



Design EWD, EWT, EWS Series Valve Body Assemblies, Cage Guided

CONFIDENTIAL. This document, including the information it bears, is the property of Fisher Controls and must be held in strict confidence and properly safeguarded by the recipient at all times. It may not be copied or reproduced, or provided or revealed to any other party, except with the prior written authorization of Fisher Controls, any authorized copy or reproduction must include this legend. The recipient may use the same only for the purpose for which Fisher Controls has provided it to the recipient, and it must be returned to Fisher Controls, along with all copies and reproductions, upon request. By accepting this document, the recipient agrees to the forgoing. The original controlled version of this document resides in the Electronic Document Control System (EDOCS) accessible on the Fisher FishWeb. Copies of this document are uncontrolled. Engineering Standard DS40 controls the creation and maintenance of this document.

EWX1-A B C D E F G H J K 9B 9C 9D 9E

C-SEAL TRIM SELECTION STRING = EWX1-A B G H K L 9C & CSEALX1-A B C D E 9A 9B

Item	Parts contained in Item	Find Number
A	Valve Body	1
B	Cage Adaptor	4
	Seat Ring Adaptor	5
C	Cage	3
D	Valve Plug	2
	Groove Pin	8
	Seat Ring	9
	Disc Retainer	21
	Disc Seat	22
E	Disc	23
F	Piston Ring	6
	Seal Ring, Valve Plug	28
	Ring Back-Up	29
	Anti-Extrusion Ring	63
G	Bonnet Gasket	10
	Cage or Body Gasket	11
	Spiral Gasket	12
	Seat Ring Gasket or Seal Ring	13
	Adaptor Gasket	14
	Gasket Shim	51
H	Cap Screw or Stud Bolt	15
	Hex Nut	16
J	Stem	7
K	Flow Arrow	18
	Drive Screw	19
L	Drive Screw	19
	Nameplate	54
	Wire	55
9B	Design, Action & Flow Direction	
9C	Class/Hydro	
9D	Seat Leak per FGS 4L5	
9E	Descriptor/Nameplate Data when Item J not used	

**ITEM A - VALVE BODY**

MATL	TEMP ° F	RATING	C.W.P. (PSI/100° F)
WCC/WCB	-20+800	CL300	740
		CL600	1480
		PN10/16	232
		PN25/40	580
		PN63	914
		PN100	1450
C5	-20+1100	CL300	750
		CL600	1500
		PN10/16	232
		PN25/40	580
		PN63	914
		PN100	1450
CF8M	-325+1000	CL300	720
		CL600	1440
		PN10/16	232
		PN25/40	580
		PN63	914
		PN100	1450
WC9	-20+1050	CL300	750
		CL600	1500
		PN10/16	232
		PN25/40	580
		PN63	914
		PN100	1450
LCC/LCB	-50+650	PN10/16	232
		PN25/40	580
		PN63	914
		PN100	1450

ITEM A - VALVE BODY (WITHOUT DRAIN TAPPING = N/TAP) (WITH DRAIN TAPPING = TAP)**ITEM B - RING AND CAGES ADAPTOR (USE ON RESTRICTED TRIM ONLY)**

	SCH 40 BWE		SCH 80 BWE		CL150 RF	CL300 RF		CL600 RF		CL300 RTJ	CL600 RTJ	6 X 2 1/2 ADAPTORS
	N/ TAP	TAP	N/ TAP	TAP	N/TAP	N/ TAP	TAP	N/ TAP	TAP	N/ TAP	N/ TAP	
	A	A	A	A	A	A	A	A	A	A	A	B
WCC/WCB	123	--	127	--	203	131	155	135	159	139	143	1
C5	124	--	128	--	--	132	--	136	--	--	144	7
LCC/LCB	--	--	--	--	--	--	--	--	--	--	--	1
WC6	--	--	--	--	--	--	--	--	--	--	--	7
316	125	--	--	--	204	133	157	137	--	--	145	--
ALLOY 20	R	R	R	R	--	--	--	--	--	--	--	--
HAST C	M	M	M	M	--	--	--	--	--	--	--	--
WC9	126	--	205	--	206	207	--	138	--	208	209	7

**ITEM A - VALVE BODY (WITHOUT DRAIN TAPPING = N/TAP) (WITH DRAIN TAPPING = TAP) (CONT)**
ITEM B - RING AND CAGES ADAPTOR (USE ON RESTRICTED TRIM ONLY) (CONT)FOREIGN MANUFACTURED EN1092-1 FLANGES
DN 150 X 100 (6" X 4")

EN TYPE B (RF)

	PN 10/16 N/TAP	PN 25/40 N/TAP	PN 63 N/TAP	PN 100 N/TAP	6 X 2 1/2 ADAPTORS
	A	A	A	A	B
WCC/WCB	171	175	179	183	1
C5	172	176	180	184	7
316	173	177	181	185	--
WC9	174	178	182	186	7
LCC/LCB	210	211	212	213	1

EN TYPE F (RECESS)

	PN 10/16 N/TAP	PN 25/40 N/TAP	PN 63 N/TAP	PN 100 N/TAP	6 X 2 1/2 ADAPTORS
	A	A	A	A	B
WCC/WCB	214	217	220	223	1
316	215	218	221	224	--
LCC/LCB	216	219	222	225	1



ITEM C - CAGE

ITEM D - VALVE PLUG, SEAT RING, GROOVE PIN

ITEM J - VALVE STEM

					THERMAL EXPANSION LIMIT TRIM/BODY COMB WHERE APPLICABLE		
CAGE	VALVE PLUG	RING OR DISC RETAINER	STEM	TEMP °F	6 X 4		6 X 4 X 2 1/2
					BODY	TEMP °F	TEMP °F
MATERIAL				COL 1	MATL	COL 1	COL 1
17-4 PH	416	416	316	-20+800	WCB, WC9 316	-20+650 -20+300	-20+350
17-4 PH	416	316	316	-20+800	316	-20+330	-20+350
17-4 PH	316	316	316	-150+410		-150+330	-150+360
316 ENC	416	416	316	-20+410			
316 ENC	MONEL	MONEL	R-MONEL	-400+500			
316	316	316	316	-425+300			
316L	316L	316L	316L	-425+300			
304	304	304	304	-425+300			
304L	304L	304L	304L	-425+300			
317	317	317	317	-425+300			
347	347	347	347	-425+300			
ALY 20	ALY 20	ALY 20	ALY 20	-325+300			
HAST C	HAST C	HAST C	HAST C	-325+300			
MONEL	MONEL	MONEL	R-MONEL	-400+300			
NICKEL	NICKEL	NICKEL	NICKEL	-325+300			
316 ENC	316	316	316	-425+600	WCB, WC9 C5	-20+430 -20+360	-20+450
347 ENC	347	347	347	-425+600	WCB, WC9 C5	-20+430 -20+360	-20+450
HARD FACED PLUG SEAT HARD FACED RING							
17-4 PH	316	316/HF & ALLOY6	316	-150+300			
COCR-A	316	316/HF & ALLOY6	316	-425+300			
316 ENC	316	316/HF & ALLOY6	316	-425+300			
HARD FACED PLUG SEAT & GUIDE HARD FACED RING							
17-4 PH	316	316/HF & ALLOY6	316	-150+410	316	+150+330	-150+360
17-4 PH	316 HI-TEMP	316/HF & ALLOY6	316	+410+800	316	(M)	(M)
COCR-A	316	316/HF & ALLOY6	316	-425+800	316 C5	-325+650 -20+600	-325+770
COCR-A	316 HI-TEMP	316/HF & ALLOY6	316	+800+1100	316 C5	(M) (M)	(M) +800+1000
316 ENC	316	316/HF & ALLOY6	316	-425+650	WCB, WC9 C5	-20+430 -20+360	-20+670 -20+460
316 CRPL	316	316/HF & ALLOY6	316	-425+1100	WCB, WC9 C5	-20+430 -20+360	-20+670 -20+460

**ITEM C - CAGE (CONT)****ITEM D - VALVE PLUG, SEAT RING, GROOVE PIN (CONT)****ITEM J - VALVE STEM (CONT)**

DESIGN EWD - METAL SEAT

				(SEAT LOAD NOT CONSIDERED) MAX PRESS DROP PSI (CANNOT EXCEED C.W.P.)	
CAGE	VALVE PLUG	RING OR DISC RETAINER	STEM	SHUT OFF	FLOWING
MATERIAL				COL 5	COL 6
17-4 PH	416	416	316	1500	1500
17-4 PH	416	316	316	300	1500
17-4 PH	316	316	316	300	1500
316 ENC	416	416	316	1500	1500
316 ENC	MONEL	MONEL	R-MONEL	300	1500
316	316	316	316	300	1500
316L	316L	316L	316L	300	1500
304	304	304	304	300	1500
304L	304L	304L	304L	300	1500
317	317	317	317	300	1500
347	347	347	347	300	1500
ALY 20	ALY 20	ALY 20	ALY 20	300	1500
HAST C	HAST C	HAST C	HAST C	300	1500
MONEL	MONEL	MONEL	R-MONEL	300	1500
NICKEL	NICKEL	NICKEL	NICKEL	300	1500
316 ENC	316	316	316	300	1500
347 ENC	347	347	347	300	1500

HARD FACED PLUG SEAT

HARD FACED RING

17-4 PH	316	316/HF & ALLOY6	316	1500	1500
COCR-A	316	316/HF & ALLOY6	316	1500	1500
316 ENC	316	316/HF & ALLOY6	316	1500	1500

HARD FACED PLUG SEAT & GUIDE

HARD FACED RING

17-4 PH	316	316/HF & ALLOY6	316	1500	1500
COCR-A	316	316/HF & ALLOY6	316	1500	1500
316 ENC	316	316/HF & ALLOY6	316	1500	1500
316 CRPL	316	316/HF & ALLOY6	316	1500	1500



ITEM C - CAGE (CONT)

ITEM D - VALVE PLUG, SEAT RING, GROOVE PIN (CONT)

ITEM J - VALVE STEM (CONT)

DESIGN EWT - METAL AND COMPOSITION

				(SEAT LOAD NOT CONSIDERED) MAX PRESS DROP PSI (CANNOT EXCEED C.W.P.)		
CAGE	VALVE PLUG	RING OR DISC RETAINER	STEM	SHUT OFF		FLOWING
				METAL SEAT	COMPOSITION SEAT	
MATERIAL				COL 5	COL 5	COL 6
17-4 PH	416	416	316	1500	1500	1500
17-4 PH	416	316	316	300	1500	1500
17-4 PH	316	316	316	300	1500	1500
316 ENC	416	416	316	1500	1500	1500
316 ENC	MONEL	MONEL	MONEL	300	1500	1500
316	316	316	316	300	1500	1500
316L	316L	316L	316L	300	1500	1500
304	304	304	304	300	1500	1500
304L	304L	304L	304L	300	1500	1500
317	317	317	317	300	1500	1500
347	347	347	347	300	1500	1500
ALY 20	ALY 20	ALY 20	ALY 20	300	1500	1500
HAST C	HAST C	HAST C	HAST C	300	1500	1500
MONEL	MONEL	MONEL	R-MONEL	300	1500	1500
NICKEL	NICKEL	NICKEL	NICKEL	300	1500	1500
316 ENC	316	316	316	300	1500	1500
347 ENC	347	347	347	300	1500	1500
HARD FACED PLUG SEAT						
HARD FACED RING						
17-4 PH	316	316/HF & ALLOY6	316	1500	1500	1500
COCR-A	316	316/HF & ALLOY6	316	1500	1500	1500
316 ENC	316	316/HF & ALLOY6	316	1500	1500	1500
HARD FACED PLUG SEAT & GUIDE						
HARD FACED RING						
17-4 PH	316	316/HF & ALLOY6	316	1500	1500	1500
COCR-A	316	316/HF & ALLOY6	316	1500	1500	1500
316 ENC	316	316/HF & ALLOY6	316	1500	1500	1500
316 CRPL	316	316/HF & ALLOY6	316	1500	1500	1500



ITEM C - CAGE (CONT)

ITEM D - VALVE PLUG, SEAT RING, GROOVE PIN (CONT)

ITEM J - VALVE STEM (CONT)

DESIGN EWS - METAL SEAT

				(SEAT LOAD NOT CONSIDERED) MAX PRESS DROP PSI (CANNOT EXCEED C.W.P.)				
				SHUT OFF				FLOWING
CAGE	VALVE PLUG	RING OR DISC RETAINER	STEM	2 7/8 PORT		4 3/8 PORT		ALL PORT
				STEM SIZE		STEM SIZE		STEM SIZE
				1/2	3/4	1/2	3/4	ALL
MATERIAL				COL 5	COL 5	COL 5	COL 5	COL 6
17-4 PH	416	416	316	785	1500	339	762	1500
17-4 PH	416	316	316	300	300	300	300	1500
17-4 PH	316	316	316	300	300	300	300	1500
316 ENC	416	416	316	785	1500	339	762	1500
316 ENC	MONEL	MONEL	R-MONEL	289	300	125	281	1500
316	316	316	316	300	300	300	300	1500
316L	316L	316L	316L	289	300	125	281	1500
304	304	304	304	300	300	149	300	1500
304L	304L	304L	304L	289	300	125	281	1500
317	317	317	317	300	300	149	300	1500
347	347	347	347	300	300	149	300	1500
ALY 20	ALY 20	ALY 20	ALY 20	300	300	223	300	1500
HAST C	HAST C	HAST C	HAST C	300	300	228	300	1500
MONEL	MONEL	MONEL	R-MONEL	289	300	125	281	1500
NICKEL	NICKEL	NICKEL	NICKEL	249	300	107	242	1500
316 ENC	316	316	316	300	300	300	300	1500
347 ENC	347	347	347	300	300	149	300	1500
HARD FACED PLUG SEAT								
HARD FACED RING								
17-4 PH	316	ALLOY6	316	785	1500	339	762	1500
COCR-A	316	ALLOY6	316	785	1500	339	762	1500
316 ENC	316	ALLOY6	316	785	1500	339	762	1500
HARD FACED PLUG SEAT & GUIDE								
HARD FACED RING								
17-4 PH	316	316/HF & ALLOY6	316	785	1500	339	762	1500
COCR-A	316	316/HF & ALLOY6	316	785	1500	339	762	1500
316 ENC	316	316/HF & ALLOY6	316	785	1500	339	762	1500
316 CRPL	316	316/HF & ALLOY6	316	785	1500	339	762	1500



ITEM C - CAGE (CONT)

ITEM D - VALVE PLUG, SEAT RING, GROOVE PIN (CONT)

ITEM J - VALVE STEM (CONT)

DESIGN EWS - COMPOSITION SEAT

				(SEAT LOAD NOT CONSIDERED) MAX PRESS DROP PSI (CANNOT EXCEED C.W.P.)				
CAGE	VALVE PLUG	RING OR DISC RETAINER	STEM	SHUT OFF				FLOWING
				2 7/8 PORT		4 3/8 PORT		ALL PORT
				STEM SIZE		STEM SIZE		STEM SIZE
				1/2	3/4	1/2	3/4	ALL
MATERIAL				COL 5	COL 5	COL 5	COL 5	COL 6
17-4 PH	416	416	316	785	1500	339	762	1500
17-4 PH	416	316	316	785	1500	339	762	1500
17-4 PH	316	316	316	785	1500	339	762	1500
316 ENC	416	416	316	785	1500	339	762	1500
316 ENC	MONEL	MONEL	R-MONEL	289	650	125	281	1500
316	316	316	316	785	1500	339	762	1500
316L	316L	316L	316L	289	650	125	281	1500
304	304	304	304	346	779	149	336	1500
304L	304L	304L	304L	289	650	125	281	1500
317	317	317	317	346	779	149	336	1500
347	347	347	347	346	779	149	336	1500
ALY 20	ALY 20	ALY 20	ALY 20	516	1161	223	501	1500
HAST C	HAST C	HAST C	HAST C	528	1188	228	513	1500
MONEL	MONEL	MONEL	R-MONEL	289	650	125	281	1500
NICKEL	NICKEL	NICKEL	NICKEL	249	560	107	242	1500
316 ENC	316	316	316	785	1500	339	762	1500
347 ENC	347	347	347	346	779	149	336	1500
HARD FACED PLUG SEAT								
HARD FACED RING								
17-4 PH	316	ALLOY6	316	785	1500	339	762	1500
COCR-A	316	ALLOY6	316	785	1500	339	762	1500
316 ENC	316	ALLOY6	316	785	1500	339	762	1500
HARD FACED PLUG SEAT & GUIDE								
HARD FACED RING								
17-4 PH	316	ALLOY6	316	785	1500	339	762	1500
COCR-A	316	ALLOY6	316	785	1500	339	762	1500
316 ENC	316	ALLOY6	316	785	1500	339	762	1500
316 CRPL	316	ALLOY6	316	785	1500	339	762	1500

Design EWD, EWT, EWS Series Valve Body Assemblies, Cage
Guided

ITEM C - CAGE (CONT)

ITEM D - VALVE PLUG, SEAT RING & GROOVE PIN (CONT)

DESIGN EWD, 6 X 4, 4 3/8 PORT, 2" TRAVEL, METAL SEAT

CAGE	PLUG	SEAT RING	STEM	=%	LIN	Q OPEN	WHISP	VSC 1L5000	1L7500	TEMP LIMIT
				C	C	C	C	D	D	° F
17-4PH H900	416	416	316	1	10	19	28	86	100	=<410
17-4PH H900	316	316	316	1	10	19	28	87	101	
316 ENC	416	416	316	8	17	26	147	86	100	
316 ENC	MONEL	MONEL	R-MONEL	8	17	26	147	--	--	
MONEL M-35W	MONEL	MONEL	R-MONEL	R	R	R	149	--	--	
316 ENC	316	316	316	8	17	26	147	87	101	
HARD FACED PLUG SEAT AND SEAT RING										
17-4PH H900	316	316	316	1	10	19	28	405	--	=<410
COCR-A	316	316	316	35	42	49	145	405	--	=<800
316 ENC	316	316	316	8	17	26	147	405	--	
HARD FACED PLUG SEAT/GUIDE AND SEAT RING										
17-4PH H900	316	316	316	1	10	19	28	406	--	=<410
17-4PH H900	316	316	316	1	10	19	28	407	--	>410=<800
COCR-A	316	316	316	35	42	49	145	406	--	=<800
COCR-A	316	316	316	35	42	49	145	407	410	>800
316 ENC	316	316	316	8	17	26	147	406	--	

EWD CLASS IV SHUT OFF - 6 X 4 - METAL SEAT
4 3/8 PORT - 2" TRAVEL

										TEMP LIMIT DUE TO PLUG CASE DIAMETRICAL EXPANSION WHERE APPLICABLE
CAGE	VALVE	SEAT RING	STEM	=%	LIN	Q OPEN	WHISP	VSC		
								1L5000	1L7500	
MATERIAL				C	C	C	C	D	D	
17-4PH H900	416 SST	416 SST	316 SST	1	10	19	28	450	455	TO 410°F
	316 SST	316 SST	316 SST	1	10	19	28	451	456	
316 SST ENC	416 SST	416 SST	316 SST	8	17	26	147	450	455	
	316 SST	316 SST	316 SST	8	17	26	147	451	456	
HARD FACED PLUG SEAT										
HARD FACED RING										
17-4PH H900	316 SST	316	316 SST	1	10	19	28	452	457	TO 410°F
316 SST ENC	316 SST	316	316 SST	8	17	26	147	452	457	TO 800°F
HARD FACED PLUG SEAT/GUIDE										
HARD FACED RING										
17-4PH H900	316 SST	316	316 SST	1	10	19	28	453	458	TO 410°F
	316 SST	316	316 SST	1	10	19	28	454	459	410 TO 800°F
316 SST ENC	316 SST	316	316 SST	8	17	26	147	453	458	

**ITEM C - CAGE (CONT)****ITEM D - VALVE PLUG, SEAT RING, & GROOVE PIN (CONT)**

EWD - 6 X 4 2 1/2 - METAL SEAT

2 7/8 PORT - 1 1/2 TRAVEL

CAGE	VALVE	SEAT RING DISC RETR DISC SEAT	STEM	=%	LIN	QUICK OPEN	WHISP	CAV
MATERIAL				C	C	C	C	C
17-4PH H900	416 SST	416 SST	316 SST	66	75	--	93	--
17-4PH H900	416 SST	316 SST	316 SST	66	75	--	93	--
17-4PH H900	316 SST	316 SST	316 SST	66	75	--	93	--
316 SST ENC	416 SST	416 SST	316 SST	73	82	--	148	--
316 SST ENC	MONEL	MONEL	R-MONEL	73	82	--	148	--
316 SST	ALL PARTS		316 SST	--	--	--	--	--
316L SST	"	"	316L SST	--	--	--	M	--
304 SST	"	"	304 SST	--	--	--	M	--
304L SST	"	"	304L SST	--	--	--	M	--
317 SST	"	"	317 SST	--	--	--	M	--
347 SST	"	"	347 SST	--	--	--	M	--
ALLOY 20	"	"	ALLOY 20	--	--	--	M	--
HAST C	"	"	HAST C	--	--	--	M	--
MONEL M-35W	MONEL	MONEL	R-MONEL	R	R	R	150	--
NICKEL	NICKEL	NICKEL	NICKEL	--	--	--	M	--
316 SST ENC	316 SST	316 SST	316 SST	73	82	--	148	--
347 SST ENC	347 SST	347 SST	347 SST	--	--	--	M	--
HARD FACED PLUG SEAT								
HARD FACED RING								
17-4PH H900	316 SST	STELL #6	316 SST	66	75	--	93	--
STELL #6	316 SST	STELL #6	316 SST	100	--	--	--	--
316 SST ENC	316 SST	STELL #6	316 SST	73	82	--	148	--
HARD FACED PLUG SEAT & GUIDE								
HARD FACED RING								
17-4PH H900	316 SST	STELL #6	316 SST	66	75	--	93	--
17-4PH H900	316 SST	STELL #6	316 SST	66	75	--	93	--
17-4PH H1100	316 SST	STELL #6	316 SST	--	--	--	--	--
17-4PH H1150	316 SST	STELL #6	316 SST	--	--	--	--	--
STELL #6	316 SST	STELL #6	316 SST	100	--	--	--	R
STELL #6	316 SST	STELL #6	316 SST	100	--	--	--	R
316 SST ENC	316 SST	STELL #6	316 SST	73	82	--	148	--
316 SST CR PL	316 SST	STELL #6	316 SST	--	--	--	--	R



ITEM C - CAGE (CONT)

ITEM D - VALVE PLUG, SEAT RING, & GROOVE PIN (CONT)

EWD - 6 X 4 2 1/2 - METAL SEAT

2 7/8 PORT - 1 1/2 TRAVEL

		SEAT RING DISC RETR DISC SEAT		VSC		TEMP LIMIT DUE TO PLUG CAGE DIAMETRICAL EXPANSION WHERE APPLICABLE
CAGE	VALVE		STEM	1L5000	1L7500	
MATERIAL				D	D	
17-4PH H900	416 SST	416 SST	316 SST	128	--	
17-4PH H900	416 SST	316 SST	316 SST	--	--	
17-4PH H900	316 SST	316 SST	316 SST	129	--	TO 410°F
316 SST ENC	416 SST	416 SST	316 SST	128	--	
316 SST ENC	MONEL	MONEL	R-MONEL	--	--	
316 SST	ALL PARTS		316 SST	129	--	
316L SST	"	"	316L SST	--	--	
304 SST	"	"	304 SST	--	--	
304L SST	"	"	304L SST	--	--	
317 SST	"	"	317 SST	--	--	
347 SST	"	"	347 SST	--	--	
ALLOY 20	"	"	ALLOY 20	--	--	
HAST C	"	"	HAST C	--	--	
MONEL M-35W	MONEL	MONEL	R-MONEL	--	--	
NICKEL	NICKEL	NICKEL	NICKEL	--	--	
316 SST ENC	316 SST	316 SST	316 SST	129	--	
347 SST ENC	347 SST	347 SST	347 SST	--	--	
HARD FACED PLUG SEAT						
HARD FACED RING						
17-4PH H900	316 SST	STELL #6	316 SST	--	--	TO 410°F
STELL #6	316 SST	STELL #6	316 SST	--	--	TO 800°F
316 SST ENC	316 SST	STELL #6	316 SST	--	--	
HARD FACED PLUG SEAT/GUIDE						
HARD FACED RING						
17-4PH H900	316 SST	STELL #6	316 SST	415	--	TO 410°F
17-4PH H900	316 SST	STELL #6	316 SST	416	--	410° TO 800°F
17-4PH H1100	316 SST	STELL #6	316 SST	415	--	TO 410°F
17-4PH H1150	316 SST	STELL #6	316 SST	415	--	TO 410°F
STELL #6	316 SST	STELL #6	316 SST	415	--	TO 800°F
STELL #6	316 SST	STELL #6	316 SST	416	--	OVER 800°F
316 SST ENC	316 SST	STELL #6	316 SST	415	--	
316 SST CR PL	316 SST	STELL #6	316 SST	415	--	



ITEM C - CAGE (CONT)

ITEM D - VALVE PLUG, SEAT RING & GROOVE PIN (CONT)

DESIGN EWT, 6 X 4, 4 3/8 PORT, 2 IN TRAVEL
METAL SEAT

CAGE	PLUG	DISC SEAT DISC RETR SEAT RING	STEM	=%	LIN	Q- OPEN	WHISP	VSC	
								1L5000	1L7500
				C	C	C	C	D	D
17-4PH H900	416	416	316	1	10	19	28	86	100
17-4PH H900	316	316	316	1	10	19	28	87	101
316 ENC	416	416	316	8	17	26	147	86	100
316 ENC	MONEL	MONEL	R-MONEL	8	17	26	147	--	--
MONEL M-35W	MONEL	MONEL	R-MONEL	R	R	R	149	--	--
316 ENC	316	316	316	8	17	26	147	87	101
HARD FACED PLUG SEAT AND SEAT RING									
17-4PH H900	316	316	316	1	10	19	28	405	--
COCR-A	316	316	316	35	42	49	145	405	--
316 ENC	316	316	316	8	17	26	147	405	--
HARD FACED PLUG SEAT/GUIDE AND SEAT RING									
17-4PH H900	316	316	316	1	10	19	28	406	409
COCR-A	316	316	316	35	42	49	145	406	409
316 ENC	316	316	316	8	17	26	147	406	409

COMPOSITION SEAT

CAGE	PLUG	DISC SEAT DISC RETR SEAT RING	STEM	=%	LIN	Q- OPEN	WHISP	VSC	
								1L5000	1L7500
				C	C	C	C	D	D
17-4PH H900	416	316	316	1	10	19	28	380	381
17-4PH H900	316	316	316	1	10	19	28	201	208
316 ENC	316	316	316	8	17	26	147	201	208

**ITEM C - CAGE (CONT)****ITEM D - VALVE PLUG, SEAT RING, GROOVE PIN (CONT)**

EWT - 6 X 4, 4 3/8 PORT, 2" TRAVEL

SPRING LOADED SEAL RING WITHOUT ANTI-EXTRUSION RING, METAL SEAT

CAGE	PLUG	SEAT RING	STEM	EQ PCT C	LINEAR C	Q OPEN C	WHISP C	VSC	
								1L5000 D	1L7500 D
17-4PH H900	416	416	316	1	10	19	28	395	396

COMPOSITION SEAT

CAGE	PLUG	DISC SEAT/ RETAIN	STEM	EQ PCT C	LINEAR C	Q OPEN C	WHISP C	VSC	
								1L5000 D	1L7500 D
17-4PH H900	416	316	316	1	10	19	28	400	401

SPRING LOADED SEAL RING WITH ANTI-EXTRUSION RING

METAL SEAT

CAGE	PLUG	SEAT RING	STEM	EQ PCT C	LIN C	Q OPEN C	WHISP C	VSC		
								1L5000 D	1L7500 D	1L1000 D
17-4PH H900	416	416	316	1	10	19	28	496	497	498

HARD FACED PLUG SEAT/GUIDE

HARD FACED RING

316 ENC	316/HF	316/HF	316	8	17	26	147	508	509	510
17-4PH H900	316/HF	316/HF	316	1	10	19	28	505	506	507
	316/HF HI TEMP +410+800	316/HF	316	1	10	19	28	502	503	504

DESIGN EWT, 6X4, 4 3/16 PORT, 2 IN TRAVEL - TIGHT SHUTOFF TRIM

SPRING LOADED SEAL RING WITH ANTI-EXTRUSION RING

CAGE	PLUG	SEAT RING	STEM	EQUAL PERCENT C	LINEAR C	QUICK OPEN C	WHISP C	VSC	
								1L5000 D	1L7500 D
S17400 H900	S44004/ S17400 H1075	S44004	S31600	1	10	19	28	N/A	495



ITEM C - CAGE (CONT)

ITEM D - VALVE PLUG, SEAT RING, GROOVE PIN (CONT)

EWT - 6 X 4 X 2 1/2, 2 7/8 PORT - 1 1/2 TRAVEL

CAGE	VALVE	SEAT RING DISC RETR DISC SEAT	STEM	=%	LIN	QUICK OPEN	WHISP	CAV
MATERIAL				C	C	C	C	C
17-4PH H900	416 SST	416 SST	316 SST	66	75	--	93	--
17-4PH H900	416 SST	316 SST	316 SST	66	75	--	93	--
17-4PH H900	316 SST	316 SST	316 SST	66	75	--	93	--
316 SST ENC	416 SST	416 SST	316 SST	73	82	--	148	--
316 SST ENC	MONEL	MONEL	R-MONEL	73	82	--	148	--
316 SST	ALL PARTS		316 SST	--	--	--	--	--
316L SST	"	"	316L SST	--	--	--	M	--
304 SST	"	"	304 SST	--	--	--	M	--
304L SST	"	"	304L SST	--	--	--	M	--
317 SST	"	"	317 SST	--	--	--	M	--
347 SST	"	"	347 SST	--	--	--	M	--
ALLOY 20	"	"	ALLOY 20	--	--	--	M	--
HAST C	"	"	HAST C	--	--	--	M	--
MONEL M-35W	MONEL	MONEL	R-MONEL	R	R	R	150	--
NICKEL	NICKEL	NICKEL	NICKEL	--	--	--	M	--
316 SST ENC	316 SST	316 SST	316 SST	73	82	--	148	--
347 SST ENC	347 SST	347 SST	347 SST	--	--	--	M	--
HARD FACED PLUG SEAT								
HARD FACED RING								
17-4PH H900	316 SST	STELL #6	316 SST	66	75	--	93	--
STELL #6	316 SST	STELL #6	316 SST	100	--	--	--	--
316 SST ENC	316 SST	STELL #6	316 SST	73	82	--	148	--
HARD FACED PLUG SEAT & GUIDE								
HARD FACED RING								
17-4PH H900	316 SST	STELL #6	316 SST	66	75	--	93	--
17-4PH H1100	316 SST	STELL #6	316 SST	--	--	--	--	--
17-4PH H1150	316 SST	STELL #6	316 SST	--	--	--	--	--
STELL #6	316 SST	STELL #6	316 SST	100	--	--	--	--
316 SST ENC	316 SST	STELL #6	316 SST	73	82	--	148	--
316 SST CR PL	316 SST	STELL #6	316 SST	--	--	--	--	R

**ITEM C - CAGE (CONT)****ITEM D - VALVE PLUG, SEAT RING, GROOVE PIN (CONT)**

EWT - 6 X 4 X 2 1/2, 2 7/8 PORT - 1 1/2 TRAVEL

CAGE	VALVE	SEAT RING DISC RETAIN DISC SEAT	STEM	METAL SEAT VSC 1L5000
MATERIAL				D
17-4PH H900	416 SST	416 SST	316 SST	128
17-4PH H900	316 SST	316 SST	316 SST	129
316 SST ENC	416 SST	416 SST	316 SST	128
316 SST	ALL PARTS		316 SST	129
316 SST ENC	316 SST	316 SST	316 SST	129
HARD FACED PLUG SEAT/GUIDE				
HARD FACED RING				
17-4PH H900	316 SST	STELL #6	316 SST	415
17-4PH H1100	316 SST	STELL #6	316 SST	415
17-4PH H1150	316 SST	STELL #6	316 SST	415
STELL #6	316 SST	STELL #6	316 SST	415
316 SST ENC	316 SST	STELL #6	316 SST	415
316 SST CR PL	316 SST	STELL #6	316 SST	415

Design EWD, EWT, EWS Series Valve Body Assemblies, Cage
Guided

ITEM C - CAGE (CONT)

ITEM D - VALVE PLUG, SEAT RING, GROOVE PIN (CONT)

EWT - 6 X 4 X 2 1/2, 2 7/8 PORT, 1 1/2 TRAVEL

SPRING LOADED SEAL RING WITHOUT ANTI-EXTRUSION RING, METAL SEAT

CAGE	PLUG	SEAT RING	STEM	EQ PCT	LINEAR	Q OPEN	WHISP	VSC	
				C	C	C	C	1L5000	1L7500
17-4PH H900	416	416	316	66	75	—	93	398	—

SPRING LOADED SEAL RING WITH ANTI-EXTRUSION RING, METAL SEAT

CAGE	PLUG	SEAT RING	STEM	EQ PCT	LINEAR	Q OPEN	WHISP	VSC	
				C	C	C	C	1L5000	1L7500
17-4PH H900	416	416	316	66	75	—	93	517	518

HARD FACED PLUG SEAT/GUIDE
COCR-A RING

316 ENC	316/HF	COCR-A	316	73	82	—	148	525	526
17-4PH H900	316/HF	COCR-A	316	66	75	—	93	523	524
	316/HF HI TEMP +410+800	COCR-A	316	66	75	—	93	521	522

DESIGN EWT

RADIUS SEAT VALVE PLUG FOR CLASS V SEAT LEAK

SPRING LOADED SEAL RING WITHOUT ANTI-EXTRUSION RING, METAL SEAT

SIZE 6 X 4 X 2, 2 7/8 PORT, 1 1/2 TRAVEL

CAGE	PLUG	SEAT RING	EQ PER	LINEAR	Q OPEN	WHISP	VSC	
			C	C	C	C	1L5000	1L7500
17-4PH H900	416 SST	416 SST	66	75	—	93	519	520
	316 SST/HF S/G	COCR-A	66	75	—	93	527	529
316SST ENC	316 SST/HF S/G	COCR-A	73	82	—	148	528	530

4 3/8 PORT, 2 TRAVEL

CAGE	PLUG	SEAT RING	EQ PER	LINEAR	Q OPEN	WHISP	VSC		
			C	C	C	C	1L5000	1L7500	1L1000
17-4 PH H900	416 SST	416 SST	1	10	19	28	499	500	501
	316 SST/HF S/G	316/HF	1	10	19	28	511	513	515
316 SST ENC	316 SST/HF S/G	316/HF	8	17	26	147	512	514	516

**ITEM C - CAGE (CONT)****ITEM D - VALVE PLUG, SEAT RING, GROOVE PIN (CONT)**

EWS - 6 X 4 - METAL SEAT

4 3/8 PORT - 2" TRAVEL

CAGE	VALVE	SEAT RING DISC RETR DISC SEAT	STEM	EQ %	LINEAR	Q OPEN	WHISP
MATERIAL				C	C	C	C
17-4 PH	416	416	316	1	10	19	28
17-4 PH	416	316	316	1	10	19	28
17-4 PH	316	316	316	1	10	19	28
316	416	416	316	8	17	26	147
316 ENC	MONEL	MONEL	R-MONEL	8	17	26	147
304	304	304	304	--	--	24	M
MONEL M-35W	MONEL	MONEL	R-MONEL	R	R	R	149
316 ENC	316	316	316	8	17	26	147
HARD FACED PLUG SEAT							
HARD FACED RING							
17-4 PH	316	STE #6	316	1	10	19	28
STEL #6	316	STE #6	316	35	42	49	145
316 ENC	316	STE #6	316	8	17	26	147
HARD FACED PLUG SEAT & GUIDE							
HARD FACED RING							
17-4 PH	316	316	316	1	10	19	28
17-4 PH	316	316	316	1	10	19	28
STEL #6	316	316	316	35	42	49	145
STEL #6	316	316	316	35	42	49	145
316 ENC	316	316	316	8	17	26	147

**ITEM C - CAGE (CONT)****ITEM D - VALVE PLUG, SEAT RING, GROOVE PIN (CONT)**

EWS - 6 X 4 - METAL SEAT

4 3/8 PORT - 2" TRAVEL

		SEAT RING DISC RETR DISC SEAT					DEG F TEMP LIMIT DUE TO PLUG CAGE DIAMETRICAL EXPANSION
CAGE	VALVE		STEM	VSC			
				1L5000	1L7500	1L1000	
MATERIAL				D	D	D	
17-4 PH	416	416	316	236	253	270	TO 410
17-4 PH	316	316	316	420	--	--	
316	416	416	316	236	253	270	
316	316	316	316	420	--	--	
316 ENC	316	316	316	420	--	--	
HARD FACED PLUG SEAT & GUIDE							
HARD FACED RING							
17-4 PH	316	316	316	422	--	430	TO 410
17-4 PH	316	316	316	--	427	--	410 TO 800
17-4 PH H1100	316	316	316	422	--	430	TO 410
17-4 PH H1150	316	316	316	422	--	430	TO 410
STEL #6	316	316	316	422	--	430	TO 800
STEL #6	316	316	316	--	427	--	OVER 800
316 ENC	316	316	316	422	--	430	
316 CRP	316	316	316	422	--	430	

**ITEM C - CAGE (CONT)****ITEM D - VALVE PLUG, SEAT RING, GROOVE PIN (CONT)**

EWS - 6 X 4 - COMPOSITION SEAT

4 3/8 PORT - 2 IN TRAVEL

		SEAT RING DISC RETR DISC SEAT								
CAGE	VALVE		STEM	EQ %	LIN	Q O	WHISP	VSC		
				1L5000	1L7500	1L1000				
MATL				C	C	C	C	D	D	D
17-4 PH	416	416	316	1	10	19	28	--	--	--
17-4 PH	416	316	316	1	10	19	28	385	--	--
17-4 PH	316	316	316	1	10	19	28	--	208	--
316	416	416	316	8	17	26	147	--	--	--
316 ENC	MONEL	MONEL	R-MONEL	8	17	26	147	--	--	--
304	304	304	304	--	--	24	M	--	--	--
MONEL M-35W	MONEL	MONEL	R-MONEL	R	R	R	149	--	--	--
316 ENC	316	316	316	8	17	26	147	--	329	--
HARD FACED PLUG SEAT										
HARD FACED RING										
17-4 PH	316	STE #6	316	1	10	19	28	--	--	--
STEL #6	316	STE #6	316	35	42	49	145	--	--	--
316 ENC	316	STE #6	316	8	17	26	147	--	--	--
HARD FACED PLUG SEAT & GUIDE										
HARD FACED RING										
17-4 PH	316	STE #6	316	1	10	19	28	--	--	--
STEL #6	316	STE #6	316	35	42	46	145	--	--	--
316 ENC	316	STE #6	316	8	17	26	147	--	--	--

**ITEM C - CAGE (CONT)****ITEM D - VALVE PLUG, SEAT RING, GROOVE PIN (CONT)**

EWS - 6 X 4 2 1/2 - METAL SEAT

2 7/8 PORT - 1 1/2 TRAVEL

CAGE	VALVE	SEAT RING DISC RETR DISC SEAT	STEM	=%	LIN	QUICK OPEN	WHISP	CAV
MATERIAL				C	C	C	C	C
17-4 PH H900	416 SST	416 SST	316 SST	66	75	--	93	--
17-4 PH H900	416 SST	316 SST	316 SST	66	75	--	93	--
17-4 PH H900	316 SST	316 SST	316 SST	66	75	84	93	--
316 SST ENC	416 SST	416 SST	316 SST	73	82	--	148	--
316 SST ENC	MONEL	MONEL	R-MONEL	73	82	--	148	--
MONEL M-35W	MONEL	MONEL	R-MONEL	R	R	R	150	—
316 SST ENC	316 SST	316 SST	316 SST	73	82	--	148	--
HARD FACED PLUG SEAT								
HARD FACED RING								
17-4 PH H900	316 SST	STELL #6	316 SST	66	75	--	93	--
STELL #6	316 SST	STELL #6	316 SST	100	--	--	--	—
316 SST ENC	316 SST	STELL #6	316 SST	73	82	--	148	--
HARD FACED PLUG SEAT & GUIDE								
HARD FACED RING								
17-4 PH H900	316 SST	STELL #6	316 SST	66	75	--	93	--
17-4 PH H900	316 SST	STELL #6	316 SST	66	75	--	93	--
STELL #6	316 SST	STELL #6	316 SST	100	--	--	--	R
STELL #6	316 SST	STELL #6	316 SST	100	--	--	--	R
316 SST ENC	316 SST	STELL #6	316 SST	73	82	--	148	--
316 SST CR PL	316 SST	STELL #6	316 SST	--	--	--	—	R



ITEM C - CAGE (CONT.)

ITEM D - VALVE PLUG, SEAT RING, GROOVE PIN (CONT.)

EWS - 6 X 4 2 1/2 - METAL SEAT, 2 7/8 PORT - 1 1/2 TRAVEL

	VALVE	SEAT RING DISC RETAIN DISC SEAT	STEM	VSC 1L5000	VSC 1L7500	TEMP LIMIT DUE TO PLUG CAGE DIAMETRICAL EXPANSION WHERE APPLICABLE
MATERIAL				D	D	
17-4 PH H900	416 SST	416 SST	316 SST	288	305	
316 SST ENC	416 SST	416 SST	316 SST	288	305	
HARD FACED PLUG SEAT/GUIDE HARD FACED RING						
17-4 PH H900	316 SST	STELL #6	316 SST	--	438	TO 410°F
17-4 PH H1100	316 SST	STELL #6	316 SST	--	438	TO 410°F
17-4 PH H1150	316 SST	STELL #6	316 SST	--	438	TO 410°F
STELL #6	316 SST	STELL #6	316 SST	--	438	TO 800°F
316 SST ENC	316 SST	STELL #6	316 SST	--	438	
316 SST CR PL	316 SST	STELL #6	316 SST	--	438	

EWS - 6 X 4 2 1/2 - COMPOSITION SEAT, 2 2/8 PORT - 1 1/2 TRAVEL

CAGE	VALVE	SEAT RING DISC RETAIN DISC SEAT	STEM	=%		Q OPEN	WHISP	CAV	VSC	
				C	C				1L5000	1L7500
17-4 PH H900	416 SST	416 SST	316 SST	66	75	--	93	--	—	—
17-4 PH H900	416 SST	316 SST	316 SST	66	75	--	93	--	--	--
17-4 PH H900	316 SST	316 SST	316 SST	66	75	--	93	--	--	--
316 SST ENC	416 SST	416 SST	316 SST	73	82	--	148	--	—	—
316 SST ENC	MONEL	MONEL	R-MONEL	73	82	--	148	--	—	—
MONEL M-35W	MONEL	MONEL	R-MONEL	R	R	R	150	—	—	—
316 SST ENC	316 SST	316 SST	316 SST	73	82	--	148	--	--	--
HARD FACED PLUG SEAT HARD FACED RING										
17-4PH H900	316 SST	STELL #6	316 SST	66	75	--	93	--	—	—
STELL #6	316 SST	STELL #6	316 SST	100	--	--	--	—	—	—
316 SST ENC	316 SST	STELL #6	316 SST	73	82	--	148	--	—	—
HARD FACED PLUG SEAT & GUIDE HARD FACED RING										
17-4 PH H900	316 SST	STELL #6	316 SST	66	75	--	93	--	—	—
STELL #6	316 SST	STELL #6	316 SST	100	--	--	--	R	—	—
316 SST ENC	316 SST	STELL #6	316 SST	73	82	--	148	--	—	—

**ITEM E - DISC**

	TEMP ° F
TFE	-100+400
NYLON	-50+200

USE WITH COMPOSITION SEAT ONLY

	PTFE
TEMP ° F	-100 TO 400
	E
6 X 4	1

ITEM F - PISTON RING OR SEAL RING

DESIGN EWD

	PISTON RING MATL	TEMP ° F
	CARBON FILLED PTFE	-100 +450
STEAM OR NON OXIDIZING SERVICE	GRAPHITE FMS 17F19	-425+600
	GRAPHITE FMS 17F27	-425+900
	GRAPHITE FMS 17F39	-425+1100
AIR OR OXIDIZING SERVICE	GRAPHITE FMS 17F27	-425+800
	GRAPHITE FMS 17F39	-425+1000

DESIGN EWT

SEAL RING	BACK-UP RING	TEMP ° F
PTFE	VITON FMS 17G34	0+400
CARBON/PTFE	VITON FMS 17G34	0+400
	NITRILE FMS 17G14	-20+200
	ETHYL PROPYL FMS 17G39	-40+450

SPRING LOADED SEAL RING

ANTI-EXTRUSION RING	SEAL RING	SERVICE	TEMP ° F
W/O	N10276/PTFE GLASS/MOS2	ALL	-100+450
PEEK	R30003/PTFEPPVE	OXIDIZING	-100+500
		NON-OXIDIZING	-100+600

**ITEM F - PISTON RING OR SEAL RING**

DESIGN EWD

	PISTON RING MATL	TEMP GUIDE ° F	FULL CAPACITY		RESTD
				CLASS IV	
			F	F	F
	CARBON FILLED PTFE	-100+450	1	M	3
STEAM OR NON OXIDIZING FLUIDS	GRAPHITE FMS 17F19	+450 TO 600	2	M	4
	GRAPHITE FMS 17F27	+601 TO 900	9	21	—
	GRAPHITE FMS 17F39	+901 TO 1100	19	22	20
AIR OR OXIDIZING FLUIDS	GRAPHITE FMS 17F27	+450 TO 800	9	21	—
	GRAPHITE FMS 17F39	+801 TO 1000	19	22	20

DESIGN EWT

SEAL RING	BACK UP RING	TEMP ° F	SERVICE	FULL 6 X 4	RESTD 6 X 4 X 2 1/2
				F	F
CARBON/PTFE FMS 17F18	VITON FMS17G34	0+400	NACE NOT WATER >180 DEG F NOT STEAM	5	7
	ETHYLPROP FMS17G39	-40+450	NOT HYDROCARBON (OIL)	25	26

SPRING LOADED SEAL RING CONSTRUCTION

ANTI-EXTRUSION RING	W/O	PEEK	
SEAL RING ° F	N10276/PTFE GLASS/MOS2 -100+450	R30003/PTFEPPVE	
		OXIDIZING SERV -100+500	NON-OXIDIZING SERV -100+600
	F	F	F
FULL CAP 6X4	16	27	27
RESTD 6 X 4 X 2 1/2	18	28	28

**ITEM G - GASKET**

METAL & COMPOSITION SEAT

SPIRAL WOUND	FLAT SHEET	TEMP ° F
MATL		COL 1
316L & COMP	GRAPH/SST	-100+450
MONEL & COMP	GRAPH/SST	-100+450
INCONEL & GRAPH	GRAPH/SST	-325+1100

FULL CAPACITY - 6 X 4 - 4 3/8 PORT, METAL & COMPOSITION SEAT

SPIRAL WOUND	FLAT SHEET		
MATL		TEMP ° F	G
INCONEL & GRAPH	GRAPH/SST	-325+1100	57

RESTRICTED - 6 X 4 X 2 1/2-2 7/8 PORT, METAL & COMPOSITION SEAT

SPIRAL WOUND	FLAT SHEET		
MATL		TEMP ° F	G
INCONEL & GRAPH	GRAPH/SST	-325+1100	58

ITEM H - BOLTING

BOLTING	NUT	TEMP ° F
MATL		COL 1
SA-193-B7	SA-194-2H	-50+800
SA-193-B16	SA-194-7	-20+1100
SA-193-B8M	SA-194-8M	-325+800
SA-193-B8M	SA-194-8M	-325+1000
SA-320-B8	SA-194-8	-425+100
SA-193-B7	SA-194-7	-50+1000
SA-193-B7M	SA-194-2HM	-50+800

BOLTING	C.W.P. PSI/100° F	HYDRO PSI/MIN
MATL	COL 3	COL 4
SA-193-B8M	1125	1700/3
SA-320-B8	1125	1700/3
SA-193-B8M	1465	2200/3
SA-193-B7M	1250	1875/3



ITEM H - BONNET BOLTING (CONT)

(UNDERLINED BOLT GRADE SYMBOL INDICATES STRAIN HARD MATL)

BODY	° F	BOLT MATL	NUT MATL	STD BNT	EXT BNT	BELLOWS SEAL
				H	H	H
WCB	-20 TO 450	SA-193-B7	SA-194-2H	1	1	4
	450 TO 800	SA-193-B7	SA-194-2H LUB	15	15	21
LCB	-50 TO 450	SA-193-B7	SA-194-2H	1	1	4
	450 TO 650	SA-193-B7	SA-194-2H LUB	15	15	21
WC1	-20 TO 450	SA-193-B7	SA-194-2H	1	1	4
	450 TO 800	SA-193-B7	SA-194-2H LUB	15	15	21
	801 TO 850	SA-193-B7	SA-194-7 LUB	19	19	25
WC6	-20 TO 450	SA-193-B7	SA-194-2H	1	1	4
	450 TO 800	SA-193-B7	SA-194-2H LUB	15	15	21
	801 TO 1000	SA-193-B7	SA-194-7 LUB	19	19	25
WC9	-20 TO 450	SA-193-B7	SA-194-2H	1	1	4
	450 TO 800	SA-193-B7	SA-194-2H LUB	15	15	21
	801 TO 1000	SA-193-B7	SA-194-7 LUB	19	19	25
	1001 TO 1050	SA-193-B16	SA-194-7 LUB	16	16	22
C5	-20 TO 450	SA-193-B7	SA-194-2H	1	1	4
	450 TO 800	SA-193-B7	SA-194-2H LUB	15	15	21
	801 TO 1000	SA-193-B7	SA-194-7 LUB	19	19	25
	1001 TO 1100	SA-193-B16	SA-194-7 LUB	16	16	22
HAST C	-50 TO 450	SA-193-B7	SA-194-2H	1	1	4
	450 TO 800	SA-193-B7	SA-194-2H LUB	15	15	21
316 & 347	-425 TO -325	SA-320-B8	SA-194-8	P	P	--
	-325 TO 450	SA-193-B <u>8M</u>	SA-194-8M	3	3	--
	450 TO 800	SA-193-B <u>8M</u>	SA-194-8M LUB	17	17	23
	450 TO 800	SA-193-B7	SA-194-2H LUB	15	15	21
	801 TO 1000	SA-193-B8M	SA-194-8M LUB	18	18	24
ALY 20	-325 TO 300	SA-193-B <u>8M</u>	SA-194-8M	3	3	--
	-50 TO 300	SA-193-B7 STD	SA-194-2H	1	1	4
LC3	-150 TO -50	SA-193-B <u>8M</u>	SA-194-8M	3	3	--
	-50 TO 450	SA-193-B7	SA-194-2H	1	1	4
	450 TO 650	SA-193-B7	SA-194-2H LUB	15	15	21
NACE						
WCB, WC9, C5	-20 TO 450	SA-193-B7M	SA-194-2HM	14	14	—
	450 TO 800	SA-193-B7M	SA-194-2HM LUB	20	20	—
LCB	-50 TO 450	SA-193-B7M	SA-194-2HM	14	14	—
	450 TO 650	SA-193-B7M	SA-194-2HM LUB	20	20	—
WC1	-20 TO 450	SA-193-B7M	SA-194-2HM	14	14	—
	450 TO 850	SA-193-B7M	SA-194-2HM LUB	20	20	—
316	-50 TO 450	SA-193-B7M	SA-194-2HM	14	14	—



ITEM J - VALVE STEM

ITEM 9E – DESCRIPTOR/NAMEPLATE DATA WHEN ITEM J NOT USED

SIZE	ACTR GROUP	VSC	DESIGN	STEM	BONNET STYLE	J	9E
6X4	1	1L5000 (EXCEPT 1/4 TVL)	ALL EXCEPT EWD CL IV	316	PLAIN	1	N
					EXT STYLE 1	8	N
					EXT STYLE 2	15	N
					BELLOW SEAL	22	N
				NIT 50	PLAIN	231	N
				EXT STYLE 1	230	N	
				304	EXT STYLE 1	11	N
			EWD CL IV	316	PLAIN	229	N
			EXT STYLE 1	8	N		
			ALL	MONEL	PLAIN	33	N
		1L7500	ALL EXCEPT EWD CL IV	316	PLAIN	57	N
					EXT STYLE 1	64	N
					EXT STYLE 2	71	N
					EXT STYLE 2	232	N
				NIT 50	EXT STYLE 1	233	N
				EXT STYLE 2	233	N	
			EWD CL IV	316	PLAIN	57	N
			EXT STYLE 1	64	N		
			ALL	MONEL	PLAIN	89	N
			INCONEL	PLAIN	91	N	
	100	1L1000	ALL EXCEPT EWD CL IV	316	PLAIN	197	N
	101	1L1000	ALL EXCEPT EWD CL IV	316	PLAIN	211	N
6X4X2 1/2	1	1L5000 (EXCEPT 1/4 TVL)	ALL EXCEPT EWD CL IV	316	PLAIN	113	N
					EXT STYLE 1	120	N
ALL	ALL	ALL	ALL	SST	ENVIRO-SEAL BELLOW SEAL	N	1
				HAST C	ENVIRO-SEAL BELLOW SEAL	N	2

**ITEM K - FLOW ARROW & DRIVE SCREW**

	K
	1

ITEM L - NAMEPLATE

	L
	1

ITEM 9B - PRODUCT DESCRIPTOR (TYPE/PLUG ACTION/FLOW DIRECTION)

TYPE	FLOW	PUSH DOWN TO CLOSE
		9B
EWD	UP	4
	DOWN	1
EWS	UP	5
	DOWN	3
EWT	UP	6
	DOWN	2

ITEM 9C - PRODUCT DESCRIPTOR (CLASS/HYDRO)

BODY MATERIAL	RATING	HYDRO PSI/MIN	9C
WCC/WCB, C5, WC9, 316, LCC/LCB	CL150	450/2	3
	CL300	1125/3	1
	CL600	2250/3	2
	PN10/16	350 PSI (24 BAR)/2	4
	PN25/40	875 PSI (60 BAR)/2	5
	PN63	1375 PSI (95 BAR)/3	6
	PN100	2175 PSI (150 BAR)/3	7

**ITEM 9D - PRODUCT DESCRIPTOR (STD LEAK TEST)**

6 X 4 BODY 4 3/8 PORT 2 TRAVEL

DESIGN	SEAT	SEAL OR PISTON RING	FLOW	CHARACTER	LEAK CLASS	VALUE	9D
EWD	METAL	PISTON RING	DOWN	EQ PCT	II(SCFH)	2960	1
					IV(SCFH)	58.2	2
				LINEAR	II(SCFH)	3526	4
					IV(SCFH)	70.5	5
				Q OPEN	II(SCFH)	3979	6
					IV(SCFH)	79.5	7
			UP	WHISPER	II(SCFH)	2610	9
EWT	METAL	STD SEAL RING & SPRING LOADED W/O ANTI-EXTRUSION RING	DOWN	EQ PCT	IV(SCFH)	59.2	3
				LINEAR	IV(SCFH)	70.5	30
				Q OPEN	IV(SCFH)	79.6	8
			UP	WHISPER	IV(SCFH)	52.2	31
		SPRING LOADED W/ PEEK ANTI-EXTRUSION	ALL	ALL	V WATER TEST (ML/MIN)	*	32
	COMP	STD SEAL RING & SPRING LOADED W/O ANTI-EXTRUSION RING	ALL	ALL	V AIR TEST (ML/MIN))	20.59	28
EWS	METAL	N/A	UP	EQ PCT	IV(SCFH)	58.4	12
				LINEAR	IV(SCFH)	70.5	33
				Q OPEN	IV(SCFH)	87.3	13
				WHISPER	IV(SCFH)	22.4	11
	COMP	N/A	UP	ALL	VI (BUBBLE/MIN)	14	14

* CLASS V WATER MUST BE CALCULATED

**ITEM 9D - PRODUCT DESCRIPTOR (STD LEAK TEST) (CONT.)**

6 X 4 X 2 1/2 BODY 2 7/8 PORT 1 1/2 TRAVEL

DESIGN	SEAT	SEAL OR PISTON RING	FLOW	CHARACTER	LEAK CLASS	VALUE	9D
EWD	METAL	PISTON RING	DOWN	EQ PCT	II(SCFH)	1324	15
				LINEAR	II(SCFH)	1725	16
				Q OPEN	II(SCFH)	1813	17
			UP	WHISPER	II(SCFH)	1392	18
EWT	METAL	STD SEAL RING & SPRING LOADED W/O ANTI-EXTRUSION RING	DOWN	EQ PCT	IV(SCFH)	26.4	19
				LINEAR	IV(SCFH)	34.5	20
				Q OPEN	IV(SCFH)	36.2	21
			UP	WHISPER	IV(SCFH)	27.8	25
		SPRING LOADED W/ PEEK ANTI-EXTRUSION	ALL	ALL	V WATER TEST (ML/MIN)	*	32
	COMP	STD SEAL RING & SPRING LOADED W/O ANTI-EXTRUSION RING	ALL	ALL	V AIR TEST (ML/MIN))	13.54	35
EWS	METAL	N/A	UP	EQ PCT	IV(SCFH)	26.1	23
				LINEAR	IV(SCFH)	34.5	34
				Q OPEN	IV(SCFH)	39.7	26
				WHISPER	IV(SCFH)	10.8	24
	COMP	N/A	UP	ALL	VI (BUBBLE/MIN)	6	22

* CLASS V WATER MUST BE CALCULATED

EWT	SPRING LOADED SEAL RING W/ANTI-EXTRUSION RING ASSY DWG	21B2120
EWT	6X4 ASSEMBLY DWG	43A8592
EWT	6X4X2 1/2 ASSEMBLY DWG	44A7931
EWD	6X4 ASSEMBLY DWG	41A9275
EWD	6X4X2 1/2 ASSEMBLY DWG	30A9547
EWD	CLASS IV 6X4 ASSEMBLY DWG	47A7189
EWS	6X4 ASSEMBLY DWG	31A9274
EWS	6X4X2 1/2 ASSEMBLY DWG	30A9548
	GASKET ASSY DWG	16A1943



Revision Change Record

The date recorded on this document reflects the effective date of this revision.

ECRN: 20171399

Add a new 9E Item for “DESCRIPTOR/NAMEPLATE DATA WHEN ITEM J NOT USED”.

Matrix Section:

Item	Module	Changes
J	All	Reformat Item J matrix table.
9E	1	New Descriptor for SST stem paired to Enviro-Seal Bellow Seal Bonnet.
9E	2	New Descriptor for HAST C stem paired to Enviro-Seal Bellow Seal Bonnet.