



**RATCHET AND PAWL
MATERIAL LIST
AND
INSTALLATION INSTRUCTIONS**

FOR USE WITH THE FOLLOWING BRADEN HOISTS

CH165A -01 DRUM

CH175B -01 DRUM

CH210A -01 DRUM

CH230B -01 DRUM

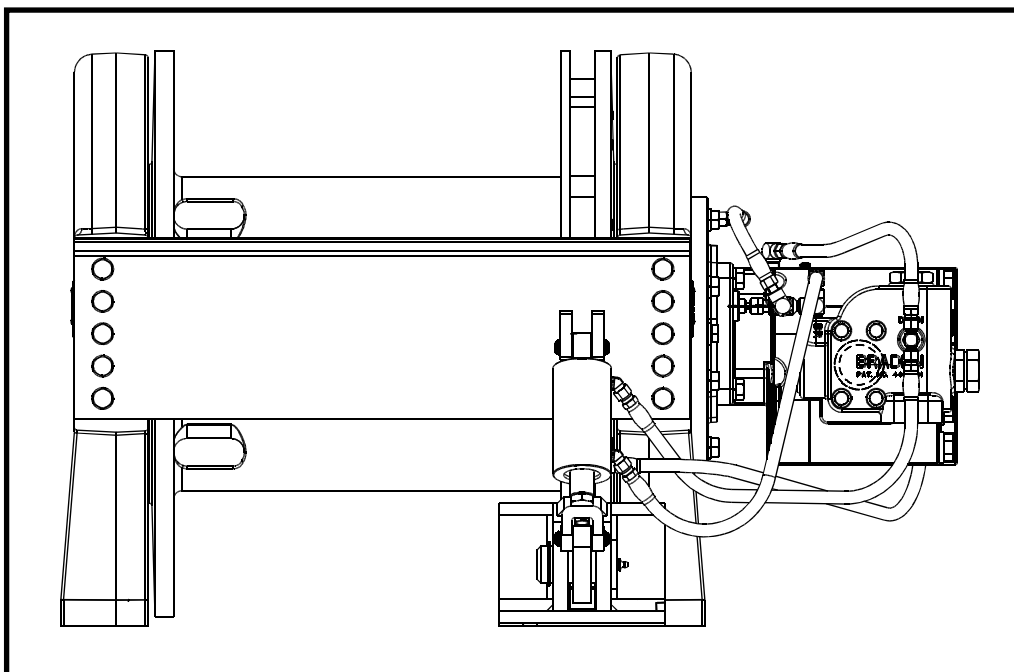
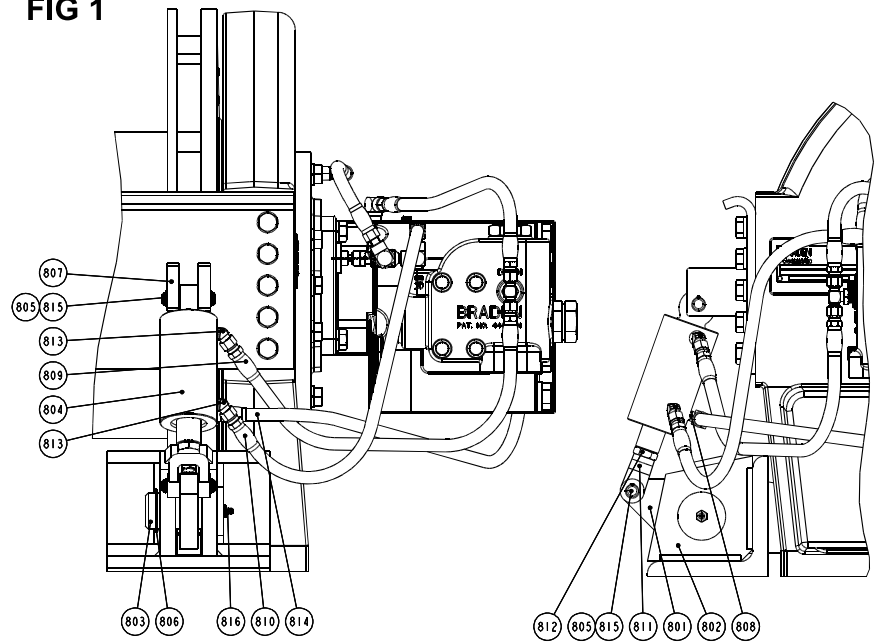


FIG 1



ITEM	PART NO	DESCRIPTION	QTY	
			63728	63359
801	81652	PAWL ASSEMBLY	1	--
	81651	PAWL ASSEMBLY	--	1
802	24871	PIVOT BASE	1	1
803	24876	PIN	1	1
804	81663	CYLINDER	1	1
805	104153	PIVOT PIN	2	2
806	12035	SNAP RING	1	1
807	52495	MOUNTING PLATE	2	2
808	21163	ELBOW	1	1
809	72318	HOSE ASSY	1	--
	25749	HOSE ASSY	--	1
810	25952	HOSE ASSY	1	--
	25749	HOSE ASSY	--	1
811	24882	CLEVIS	1	1
812	18004	JAM NUT	1	1
813	21165	ELBOW	2	2
814	34197	HOSE ASSY	1	1
815	101082	RETAINING RING	4	4
816	18047	GREASE FITTING	1	1

FIG 2

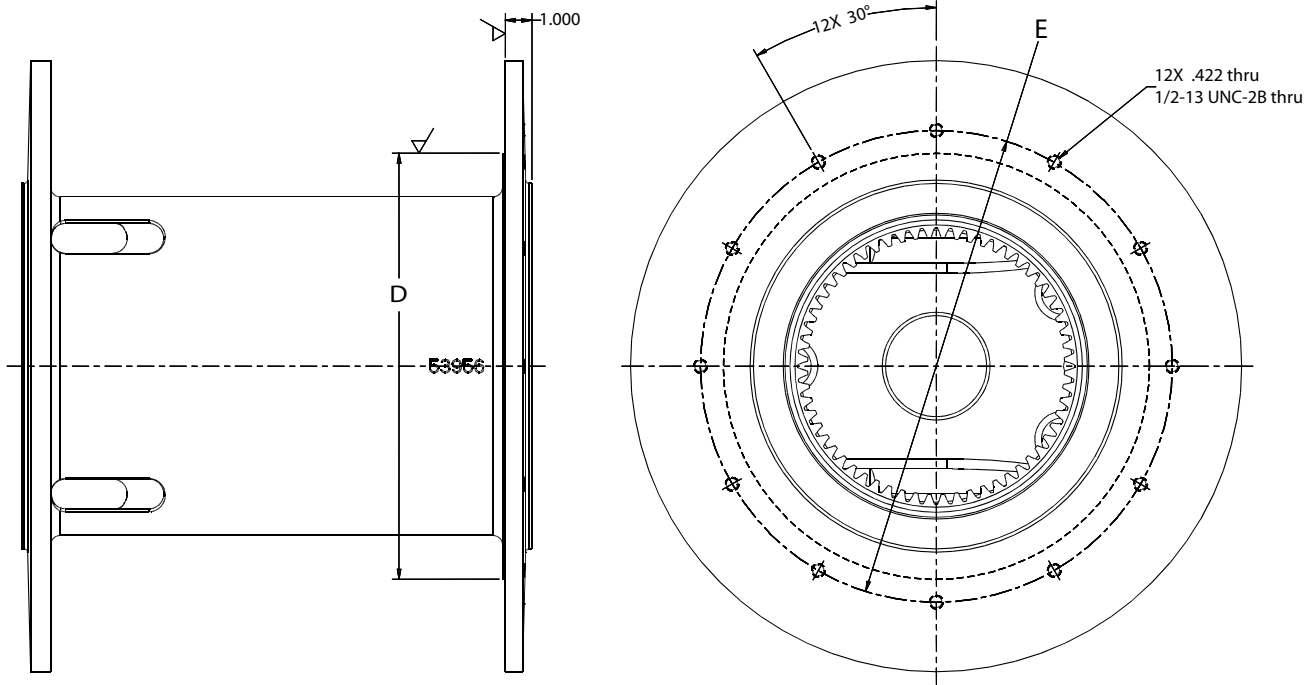


FIG 3

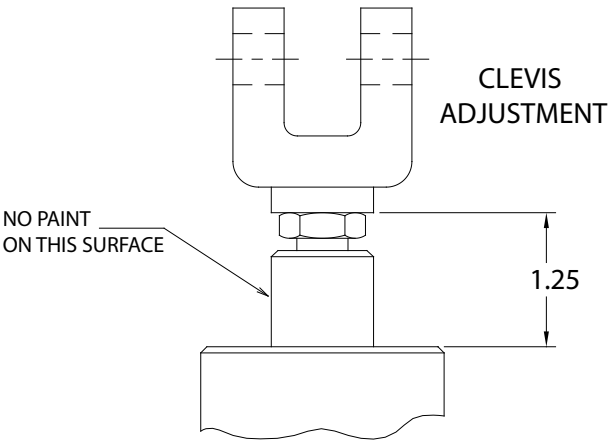
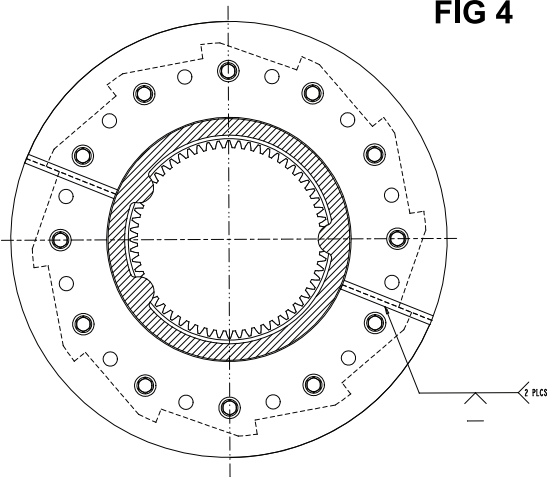
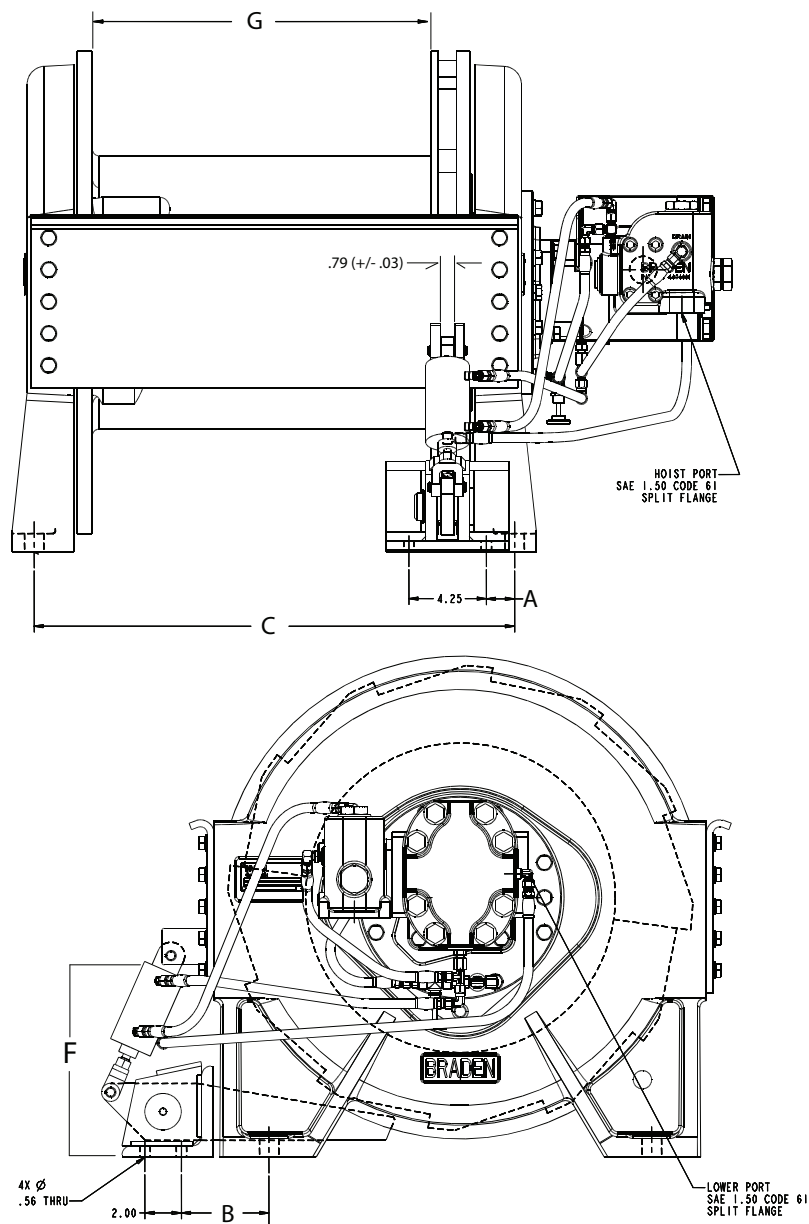


FIG 4



INSTALLATION INSTRUCTIONS FOR ASSEMBLY OF RATCHET AND PAWL KITS ON BRADEN “CH” HOISTS

1. Remove wire rope from the hoist (if applicable) and move hoist to a clean work area for disassembly.
2. Disassemble hoist per instructions given in Hoist Service Manual.
3. Machine the inside of the drum flange as shown. Drill and tap the mounting holes as indicated; see fig. 2.
4. Align the ratchet wheel halves with the twelve (12) tapped holes in the cable drum making the O.D. of the ratchet halves concentric with the O.D. of the drum flange. The O.D. of the ratchet halves should be almost flush with the outside of the drum flange. A limited amount of drum flange run-out may be possible with variances in the drum castings.



5. Attach the ratchet wheel halves to the drum flange using twelve capscrews and washers. Torque capscrews to 80 ft. lbs. Weld the ratchet wheel halves at the mating joints as indicated in Figure 4. Ratchet half cover material is A36 steel.

6. Position pawl assembly in place per dimensions A, B & C. Slowly rotate the cable drum so that the pawl fully engages the ratchet wheel (see Figure 1). Adjust the clevis on the cylinder assembly to 1.25 in. (31.75 mm) (see Figure 3).

7. Connect all hoses.

8. Attach the pawl assembly base to the crane mounting structure using four (4) ½" Grade 8, zinc plated capscrews to prevent corrosion. The capscrew length will depend on the mounting structure. Torque the capscrews to the proper torque specification.

9. Check operation of hoist and ratchet & pawl assembly to insure that the pawl will always fully disengage ratchet wheel (when control lever is in lowering mode) and that the pawl engages fully (when control lever is in neutral or the raise position).

WINCH	DIMENSION						
	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)
CH165A -01	1.53	5.51	23.50	16.03	17.75	10.81	15.72
CH175B -01	1.00	5.51	21.50	13.00	14.50	10.40	14.63
CH210A -01	1.55	4.88	26.37	16.50	22.00	10.56	18.61
CH230B -01	1.53	5.51	23.50	16.03	17.75	10.81	15.72

WINCH	R & P GROUP		RATCHET HALF		CAPSCREW		WASHER	
	PART NO.	QTY.	PART NO.	QTY.	PART NO.	QTY.	PART NO.	QTY.
CH165A -01	63728	1	105702	2	102475	12	11026	12
CH175B -01	63728	1	107047	2	29855	12	11026	12
CH210A -01	63359	1	83074	2	104323	12	11026	12
CH230B -01	63728	1	105702	2	102475	12	11026	12

TroubleShooting

The pawl will not engage or not engage fully:

1. Check Figure 3 and adjust if necessary; should be 1.25 in. (31.75 mm).
2. The spring in the Pawl cylinder assembly may be weak or broken. Disassemble the cylinder and inspect spring. If it is not broken, check spring free height. It should be 2.50 6 .09 in. (63.5 6 2.3 mm).
3. Check the orifice (located in the piston) to be certain it is clear. The orifice hole is approximately .070 in. (1.78 mm) in diameter.

The pawl will not disengage:

1. If the ratchet is too tight against the pawl it may not disengage. Raise the load slightly and disengage normally.
2. Check Figure 3 and adjust if necessary.

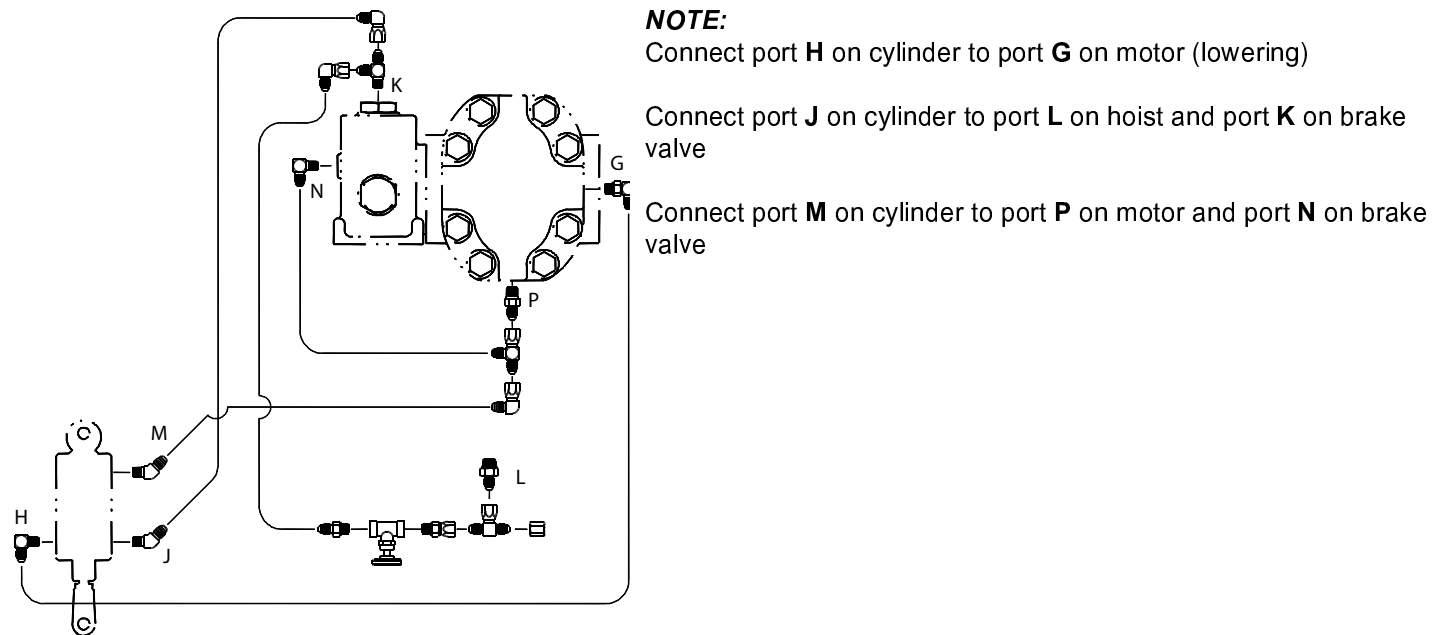
Cylinder assembly leaks hydraulic fluid:

1. Disassemble, remove and replace all O-rings.

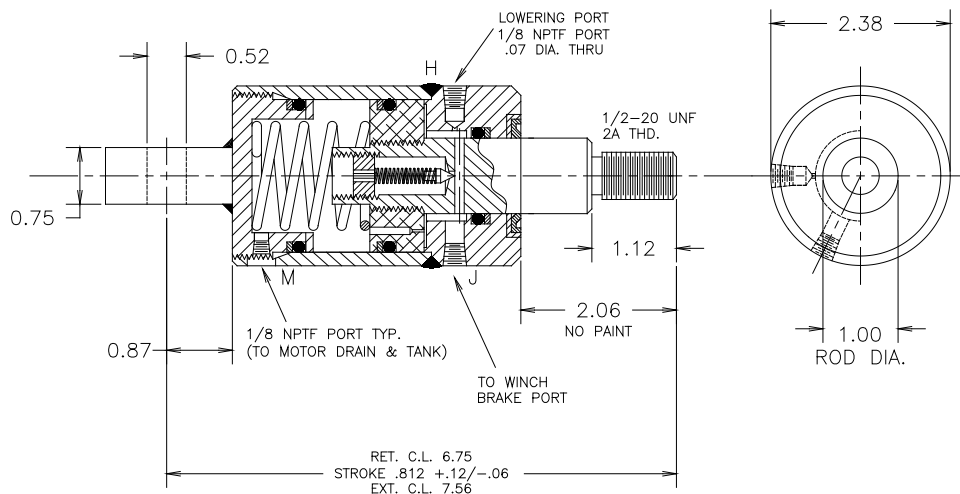
Adjustment

Note: The Pawl cylinder has an internal relief valve that is factory pre-set (1200 to 1500 psi). No further adjustment is necessary.

Hydraulic Schematic (fittings shown may not match all hoists)



Ratchet and Pawl Cylinder, Part # 81663



NOTE: Seal Kit for cylinder 81663 is part number 61614