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CH5, CH10, CH11 Series Control Heads

A Description

- The CH5 Control Head is a lever operated pneumatic control valve that provides two pilot air signals, and a variable pressure signal proportional to lever position.
- The CH10 Control Head is a lever operated pneumatic control valve that provides a variable pressure signal proportional to lever position.
- The CH11 Control Head is a lever operated pneumatic control valve that provides two variable pressure signals proportional to lever position.

The Control Head will also accept a mechanical input from a second station CH8 Control using 1/8 inch stainless steel cable. The Control Head has a polished stainless steel finish and is available in right or left-hand configurations. Three lever options are available: Long Lever, Short Lever, and Knob Lever. Lever position indicators are also available.

B Specifications:

Material: Brass and stainless steel

Maximum operating pressure: 200 psi (14.1 kg/cm^2)

Flow: 50 SCFM @ 100 psi (2360 dm^3/sec @ 7 kg/cm^2)

Weight: Approximate 20 lbs (9 kgs)

C Installation

These Control Heads are designed for panel mounting. The Control Head may be installed and removed from the top, only after the manifold is removed. See Figure B4-20-1:, Figure B4-20-2:, Figure B4-20-3: and Figure B4-20-4: for dimensions.

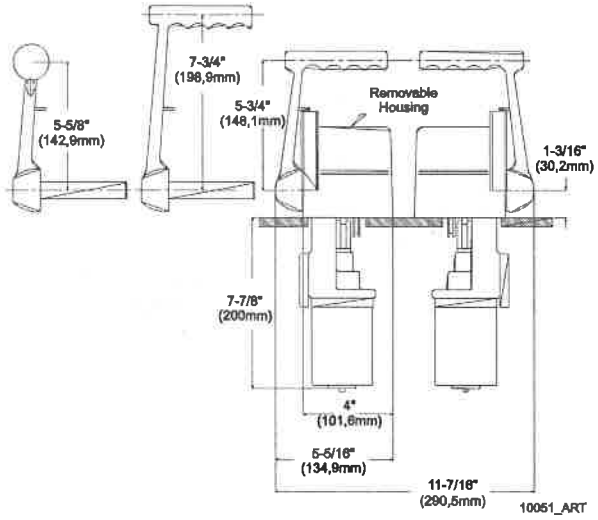

Figure B4-20-1: CH Control Head Dimensions

Port	CH5	CH10	CH11
1	Supply	Supply	Supply
6	Pressure Signal	Pressure Signal	Plugged
7	Pilot Air Signal	Plugged	Pressure Signal
8	Pilot Air Signal	Plugged	Pressure Signal

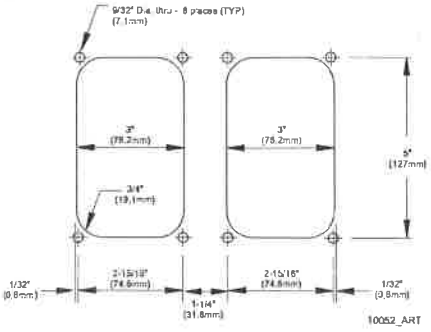

Figure B4-20-2: Cutout Template

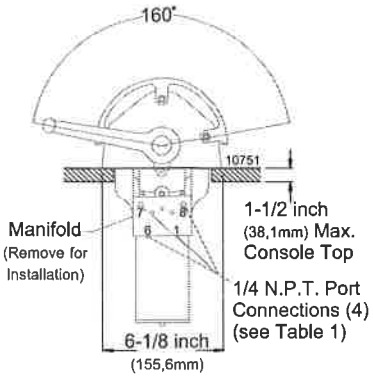

Figure B4-20-3: Clearance Dimensions

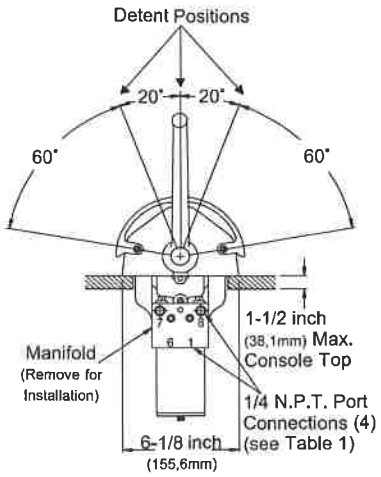

Figure B4-20-4: Detent Positions

D Maintenance And/or Overhaul

- System inspection should be scheduled at least once a year, checking for dirt, water and lubrication in the system. No more than five years interval is recommended for major over-haul. It can be performed with only one 1/2 inch, one 7/16 inch, and one 3/8 inch combination wrench, 3/16 inch and 5/32 inch Allen, and a straight slot screwdriver.
- These Control Heads have been designed to allow for "in place" maintenance and/or overhaul. If unit removal is desired, the manifold must be first removed (leaving pipe connections undisturbed) and the valve body may then be removed from the top.
- Completely disassemble the Control Head.

CAUTION: During disassembly, and later at re assembly, use ONLY the 1/2 inch wrench flats (Figure 6), as provided just below the roller on the plunger assembly Item 7, to prevent plunger from rotating while either loosening or securing the threaded supply seat Item 23.

- Wash all metal parts in a non-flammable solvent. Rinse each part thoroughly and blow dry with a low pressure air jet. Assemble the parts on a clean surface, as shown in the exploded view (Figure B4-20-5:). Lubricate all rubber parts with MA92-0100 silicone lubricant, or equal (MA92-0100 is available from Northway Products Inc). Examine each part carefully. Visually check metal components for excessive scuffing or wear. Replace all rubber parts and any other parts that may not provide satisfactory service until the next scheduled maintenance period.

Table B4-20-1: Item Number References Correspond to Callout Numbers in Figures A5 and A6

Item	Qty	Part #	Description
1	1	CH5-0109	Valve Body
2	1	CH5-0207	Spring Housing
3	1	CH5-0304	Housing, S.S.
4	1	CH5-0405	Long Lever, S.S.
	1	CH5-0415	Short Lever, S.S
	1	CH5-0419	Knob Lever, S.S
5	1	CH5-0501	Sheave & Cam Hub (CH5, CH11)
	1	CH10-0301	Sheave & Cam Hub (CH10)
6	1	CH5-0601	Pilot Operator
7	1	CH5-0708	Plunger Assembly
8	1	CH5-0813	Manifold (CH5, CH10)
	1	CH11-0106	Manifold (CH11)
9	1	CH5-0902	Friction Button
10	1	CH5-1001	Detent Shaft
11	1	CH5-1104	Spring Support
12	1	CH5-1201-7	Cam(Standard CH5)(10-60 PSI)
	1	CH10-0201-5	Cam(Standard CH10)(6-62 PSI)
	1	CH10-0201-2	CAM-MACHINED (0-70 PSI)
	1	CH5-1201-5	CAM-MACHINED (10-70 PSI)
	1	CH5-0201-6	CAM-MACHINED (30-70 PSI)
13	1	CH5-1301	Gasket
*14	1	CH5-1401	Pilot Bushing
15	2	CH5-1402	Bushing
16	1	CH5-1506	Indicator Ring Assy., Chrome
17	1	CH5-1704	Control Spring
18	1	CH5-1806	Balance Piston
20	1	CH5-4501	Filter
*21	1	CH5-2401	Pilot Pin
22	1	CH5-2803	Detent Roller
23	1	CH5-3206	Supply Seat & Poppet Assy.
24	1	CH5-4202	Plunger Return Spring
25	1	CH5-4301	Supply Spring
26	1	CH1-0962	Detent Spring
27	2	CI-1141	Drivescrew, S.S. (#2x1/4)
28	1	CH2-2501	Hub Set Screw
29	1	CH2-2601	Indicator Pin
30	2	CV1-0800	Cartridge Valve (includes items 32&33)
31	1	CI-0013	O-Ring
32	2	CI-0015	O-Ring
33	2	CI-0016	O-Ring
34	4	CI-0109	O-Ring
35	3	CI-0111	O-Ring
36	1	CI-0114	O-Ring
37	1	CI-0142	O-Ring
*38	2	DRT-0612-2	Thrust Washer
*39	1	5100-25H	Retaining Ring
*40	1	B48-3	Bearing - Sleeve
41	1	TS43CR066J 12PS	Set Screw
*42	1	AN960-C416	Flatwasher-S.S.(1/4")
43	2	CH06721	Groove Pin-S.S.
44	1	CI-0327	O-Ring
45	2	CI-1132	Flatwasher-Brass (#10L)
46	1	CI-1179	Flatwasher-S.S. (1/4L)
47	1	CI-1106	Lockwasher-S.S. (1/4-20)
48	1	79NE-040	Nut-Nyloc, S.S. (1/4-20)
49	3	CI-1142	Screw-Sltd. Oval Hd. (10-24x3/8"), Chrome
50	2	CI-1134	Screw-Soc. Hd. S.S. (10-24x3/8")
51	5	CI-1135	Screw-Soc. Hd., S.S. (1/4-20x5/8")
52	2	CI-1136	Screw-Soc. Hd., S.S. (1/4-20x3/4")
53	2	CI-1131	Screw-Sltd. Oval Hd. (10-24x2), Chrome
55	2	219P-4	Fitting, Plug pipe (CH10)
56	1	CI-1149	Screw-Hex Hd., S.S. (1/4-20x1/2) (CH10)

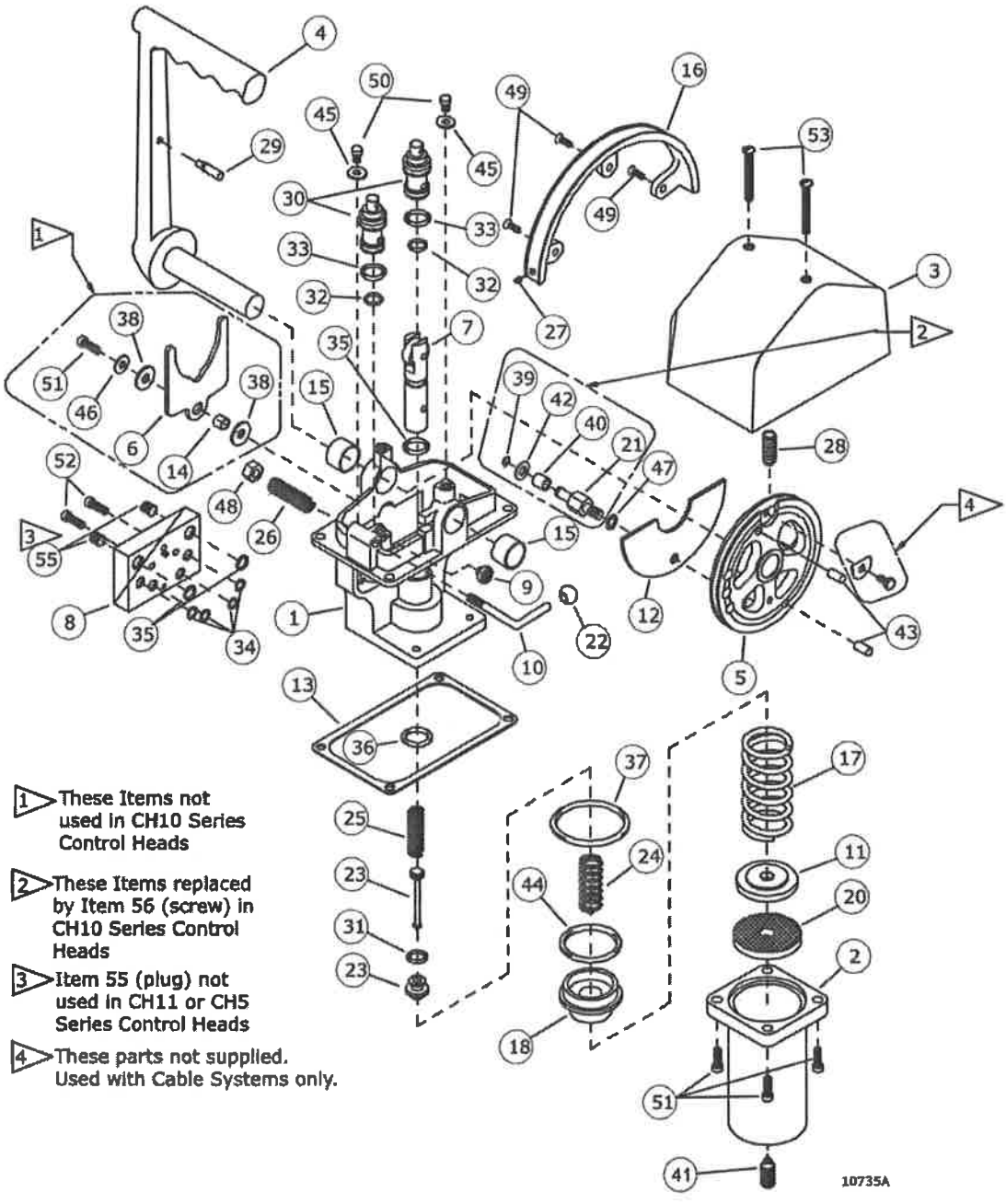

Figure B4-20-5: Exploded View

E Adjustments

Two adjustments can be made to the Control Head. Preload set screw (Item 41) changes the maximum and minimum pressures and nut (Item 48) alters the force required to move the Control Head lever.

- Preload Pressure Adjustment

  Preload set screw (Item 41) varies the minimum and maximum pressure setting a like amount without changing the range of pressure.

- Place the Control Head lever (Item 4) in the maximum increasing pressure position (full travel) and turn the set screw (Item 41) in or out until the desired maximum pressure is seen on a test gauge from the appropriate pressure signal port (see Figure B4-20-3: or Figure B4-20-4:). Nominal operating pressure ranges for available cams are shown in Table B4-20-2: Minimum and Maximum Pressure Settings.
- Recommended initial set-up pressure (at full lever travel) for all cams is 3 psi above the maximum nominal range. Final settings to personal requirements may then be made.

Table B4-20-2: Minimum and Maximum Pressure Settings

Speed Pressure Cam	Nominal Operating Range	Speed Pressure Cam	Nominal Operating Range
(CH5, CH11 series)		(CH10 series)	
CH5-1201-5	10-70 psi	CH10-0201-1	0-80 psi
CH5-1201-6	30-70 psi	CH10-0201-2	0-70 psi
CH5-1201-7	10-60 psi	CH10-0201-3	30-70 psi
CH5-1201-8	Falk Slip	CH10-0201-4	40-75 psi
CH5-1201-9	10-80 psi	CH10-0201-5	6-62 psi

- Lever Friction Adjustment

  Adjusting the nut (Item 48) can vary the lever force of the Control Head. This adjustment increases or decreases the manual force required to move or hold the lever in any desired position throughout the full range of lever travel. Do not allow detent spring (Item 26) to bottom out.

F Spares

Overhaul Kit CH5-5406: This kit provides all rubber components, as well as all valve and seat component parts. Also included is Bulletin B4-20.

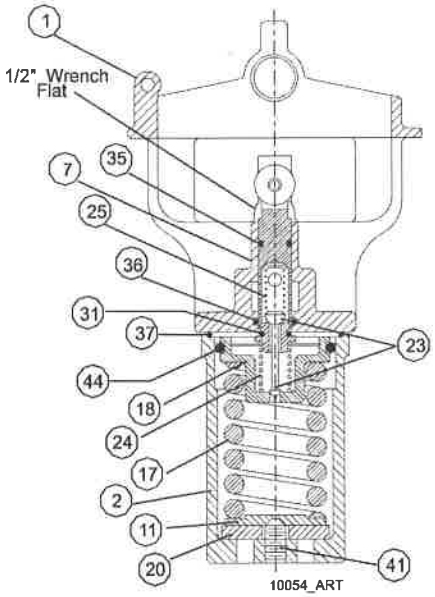

Figure B4-20-6: Cut-away side view

IMPORTANT: For users located in remote areas and faced with long re-supply times, it is recommended that the CH5-5406 Overhaul Kit be kept in stock aboard the vessel.