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ECX6 - A B C D E F G H J K L 9A 9C 9D 9E

C-SEAL TRIM SELECTION STRING = ECX6 - A B F G K L 9C & CSEALX1 - A B C D E 9A 9B

Temperatures per ASME B31.3, EN1092-1

CWP per ASME B16.34, EN1092-1

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

	TEMP ° F	TEMP ° C	RATING	CWP (PSI/100° F)	CWP (BAR/38° C)
CI	-100+450	-73+232	CLASS 125 CLASS 250	200 500	13.8 34.5
WCC	-20+800	-29+427	CLASS 150 CLASS 300 CLASS 400 CLASS 600	290 750 1000 1500	20 51.7 68.9 103.4
LCC	-50+650	-46+343	CLASS 150 CLASS 300 CLASS 400 CLASS 600	290 750 1000 1500	20 51.7 68.9 103.4
WC1	-20+850	-29+454	CLASS 150 CLASS 300 CLASS 400 CLASS 600	265 695 925 1390	18.2 47.9 63.8 95.8
C5	-20+1100	-29+593	CLASS 150 CLASS 300 CLASS 400 CLASS 600	290 750 1000 1500	20 51.7 68.9 103.4
WC6	-20+1000	-29+538	CLASS 150 CLASS 300 CLASS 400 CLASS 600	290 750 1000 1500	20 51.7 68.9 103.4
WC9	-20+1050	-29+566	CLASS 150 CLASS 300 CLASS 400 CLASS 600	290 750 1000 1500	20 51.7 68.9 103.4
CF8M	-325+1000	-198+538	CLASS 150 CLASS 300 CLASS 400 CLASS 600	275 720 960 1440	19 49.6 66.2 99.3
347	-325+1100	-198+593	CLASS 150 CLASS 300 CLASS 400 CLASS 600	275 720 960 1440	19 49.6 66.2 99.3
ALY 20	-325+800	-198+427	CLASS 150 CLASS 300 CLASS 400 CLASS 600	230 600 800 1200	15.9 41.4 55.2 82.7
HAST C	-325+1000	-198+538	CLASS 150 CLASS 300 CLASS 400 CLASS 600	290 750 1000 1500	20 51.7 68.9 103.4
CD3MN	-20+500	-29+260	CLASS 300	750	51.7

**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 B - CAGE ADAPTOR**

ADAPTOR	TEMP ° F
CARBON STEEL	-20+800

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

	CL125 FF		CL250 RF		4 X 2 1/2
	N/TAP	TAP	N/TAP	TAP	ADAPTOR
	A	A	A	A	B
CAST IRON CL C	1	93	2	94	14

	SCH 40 BWE		SCH 80 BWE		CL150 RF		CL300 RF		CL400 RF	4X2 1/2	4X3
	N/TAP	TAP	N/TAP	TAP	N/TAP	TAP	N/TAP	TAP	N/TAP	ADPTR	ADPTR
	A	A	A	A	A	A	A	A	A	B	B
WCC	3	95	9	15	107	21	113	27		14	R
C5	6	--	12	18	--	24	--	--		13	R
LCC	--	--	--	16	--	22	--	--		14	R
WC6	--	--	13	--	--	25	--	--		13	R
CF8M	8	--	14	20	112	26	--	--		3	R
347	--	--	--	--	--	-	--	--		--	R
ALLOY 20	R	R	R	-	--	--	--	--		--	R
WC9	185	--	319	320	--	321	--	--		13	R
CD3MN	--	--	--	--	--	316	--	--		14	R

	CL600 RF		CL300 RTJ		CL600 RTJ		4X2 1/2	4 X 3
	N/TAP	TAP	N/TAP	TAP	N/TAP	TAP	ADPTR	ADPTR
	A	A	A	A	A	A	B	B
WCC	33	125	45	57	149		14	R
C5	36	--	48	60	--		13	R
LCC	34	--	--	318	--		14	R
WC1	35	--	47	--	--		-	R
WC6	37	--	--	--	--		13	R
CF8M	38	--	50	62	--		3	R
WC9	190	--	322	323	--		13	R

	CL150 FF	4 X 2 1/2	4 X 3
	N/TAP	ADAPTOR	ADAPTOR
	A	B	B
WCC	295	14	R
CF8M	296	3	R

STEAM JACKETED BODY ASSEMBLY

	150 RF	300 RF	ADAPTOR	
	TAP	TAP	4 X 2 1/2	4 X 3
	A	A	B	B
WCC	R	R	14	R
CF8M	R	R	3	R

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

DN 100, EN1092-1

RF (Type B)

	PN 10/16	PN 25	4 X 2 1/2
	N/TAP	N/TAP	ADAPTOR
	A	A	B
CAST IRON	205	206	14

	PN 10/16	PN 25/40	PN 63	PN 100	4 X 2 1/2	4 X 3
	N/TAP	N/TAP	N/TAP	N/TAP	ADAPTOR	ADAPTOR
	A	A	A	A	B	B
WCC	207	217	227	237	14	R
C5	210	220	230	240	13	R
LCC	208	218	228	238	14	R
WC1	209	219	229	239	-	R
WC6	211	221	231	241	13	R
CF8M	212	222	232	242	3	R
347	213	223	233	243	--	R
ALLOY 20	214	224	234	244	--	R
HAST C	215	225	235	245	--	R
WC9	216	226	236	246	13	R

Spigot (Type E)

	PN 10/16	PN 25/40	PN 63	PN 100	4 X 2 1/2
	N/TAP	N/TAP	N/TAP	N/TAP	ADAPTOR
	A	A	A	A	B
LCC	308	309	310	311	14
WCC	312	313	314	315	14
CF8M	--	317	--	--	--

Recess (Type F)

	PN 10/16	PN 25/40	PN 63	PN 100	4 X 2 1/2
	N/TAP	N/TAP	N/TAP	N/TAP	ADAPTOR
	A	A	A	A	B
LCC	326	329	332	335	14
WCC	327	330	333	336	14
CF8M	328	331	334	337	--



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		410/416 SST	-20+800	CF8M/347 SST	-20+350
			316 SST	-20+800	CF8M/347 SST	-20+360
	316 SST		316 SST	-150+410	CF8M/347 SST	-20+360
	316 SST/HF SEAT		COCR-A	-150+300		
	316 SST/HF S/G	STD	COCR-A	-150+410	CF8M/347 SST	-150+360
		HI-TEMP	COCR-A	+410+800	CF8M/347 SST	(M)
	316 SST		316 SST	-425+300	HAST C	-130+300
	316L SST		316L SST	-425+300	HAST C	-130+300
304L SST	304L SST		304L SST	-425+300	HAST C	-130+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		410/416 SST	-20+410		
	316 SST		316 SST	-425+600	C5	-20+450
					HAST C	-130+450
	316 SST/HF SEAT		316 SST/COCR-A	-425+300		
	316 SST/HF S/G		316 SST/COCR-A	-425+650	WCC	-20+670
					WC1/WC6/WC9	-20+460
					C5	-20+460
					HAST C	-130+460
	MONEL		MONEL	-400+500		
COCR-A	316 SST/HF SEAT		316 SST/COCR-A	-425+300		
	316 SST/HF S/G	STD	316 SST/COCR-A	-425+800	CF8M/347 SST	-325+770
		HI-TEMP	316 SST/COCR-A	+800+1100	HAST C	-140+800
					347 SST	(M)
					C5	+800+1000

MATL	SEAT	PORT	MAX SEAT LOAD (LBS)
304L SST/316 SST/316L SST/MONEL	METAL	2 7/8	7500
		4 3/8	10500
	COMP	2 7/8	600
		4 3/8	900
416 SST	METAL	2 7/8	20000
		3 7/16	22000
		4 3/8	41000
	COMP	2 7/8	1200
		4 3/8	1800
	SOFT SEAT PLUG	2 3/4	00000
		4 1/4	41000
ALY 20/HAST C	METAL	4 3/8	15000
ALY 6	METAL	2 7/8	20000
		4 3/8	41000
	COMP	2 7/8	1800
		4 3/8	2700

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

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

SHUT OFF

DESIGN ED/ET

VALVE PLUG	SEAT RING	METAL	COMP
416 SST	410/416 SST 316 SST	1500	1500 1500
316 SST	316 SST	300	1500
316 SST/HF SEAT	COCR-A	1500	1500
316 SST/HF S/G	COCR-A	1500	1500
316L SST	316L SST	300	
304L SST	304L SST	300	
ALY 20	ALY 20	300	
HAST C	HAST C	300	
MONEL	MONEL	300	1500

DESIGN ES

DESIGN ES													SOFT SEAT PLUG
VALVE PLUG	SEAT	METAL						COMP					ALL
	PORT	2 3/8		3 7/16	4 3/8			2 3/8		4 3/8			ALL
	STEM	1/2	3/4	3/4	1/2	3/4	1	1/2	3/4	1/2	3/4	1	ALL
	RING												
416 SST	416 SST 316 SST	785	1500	1235	339	762	1094	785	1500	339	762	1094	1500
316 SST 316 SST/HF SEAT	316 SST COCR-A	300 785	300 1500		196 339	300 762	300 1094	785	1500	339	762		
316 SST/HF S/G	COCR-A	785	1500		339	762	1094						

CHARACTERISTIC	PORT	TRAVEL	CAGE	C
WHISPER	2 7/8	1 1/2	17-4 PH H900	100
			316 SST ENC	233
			COCR-A	230
			MONEL	236
	3 7/16	1 1/2	316 SST ENC	234
	4 3/8	2	17-4 PH H900	28
			316 SST ENC	232
			COCR-A	229
			MONEL	235



ITEM C - CAGE (CONT)

CHARACTERISTIC	PORT	TRAVEL	CAGE	C
EQ PERCENT	2 3/4	1 1/2	17-4 PH H900	73
			316 SST ENC	80
	2 7/8	1 1/2	17-4 PH H900	73
			304L SST	79
			316 SST ENC	80
			COCR-A	107
			MONEL	R
	3 7/16	1 1/2	17-4 PH H900	156
	4 1/4	2	17-4 PH H900	1
			316 SST ENC	8
4 3/8	2	17-4 PH H900	1	
		17-4 PH H1100	2	
		304L SST	7	
		316 SST	4	
		316 SST ENC	8	
		316L SST	5	
		ALY 20	36	
		COCR-A	35	
		HAST C	57	
		MONEL	R	
LINEAR	2 3/4	1 1/2	17-4 PH H900	82
			316 SST ENC	89
	2 7/8	1 1/2	17-4 PH H900	82
			316 SST ENC	89
			COCR-A	114
	4 1/4	2	17-4 PH H900	10
			316 SST ENC	17
	4 3/8	2	17-4 PH H900	10
17-4 PH H1100			11	
316 SST ENC			17	
COCR-A			42	
MONEL			R	
Q-OPEN	2 7/8	1 1/2	17-4 PH H900	91
			316 SST ENC	98
			COCR-A	121
			MONEL	R
	4 3/8	2	17-4 PH H900	19
			17-4 PH H1100	20
			17-4 PH H1150	21
			316 SST ENC	26
		COCR-A	49	
		MONEL	R	

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

DESIGN ED, METAL SEAT

PORT	TRAVEL	VSC	SEAT LEAK	VALVE PLUG		SEAT RING	D
2 7/8	1 1/2	1L5000	STD	416 SST		416 SST	280
				304L SST		304L SST	284
				316 SST		316 SST	281
				316 SST/HF SEAT		COCR-A	679
				316 SST/HF S/G	STD HI-TEMP	COCR-A COCR-A	597 710
				MONEL		MONEL	292
		1L7500	STD	416 SST		416 SST	294
				316 SST/HF S/G	STD HI-TEMP	COCR-A COCR-A	598 712
4 3/8	2	1L5000	STD	416 SST		416 SST	238
				316 SST		316 SST	239
				316L SST		316L SST	240
				304L SST		304L SST	242
				316 SST/HF SEAT		COCR-A	677
				316 SST/HF S/G	STD HI-TEMP	COCR-A COCR-A	595 705
				ALY 20		ALY 20	246
				MONEL		MONEL	250
			CLASS IV	416 SST		416 SST	777
				316 SST		316 SST	778
			CLASS IV	316 SST/HF SEAT		COCR-A	779
				316 SST/HF S/G	STD HI-TEMP	COCR-A COCR-A	780 781
		1L7500	STD	416 SST		416 SST	252
				316 SST		316 SST	253
				304L SST		304L SST	256
				316 SST/HF SEAT		COCR-A	678
				316 SST/HF S/G	STD HI-TEMP	COCR-A COCR-A	596 706
				HAST C		HAST C	262
				MONEL		MONEL	253
			CLASS IV	416 SST		416 SST	782
				316 SST		316 SST	783
			CLASS IV	316 SST/HF SEAT		COCR-A	784
				316 SST/HF S/G	STD HI-TEMP	COCR-A COCR-A	785 786

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

DESIGN ES

PORT	TRAVEL	SEAT	VSC	VALVE PLUG		SEAT RING	D	
2 7/8	1 1/2	METAL	1L5000	416 SST		416 SST	439	
				316 SST		316 SST	741	
				316 SST/HF S/G		COCR-A	743	
			1L7500	416 SST		416 SST	456	
				316 SST		316 SST	744	
				316 SST/HF S/G	STD HI-TEMP	COCR-A COCR-A	746 717	
		COMP	1L5000	416 SST		316 SST	588	
				316 SST		316 SST	534	
			316 SST/HF S/G		316 SST	792		
			1L7500	416 SST		316 SST	589	
316 SST		316 SST		541				
316 SST/HF S/G		316 SST	793					
2 3/4	1 1/2	SOFT SEAT PLUG	1L7500	416 SST/HT		416 SST/HT	866	
3 7/16	2	METAL	1L7500	416 SST		416 SST	490	
4 1/4	2	SOFT SEAT PLUG	1L7500	416 SST/HT		416 SST/HT	794	
4 3/8	2	METAL	1L5000	416 SST		416 SST	388	
				316 SST		316 SST	732	
				316 SST/HF SEAT		COCR-A	733	
				316 SST/HF S/G	STD HI-TEMP	COCR-A COCR-A	734 713	
				1L7500	416 SST		416 SST	405
					316 SST		316 SST	735
			316 SST/HF SEAT		COCR-A	736		
			316 SST/HF S/G		STD HI-TEMP	COCR-A COCR-A	737 714	
			1L1000	416 SST		416 SST	422	
				316 SST/HF S/G		COCR-A	740	
				STD HI-TEMP		COCR-A COCR-A	715	
			COMP	1L5000	416 SST		316 SST	585
					316 SST		316 SST	507
		1L7500		416 SST		316 SST	586	
				316 SST		316 SST	516	
		1L1000		416 SST		316 SST	587	

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

DESIGN ET

WITHOUT SPRING LOADED SEAL RING

PORT	TRAVEL	SEAT	VSC	VALVE PLUG	DISK SEAT/RETAINER OR SEAT RING	D
2 7/8	1 1/2	METAL	1L5000	416 SST	416 SST	280
				304L SST	304L SST	284
				316 SST	316 SST	281
				316 SST/HF	COCR-A	679
				316 SST/HF S/G	COCR-A	597
				MONEL	MONEL	292
		COMP	1L5000	416 SST	316 SST	583
				316 SST	316 SST	374
				316 SST/HF S/G	COCR-A/316 SST	601
					316 SST	789
				416 SST	316 SST	584
4 3/8	2	METAL	1L5000	416 SST	416 SST	238
				316L SST	316L SST	240
				304L SST	304L SST	242
				316 SST	316 SST	239
				316 SST/HF SEAT	COCR-A	677
				316 SST/HF S/G	COCR-A	595
				ALY 20	ALY 20	246
				MONEL	MONEL	250
			1L7500	416 SST	416 SST	252
				304L SST	304L SST	256
				316 SST	316 SST	253
				316 SST/HF SEAT	COCR-A	678
				316 SST/HF S/G	COCR-A	596
				HAST C	HAST C	262
		COMP	1L5000	416 SST	316 SST	580
				316 SST	316 SST	353
				316 SST/HF S/G	COCR-A/316 SST	599
					316 SST	787
				MONEL	MONEL	358
			1L7500	416 SST	316 SST	581
				316 SST	316 SST	360
				316 SST/HF S/G	COCR-A/316 SST	600
					316 SST	788

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

DESIGN ET
WITH SPRING LOADED SEAL RING
WITHOUT ANTI-EXTRUSION RING

PORT	TRAVEL	SEAT	VSC	VALVE PLUG	SEAT RING	CAGE	D
2 7/8	1 1/2	METAL	1L5000	416 SST	416 SST	17-4 PH	686
				316 SST	316 SST	316 SST ENC	763
				316 SST/HF S/G	COCR-A	17-4 PH 316 SST ENC COCR-A	687 762 762
			1L7500	416 SST	416 SST	17-4 PH	688
				316 SST/HF S/G	COCR-A	17-4 PH 316 SST ENC COCR-A	689 765 765
		COMP	1L5000	416 SST 316 SST	316 SST 316 SST	17-4 PH 316 SST ENC	695 774
				316 SST/HF S/G	COCR-A	316 SST ENC COCR-A	773 773
			1L7500	416 SST	316 SST	17-4 PH	697
				316 SST/HF S/G	COCR-A	17-4 PH	698
		RADIUS SEAT PLUG/CL V SEAT LEAK	1L5000	416 SST	416 SST	17-4 PH	843
				316 SST/HF S/G	COCR-A	17-4 PH 316 SST ENC	837 838
			1L7500	416 SST	416 SST	17-4 PH	844
				316 SST/HF S/G	COCR-A	17-4 PH 316 SST ENC	839 840
4 3/8	2	METAL	1L5000	416 SST	416 SST	17-4 PH	680
				316 SST	316 SST	316 SST 316 SST ENC	754 754
				316 SST/HF S/G	COCR-A	17-4 PH 316 SST ENC COCR-A	681 753 753
			1L7500	416 SST	416 SST	17-4 PH	682
				316 SST	316 SST	316 SST 316 SST ENC	757 757
				316 SST/HF S/G	COCR-A	17-4 PH	683
		COMP	1L5000	416 SST	316 SST	17-4 PH	690
				316 SST	316 SST	316 SST 316 SST ENC	769 769
				316 SST/HF S/G	COCR-A	17-4 PH	691
			1L5000	416 SST	416 SST	17-4 PH	863
				316 SST/HF S/G	COCR-A	17-4 PH 316 SST ENC	854 855
		RADIUS SEAT PLUG/CL V SEAT LEAK	1L7500	416 SST	416 SST	17-4 PH	864
				316 SST/HF S/G	COCR-A	17-4 PH 316 SST ENC	856 857
			1L1000	416 SST	416 SST	17-4 PH	865
				316 SST/HF S/G	COCR-A	17-4 PH 316 SST ENC	858 859

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

DESIGN ET

WITH SPRING LOADED SEAL RING

WITH ANTI-EXTRUSION RING, METAL SEAT

PORT	TRAVEL	VSC	VALVE PLUG		SEAT RING	CAGE	D
2 7/8	1 1/2	1L5000	416 SST		416 SST	17-4 PH	841
			316 SST/HF S/G	STD	COCR-A	17-4 PH 316 SST ENC	833 835
				HI-TEMP	COCR-A	17-4 PH	831
		1L7500	416 SST		416 SST	17-4 PH	842
			316 SST/HF S/G	STD	COCR-A	17-4 PH 316 SST ENC	834 836
				HI-TEMP	COCR-A	17-4 PH	832
		1L5000	416 SST		416 SST	17-4 PH	860
			316 SST/HF S/G	STD	COCR-A	17-4 PH 316 SST ENC	848 851
				HI-TEMP	COCR-A	17-4 PH	845
4 3/8	2	1L7500	416 SST		416 SST	17-4 PH	861
			316 SST/HF S/G	STD	COCR-A	17-4 PH 316 SST ENC	849 852
				HI-TEMP	COCR-A	17-4 PH	846
		1L1000	416 SST		416 SST	17-4 PH	862
			316 SST/HF S/G	STD	COCR-A	17-4 PH 316 SST ENC	850 853
				HI-TEMP	COCR-A	17-4 PH	847
		1L5000	416 SST		416 SST	17-4 PH	860
			316 SST/HF S/G	STD	COCR-A	17-4 PH 316 SST ENC	848 851
				HI-TEMP	COCR-A	17-4 PH	845

ITEM E - DISC

SEAT	DISC	TEMP °F	PORT	E
COMP	PTFE FMS 17F3	-100+400	2 7/8	6
			4 3/8	1
METAL	N/A	N/A	ALL	N

**ITEM F - BOLTING**

BOLTING	NUT	TEMP ° F	BODY	TEMP ° F
SAE GR 5	—	-20+650		
B7	2H GR 7	-50+800 -50+1000		
B7M	2HM	-50+800		
B8	GR 8	-425+100		
B8M CL1	8M	-325+1000		
B8M CL2	8M	-325+800	HAST C	-325+250
B16	GR 7	-20+1100		

BOLTING	CWP (PSI)	HYDRO (PSI/MIN)
B8	1125	1700/2
B8M	1125	1700/2
B8M CL2	1465	2200/2
B7M CL1	1250	1875/2

FULL CAPACITY & RESTRICTED
STANDARD & NACE CL III

BODY	° F	BOLT	NUT	PLAIN	EXT	BELLOWS SEAL	ENVIRO-SEAL BELLOWS SEAL
				F	F	F	F
CI	-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	31
		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	31
		B7M	2HM LUB	21	21		
WC1	-20+450	B7	2H	2	2	5	27
	450+800	B7	2H LUB	17	17	23	31
	801+850	B7	GR 7 LUB	16	16	22	30
WC6	-20+450	B7	2H	2	2	5	27
	450+800	B7	2H LUB	17	17	23	31
	801+1000	B7	GR 7 LUB	16	16	22	30
WC9	-20+450	B7	2H	2	2	5	27
	450+800	B7	2H LUB	17	17	23	31
	801+1000	B7	GR 7 LUB	16	16	22	30
	1001+1050	B16	GR 7 LUB	18	18	24	32
C5	-20+450	B7	2H	2	2	5	27
	450+800	B7	2H LUB	17	17	23	31
	801+1000	B7	GR 7 LUB	16	16	22	30
	1001+1100	B16	GR 7 LUB	18	18	24	32

**ITEM F - BONNET BOLTING (CONT)**

FULL CAPACITY & RESTRICTED
STANDARD & NACE CL III

BODY	° F	BOLT	NUT	STD BNT	EXT BNT	BELLOWS SEAL	ENVIRO- SEAL BELLOWS SEAL
				F	F	F	F
HAST C	-50+450	B7	2H	2	2	5	27
	450+800	B7	2H LUB	17	17	23	31
CF8M	-425+-325	B8	GR 8	P	P	11	29
	-325+450	B8M CL2	8M	4	4	7	28
	450+800	B8M CL2	8M LUB	19	19	25	33
	-50+450	B7 STD	2H	2	2	5	27
		B7M	2HM	15	15		
	450+800	B7	2H LUB	17	17	23	31
		B7M	2HM LUB	21	21		
347	801+1000	B8M CL1	8M LUB	20	20	26	34
	-425+-325	B8	GR 8	P	P	11	29
	-325+450	B8M CL2	8M	4	4	7	28
	450+800	B8M CL2	8M LUB	19	19	25	33
	-50+450	B7 STD	2H	2	2	5	27
	450+800	B7	2H LUB	17	17	23	31
	801+1000	B8M CL1	8M LUB	20	20	26	34
ALY 20	-325+400	B8M CL2	8M	4	4	7	28
	-50+450	B7 STD	2H	2	2	5	27
	450+800	B7	2H LUB	17	17	23	31

ITEM G - GASKET

PORT	SPIRAL WOUND	FLAT SHEET	TEMP ° F	G
4 3/8	MONEL/ GRAPH	GRAPH/SST	-100+900	78
	INCONEL/GRAPH	GRAPH/SST	-325+1100	75
3 7/16	INCONEL/GRAPH	GRAPH/SST	-325+1100	77
2 7/8	MONEL/PTFE	MONEL/PTFE	-100+300	70
	INCONEL/GRAPH	GRAPH/SST	-325+1100	76

**ITEM H - PISTON RING OR SEAL RING**

DESIGN ED

	PISTON RING MATL	TEMP GUIDE ° F	FULL CAPACITY		RESTRICTED	
			STD	CLASS IV	4 X 2 1/2	4 X 3
			H	H	H	H
	CARBON FILLED TFE	-100++450	1	M	3	19
STEAM OR NON-OXIDIZING SERVICE	GRAPHITE FMS 17F19	+450+600	2	M	4	—
	GRAPHITE FMS 17F27	+601+900	11	31	12	21
	GRAPHITE FMS 17F39	+901+1100	28	32	29	30
AIR OR OXIDIZING SERV	GRAPHITE FMS 17F27	+450+800	11	31	12	21
	GRAPHITE FMS 17F39	+801+1000	28	32	29	30
NACE	CARBON FILLED TFE	-100++450	1	M	3	19
	GRAPHITE FMS 17F19	+450+600	2	M	4	—
	GRAPHITE FMS 17F27	+450+800	11	M	12	21
	GRAPHITE FMS 17F39	+901+1100	28	32	29	30

DESIGN ET

SEAL RING	BACK UP RING	TEMP ° F	SERVICE	RESTD		
				FULL H	4 X 2 1/2 H	4 X 3 H
PTFE FMS17F3	FKM FMS17G34	0+400	OXYGEN	13	14	25
CARBON/PTFE FMS 17F18	FKM FMS17G34	0+400	NACE NOT WATER >180° F NOT STEAM	6	8	23
	NBR, FMS 41G14	-40+160	HYDROCARBONS, AIR	5	7	—
		-40+180	FIRE-RESISTANT HYDRAULIC OILS	M	M	M
			OTHER COMPATIBLE FLUIDS	5	7	—
	ETHYLPROP FMS17G39	-40+450	NOT HYDROCARBON (OIL)	35	36	—

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	16	37	37
RESTD 4 X 2 1/2	18	38	38
RESTD 4 X 3	27	—	—

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

PDTC, ALL EXCEPT ED CLASS IV

ACTR	BONNET	VSC	CHARACTERISTIC	STEM	J	9E
GROUP 1/ AU2259	PLAIN	1L5000	FULL & RESTRICTED 4 X 2 1/2 & 4 X 3 (EX 1/4 TRAVEL)	316	1	N
				NIT 50	287	N
				316L	2	N
				321	7	N
				304L	5	N
				HAST B	10	N
				HAST C	11	N
				ALY 20	12	N
				K-MONEL	13	N
		1L7500	FULL/RESTRICTED 4 X 3	316	65	N
				NIT 50	288	N
				HAST C	75	N
				ALY 20	76	N
		1L7500	RESTRICTED 4 X 2 1/2	316	129	N
				NIT 50	289	N
				INCONEL	143	N
	EXT STYLE 1	1L5000	FULL & RESTRICTED 4 X 2 1/2 & 4 X 3 (EX 1/4 TRAVEL)	316	17	N
				NIT 50	286	N
				321	23	N
		1L7500	FULL/RESTRICTED 4 X 3	316	81	N
				NIT 50	285	N
	EXT STYLE 2	1L5000	FULL & RESTRICTED 4 X 2 1/2 & 4 X 3 (EX 1/4 TRAVEL)	316	33	N
	EXT STYLE 4	1L5000	FULL & RESTRICTED 4 X 2 1/2 & 4 X 3 (EX 1/4 TRAVEL)	316	276	N
		1L7500	FULL/RESTRICTED 4X3	316	277	N
	STYLE NS	1L5000	FULL & RESTRICTED 4 X 2 1/2 & 4 X 3 (EX 1/4 TRAVEL)	316	1	N
				NIT 50	287	N
				316L	2	N
				321	7	N
				304L	5	N
				HAST B	10	N
				HAST C	11	N
				ALY 20	12	N
				K-MONEL	13	N
		1L7500	FULL/RESTRICTED 4 X 3	316	280	N
				316	281	N

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

PDTC, ALL EXCEPT ED CLASS IV

ACTR	BONNET	VSC	CHARACTERISTIC	STEM	J	9E
GROUP 1/ AU2259	BELLOWS SEAL	1L7500 1/2 STEM	FULL & RESTRICTED 4 X 2 1/2 & 4 X 3 (EX 1/4 TRAVEL)	316	49	N
				304L	53	N
				347	56	N
				HAST C	59	N
GROUP 100 /AU2259	BELLOWS SEAL	1L7500	FULL/RESTRICTED 4 X 3	316	113	N
				K-MONEL	125	N
	ENVIRO-SEAL BELLOWS SEAL	ALL	ALL	316L	N	1
				HAST C	N	2
GROUP 101 /AU2259	PLAIN	1L1000	FULL	316	193	N
	EXT STYLE 4	1L1000	FULL	316	278	N
	ENVIRO-SEAL BELLOWS SEAL	ALL	ALL	316L HAST C	N N	1 2
GROUP 101 /AU2259	PLAIN	1L1000	FULL	316	225	N
	ENVIRO-SEAL BELLOWS SEAL	ALL	ALL	316L HAST C	N N	1 2
GROUP 103 /AU2259	PLAIN	1L5000	FULL	316	273	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	275	N
617	PLAIN	1L5000	3/4 TRAVEL	316	275	N
795	N/A	N/A	N/A	N/A	N	1
796	N/A	N/A	N/A	N/A	N	1

DESIGN ED CLASS IV

ACTR	BONNET	VSC	CHARACTERISTIC	STEM	J	9E
GROUP 1/ AU2259	PLAIN	1L5000	FULL & RESTRICTED 4 X 2 1/2 & 4 X 3 (EX 1/4 TRAVEL)	316	279	N
		1L7500	FULL/RESTRICTED 4 X 3	316	65	N
	EXT STYLE 1	1L5000	FULL & RESTRICTED 4 X 2 1/2 & 4 X 3 (EX 1/4 TRVL)	316	17	N
		1L7500	FULL/RESTRICTED 4 X 3	316	81	N
	STYLE NS	1L5000	FULL & RESTRICTED 4 X 2 1/2 & 4 X 3 (EX 1/4 TRAVEL)	316	279	N
	ENVIRO-SEAL BELLOWS SEAL	ALL	ALL	316L HAST C	N N	1 2

ITEM K - FLOW ARROW & DRIVE SCREW

K
1



ITEM L - NAMEPLATE

L
1

ITEM 9A - TYPE, ACTION, FLOW

FLOW TYPE	PUSH DOWN TO CLOSE	
	UP 9A	DOWN 9A
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, WC6, CF8M, WC9, 347	CLASS 150	450 PSI /2 MIN	3
		CLASS 300	1125 PSI /2 MIN	4
		CLASS 400	1500 PSI /2 MIN	5
		CLASS 600	2250 PSI /2 MIN	6
	ALLOY 20	CLASS 150	350 PSI /2 MIN	7
		CLASS 300	900 PSI /2 MIN	8
		CLASS 400	1200 PSI /2 MIN	9
		CLASS 600	1800 PSI /2 MIN	10
	WC1	CLASS 150	400 PSI /2 MIN	15
		CLASS 300	1050 PSI /2 MIN	16
		CLASS 600	2100 PSI /2 MIN	17
	HAST C	CLASS 150	450 PSI /2 MIN	11
		CLASS 300	1125 PSI /2 MIN	12
		CLASS 400	1500 PSI /2 MIN	13
		CLASS 600	2250 PSI /2 MIN	14
EN	CI	PN10/16	350 PSI (24 BAR)/2MIN	18
		PN25	550 PSI (38 BAR)/2MIN	19
	ALL OTHER	PN10/16	350 PSI (24 BAR)/2MIN	20
		PN25/40	875 PSI (60 BAR)/2MIN	21
		PN63	1375 PSI (95 BAR)/2MIN	22
		PN100	2175 PSI (150 BAR)/2MIN	23

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

DESIGN EC & ES

CHARACTERISTIC	METAL SEAT (SCFH) CLASS IV						COMPOSITION SEAT (BUBBLES/MIN) CLASS VI					
	2 7/8 PORT		3 7/16 PORT		4 3/8 PORT		2 7/8 PORT		3 7/16 PORT		4 3/8 PORT	
FLOW UP	VALUE	9D	VALUE	9D	VALUE	9D	VALUE	9D	VALUE	9D	VALUE	9D
EQUAL PERCENTAGE	27.4	1	33.3	6	47.6	11	6	16	9	17	14	18
LINEAR	31.8	2	39.9	7	48.8	12	6	16	9	17	14	18
QUICK OPENING	40.6	3	41.8	8	53.7	13	6	16	9	17	14	18
WHISPER	26	4	29.3	9	43.9	14	6	16	9	17	14	18

DESIGN ED, METAL SEAT

CHARACTERISTIC	FLOW	PORT	CLASS II(SCFH)		CLASS IV(SCFH)	
			VALUE	9D	VALUE	9D
EQUAL PERCENTAGE	DOWN	2 7/8	1307	19	—	—
		4 3/8	2452	20	49.0	29
LINEAR	DOWN	2 7/8	1365	21	—	—
		4 3/8	2533	22	50.7	30
QUICK OPENING	DOWN	2 7/8	1537	23	—	—
		4 3/8	2707	24	54.2	31
WHISPER	UP	2 7/8	1297	27	—	—
		4 3/8	1977	28	39.5	32

DESIGN ET

SEAT	SEAL RING	FLOW	CHARACTERISTIC	CLASS	PORT	VALUE	9D
METAL	STD & SPRING LOADED SEAL W/O ANTI-EXTRUSION RING	DOWN	EQ PERCENT	IV (SCFH)	2 7/8	26.1	33
					4 3/8	49.0	29
			LINEAR	IV (SCFH)	2 7/8	27.3	34
					4 3/8	50.7	30
		UP	Q OPEN	IV (SCFH)	2 7/8	30.7	35
					4 3/8	54.2	31
			WHISPER	IV (SCFH)	2 7/8	25.9	36
					4 3/8	39.5	32
COMP	ALL	ALL	ALL	V WATER TEST (ML/MIN)	ALL	CALC	38
				V AIR TEST (ML/MIN)	2 7/8	13.54	40
					4 3/8	20.59	41
				V AIR TEST (ML/MIN)	2 7/8	13.54	40
					4 3/8	20.59	41

ET, SPRING LOADED SEAL RING W/ANTI-EXTRUSION RING ASSEMBLY DWG	21B2120
ET, FULL CAPACITY ASSEMBLY DWG	44A7928
ET, RESTRICTED 4X2 1/2 ASSEMBLY DWG	44A7931
ED, FULL CAPACITY ASSEMBLY DWG	30A9542
ED, RESTRICTED 4X2 1/2 ASSEMBLY DWG	30A9547
ES, FULL CAPACITY ASSEMBLY DWG	30A9543
ES, RESTRICTED 4X2 1/2 ASSEMBLY DWG	30A9548
ES, RESTRICTED 4X3 ASSEMBLY DWG	30A9550
ED, CLASS IV FULL CAPACITY ASSEMBLY DWG	37A3993



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, the “GROUP 100/ AU2259” actuator, “ENVIRO-SEAL BELLOWS SEAL” bonnet, the “GROUP 101/ AU2259” actuator, “ENVIRO-SEAL BELLOWS SEAL” bonnet, the “GROUP 103/ AU2259” actuator, “ENVIRO-SEAL BELLOWS SEAL” bonnet.