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EWX17 – A B C D E F G H J K L M 9A 9B 9D 9E  
 C-Seal Trim Selection String = EWX17-A B F G K L M 9B 9D & CSEALX1-A B C D E 9A 9B

Item	Parts Contained in Item	Find Number
A	Valve Body	1
B	Cage Spacer	52
C	Cage	3
D	Plug	2
	Pin, Groove	8
	Seat Ring	9
	Disc Retainer	21
	Disc Seat	22
	Ring, Retaining, EXT	27
	Ring, Back-up	29
E	Disc	23
F	Stud Bolt, CONT THD/S	15
	Nut, Hex, Heavy	16
G	Gasket	10
	Gasket	13
	Arrow, Flow Direction	18
	Screw, Drive	19
H	Ring, Piston	6
	Seal Ring	28
	Rings, Anti-Extrusion	63
J	Stem, Plug	7
K	Ring, Load	26
L	Lub Anti-seize/LUB-3	51
M	Screw, Drive	19
	Nameplate, SS Body	54
	Seal and Wire, Lead	55
9A	Type/Plug Action/Flow Direction	
9B	Travel	
9D	Class/Hydro	
9E	Seat Leak Test Per FGS 4L5	

**ITEM A – VALVE BODY**

BODY	TEMPERATURE °F	CLASS	C.W.P.(PSI/100 °F)
WCC/WCB	-20+800	300 600	740 1480
C5	-20+1100	300 600	750 1500
CF8M	-325+1000	300 600	720 1440
WC9	-20+1050	300 600	750 1500

BODY	BWE		RF			RTJ	
	SCH 40	SCH 80	CL150	CL300	CL600	CL300	CL600
	A	A	A	A	A	A	A
WCC/WCB	1	5	41	9	13	17	21
C5	2	6	—	10	14	18	22
WC9	3	7	43	11	15	19	23
CF8M	4	8	42	12	16	20	24

## FOREIGN MANUFACTURED EN1092-1 FLANGES, DN 300 X 200 (12X8)

MATL	TEMP ° F	RATING	C.W.P. (PSI/100° F)
WCC/WCB	-20+800	PN10 PN16 PN25 PN40 PN63 PN100	145 232 363 580 914 1450
LCC/LCB	-50+650	PN10 PN16 PN25 PN40 PN63 PN100	145 232 363 580 914 1450
C5	-20+1100	PN25 PN40 PN63 PN100	363 580 914 1450
CF8M	-325+1000	PN10 PN16 PN25 PN40 PN63 PN100	145 232 363 580 914 1450
WC9	-20+1100	PN25 PN40 PN63 PN100	363 580 914 1450

**ITEM A – VALVE BODY(CONTINUED)**

## EN TYPE B (RF)

	PN 10	PN 16	PN 25	PN 40	PN 63	PN 100
BODY	A	A	A	A	A	A
WCC/WCB	44	47	25	29	33	37
C5	-	-	26	30	34	38
WC9	-	-	27	31	35	39
CF8M	45	48	28	32	36	40
LCC/LCB	46	49	50	51	52	53

## EN TYPE F (RECESS)

	PN 10	PN 16	PN 25	PN 40	PN 63	PN 100
BODY	A	A	A	A	A	A
WCC/WCB	54	57	60	63	66	69
CF8M	55	58	61	64	67	70
LCC/LCB	56	59	62	65	68	71

**ITEM B – CAGE SPACER**

BODY	EQ PERCENT	LINEAR	Q-OPEN	WHISPER I	
				3 TVL	4 TVL
	B	B	B	B	B
WCB	1	1	1	1	5
C5	2	2	2	2	6
WC9	3	3	3	3	7
CF8M	4	4	4	4	8

**ITEM C – CAGE****ITEM D – VALVE PLUG/SEAT RING/GROOVE PIN**

Quick Opening, Linear, Equal Percent Trim

CAGE	VALVE PLUG		RING	TEMPERATURE °F	TRIM/BODY TEMP LIMIT	
					BODY	TEMPERATURE °F
17-4 PH	17-4 PH		410 SST	-20+800		
	416 SST		410 SST	-20+800	CF8M	-20+350
			316 SST	-20+800	CF8M	-20+360
	316 SST		316 SST	-150+410	CF8M	-150+360
	316 SST/HF SEAT		COCR-A	-150+300		
	316 SST/HF S/G	STD	COCR-A	-150+410	CF8M	-150+360
		HI-TEMP	COCR-A	+410+800	CF8M	(M)
316 SST	316 SST		316 SST	-425+300		
316 SST ENC	416 SST		410 SST	-20+410		
	316 SST		316 SST	-425+600	C5	-20+450
	316 SST/HF SEAT		COCR-A	-425+300		
	316 SST/HF S/G		COCR-A	-425+650	C5	-20+460
COCR-A	316 SST/HF SEAT		COCR-A	-425+300		
	316 SST/HF S/G	STD	COCR-A	-425+800	CF8M	-325+770
		HI-TEMP	COCR-A	+800+1100	C5	+800+1000

WHISPER I Trim

CAGE	VALVE PLUG		RING	TEMPERATURE °F	TRIM/BODY TEMP LIMIT	
					BODY	TEMPERATURE °F
17-4 PH	17-4 PH		410 SST	-20+800		
	416 SST		410 SST	-20+800	CF8M	-20+350
			316 SST	-20+800	CF8M	-20+360
	316 SST/HF SEAT		COCR-A	-150+300		
	316 SST/HF S/G	STD	COCR-A	-150+410	CF8M	-150+360
		HI-TEMP	COCR-A	+410+800	CF8M	(M)
316 SST	316 SST		316 SST	-425+300		
316 SST ENC	416 SST		410 SST	-20+410		
	316 SST		316 SST	-425+300	C5	-20+450
	316 SST/HF SEAT		COCR-A	-425+300		
	316 SST/HF S/G		COCR-A	-425+650	C5	-20+460
COCR-A	316 SST/HF SEAT		COCR-A	-425+300		
	316 SST/HF S/G	STD	COCR-A	-425+600		
		HI-TEMP	COCR-A	+600+1100		
R31233	316 SST/HF S/G	STD	COCR-A	-425+600		
		HI-TEMP	COCR-A	+600+1100		



## ITEM C – CAGE (CONTINUED)

		MAXIMUM ΔP (PSI), MUST =<CWP, NO SEAT CONSIDERED									
		SHUT OFF									FLOWING
		DESIGN	EWS						OTHER		ALL
		SEAT	METAL			COMP			METAL	COMP	ALL
VALVE PLUG	RING	STEM	3/4	1	1 1/4	3/4	1	1 1/4	ALL	ALL	ALL
416 SST	410 SST		228	327	418	228	327	418	1500	1500	1500
	316 SST		228	300	300	228	327	418	300	1500	1500
316 SST	316 SST		228	300	300	228	327	418	300	1500	1500
316 SST/HF SEAT	COCR-A		228	327	418	228	327	418	1500	1500	1500
316 SST/HF S/G	COCR-A		228	327	418	228	327	418	1500	1500	1500

CHARACTERISTIC	TRAVEL	CAGE	C
EQ PERCENT	2 & 3	17-4 PH H900	1
		316 SST	2
		316 SST ENC	4
		COCR-A	3
LINEAR	2 & 3	17-4 PH H900	6
		316 SST	7
		316 SST ENC	9
		COCR-A	8
Q-OPEN	2 & 3	17-4 PH H900	11
		316 SST	12
		316 SST ENC	14
		COCR-A	13
WHISPER I	3	17-4 PH H1075	16
		17-4 PH ENC*	17
		R31233*	20
	4	17-4 PH H1075	18
		17-4 PH ENC*	19
		R31233*	21

\* ACCEPTABLE FOR NACE SERVICE



## ITEM D – VALVE PLUG/SEAT RING/GROOVE PIN (CONTINUED)

DESIGN EWD, 8 PORT

CHARACTERISTIC	SEAT	SHUT OFF	VSC	PLUG		SEAT RING	D
WHISPER I	METAL	CL III	1L7500	17-4PH H900		410 SST	83
				316SST/HF S/G*	STD HI-TEMP	COCR-A COCR-A	93 —
EQ PERCENT, LINEAR, Q-OPEN	METAL	CL IV	1L7500	416 SST		410 SST	55
				316 SST		316 SST	56
				316 SST/HF SEAT		COCR-A	57
				316 SST/HF S/G	STD HI-TEMP	COCR-A COCR-A	58 59
			1L1000	416 SST		410 SST	60
				316 SST		316 SST	61
				316 SST/HF SEAT		COCR-A	62
				316 SST/HF S/G	STD HI-TEMP	COCR-A COCR-A	63 64
		OTHER	1L7500	416 SST		410 SST	1
				316 SST		316 SST	2
				316 SST/HF SEAT		COCR-A	3
				316 SST/HF S/G	STD HI-TEMP	COCR-A COCR-A	4 5
			1L1000	416 SST		410 SST	6
				316 SST		316 SST	7
				316 SST/HF SEAT		COCR-A	8
				316 SST/HF S/G	STD HI-TEMP	COCR-A COCR-A	9 10
			1L1250	416 SST		410 SST	11
				316 SST		316 SST	12
				316 SST/HF SEAT		COCR-A	13
				316 SST/HF S/G	STD HI-TEMP	COCR-A COCR-A	14 15

\* ACCEPTABLE FOR NACE SERVICE

**ITEM D – VALVE PLUG/SEAT RING/GROOVE PIN (CONTINUED)**

DESIGN EWS, 8 PORT

EQUAL PERCENT, LINEAR &amp; QUICK OPEN

SEAT	VSC	PLUG	SEAT RING	D
METAL	1L7500	416 SST	410 SST	28
		316 SST	316 SST	29
		316 SST/HF SEAT	COCR-A	30
		316 SST/HF S/G	COCR-A	31
	1L1000	STD HI-TEMP	COCR-A	32
		416 SST	410 SST	33
		316 SST	316 SST	34
		316 SST/HF SEAT	COCR-A	35
	1L1250	316 SST/HF S/G	COCR-A	36
		STD HI-TEMP	COCR-A	37
		416 SST	410 SST	38
		316 SST	316 SST	39
COMP	1L7500	316 SST/HF SEAT	COCR-A	40
		316 SST/HF S/G	COCR-A	41
		STD HI-TEMP	COCR-A	42
		416 SST	316 SST	46
	1L1000	316 SST	316 SST	43
		316 SST/HF SEAT	COCR-A	44
		316 SST/HF S/G	COCR-A	45
		416 SST	316 SST	50
	1L1250	316 SST	316 SST	47
		316 SST/HF SEAT	COCR-A	48
		316 SST/HF S/G	COCR-A	49
		416 SST	316 SST	54
		316 SST	316 SST	51
		316 SST/HF SEAT	COCR-A	52
		316 SST/HF S/G	COCR-A	53

**ITEM D – VALVE PLUG/SEAT RING/GROOVE PIN (CONTINUED)**

DESIGN EWT, 8 PORT

SPRING LOADED SEAL RING WITHOUT ANTI-EXTRUSION RING

CHARACTERISTIC	SEAT	VSC	PLUG	SEAT RING	D
WHISPER I (3 & 4 TRAVEL)	METAL	1L7500	17-4 PH H900	410 SST	83
			316 SST/HF S/G*	COCR-A	93
	COMP	1L7500	17-4PH H900	316 SST	79
EQ PERCENT, LINEAR, Q-OPEN	METAL	1L7500	416 SST	410 SST	1
			316 SST	316 SST	2
			316 SST/HF SEAT	COCR-A	3
			316 SST/HF S/G	COCR-A	4
		1L1000	416 SST	410 SST	6
			316 SST	316 SST	7
			316 SST/HF SEAT	COCR-A	8
			316 SST/HF S/G	COCR-A	9
		1L1250	416 SST	410 SST	11
			316 SST	316 SST	12
			316 SST/HF SEAT	COCR-A	13
			316 SST/HF S/G	COCR-A	14
	COMP	1L7500	416 SST	316 SST	19
			316 SST	316 SST	16
			316 SST/HF SEAT	COCR-A	17
			316 SST/HF S/G	COCR-A	18
		1L1000	416 SST	316 SST	23
			316 SST	316 SST	20
			316 SST/HF SEAT	COCR-A	21
			316 SST/HF S/G	COCR-A	22
		1L1250	416 SST	316 SST	27
			316 SST	316 SST	24
			316 SST/HF SEAT	COCR-A	25
			316 SST/HF S/G	COCR-A	26

SPRING LOADED SEAL RING W/ANTI-EXTRUSION RING

EQ PERCENT, LINEAR, Q-OPEN CHARACTERISTIC

SEAT	VSC	CAGE	PLUG		SEAT RING	D
METAL	1L7500	17-4 PH H900	416 SST		410 SST	80
			316 SST/HF S/G	STD	COCR-A	87
				HI-TEMP	COCR-A	84
		316 SST ENC	316 SST/HF S/G		COCR-A	90
	1L1000	17-4 PH H900	416 SST		410 SST	81
			316 SST/HF S/G	STD	COCR-A	88
				HI-TEMP	COCR-A	85
		316 SST ENC	316 SST/HF S/G		COCR-A	91
	1L1250	17-4PH H900	416 SST		410 SST	82
			316 SST/HF S/G	STD	COCR-A	89
				HI-TEMP	COCR-A	86
		316 SST ENC	316 SST/HF S/G		COCR-A	92

\* ACCEPTABLE FOR NACE SERVICE



**ITEM E – DISC**

SEAT	DISC	TEMPERATURE °F	E
COMPOSITION	PTFE FMS 17F3	-100+400	1
	NYLON FMS 17F6	-50+200	2
METAL	N/A	N/A	N

**ITEM F – BOLTING**

BOLT	NUT	TEMPERATURE °F	CWP (PSI)	USE WITH BODY	BODY/BOLT LIMIT	F
B7	2H	-20+800	BODY	WCB, C5, WC9 & CF8M	CF8M -50+450	1
	GRADE 7	-50+1000	BODY	C5 & WC9		3
B16	GRADE 7	-20+1100	BODY	C5 & WC9		2
B8M CLASS 2	8M	-325+800	1390	CF8M		5
SA453-660	GRADE 7	-20+1000	BODY	CF8M		4

**ITEM G – GASKETS**

BONNET & SEAT RING GASKETS	TEMPERATURE °F	G
GRAPHITE/SST	-325+1100	2
MONEL/PTFE	-100+300	4

**ITEM H – PISTON RING OR SEAL RING**

DESIGN	SPRING LOADED SEAL OR PISTON RING	SERVICE TEMPERATURE °F		H	CLASS IV
		STEAM OR NON-OXIDIZING	AIR OR OXIDIZING		H
EWD	GRAPH FMS 17F19	-425+600	-	5	M
	GRAPH FMS 17F27	-425+900	-425+800	6	9
	GRAPH FMS 17F39	-425+1100	-425+1000	8	10
EWS	N/A	-	-	N	N
EWT	N10276/PTFE GLASS/MOS 2 WITHOUT ANTI-EXTRUSION RING	-100+450	-100+450	4	-
	R30003/PTFEPPVE WITH PEEK ANTI-EXTRUSION RING	-100+600	-100+500	12	-

**ITEM J – VALVE STEM**

STEM	ACTUATOR GROUP/AU2259	TRAVEL	BONNET STYLE	VSC	J
316 SST	1	2 & 3	PLAIN	1L7500	1
			EXTENSION STYLE 1	1L7500	2
	100	2	EXTENSION STYLE 1	1L1000	3
				1L1250	4
		3	EXTENSION STYLE 1	1L1000	5
	101	2 & 3	EXTENSION STYLE 1	1L1250	6
				1L1000	7
				1L1250	8
	401	4	PLAIN	1L7500	9

**ITEM K – LOAD RING**

LOAD RING	TEMPERATURE °F	K
17-4PH	-150+600	1
INCONEL 718	-425+1100	2
K-MONEL (CORROSIVE/NACE SERVICE)	-400+500	3

**ITEM L – LUBRICANT**

LUBRICANT	L
NEVER-SEEZ NICKEL SPECIAL	1

**ITEM M – NAMEPLATE**

M
1

**ITEM 9A – TYPE/PLUG ACTION/FLOW DIRECTION**

ACTION	DESIGN	FLOW	9A
PDTC	EWD	UP	1
		DOWN	4
	EWS	UP	2
		DOWN	5
	EWT	UP	3
		DOWN	6

**ITEM 9B – TRAVEL**

TRAVEL	9B
2	1
3	2
4	3

**ITEM 9D – CLASS/HYDRO**

BODY	RATING	BOLTING	HYDRO PSI/MIN	9D
WCC/WCB, WC9, C5, 316	CL150	ALL	450/5	3
	CL300	ALL	1125/5	1
	CL600	B8M CLASS 2	2100/5	-
		OTHER	2250/5	2
WCC/WCB, CF8M, LCC/LCB	PN 10	ALL	225 (15 BAR)/ 3 MIN	4
	PN 16	ALL	350 (24 BAR)/ 3 MIN	5
WCC/WCB, C5, WC9, CF8M & LCC/LCB	PN 25	ALL	550 (38 BAR)/ 3 MIN	6
	PN 40	ALL	875 (60 BAR)/ 3 MIN	7
	PN 63	ALL	1375 (95 BAR)/ 5 MIN	8
	PN 100	B8M CLASS 2	2100 (145 BAR)/ 5 MIN	-
		OTHER	2175 (150 BAR)/ 5 MIN	9

**ITEM 9E – SEAT LEAK TEST PER FGS 4L5**

DESIGN	SEAT	SEAL OR PISTON RING	FLOW	CHARACTER	LEAK CLASS	VALUE	9E
EWD	METAL	PISTON RING	DOWN	EQ PCT	II (SCFH)	11,484	1
					IV (SCFH)	229.6	4
				LINEAR	II (SCFH)	12,519	2
			UP		IV (SCFH)	250.3	5
				Q OPEN	II (SCFH)	13,004	3
					IV (SCFH)	260	6
EWT	METAL	STANDARD SEAL RING & SPRING LOADED WITHOUT ANTI-EXTRUSION RING	DOWN	WHISPER I	II (SCFH)	10,320	16
					IV (SCFH)	206	17
				EQ PCT	IV (SCFH)	229	7
			UP	LINEAR	IV (SCFH)	250	8
				Q OPEN	IV (SCFH)	260	9
				WHISPER I	IV (SCFH)	206	18
	COMP	STANDARD SEAL RING & SPRING LOADED WITHOUT ANTI-EXTRUSION RING	ALL	EQ PCT	V WATER TEST (ML/MIN)	*	15
				LINEAR	V WATER TEST (ML/MIN)	*	15
				UP	V WATER TEST (ML/MIN)	*	15
			ALL	ALL	V AIR TEST (ML/MIN)	37.60	14
EWS	METAL	N/A	UP	EQ PCT	IV (SCFH)	230	10
				LINEAR	IV (SCFH)	248	11
				Q OPEN	IV (SCFH)	262	12
	COMP	N/A	UP	ALL	VI (BUBBLE/MIN)	45	13

\* CLASS V WATER SEAT LEAK MUST BE CALCULATED

DESIGN	DRAWING
EWT SPRING LOADED SEAL RING W/ANTI-EXTRUSION RING ASSEMBLY DWG	21B2120
ED CLASS IV ASSEMBLY DWG	47A7191
ED FULL CAPACITY ASSEMBLY DWG	55A8286
ES FULL CAPACITY ASSEMBLY DWG	55A8290
ET FULL CAPACITY ASSEMBLY DWG	55A8288



### Revision Change Record

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

**ECRN:** 20180998

Page 4, For ITEM B – CAGE (CONTINUED) ITEM C – VALVE PLUG, SEAT RING, GROOVE PIN,  
Add note “Quick Opening, Linear, Equal Percent Trim” above Cage & Valve Plug, Seat Ring with body temperature &  
materials table, add new Materials “R31233” for column cage.  
Add new Cage & Valve Plug, Seat Ring with body temperature & materials table for WHISPER I Trim.

Page 5, For ITEM C – CAGE, ITEM D – VALVE PLUG/SEAT RING/GROOVE PIN,  
Add new trim parts, add new column heading “R31233” for “CAGE” column.

**Matrix Section:**

Item	Module	Changes
C	20-21	New - R31233 WHISPER I CAGE 8 PORT.