



## MUD PUMP EXPENDABLE PARTS LIST

### SOUTHWEST 8404-25A FLUID END FOR HH F-1600

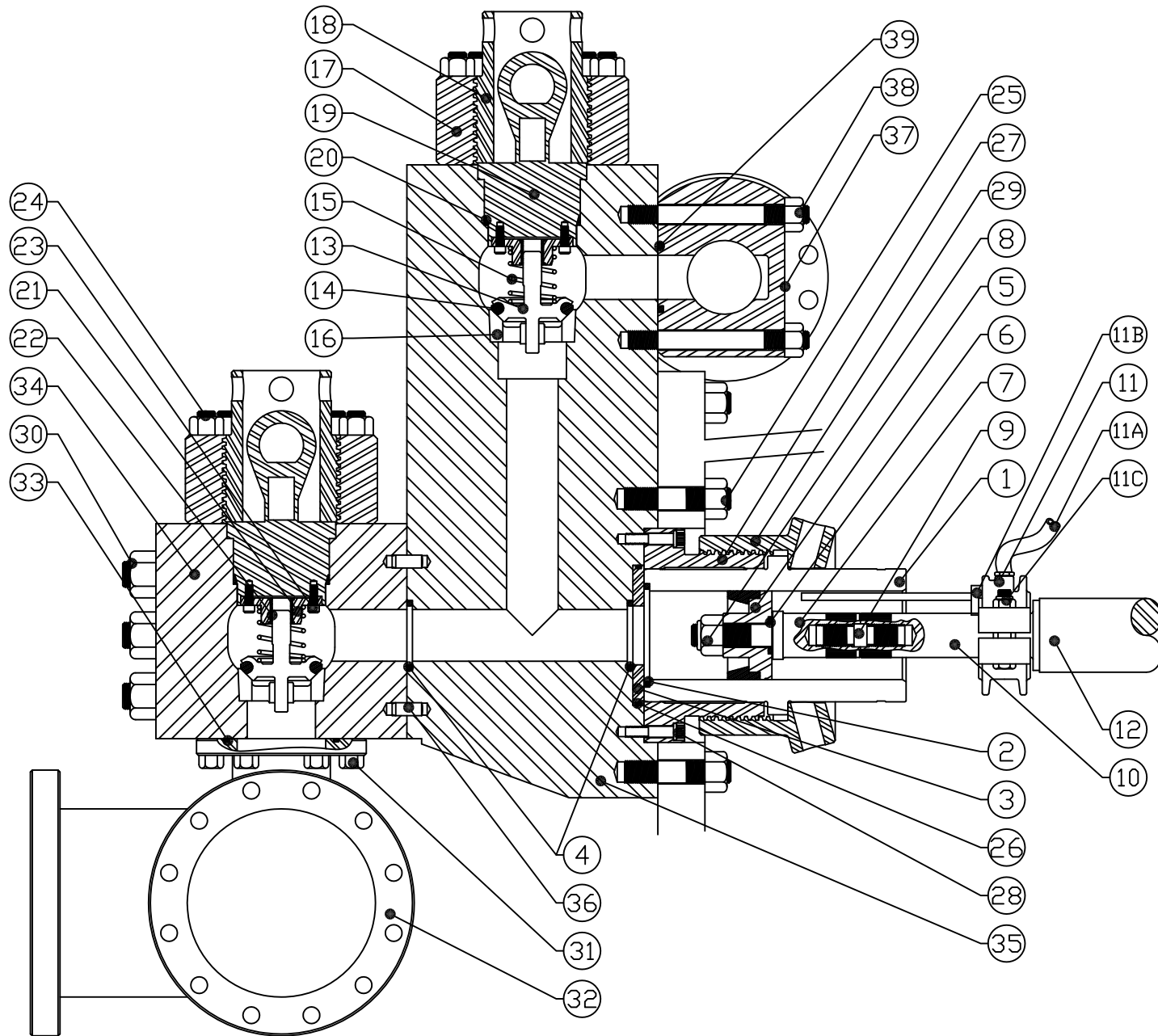
#### MUD PUMP PERFORMANCE CHART

PUMP MODEL	MAX I.H.P.	MAX S.P.M.	STROKE LENGTH	LINER SIZE IN INCHES												
				4 ½	4 ¾	5	5 ¼	5 ½	6	6 ¼	6 ½	6 ¾	7	7 ¼	7 ½	
F-1600	1600	120	12"	MAX-P.S.I.	7500	7449	6723	6098	5556	4669	4303	3978	3689	3430	3197	2988
				G.P.R.	2.479	2.762	3.06	3.374	3.703	4.406	4.781	5.171	5.577	5.998	6.434	6.885
				G.P.M. @ 120 R.P.M.	297.4	331.4	367.2	404.8	444.3	528.8	573.7	620.6	669.2	719.7	772	826.2

NOTE: I.H.P.= INPUT HORSE POWER      S.P.M.= STROKE PER MINUTE      P.S.I.= POUNDS PER SQUARE INCH      G.P.R.= GALLONS PER REVOLUTION

\*MAX – P.S.I. CALCULATIONS DO NOT EXCEED MAXIMUM FLUID END PRESSURE RATINGS

BASED ON 100% VOLUMETRIC EFFICIENCY AND 90% MECHANICAL EFFICIENCY



REV.#	DATE	REVISED BY	REVISIONS . . .	UNLESS OTHERWISE NOTED . . .	SOUTHWEST® OILFIELD PRODUCTS, INC. -- HOUSTON, TX.					
				<ol style="list-style-type: none"> <li>ALL DIMENSIONS ARE IN INCHES.</li> <li>ALL FRACTIONAL DIMENSIONS ARE ±1/64.</li> <li>ALL DECIMAL DIMENSIONS ARE +.005/- .000.</li> <li>ALL ANGLES ARE ±0.5°.</li> <li>ALL FILLETS AND RADII ARE 1/16 MAX.</li> <li>CHAMFERS ARE 1/16 x 45° MAX.</li> <li>SURFACE FINISH IS 125√RMS MAX.</li> <li>CONCENTRICITY NOT TO EXCEED .005 T.I.R.</li> <li>BREAK CORNERS AT 1/32 x 45° MAX.</li> </ol>	PROPRIETARY INFORMATION--THE INFORMATION CONTAINED HEREIN SHALL BE CONSIDERED THE SOLE PROPERTY OF SOUTHWEST OILFIELD PRODUCTS, INC., AND THE RECIPIENT THEREOF AGREES TO MAINTAIN THE INFORMATION CONFIDENTIAL AND AGREE NOT TO COPY, REPRODUCE, DISTRIBUTE TO OTHERS, OR USE IN WHOLE OR IN PART FOR ANY PURPOSE WITHOUT THE EXPRESS WRITTEN PERMISSION OF SOUTHWEST OILFIELD PRODUCTS, INC.		DESCRIPTION ASSEMBLY DRAWING FOR HH F-1600 7500PSI SOUTHWEST FLUID END	DRAWN DATE 05-15-08	APPROVED 07-19-11 E. FOOTE	SCALE NONE
					FILE # ACAD\ASSEMBLY\8404-25A	SHEET OF 1 1	MATERIAL N / A	HEAT TREATMENT N / A	DRAWING # 8404-25A	REVISION #

<b>FLUID END TYPE</b>	<b>MODEL OF PUMP</b>	<b>SIZE OF PUMP</b>
<b>SOUTHWEST 7500 P.S.I.</b>	<b>HH F-1600</b>	<b>7 1/2" X 12"</b>

<b>ITEM NO.</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY. REQ'D</b>
	8404-25A	<b>FLUID END ASSEMBLY: (CONSISTS OF ITEMS: 3,4,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,34,35,36,38)</b>	
1	1376YXX	<b>LINER REFER TO GUIDE FOR ORDERING CHART FOR TYPE (G); (Y); AND FOR BORE SIZE (XX)</b>	3
2	2930-XX	<b>LINER SEAL</b>	3
3	8490-28	<b>LINER WEARPLATE (WITH 568-447 O-RING) WHEN USING P-QUIP LRS, USE 8490-34 WEARPLATE --- SEE PRODUCT BULLETIN SW-PB-103 REV. C</b>	3
4	2988	<b>WEARPLATE AND MODULE SEAL</b>	6
5	XX-BYY	<b>PISTON REFER TO GUIDE FOR ORDERING CHART FOR SIZE (XX) AND FOR TYPE (YY)</b>	3
6	568-225	<b>PISTON SEAL</b>	3
7	6278-25	<b>PISTON ROD (WITH ELASTIC STOP NUT)</b>	3
8	API-4ESN	<b>PISTON ROD NUT</b>	3
9	1290-2	<b>PISTON ROD CONNECTING STUD</b>	3
10	6284-1	<b>SUB ROD</b>	3
11	6274CWY	<b>ROD CLAMP (WITH WATER JACKET)(CONSIST OF 11A, 11B, 11C)</b>	3
11A	1200H30	<b>HOSE (1/2" X 30" WITH 1/2" MALE X 3/8" MALE CONNECTIONS)</b>	3
11B	1286CWYFP	<b>ROD CLAMP WATER SPRAY MANIFOLD WITH PIPE</b>	3
11C	4020-29	<b>BOLT (7/8-9 GRADE 8 BOLT WITH LOCK NUT AND WASHER)</b>	6
12	1200G74	<b>PONY ROD</b>	3
13	SEE PAGE	<b>VALVE</b>	6
14	SEE PAGE	<b>VALVE INSERT</b>	6
15	SEE PAGE	<b>VALVE SPRING</b>	6
16	SEE PAGE	<b>VALVE SEAT</b>	6
	SWTM1700	<b>HYDRAULIC SEAT PULLER KIT COMPLETE (REFER TO TOOLS SECTION IN CATALOG)</b>	1
17	4488-25	<b>VALVE COVER FLANGE</b>	6
18	4588-25	<b>SCREW GLAND</b>	6
19	4690-25A	<b>PLUG (COMPLETE WITH VALVE GUIDE; BUSHING; AND SCREWS) INCLUDES ITEMS 20, 21, 22, &amp; 23</b>	6
20	P115	<b>HP VALVE COVER PLUG NITRILE SEAL (ALSO AVAILABLE IN URETHANE - PART# P115U)</b>	6
21	4788-25R	<b>VALVE GUIDE (COMPLETE WITH BUSHING #4700I)</b>	6
22	4700I	<b>VALVE GUIDE INSERT (ALSO AVAILABLE IN URETHANE - PART# 4700IU)</b>	6
23	4018-18	<b>VALVE GUIDE SCREW</b>	12
24	4015-2	<b>VALVE COVER STUD (WITH SW PART# HHN1250-7 1 1/4"-7 HEAVY HEX NUT)</b>	72

<b>FLUID END TYPE</b>	<b>MODEL OF PUMP</b>	<b>SIZE OF PUMP</b>
<b>SOUTHWEST 7500 P.S.I.</b>	<b>HH F-1600</b>	<b>7 1/2" X 12"</b>

<b>ITEM NO.</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY. REQ'D</b>
25	4017-33	POWER END STUD (WITH SW PART# HHN1500-8 1 1/2"-8 HEAVY HEX NUT)	30
26	568-443	WEARPLATE 'O' RING	3
27	6490-25	LINER RETAINER FLANGE	3
28	4019-51	LINER RETAINER CAPSCREW	72
29	6590-25	LINER RETAINER NUT	3
30	4019-61	SUCTION MODULE STUD (WITH SW PART# HHN1750-8 1 3/4"-8 HEAVY HEX NUT)	18
31	4018-19	SUCTION MANIFOLD CAPSCREW	18
32	8590-6	SUCTION MANIFOLD	1
33	568-442	SUCTION MANIFOLD 'O' RING	3
34	8404-26	SUCTION MODULE	3
35	8404-27	DISCHARGE MODULE	3
36	8488-5	DOWEL PIN	6
37	8376-25MOD	DISCHARGE MANIFOLD	1
38	4019-60	DISCHARGE MANIFOLD STUD (WITH SW PART# HHN1250-7 1 1/4"-7 HEAVY HEX NUT)	18
39	2988	DISCHARGE MANIFOLD SEAL	3
40	6490-25P	LINER RETAINER PULLER	1
	8590-6BFA	BLIND FLANGE IS AVAILABLE FOR CAPPING UNUSED FLANGES ON 8590-6 SUCTION MANIFOLD – (8590-6BFA INCLUDES 8590-6BF BLIND FLANGE AND 568-456 O-RING) SEE SEPARATE PG. FOR DETAILS	

**\*\* POLYURETHANE SEAL AVAILABLE \*\***



**SOUTHWEST 7500PSI      HHF-1600      GUIDE TO ORDERING**

PISTONS						LINERS		LINER GASKETS	
SIZE	PITBULL®	SINGLE-DURO®	BULLDOG®	BLACKCAT®	HELLCAT®	GRAYLOY®	ZIRCONIA	RUBBER	URETHANE
4"	76BDP	76BSD	76BDB	76BBC	76BPP	1376G06	1376ZIR06	2930-06	2930-06U
4 1/2"	78BDP	78BSD	78BDB	78BBC	78BPP	1376G08	1376ZIR08	2930-08	2930-08U
4 3/4"	79BDP	79BSD	79BDB	79BBC	79BPP	1376G09	1376ZIR09	2930-09	2930-09U
5"	81BDP	81BSD	81BDB	81BBC	81BPP	1376G1	1376ZIR1	2930-1	2930-1U
5 1/4"	82BDP	82BSD	82BDB	82BBC	82BPP	1376G2	1376ZIR2	2930-2	2930-2U
5 1/2"	83BDP	83BSD	83BDB	83BBC	83BPP	1376G3	1376ZIR3	2930-3	2930-3U
5 3/4"	84BDP	84BSD	84BDB	84BBC	84BPP	1376G4	1376ZIR4	2930-4	2930-4U
6"	85BDP	85BSD	85BDB	85BBC	85BPP	1376G5	1376ZIR5	2930-5	2930-5U
6 1/4"	86BDP	86BSD	86BDB	86BBC	86BPP	1376G6	1376ZIR6	2930-6	2930-6U
6 1/2"	87BDP	87BSD	87BDB	87BBC	87BPP	1376G7	1376ZIR7	2930-7	2930-7U
6 3/4"	88BDP	88BSD	88BDB	88BBC	88BPP	1376G8	1376ZIR8	2930-8	2930-8U
7"	89BDP	89BSD	89BDB	89BBC	89BPP	1376G9	1376ZIR9	2930-9	2930-9U

NOTE: ALL PISTONS AND GRAYLOY® ARE REGISTERED TRADEMARKS OF SOUTHWEST® OILFIELD PRODUCTS.

## VALVES & SEATS (HH F-1600)

TYPE	VALVE	INSERT	SPRING	STAINLESS SPRING	SEAT	PULLER HEAD	PULLER HEAD STYLE
FULL OPEN-ROUGHNECK (Cast N Place Insert)	SWND-6VB	N/A	SW5710-115	N/A	SWND-6S4	SWTM27SXN SWND-6PH	SPLIT JAW PANCAKE
FULL OPEN-ROUGHNECK (High Temp)	SWND-6VBHT	N/A	SW5710-115	N/A	SWND-6S4	SWTM27SXN SWND-6PH	SPLIT JAW PANCAKE
FULL OPEN-ROUGHNECK (w/Replaceable Urethane Insert)	SWND-6V1	SWND-6I	SW5710-115	N/A	SWND-6S4	SWTM27SXN SWND-6PH	SPLIT JAW PANCAKE
3 WEB DOUBLE ANGLE O-RING	SWR0500119	SWR0515845	SWR0513744	SWR0514790	SWR0512436	SWTM3-7D	3 J HOOK
3 WEB (High Temp)	SWR0520586	SWR0520585	SWR0513744	SWR0514790	SWR0512436	SWTM3-7D	
3 WEB STANDARD PLATE	SWR0505038	SWR0504890	SWR0515575	SWR0514790	SWR0512436	SWTM3-7D	
4 WEB	SWU5B-EH	SWUDD-6AB	SW5710-115	N/A	SW6ADD-B4	SWTM4-6	4 J HOOK
4 WEB (High Temp)	SWU5B-EHHT	SWUDD-6ABHT	SW5710-115	N/A	SW6ADD-B4	SWTM4-6	

PANCAKE



SPLIT JAW

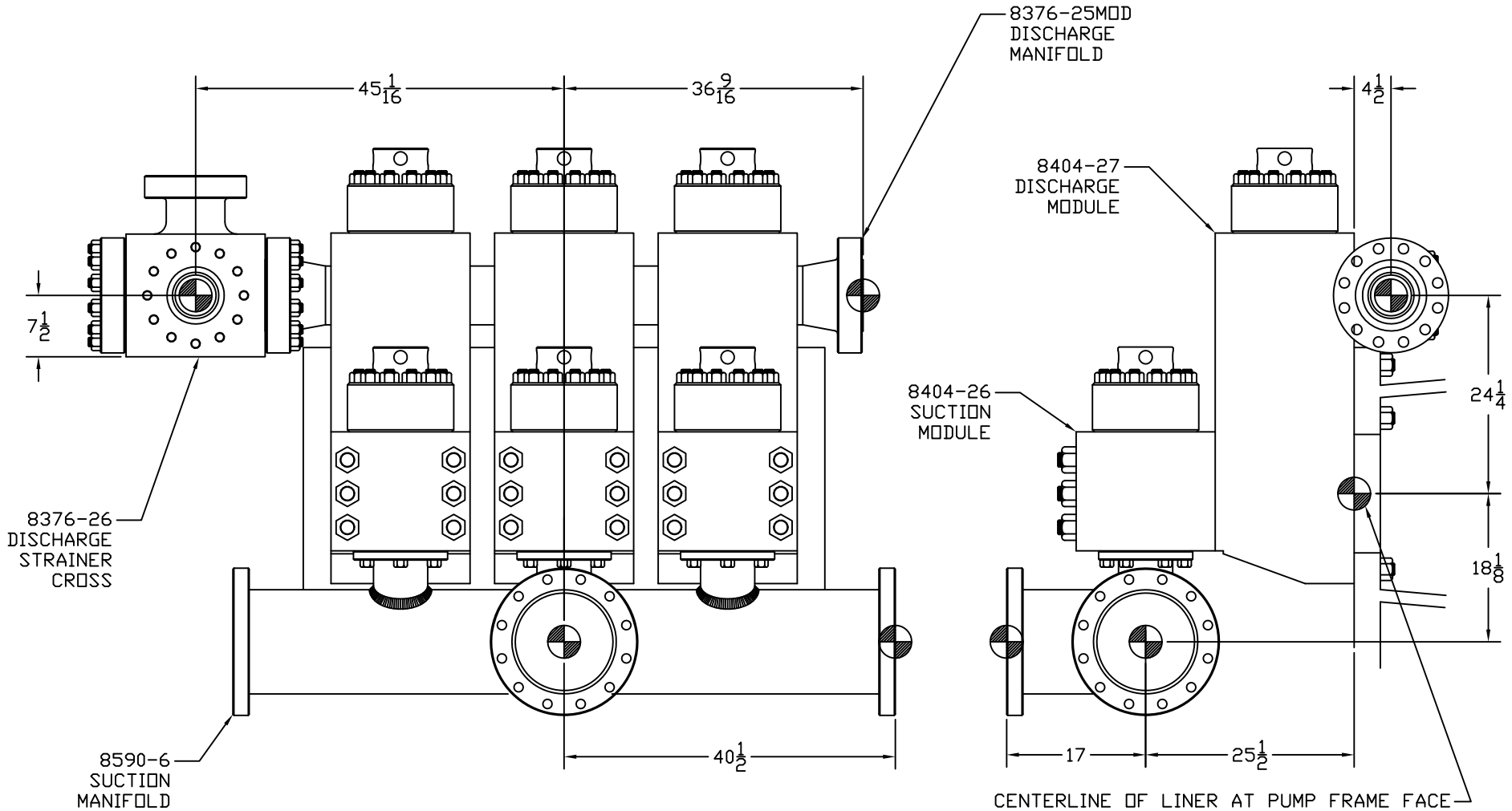


3 J HOOK



4 J HOOK

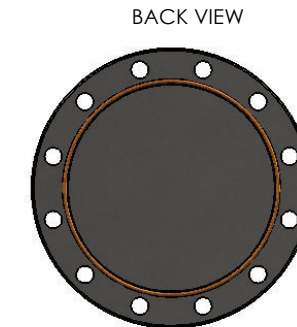
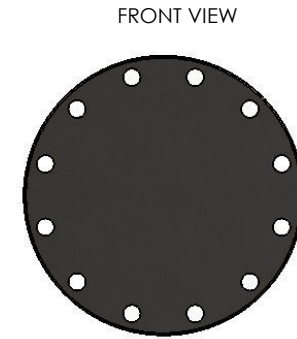
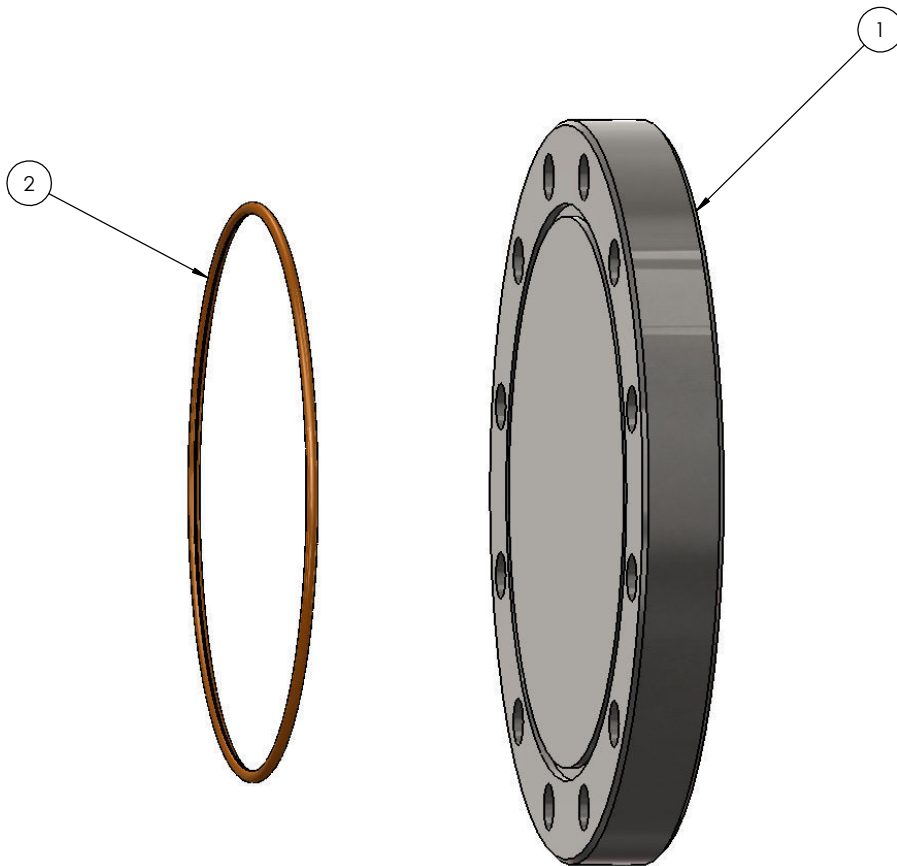




\*THIS LAYOUT SHOWS THE SUCTION MANIFOLD LOCATIONS USING 8590-6 SUCTION MANIFOLD. THE INLET CONNECTIONS ARE COMPATIBLE WITH THE ORIGINAL FB-1600 EMSCO SUCTION MANIFOLDS. DISCHARGE MANIFOLD CONNECTIONS ARE 5 1/8" 10,000 PSI API CONNECTIONS.


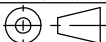
REV#	DATE	REVISED BY	REVISIONS . . .	UNLESS OTHERWISE NOTED . . .	PROPRIETARY INFORMATION--THE INFORMATION CONTAINED HEREIN SHALL BE CONSIDERED THE SOLE PROPERTY OF SOUTHWEST OILFIELD PRODUCTS, INC., AND THE RECIPIENT THEREOF AGREES TO MAINTAIN THE INFORMATION CONFIDENTIAL AND AGREES NOT TO COPY, REPRODUCE, DISTRIBUTE TO OTHERS, OR USE IN WHOLE OR IN PART FOR ANY PURPOSE WITHOUT THE EXPRESS WRITTEN PERMISSION OF SOUTHWEST OILFIELD PRODUCTS, INC.				SOUTHWEST® OILFIELD PRODUCTS, INC. -- HOUSTON, TX.	
				1. ALL DIMENSIONS ARE IN INCHES. 2. ALL FRACTIONAL DIMENSIONS ARE ±1/64. 3. ALL DECIMAL DIMENSIONS ARE +.005/- .000. 4. ALL ANGLES ARE ±0.5°. 5. ALL FILLETS AND RADII ARE 1/16 MAX. 6. CHAMFERS ARE 1/16 x 45° MAX. 7. SURFACE FINISH IS 125√RMS MAX. 8. CONCENTRICITY NOT TO EXCEED .005 T.I.R. 9. BREAK CORNERS AT 1/32 x 45° MAX.	DESCRIPTION	DRAWN	APPROVED	SCALE		
					PIPING LAYOUT FOR HHF-1600	DATE 04-18-08	EARL FOOTE	NONE		
					7500 PSI SOUTHWEST FLUID END	NAMET. LEMAN	11-23-10			
					FILE #	HEAT TREATMENT	DRAWING #	REVISION #		
					SHEET OF MATERIAL 1 1 N/A	N/A	8404-25APL			

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	8590-6BF	SUCTION MANIFOLD BLIND FLANGE	1
2	568-456	O-RING	1



**NOTE:**

1. THIS FLANGE IS EQUAL TO EMSCO# 6317-0074-00
2. SW PART# 568-456 O-RING IS EQUAL TO EMSCO# 7602-1600-52

 <small>THIRD ANGLE PROJECTION</small> 	<small>UNLESS OTHERWISE SPECIFIED:</small> DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/64$ ANGULAR: $\pm 0.5^\circ$ DECIMAL $+0.005 / -0.000$ ALL FILLETS & RADII - $1/16$ MAX CHAMFERS $1/16 \times 45^\circ$ MAX SURFACE FINISH 125 RMS MAX CONCENTRICITY NOT TO EXCEED .005 T.I.R. BREAK SHARP CORNERS $1/32 \times 45^\circ$ MAX.	DRAWN BY: MG DATE: 06/13/2014 CHECKED BY: JM DATE: 06/17/2014	<b>SOUTHWEST OILFIELD PRODUCTS</b> 10340 WALLISVILLE ROAD, HOUSTON, TX 77013 TITLE: <b>SUCTION MANIFOLD BLIND FLANGE ASSEMBLY FOR 8590-6 SUCTION MANIFOLD</b>
	MATERIAL: N/A HEAT TREAT: N/A	SIZE: B DWG. NO.: 8590-6BFA	REV. A
	<small>THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF SOUTHWEST OILFIELD PRODUCTS. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF SOUTHWEST OILFIELD PRODUCTS IS PROHIBITED.</small>		SHEET 1 OF 1



**TORQUE SPECIFICATIONS FOR 8404-25A SOUTHWEST FLUID END ASSEMBLY  
FOR HH F-1600 7500 P.S.I.**

<u>PART NUMBER</u>	<u>DESCRIPTION</u>	<u>TORQUE METHOD (EXPRESSED IN FOOT-POUNDS)</u>	
		<u>MOLY GREASE</u>	<u>DRY (NOT RECOMMENDED)</u>
API-4 ESN	PISTON NUT	<i>NO MORE FORCE THAN ONE MAN ON 3' WRENCH/CHEATER COMBINATION</i>	
1290-2	PISTON ROD CONNECTING STUD	<i>150 MAXIMUM</i>	<i>150 MAXIMUM</i>
4020-29	ROD CLAMP BOLT	455	606
4018-18	VALVE GUIDE SCREW	80	107
4015-2	VALVE COVER STUD	970	1338
4017-33	POWER END STUD	1995	2752
4019-51	LINER RETAINER CAP SCREW	329	313
4019-61	SUCTION MODULE STUD	3299	4550
4018-19	SUCTION MANIFOLD CAP SCREW	322	430
4019-60	DISCHARGE MANIFOLD STUD	1098	1514

**SOUTHWEST 8404-25A FLUID END FOR HH F-1600  
REVISION SUMMARY**

<b>REVISION</b>	<b>DATE</b>	<b>REASON OF CHANGE</b>
REV. A	06/30/2014	ADDED 8590-6BFA DRAWING TO CATALOG INCLUDED NOTE ON PARTS LIST.
REV. B	12/10/2014	CHANGED ITEM NO. 25 FROM 4017-33 TO <u>4019-52</u> POWER END STUD.
REV. C	06/04/2015	CHANGED ITEM NO. 25 FROM 4019-52 TO <u>4017-33</u> POWER END STUD CORRECTED/UPDATED TORQUE SPECIFICATION PAGE.
REV. D	09/24/2015	INCLUDED A NOTE ON ITEM NO. 11 – (CONSIST OF 11A, 11B, 11C).
REV. E	10/21/2015	TYPO ON FRONT PAGE G.P.M. @ 140 R.P.M. SHOULD READ 120 R.P.M.
REV. F	09/26/2016	ADDED A NOTE TO ITEM NO. 3 PART NO. 8490-28 LINER WEARPLATE.
REV. G	01/30/2018	CORRECTED ITEM # 28 QUANTITY IN BOM (4019-51 CAP SCREWS).
REV. H	10/12/2020	UPDATED PISTON SHEET.
REV. I	12/06/2022	REVISED WEAR PLATE O-RING PART NUMBER.