



HOUSTON OILFIELD EQUIPMENT, INC.

PRODUCT CATALOG

FLOW CONTROL EQUIPMENT





HISTORY

CONTENTS

Houston Oilfield Equipment, Inc. (HOE, Inc.) is recognized throughout the world as a manufacturer of quality choke products. Our company was formed in 1993 and is headquartered in Houston, Texas, which is considered to be a major hub within the oil and gas industry. Houston was a natural choice, as this location ideally serves both domestic and international markets. The president and founder of HOUSTON OILFIELD EQUIPMENT, INC. is Tom Bowers. Mr. Bowers has 52+ years of experience in the oil and gas industry, has attained a vast knowledge of chokes and related products and possesses an impeccable reputation with customers, colleagues and competitors alike.

HOE, Inc. markets its products through a network of distributors and sales representatives, both domestic and foreign. Our company takes pride in being able to respond to its customers in minimal time, whether the task be providing a quote, shipping a product or assisting in customer service. We have maintained excellent customer relationships by providing unsurpassed service. This everyday challenge is the basis of operation by which our company operates. HOE, Inc. specializes in chokes of the FMC, Cameron type H2 and Thornhill-Craver profile, which are fully interchangeable with those manufacturers of the same product style. These designs are time-proven and have been employed in many different types of service. In addition to the choke assemblies, parts for the above mentioned and various other types of chokes are also available.

HOE, Inc.'s line of chokes is ideally suited for a broad range of applications. These include wellheads, production manifold, well testing, steam injection, choke and kill manifolds, indirect fired heaters and well clean-up operations. In addition to chokes we also manufacture adapter spools and spacer spools. We welcome the opportunity to address your choke needs. As our reputation has shown for the past 30 years, we will make every effort to provide timely and professional service to your organization. Providing a quality product with outstanding customer service has and will continue to be our benchmark in the oil and gas industry.



HOUSTON OILFIELD EQUIPMENT, INC.'S OBJECTIVE

It is to manufacture quality products at competitive prices. The company offers chokes of actual OEM dimensional standards as well as those of custom dimensions. All manufacturing is accomplished with the use of modern CNC equipment and tooling. In addition to choke assemblies, parts for many types of chokes are also manufactured here. The company maintains a quality system in accordance to API Q1 and ISO 9001. Products with Third Part Inspection (TPI) certification may also be provided upon request. Houston Oilfield Equipment, Inc. has full capabilities of satisfying all of your requirements for chokes and component parts.

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CHOKE SELECTION INFORMATION

SPECIFICATIONS

Type:	Positive & Adjustable
Body Design:	Angle Type
End Connections:	1" LPT, 2" LPT Flanged RTJ & RF Union Ends
Design Pressure:	2,000 PSI CWP 3,000 PSI CWP 5,000 PSI CWP 10,000 PSI CWP 15,000 PSI CWP 20,000 PSI CWP
Trim Sizes:	1/2", 3/4", 1", 2", 3"
Trim Materials:	Alloy Steel, Stellite Stainless Steel, Inconel Stainless Steel Tungsten Carbide

FEATURES AND BENEFITS

- Hammer Union Bonnet & Cap Connections
- Forged Steel Bodies - Alloy and 410 SS
- Choice of End Connections
- Available H2S Service (NACE MR-01-75)
- Easily Converted in Field
- Choice of Trim Materials
- Choice of Orifice Sizes
- Grease Fittings on Adj. Model Bonnets
- Thumb Screw for "Locking" Stem
- Test Port on Flanged Models
- FMC & H2 Profile Centerline Dimensions
- Easy-To-Read Indicator in 64ths Inch
- Readily Available Parts
- Low Maintenance
- Special Dimensions Available
- 316SS + Inconel Inlay per Request

With so many choices, selection of the proper choke for the job does not have to be difficult. Turn to Houston Oilfield Equipment, Inc. for prompt customer service and a quality manufactured product.

Houston Oilfield Equipment, Inc. is recognized throughout the oil and gas industry as a manufacturer of quality choke products. Our company produces choke assemblies of the FMC and H2 type profiles, which are fully interchangeable with those of other manufacturers of the same. This design is time-proven, which has been employed in many services within the industry.

The company also manufactures various parts for chokes of the Thornhill Craver profile, as well as others.

Our line of chokes is ideally suited for a broad range of applications. These include wellheads, production manifolds, well testing, choke and kill manifolds, and well clean-up operations.

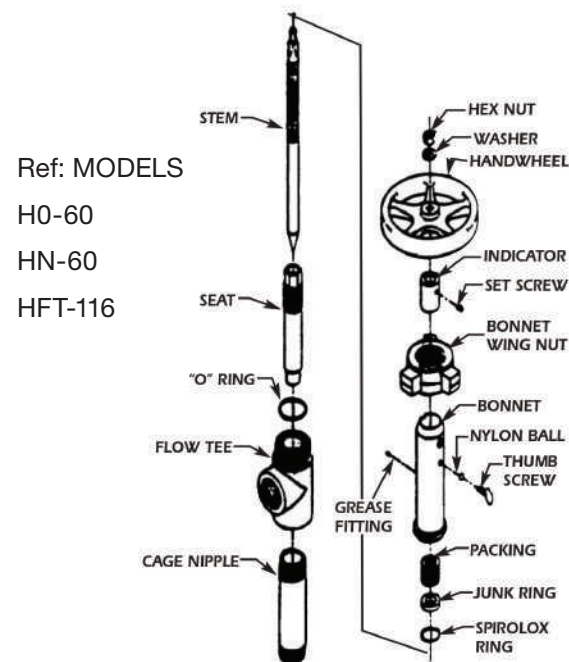
Chokes may be ordered in both positive and adjustable models. Each model utilizes a hammer union type connection, which facilitates the quick changing of flow beans and trims. In addition, each choke is easily converted from positive to adjustable or adjustable to positive while the choke body remains installed in the line. This means more time working and less time waiting as replacement parts are readily available from your local supply store.

Your selection of materials for choke bodies include alloy steel, 316 stainless steel, Duplex, and 410 stainless steel. All FMC profile flanged models employ bodies of forged steel construction with integral flanges, while fabricated versions are also available. Our HH2 profile flanged models also feature forged and fabricated bodies. The standard materials used for our threaded bodies are forged alloy steel, with carbon steel also available upon request.



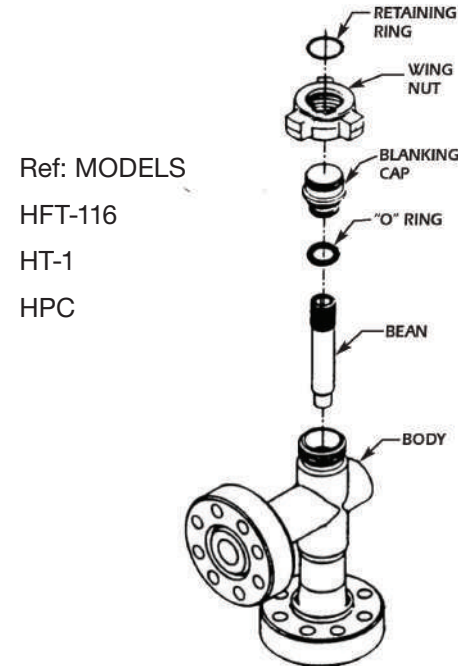
POSITIVE AND ADJUSTABLE CHOKES

TYPICAL THREADED ADJUSTABLE CHOKE



Ref: MODELS
H0-60
HN-60
HFT-116

TYPICAL FLANGED POSITIVE CHOKE



Ref: MODELS
HFT-116
HT-1
HPC

HOW TO ORDER CHOKES

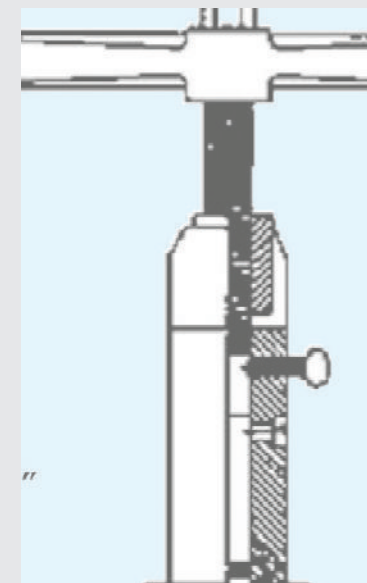
1. Type of Choke - Positive or Adjustable.
2. Specify Working Pressure.
3. Type of Inlet & Outlet Connections; Size & Pressure Rating.
4. Specify Trim Size (Orifice Required).
5. Trim Material - Alloy Steel, Tungsten Carbide, Inconel, Stellite, SS.
6. Specify Heater Choke if applicable.

NOTE: Beans for Positive Chokes are not furnished with assemblies and must be ordered separately. Choke wrenches are also sold as a separate item.

THREADED CHOKE ASSEMBLIES FMC PROFILE

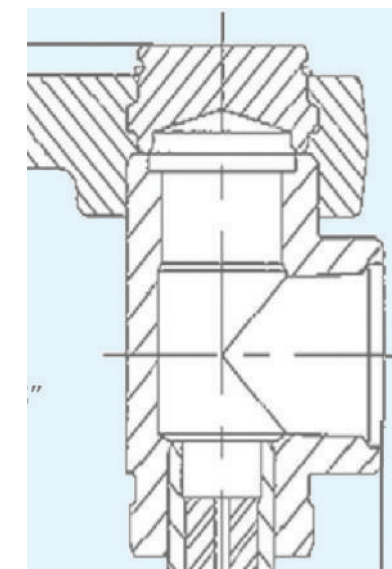
TYPE H-29

2,000 PSI CWP
Adjustable Choke
with 2" LPT Inlet
and 2" LPT Outlet



TYPE H-FT-108

3,000 PSI CWP
5,000 PSI CWP
Positive Choke
With 2" LPT Inlet
and 2" LPT Outlet



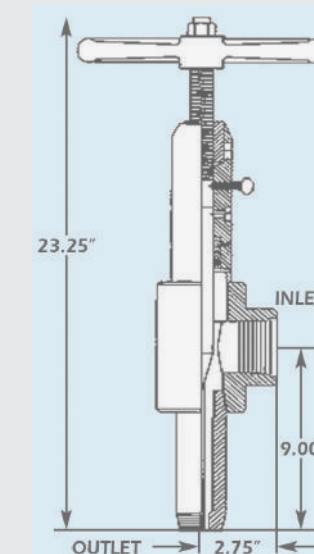
TYPE H-N-60

3,000 PSI CWP
Adjustable Choke
with 2" LPT Inlet
and 2" LPT Outlet



TYPE H-N-60

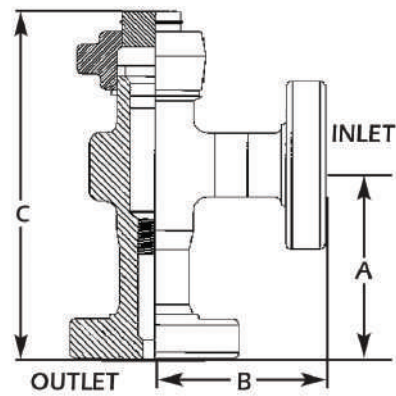
3,000 PSI CWP
5,000 PSI CWP
Adjustable Choke
with 2" LPT Inlet
and 2" LPT Outlet



H-29 not acceptable for H2S service

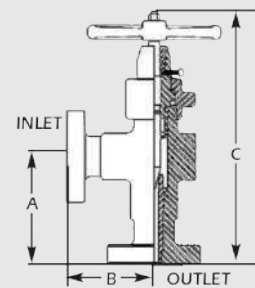
H-FT-108 & H-N-60 also available with 1" LPT connections and 3/4" or 1" trim

FLANGED CHOKE ASSEMBLIES



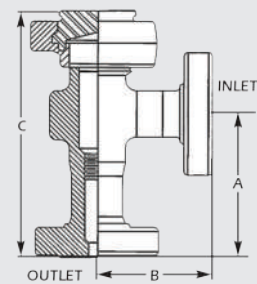
TYPE H-PC POSITIVE CHOKE

SIZE	CWP	A"	B"	C"
2"	5,000	9.38	7.50	14.13
2 9/16"	5,000	9.38	9.38	15.56
1 13/16"	10,000	9.38	7.50	14.13
2 1/16"	10,000	9.38	7.50	16.31
2 9/16"	10,000	9.38	9.38	15.56
1 13/16"	15,000	10.13	7.38	
2 1/16"	15,000	10.13	7.38	



SIZE	CWP	A"	B"	C"
2"	5,000	9.38	7.50	20.81
2 9/16"	5,000	9.38	9.38	20.81
1 13/16"	10,000	9.38	7.50	21.06
2 1/16"	10,000	9.38	7.50	21.38
2 9/16"	10,000	9.38	9.38	20.81
1 13/16"	15,000	10.13	7.38	
2 1/16"	15,000	10.13	7.38	

Type H-JWA Adjustable Choke



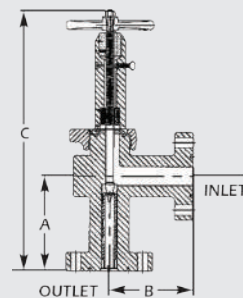
SIZE	CWP	A"	B"	C"
2"	2,000	9.38	7.50	14.50
2"	5,000	9.38	7.50	13.88
2"	150 ANSI	9.38	7.50	14.13
2"	300 ANSI	9.38	7.50	14.13
2"	600 ANSI	9.38	7.50	14.13

Type H-T-1 Positive Choke

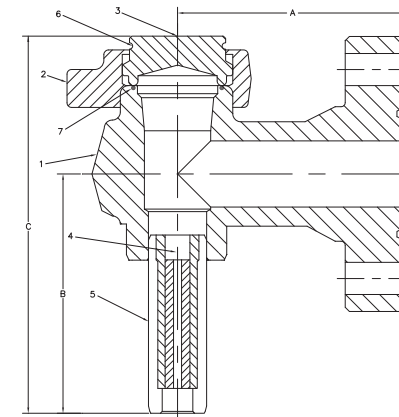
Type H-N-62 Adjustable Choke



SIZE	CWP	A"	B"	C"
2"	2,000	9.38	7.50	24.38
2"	5,000	9.38	7.50	24.38
2"	150 ANSI	9.38	7.50	24.38
2"	300 ANSI	9.38	7.50	24.38
2"	600 ANSI	9.38	7.50	24.38



FLANGED CHOKE ASSEMBLIES FMC PROFILE



TYPE H-FT-116-F POSITIVE CHOKE

SIZE	CWP	A"	B"	C"
2"	3,000	8.00	6.63	13.25
2"	5,000	8.00	6.63	13.25

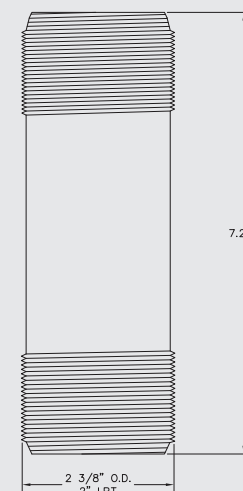
TYPE H-FT-116-F ADJUSTABLE CHOKE

SIZE	CWP	A"	B"	C"
2"	3,000	8.00	6.63	13.25
2"	5,000	8.00	6.63	23.25

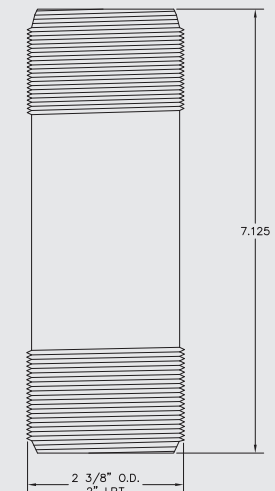


CAGE NIPPLES POSITIVE AND ADJUSTABLE CHOKES

TYPE OCT FC-140 PART NO. 1041

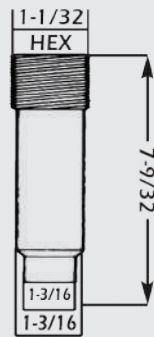


TYPE TC-1018 PART NO. 1121



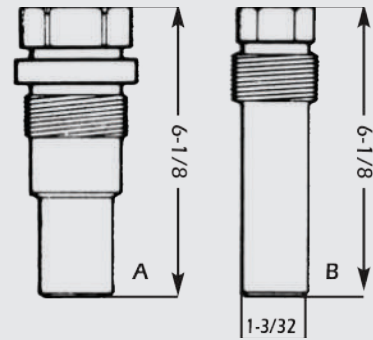
POSITIVE FLOW BEANS & MISCELLANEOUS PARTS

Oil Center Tool (FMC)



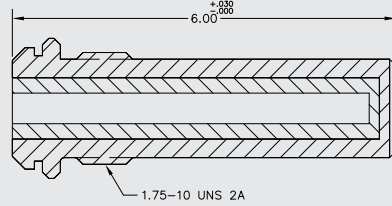
Alloy / Steel PN-1 SIZE
Alloy / Ceramic PN-2 SIZE
SSTC (PL) PN-3 SIZE
SSTC (FL) PN-4 SIZE

Thornhill – Craver



Alloy / Steel PN-25 SIZE
Alloy / Ceramic PN-27 SIZE
SSTC (FL) PN-26 SIZE

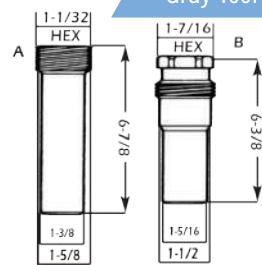
Cameron Iron Works



Alloy / Steel PN-23 SIZE
Alloy / Ceramic PN-8 SIZE C
SSTC (FL) PN-34 SIZE

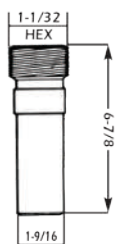


Gray Tool



Type 60 Type 80
A. Alloy / Ceramic PN-16 SIZE
B. Alloy / Ceramic PN-18 SIZE

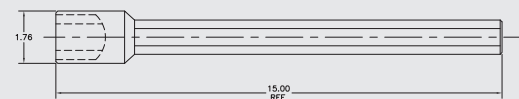
National Supply



Alloy / Steel PN-35 SIZE
Alloy / Ceramic PN-36 SIZE

MISCELLANEOUS PARTS

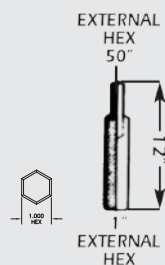
CHOKE BEAN WRENCHES



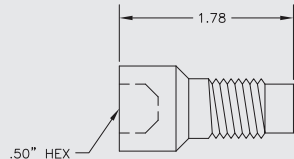
Type FC-140
Bean & Seat Wrench
Part No. 1050

All orifice sizes expressed in increments of 1/64" fractional sizes of 1/2" of 1/64" available from 2/64" to 20/64" hardened steel, SS.

Specify Orifice Size: PN 39 SIZE



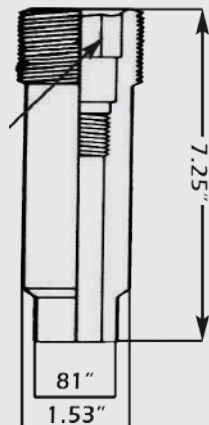
Type FC-143
Flow Bean Wrench
Part No. 1122



MASTER BEAN: OIL CENTER TOOL

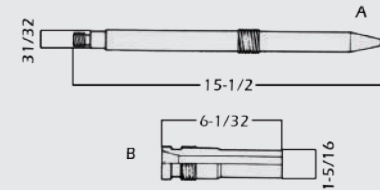
For standard flow beans
For use with type FC-140 cage nipple and FC-142 flow inserts.
PN: 1419
TYPE FC-141

Also fits similar profile chokes supplied by other manufacturers.



PARTS FOR ADJUSTABLE CHOKES

GRAY TOOL CO.



DESCRIPTION

A Stem 8711, 8727 Adj. Choke
B Seat Type 80

EQUIVALENT PART NO.

20-353/30702
91022/30716

HARDENED ALLOY STEEL

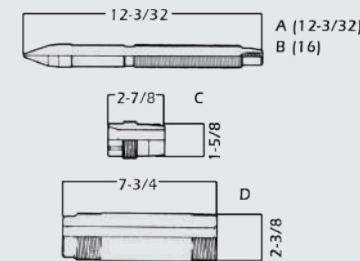
1432
1434

TUNGSTEN CARBIDE STAINLESS

1433
1435



NATIONAL SUPPLY



DESCRIPTION

A Stem for 2" Type F, G and GR Chokes
B Stem for 2" Type F 2900 Series
C Seat for Type F, GR
D Choke Nipple Seat Type G

EQUIVALENT PART NO.

522114
522164
522105
522113

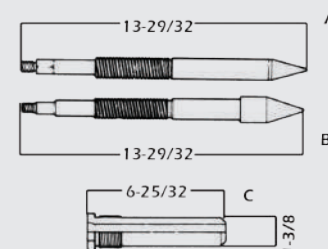
HARDENED ALLOY STEEL

1440
1442
1444
1446

TUNGSTEN CARBIDE STAINLESS

1441
1443
1445
N/A

GULFCO



DESCRIPTION

A Stem for AB - 75 Choke
B Stem for AB - 100 Choke
C Seat for AB - 75 Choke
D Seat for AB - Choke

EQUIVALENT PART NO.

AB - 2
AB - 2A
AB - 3
AB - 3A

HARDENED ALLOY STEEL

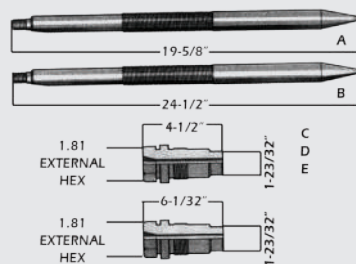
1447
1449
1450
1452

TUNGSTEN CARBIDE STAINLESS

1448
1221
1451
1210

PARTS FOR ADJUSTABLE CHOKES

Thornhill-Craver Type

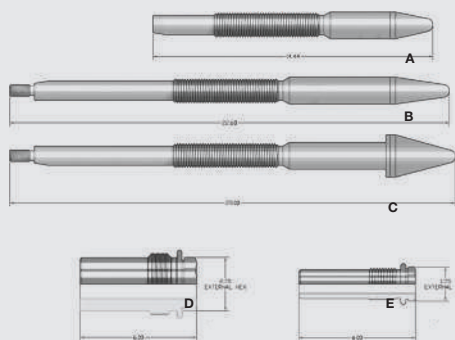


DESCRIPTION	HARDENED ALLOY STEEL	TUNGSTEN CARBIDE STAINLESS
A Stem - Adjustable Wing Valve Choke	1100	1099
B Stem - Long Nose Heater Choke	1102	1101
C Seat - 3,000 & 5,000 PSI CWP Chokes, 1/2" Orifice	1106	1103
D Seat - 3,000 & 5,000 PSI CWP Chokes, 3/4" Orifice	1107	1104
E Seat - 3,000 & 5,000 PSI CWP Chokes, 1" Orifice	1108	1105
F Seat - 10,000 PSI CWP Choke, 1/2" Orifice	1125	1112
G Seat - 10,000 PSI CWP Choke, 3/4" Orifice	1116	1113
H Seat - 10,000 PSI CWP Choke, 1" Orifice	1117	1114

Oil Center Tool Type (FMC) Threaded & Flanged Body Chokes

DESCRIPTION	OVERALL LENGTH	ORIFICE SIZE	HARDENED ALLOY STEEL	TUNGSTEN CARBIDE STAINLESS
A Stem HO-60, HN-60, HT-116-F 3-5,000 CWP	16 3/4"	3/4"	1018	1028
B Stem H-N-62, 2-5,000 CWP	18"	3/4"	1059	1061
C Stem H-29 2,000 CWP	14 3/32"	3/4"	1002	1002TC
D Stem H-JWA 5-10,000 CWP	14 15/32"	3/4"	1069	1070
E Stem H-JWA 15,000 CWP	19 1/8"	3/4"	1455	1456
F Stem HN-60, HFT-116F 3-5,000 CWP	16 3/4"	1"	1027	1029
G Stem H-N-62 2-5,000 CWP	18"	1"	1060	1062
H Stem H-JWA 5-10,000 CWP	14 15/16"	1"	1069	1070
I Seat Type N & H-JWA	8 1/4"	3/4"	1030	1032
J Seat Type N & H-JWA	8 1/4"	1"	1031	1033
K Seat Nipple H-29	4"	3/4"	1014	1014SSTC

H2 Cameron Type



DESCRIPTION	STAINLESS STEEL	TUNGSTEN CARBIDE STAINLESS
A Stem - 1" F/2" Nominal H2	1656	1209
B Stem - 1" F/3" Nominal H2	2034	1460
C Stem - 2" F/3" Nominal H2	1509	1427
D Seat - 1" F/3" Nominal H2 Long	2035	1459
Seat - 2" F/3" Nominal H2 Long	2028	1594
Seat - 2" F/3" Nominal H2 Short (3.30" Length)	1514	1429
E Seat - 1" F/2" Nominal H2	1655	1203

HEATER CHOKE 6,500 CWP & 7,800 CWP

THE LOW COST HEATER CHOKE WITH QUALITY AND A TIME-PROVEN DESIGN.

When you select a 6,500 PSI ECONOMY HEATER CHOKE from Houston Oilfield Equipment, Inc., you can be assured of high quality at a very competitive price. Our Long Nose Heater Choke is manufactured to the most rigid specifications with special emphasis on safety and reliability. It is built upon a time-proven design that has been employed by both end users and fabricators in countless trouble-free installations.

The function of a Heater Choke is to expand the high pressure gas within the tubing coils of an indirect fired heater. The coil attaches to the choke at its outlet end, which is immersed in the water bath of the heater. The resultant generation of heat minimizes the extreme refrigerating action, which will occur as the high pressure gas expands.

Get more value for your dollar when you specify the 6,500/7,800 PSI ECONOMY HEATER CHOKE from Houston Oilfield Equipment, Inc.

SPECIFICATIONS

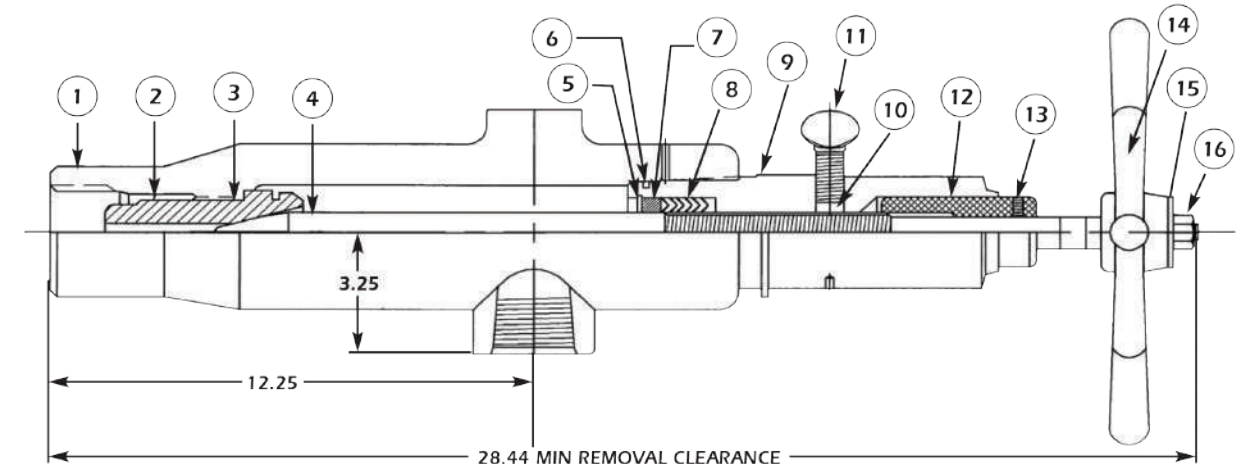
End Connections:	2" Threaded Socket Weld Butt-Weld
Trim Sizes:	1/2", 3/4", 1"
Body Design:	Angle Type Long Nose
Trim Materials:	Alloy Steel SS Tungsten Carbide
Design Pressure:	6,500 PSI CWP 7,800 PSI CWP 10,000 PSI CWP

Note: Stem Seats Available w/ .500, .750, 1.00 Diameter Bores
 .500 Diameter - HS Part No. 1106
 .750 Diameter - HS Part No. 1107
 1.00 Diameter - HS Part No. 1108

FEATURES AND BENEFITS

- Threaded Bonnet with O-ring
- Available in NACE (MR-01-75)
- Safety Pressure Relief Vent in Body
- Choice of End Connections BW or SW
- Body 4130 75K with High Tensile & Yield Strengths
- Interchangeable with Thornhill Craver Type Economy Heater Choke
- Upgradeable to 7,800 PSI CWP

Mark	Name of Part	Part No.
1	Body 2" LPT (HC-4373)	1163
2	Seat, 3/4" HS (HC-1003A)	1107
3	Seat Gasket (HC-1016)	1165
4	Stem, HS (HC-899)	1102
5	Retainer Ring (HC-959)	1161
6	O-Ring, Buna	1160
7	Junk Ring (HC-895)	1144
8	Stem Packing (HC-896)	1143
9	Bonnet, Alloy Steel	1158
10	Nylon Ball	1004
11	Thumb Screw (HC-529)	1162
12	Indicator 3/4" (HC-530)	1417
13	Set Screw F/Indicator	1007
14	Handwheel	9000
15	Washer, Flat 5/8"	1023
16	Hex Nut 5/8"	1043



HEATER CHOKE MODEL TB-10

SPECIFICATIONS

Design Pressure 10,000 PSI CWP, 15,000 PSI CTP
 Trim Sizes Available 1/2", 3/4", 1"
 Body Angle Design 90 Degree
 Trim Material Alloy Steel, SS, SS w/Tungsten Carbide, Inconel
 Dimensions Inlet 12 5/8" Outlet 19 7/8"
 Manual Adjustable Operation
 O-ring Bonnet Seal
 Indicator in 64ths Inch Increments
 Body 5.00" OD for Pack-Off

FEATURES AND BENEFITS

Centerline Dimes Same as Thornhill Craver
 Safety Pressure Relief Vent in Body
 Choice of End Connections BW or Single Bolt Coupling BW
 Trim Interchangeable with that of Original Thornhill Craver
 Hammer Nut Design for Easy Removal & Installation
 Easily Replaces Thornhill Craver Fig 308 10M
 Available Nace (MR-01-75) or Standard Service
 Choice of Trim Sizes & Materials Alloy, SS, SS/Tung Carbide
 Factory Tested to 15,000 PSI
 Field Weldable Material
 Easily Actuated
 Max 1" Trim Size Available
 Easily Converts to Positive for Testing
 Grease Fitting in Bonnet for Lubrication



The indirect flow line heater is used to heat natural gas to a temperature, which is sufficient to prevent the formation of hydrates when line pressures and temperatures are reduced. Our model TB-10 Long Nose Heater Choke lends itself well to this application. The TB-10 is constructed of the highest quality material to give the end user many years of trouble-free service.

The function of our TB-10 LN Heater Choke Assembly is to expand the high pressure gas within the tubing coils of an indirect fired heater. The coil attaches to the outlet end of the choke body, which is immersed in the water bath of the heater. The resultant generation of heat within the heater minimizes the extreme refrigeration action, which occurs as the high pressure gas expands.

HEATER CHOKE MODEL HH2 MAX 2" ORIFICE

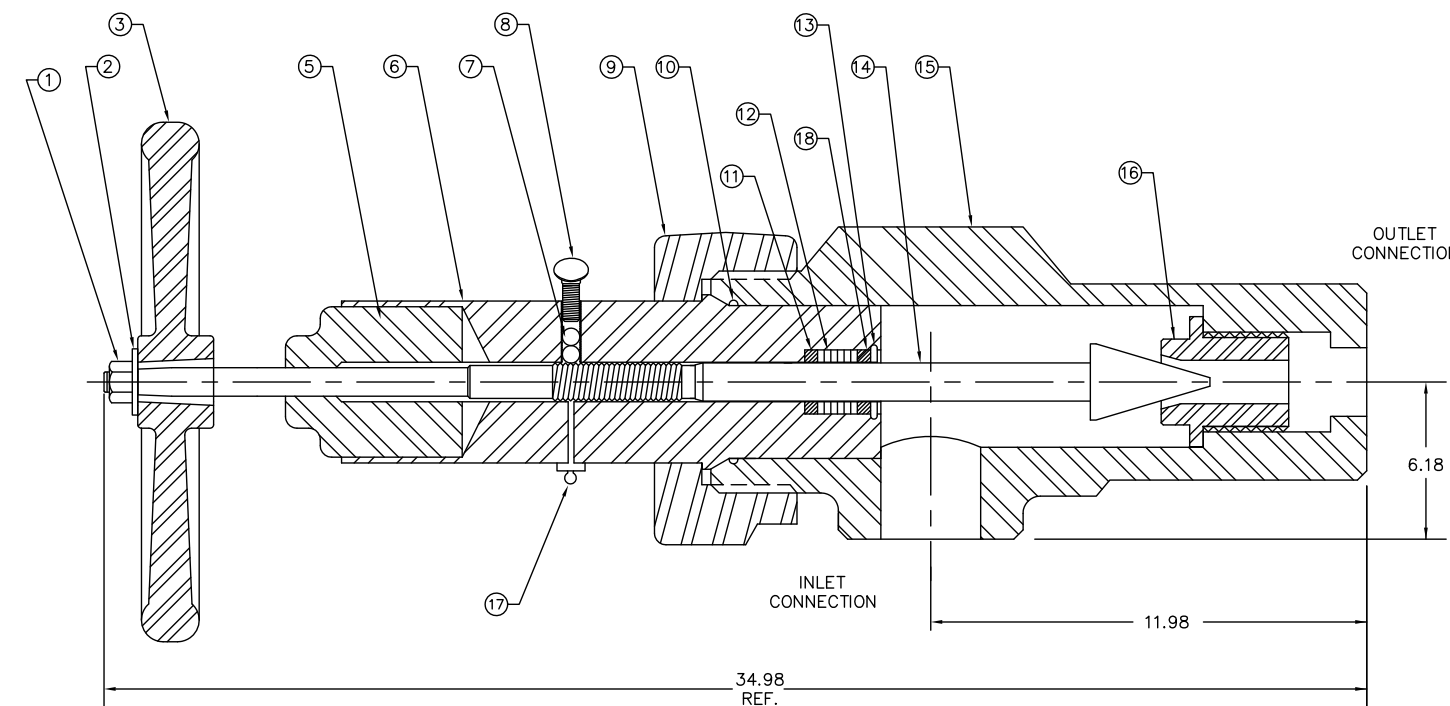
SPECIFICATIONS

Available in 5,000 PSI & 10,000 PSI CWP
 Trim Sizes Available 1", 1 1/2", 2"
 Body Angle Design 90 Degree 3" Nominal Bore
 Trim Material Alloy Steel, SS, SS w/Tungsten Carbide
 Dimensions Inlet 6.18" Outlet 11.98"
 Manual Adjustable Operation
 O-ring Bonnet Seal Standard
 Metal Bonnet Seal Available
 Indicator in 64ths Inch Increments
 Pack-Off of Body 5.625" OD F/10M Model
 Pack-Off of Body 5.00" OD F/5M Model

FEATURES AND BENEFITS

Safety Pressure Relief Vent in Body
 Choice of End Connections BW or SOCKET WELD
 Hammer Nut Design for Easy Removal & Installation
 Available Nace (MR-01-75) or Standard Service
 Choice of Trim Sizes & Materials
 Factory Tested to 7,500 PSI & 15,000 PSI
 Field Weldable Material 4130 75K Alloy
 Max 2" Trim Size Available
 Easily Converts to Positive for Testing
 Grease Fitting in Bonnet for Lubrication

Our model HH2 Long Nose Heater Choke is specially designed for applications requiring larger flow capacity. The choke body is a 3" nominal bore size and can accommodate a bean or seat size maximum of 2.00" ID.



ITEM	QTY.	NAME OF PART	PART NO.	ITEM	QTY.	NAME OF PART	PART NO.
1	1	HEX NUT	1024	10	1	O-RING	1528
2	1	WASHER	1023	11	1	JUNK RING LOWER	1481
3	1	HANDWHEEL	1521	12	1	SET PACKING	1505
4	1	HEX PLUG	1212	13	1	RETAINING RING	1484
5	1	INDICATOR 2"	1483	14	1	STEM 2" SSTC LN	2680
6	1	BONNET	1510	15	1	CHOKE BODY 3" SCH 160 BW LN 2763	
7	2	NYLON BALL	1004	16	1	CHOKE SEAT W/ GASKET 2"	1429
8	1	THUMB SCREW	1529	17	1	GREASE FITTING	1013
9	1	HAMMER NUT 5M	1511	18	1	JUNK RING UPPER	1614B

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Drawn: MPW
 Chkd.: OTB
 Appd.: OTB

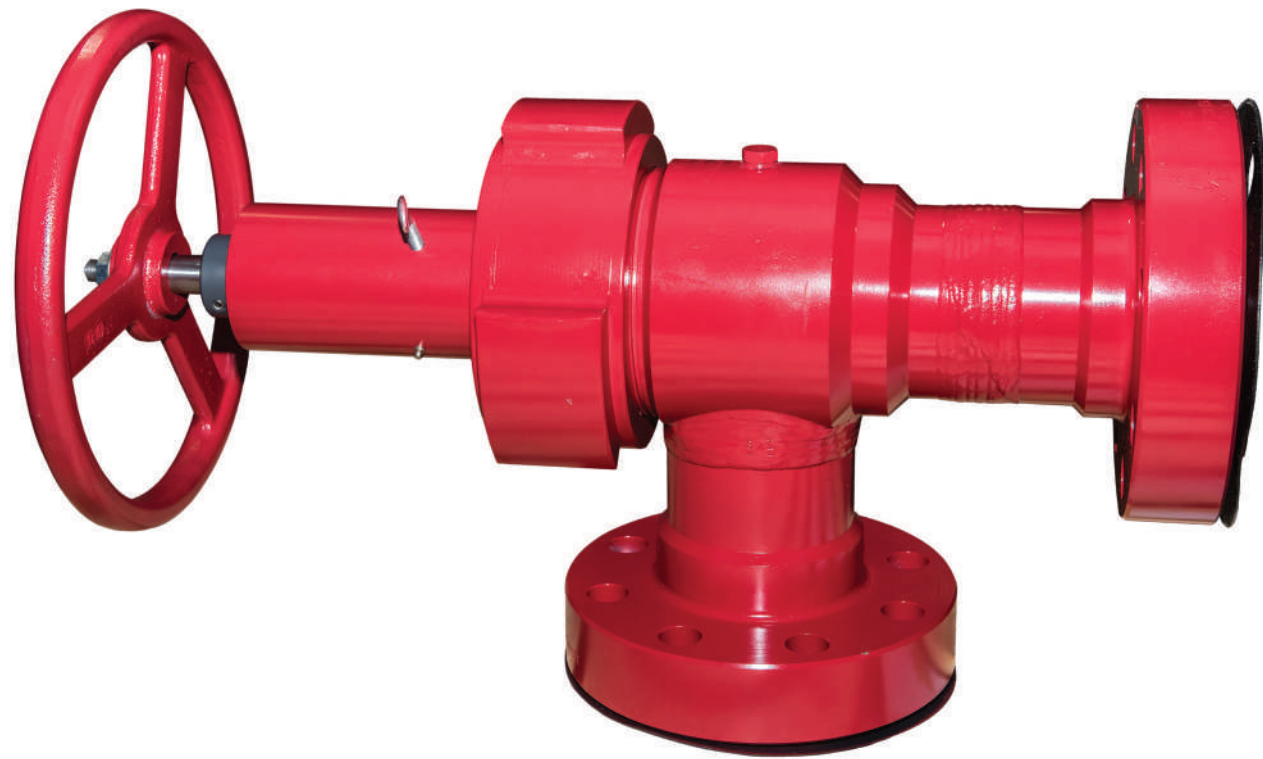
STANDARD TOLERANCES
 .X = ±.06 FRAC = 1/32
 .XX = ±.02 ANGLE = ±1/2°
 .XXX = ±.005 FINISH = 130

HH2 5M CWP
 LONG NOSE HEATER CHOKE ASSY
 TRIM 2" SSTC 3" BW 3" SCH160
 INLET X OUTLET 2.626 I.D.

HOUSTON OILFIELD EQUIPMENT, INC.
 HOUSTON, TEXAS

SIZE: A
 DWG. NO.: 3065011023HT
 REV. A

TYPE HH2 POSITIVE & ADJUSTABLE CHOKES



SPECIFICATIONS

Type:	Positive & Adjustable
Body Design:	Angle Type
End Connections:	Flanged API Type RTJ ANSI RF/RTJ Threaded Union Ends
Design Pressure:	Butt-Weld Ends 2,000 PSI CWP 3,000 PSI CWP 5,000 PSI CWP 10,000 PSI CWP 15,000 PSI CWP 20,000 PSI CWP
TRIM SIZES:	3/4", 1", 1 1/2", 2"
TRIM MATERIALS:	Alloy Steel Stellite/Tung Carbide Inconel/Tung Carbide SS/Tung Carbide
TRIM STYLES:	Needle & Seat External Cage & Sleeve

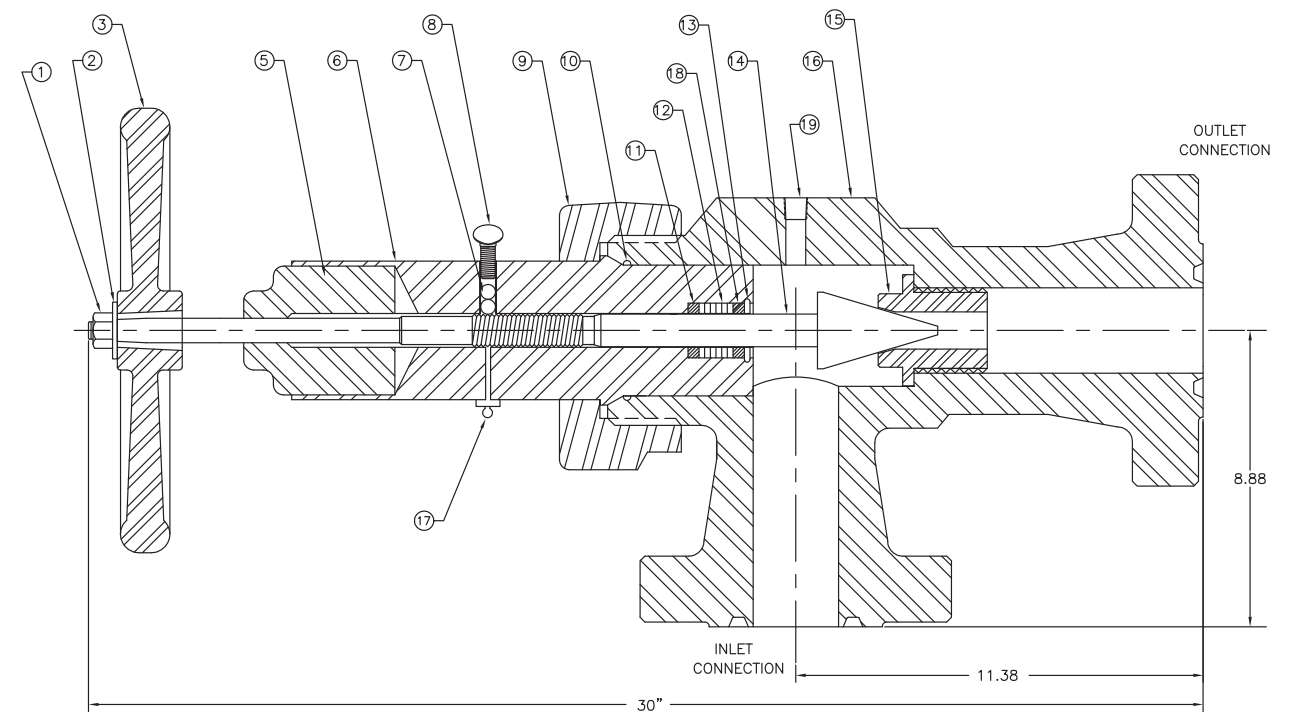
The type HH2 Choke from Houston Oilfield Equipment, Inc. features the needle and seat design to allow fully adjustable flow. The adjustable choke is operated by rotating the hand wheel in order to obtain a desired flow rate or a specified downstream pressure. The HH2 is also available in a positive or fixed orifice design. In this model, a flow bean is installed in the choke to achieve the desired flowing conditions. In addition to manual operation it may be actuated pneumatically or electrically.



TYPE HH2 ADJUSTABLE CHOKES MAX 2" ORIFICE

PARTS HH2 ADJUSTABLE CHOKES MAX 2" ORIFICE

ITEM	DESCRIPTION	QTY.	PART NO.	ITEM	DESCRIPTION	QTY.	PART NO.
1	Hex Nut	1	1024		Stem SS 2"	1	1509
2	Flat Washer	1	1023		Stem SSTC 2"	1	1427
3	Handwheel	1	1521	15	Seat HS 2"	1	1513
5	Indicator 2"	1	1483		Seat SS 2"	1	1514
6	Bonnet	1	1510		Seat SSTC 2"	1	1429
7	Nylon Ball (2 Reqd)	2	1004	16	Body, Flanged 3" 5M	1	1516
8	Thumbscrew	1	1529		Body, Flanged 3" 10M	1	1517
9	Hammer Nut 5M	1	1511	17	Grease Fitting	1	1013
	Hammer Nut 10M	1	1512	18	Junk Ring Upper	1	1614
10	O-Ring	1	1528	19	Hex Plug FS	1	1212
11	Junk Ring Lower	1	1481	20	Seat Wrench	1	1474
12	Packing	1	1505				
13	Retaining Ring	1	1484				
14	Stem HS 2"	1	1530				

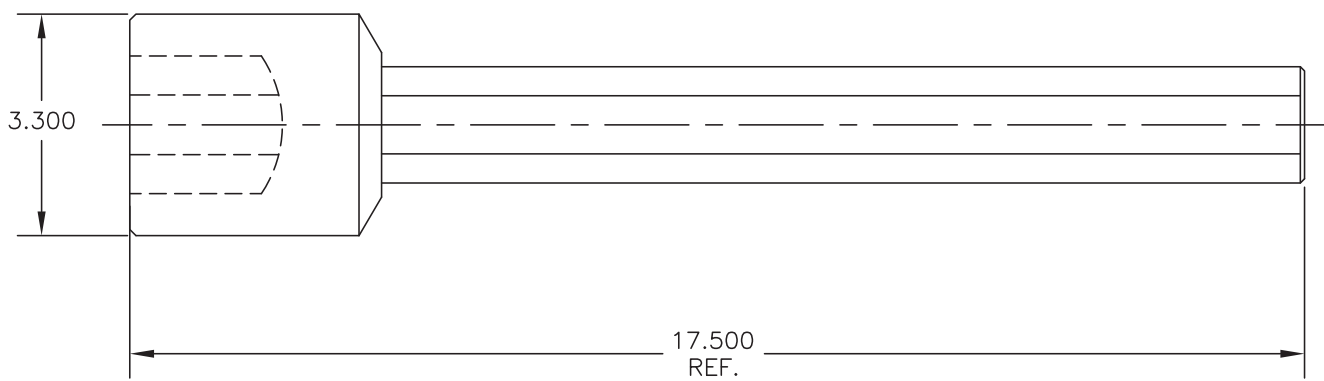
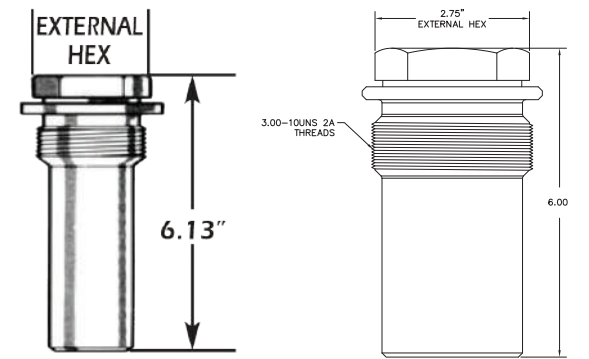
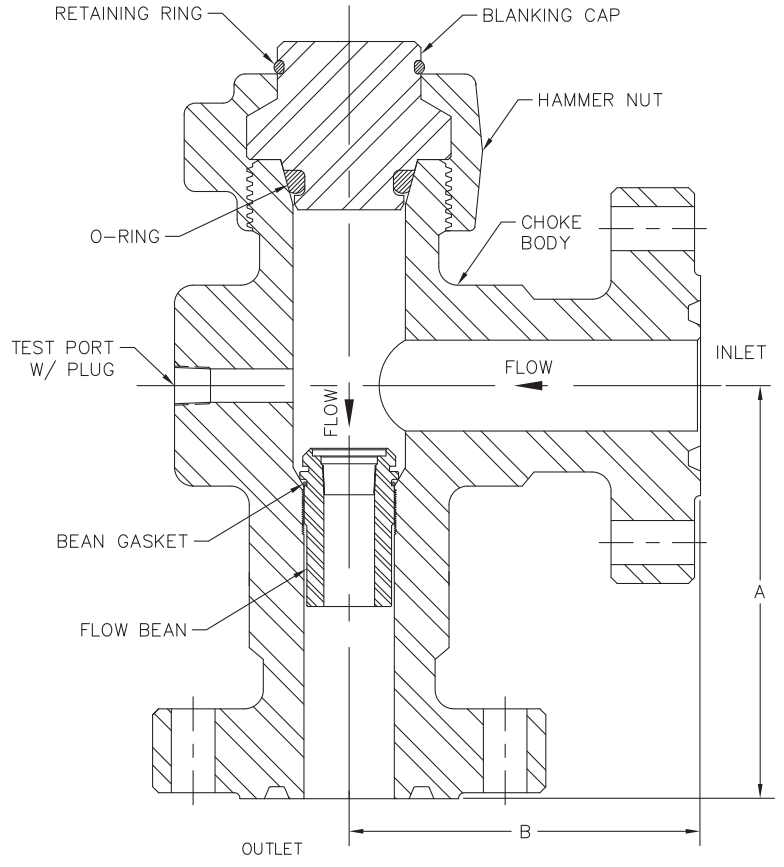


TYPE HH2 POSITIVE CHOKES MAX 2" ORIFICE

PARTS HH2 POSITIVE CHOKES MAX 2" ORIFICE

ITEM	DESCRIPTION	QTY.	PART NO.
1	Blanking Cap TAP 1/2"	1	1789
2	Retaining Ring	1	1562
3	Hammer Nut 5M	1	1511
	Hammer Nut 10M	1	1512
4	O-Ring, VITON	1	1528
5	Body, Flanged 3" 5M	1	1516
	Body, Flanged 3" 10M	1	1517
6	Hex Plug, FS	1	1212
7*	Flow Bean HS	1	41 SIZE
	Flow Bean SSTC	1	40 SIZE
8*	Bean Wrench	1	1474

*Items 7 and 8 are sold separately (not pictured)



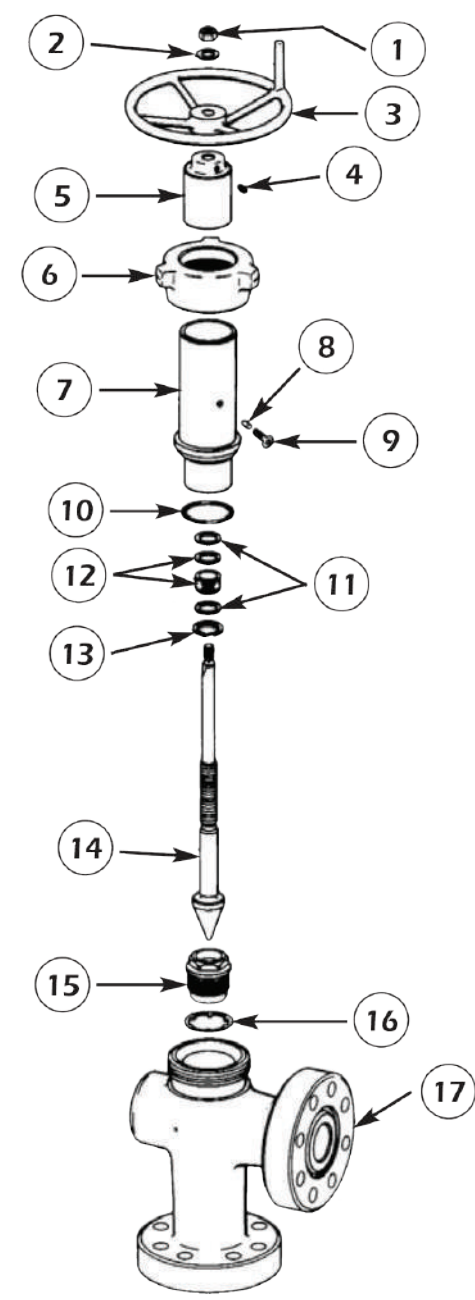
CHOKE WRENCH H2 MAX 2" PART NO. 1474FG

TYPE HH2 ADJUSTABLE CHOKES MAX 1" ORIFICE

PARTS HH2 ADJUSTABLE CHOKES MAX 1" ORIFICE

TYPICAL 2,000 THROUGH 10,000 PSI ADJUSTABLE CHOKES

ITEM NO.	DESCRIPTION	1" MAXIMUM	ORIFICE
1	Hex Bolt	1542	1542
2	Washer	1011	1011
3	Handwheel	1522	1522
4	Set Screw	1007	1007
5	Indicator 1"	1207	1207
6	Wing Nut	1536	1536
7	Bonnet	1538	1538
8	Nylon Ball (Plug)	1004	1004
9	Thumb Screw	1003	1003
10	O-Ring	1205	1205
11	Junk Ring	1206	1206
12	Packing w/BU	1202	1202
13	Retainer Ring	1590	1590
14	Stem HS	1208	1208
	Stem HSS	1656	1656
	Stem SSTC	1209	1209
15	Seat HS 1"	1415	1415
	Seat HSS 1"	1655	1655
	Seat SSTC 1"	1204	1204
16	Gasket, Copper	1541	1541
17	Body, Flanged	1539	1765
18*	Wrench	1465	1465



MISCELLANEOUS PARTS FOR HH2 POSITIVE AND ADJUSTABLE CHOKES

Indicator 3 x 1 PVC	1550
Ditto Aluminum	1715
Ditto 3 x 1 1/2 PVC	1864
Ditto 3 x 2 Aluminum	2088
Ditto 2 x 3/4 PVC	1916
Adapter Bean/Seat 3 x 1 H2 Alloy	1525
Ditto SS	2089
Adapter 3 x 1 H2 F/FC-140 Alloy	1593
Ditto SS	1790
Stem H2 15M 1" SSTC	1543
Seat 3 x 1 SSTC Short FL	1899
Ditto 3 x 1 1/2 SSTC Short PL	1863
Ditto 3 x 1 1/2 SSTC 6" Long FL	5054
Ditto 3 x 2 SSTC Short FL	1745
Ditto 3 x 2 SSTC 6" Long PL	1925
Ditto 3 x 2 SSTC 10" OAL FL	1624
Ditto 2 x 1 SSTC 12" OAL FL	1985
Ditto 3 x 2 SST FL	1594

The 4" Nom model H2I is a great choice for any flow application requiring a max orifice of a 3" diameter. The adjustable type features a needle & seat design to allow fully adjustable flow and is constructed of the same high quality materials as our other HH2 models to deliver many years of trouble-free service. The positive choke in turn utilizes a flow bean to achieve the desired flow conditions. Our 5M model is supplied with a conventional stem while our 10M model features a pressure balanced stem which provides for lower operating torque.

This choke may be manufactured per our standard inlet & outlet dimensions or built per the client's special dimensions.

Conversion of this choke, whether it be a positive or adjustable mode of operation, is easily performed in the field with a limited amount of downtime and simple hand tools.

Spare parts for this assembly are readily available as we maintain an inventory of choke trim and all other parts for this assembly.



SPECIFICATIONS

- Body Max 3" Orifice Nom 4" Bore
- Positive & Adjustable Operation
- Design Pressure 5M, 10M CWP
- Factory Tested to 7,500 PSI, 15,000 PSI
- Trim Alloy, SS, SS w/Tung Carbide, Inconel, Stellite
- API or ANSI Rated End Connections
- Bonnet Nut Internal ACME Threads
- Needle & Seat Design - Conventional & Balanced Stem
- O-ring Bonnet to Body Seal
- Metallic Seat Gasket

FEATURES AND BENEFITS

- Hammer Union Nut with Forged Lugs
- End Connections Flanged, Butt Weld, Hammer Union
- H2S & Standard Service Application
- Easily Converted From Positive to Adjustable
- Bleed Port in Body to Relieve Pressure
- Adapter Allows Use of Big John & FC-140 Beans
- ACME Threads on Hammer Nut & Body
- Packing Available High Temp or Low Temp
- Stem ACME Threads to Prevent Galling
- Indicator in 64ths Increments PVC, Aluminum, Delrin & SS Material
- Seat & Bean Slotted for Easy Removal & Installation
- Assembly Alloy Steel 410 SS
- Grease Fitting in Bonnet for Lubrication
- Choice of Centerline Dimensions
- Parts Interchangeability with Choke of Original MFG



TYPE HH2 DIMENSIONS: INLET & OUTLET

3" MAXIMUM ORIFICE

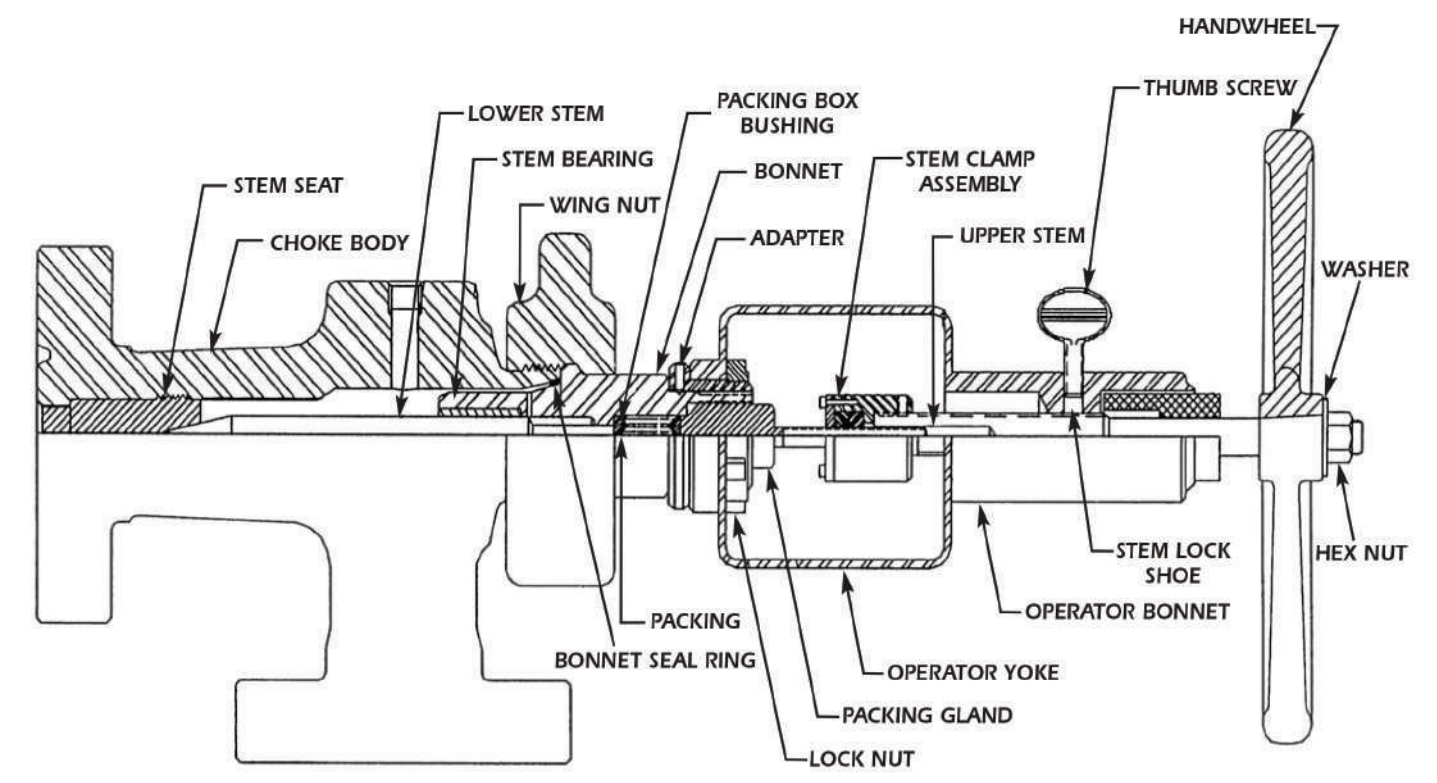
INLET (B)	OUTLET (A)	WORKING PRESSURE	BODY STYLE	DIMENSIONS	
				B	A
4" LP	4" LP	3,000	A	12.25"	12.25"
4-1/16" 3,000 R-37	4" LP	3,000	C	12.25"	12.25"
4-1/16" 3,000 R-37	4-1/16" 3,000 R-37	3,000	D	12.25"	12.25"
3-1/8" 5,000 R-35	3-1/8" 5,000 R-35	5,000	D	14.44"	15.94"
4-1/16" 5,000 R-39	4-1/16" 5,000 R-39	5,000	D	12.25"	12.25"
4 1/16" 10,000 BX-155	4 1/16" 10,000 BX-155	10,000	D	12.25"	12.25"
6" 150# ANSI	6" 150# ANSI	285	D	10.00"	11.38"
10" 150# ANSI	10" 150# ANSI	285	D	14.75"	17.88"
4" 600# ANSI	4" 600# ANSI	1,480	D	9.50"	10.75"
6" 600# ANSI	6" 600# ANSI	1,480	D	13.62"	13.62"
6" 1500# ANSI	6" 1500# ANSI	3,705	D	13.62"	13.62"

2" MAXIMUM ORIFICE TYPE HH2

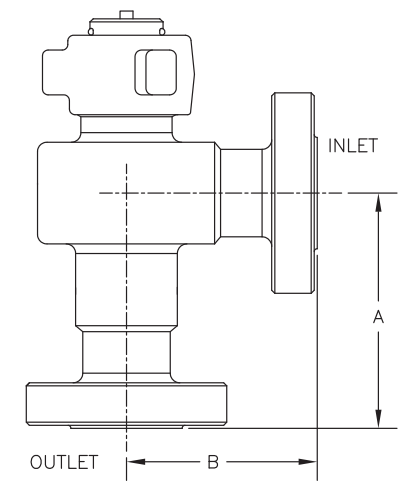
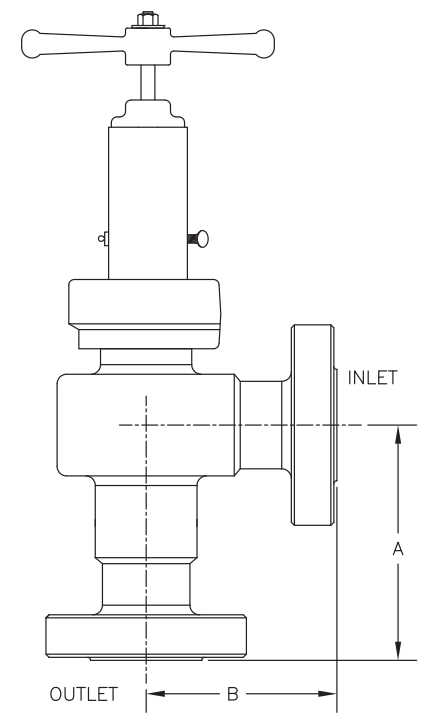
INLET (B)	OUTLET (A)	WORKING PRESSURE	BODY STYLE	DIMENSIONS	
				B	A
3-1/8" 2,000 R-31	3-1/8" 2,000 R-31	2,000	D	8.88"	11.38"
3" LPT-3,000	3" LPT-3,000	3,000	A	5.31"	9.38"
3-1/8" 3,000 R-31	3-1/8" 3,000 R-31	3,000	D	8.88"	11.38"
3" LPT-5,000	3" LPT-5,000	5,000	A	5.31"	9.38"
2-1/16" 5,000 R-24	2-1/16" 5,000 R-24	5,000	D	8.93"	11.43"
2-9/16" 5,000 R-27	2-9/16" 5,000 R-27	5,000	D	8.88"	11.75"
3-1/8" 5,000 R-35	3-1/8" 5,000 R-35	5,000	D	8.88"	11.38"
4-1/16" 5,000 R-39	4-1/16" 5,000 R-39	5,000	D	10.12"	12.62"
5-1/8" 5,000 R-44	5-1/8" 5,000 R-44	5,000	D	13.62"	13.62"
1-13/16" 10,000 BX-151	1-13/16" 10,000 BX-151	10,000	D	10.38"	12.00"
2-1/16" 10,000 BX-152	2-1/16" 10,000 BX-152	10,000	D	10.38"	12.00"
2-9/16" 10,000 BX-153	2-9/16" 10,000 BX-153	10,000	D	10.38"	11.75"
3-1/16" 10,000 BX-154	3-1/16" 10,000 BX-154	10,000	D	10.38"	11.75"
4-1/16" 10,000 BX-155	4-1/16" 10,000 BX-155	10,000	D	9.94"	11.5"
2-9/16" 15,000 BX-153	2-9/16" 15,000 BX-153	15,000	D	10.50"	11.75"
3-1/16" 15,000 BX-154	3-1/16" 15,000 BX-154	15,000	D	10.34"	11.62"
4-1/16" 15,000 BX-155	4-1/16" 15,000 BX-155	15,000	D	11.62"	11.62"
2" 300# ANSI	2" 300# ANSI	740	D	7.50"	10.00"
3" 300# ANSI	3" 300# ANSI	740	D	7.50"	10.00"
4" 300# ANSI	4" 300# ANSI	740	D	7.50"	10.00"
6" 300# ANSI	6" 300# ANSI	740	D	13.62"	13.62"
2" 600# ANSI	2" 600# ANSI	1,480	D	7.50"	10.00"
3" 600# ANSI	3" 600# ANSI	1,480	D	7.50"	10.00"
4" 600# ANSI	4" 600# ANSI	1,480	D	10.38"	11.62"
6" 600# ANSI	6" 600# ANSI	1,480	D	13.62"	13.62"
3" 900# ANSI	3" 900# ANSI	2,220	D	8.88"	11.38"
4" 900# ANSI	4" 900# ANSI	2,220	D	10.38"	11.62"
6" 900# ANSI	6" 900# ANSI	2,220	D	13.62"	13.62"
3" 1500# ANSI	3" 1500# ANSI	3,705	D	8.88"	11.38"
4" 1,500# ANSI	4" 1,500# ANSI	3,705	D	10.38"	11.62"
6" 1,500# ANSI	6" 1,500# ANSI	3,705	D	13.62"	13.62"
3" 2,500# ANSI	3" 2,500# ANSI	6,170	D	10.38"	11.75"

1" MAXIMUM ORIFICE TYPE HH2

INLET (B)	OUTLET (A)	WORKING PRESSURE	BODY STYLE	DIMENSIONS	
				B	A
2-1/16" 2000 R-23	2-1/16" 2,000 R-23	2,000	D	6.88"	8.00"
2" LP	2" LP	3,000	A	3.44"	4.56"
2-1/16" 3,000 R-24	2" LP	3,000	C	6.88"	4.56"
2-9/16" 3,000 R-27	2-9/16" 3,000 R-27	3,000	D	8.25"	6.94"
3-1/8" 3,000 R-31	3-1/8" 3,000 R-31	3,000	D	7.81"	8.94"
2-1/16" 5,000 R-24	2" LP	5,000	C	6.88"	4.56"
2-1/16" 5,000 R-24	2-1/16" 5,000 R-24	5,000	D	6.88"	8"
2-9/16" 5,000 R-27	2-9/16" 5,000 R-27	5,000	D	6.94"	8.25"
3-1/8" 5,000 R-35	3-1/8" 5,000 R-35	5,000	D	9.69"	9.56"
1-13/16" 10,000 BX-151	1-13/16" 10,000 BX-151	10,000	D	8.47"	9.63"
2-1/16" 10,000 BX-152	2-1/16" 10,000 BX-152	10,000	D	7.69"	8.81"
2-9/16" 10,000 BX-153	2-9/16" 10,000 BX-153	10,000	D	8.19"	9.32"
1-13/16" 15,000 BX-151	1-13/16" 15,000 BX-151	15,000	D	8.47"	9.63"
2-1/16" 15,000 BX-152	2-1/16" 15,000 BX-152	15,000	D	8.88"	10.31"
2-9/16" 15,000 BX-153	2-9/16" 15,000 BX-153	15,000	D	10.50"	11.75"
3-1/16" 15,000 BX-154	3-1/16" 15,000 BX-154	15,000	D	10.34"	11.63"
2" 150# ANSI	2" 150# ANSI	285	D	6.88"	8.00"
3" 150# ANSI	3" 150# ANSI	285	D	6.88"	8.00"
2" 300# ANSI	2" 300# ANSI	740	D	6.88"	8.00"
3" 300# ANSI	3" 300# ANSI	740	D	6.88"	8.00"
2" 600# ANSI	2" 600# ANSI	1,480	D	6.88"	8.00"
3" 600# ANSI	3" 600# ANSI	1,480	D	6.88"	8.00"
3" 900# ANSI	3" 900# ANSI	2,220	D	8.81"	8.81"
2" 1500# ANSI	2" 1500# ANSI	3,705	D	6.88"	8.00"
3" 1500# ANSI	3" 1500# ANSI	3,705	D	9.69"	9.56"
2" 2500# ANSI	2" 2500# ANSI	6,170	D	9.38"	9.38"



The Houston Oilfield Equipment, Inc. Steam Choke uses a non-rotating stem with linear motion that won't grab the packing and pull it out of place. When packing needs adjustment, simply tighten the choke packing gland as required. The gland is easily accessible as it is externally located. This means minimal time and simple maintenance.



SPECIFICATIONS

- 3,000 lbs / API & ANSI Class
- Max 1" Orifice
- Alloy or SS Body
- Flanged, Butt Weld, Socket Weld, or Threaded End Connections
- Manual Type or Actuated Operation
- Temperature Range -32°F to 850°F
- Angle Body with Vent Port
- Trim Stainless Steel

FEATURES AND BENEFITS

- Uses FMC Type Standard JWA Body
- Aluminum Indicator
- External Packing Adjustment
- Field Repairable
- Metal to Metal Taper Seal
- Hammer Union Design
- No Special Tools Required

1502 POSITIVE & ADJUSTABLE ASSEMBLY

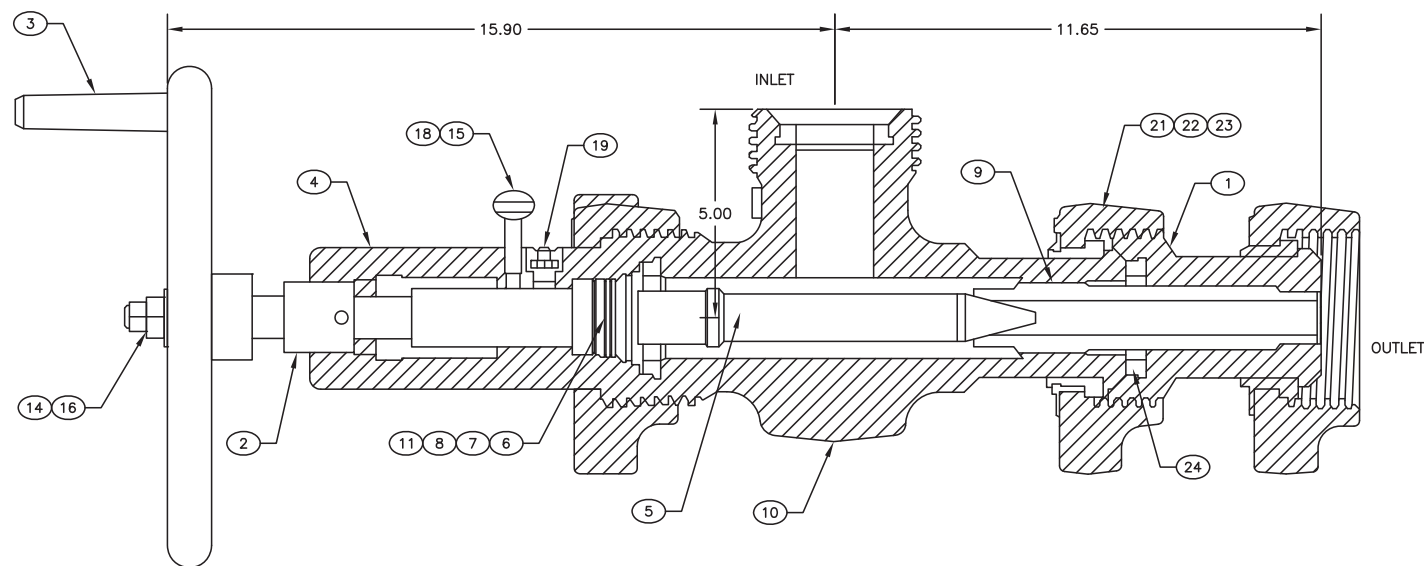
SPECIFICATIONS

15M CWP Design Pressure
 Standard Service Factory Tested at 22,500 PSI
 H2S Service Factory Tested at 15,000 PSI
 3/4" & 1" Orifice Sizes
 Trim Material Alloy Steel, SS, SS w/Tung Carbide
 1 1/8-12NF Autoclave Tap in Body Optional
 Body Design Angle 90 Degree
 Also available external Cage Trim

FEATURES AND BENEFITS

Positive & Adjustable Operation Easily Converted
 Supplied with Fully Lined SSTC Seats
 Outlet End with Choke Saver Sub
 2" 1502 End Connections Male & Female
 Forged Steel Body 4130 75K
 Single Piece Bonnet
 Stem w/Large Diameter Safety Stop
 Indicator Aluminum, PVC & Delrin
 Centerline Dims Industry Standard
 Hammer Nut Design for Easy Removal & Installation
 Employs Common FC-140 Flow Bean & Type N Seats

Houston Oilfield Equipment, Inc. offers the 2" 1502 15M Choke Assembly in both adjustable & positive models. Our design is reliable, field-tested, and provides flow control in all fracturing & flowback applications. They are available in 3/4" & 1" orifice sizes and Standard or H2S Service. The Positive Choke Assembly uses the industry common FC-140 Flow Bean, which is readily available from local supply stores. Houston Oilfield Equipment, Inc. carries a complete full line of all spare parts for this Choke Assembly.

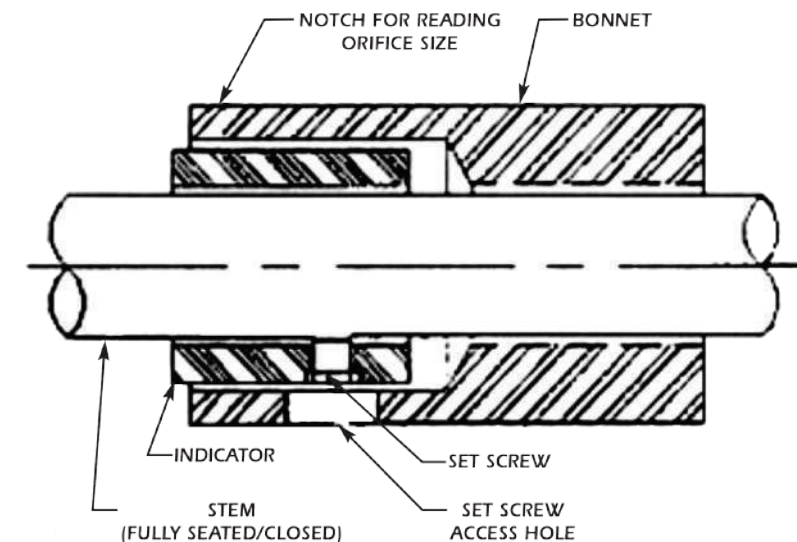


INDICATOR DETAIL/PROCEDURES FMC

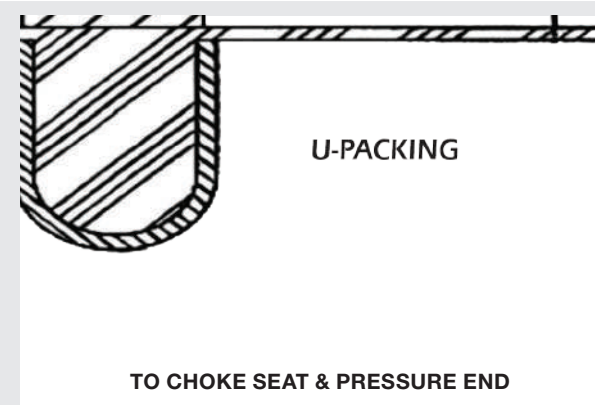
PROCEDURE

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: Remember to open choke prior to shipment or final disposition. Failure to do so may result in damage to stem and seat.



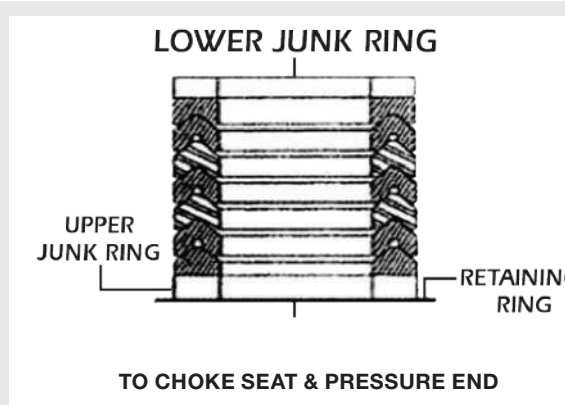
PACKING TYPE U W/ BACK-UP RING PN: 1505 H2S/CO2 SERVICE



INSTRUCTIONS

1. Slide back-up ring to bottom of packing gland.
2. Install packing into bonnet with radius end up and flat against junk ring.
3. Place upper junk ring on top of packing.
4. Install retaining ring in groove.

PACKING CHEVRON TYPE TYPICAL FOR H2/FMC ADJUSTABLE CHOKES



INSTRUCTIONS

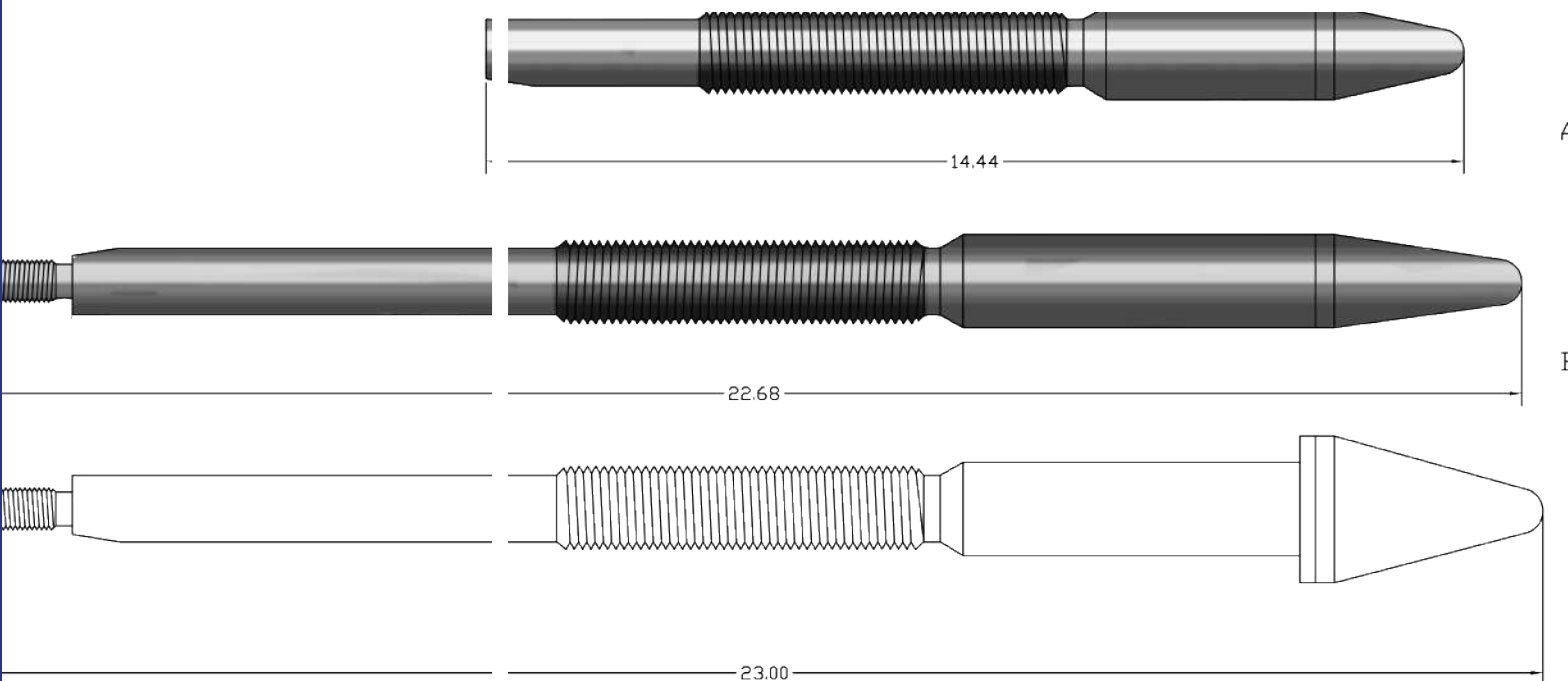
1. Slide lower junk ring to bottom of packing gland.
2. Install packing rings into bonnet with flat adapter first. **NOTE:** V shape of packing rings must be positioned with open (lip end) toward pressure.
3. Place upper junk ring on top of packing and install retaining ring.

TERMS AND CONDITIONS

Standard terms are net 30 days unless otherwise agreed by Houston Oilfield Equipment, Inc. in writing. Boxing, freight, cartage and like charges, where applicable, are net. All weights are approximate.

All sales are F.O.B. Factory unless otherwise expressly stipulated. Our responsibility ceases upon delivery of goods and bill of lading or dock receipt, invoice and supplementary documents to the customer or his agent, or upon delivery of the shipment to the carrier.

All price quotations are F.O.B. Factory, are subject to change without notice, and are for immediate acceptance unless otherwise specified. Delivery dates promised will be kept to the best of our ability but cannot be guaranteed, and Houston Oilfield Equipment, Inc. (hereafter referred to as HOE, Inc.), will assume no liability for damages arising out of failure to keep delivery date, irrespective of the delay. Purchase orders placed and accepted may be canceled with HOE, Inc.'s consent and upon terms which will indemnify HOE, Inc. against loss. All invoices are due and payable at our offices, located in Houston, Harris County, Texas.



PRODUCT WARRANTY

We warrant products of our manufacture one year from date of shipment to the extent that HOE, Inc. will repair or replace any products of defective workmanship proven under normal use and service. No other warranty is expressed or implied. We specifically are not responsible for damages or injury, direct or indirect, or for damages or failures caused by improper installation, operation, or misuse.

Goods or parts thereof, not manufactured by us, are guaranteed only in accordance with the manufacturer's guarantee and only to the extent that we are able to enforce it.

All claims for in-transit shortages, damages, or erroneous charges must be made within thirty (30) days from receipt of shipment and must be accompanied by the packing list(s) covering shipment.

We strive to pack and prepare all shipments so that they will not break, rust, or deteriorate in transit but do not guarantee against such damage.

Upon request, HOE, Inc. will provide engineering and/or technical information regarding its products and their uses and, if feasible, will provide personnel to assist purchasers in effecting field installations and/or field service. Any such information, service, advice or assistance when provided, whether with or without charge, shall be advisory only. It is expressly understood that HOE, Inc. assumes no liability for damage or loss arising out of, resulting from, or caused in whole or in part by such information, service, advice, or assistance so provided.

We reserve the right to change or modify the design and/or construction of any HOE, Inc. product in due course of manufacturing procedure without notice and without incurring any obligation to furnish or install such changes or modifications on products previously or subsequently sold. Any other representations, warranties or conditions, expressed or implied, relating to material, equipment or services provided by HOE, Inc. are excluded, unless specifically agreed in writing, by HOE, Inc.

All sales made by us, unless otherwise agreed to in writing by an executive officer of the Company, are made subject to each and all of the foregoing conditions and the placing of an order or the acceptance by the customer of the above said conditions.

UNUSED PRODUCT RETURN POLICY

New, unused products of our current manufacture may be returned for credit, provided a written request is received within eighteen (18) months after the purchase date. Special or discontinued and/or obsolete products are not returnable for credit. Restocking charges may apply and will be determined at time of request.

Requests for the return of material should show original purchase order number, invoice number, description of material, and date of purchase. All requests should be mailed or e-mailed to: HOUSTON OILFIELD EQUIPMENT, INC., 9669 Port Erroll Dr., Houston, TX 77095 | sales@hoeinc.com

Material returned for credit shall be shipped via prepaid freight to our specified destination.

The credit allowed on returned goods is a merchandise credit and applicable only against purchases of our products. Credit will be allowed under the above conditions at the original price, or at a subsequently adjusted price.

WHAT ARE CHOKES?

Chokes are used to reduce the flow of liquids, gases or any other media that requires throttling or restrictions. API 6A, which sets design criteria for chokes, states that chokes will include restrictions or orifices to control the flow rate of fluids. Most importantly it states “Chokes are not intended to be used as shutoff valves.” This is a very important thing to be aware of and remember.

There are two basic types of chokes: positive and adjustable.

Positive chokes are often referred to as “fixed” chokes, meaning that the orifice size within that choke is permanently set until process conditions necessitate a change in orifice plate size. Adjustable chokes are easily recognized because they have a hand-wheel on top, which can be turned to regulate orifice size. This may be done by hand or remotely with an actuator. Actuators are commonly operated electrically, hydraulically, or pneumatically.

Chokes will typically range in design pressures of 2,000 PSI, 3,000 PSI, 6,500 PSI, 7,800 PSI, 10,000 PSI, 15,000 PSI & 20,000 PSI.

When employed in an oil or gas well, the adjustable choke is used to establish proper flow rate of the well in order to prolong its production life. It is often converted into a positive mode of operation once the well is stabilized. The adjustable will also be used when the flow rate within the well fluctuates frequently and, therefore, requires constant orifice size adjustment. Positive chokes are used in same types of application but in situations where flow rate is more constant and little or no routine adjustment is required.

Chokes are pressure tested per API 6A guidelines according to their specific design working pressure. API also specifies the duration of each test that is performed. An important thing to remember is that chokes are tested in a partially open position. Many operators attempt to test the needle and seat adjustable chokes with the stem closed against the seat, and this is not the proper manner in which to test. When using a stem and seat of tungsten carbide, the stem tip or seat insert is usually broken or fractured in some way. This is not to say that all chokes are incapable of sealing, as there are chokes in the industry that afford a bubble tight seal. Remember that needle and seat/bean type chokes are used to restrict flow of fluids or gases and are not to be used as a shut off valve.

When ordering chokes, it is important to have an accurate description of what the client is looking for. First, determine if it is an adjustable or positive type. Next, you will need to know the working pressure, type of inlet and outlet connection, orifice size, material class, temperature requirement, and any other specification the client may have.

NOTE: ONE IMPORTANT THING TO KNOW IS THAT A LONG-NOSED HEATER CHOKE IS NOT THE BASIC CHOKE USED ON A WELLHEAD BUT, RATHER, UTILIZES A LONGER LENGTH BODY AND STEM.

CHOKE ASSEMBLY DATA SHEET	
MODEL NUMBER	
PART NUMBER	
ADJ OR POSITIVE	
INLET CONNECTION	
OUTLET CONNECTION	
CV/TRIM SIZE	
TRIM DESCRIPTION	
TRIM MATERIAL	
MATERIAL CLASS	
BODY & FLANGE MATERIAL	
BONNET MATERIAL	
STEM MATERIAL	
SEALS	
SPECIAL DIMS IF REQUIRED	
TEMPERATURE CLASS	
ACTUATION	
TYPE OF SERVICE	
CERTIFICATION	



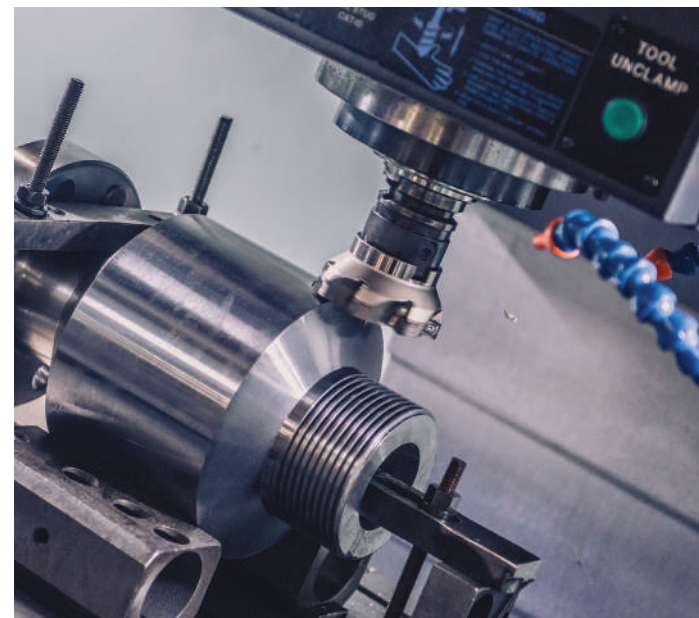
MATERIAL REQUIREMENTS

MATERIAL CLASS		MINIMUM MATERIAL REQUIREMENTS	
		BODY, BONNET, END AND OUTLET CONNECTIONS	PRESSURE-CONTROLLING PARTS
AA	GENERAL SERVICE	CARBON OR LOW-ALLOY STEEL	CARBON OR LOW-ALLOY STEEL
BB	GENERAL SERVICE	CARBON OR LOW-ALLOY STEEL	STAINLESS STEEL
CC	GENERAL SERVICE	STAINLESS STEEL	STAINLESS STEEL
DD	SOUR SERVICE	CARBON OR LOW-ALLOY STEEL	CARBON OR LOW-ALLOY STEEL
EE	SOUR SERVICE	CARBON OR LOW-ALLOY STEEL	STAINLESS STEEL
FF	SOUR SERVICE	STAINLESS STEEL	STAINLESS STEEL
HH	SOUR SERVICE	CORROSION RESISTANT ALLOY	CORROSION RESISTANT ALLOY

TEMPERATURE RATINGS

TEMPERATURE CLASSIFICATION	OPERATING RANGE				
	°C		°F		
	MIN.	MAX.	MIN.	MAX.	
K	-60	82	-75	180	
L	-46	82	-50	180	
N	-46	60	-50	140	
P	-29	82	-20	180	
S	-18	60	0	140	
T	-18	82	0	180	
U	-18	121	0	250	
V	2	121	35	250	
ELEVATED TEMPERATURE RATINGS					
X	-18	180	0	350	
Y	-18	345	0	650	

The flow capacity of chokes within various orifice sizes is often referred to as CV value. The CV value is merely a flow coefficient and is defined as the volume (US gallon) of water at a temperature of 60°F that will flow per minute through a given orifice with a pressure drop of 1 PSI.





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