

# COLTRI-SUB C90 DIAPHRAGM FIRST STAGE

## MAINTENANCE INSTRUCTIONS

### Tools required

“C spanner 42 x 3mm (Part No RE 013350007301), 4mm hex wrench, 6mm hex wrench, 25mm ring spanner, 14, 15, 22 mm open ended spanners, intermediate pressure gauge (Part No RE100260 or RE100265).

### Disassembly

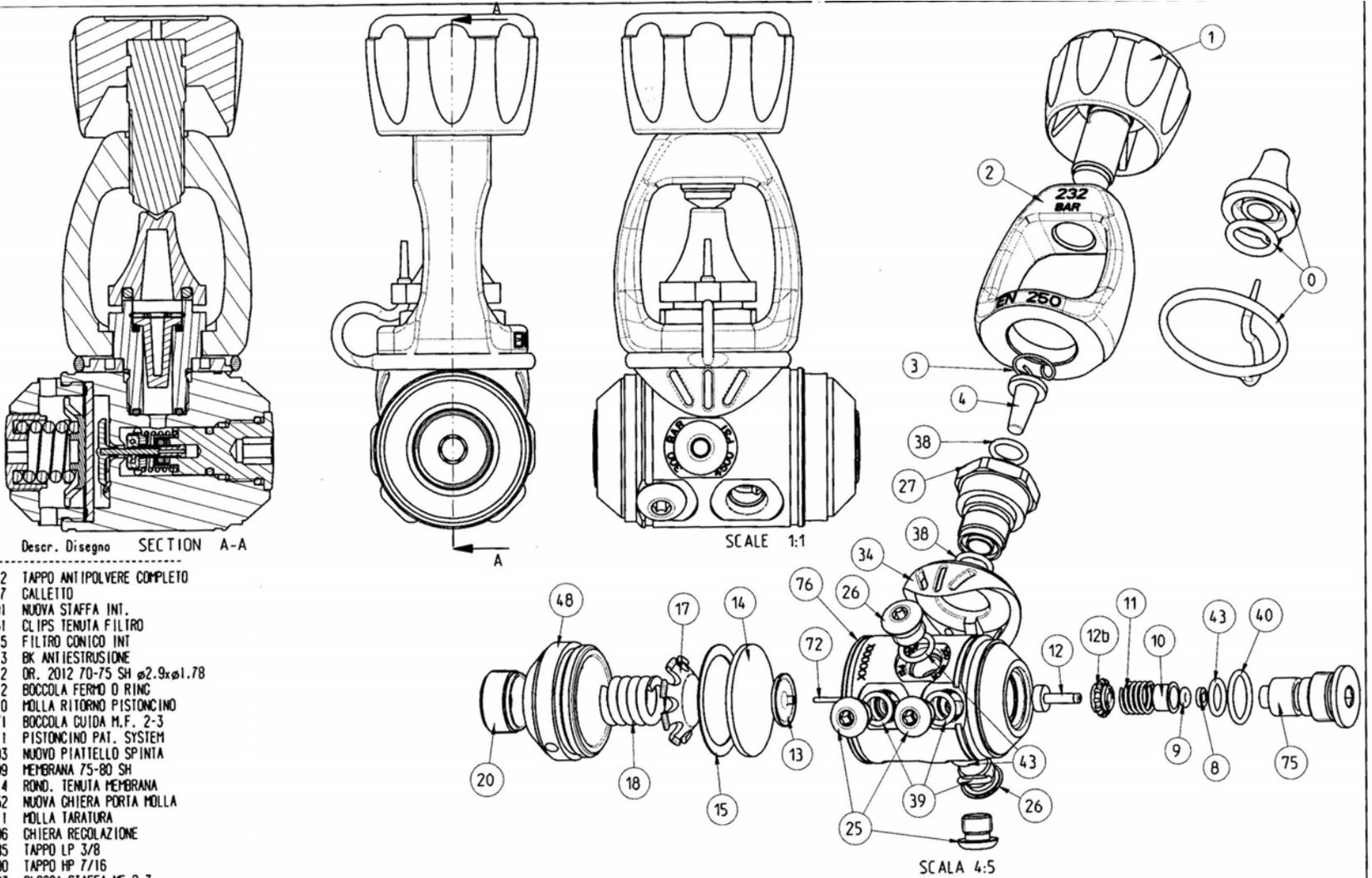
1. Remove all hoses and 3/8 plugs (25), 7/16 plugs (26) and O rings (39) and (43)
2. Clamp the valve body (76) vertically in a soft jawed vice with diaphragm end facing upwards.
3. Remove the adjuster (20) with a 6mm hex wrench. With a “C spanner “ remove end cap (48).
4. Remove the spring (18) and spring support pad (17).
5. Remove the thrust washer (15) and diaphragm (14) taking care not to damage the sealing surface in the valve body (76).
6. Lift out the valve needle support pad (13) and the valve needle (72).
7. Invert the valve body (76) so that the balance chamber (75) is facing upwards.
8. Using a 6mm hex wrench remove the balance chamber (75)
9. Remove O ring (40) and (43) from the balance chamber (75) then remove the O ring (9) and the backup ring (8) from inside the balance chamber (75) taking care not to scratch or damage the sealing surface.
10. Remove the O ring bush (10), control spring (11) and piston assembly (12 & 12b) from inside the valve body (76). Pull the O ring bush (10) from the control spring (11).
11. Slide the guide bush (12b) from the piston (12).
12. Turn the valve body (76) in the vice so that the yoke is facing upwards.
13. **For the “A” clamp version:** With a 25mm ring spanner, remove the yoke bolt (27). Remove the saddle (34), dust cap (0) and yoke (2). Unscrew the hand wheel (1) from the yoke (2).
14. Remove snap ring (3), filter (4) and two O rings (38) from yoke bolt (27).
- 13a. **For the DIN connector version:** With a 6mm hex wrench remove the hand wheel connector (21). Remove O rings (41) and (42). Pull off the Hand wheel (22).
- 14a. With a 22mm spanner, remove the hand wheel post (28) and lift off the saddle (34). Remove filter (23) and O ring (38) from the hand wheel post (25).

## **Final adjustment**

1. Using a 0 – 20 bar gauge connect the regulator to a 200 bar supply
2. The intermediate pressure is adjusted by screwing the adjuster (20) in/out using a 6mm hex key until the valve locks up at 9.5 bar. Purge the regulator 2 or 3 times, then check again, adjusting to 9.5 bar as necessary. Leave the regulator pressurised for 1 minute, the interstage pressure should not have crept more than **x bar**. Purge the regulator fully.
3. Adjust the supply pressure to 20 bars; the interstage pressure should not be less than 9.0 bars.
4. Finally, immerse the valve connected to a small cylinder in a water bath and check for air leaks.

## COLTRI-SUB C90 FIRST STAGE PARTS

Italiano		English	
No. Codice	Denominazione	Position number	Name
0	Tappo antipolvere	0	Dust cap
01	Galletto nylon	01	Hand wheel
02	Nuovo Staffa Int.	02	Yoke
03	Clips tenuta filtro	03	Snap ring
04	Filtro conico int	04	Conical filter ("A" clamp)
08	BK antiestrusione	08	Backup ring
09	O ring 2.90 X 1.78 mm	09	O ring 2.90 X 1.78 mm
10	Boccola fermo O ring	10	O ring bush
11	Molla ritorno pistoncino	11	Control spring
12	Pistoncino (pat system)	12	Piston (patented)
12b	Boccola guida	12b	Guide bush
13	Piattello spinta	13	Needle support pad
14	Membrana	14	Diaphragm
15	Rondella membrana	15	Thrust washer
17	Ghiera porta molla	16	Spring support pad
18	Molla taratura	18	Main spring
20	Ghiera regolazione	20	Adjuster
25	Tappo LP 3/8	25	LP plug 3/8 UNF
26	Tappo HP 7/16	26	HP plug 7/16 UNF
27	Bloccastaffa	27	Yoke bolt
34	Sella "compact"	34	Nylon saddle
38	O ring 9.19 X 1.78 mm	38	O ring 9.19 X 1.78 mm
39	O ring 7.66 X 1.78 mm	39	O ring 7.66 X 1.78 mm
40	O ring 14.0 X 1.78 mm	40	O ring 14.0 X 1.78 mm
43	O ring 8.73 X 1.78 mm	43	O ring 8.73 X 1.78 mm
48	Cappello	48	End cap
72	Astina guida	72	Valve needle
75	Camera billanc monolit	75	Balance chamber housing
76	Corpo MF 4	76	Valve body
<b>DIN connector version</b>			
21	Raccordo volantino	21	Hand wheel connector
22	Volantino DIN 200 Bar	22	Hand wheel (200 bar DIN)
23	Filtro conico DIN	23	Conical filter DIN
28	Fermo Volant 200 bar	28	Hand wheel post (DIN 200 bar)
41	O ring 11.91 X 2.63 mm	41	O ring 11.91 X 2.63 mm
42	O ring 10.82 X 1.78 mm	42	O ring 10.82 X 1.78 mm



Pos. Cod. Prodotto Descr. Disegno SECTION A-A

0	010.99.99.01042	TAPPO ANTIPOLVERE COMPLETO
1	010.99.99.12717	GALLETTO
2	010.58.83.00101	NUOVA STAFFA INT.
3	010.04.00.01051	CLIPS TENUTA FILTRO
4	010.28.80.11015	FILTRO CONICO INT
8	010.90.00.02513	BK ANTIESTRUSIONE
9	010.91.00.02012	DR. 2012 70-75 SH ø2.9xø1.78
10	010.58.80.02512	BOCCOLA FERMO D RING
11	010.04.00.02510	MOLLA RITORNO PISTONCINO
12b	010.58.80.25071	BOCCOLA GUIDA M.F. 2-3
12	010.59.80.25011	PISTONCINO PAT. SYSTEM
13	010.58.80.12503	NUOVO PIATTELLO SPINTA
14	010.91.00.02509	MEMBRANA 75-80 SH
15	010.90.00.02514	ROND. TENUTA MEMBRANA
17	010.90.00.25052	NUOVA GHIERA PORTA MOLLA
18	010.04.00.02511	MOLLA TARATURA
20	010.58.82.02506	GHIERA REGOLAZIONE
25	010.58.82.01985	TAPPO LP 3/8
26	010.58.82.01990	TAPPO HP 7/16
27	018.58.82.01107	BLOCCA STAFFA MF 2-3
34	010.90.00.01004	SELLA 1-ST. "COMPACT"
38	010.91.00.20377	DR. 2037 70-75 SH ø9.19xø1.78
39	010.91.00.20317	DR. 2031 70-75 SH ø7.66xø1.78
40	010.91.00.20567	DR. 2056 70-75 SH ø14.0xø1.71
43	010.91.00.10870	DR. 108 70-75 SH ø8.73xø1.78
48	015.58.83.12502	CAPPELLOTTI 1 STADIO
72	010.02.00.25031	ASTINA GUIDA DIS 25031
75	010.58.82.02710	CAMERA BILANC. MONOLITICA PER MF.4
76	010.58.83.32505	CORPO MF4

REV.	DATA/DATE	DESCRIZIONE REVISIONE/DESCRIPTION REVISION

BAVE, TESTIMONI E RESIDUI DI LAVORAZIONE NON TOLLERATI		NO. DISEGNO/AC.DRAWING:	
DESCRIZIONE/DESCRIPTION: 1° STADIO BIL. INT MF4 SATINATO		DATA/DATE: 02/01/2002	
MATERIALE/MATERIAL: ARTICOLI COMPLETI		SCALA/SCALE: 1:1	
TRATTAMENTO TERMICO/HEAT - TREATING:		PESO FATTO BY / FORM: 868.21 A3	
RIVESTIMENTO PROTETTIVO/PROTECTIVE PLATING: CROMATURA SATINATA		LAVORAZIONI INDUSTRIALI S.p.A. Genova - Bolzaneto - ITALY	
TOLLERANZE GENERALI: ISO 2768-FINE		DISegnATORE/PROJ.DESIGNER: T. PIBERNIK	
SALVO SPECIFICHE INDICAZIONI		GRADO DI FINITURA: COME NON INDICATO	
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