the following. Ensure that the Steam and Water supplies are turned on and have running condition pressures in excess of 1.4 bar g.

SIMTOMA	SOLUÇÃO
Válvula libera somente água fria.	Disconnect the downstream pipework or Hose, and check if hot water flows. If hot is now flowing the downstream pipework is causing too much resistance. Please refer to the minimum flow chart and alter pipework to suit.
Temperatura de água quente baixa.	Check that the correct spring is fitted. Turn control knob to right as far as possible, to obtain the correct temperature. (screw stop 10 fig 5 may need to be loosened). Remove the hex screw 9 insert a screwdriver and close the cold water input valve by turning clockwise. Measure the temperature if correct refit screw 9. If the temperature is still too low the water supply should be reduced by the installation of an LRV water reducing valve.
Temperatura de água quente alta.	The mixing valve is supplied with the control knob set to the highest setting, fully turned to the clockwise. To reduce the outlet temperature the knob should be turned anti-clockwise. If the control knob is at full travel anti-clockwise and against the stop, the control knob should be removed and refitted on to the spindle in a new position. It will now be able to turn the knob anti-clockwise to reduce the temperature. This operation may have to be repeated.
Gland leaking	When the mixing valve has been in operation for a short time it is possible that the stem sealing gland may leak very slightly. The gland should then be tightened. Continual leakage may cause the knob to seize. **Note:** Check gland tightness after a few days operational service.

4. Manutenção

Regular cleaning of the Mixing valve handgun may be required if they are supplied with Hard Water.

4.1 Limpeza

Cleaning should only be carried out by suitably qualified persons.

Turn off and isolate the Steam and Water supplies, remove any residual pressure from the system by operating the Hose Gun and remove the gun from the hose. Undo the 3 union joints and remove the mixing valve from its fixings and move it to a maintenance area.

Referring to Fig 5. Remove Knob 12. by loosening holding screw 10. Unscrew the upper head 1. and remove the spring. Remove the upper body 3 by taking out the 12 x 5mm set screws. The upper and lower bodies may be eased apart. All parts should now be cleaned using a proprietary De-Scaler.

Nota: Metal scrapers should not be used as this may cause permanent damage to the components.

Before reassembly please ensure that all gasket surfaces are clean ready to receive the new gaskets. If the valve plug 6 is worn or damaged this should be replaced. Reassemble the mixing valve and test for correct operation.

4.2 Stripping down for service ½" & ¾" valves only

To renew P.T.F.E. seat and Steam valve assembly. (Fig. 7 C & D). Whenever possible remove the mixing valve from the pipework (this will enable the work to be carried out much more easily and will save time in the long run).

Please read in conjunction with Fig 6.

1. Remove knob 12 by loosening screw 10.
2. Remove upper head 1.(R/H thread).
3. Remove fixed loading spring 11.
4. Remove Steam valve spring 2.
5. Remove cover by releasing screws, taking care not to damage gasket.
6. Remove retaining plate, upper, using two prong tool or $1^{1}/_{16}$" A/F box spanner.
7. Lift out steam valve assembly 6.
8. Lift out valve retaining plate.
9. Remove the 3 stainless steel screws.
10. Remove silencer plate.
11. Remove P.T.F.E. valve seat housing assembly complete using a $1^{1}/_{16}$" A/F box spanner.
12. To reassemble reverse the break down procedure.

IMPORTANT PLEASE ENSURE THAT:

a. The copper washer fits correctly between the P.T.F.E. valve seat housing assembly and valve stem.
b. The steam silencer plate is fitted with the three rivet heads against the P.T.F.E. valve seat housing assembly i.e. rivets not visible.
c. The piston moves freely up and down, before fitting the springs and final assembly.
d. When refitting the cover, the screws should be tightened progressively.

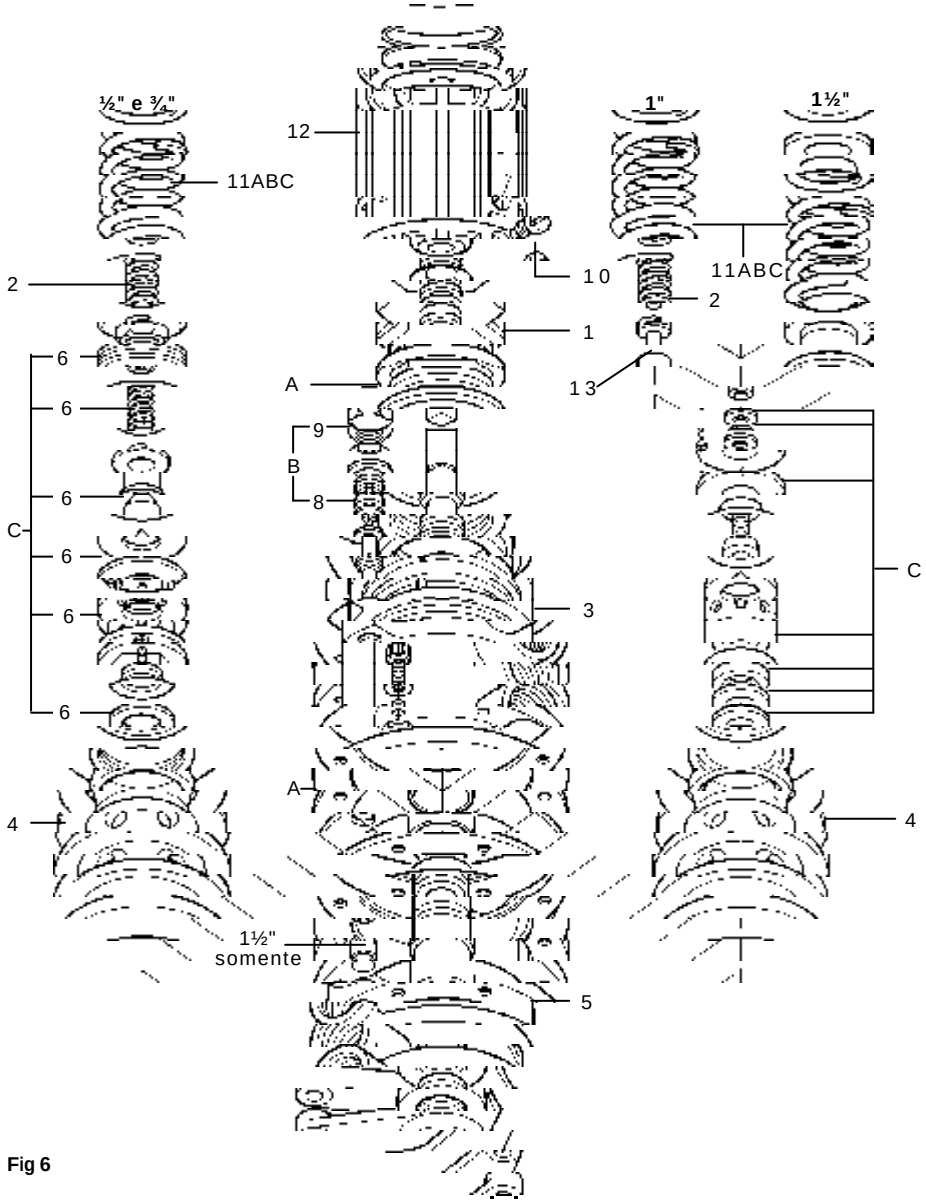


Fig 6

4.3 Stripping down for service somente para válvulas 1" e 1½".

To renew P.T.F.E. seat and Steam valve assembly. (Fig. 7 C e D). Whenever possible remove the mixing valve from the pipework (this will enable the work to be carried out much more easily and will save time in the long run).

Please read in conjunction with Fig 6.

1. Remove knob 12 by loosening screw 10.
2. Remove upper head 1.(R/H thread.)
3. Remove fixed loading spring 11.
4. Remove Steam valve spring 2.
   Note 1½" size does not have this spring.
5. Remove spiggoted spring guide 13, **(1" size only)**
6. Remove cover
7. Remove steam valve assembly by removing the six holding screws.
8. Remove valve seat retainer by means of a 5/16" Dia bar passed through the holes in the piston and through the holes in the valve retainer. (Note the piston will have to be raised slightly to align this).
9. Remove P.T.F.E. valve seat assembly.
10. To reassemble reverse the break down procedure.

IMPORTANT PLEASE ENSURE THAT:

a. The P.T.F.E. seat and pressure plates must be assembled as follows:-
   First the P.T.F.E. seat. (in contact with the steam stem).
   Second the plain pressure washer.
   Third the Beryllium copper crinkle washer. (This must be in contact with the housing).
b. Ensure piston moves freely up and down, before fitting the springs and final assembly. The securing screws should be tightened progressively.
c. When renewing steam valve assembly, to prevent the securing nut becoming loose during working conditions use three centre dots.

IT IS ESSENTIAL THAT ON ALL OCCASIONS A CERTAIN AMOUNT OF "FLOAT" ON STEAM VALVE ASSEMBLY IS PROVIDED. TO ALLOW FOR SELF CENTERING.