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ECX1-A B C D E F G H J 9A 9B 9D 9E 9F

Design ES w/Micro-Flat Cavitation Trim Selection String: ECX1- A E F J 9D & MICROX1- A B 9A 9B

Item	Parts contained in Item	Find Number
A	Valve Body	1
	Pipe Plug	17
B	Cage	3
C	Valve Plug	2
	Groove Pin	8
	Seat Ring	9
	Disc Retainer	21
	Disc Seat	22
	Disc	24
	Tip	25
	Ring, Retaining, Ext.	27
	Back Up Ring	29
D	Disc	23
E	Cap Screw or Stud Bolt	15
	Hex Nut	16
F	Bonnet Gasket	10
	Spiral Gasket	12
	Seat Ring Gasket or Seal Ring	13
	Flow Arrow	18
	Drive Screw	19
	Shim	51
G	Piston Ring	6
	Seal Ring, Valve Plug	28
	Rings, Anti-Extrusion	63
H	Stem	7
J	Drive Screw	19
	Nameplate	53
	Wire	54
	Nameplate Warning Tag	
9A	Design, Action & Flow Direction	
9B	Flow Characteristic	
9D	Class/Hydro	
9E	Seat Leak per FGS 4L5	
9F	Nameplate Data	

**ITEM A - VALVE BODY**

BODY	TEMP °F	RATING		CWP (PSI/100° F)
CI	-100+450	CLASS 125		200
		CLASS 250	NPT	400
			FLG	500
WCC	-20+800	CLASS 150		290
		CLASS 300		750
		CLASS 600		1500
WC1	-20+850	CLASS 150		265
		CLASS 300		695
		CLASS 600		1390
LCC	-50+650	CLASS 150		290
		CLASS 300		750
		CLASS 600		1500
WC6	-20+1000	CLASS 150		290
		CLASS 300		750
		CLASS 600		1500
WC9	-20+1100	CLASS 150		290
		CLASS 300		750
		CLASS 600		1500
C5	-20+1100	CLASS 150		290
		CLASS 300		750
		CLASS 600		1500
CF8M	-325+1000	CLASS 150		275
		CLASS 300		720
		CLASS 600		1440
CF3M	-325+1000	CLASS 150		275
		CLASS 300		720
		CLASS 600		1440
347SST	-325+1100	CLASS 150		275
		CLASS 300		720
		CLASS 600		1440
ALY 20	-325+800	CLASS 150		230
		CLASS 300		600
		CLASS 600		1200
HAST C	-325+1000	CLASS 150		290
		CLASS 300		750
		CLASS 600		1500

**ITEM A - VALVE BODY (CONT)**

BODY	TEMP °F	TEMP °C	RATING	CWP (PSI/100° F)	CWP (BAR/38°C)
CI	-100+450	-73+232	PN 10/16	232	16.0
			PN 25	363	25.0
WCC	-20+800	-29+425	PN 10/16/25/40	580	40.0
			PN 63/100	1450	100.0
WC1	-20+850	-29+454	PN 10/16/25/40	580	40.0
			PN 63/100	1450	100.0
LCC	-50+650	-46+343	PN 10/16/25/40	580	40.0
			PN 63/100	1450	100.0
WC6	-20+1000	-29+538	PN 10/16/25/40	580	40.0
			PN 63/100	1450	100.0
WC9	-20+1100	-29+593	PN 10/16/25/40	580	40.0
			PN 63/100	1450	100.0
C5	-20+1100	-29+593	PN 10/16/25/40	580	40.0
			PN 63/100	1450	100.0
CF8M	-325+1000	-198+538	PN 10/16/25/40	580	40.0
			PN 63/100	1450	100.0
CF3M	-325+1000	-198+538	PN 10/16/25/40	580	40.0
			PN 63/100	1450	100.0
CF8C	-325+1100	-198+593	PN 10/16/25/40	580	40.0
			PN 63/100	1450	100.0



ITEM A - VALVE BODY (CONT)

SIZE	DRAIN TAPPED	NPT		SWE		SCH40 BWE		SCH80 BWE	150 RF	300 RF	600 RF
		W/O	WITH	W/O	WITH	W/O	WITH	W/O	W/O	W/O	W/O
	MATL	A	A	A	A	A	A	A	A	A	A
1/2	CI	1	—	M	M	M	M	M	—	—	—
	WCC	2	39	11	48	—	—	—	446	447	448
	C5	—	—	14	—	—	—	—	—	—	—
	WC1	—	—	—	—	—	—	31	—	—	—
	WC6	—	—	—	—	—	61	33	—	—	—
	CF8M	7	—	16	—	—	—	—	449	450	451
	WC9	458	—	459	—	—	—	460	—	—	461
3/4	CI	75	112	M	M	M	M	M	—	—	—
	WCC	76	113	85	122	94	—	—	452	453	454
	C5	79	—	88	—	—	—	—	—	—	—
	CF8M	81	—	90	—	—	—	—	455	456	457
	WC9	462	—	463	—	464	—	—	—	465	466

SIZE	DRAIN TAPPED	NPT		SWE		SCH40 BWE		SCH80 BWE
		W/O	WITH	W/O	WITH	W/O	WITH	W/O
	MATL	A	A	A	A	A	A	A
1 IN	CI	149	233	M	M	M	M	M
	WCC	152	236	161	245	170	—	179
	LCC	487	—	489	—	491	—	493
	C5	155	—	164	248	—	—	—
	WC1	154	—	—	—	—	—	—
	WC6	—	—	165	—	—	—	—
	WC9	467	—	334	—	468	—	469
	CF8M	157	241	166	—	175	—	184
	CF3M	488	—	490	—	492	—	494
1 1/4	CI	351	—	—	—	—	—	—
	WCC	352	363	—	—	—	—	—

SIZE 1 INCH

DRAIN	125 FF		250 RF		150 FF	150 RF		150 RTJ	300 RF		600 RF		300-600 RTJ
	N/TAP	TAP	N/TAP	TAP	N/TAP	N/TAP	TAP	N/TAP	N/TAP	TAP	N/TAP	TAP	N/TAP
MATL	A	A	A	A	A	A	A	A	A	A	A	A	A
CI	150	234	151	235	—	—	—	—	—	—	—	—	—
WCC	—	—	—	—	420	188	272	215	197	281	206	290	224
C5	—	—	—	—	—	191	—	—	200	284	209	—	227
LCC	—	—	—	—	—	437	—	—	438	—	439	—	445
WC6	—	—	—	—	—	—	—	—	201	—	210	—	228
WC9	—	—	—	—	—	470	—	471	338	—	472	—	473
CF8M	—	—	—	—	421	193	277	220	202	286	211	295	229
CF3M	—	—	—	—	480	481	—	—	482	—	483	—	484
347	—	—	—	—	—	—	—	—	203	—	—	—	—
ALY 20	—	—	—	—	—	195	—	—	—	—	—	—	—



ITEM A - VALVE BODY (CONT)

DN25, EN1092-1
DRAIN NOT TAPPED

RATING	BODY	RF (Type B)	Spigot (Type E)	Recess (Type F)
		A	A	A
PN 10/16	CAST IRON	373	-	-
PN 25	CAST IRON	374	-	-
PN 10/16/25/40	WCC	375	-	474
	C5	378	-	-
	LCC	376	440	475
	WC1	377	-	-
	WC6	379	-	-
	CF8M	381	444	476
	CF3M	485	-	-
	CF8C	382	-	-
	ALLOY 20	383	-	-
	HAST C	384	-	-
	WC9	380	-	-
PN 63/100	WCC	385	-	477
	C5	388	-	-
	LCC	386	441	478
	WC1	387	-	-
	WC6	389	-	-
	CF8M	391	-	479
	CF3M	486	-	-
	CF8C	392	-	-
	ALLOY 20	393	-	-
	HAST C	394	-	-
	WC9	390	-	-



ITEM B - CAGE

DESIGN EC

M-FLUTE/M-FLOW

SEAT	CAGE	VALVE PLUG	RING	TEMP ° F	TRIM/BODY	TEMP LIMIT
					BODY	TEMP ° F
METAL	NICKEL	NICKEL	NICKEL	-325+300		
	ALY 20	ALY 20	ALY 20	-325+300		
	17-4PH	416SST	416SST	-20+600		
		316SST/HF TIP/SEAT	316SST COCR-A	-150+300 -150+800	CF8M/347SST	-150+700
	316SST ENC	416SST	416SST	-20+600		
		MONEL	MONEL	-400+400		
		316SST/HF TIP/SEAT	316SST COCR-A	-425+300 -425+650		
COMP	316L SST	316L SST/HF TIP/SEAT	316L SST	-425+300		
	COCR-A	316SST/HF TIP/SEAT	COCR-A	-425+1100	347SST	-425+1030
	17-4PH	316SST/HF TIP	PTFE DISC	-100+300		
			NYLON DISC	-50+200		

ALL EXCEPT M-FLUTE/M-FLOW

CAGE	VALVE PLUG	RING	TEMP ° F	TRIM/BODY	TEMP LIMIT
				BODY	TEMP ° F
17-4PH	416SST	416SST	-20+800	CF8M/347SST	-20+670
		316SST	-20+800	CF8M/347SST	-20+670
	316SST	316SST	-150+410		
	316SST/HF SEAT	COCR-A	-150+300		
316SST 316L SST 304L SST ALY 20 CI ENC HAST C MONEL	316SST/HF S/G	STD HI-TEMP	COCR-A	-150+410	
			COCR-A	+410+800	CF8M/347SST +410+700
	316SST	316SST	-425+300		
	316L SST	316L SST	-425+300		
	304L SST	304L SST	-425+300		
	ALY 20	ALY 20	-425+300		
	CI ENC	316SST	-20+500		
	HAST C	HAST C	-425+300		
	MONEL	MONEL	-425+300		
	316SST ENC	416SST	-20+410		
COCR-A	316SST	316SST	-425+600		
	MONEL	MONEL	-400+500		
	316SST/HF SEAT	COCR-A	-425+300		
	316SST/HF S/G	COCR-A	-425+650		
	316SST/HF SEAT	COCR-A	-425+300		
	316SST/HF S/G	STD HI-TEMP	COCR-A	-425+800	
		COCR-A	+800+1100	347SST	+800+1030

**ITEM B - CAGE (CONT)**

MAXIMUM ΔP (PSI), MUST \leq CWP, NO SEAT LOAD CONSIDERED
 DESIGN EC, M-FLUTE/M-FLOW

VALVE PLUG	RING	SHUT OFF	FLOWING
ALY 20	ALY 20	300	1500
MONEL	MONEL	300	1500
NICKEL	NICKEL	300	1500
416SST	416SST	1500	1500
316SST/HF TIP/SEAT	316SST	300	1500
	COCR-A	1500	1500
316L SST/HF TIP/SEAT	316L SST	300	1500
316SST/HF TIP	PTFE DISC	1500	1500
	NYLON DISC	1000	1500

DESIGN ED/ES/ET

		MAX DELTA P(PSI), MUST =<CWP, NO SEAT CONSIDERED					
		SHUT OFF				FLOWING	
		METAL	COMP			ALL	
		DESIGN	ALL	ES EXCEPT M-FORM		OTHER	ES M-FORM
VALVE PLUG	STEM	ALL	3/8	1/2	ALL	ALL	ALL
	RING						
	416SST	416SST	1500	1500	1500	1500	500
	316SST	300	1500	1500	300	500	1500
316SST	316SST	300	1500	1500	300	500	1500
316SST/HF SEAT	COCR-A	1500	1500	1500	1500	500	1500
316SST/HF S/G	COCR-A	1500	1500	1500	1500	500	1500
316L SST	316L SST	300	776	1386	300	500	1500
304L SST	304L SST	300	776	1386	300	500	1500
ALY 20	ALY 20	300	1386	1500	300	500	1500
HAST C	HAST C	300	1419	1500	300	500	1500
MONEL	MONEL	300	777	1386	300	500	1500

**ITEM B - CAGE (CONT)**

3/4 TRAVEL

CHARACTERISTIC	BODY SIZE	CAGE	B
EQ PERCENT	1-1 1/4	17-4PH H900	1
		316SST	2
		316SST ENC	20
		316L SST	3
		304L SST	18
		ALY 20	10
		COCR-A	12
		HAST C	9
LINEAR	1-1 1/4	17-4PH H900	23
		316SST	24
		316SST ENC	42
		COCR-A	34
Q-OPEN/M-FORM/M-FLOW/M-FLUTE	1/2-1 1/4	17-4PH H900	44
		316SST	45
		316SST ENC	63
		316L SST	46
		304L SST	61
		ALY 20	53
		COCR-A	55
WHISPER	1-1 1/4	17-4PH H900	66
		316SST ENC	78
		COCR-A	77
		MONEL	79

**ITEM C - VALVE PLUG/SEAT RING/GROOVE PIN**

DESIGN EC, 3/4 TRAVEL, 1L3750/1L5001 VSC
M-FLUTE

SEAT	VALVE PLUG	RING	DISC	PORT FLUTE STEM	1/4			3/8	1/2	3/4	1
					1	2	3	3	3	3	3
METAL	416SST	416SST		ALL	73	92	111	130	149	168	187
	ALY 20	ALY 20		ALL	—	103	122	141	—	—	—
	MONEL	MONEL		ALL	—	—	128	147	—	185	—
	316SST/HF TIP	316SST		ALL	547	549	551	552	554	556	557
		316/HF		ALL	75	94	113	132	151	170	189
	316L SST/HF TIP	316L SST		ALL	548	550	—	553	555	—	558
COMPOSITION	316SST	316SST	NYLON	3/8	—	—	—	—	—	559	—
			PTFE	3/8	—	—	560	561	562	563	564
				1/2	—	—	—	—	—	565	—

M-FLOW, 3/16 PORT, METAL SEAT

VALVE PLUG	CV	RING	C
316SST/HF TIP	0.075	316 SST	544
		316/HF	47
	0.181	316 SST	546
		316/HF	67
316L SST/HF TIP	0.075	316L SST	545

DESIGN ED, 1 5/16 PORT, 3/4 TRAVEL, METAL SEAT

VSC	VALVE PLUG		SEAT RING	C
1L3750	416SST		416SST	424
	316SST		316SST	425
	316L SST		316L SST	426
	304L SST		304L SST	428
	316SST/HF SEAT		COCR-A	510
	316SST/HF S/G	STD	COCR-A	452
		HI-TEMP	COCR-A	525
	HAST C		HAST C	434
1L5000	MONEL		MONEL	436
	416SST		416SST	438
	316SST		316SST	439
	316SST/HF SEAT		COCR-A	511
	316SST/HF S/G	STD	COCR-A	526
		HI-TEMP	COCR-A	527

**ITEM C - VALVE PLUG/SEAT RING/GROOVE PIN (CONT)**

DESIGN ES, 3/4 TRAVEL

FULL CAPACITY, METAL SEAT, 1L3750/15001 VSC, 1 5/16 PORT

SEAT	VSC	VALVE PLUG		SEAT RING	C
METAL	1L3750	416SST		416SST	264
		316SST		316SST	265
		316L SST		316L SST	267
		316SST/HF SEAT		COCR-A	266
		316SST/HF S/G	STD	COCR-A	483
			HI-TEMP	COCR-A	518
		HAST C		HAST C	276
		MONEL		MONEL	278
	1L5000	416SST		416SST	280
		316SST		316SST	281
		316SST/HF SEAT		COCR-A	282
		316SST/HF S/G	STD	COCR-A	283
			HI-TEMP	COCR-A	519
COMP	1L3750	416SST		316SST	505
		316SST		316SST	372
		316SST/HF SEAT		316SST	373
		316SST/HF S/G		316SST	541
	1L5000	416SST		316SST	506
		316SST/HF SEAT		316SST	382
		316SST/HF S/G		316SST	542

**ITEM C - VALVE PLUG/SEAT RING/GROOVE PIN (CONT)**

DESIGN ET, 1 5/16 PORT, 3/4 TRAVEL, 1L3750 VSC
WITHOUT SPRING LOADED SEAL RING

SEAT	VSC	VALVE PLUG	DISC SEAT/RETAINER OR SEAT RING	C
METAL	1L3750	416SST	416SST	424
		316SST	316SST	425
		316SST/HF SEAT	COCR-A	510
		316SST/HF S/G	COCR-A	452
		316L SST	316L SST	426
		304L SST	304L SST	428
		HAST C	HAST C	434
		MONEL	MONEL	436
	1L5000	416SST	416SST	438
		316SST	316SST	439
		316SST/HF SEAT	COCR-A	511
		316SST/HF S/G	COCR-A	526
COMP	1L3750	416SST	316SST	507
		316SST	316SST	470
		316SST/HF S/G	316SST	543
	1L5000	416SST	COCR-A/316SST	453
		316SST		508
		316SST	316SST	477

WITH SPRING LOADED SEAL RING

ANTI-EXTRUSION RING	SEAT	PLUG STYLE	VALVE PLUG	SEAT RING	CAGE	C
WITHOUT	METAL	RADIUS SEAT FOR CLASS V SHUT OFF	416SST	416SST	17-4PH	579
			316SST/HF S/G	COCR-A	17-4PH	576
					316SST ENC	577
		OTHER	416SST	416SST	17-4PH	512
			316SST	316SST	316SST	528
					316SST ENC	528
	COMP	ALL	316SST/HF S/G	COCR-A	17-4PH	530
					316SST ENC	513
					COCR-A	513
WITH	METAL	ALL	416SST	416SST	17-4PH	578
			316SST/HF S/G	STANDARD	COCR-A	316SST ENC
					COCR-A	17-4PH
				HI-TEMP	COCR-A	17-4PH
						573

ITEM D - DISC

SEAT	DISC	TEMP °F	D
METAL	N/A	-	N
COMPOSITION	PTFE	-100+400	1
	NYLON	-50+200	3

**ITEM E - BOLTING**

BOLTING/NUT	TEMP °F
SAE GR 5	-20+650
B7/2H	-50+800
B7/GR 7	-50+1000
B16/GR 7	-20+1100
B8M CL1/8M	-325+1000
B8M CL2/8M	-325+800
B8/GR 8	-425+100
B7M/2HM	-50+800

BODY	TEMP °F	BOLT/NUT	BONNET STYLE	
			PLAIN	EXT & ENVIRO SEAL BELLOW SEAL
			E	E
CI	-20+450	SAE GR5	1	M
	-50+450	B7/2H	-	2
WCC	-20+450	B7/2H	2	2
		B7M/2HM	15	-
	+450+800	B7/2H LUB	17	17
		B7M/2HM LUB	21	-
LCC	-20+450	B7/2H	2	2
		B7M/2HM	15	-
	+450+700	B7/2H LUB	17	17
		B7M/2HM LUB	21	-
WC1	-20+450	B7/2H	2	2
	+450+800	B7/2H LUB	17	17
	+800+850	B7/GR 7 LUB	16	16
WC6	-20+450	B7/2H	2	2
	+450+800	B7/2H LUB	17	17
	+800+1000	B7/GR 7 LUB	16	16
WC9	-20+450	B7/2H	2	2
	+450+800	B7/2H LUB	17	17
	+800+1000	B7/GR 7 LUB	16	16
	+1000+1050	B16/GR 7 LUB	18	18
C5	-20+450	B7/2H	2	2
	+450+800	B7/2H LUB	17	17
	+800+1000	B7/GR 7 LUB	16	16
	+1000+1100	B16/GR 7 LUB	18	18
CF8M & CF3M	-425-325	B8/GR 8	10	10
	-325+450	B8M CL2/8M	4	4
	-50+450	B7/2H	2	2
		B7M/2HM	15	-
	+450+800	B8M CL2/8M LUB	19	19
		B7/2H LUB	17	17
		B7M/2HM	15	-
	+800+1000	B8M CL1/8M LUB	20	20

**ITEM E - BOLTING (CONTINUED)**

BODY	TEMP °F	BOLT/NUT	BONNET STYLE	
			PLAIN	EXT & ENVIRO SEAL BELLOW SEAL
			E	E
CF8C	-425-325	B8/GR 8	10	10
	-325+450	B8M CL2/8M	4	2
	-50+450	B7/2H	2	2
	+450+800	B8M CL2/8M LUB	19	19
		B7/2H LUB	17	17
	+800+1000	B8M CL1/8M LUB	20	20
HAST C	-20+450	B7/2H	2	2
	+450+800	B8M CL1/8M LUB	19	19
ALY 20	-325+400	B8M CL2/8M	4	4
	-50+450	B7/2H	2	2
	450+800	B7/2H LUB	17	17

ITEM F - GASKET

SPIRAL WOUND GASKET	FLAT SHEET GASKETS	TEMP °F	F
MONEL & GRAPHITE	GRAPHITE/SST	-100+900	27
MONEL & PTFE	MONEL/PTFE	-100+300	24
INCONEL & GRAPHITE	GRAPHITE/SST	-325+1100	26

**ITEM G - PISTON RING OR SEAL RING**

DESIGN ED	PISTON RING MATL	TEMP GUIDE DEG F	G
	CARBON FILLED TFE	-100 TO 450	1
STEAM OR NON-OXIDIZING FLUIDS	GRAPHITE FMS 17F19	+450 TO 600	2
	GRAPHITE FMS 17F27	+601 TO 900	5
	GRAPHITE FMS 17F39	+901 TO 1100	10
AIR OR OXIDIZING	GRAPHITE FMS 17F27	+450 TO 800	5
	GRAPHITE FMS 17F39	+801 TO 1000	10
NACE MR-01-75	CARBON FILLED TFE	-100 TO 450	1
	GRAPHITE FMS 17F19	+450 TO 600	2
	GRAPHITE FMS 17F27	+450 TO 800	5
	GRAPHITE FMS 17F39	+901 TO 1100	10

DESIGN ET

SEAL RING	BACK UP RING	TEMP ° F	SERVICE	G
PTFE FMS 17F3	FKM FMS 17G34	0+400	OXYGEN	7
CARBON/PTFE FMS 17F18	FKM FMS 17G34	0+400	NACE NOT WATER >180° F NOT STEAM	4
	NBR, FMS 41G14	-40+160	HYDROCARBONS, AIR	3
		-40+180	FIRE-RESISTANT HYDRAULIC OILS OTHER COMPATIBLE FLUIDS	M 3
	ETHYLPROPYL FMS 17G39	-40+450	NOT HYDROCARBON (OIL)	12

SPRING LOADED SEAL RING CONSTRUCTION

ANTI-EXTRUSION RING	W/O	PEEK	
SEAL RING	N10276/PTFE	R30003/PTFEPPVE	
	GLASS/MOS2	OXIDIZING SERV	NON-OXIDIZING SERV
DEG F	-100+450	-100+500	-100+600
	G	G	G
FULL CAPACITY	9	13	13

**ITEM H - STEM****ITEM 9F - NAMEPLATE DATA (ENVIRO-SEAL BELLOWS SEAL OR M-FLUTE COMPOSITION PLUG)**

ACTUATOR	BONNET	VSC	CHARACTERISTIC	STEM	H	9F
GROUP 1/ AU2259	PLAIN	1L3750	FULL, M-FLUTE METAL SEAT, M-FORM, M-FLOW	316	1	N
				NIT 50	184	N
				316L	2	N
				304	3	N
				304L	4	N
				HAST B	10	N
				HAST C	11	N
				ALY 20	12	N
				K-MONEL	13	N
				INCONEL	15	N
			M-FLUTE COMP SEAT	ALL	N	1
		1L5000	FULL	316	65	N
		1L5001	M-FLUTE METAL SEAT, M-FORM, M-FLOW	NIT 50	185	N
				316	129	N
			M-FLUTE COMP SEAT	ALL	N	1
	EXT STYLE 1	1L3750	FULL, M-FLUTE METAL SEAT, M-FORM, M-FLOW	316	17	N
				NIT 50	186	N
				HAST C	27	N
			M-FLUTE COMP SEAT	ALL	N	1
		1L5000	FULL	316	81	N
				NIT 50	188	N
		1L5001	M-FLUTE METAL SEAT, M-FORM, M-FLOW	316	145	N
			M-FLUTE COMP SEAT	ALL	N	1
	EXT STYLE 2	1L3750	FULL, M-FLUTE METAL SEAT, M-FORM, M-FLOW	316	33	N
				NIT 50	187	N
				HAST C	43	N
				K-MONEL	45	N
			M-FLUTE COMP SEAT	ALL	N	1
		1L5000	FULL	316	97	N
		1L5001	M-FLUTE METAL SEAT, M-FORM, M-FLOW	316	161	N
			M-FLUTE COMP SEAT	ALL	N	1
	EXT STYLE 4	1L3750	FULL, M-FLUTE METAL	316	178	N
			M-FLUTE COMP SEAT	ALL	N	1
		1L5000	FULL	316	179	N
	STYLE NS	1L5000	FULL	316	180	N
		1L5001	M-FLUTE METAL SEAT, M-FORM, M-FLOW	316	181	N
			M-FLUTE COMP SEAT	ALL	N	1
	ENVIRO-SEAL BELLOWS SEAL	ALL	ALL	316L	N	1
				HAST C	N	2



ITEM J - NAMEPLATE

ITEM 9D - CLASS/HYDRO (PSI/MIN)/CWP (PSI)

				NAMEPLATE STYLE	STD		PICK HEAT		9D
				BODY END CONN	FLG	OTHER	FLG	OTHER	
BODY	RATING	BOLTING	CWP (PSI)	HYDRO (PSI/MIN)	J	J	J	J	
CI	CLASS 125B	B7/SAE GR5	200	300/1	1	1	2	2	12
	CLASS 250B	B7/SAE GR5	500	750/1	1	1	2	2	13
WCC	CLASS 150	B7/B7M	290	450/1	1	1	2	2	14
	CLASS 300	B7/B7M	750	1125/1	1	1	2	2	15
	CLASS 600	B7M	850	1275/1	1	1	2	2	16
		B7	1500	2250/1	1	1	2	2	17
WC1	CLASS 150	B7	265	400/1	1	1	2	2	18
	CLASS 300	B7	695	1050/1	1	1	2	2	19
	CLASS 600	B7	1390	2100/1	1	1	2	2	21
LCC	CLASS 150	B7/B7M	290	450/1	1	1	2	2	14
	CLASS 300	B7/B7M	750	1125/1	1	1	2	2	15
	CLASS 600	B7M	850	1275/1	1	1	2	2	16
		B7	1500	2250/1	1	1	2	2	17
WC6	CLASS 150	B7	290	450/1	1	1	2	2	14
	CLASS 300	B7	750	1125/1	1	1	2	2	15
	CLASS 600	B7	1500	2250/1	1	1	2	2	17
WC9	CLASS 150	B7/B16	290	450/1	1	1	2	2	14
	CLASS 300	B7/B16	750	1125/1	1	1	2	2	15
	CLASS 600	B7/B16	1500	2250/1	1	1	2	2	17
C5	CLASS 150	B7/B16	290	450/1	1	1	2	2	14
	CLASS 300	B7/B16	750	1125/1	1	1	2	2	15
	CLASS 600	B7/B16	1500	2250/1	1	1	2	2	17
CF8M & CF3M	CLASS 150	B7/B7M/B8/B8M	275	450/1	1	1	2	2	34
	CLASS 300	B7/B7M/B8/B8M CLASS 2	720	1125/1	1	1	2	2	35
		B8M CLASS 1	695	1050/1	3	1	4	2	19
	CLASS 600	B8/B8M CLASS 1	695	1050/1	3	1	4	2	19
		B8M CLASS 2	1110	1675/1	3	1	4	2	40
		B7M	850	1275/1	3	1	4	2	16
B7		1440	2250/1	1	1	2	2	42	
CF8C	CLASS 150	B7/B8/B8M CLASS 1 & 2	275	450/1	1	1	2	2	34
	CLASS 300	B7/B8/B8M CLASS 2	720	1125/1	1	1	2	2	35
		B8M CLASS 1	695	1050/1	3	1	4	2	19
	CLASS 600	B8/B8M CLASS 1	695	1050/1	3	1	4	2	19
		B8M CLASS 2	1110	1675/1	3	1	4	2	40
		B7	1440	2250/1	1	1	2	2	42
HAST C		CLASS 150	B7/B8M CLASS 1	290	450/1	1	1	2	2
	CLASS 300	B8M CLASS 1	695	1050/1	3	1	4	2	19
		B7	750	1125/1	1	1	2	2	15
	CLASS 600	B8M CLASS 1	695	1050/1	3	1	4	2	19
		B7	1500	2250/1	1	1	2	2	17
ALY 20	CLASS 150	B7/B8M CLASS 2	230	350/1	1	1	2	2	56
	CLASS 300	B7/B8M CLASS 2	600	900/1	1	1	2	2	57
	CLASS 600	B8M CLASS 2	1110	1675/1	3	1	4	2	40
		B7	1200	1800/1	1	1	2	2	59

**ITEM J - NAMEPLATE (CONT)****ITEM 9D - CLASS/HYDRO (PSI/MIN)/CWP (PSI) (CONT)**

BODY	RATING	BOLTING	CWP		HYDRO	J	9D
			PSI	BAR			
CI	PN10/16	B7 & SAE GR5	232	16.0	350 PSI (24 BAR)/1 MIN	1	61
	PN25	B7 & SAE GR5	362	25.0	550 PSI (38 BAR)/1 MIN	1	62
WCC	PN10/16/25/40	B7 & B7M	580	40.0	875 PSI (60 BAR)/1 MIN	1	63
	PN63/100	B7	1450	100.0	2175 PSI (150 BAR)/1 MIN	1	64
		B7M	850	58.6	1275 PSI (88 BAR)/1 MIN	3	67
C5	PN10/16/25/40	B7 & B16	580	40.0	875 PSI (60 BAR)/1 MIN	1	63
	PN63/100	B7	1450	100.0	2175 PSI (150 BAR)/1 MIN	1	64
LCC	PN10/16/25/40	B7 & B7M	580	40.0	875 PSI (60 BAR)/1 MIN	1	63
	PN63/100	B7	1450	100.0	2175 PSI (150 BAR)/1 MIN	1	64
WC1	PN10/16/25/40	B7	580	40.0	875 PSI (60 BAR)/1 MIN	1	63
	PN63/100	B7	1450	100.0	2175 PSI (150 BAR)/1 MIN	1	64
WC6	PN10/16/25/40	B7	580	40.0	875 PSI (60 BAR)/1 MIN	1	63
	PN63/100	B7	1450	100.0	2175 PSI (150 BAR)/1 MIN	1	64
WC9	PN10/16/25/40	B7 & B16	580	40.0	875 PSI (60 BAR)/1 MIN	1	63
	PN63/100	B7 & B16	1450	100.0	2175 PSI (150 BAR)/1 MIN	1	64
CF8M, CF8C, & CF3M	PN10/16/25/40	B7, B7M, B8M CLASS 1 & 2	580	40.0	875 PSI (60 BAR)/1 MIN	1	63
	PN63/100	B7	1450	100.0	2175 PSI (150 BAR)/1 MIN	1	64
		B7M	850	58.6	1275 PSI (88 BAR)/1 MIN	3	67
		B8M CLASS 1	695	47.9	1050 PSI (73 BAR)/1 MIN	3	68
		B8M CLASS 2	1110	76.5	1675 PSI (116 BAR)/1 MIN	3	65
ALLOY 20	PN10/16/25/40	B7 & B8M CLASS 2	580	40.0	875 PSI (60 BAR)/1 MIN	1	63
	PN63/100	B7	1200	82.7	1800 PSI (125 BAR)/1 MIN	3	66
		B8M CLASS 2	1110	76.5	1675 PSI (116 BAR)/1 MIN	3	65
HAST C	PN10/16/25/40	B7 & B8M CLASS 1	580	40.0	875 PSI (60 BAR)/1 MIN	1	63
	PN63/100	B7	1450	100.0	2175 PSI (150 BAR)/1 MIN	1	64
		B8M CLASS 1	695	47.9	1050 PSI (73 BAR)/1 MIN	3	68

ITEM 9A - DESIGN, ACTION, FLOW DIRECTION

ACTION	FLOW	DESIGN	9A
PDTC	UP	EC	1
		ED	2
		ET	3
		ES	4
	DOWN	EC	5
		ED	6
		ET	7
		ES	8

ITEM 9B - CHARACTERISTIC

PLUG STYLE	CHARACTERISTIC	9B
M-FLUTE, M-FORM, M-FLOW	EQUAL PERCENT	1
ALL OTHERS	N/A	N



ITEM 9E - SEAT LEAK PER FGS 4L5

DESIGN	FLOW	SEAT CHARACTERISTIC		PORT	METAL, CLASS IV (SCFH)						COMPOSITION	
					BODY SIZE						CLASS VI	
					1/2	9E	3/4	9E	1-1 1/4	9E	BUBBLES/MIN	9E
EC	UP	M-FLUTE	1 FLUTE	1/4	0.06	9	0.06	9	0.06	9	1	22
			2 FLUTE	1/4	0.118	10	0.118	10	0.118	10	1	22
			3 FLUTE	1/4	0.182	11	0.182	11	0.182	11	1	22
				3/8	0.371	12	0.378	16	0.378	16	1	22
				1/2	0.644	13	0.673	17	0.660	19	1	22
				3/4	N/A	M	1.40	18	1.33	20	1	22
				1	N/A	M	N/A	M	2.29	21	1	22
		M-FLOW	Cv-.075	3/16	0.018	14	0.018	14	0.018	14	1	22
			Cv-1.81	3/16	0.038	15	0.038	15	0.038	15	1	22
		Q-OPENING		1 5/16	1.33	1	2.68	2	4.46	3	2	8
		EQUAL PERCENT		1 5/16	N/A	M	N/A	M	3.82	4	2	8
		LINEAR		1 5/16	N/A	M	N/A	M	4.32	5	2	8
		WHISPER		1 5/16	N/A	M	N/A	M	3.92	6	2	8
ES	UP	Q-OPENING		1 5/16	1.33	1	2.68	2	4.46	3	2	8
		EQUAL PERCENT		1 5/16	N/A	M	N/A	M	3.82	4	2	8
		LINEAR		1 5/16	N/A	M	N/A	M	4.32	5	2	8
		WHISPER		1 5/16	N/A	M	N/A	M	3.92	6	2	8
		MICRO-FORM		1/4	0.313	23	0.313	23	0.313	23	-	-
				3/8	0.705	24	0.705	24	0.705	24	-	-
				1/2	0.964	25	1.17	26	1.18	28	-	-
				3/4	N/A	M	2.08	27	2.36	29	-	-
				1	N/A	M	N/A	M	3.47	30	-	-

DESIGN ED, METAL SEAT, CLASS II (SCFH)

BODY SIZE	CHARACTERISTIC	FLOW	PORT	VALUE	9E
1/2	QUICK OPENING	DOWN	1 5/16	66.6	31
3/4	QUICK OPENING	DOWN	1 5/16	134	32
1 & 1 1/4	QUICK OPENING	DOWN	1 5/16	213	33
	LINEAR	DOWN	1 5/16	212	34
	EQUAL PERCENT	DOWN	1 5/16	181	35
	WHISPER	UP	1 5/16	190	37

DESIGN ET

SEAT	SEAL RING	FLOW	BODY	CHARACTERISTIC	CLASS	PORT	VALUE	9E
METAL	STD & SPRING LOADED SEAL W/O ANTI-EXTRUSION RING	DOWN	1/2	QUICK OPENING	IV(SCFH)	1 5/16	1.33	1
			3/4	QUICK OPENING	IV(SCFH)	1 5/16	2.68	2
			1 & 1 1/4	QUICK OPENING	IV(SCFH)	1 5/16	4.26	38
				LINEAR		1 5/16	4.25	39
				EQUAL PERCENT		1 5/16	3.63	40
	SPRING LOADED SEAL W/ANTI-EXTRUSION	UP	1 & 1 1/4	WHISPER	IV(SCFH)	1 5/16	3.81	41
		ALL	ALL	ALL	V WATER TEST (ML/MIN)	ALL	CALC	43
					V AIR TEST (BUBBLES/MIN)	1 5/16	41	44
COMP	ALL	ALL	ALL	ALL	V AIR TEST (BUBBLES/MIN)	1 5/16	41	44



ET, SPRING LOADED SEAL RING W/ANTI-EXTRUSION RING ASSEMBLY DRAWING 21B2120	
EC, MICRO FLUTE & FLOW ASSEMBLY DRAWING	CU8376
EC, COMPOSITION 1/4-3/8 ORIFICE ASSEMBLY DRAWING	30A9546
EC, COMPOSITION 1/2 THRU 1 ORIFICE ASSEMBLY DRAWING	30A9545
ES FULL CAPACITY ASSEMBLY DRAWING	30A9543
ES MICRO FORM ASSEMBLY DRAWING	CU3906
ED - FULL CAPACITY ASSEMBLY DRAWING	30A9542
ET, FULL CAPACITY ASSEMBLY DRAWING	44A7928

Revision Change Record

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

ECRN: 20181741

Page 11, for the Item C - DESIGN ET, 1 5/16 PORT, 3/4 TRAVEL, 1L3750 VSC
WITHOUT SPRING LOADED SEAL RING, C543 and C453 swapped for each other.

Matrix:

Item	Module	Changes
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