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INSTALLATION AND MAINTENANCE INSTRUCTION MANUAL

6500/7800 # ADJUSTABLE HEATER CHOKE

LONG NOSE THREADED & SOCKET WELD

ADJUSTABLE CHOKE

AND

POSITIVE CHOKE ASSEMBLIES

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I. OPERATION

Your Long Nose Heater Choke adjustable choke uses the needle and seat principle to provide fully adjustable flow. Varying the size of the calibrated orifice is achieved by rotating the hand wheel to obtain the desired flow rate, or downstream pressure. The orifice size is read from the indicator, which is calibrated in 64ths of an inch and is in line with a V-notch machined into the top of the bonnet.

II. INSTALLATION

Install your choke so that the flow is in line with the inlet connection, making at 90 degree turn and then exiting through the outlet orifice. Your choke can be mounted in any orientation without affecting its performance; as long as the flow enters the choke at the inlet and exits through the outlet.

When welding the choke body to the heater coil it is recommended that the choke body outlet end be preheated to 300 degrees Fahrenheit. In addition, the same applies when the circumference of the choke body (barrel) is welded to the heater's end plate

CAUTION: Prior to welding, the seat and bonnet are to be removed from the choke body. The choke body should be protected from weld spatter in and around the threaded areas. Failure to follow welding recommendations may affect the warranty of your heater choke.

III. MAINTENANCE

Inspect your choke regularly for excessive wear. Parts normally replaced at service intervals are choke seat, stem packing, bonnet o-ring and stem. Be sure to lubricate stem threads, o-ring groove, and the inside diameter of the stem packing.

IV. DISASSEMBLY OF ADJUSTABLE CHOKE

1. With choke in the open position, bleed all pressure form system.
2. Loosen bonnet by rotating counter clockwise. This will also allow any trapped pressure within the choke to escape the vent hole in choke body.

CAUTION: If an excessive amount of pressure escapes between the bonnet and the bonnet nut, stop disassembly procedure and ensure that the system pressure is off the choke.

3. Unscrew bonnet nut from body. Pull bonnet assembly out of body.

Disassemble Bonnet Assembly:

1. Remove hand wheel nut and washer.
2. Remove hand wheel.
3. Loosen indicator set screw.
4. Remove indicator from stem.
5. Remove thumb screw.
6. Remove nylon ball from thumb screw hole.
7. Invert bonnet for easy access to stem packing
8. Remove retaining ring.
9. Grasping the bonnet, rotate the stem counter-clockwise until stem passed through the stem packing.
10. Remove junk ring.
11. Remove stem packing.
12. Remove bonnet o-ring.

The bonnet assembly is now completely disassembled, make a visual inspection of stem for signs of wear or damage. Required replacement parts are stem packing and bonnet o-ring.

If the flow medium has worn the cone shaped part of the stem, replacement of the stem will be required.

Choke Seat Removal:

Using a bean/seat wrench, remove seat by sliding wrench over the seat hex. Turn wrench counter-clockwise to unscrew seat from body. Normally, the seat can be lifted out of the body with the wrench. Visually inspect seat for excessive wear or damage, replace if necessary.

V. ASSEMBLY OF ADJUSTABLE CHOKE

Choke Seat Installation:

Holding he choke seat hex with the seat wrench, lubricate the choke seat threads and then place the seat in the choke body. With the seat wrench gripping the seat hex, turn the wrench clockwise to tighten (75-125 ft. lbs.) to seat into position. Remove the seat wrench.

Bonnet Assembly:

1. Replace any worn or damaged parts.
2. Lubricate stem (with anti-seize thread compound), packing gland area of bonnet, and bonnet o-ring groove.
3. Lubricate inside diameter of new stem packing and slide into packing gland.

<u>Note</u>: The direction of the "V" type stacked packing is important for proper operation. The "V" shape must be positioned such that the open end of the "V" shape has the internal pressure of the choke acting on it.

4. Slide junk ring into packing gland.
5. Lubricate stem threads (with anti-seized thread compound), slide stem through stem packing and turn stem clockwise to thread stem into bonnet.
6. Place retaining ring into groove in bonnet to hold stem packing and junk ring in place.
7. Drop the nylon ball into thumb screw hole and install thumb screw.
8. Install indicator on stem. *See indicator adjustment instructions for proper calibration on (Page 5).
9. Install hand wheel followed by stem washer and nut.
10. Slide bonnet o-ring onto lubricated o-ring groove
11. Carefully slide stem and bonnet into body. Thread bonnet onto body.

Note: Bonnet assembly is ready to be installed on the body. Before installing bonnet check the following items:

i. Choke seat is in the body.
ii. Bonnet o-ring is installed and lubricated.
iii. Stem packing and junk ring are in place with retaining ring inside groove.
iv. Stem is in the full open position.

CAUTION: Damage to the stem, choke seat or both will result if the stem is not in the open position while hammering the bonnet nut tightly into position.

VI. INSTRUCTIONS FOR SETTING ADJUSTABLE CHOKE INDICATORS

1. The bonnet features a notch for aligning and reading the indicated orifice size. On the side of the bonnet (usually 180 degrees from the notch) there is a ¾ in. set screw access hole.

Note: The set screw access hole, as shown on the Indicator Detail Diagram, (Page 6), is not applicable to HH2 chokes.

2. Rotate hand wheel until indicator set screw is visible in the ¾ in. hole, or at the top of the top of the bonnet.

3. Loosen set screw to allow the indicator to move independently of the stem.

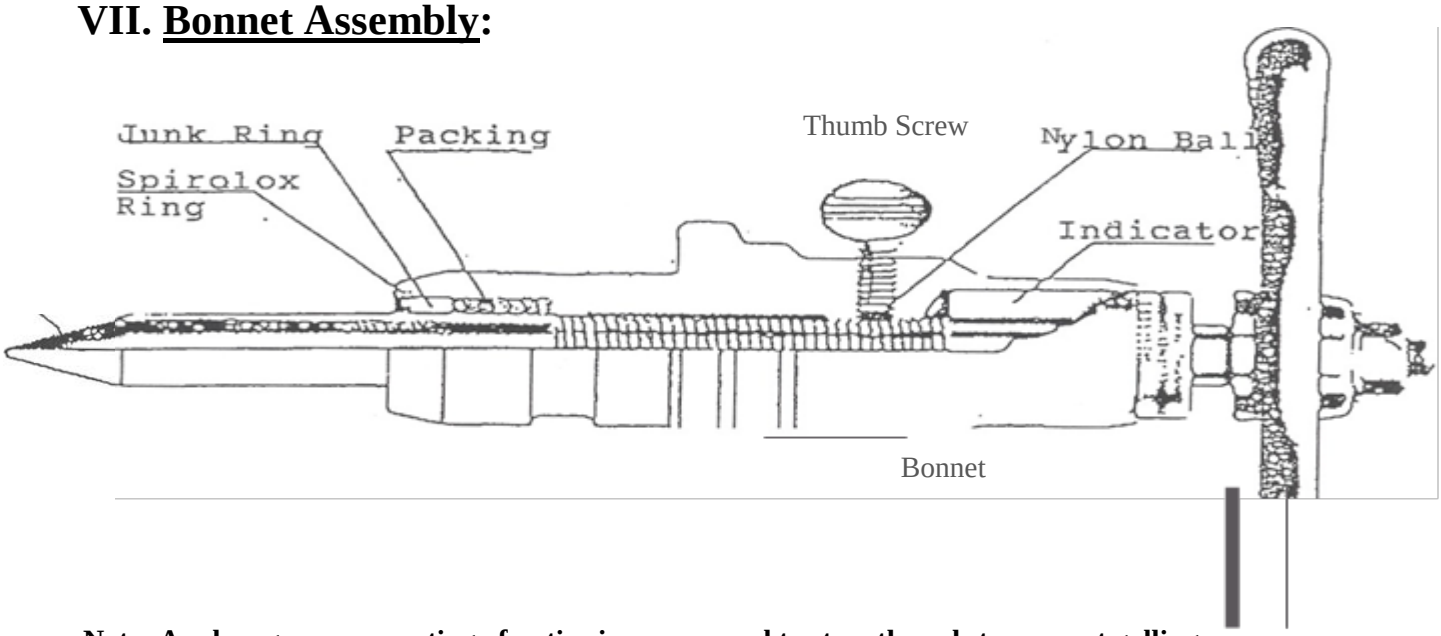
4. Turn hand wheel toward the closed direction until the stem is seated in the seat.

CAUTION: Chokes with tungsten carbide trim may crack or break if the stem is forced into the seat with excessive force. Chokes by design are not to be used as shut-off valves.

5. With the stem seated in the choke seat, make indicator adjustment. Using a 5/32 in, Allen wrench in the set screw, move the indicator so that the zero (0) reading is lined up with the notch. Tighten set screw.

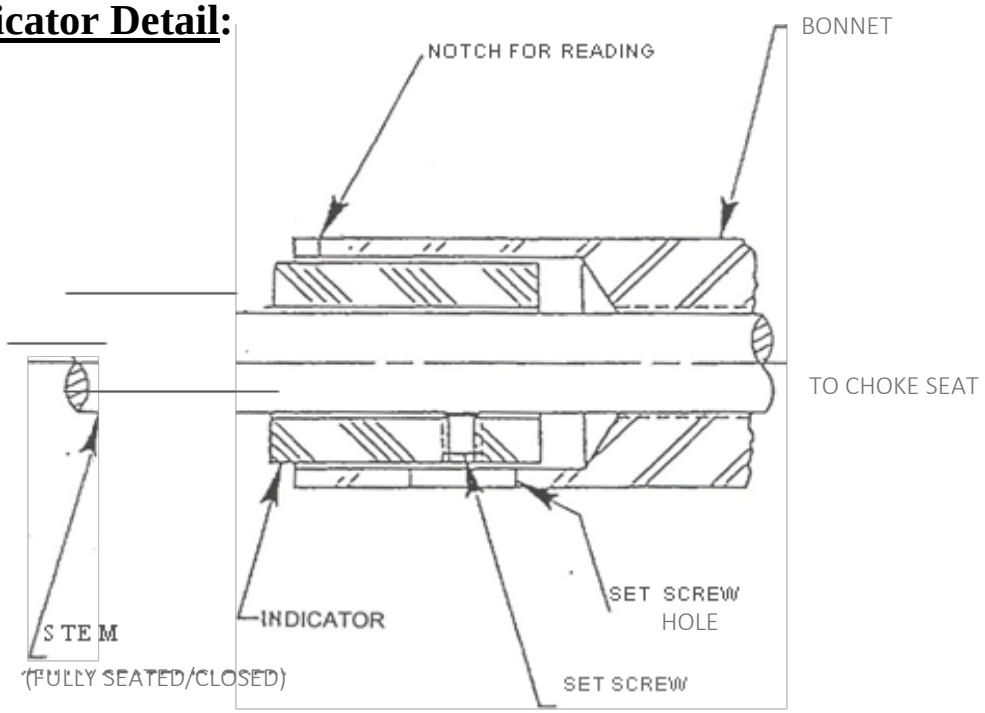
6. The indicator should be set to the proper corresponding orifice size. To check, rotate hand wheel to the full open position, then back to the seated position. The indicator should read zero (0). If not, readjust by repeating step numbers (2) through (5).

VII. Bonnet Assembly:



Note: Apply a generous coating of anti-seize compound to stem threads to prevent galling.

Indicator Detail:



Procedure for Setting Indicator:

With choke in fully closed position align mark (64ths increments) on indicator with notch on bonnet. Tighten set screw. Indicator is now set in proper calibration.

Note: The indicator must match the seat size, (i. e. ¾ inch indicator- ¾ inch seat).

VIII. RECOMMENDED SPARE PARTS FOR TWO YEARS SERVICE

Part No.	Description	Quantity
1102	Stem, Hardened Steel	2
1101	Stem, SSTC	2
1143	Stem Packing	6 Sets
1144	Junk Ring	4
1161	Retaining Ring	6
1160	Bonnet O-ring	10
1108	Seat, Hardened Steel 1”	2
1104	Seat, SSTC ¾”	2

Note: When in severe and critical service, with highly abrasive flow medium, the above items will require more frequent inspection and replacement.

IX. DISCLAIMER

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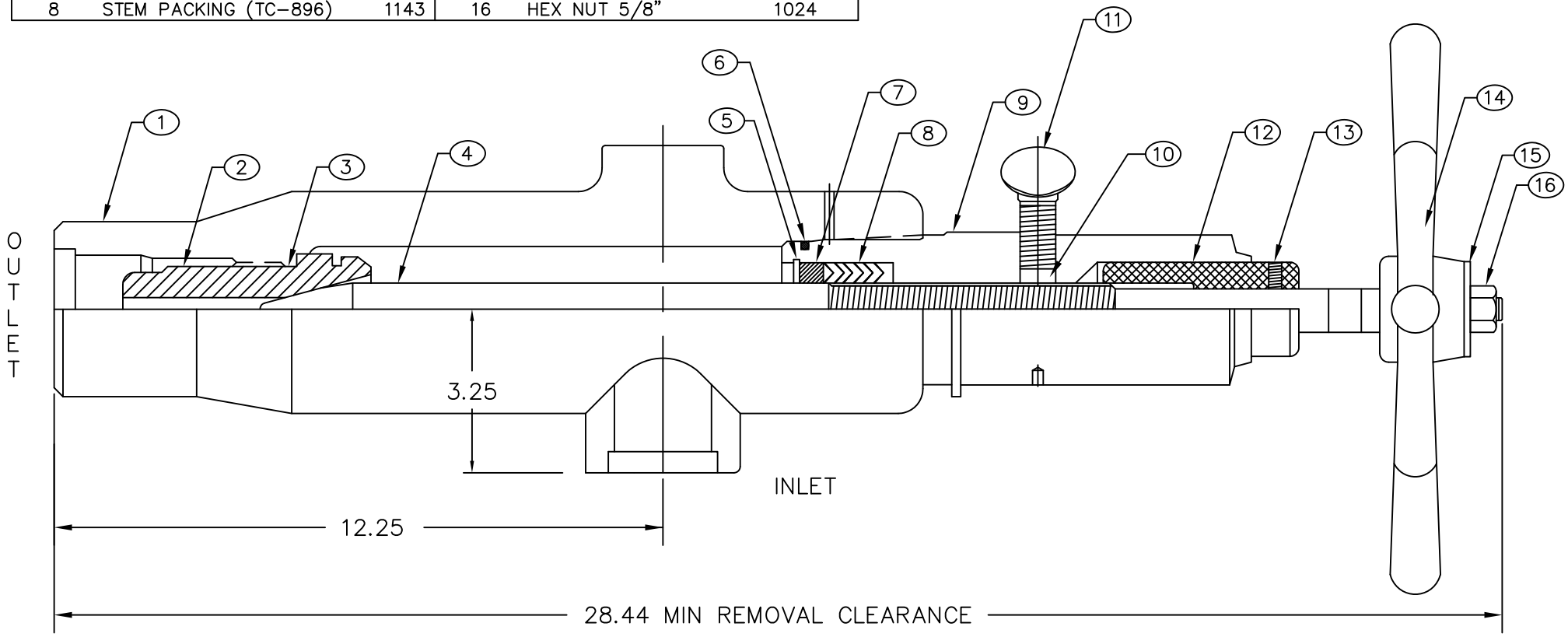
PARTS LIST

MARK	NAME OF PART	PART NO.	MARK	NAME OF PART	PART NO.
1	BODY 2" SW (TC-4373)	1164	9	BONNET, ALLOY STEEL	1158
2	SEAT 1" SSTC	1105	10	NYLON BALL	1004
3	SEAT GASKET (TC-1016)	1165	11	THUMB SCREW (TC-529)	1162
4	STEM, (TC-899) SSTC	1101	12	INDICATOR 1" (TC-530)	1142
5	RETAINER RING (TC-959)	1161	13	SET SCREW F/INDICATOR	1007
6	O-RING	1160	14	HANDWHEEL	9000
7	JUNK RINK (TC-895)	1144	15	WASHER, FLAT 5/8"	1023
8	STEM PACKING (TC-896)	1143	16	HEX NUT 5/8"	1024

NOTE: STEM SEATS AVAILABLE W/.500,.750, 1.000 DIAMETER BORES

.500 DIA. PART NO. 1103
.750 DIA. PART NO. 1104
1.000 DIA. PART NO. 1105



Drawn	MPW	STANDARD TOLERENCES
Chk'd.	OTB	.X = ±.06 FRAC = 1/32
Appd.	OTB	.XX = ±.02 ANGLE = ±1/2°
		.XXX = ±.005 FINISH = 125√

2/14
DATE

HOUSTON OILFIELD EQUIPMENT, INC.
HOUSTON, TEXAS

LONG NOSE HEATER CHOKE ASSY
6500 PSI C.W.P SOCKET WELD
INLET X OUTLET 2" W/ 1" SSTC

SIZE	DWG. NO.	REV.
A	206658822	A