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ECX5 - A B C D E F G H J K L 9A 9C 9D 9E

C-SEAL TRIM SELECTION STRING = ECX5 - A B F G K L 9C & CSEALX1 - A B C D E 9A 9B

Item	Parts contained in Item	Find Number
A	Valve Body	1
	Pipe Plug	17
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
	Ring, Retaining, Ext.	27
	Back Up Ring	29
	Thread Lock	56
	Cap Screw	57
E	Disc	23
F	Cap Screw or Stud Bolt	15
	Hex Nut	16
G	Bonnet Gasket	10
	Cage Gasket	11
	Spiral Gasket	12
	Seat Ring Gasket	13
	Adaptor Gasket	14
	Shim	51
H	Piston Ring	6
	Seal Ring	28
	Back-up Ring	29
	Rings, Anti-Extrusion	63
J	Stem	7
K	Flow Arrow	18
	Drive Screw	19
L	Drive Screw	19
	Nameplate	53
	Wire	54
9A	Design, Action & Flow Direction	
9C	Class/Hydro	
9D	Seat Leak per FGS 4L5	
9E	Nameplate Data When Item J Not Used	

**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
LCC	-50+650	CLASS 150		290
		CLASS 300		750
		CLASS 600		1500
WC1	-20+850	CLASS 150		265
		CLASS 300		695
		CLASS 600		1390
WC6	-20+1000	CLASS 150		290
		CLASS 300		750
		CLASS 600		1500
WC9	-20+1050	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
347 SST	-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 (BAR/38° F)
CI	-100+450	-73+232	PN 10/16	16.0
			PN 25	25.0
WCC	-20+800	-29+425	PN10/16	16.0
			PN25/40	40.0
			PN63	63.0
			PN100	100.0
WC1	-20+850	-29+454	PN10/16	16.0
			PN25/40	40.0
			PN63	63.0
			PN100	100.0
LCC	-50+650	-46+343	PN10/16	16.0
			PN25/40	40.0
			PN63	63.0
			PN100	100.0
WC6	-20+1000	-29+538	PN10/16	16.0
			PN25/40	40.0
			PN63	63.0
			PN100	100.0
WC9	-20+1050	-29+566	PN10/16	16.0
			PN25/40	40.0
			PN63	63.0
			PN100	100.0
C5	-20+1100	-29+593	PN10/16	16.0
			PN25/40	40.0
			PN63	63.0
			PN100	100.0
CF8M	-325+1000	-198+538	PN10/16	16.0
			PN25/40	40.0
			PN63	63.0
			PN100	100.0
347SST	-325+1100	-198+593	PN10/16	16.0
			PN25/40	40.0
			PN63	63.0
			PN100	100.0



ITEM A - VALVE BODY (W/O DRAIN TAPPING = N/TAP) (W/DRAIN TAPPING = TAP)

ITEM B - CAGE ADAPTOR (USE ON RESTRICTED TRIM ONLY)

ADAPTOR	TEMP ° F	BODY	TEMP ° F
CARBON STEEL	-20+800	CI	-20+450
		LCC	-20+650

	CL125 FF		CL250 RF		3 X 2 ADAPTOR	3 X 2 1/2 ADAPTOR
	N/TAP	TAP	N/TAP	TAP		
	A	A	A	A	B	B
CAST IRON CL C	1	75	2	76	16	R

	SCH 40 BWE		SCH 80 BWE		CL150 RF		CL300 RF		ADAPTOR	
	N/TAP	TAP	N/TAP	TAP	N/TAP	TAP	N/TAP	TAP	3 X 2	3 X 2 1/2
	A	A	A	A	A	A	A	A	B	B
WCC	3	77	10	84	17	91	24	98	16	R
C5	6	--	13	--	20	--	27	101	15	R
LCC	--	--	--	--	18	--	25	--	16	R
WC6	7	--	--	--	--	--	28	--	15	R
CF8M	8	82	15	--	22	--	29	103	9	R
ALLOY 20	R	R	R	R	--	--	65	--	--	R
WC9	279	--	150	--	151	--	280	--	15	R

	CL400, 600 RF		CL150 RTJ	CL300 RTJ	CL400 & CL600 RTJ		CL150 FF	3X2	3X2 1/2
	N/TAP	TAP	N/TAP	N/TAP	N/TAP	TAP	N/TAP	ADAPTOR	ADAPTOR
	A	A	A	A	A	A	A	B	B
WCC	31	105	38	45	52	126	255	16	R
C5	34	--	--	48	55	--	--	15	R
LCC	32	--	--	--	278	--	--	16	R
WC1	33	--	--	47	--	--	--	8	R
WC6	35	--	--	--	56	--	--	15	R
CF8M	36	110	--	50	57	--	256	9	R
WC9	153	--	281	282	156	--	--	15	R

STEAM JACKET BODY ASSEMBLY

	CL150 RF	CL300 RF	ADAPTOR	
	TAP	TAP	3 X 2	3 X 2 1/2
	A	A	B	B
WCC	R	R	16	R
CF8M	R	R	9	R

**ITEM A - VALVE BODY (W/O DRAIN TAPPING = N/TAP) (W/DRAIN TAPPING = TAP) (CONT)****ITEM B - RING AND CAGE ADAPTOR (USE ON RESTRICTED TRIM ONLY) (CONT)**

DN80, EN1092-1

RF (Type B)

	PN 10/16	PN 25	3 X 2	3 X 2 1/2
	N/TAP	N/TAP	ADAPTOR	ADAPTOR
	A	A	B	B
CAST IRON	165	166	16	R

	PN 10/16	PN 25/40	PN 63	PN 100	3 X 2	3 X 2 1/2
	N/TAP	N/TAP	N/TAP	N/TAP	ADAPTOR	ADAPTOR
	A	A	A	A	B	B
WCC	167	177	187	197	16	R
C5	170	180	190	200	15	R
LCC	168	178	188	198	16	R
WC1	169	179	189	199	8	R
WC6	171	181	191	201	15	R
CF8M	172	182	192	202	9	R
347	173	183	193	203	10	R
ALLOY 20	174	184	194	204	--	R
HAST C	175	185	195	205	--	R
WC9	176	186	196	206	15	R

Spigot (Type E)

	PN 10/16	PN 25/40	PN 63	PN 100	3 X 2	3 X 2 1/2
	N/TAP	N/TAP	N/TAP	N/TAP	ADAPTOR	ADAPTOR
	A	A	A	A	B	B
LCC	268	269	270	271	16	R
CF8M	--	277	--	--	--	--

Recess (Type F)

	PN 10/16	PN 25/40	PN 63	PN 100	3 X 2	3 X 2 1/2
	N/TAP	N/TAP	N/TAP	N/TAP	ADAPTOR	ADAPTOR
	A	A	A	A	B	B
WCC	283	286	289	292	16	R
LCC	284	287	290	293	16	R
CF8M	285	288	291	294	9	R



ITEM C - CAGE

ITEM D - VALVE PLUG/SEAT RING/GROOVE PIN

CAGE	VALVE PLUG		RING	TEMP ° F	TRIM/BODY TEMP LIMIT	
					BODY	TEMP ° F
17-4 PH	416 SST		416 SST	-20+800	CF8M/347 SST	-20+420
			316 SST	-20+800	CF8M/347 SST	-20+440
	316 SST 316 SST/HF SEAT		316 SST COCR-A	-150+410 -150+300		
	316 SST/HF S/G	STD HI-TEMP	COCR-A COCR-A	-150+410 +410+800	CF8M/347 SST	+410+440
304L SST	304L SST		304L SST	-425+300		
316 SST	316 SST		316 SST	-425+300		
316L SST	316L SST		316L SST	-425+300		
ALY 20	ALY 20		ALY 20	-325+300		
HAST C	HAST C		HAST C	-325+300		
MONEL	MONEL		MONEL	-400+300		
316 SST ENC	416 SST		416 SST	-20+410		
	316 SST		316 SST	-425+600		
	316 SST/HF SEAT		316 SST/COCR-A	-425+300		
	316 SST/HF S/G		316 SST/COCR-A	-425+650	C5 HAST C	-20+660 -325+650
	MONEL		MONEL	-400+500		
COCR-A	316 SST/HF SEAT		316 SST/COCR-A	-425+300		
	316 SST/HF S/G	STD HI-TEMP	316 SST/COCR-A 316 SST/COCR-A	-425+800 +800+1100	347 SST	+800+840

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

MAX SEAT LOAD (LBS)

TRIM	SEAT	METAL			COMPOSITION		SOFT SEAT PLUG
	PORT	2 5/16	2 7/8	3 7/16	2 5/16	3 7/16	3 5/16
304L				8500			
316		6000		8500	500	700	
316L				8500			
347		6000					
416		17000	20000	22000	1000	1400	22000
ALLOY 6		17000	20000	22000	1500	2100	
ALLOY 20				12000		700	
HAST C276				12000		700	
MONEL		6000		8500	500	700	

MAX DELTA P(PSI), MUST = <CWP, NO SEAT LOAD CONSIDERED, FLOWING = 1500,
DESIGN ED/ET

SEAT	VALVE PLUG	RING	SHUT OFF
METAL	416 SST	416SST	1500
	316 SST	316SST	300
	316 SST/HF SEAT	COCR-A	1500
	316 SST/HF S/G	COCR-A	1500
	316L SST	316L SST	300
	304L SST	304L SST	300
	347 SST	347 SST	300
	ALY 20	ALY 20	300
	HAST C	HAST C	300
	MONEL	MONEL	300
COMP	ALL	ALL	1500

DESIGN ES

SEAT	VALVE PLUG	PORT STEM RING	2 5/16		2 7/8		3 7/16		3 5/16
			1/2	3/4	1/2	3/4	1/2	3/4	1/2
METAL	416 SST	416 SST	1212	1500		1500	549	1235	
	316 SST	316 SST	300				300	300	
	316 SST/HF SEAT	COCR-A	1212				549	1235	
	316 SST/HF S/G	COCR-A	1212	1500		1500	549	1235	
COMP	416 SST	316 SST	1212	1500			549	1235	
	316 SST	316 SST	1212	1500			549	1235	
	316 SST/HF S/G	COCR-A	1212	1500					
SOFT SEAT PLUG	416 SST	416 SST							1500

**ITEM C - CAGE (CONT)**

2 5/16 PORT - 1 1/8 TRAVEL

2 7/8 PORT - 1 1/2 TRAVEL

3 5/16 PORT - 1 1/2 TRAVEL

3 7/16 PORT - 1 1/2 TRAVEL

CHARACTERISTIC	CAGE	PORT	C
EQ PERCENT	17-4PH H900	2 5/16	139
		3 5/16, 3 7/16	1
	304L SST	2 5/16	145
		3 7/16	7
	316 SST	3 7/16	4
	316 SST ENC	2 5/16	146
		3 5/16, 3 7/16	*8
	316L SST	3 7/16	5
	ALY 20	3 7/16	36
LINEAR	HAST C	3 7/16	57
	COCR-A	2 5/16	173
		3 7/16	35
	MONEL	3 7/16	R
	17-4 PH H900	2 5/16	148
		3 5/16, 3 7/16	10
	17-4 PH H1100	3 7/16	11
	17-4 PH H1150	3 7/16	12
	316 SST ENC	2 5/16	155
Q-OPEN		3 5/16, 3 7/16	17
	COCR-A	2 5/16	180
		3 7/16	42
	MONEL	3 7/16	R
	17-4 PH H900	2 5/16	157
		2 7/8	248
		3 7/16	19
	17-4 PH H1100	3 7/16	20
	17-4 PH H1150	3 7/16	21
WHISPER	316 SST ENC	2 5/16	164
		3 7/16	26
	COCR-A	2 5/16	187
		3 7/16	49
	MONEL	3 7/16	R
	17-4 PH H900	2 5/16	166
		3 7/16	28
	316 SST ENC	2 5/16	303
		2 7/8	304
		3 7/16	302
	COCR-A	2 5/16	300
		3 7/16	299
	MONEL	2 5/16	306
		3 7/16	305

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

DESIGN ED, METAL SEAT

VALVE PLUG		SEAT RING	PORT	VSC	D
304L SST		304L SST	3 7/16	1L5000	240
316SST		316 SST	2 5/16	1L5000	265
			3 7/16	1L5000	237
				1L7500	251
316L SST		316L SST	3 7/16	1L5000	238
347 SST		347 SST	2 5/16	1L5000	271
316 SST/HF SEAT		COCR-A	2 5/16	1L5000	504
			3 7/16	1L5000	502
				1L7500	503
316 SST/HF S/G	STD	COCR-A	2 5/16	1L5000	482
				1L7500	483
			3 7/16	1L5000	480
	HI-TEMP	COCR-A		1L7500	481
			3 7/16	1L5000	526
				1L7500	527
416 SST		416 SST	2 5/16	1L5000	264
			3 7/16	1L5000	236
				1L7500	250
ALY 20		ALY 20	3 7/16	1L5000	244
HAST C		HAST C	3 7/16	1L5000	246
MONEL		MONEL	2 5/16	1L5000	276
			3 7/16	1L5000	248

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

DESIGN ES

SEAT	VALVE PLUG		SEAT RING	PORT	VSC	D	
METAL	416 SST		416 SST	2 5/16	1L5000 1L7500	390 407	
				2 7/8	1L7500	499	
				3 7/16	1L5000 1L7500	356 373	
	316 SST		316 SST	2 5/16	1L5000	556	
				3 7/16	1L5000 1L7500	550 553	
	316 SST/HF SEAT		COCR-A	2 5/16	1L5000	557	
				3 7/16	1L5000 1L7500	551 554	
	316 SST/HF S/G	STD	COCR-A		2 5/16	1L5000 1L7500	558 561
				HI-TEMP	COCR-A	3 7/16	1L5000 1L7500
		2 5/16	1L5000 1L7500			532 533	
			2 7/8			1L7500	537
						3 7/16	1L5000 1L7500
		COMP		416 SST	316 SST		2 5/16
3 7/16	1L5000 1L7500					473 474	
316 SST		316 SST	2 5/16	1L5000 1L7500	441 450		
			3 7/16	1L5000 1L7500	423 432		
316 SST/HF S/G		316 SST	2 5/16	1L5000 1L7500	443 452		
		316 SST	2 5/16	1L5000 1L7500	594 595		
			3 7/16	1L5000 1L7500	592 593		

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

DESIGN ET

WITHOUT SPRING LOADED SEAL RING

SEAT	VALVE PLUG	DISK SEAT/RETAINER OR SEAT RING	PORT	VSC	D
METAL	416 SST	416 SST	2 5/16	1L5000	264
			3 7/16	1L5000	236
				1L7500	250
	304L SST	304L SST	3 7/16	1L5000	240
	316L SST	316L SST	3 7/16	1L5000	238
	316 SST	316 SST	2 5/16	1L5000	265
			3 7/16	1L5000	237
				1L7500	251
	316 SST/HF	COCR-A	2 5/16	1L5000	504
			3 7/16	1L5000	502
				1L7500	503
	316 SST/HF S/G	COCR-A	2 5/16	1L5000	482
				1L7500	483
			3 7/16	1L5000	480
				1L7500	481
COMP	416 SST	316 SST	2 5/16	1L5000	271
			3 7/16	1L5000	244
			3 7/16	1L5000	246
	MONEL	MONEL	2 5/16	1L5000	276
			3 7/16	1L5000	248
	416 SST	316 SST	2 5/16	1L5000	471
				1L7500	472
			3 7/16	1L5000	469
				1L7500	470
	316 SST	316 SST	2 5/16	1L5000	342
			3 7/16	1L5000	328
				1L7500	335
	316 SST/HF S/G	316 SST	2 5/16	1L5000	590
				1L7500	591
			3 7/16	1L5000	588
				1L7500	589
		COCR-A/316 SST	2 5/16	1L5000	486
			3 7/16	1L5000	484
	HAST C	HAST C	3 7/16	1L5000	331
	MONEL	MONEL	2 5/16	1L5000	347
			3 7/16	1L5000	333

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

DESIGN ET WITH SPRING LOADED SEAL RING

WITHOUT ANTI-EXTRUSION RING

SEAT	VALVE PLUG	DISK SEAT/RETAINER OR SEAT RING	CAGE	PORT	VSC	D
METAL	416 SST	416 SST	17-4 PH	2 5/16	1L5000	509
				3 7/16	1L5000 1L7500	506 507
	316 SST	316 SST	316 SST 316 SST ENC	3 7/16	1L5000	569
				2 5/16	1L5000	575
	316 SST/HF S/G	COCR-A	17-4 PH	2 5/16	1L5000	510
				3 7/16	1L5000 1L7500	566 508
			316 SST ENC	2 5/16	1L5000	574
				3 7/16	1L5000	568
			COCR-A	2 5/16	1L5000	574
				3 7/16	1L5000	568
COMP	416 SST	316 SST	17-4 PH	2 5/16	1L5000	516
				3 7/16	1L5000	513
	316 SST	316 SST	316 SST	3 7/16	1L5000	581
			316 SST ENC	2 5/16	1L5000	585
				3 7/16	1L5000	581
	316 SST/HF S/G	COCR-A/316 SST	17-4 PH	3 7/16	1L5000	567
RADIUS SEAT PLUG/ CL V SEAT LEAK	416 SST	416 SST	17- 4 PH	2 5/16	1L5000	637
					1L7500	638
				3 7/16	1L5000 1L7500	651 652
	316 SST/HF S/G	COCR-A	17-4 PH	2 5/16	1L5000	631
					1L7500	633
				3 7/16	1L5000 1L7500	645 647
			316 SST ENC	2 5/16	1L5000	632
					1L7500	634
				3 7/16	1L5000 1L7500	646 648

WITH ANTI-EXTRUSION RING, METAL SEAT

VALVE PLUG		SEAT RING	CAGE	PORT	VSC	D
416 SST		416 SST	17-4 PH	2 5/16	1L5000	635
					1L7500	636
				3 7/16	1L5000	649
					1L7500	650
316 SST/HF S/G	STD	COCR-A	17-4 PH	2 5/16	1L5000	627
					1L7500	628
				3 7/16	1L5000	641
					1L7500	642
			316 SST ENC	2 5/16	1L5000	629
					1L7500	630
				3 7/16	1L5000	643
					1L7500	644
	HI-TEMP	COCR-A	17-4PH	2 5/16	1L5000	625
					1L7500	626
				3 7/16	1L5000	639
					1L7500	640



ITEM E - DISCS

SEAT	PORT	DISC	TEMP °F	E
COMPOSITION	2 5/16	PTFE FMS 17F3	-100+400	6
		NYLON FMS 17F6	-50+200	8
	3 7/16	PTFE FMS 17F3	-100+400	1
METAL	ALL	N/A	N/A	N

ITEM F - BOLTING

BOLTING	NUT	TEMP °F	CWP (PSI)	HYDRO (PSI/MIN)	BODY	TEMP °F
SAE GRADE 5	-	-20+650	BODY	BODY		
B7	2H	-50+800	BODY	BODY		
	GRADE 7	-50+1000	BODY	BODY		
B16	GRADE 7	-20+1100	BODY	BODY		
B8M CLASS 1	8M	-325+1000	1055	1600/2		
B8	GRADE 8	-425+100	1055	1600/2		
B7M	2HM	-50+800	1175	1775/2		
B8M CLASS 2	8M	-325+800	1370	2075/2	HAST C	-325+250

**ITEM F - BONNET BOLTING**

FULL CAPACITY & RESTRICTED

BODY	° F	BOLT	NUT	PLAIN	EXT	BELLOWS SEAL	ENVIRO-SEAL
				F	F	F	F
CAST IRON	-100+250	B8M CL2	-----	—	—	—	M
	-20+450	SAE GR 5	-----	1	M	M	M
	-50+450	B7	2H	—	2	5	M
WCC	-20+450	B7	2H	2	2	5	27
		B7M	2HM	15	15		
	450+800	B7	2H LUB	17	17	23	30
		B7M	2HM LUB	21	21		
LCC	-20+450	B7	2H	2	2	5	27
		B7M	2HM	15	15		
	450+650	B7	2H LUB	17	17	23	30
		B7M	2HM LUB	21	21		
WC1	-20+450	B7	2H	2	2	5	27
	450+800	B7	2H LUB	17	17	23	30
	801+850	B7	GR 7 LUB	16	16	22	29
WC6	-20+450	B7	2H	2	2	5	27
	450+800	B7	2H LUB	17	17	23	30
	801+1000	B7	GR 7 LUB	16	16	22	29
WC9	-20+450	B7	2H	2	2	5	27
	450+800	B7	2H LUB	17	17	23	30
	801+1000	B7	GR 7 LUB	16	16	22	29
	1001+1050	B16	GR 7 LUB	18	18	24	31
C5	-20+450	B7	2H	2	2	5	27
	450+800	B7	2H LUB	17	17	23	30
	801+1000	B7	GR 7 LUB	16	16	22	29
	1001+1100	B16	GR 7 LUB	18	18	24	31
HAST C	-50+450	B7	2H	2	2	5	27
	450+800	B7	2H LUB	17	17	23	30
CF8M	-425+-325	B8	GR 8	9	9	P	—
	-325+450	B8M CL2	8M	4	4	7	28
	450+800	B8M CL2	8M LUB	19	19	25	32
	-50+450	B7	2H	2	2	5	27
		B7M	2HM	15	15		
	450+800	B7	2H LUB	17	17	23	30
		B7M	2HM LUB	21	21		
	801+1000	B8M CL1	8M LUB	20	20	26	33
347	-425+-325	B8	GR 8	9	9	P	—
	-325+450	B8M CL2	8M	4	4	7	28
	450+800	B8M CL2	8M LUB	19	19	25	32
	-50+450	B7 STD	2H	2	2	5	27
	450+800	B7	2H LUB	17	17	23	30
	801+1000	B8M CL1	8M LUB	20	20	26	33
ALY 20	-325+400	B8M CL2	8M	4	4	7	28
	-50+450	B7	2H	2	2	5	27
	450+800	B7	2H LUB	17	17	23	30

**ITEM G - GASKET**

PORT	SPIRAL WOUND GASKET	FLAT SHEET GASKETS	TEMP °F	G
3 7/16	MONEL & GRAPHITE	GRAPH/SST	-100 TO 900	82
	MONEL & PTFE	MONEL/PTFE	-100 TO 300	73
	INCONEL & GRAPHITE	GRAPH/SST	-325 TO 1100	79
2 5/16	MONEL & PTFE	MONEL/PTFE	-100 TO 300	74
	INCONEL & GRAPHITE	GRAPH/SST	-325 TO 1100	80
2 7/8	MONEL & PTFE	MONEL/PTFE	-100 TO 300	75
	INCONEL & GRAPHITE	GRAPH/SST	-325 TO 1100	81

ITEM H - PISTON RING OR SEAL RING

DESIGN ED	PISTON RING MATL	TEMP °F	FULL CAPACITY	RESTRICTED
			H	H
	CARBON FILLED TFE	-100 TO +450	1	5
STEAM OR NON-OXIDIZING SERVICE	GRAPHITE FMS 17F19	+450 TO 600	2	6
	GRAPHITE FMS 17F27	+601 TO 900	13	14
	GRAPHITE FMS 17F39	+901 TO 1100	21	22
AIR OR OXIDIZING SERV	GRAPHITE FMS 17F27	+450 TO 800	13	14
	GRAPHITE FMS 17F39	+801 TO 1000	21	22
NACE	CARBON FILLED TFE	-100 TO +450	1	5
	GRAPHITE FMS 17F19	+450 TO 600	2	6
	GRAPHITE FMS 17F27	+450 TO 800	13	14
	GRAPHITE FMS 17F39	+901 TO 1100	21	22

DESIGN ET

SEAL RING	BACK UP RING	TEMP DEG F	SERVICE	FULL	RESTD 3X2
				H	H
PTFE FMS 17F3	FKM FMS 17G34	0+400	OXYGEN	15	16
CARBON/PTFE FMS 17F18	FKM FMS 17G34	0+400	NACE	8	10
			NOT WATER >180° F		
			NOT STEAM		
	NBR, FMS 41G14	-40+160	HYDROCARBONS, AIR	7	9
		-40+180	FIRE-RESISTANT HYDRAULIC OILS	M	M
			OTHER COMPATIBLE FLUIDS	7	9
	ETHYL PROP FMS 17G39	-40+450	NOT HYDROCARBON(OIL)	25	26

SPRING LOADED SEAL RING CONSTRUCTION

ANTI-EXTRUSION RING	W/O	PEEK	
SEAL RING	N10276/PTFE	R30003/PTFEPPVE	
	GLASS/MOS2	OXIDIZING SERV	NON-OXIDIZING SERV
	° F	-100+450	-100+600
	H	H	H
FULL CAPACITY	18	27	27
RESTD 3 X 2	20	28	28

**ITEM J - STEM****ITEM 9E - DESCRIPTOR/NAMEPLATE DATA WHEN ITEM J NOT USED**

PDTC

ACTR	BONNET	VSC	CHARACTERISTIC	STEM	J	9E
GROUP 1/AU2259	PLAIN	1L5000	FULL	316	1	N
				NIT 50	224	N
				316L	2	N
				304L	5	N
				HAST B	10	N
				HAST C	11	N
				ALY 20	12	N
				K-MONEL	13	N
				INCONEL	15	N
			RESTRICTED 3X2 & 3 1/2	316	65	N
				NIT 50	226	N
				304L	69	N
				ALY 20	76	N
				K-MONEL	77	N
		1L7500	FULL	316	129	N
				NIT 50	225	N
				K-MONEL	141	N
			RESTRICTED 3X2 & 3 1/2	316	161	N
				NIT 50	221	N
	EXT STYLE 1	1L5000	FULL	316	17	N
				NIT 50	223	N
				HAST B	26	N
				HAST C	27	N
				K-MONEL	29	N
			RESTRICTED 3X2 & 3 1/2	316	81	N
				NIT 50	227	N
		1L7500	FULL	316	145	N
				NIT 50	220	N
				316L	146	N
				K-MONEL	157	N
			RESTRICTED 3X2 & 3 1/2	316	177	N
				NIT 50	222	N
	EXT STYLE 2	1L5000	FULL	316	33	N
			RESTRICTED 3X2 & 3 1/2	316	97	N
	EXT STYLE 4	1L5000	FULL	316	213	N
		1L7500	FULL	316	214	N

**ITEM J - STEM (CONT)****ITEM 9E - DESCRIPTOR/NAMEPLATE DATA WHEN ITEM J NOT USED (CONT)**

PDTC

ACTR	BONNET	VSC	CHARACTERISTIC	STEM	J	9E
GROUP 1/AU2259	STYLE NS	1L5000	FULL	316	1	N
				NIT 50	224	N
				316L	2	N
				304L	5	N
				HAST B	10	N
				HAST C	11	N
				ALY 20	12	N
				K-MONEL	13	N
				INCONEL	15	N
		RESTRICTED 3X2 & 3 1/2	316	65	N	
			NIT 50	226	N	
			304L	69	N	
	1L7500	FULL RESTRICTED 3X2 & 3 1/2	316	215	N	
			316	215	N	
	BELLOWS SEAL	1L5000	FULL	316	49	N
				347	56	N
				HAST C	59	N
K-MONEL				61	N	
RESTRICTED 3X2 & 3 1/2	316	113	N			
ENVIRO-SEAL BELLOWS SEAL	ALL	ALL	316L HAST C	N N	1 2	
GROUP 103/AU2259	PLAIN	1L5000	FULL	316	210	N
		1L7500	FULL	316	211	N
	ENVIRO-SEAL BELLOWS SEAL	ALL	ALL	316L HAST C	N N	1 2
298T	N/A	N/A	N/A	N/A	N	1
607	PLAIN	1L5000	3/4 TRAVEL	316	212	N
617	PLAIN	1L5000	3/4 TRAVEL	316	212	N
795	N/A	N/A	N/A	N/A	N	1
796	N/A	N/A	N/A	N/A	N	1

ITEM K - FLOW ARROW & DRIVE SCREW

K
1

ITEM L - NAMEPLATE

L
1

**ITEM 9A - TYPE, ACTION, FLOW**

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

ITEM 9C - CLASS/HYDRO

STYLE	BODY	RATING	HYDRO	9C
ASME	CAST IRON	CLASS 125	300 PSI /2 MIN	1
		CLASS 250	750 PSI /2 MIN	2
	WCC, LCC, C5, WC9, CF8M & 347	CLASS 150	450 PSI /2 MIN	3
		CLASS 300	1125 PSI /2 MIN	4
		CLASS 600	2250 PSI /2 MIN	5
	ALLOY 20	CLASS 150	350 PSI /2 MIN	6
		CLASS 300	900 PSI /2 MIN	7
		CLASS 600	1800 PSI /2 MIN	8
	WC1	CLASS 150	400 PSI /2 MIN	12
		CLASS 300	1050 PSI /2 MIN	13
		CLASS 600	2100 PSI /2 MIN	14
EN	HAST C	CLASS 150	450 PSI /2 MIN	9
		CLASS 300	1125 PSI /2 MIN	10
		CLASS 600	2250 PSI /2 MIN	11
	CI	PN10/16	350 PSI (24 BAR)/2MIN	15
		PN25	550 PSI (38 BAR)/2MIN	16
	ALL OTHER	PN10/16	350 PSI (24 BAR)/2MIN	17
		PN25/40	875 PSI (60 BAR)/2MIN	18
		PN63	1375 PSI (95 BAR)/2MIN	19
		PN100	2175 PSI (150 BAR)/2MIN	20

**ITEM 9D - SEAT LEAK LEST PER FGS 4L5**

DESIGN EC & ES

FLOW UP

FLOW UP	METAL SEAT (SCFH) CLASS IV						COMPOSITION SEAT (BUBBLES/MIN) CLASS VI			
	PORT									
CHARACTERISTIC	3 7/16	9D	2 5/16	9D	2 7/8	9D	3 7/16	9D	2 5/16	9D
EQUAL PERCENT	27.2	1	15.0	6	21.4	11	9	16	4	17
LINEAR	30.3	2	19.8	7	26.1	12	9	16	4	17
QUICK OPEN	32.9	3	25.8	8	33.4	13	9	16	4	17
WHISPER	26.3	4	16.6	9	23.9	14	9	16	4	17

DESIGN ED

CHARACTERISTIC	PORT	METAL SEAT CLASS II (SCFH)	
FLOW DOWN			9D
EQUAL PERCENT	2 5/16	767	23
	3 7/16	1446	18
LINEAR	2 5/16	1129	24
	3 7/16	1508	19
QUICK OPEN	2 5/16	1026	25
	3 7/16	1582	20
FLOW UP			
WHISPER	2 5/16	835	27
	3 7/16	1197	22

DESIGN ET

SEAT	CONSTRUCTION	FLOW	CHARACTERISTIC	CLASS	PORT	VALUE	9D
METAL	STD & SPRING LOADED SEAL W/O ANTI-EXTRUSION RING	DOWN	EQ PERCENT	IV(SCFH)	2 5/16	15.3	31
					3 7/16	28.9	28
			LINEAR	IV(SCFH)	2 5/16	22.6	32
					3 7/16	30.2	29
			Q OPEN	IV(SCFH)	2 5/16	20.5	33
					3 7/16	31.6	30
	SPRING LOADED SEAL W/ANTI-EXTRUSION	UP	WHISPER	IV(SCFH)	2 5/16	16.7	34
					3 7/16	23.9	14
		ALL	ALL	V WATER TEST (ML/MIN)	ALL	CALC	36
				V AIR TEST (ML/MIN)	2 5/16	10.86	38
COMP	ALL	ALL	ALL	V AIR TEST (ML/MIN)	3 7/16	16.17	39
					2 5/16	10.86	38

ET, SPRING LOADED SEAL RING W/ANTI-EXTRUSION RING ASSEMBLY DWG	21B2120
ED, FULL CAPACITY ASSEMBLY DWG	30A9542
ED, RESTRICTED 3X2 ASSEMBLY DWG	30A9547
ES, FULL CAPACITY ASSEMBLY DWG	30A9543
ES, RESTRICTED 3X2 ASSEMBLY DWG	30A9548
ES, RESTRICTED 3X2 1/2 ASSEMBLY DWG	30A9109
ET, FULL CAPACITY ASSEMBLY DWG	44A7928
ET, RESTRICTED 3X2 ASSEMBLY DWG	44A7931

**Revision Change Record**

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

ECRN: 20180325

Matrix:

Item	Module
9E	1

Changes

Change the stem material description from “316” to “316L” for the “GROUP 1/ AU2259” actuator, “ENVIRO-SEAL BELLOWS SEAL” bonnet, and the “GROUP 103/ AU2259” actuator, “ENVIRO-SEAL BELLOWS SEAL” bonnet.