CLORIUS CONTROLS 3-WAY CONTROL VALVES TYPE Soft Seated

NODULAR CAST IRON, DN 80 - 300 mm

Instructions





General safety instructions

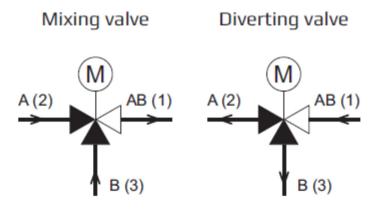
The valves must be installed and serviced by fully trained and qualified personnel only, observing the accepted industry codes and practices. Make sure employees or third persons are not exposed to any danger.

DESIGN

The valve components (seats and cone) are made of gun metal, the spindle of stainless steel. The valve body is made of nodular cast iron and the valve flanges are drilled according to EN 1092-2 (JIS B 2210 option). The valve has two balanced single seats and the port AB-B is designed 100 % tight.

PORT NUMBERING

The ports of valves type Soft Seated are marked with the letters AB, A and B. The letters in parentheses refer to the corresponding internationally adapted designations.



Port AB (1) common port always open Port A (2) closes at load on spindle Port B (3) opens at load on spindle

FUNCTION

The valve cone is firmly connected with the motor spindle. When the valve cone is in the one extreme position by draw on the spindle, connection A-AB is kept fully open and connection B-AB is fully closed. In the other extreme position connection A-AB is fully closed and connection B-AB is fully open. In the intermediate positions the opening degrees change proportionally.

TECHNICAL DATA

Materials:	- Valve body	Nodular cast iron EN-GJS-400-15
	- Trim	Gun metal RG 5
	- 111111	
		CuSn5Zn5Pb5-C
	 Valve spindle 	Stainless steel
		(W.no. 1.4436)
Nominal press	ure	
	DN 80-200	PN 16 (max.150°C)
	DN 300/250-300	PN 10 (max.150°C)
	DN 80-300	JIS 10K (option)
Seats		2 balanced single seats
Valve characte	ristic	Almost linear
Leakage	Port AB-B	0.0%
Temperature r	ange	Max. 150°C
Mounting		See below
Flanges		According to EN 1092-2,
		PN 16 & PN 10
- option:		According to JIS B 2210 10K
Note ! Valve D	N 200/175 has outer me	asures and flanges drilled as valve DN 200.
		and flanges drilled as valve DN 300.

Counter flanges (suggested for EN 1092-2)

DN 80-200:	DIN 2633 – PN 16
DN 300/250-300:	DIN 2632 – PN 10

Maintenance

The soft seals for low leakage valves (o-rings and u-rings) have a durability of approximately 8 years. However, it is recommended that the soft seals are inspected and changed every 4 years if possible. For DN 80-DN150 it is also recommended that spindle and cone are changed every 4 years if possible.

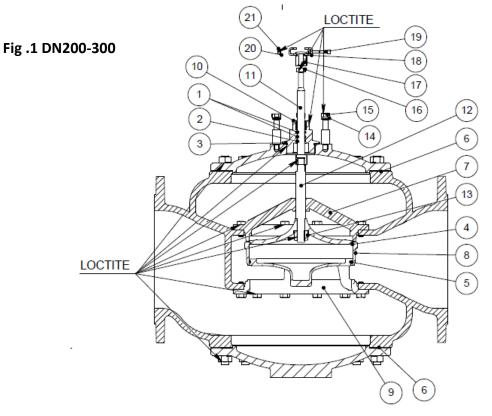
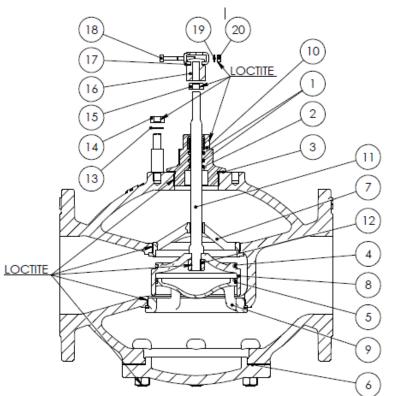


Fig. 2. DN80-150



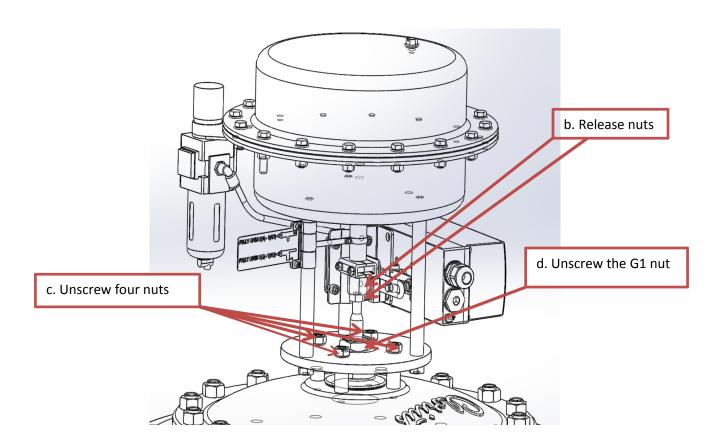
1.1 Disassembly Pneumatic Actuator from the valve:

Step 1:

Disconnect the following items in sequence (fig. 3):

- a. Pipes from SIPART PS2 positioner
- b. Release connection of two nuts
- c. Unscrew four nuts
- d. Unscrew the G1 nut

Fig. 3



Step 2:

Release nuts from the coupler then unscrew the adjusting nut and remove Pneumatic Actuator from the valve. (Fig. 4)

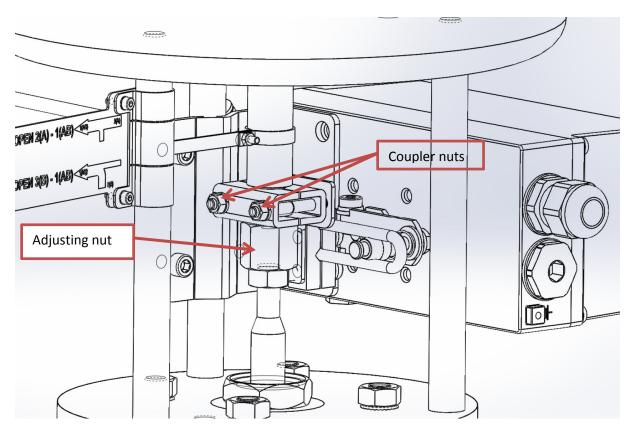


Fig. 4

2.1 Maintenance of valves DN200, DN 200/175, DN300 and DN300/250 - Fig 1.

- A. Remove positioner and actuator by following instruction 1.1.
- B. Dismantle screw-joint for cover (pos. 10) Note: Loctite has been added to protect against vibrations.
- C. Remove valve cover nuts –Note: Loctite has been added to protect against vibrations.
- D. Remove valve cover. Replace gaskets 2pcs (pos. 6) -See Appendix of spare part list for correct item number
- E. Remove all seat bolts -Note: Loctite has been added to protect against vibrations.
- F. Remove spindle, cone and all connected parts as one unit (pos. 11,12,7,8) by lifting them up.
- G. Change O-ring (pos. 1,4,5) -See Appendix of spare part list for correct item number.
- H. Change U-ring (pos. 2) -See Appendix of spare part list for correct item number.

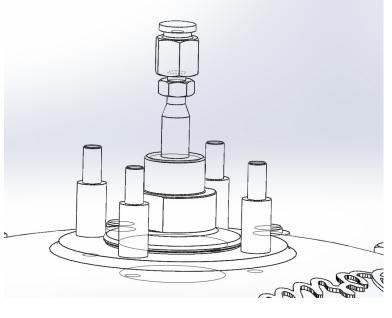
- I. Follow instructions 2.1 in reverse order to assemble the valve. Remember to add Loctite again at step E,C and B.
- J. Follow instructions 3.1 how to assemble the pneumatic actuator with the valve.

2.2. Maintenance of valves DN80-150

- A. Remove positioner and actuator following instructions 1.1.
- B. Remove all cover nuts. Note: Loctite has been added to protect against vibrations.
- C. Remove valve cover. Replace gasket (pos 6). -See Appendix of spare part list for correct item number
- D. Remove bolts. Note: Loctite has been added to bolts for protection against vibrations. For DN80-DN100 which have no bolts the seat is screwed tight and Loctite has been added to the threading.
- E. Remove lower seat (pos. 9). Replace o-ring (pos. 5) -See Appendix of spare part list for correct item number
- F. Remove screw joint (pos. 10) Note: Loctite has been added to protect against vibrations.
- G. Replace gasket (pos. 3), replace 2pcs o-rings (pos. 1), replace u-ring (pos. 2) -See Appendix of spare part list for correct item number
- H. Unscrew spindle (pos. 11,12) Note: Loctite has been added to protect against vibrations.
- I. Remove cone (pos. 8) through the bottom opening.
- J. Replace cone (pos. 8) with new cone and new o-ring (pos. 4) -See Appendix of spare part list for correct item number.
- K. Replace spindle (pos. 11) with new spindle. Connect the cone (pos. 8) and spindle with bolt (pos. 12). Add Loctite.
- L. Mount lower seat (pos. 9) and fasten bolts. Add Loctite.
- M. Mount gasket (pos. 6), valve cover. Add Loctite to cover nuts and fasten them.
- N. Mount screw-joint (pos. 10). Add Loctite.
- O. Follow instructions 3.1 how to assemble the pneumatic actuator with the valve.

3.1 Assembly Pneumatic Actuator with the valve: Step 1:

Screw Adjusting Nut on the valve spindle all the way to the end position.(Fig. 5)





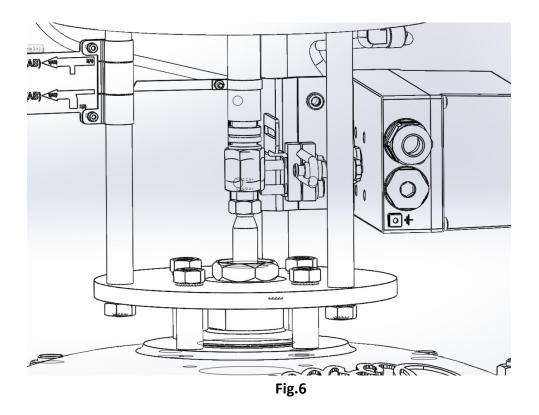
Step 2:

Place the Pneumatic Actuator on the stud bolts and fasten the plate actuator by screwing the nuts on the stud bolts (use special washer under nuts).

Fasten G1 nut on the plate.

Adjust "adjusting nut" by unscrewing until it touches the spindle surface from actuator side.

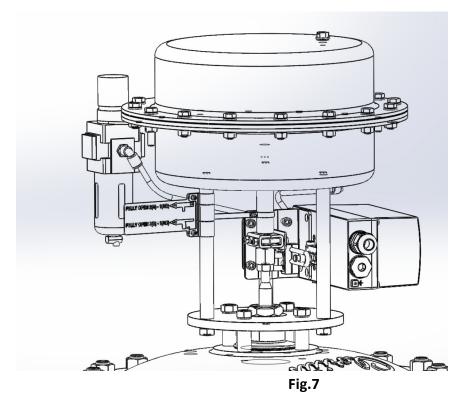
Tighten nuts.(Fig. 4)



Step 3: Connect lever positioner by using couplers between adjusting nut and pneumatic spindle.

Tighten nuts.

Feed in pneumatic supply power into positioner and repeat commissioning process.(Fig.6)



Important! Use Loctite for all screw connections that were disassembled.

Strainer

It is recommended to use a strainer in front of the control valve if the liquid contains suspended particles.

Transport and storage

The valve must be transported and stored dry and clean. In humid rooms, a drying material or heating must be used to avoid condensation.

During transport and intermediate storage the valve should not be exposed to temperatures lower than -10°C.

The valves are painted (top coated) on the outside. This coating must remain without damage, otherwise the faulty spots must be repaired immediately.

The standard packaging protects valves and equipment against rain and snow during trucking. For critical transports such as sea freight equipment will be protected by VCI (Volatile Corrosion Inhibitor) material.

If protected by VCI do not remove the packaging until the equipment is going to be installed.

APPENDIX

Important notice: **Old** MAN item numbers are obsolete from January 1st 2017.

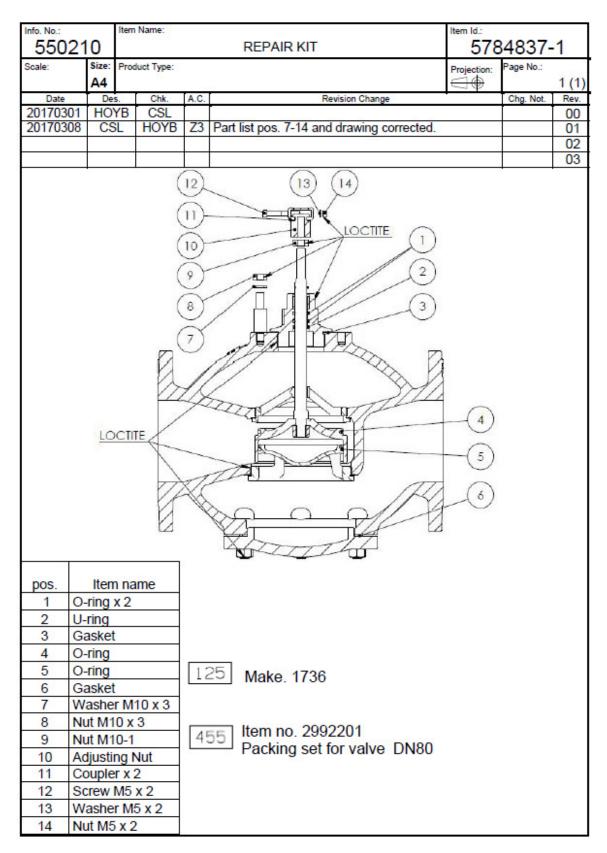
By using Clorius Item numbers (or **New** MAN item numbers) below, the valve trim will be upgraded to the latest design.

Clorius Item no.	Spare parts	Old MAN	New MAN item
		item Id.	id.
1-2992200	TRIM SET 80 G3F MAN	5676900-8	5784675-2
1-2992201	PACKING SET FOR 80 G3F MAN	5676904-5	5784837-1
1-2992202	TRIM SET 100M-G3F MAN	5662601-1	5783319-0
1-2992203	PACKING SET FOR 100M-G3F MAN	5662034-3	5783320-0
1-2992204	TRIM SET FOR 125M-G3F MAN	5662603-5	5783263-6
1-2992205	PACKING SET FOR 125M-G3F MAN	5662035-5	5783403-9
1-2992206	TRIM SET 150 M-G3F MAN	5662604-7	5783407-6
1-2992207	PACKING SET FOR 150M-G3F MAN	5662036-7	5783411-1
1-2992208	TRIM SET 200/175 M-G3F MAN	5662598-6	5783429-2
1-2992209	PACKING SET 200/175M-G3F MAN	5660475-3	5783437-5
1-2992210	TRIM SET 200M-G3F MAN	5660476-5	5783443-4
1-2992211	PACKING SET FOR 200M-G3F MAN	5662541-1	5783444-6
1-2992212	TRIM SET 250/300M-G3F MAN	5662599-8	5783448-3
1-2992213	PACKING SET 250/300M-G3F MAN	5662031-8	5783492-4
1-3999770	PACKING SET PNEUMATIC ACT. S25 MAN	5661998-3	5783494-8
1-3999771	PACKING SET PNEUMATIC ACT. S34 MAN		5783931-1
1-3999655	AIR REDUCT. VALVE AW20K MAN	5660477-7	No change
1-3999604	PNEUM.POSITIONER SIPART PS2MAN	5660478-9	No change

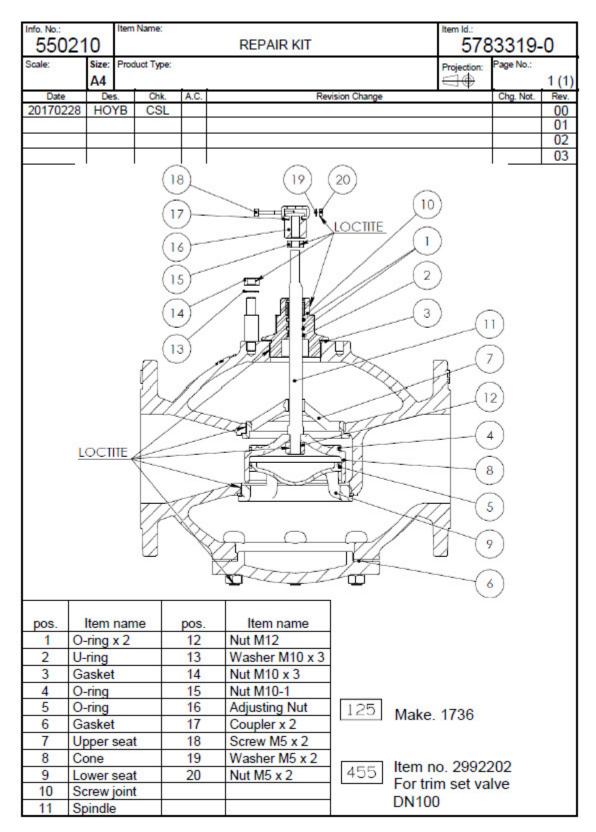
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	O-ring			16	Adjusting Nut	125	Make 4700		
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PACKING SET FOR 80 G3F MAN



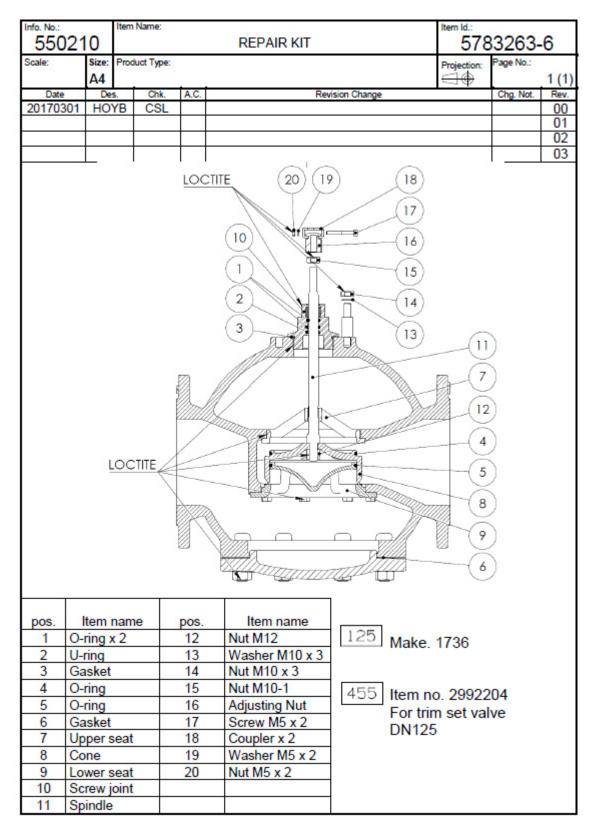
TRIM SET 100M-G3F MAN



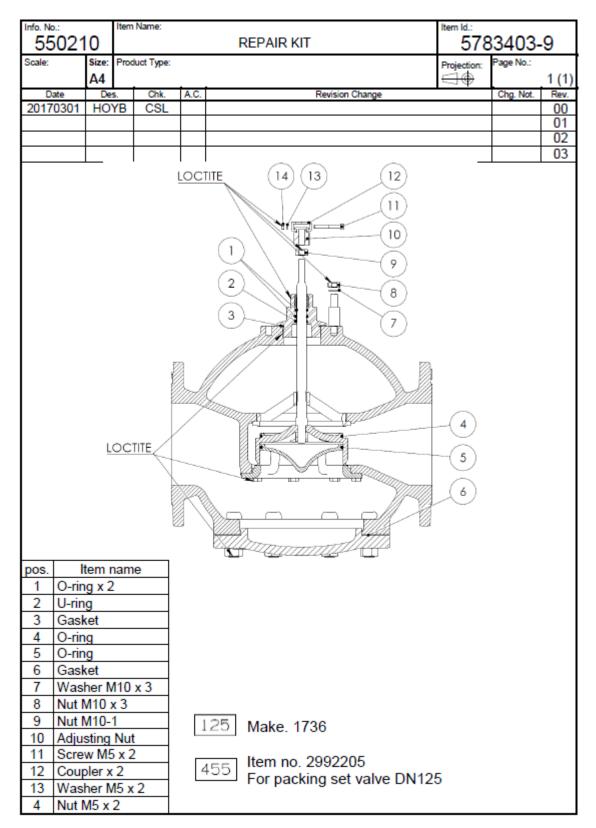
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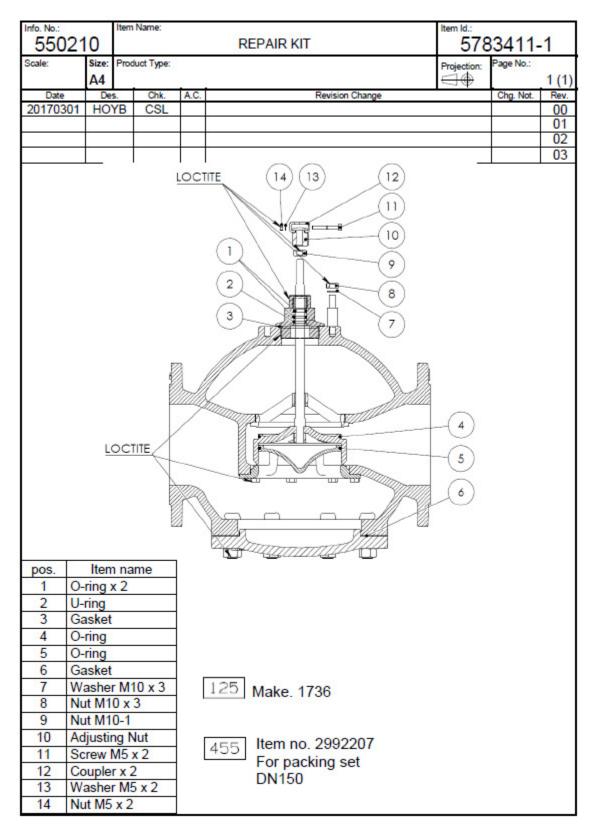
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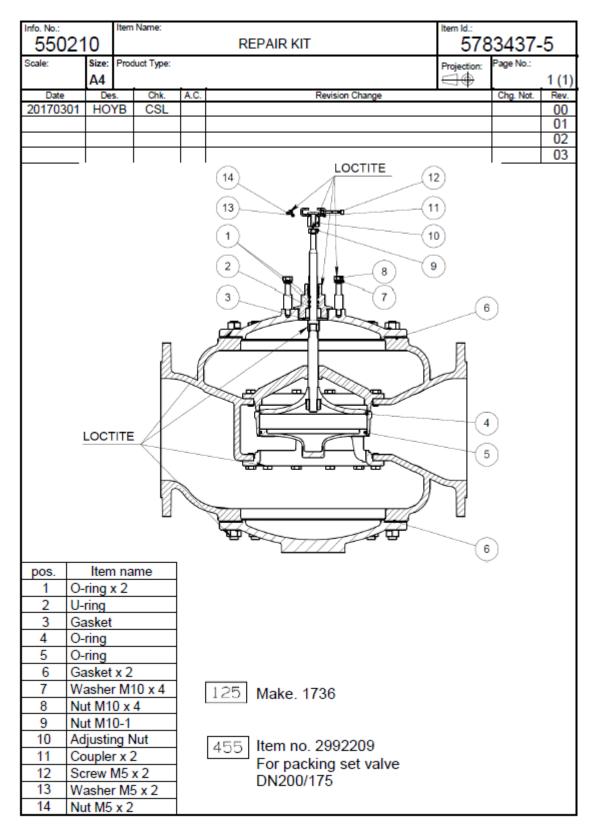
PACKING SET FOR 150M-G3F MAN



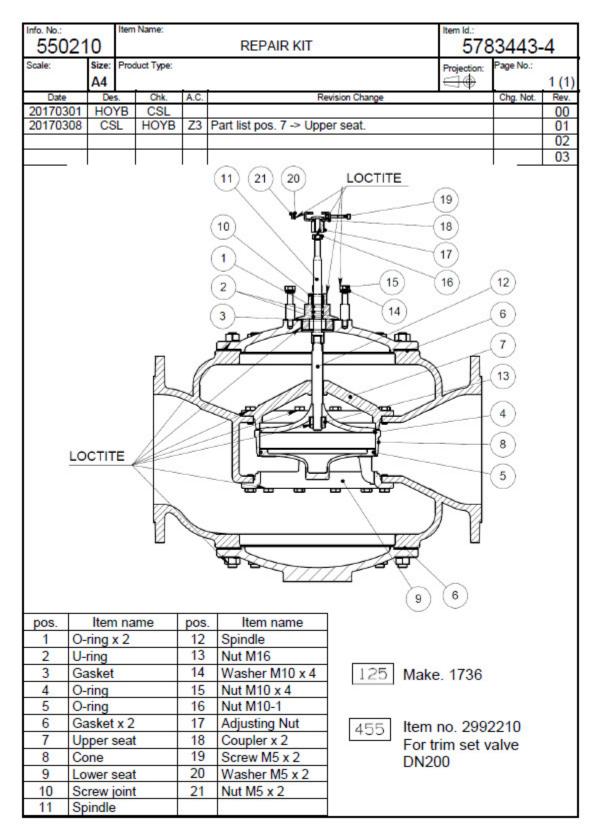
TRIM SET 200/175 M-G3F MAN

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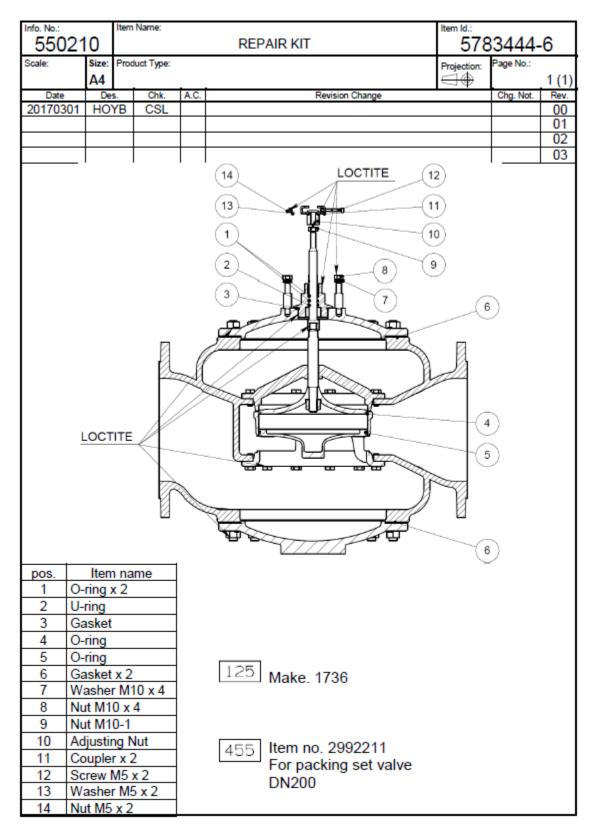
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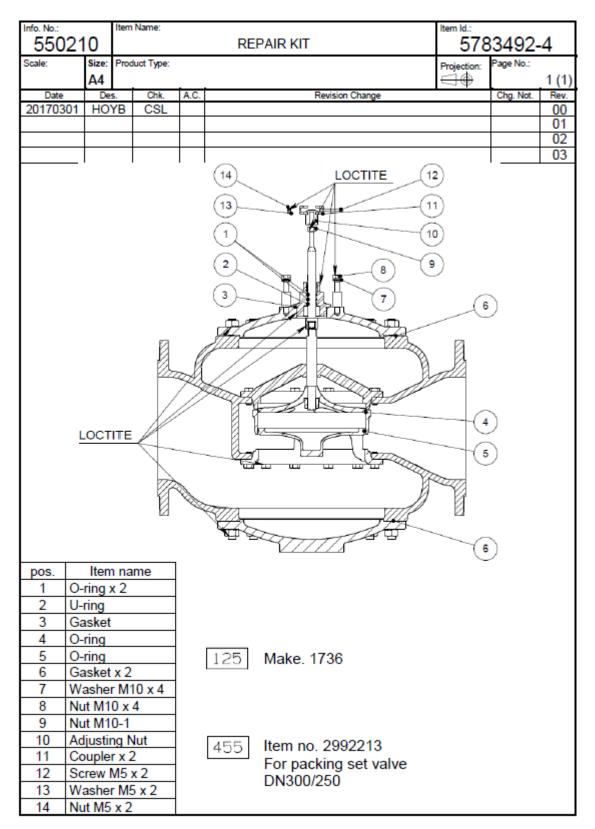
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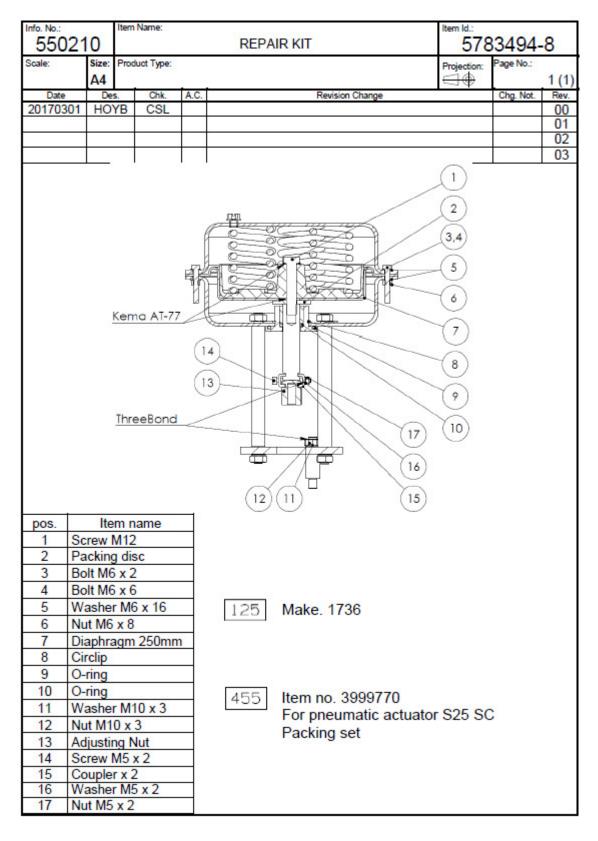


TRIM SET 250/300M-G3F MAN

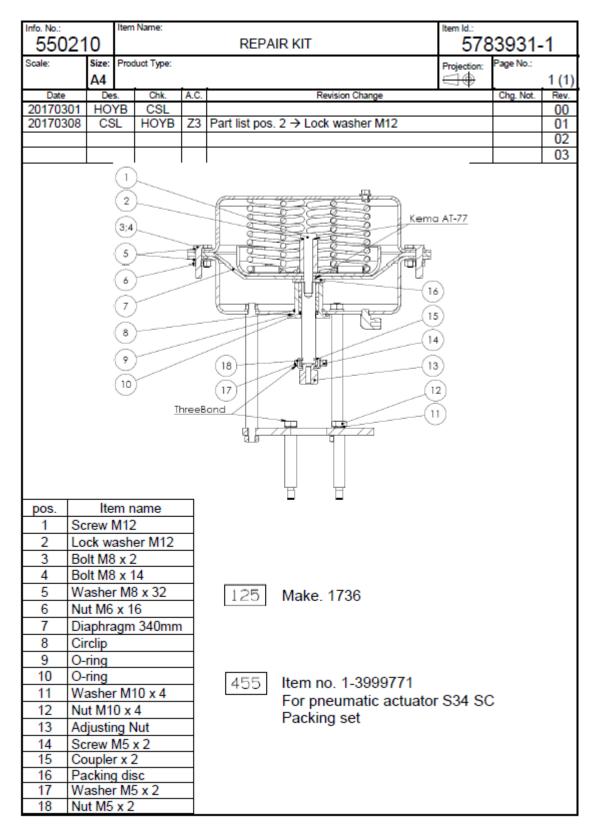
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1 2 3 4 5 6	O-ring : U-ring Gasket O-ring O-ring Gasket	x 2	12 13 14 15 16 17	Spindle Nut M16 Washer M10 x 4 Nut M10 x 4 Nut M10-1 Adjusting Nut	125	U C	736					
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1 2 3 4 5 6 7 8	O-ring U-ring Gasket O-ring O-ring Gasket Upper s Cone	x 2 x 2 seat	12 13 14 15 16 17 18 19	Spindle Nut M16 Washer M10 x 4 Nut M10 x 4 Nut M10-1 Adjusting Nut Coupler x 2 Screw M5 x 2		Make. 1	. 299221					
1 2 3 4 5 6 7 8 9	O-ring U-ring Gasket O-ring O-ring Gasket Upper s Cone Lower s	x 2 x 2 seat seat	12 13 14 15 16 17 18 19 20	Spindle Nut M16 Washer M10 x 4 Nut M10 x 4 Nut M10-1 Adjusting Nut Coupler x 2 Screw M5 x 2 Washer M5 x 2	125	Make. 1						
1 2 3 4 5 6 7 8 9 10	O-ring U-ring Gasket O-ring O-ring Gasket Upper s Cone	x 2 seat seat	12 13 14 15 16 17 18 19	Spindle Nut M16 Washer M10 x 4 Nut M10 x 4 Nut M10-1 Adjusting Nut Coupler x 2 Screw M5 x 2		Make. 1	. 299221 set valve					

PACKING SET 250/300M-G3F MAN



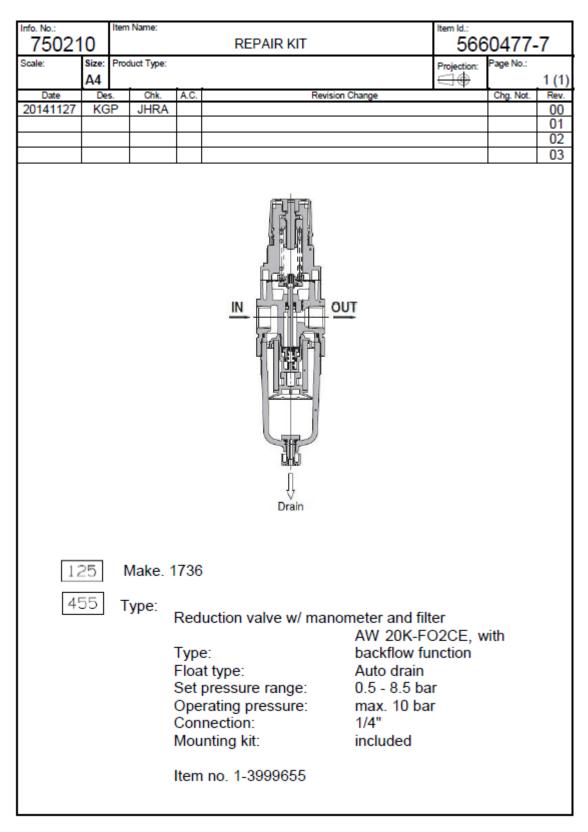


PACKING SET FOR PNEUMATIC ACTUATOR S25 MAN



PACKING SET FOR PNEUMATIC ACTUATOR S34 MAN

AIR REDUCT. VALVE AW20K MAN



PNEUMATIC POSITIONER SIPART PS2 MAN

