



4CONFIDENTIAL. 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.

ECX4 - A B C D E F G H J K L 9A 9C 9D 9E

C-SEAL TRIM SELECTION STRING = ECX4 - 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
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+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
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 (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 - RING & CAGE ADAPTOR**

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

**ITEM A - VALVE BODY (WITHOUT DRAIN TAPPING = W/TAP)(WITH DRAIN TAPPING = TAP)****ITEM B - RING & CAGE ADAPTOR (USE WITH RESTRICTED TRIM ONLY)**

	CL125 FF N/TAP	CL250 RF N/TAP	ADAPTOR 2 1/2 X 1 1/2	ADAPTOR 2 1/2 X 2
	<b>A</b>	<b>A</b>	<b>B</b>	<b>B</b>
CAST IRON CL B	1	—	1	R
CAST IRON CL C	—	2	1	R

	SCH 40 BWE		SCH 80 BWE		CL150 RF		CL300 RF	ADAPTOR	ADAPTOR
	N/TAP	TAP	N/TAP	TAP	N/TAP	TAP	N/TAP	2 1/2X1 1/2	2 1/2X2
	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>B</b>	<b>B</b>
WCC	3	--	10	--	17	91	24	1	R
C5	6	--	13	--	20	--	27	12	R
LCC	--	--	--	--	--	--	25	1	R
WC6	--	--	--	--	21	--	28	12	R
316	8	--	15	--	22	--	29	3	R
ALLOY 20	R	R	R	R	--	--	--	--	R
HAST C	M	M	M	M	--	--	--	--	R
WC9	149	--	207	--	151	--	208	12	R

	CL400,600				CL400,600	ADAPTOR 2 1/2 X 1 1/2	ADAPTOR 2 1/2 X 2
	RF		CL150 RTJ	CL300 RTJ	RTJ		
	N/TAP	TAP	N/TAP	N/TAP	N/TAP		
	A	A	A	A	A	B	B
WCC	31	105	38	45	52	1	R
C5	34	--	--	--	--	12	R
LCC	32	--	--	--	--	1	R
WC6	35	--	--	--	--	12	R
316	36	--	--	--	57	3	R
WC9	153	--	209	210	211	12	R



**ITEM A - VALVE BODY (WITHOUT DRAIN TAPPING = W/TAP) (WITH DRAIN TAPPING = TAP) (CONT)**  
**ITEM B - RING & CAGE ADAPTOR (USE WITH RESTRICTED TRIM ONLY) (CONT)**

FOREIGN MANUFACTURED EN1092-1 FLANGES  
 DN 65 (2 1/2")

RF (TYPE B)

	PN10/16	PN25	2 1/2 X 1 1/2	2 1/2 X 2
	N/TAP	N/TAP	ADAPTOR	ADAPTOR
	<b>A</b>	<b>A</b>	<b>B</b>	<b>B</b>
CAST IRON	165	166	1	R

	PN10/16	PN25/40	PN63	PN100	2 1/2 X 1 1/2	2 1/2 X 2
	N/TAP	N/TAP	N/TAP	N/TAP	ADAPTOR	ADAPTOR
	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>B</b>	<b>B</b>
WCC	167	177	187	197	1	R
C5	170	180	190	200	12	R
LCC	168	178	188	198	1	R
WC1	169	179	189	199	--	R
WC6	171	181	191	201	12	R
316	172	182	192	202	3	R
347	173	183	193	203	--	R
ALLOY 20	174	184	194	204	--	R
HAST C	175	185	195	205	--	R
WC9	176	186	196	206	12	R

RECESS (TYPE F)

	PN 10/16	PN 25/40	PN 63	PN 100	2 1/2 X 1 1/2	2 1/2 X 2
	N/TAP	N/TAP	N/TAP	N/TAP	ADAPTOR	ADAPTOR
	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>B</b>	<b>B</b>
WCC	212	215	218	221	1	R
LCC	213	216	219	222	1	R
CF8M/316	214	217	220	223	3	R



## ITEM C - CAGE

## ITEM D - VALVE PLUG/SEAT RING

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+420
	316 SST	316 SST	-150+410		
	316 SST/HF SEAT	COCR-A	-150+300		
	316 SST/HF S/G	STD	-150+410		
	HI-TEMP	COCR-A	+410+800	CF8M/347 SST	+410+440
304L SST	304L SST	304L SST	-425+300		
316L SST	316L SST	316L SST	-425+300		
316 SST	316 SST	316 SST	-425+300		
316 SST ENC	416 SST	416 SST	-20+410		
	MONEL	MONEL	-400+500		
	316 SST	316 SST	-425+600		
	316 SST/HF SEAT	COCR-A	-425+300		
	316 SST/HF S/G	COCR-A	-425+650	C5	-20+650
COCR-A				HAST C	-325+650
	316 SST/HF SEAT	COCR-A	-425+300		
	316 SST/HF S/G	STD	-425+800		
	HI-TEMP	COCR-A	+800+1100	347 SST	+800+840

MAX DELTA P(PSI), MUST =<CWP, NO SEAT CONSIDERED											
SHUT OFF											
DESIGN	ES								OTHER		FLOWING
	SEAT	METAL				COMP			METAL	COMP	ALL
PORT	1 7/8	2 5/16	2 7/8		2 7/8		2 3/4		ALL	ALL	ALL
STEM	1/2	1/2	1/2	3/4	1/2	3/4	3/4		ALL	ALL	ALL
VALVE PLUG	RING										
416 SST	416 SST	1500	1212	785	1500			1500	1500	1500	1500
	316 SST					785	1500		300	1500	1500
316L SST	316L SST								300	1500	1500
304L SST	304L SST								300	1500	1500
316 SST	316 SST	300	300	300	300	785	1500		300	1500	1500
316 SST/HF SEAT	COCR-A	1500	1212	785	1500				1500	1500	1500
316 SST/HF S/G	COCR-A	1500	1212	785	1500				1500	1500	1500
MONEL	MONEL								300	1500	1500



## ITEM C - CAGE (CONT)

CHARACTERISTIC	DESIGN	CAGE	PORT	C
EQ PERCENT	ALL	17-4 PH H900	1 7/8	73
			2 5/16	161
			2 7/8	1
			2 3/4	1
		17-4 PH H1100 304L SST	1 7/8	74
			2 7/8	7
		316 SST ENC	1 7/8	80
			2 5/16	236
			2 7/8	8
			2 3/4	8
		COCR-A MONEL	2 7/8	35
			2 7/8	R
LINEAR	ALL	17-4PH H900	1 7/8	82
			2 7/8	10
			2 3/4	10
		316L SST	1 7/8	86
		316 SST ENC	1 7/8	89
			2 7/8	17
			2 3/4	17
		COCR-A MONEL	1 7/8	114
			2 7/8	R
Q-OPEN	ALL	17-4 PH H900	1 7/8	91
			2 7/8	19
			2 3/4	19
		316 SST	2 7/8	22
		316 SST ENC	1 7/8	98
			2 7/8	26
			2 3/4	26
		COCR-A MONEL	2 7/8	49
			2 7/8	R
WHISPER	ALL	17-4 PH H900	1 7/8	100
			2 7/8	28
		316 SST ENC	1 7/8	235
			2 7/8	234
		COCR-A	1 7/8	232
			2 7/8	231
		MONEL	1 7/8	238

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

## DESIGN ED, METAL SEAT

PORT	TRAVEL	VSC	VALVE PLUG	SEAT RING	D
1 7/8	3/4	1L5000	316L SST	316L SST	520
			316 SST	316 SST	519
			316 SST/HF S/G	STD HI-TEMP	532
				COCR-A	591
			416 SST	416 SST	518
2 7/8	1 1/2	1L5000	MONEL	MONEL	530
			304L SST	304L SST	170
			316 SST	316 SST	167
			316 SST/HF SEAT	COCR-A	471
			316 SST/HF S/G	STD HI-TEMP	355
				COCR-A	588
		1L7500	416 SST	416 SST	166
			416 SST	416 SST	180

## DESIGN ES

SEAT	PORT	TRAVEL	VSC	VALVE PLUG	SEAT RING	D
METAL	1 7/8	3/4	1L5000	316 SST	316 SST	613
				316 SST/HF SEAT	COCR-A	614
				316 SST/HF S/G	STD HI-TEMP	615
					COCR-A	594
				416 SST	416 SST	542
	2 5/16	1 1/8	1L5000	416 SST	416 SST	413
	2 7/8	1 1/2	1L5000	316 SST	316 SST	607
				316 SST/HF SEAT	CO CR-A	608
				316 SST/HF S/G	STD HI-TEMP	609
					COCR-A	592
				416 SST	416 SST	256
			1L7500	316 SST	316 SST	610
				316 SST/HF SEAT	COCR-A	611
				316 SST/HF S/G	STD HI-TEMP	612
					COCR-A	593
				416 SST	416 SST	273
COMP	1 7/8	1 1/2	1L5000	316 SST/HF S/G	COCR-A	642
	2 7/8	1 1/2	1L5000	416 SST	316 SST	347
				316 SST/HF S/G	COCR-A	640
			1L7500	316 SST	316 SST	*316
SOFT SEAT PLUG	2 3/4	1 1/2	1L7500	316 SST/HF S/G	COCR-A	641
				416 SST	416 SST	645



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

DESIGN ET

WITHOUT SPRING LOADED SEAL RING

SEAT	PORT	TRAVEL	VSC	VALVE PLUG	DISK SEAT/RETAINER OR SEAT RING	D
METAL	1 7/8	3/4	1L5000	316 SST	316 SST	519
				316 SST/HF SEAT	COCR-A	533
				316 SST/HF S/G	COCR-A	532
				316L SST	316L SST	520
				416 SST	416 SST	518
				MONEL	MONEL	530
	2 7/8	1 1/2	1L5000	316 SST	316 SST	167
				316 SST/HF SEAT	COCR-A	471
				316 SST/HF S/G	COCR-A	355
				304L SST	304L SST	170
				416 SST	416 SST	166
			1L7500	416 SST	416 SST	180
COMP	1 7/8	3/4	1L5000	316 SST	316 SST	534
				316 SST/HF S/G	316 SST	639
					COCR-A/316 SST	541
				416 SST	316 SST	540
	2 7/8	1 1/2	1L5000	316 SST	316 SST	235
				316 SST/HF S/G	316 SST	637
				416 SST	316 SST	344
				MONEL	MONEL	240
			1L7500	316 SST/HF S/G	COCR-A/316 SST	638
				416 SST	316 SST	345

SPRING LOADED SEAL RING

W/O ANTI-EXTRUSION RING

SEAT	PORT	TRAVEL	VSC	VALVE PLUG	RING	D
METAL	1 7/8	3/4	1L5000	316 SST/HF S/G	COCR-A	576
				416 SST	416 SST	575
	2 7/8	1 1/2	1L5000	416 SST	416 SST	571
COMP	1 7/8	3/4	1L5000	416 SST	316 SST	581
	2 7/8	1 1/2	1L5000	416 SST	316 SST	577

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

DESIGN ET

WITH ANTI-EXTRUSION RING, METAL SEAT

PORT	TRAVEL	VSC	VALVE PLUG		RING	CAGE	D
1 7/8	3/4	1L5000	316 SST/HF S/G	STD	COCR-A	316 SST ENC	669
				HI-TEMP	COCR-A	17-4 PH	668
			416 SST		416 SST	17-4 PH	667
			416 SST		416 SST	17-4 PH	672
2 7/8	1 1/2	1L5000	316 SST/HF S/G	STD	COCR-A	316 SST ENC	678
				HI-TEMP	COCR-A	17-4 PH	676
			416 SST		416 SST	17-4 PH	674
			416 SST		416 SST	17-4 PH	684
		1L7500	316 SST/HF S/G	STD	COCR-A	316 SST ENC	679
				HI-TEMP	COCR-A	17-4 PH	677
			416 SST		416 SST	17-4 PH	675
			416 SST		416 SST	17-4 PH	685

RADIUS SEAT VALVE PLUG FOR CLASS V SHUT OFF, METAL SEAT  
 SPRING LOADED SEAL RING W/O ANTI-EXTRUSION RING

PORT	TRAVEL	VSC	VALVE PLUG	SEAT RING	CAGE	D
1 7/8	3/4	1L5000	316 SST/HF S/G	COCR-A	17-4 PH	670
					316 SST ENC	671
			416 SST	416 SST	17-4 PH	673
2 7/8	1 1/2	1L5000	316 SST/HF S/G	COCR-A	17-4 PH	680
					316 SST ENC	681
			416 SST	416 SST	17-4 PH	686
		1L7500	316 SST/HF S/G	COCR-A	17-4 PH	682
					316 SST ENC	683
			416 SST	416 SST	17-4 PH	687

**ITEM E - DISC**

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

**ITEM F - BONNET BOLTING**

BOLTING	NUT	TEMP ° F	BODY	TEMP ° F	C.W.P. PSI/100° F	HYDRO PSI/MIN
SAE GRADE 5	-----	-20+650				
B7	2H	-50+800				
B16	GR 7	-20+1100				
B8M CL1	8M	-325+1000			1250	1875/2
B8	GR 8	-425+100			930	1400/2
B7	GR 7	-50+1000				
B7M	2HM	-50+800			1050	1575/2
B8M CL2	8M	-325+800	HAST C	-325+250	1250	1875/2

BODY	° F	BOLT	NUT	PLAIN	EXT	BELLOWS SEAL
				F	F	F
CAST IRON	-100+250	B8M CL2	-----	—	—	—
	-20+450	SAE GR 5	-----	1	M	M
	-50+450	B7	2H	—	2	5
WCC	-20+450	B7	2H	2	2	5
		B7M	2HM	15	15	
	450+800	B7	2H LUB	17	17	23
LCC		B7M	2HM LUB	21	21	
	-20+450	B7	2H	2	2	5
		B7M	2HM	15	15	
WC1	450+650	B7	2H LUB	17	17	23
		B7M	2HM LUB	21	21	
	-20+450	B7	2H	2	2	5
WC6	450+800	B7	2H LUB	17	17	23
	801+850	B7	GR 7 LUB	16	16	22
	-20+450	B7	2H	2	2	5
WC9	450+800	B7	2H LUB	17	17	23
	801+1000	B7	GR 7 LUB	16	16	22
	1001+1050	B16	GR 7 LUB	18	18	24
C5	-20+450	B7	2H	2	2	5
	450+800	B7	2H LUB	17	17	23
	801+1000	B7	GR 7 LUB	16	16	22
HAST C	1001+1100	B16	GR 7 LUB	18	18	24
	-50+450	B7	2H	2	2	5
	450+800	B7	2H LUB	17	17	23

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

BODY	° F	BOLT	NUT	PLAIN	EXT	BELLOWS SEAL
				F	F	F
316	-325+450	B8M CL2	8M	4	4	--
	450+800	B8M CL2	8M LUB	19	19	25
	-50+450	B7 STD	2H	2	2	5
		B7M	2HM	15	15	
	450+800	B7	2H LUB	17	17	23
		B7M	2HM LUB	21	21	
	801+1000	B8M CL1	8M LUB	20	20	26
347	-325+450	B8M CL2	8M	4	4	--
	450+800	B8M CL2	8M LUB	19	19	25
	-50+450	B7 STD	2H	2	2	5
	450+800	B7	2H LUB	17	17	23
	801+1000	B8M CL1	8M LUB	20	20	26
ALY 20	-325+400	B8M CL2	8M	4	4	--
	-50+450	B7 STD	2H	2	2	5
	450+800	B7	2H LUB	17	17	23

**ITEM G - GASKET**

## FULL CAPACITY - 2 7/8 PORT

SPIRAL WOUND GASKET	FLAT SHEET GASKETS	TEMP ° F	G
MONEL & GRAPH	GRAPH/SST	-100 TO 450	83
INCONEL & GRAPHITE	GRAPH/SST	-325 TO 1100	80

## RESTRICTED - 2 1/2 X 1 1/2 - 1 7/8 PORT

SPIRAL WOUND GASKET	FLAT SHEET GASKETS	TEMP ° F	G
INCONEL & GRAPHITE	GRAPH/SST	-325 TO 1100	81

## RESTRICTED - 2 1/2 X 2 - 2 5/16 PORT

SPIRAL WOUND GASKET	FLAT SHEET GASKETS	TEMP ° F	G
INCONEL & GRAPHITE	GRAPH/SST	-325 TO 1100	82

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

	PISTON RING MATL	TEMP GUIDE DEG F	FULL CAPACITY	RESTRICTED
			<b>H</b>	<b>H</b>
	CARBON FILLED TFE	-100 TO +450	1	3
STEAM OR NON-OXIDIZING SERVICE	GRAPHITE FMS 17F19	+450 TO 600	2	4
	GRAPHITE FMS 17F27	+601 TO 900	9	10
	GRAPHITE FMS 17F39	+901 TO 1100	19	20
AIR OR OXIDIZING SERV	GRAPHITE FMS 17F27	+450 TO 800	9	10
	GRAPHITE FMS 17F39	+801 TO 1000	19	20
NACE	CARBON FILLED TFE	-100 TO +450	1	3
	GRAPHITE FMS 17F19	+450 TO 600	2	4
	GRAPHITE FMS 17F27	+450 TO 800	9	10
	GRAPHITE FMS 17F39	+901 TO 1100	19	20

**DESIGN ET**

SEAL RING	BACK UP RING	TEMP DEG F	SERVICE	FULL	RESTD
				<b>H</b>	<b>H</b>
PTFE FMS 17F3	FKM FMS 17G34	0+400	OXYGEN	13	14
CARBON/PTFE FMS 17F18	FKM FMS 17G34	0+400	NACE	6	8
			NOT WATER >180° F		
			NOT STEAM		
	NBR, FMS 41G14	-40+160	HYDROCARBONS, AIR	5	--
		-40+180	FIRE-RESISTANT	M	M
			HYDRAULIC OILS		
			OTHER COMPATIBLE FLUIDS	5	--
	ETHYL PROP FMS 17G39	-40+450	NOT HYDROCARBON(OIL)	23	24

**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+500	-100+600
	<b>H</b>	<b>H</b>	<b>H</b>
FULL CAPACITY	16	25	25
RESTD 2 1/2 X 1 1/2	18	26	26

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

PDTC

ACTR	BONNET	VSC	PORT SIZE	STEM	J	9E
GROUP 1/ AU2259	PLAIN	1L5000	FULL	316	1	N
				NIT 50 (NACE)	309	N
				NIT 50	309	N
				304L	5	N
				K-MONEL	13	N
				INCONEL	15	N
		RESTRICTED 2 1/2 X 1 1/2		316	162	N
				NIT 50(NACE)	306	N
				NIT 50	306	N
	EXT STYLE 1	1L5000	FULL	316L	163	N
				K-MONEL	190	N
		RESTRICTED 2 1/2 X 2		316	200	N
				NIT 50 (NACE)	310	N
		1L7500	FULL	316	129	N
				NIT 50 (NACE)	311	N
		RESTRICTED 2 1/2X2		NIT 50(NACE)	312	N

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

PDTC

ACTR	BONNET	VSC	PORT SIZE	STEM	J	9E
GROUP 1/ AU2259	EXT STYLE 2	1L5000	FULL	316	33	N
	STYLE NS	1L5000	FULL	316	1	N
				NIT 50 (NACE)	309	N
				NIT 50	309	N
				304L	5	N
				K-MONEL	13	N
				INCONEL	15	N
			RESTRICTED 2 1/2 X 1 1/2	316	162	N
				NIT 50 (NACE)	306	N
				NIT 50	306	N
				316L	163	N
				K-MONEL	190	N
			RESTRICTED 2 1/2 X 2	316	200	N
				NIT 50 (NACE)	310	N
		1L7500	FULL	316	299	N
			RESTRICTED 2 1/2 X 2	NIT 50 (NACE)	299	N
GROUP 103 /AU2259	BELLOWS SEAL	1L5000	FULL	316	49	N
				HAST C	59	N
			RESTRICTED 2 1/2 X 1 1/2	316	49	N
				HAST C	59	N
	ENVIRO-SEAL BELLOWS SEAL	ALL	ALL	ALL	N	1
	PLAIN	1L5000	FULL	316	193	N
	ENVIRO-SEAL BELLOWS SEAL	ALL	ALL	316L HAST C	N N	1 2
607	PLAIN	1L5000	FULL	316	296	N
617	PLAIN	1L5000	FULL	316	296	N
298T	N/A	N/A	N/A	N/A	N	1
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 SCREWS****K**

1

**ITEM L - NAMEPLATE**

	L
FISHER	1
PICK HEATERS	2

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

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

**ITEM 9C – CLASS/HYDRO**

BODY MATERIAL	ASME RATING	HYDRO (PSI/MIN)	9C
CAST IRON	CLASS 125	300/2	1
	CLASS 250	750/2	2
WCC, LCC, C5, WC9, 316, 347	CLASS 150	450/2	3
	CLASS 300	1125/2	4
	CLASS 600	2250/2	5
ALLOY 20	CLASS 150	350/2	6
	CLASS 300	900/2	7
	CLASS 600	1800/2	8
NON CODE MATERIAL			
HAST C	CLASS 150	450/2	9
	CLASS 300	1125/2	10
	CLASS 600	2250/2	11

PSI TEST PRESSURE CONVERTED FROM BAR UNITS FOR PN EN RATING

BODY MATERIAL	EN RATING	HYDRO		9C
		BAR/MIN	PSI/MIN	
CAST IRON	PN 10/16	24/2	350/2	15
	PN 25	38/2	550/2	16
ALL OTHER	PN 10/16	24/2	350/2	15
	PN 25/40	60/2	875/2	17
	PN 63	95/2	1375/2	18
	PN 100	150/2	2175/2	19

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

DESIGN EC &amp; ES

CHARACTERISTIC	METAL SEAT (SCFH) CLASS IV						COMP SEAT (BUBBLES/MIN) CLASS VI					
	1 7/8 PORT		2 5/16 PORT		2 7/8 PORT		1 7/8 PORT		2 5/16 PORT		2 7/8 PORT	
FLOW UP	COL 10	9D	COL 10	9D	COL 10	9D	COL 10	9D	COL 10	9D	COL 10	9D
EQUAL PERCENT	9.0	1	14.2	6	20.1	11	3	16	4	17	6	18
LINEAR	11.1	2	17.2	7	20.8	12	3	16	4	17	6	18
QUICK OPEN	16.4	3	20.7	8	22.4	13	3	16	4	17	6	18
WHISPER	9.4	4	15.4	9	19.4	14	3	16	4	17	6	18



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

## DESIGN ED

CHARACTERISTIC	PORT SIZE	METAL SEAT (SCFH) CLASS II	
		COL 10	9D
FLOW DOWN			
EQUAL PERCENT	1 7/8	479	19
	2 7/8	1045	20
LINEAR	1 7/8	602	21
	2 7/8	1119	22
QUICK OPEN	1 7/8	776	23
	2 7/8	1139	24
FLOW UP			
WHISPER	1 7/8	459	27
	2 7/8	812	28

## DESIGN ET

SEAT	SEAL RING CONSTRUCTION	FLOW	CHARACTER	CLASS	PORT	TEST VALUE	9D
METAL	STD & SPRING LOADED SEAL W/O ANTI-EXTRUSION RING	DOWN	EQ PERCENT	IV(SCFH)	1 7/8	9.58	29
					2 7/8	20.9	30
			LINEAR	IV(SCFH)	1 7/8	12.0	31
					2 7/8	22.4	13
		UP	Q OPEN	IV(SCFH)	1 7/8	15.5	32
					2 7/8	22.8	33
	SPRING LOADED SEAL W/ANTI-EXTRUSION	ALL	ALL	V WATER TEST (ML/MIN)	ALL	CALC	38
					1 7/8	8.84	40
					2 7/8	13.54	41
COMP	ALL	ALL	ALL	V AIR TEST (ML/MIN)	1 7/8	8.84	40
					2 7/8	13.54	41

ET	SPRING LOADED SEAL RING W/ANTI-EXTRUSION RING ASSY DWG	21B2120
ET	FULL CAPACITY TRIM ASSEMBLY	44A7928
ET	RESTRICTED TRIM ASSEMBLY	44A7931
ES	FULL CAPACITY TRIM ASSEMBLY DWG	30A9543
ES	RESTRICTED TRIM ASSEMBLY DWG	30A9548
ED	FULL CAPACITY TRIM ASSEMBLY DWG	30A9542
ED	RESTRICTED TRIM ASSEMBLY DWG	30A9547



Revision Change Record

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

ECRN: 20132759

Matrix:

Item	Module	Changes
F	all	Change the C.W.P. (PSI/100° F) from 930 to 1250, the HYDRO (PSI/MIN) from 1400/2 to 1875/2 for the B8M CL2 bolting 8M nut. (Oracle is not affected.)