

# Increased Pressure/Temperature Ratings for Fisher® EH and EW Series Steel Valves

## U.S. Traditional Units

EH Series and EW Series valves with butt-welded ends have increased/temperature ratings, called Intermediate ratings as defined in ASME B16.34-2013.

The extra strength of these valves allows ratings higher than the normal CL900, CL1500, or CL2500 ratings that are specified in ASME B16.34-2013. Two types of the higher (Intermediate) ratings are available: Intermediate Standard and Intermediate Special. All EH and EW Series valves with butt-welded ends listed in the following tables have Intermediate Standard ratings. Intermediate Special ratings allow pressures higher than Intermediate Standard ratings, which can only be obtained by a valve body assembly successfully undergoing certain nondestructive examinations as described in the ASME B16.34-2013 standard.

Intermediate ratings apply only to valve body assemblies with the material listed in tables 1 and 2. EH Series valves with line-size butt-welding ends have Intermediate ratings as listed in tables 3 through 21.

The NPS 12 x 8 CL900 EW Series valve body has Intermediate ratings as shown in table 22. Note that the NPS 1 and 2 socket-weld EH Series valve bodies also provide the ratings shown for NPS 1 and 2 butt-welded valve bodies. Also, the NPS 1-1/2 x 1 EH Series valve body is the only valve body with expanded ends that provides Intermediate ratings; the NPS 2 x 1, 3 x 2, 4 x 3, 6 x 4, and 8 x 6 valve bodies do not allow these higher ratings.

The ratings in tables 3 through 22 were calculated using the maximum stem load listed in each table. These stem loads are for the largest diameter 316 strain-hardened stainless steel stem available for each valve body size. When using the tables, compare the maximum available stem load to the table stem load. If the maximum available stem load is greater than the printed value, consult your Emerson Process Management sales office since the higher stem load may require additional pressure derating due to bolting limitations. If the maximum available stem load is less than or equal to the printed value, a lower load may allow pressures higher than those shown in the tables if the rating is limited by bolting limitations.

Table 1. Body and Bolting Material Descriptions for NPS 1 through 6 EH Series Valves

VALVE BODY MATERIAL		BOLTING MATERIAL				TEMPERATURE, °F
Specification	Grade	Bolts		Nuts		
		Specification	Grade	Specification	Grade	
SA-352	LCC	SA-193	B7	SA-194	2H	to 700
SA-216	WCC	SA-193	B7	SA-194	2H	to 800
SA-217	WC9	SA-193	B7	SA-194	2H	to 800
		SA-193	B7	SA-194	7	over 800
		SA-193	B16	SA-194	7	See table values
SA-351	CF8M or 316 <sup>(1)</sup>	SA-193	B7	SA-193	2H	to 450
		SA-453	660 Class A or B with Belleville washers	SA-194	7	to 800
		SA-453	660 Class A or B rupture tested with Belleville washers	SA-194	7	to 1000
		SA-453	660 Class A or B with Belleville washers	SA-194	7M	to 800
		SA-453	660 Class A or B rupture tested with Belleville washers	SA-194	7M	to 1000

1. 316H must be specified for service temperatures above 1000°F.



Table 2. Body and Bolting Material Descriptions for NPS 8 through 14 EH Series Valves and NPS 12 x 8 EW Series Valves

VALVE BODY MATERIAL		BOLTING MATERIAL				TEMPERATURE, °F
Specification	Grade	Bolts		Nuts		
		Specification	Grade	Specification	Grade	
SA-352	LCC	SA-193	B7	SA-194	2H	to 450
SA-216	WCC	SA-193	B7	SA-194	2H	to 800
SA-217	WC9	SA-193	B7	SA-194	2H	to 800
		SA-193	B7	SA-194	7	over 800
		SA-193	B16	SA-194	7	See table values
SA-351	CF8M or 316 <sup>(1)</sup>	SA-193	B7	SA-193	2H	to 450
		SA-453	660 Class A or B with Belleville washers	SA-194	7	to 800
		SA-453	660 Class A or B rupture tested with Belleville washers	SA-194	7	to 1000
		SA-453	660 Class A or B with Belleville washers	SA-194	7M	to 800
		SA-453	660 Class A or B rupture tested with Belleville washers	SA-194	7M	to 1000

1. 316H must be specified for service temperatures above 1000°F.

Table 3. NPS 1 CL1500 EH Series Valves with Intermediate 2282 Rating

TEMP, °F	PRESSURE RATINGS, PSIG								MAXIMUM STEM LOAD, <sup>(2)</sup> POUNDS
	Valve Body Material and Intermediate Class Designation								
	WCC		LCC		WC9		CF8M <sup>(1)</sup>		
	Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class	
100	5705	5705	5705	5705	5705	5705	5475	5705	11110
200	5705	5705	5705	5705	5705	5705	4710	5250	9920
300	5540	5705	5540	5705	5540	5640	4255	4745	9020
400	5370	5705	5370	5705	5370	5510	3905	4335	8120
450	5205	5705	5205	5705	5205	5490	3720	4085	7860
500	5055	5705	5055	5705	5055	5475	(4)	(4)	7660
600	4600	5705	4600	5705	4600	5475	(4)	(4)	7320
650	4475	5705	4475	5705	4475	5445	(4)	(4)	7140
700	4315	5413	4315	5413	4320	5410	(4)	(4)	6970
750	3835	4792	---	---	4045	5250	(4)	(4)	6910
800	3130	3911	---	---	3860	5115	(4)	(4)	6850
850	---	---	---	---	3705	4890 <sup>(3)</sup>	(4)	(4)	2950
900	---	---	---	---	3420	4565 <sup>(3)</sup>	(4)	(4)	2930
950	---	---	---	---	2870 <sup>(3)</sup>	3585 <sup>(3)</sup>	(4)	(4)	2900
1000	---	---	---	---	1980 <sup>(3)</sup>	2480 <sup>(3)</sup>	(4)	(4)	2870
1050	---	---	---	---	1330 <sup>(3)</sup>	1545 <sup>(3,5)</sup>	(4)	(4)	2870
1100	---	---	---	---	---(4)	---(4)	(4)	(4)	2870

1. Ratings based on SA-193-B7 bolts up to 450°F, consult your Emerson Process Management sales office for ratings with other bolt material.  
 2. For largest available 316 strain-hardened stainless steel stem.  
 3. SA-193-B16 bolts and SA-194-7 nuts must be used to obtain maximum rating shown.  
 4. Consult your Emerson Process Management sales office.  
 5. Derating due to bolting limitations, higher ratings may be possible with alternate bolt materials. Consult your Emerson Process Management sales office for ratings with other bolt materials.

**Table 4. NPS 1 CL2500 EH Series Valves with Intermediate 3862 Rating<sup>(1)</sup>**

TEMP, °F	PRESSURE RATINGS, PSIG								MAXIMUM STEM LOAD, <sup>(3)</sup> POUNDS
	Valve Body Material and Intermediate Class Designation								
	WCC		LCC		WC9		CF8M <sup>(2)</sup>		
Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class		
100	9655	9655	9655	9655	9655	9655	9270	9655	11110
200	9655	9655	9655	9655	9655	9655	7975	8885	9920
300	9375	9655	9375	9655	9375	9545	7200	8035	9020
400	9085	9655	9085	9655	9085	9325	6610	7340	8120
450	8805	9655	8805	9655	8805	9295	5500	6915	7860
500	8550	9655	8550	9655	8555	9270	(5)	(5)	7660
600	7785	9655	7785	9655	7785	9270	(5)	(5)	7320
650	7575	9655	7575	9655	7575	9215	(5)	(5)	7140
700	7310	9160	7310	9160	7310	9160	(5)	(5)	6970
750	6490	8110	---	---	6840	8885	(5)	(5)	6910
800	5295	6620	---	---	6530	8665 <sup>(4)</sup>	(5)	(5)	6850
850	---	---	---	---	6270	8275 <sup>(4)</sup>	(5)	(5)	2950
900	---	---	---	---	5785 <sup>(4)</sup>	7725 <sup>(4)</sup>	(5)	(5)	2930
950	---	---	---	---	4860 <sup>(4)</sup>	6070 <sup>(4)</sup>	(5)	(5)	2900
1000	---	---	---	---	3355 <sup>(4)</sup>	4195 <sup>(4)</sup>	(5)	(5)	2870
1050	---	---	---	---	2250 <sup>(4)</sup>	2425 <sup>(4,6)</sup>	(5)	(5)	2870
1100	---	---	---	---	--- <sup>(5)</sup>	--- <sup>(5)</sup>	(5)	(5)	2870

1. Intermediate 4080 rating is available with special bolting materials in most valve body materials. Consult your Emerson Process Management sales office.  
2. Ratings based on SA-193-B7 bolts up to 450°F, consult your Emerson Process Management sales office for ratings with other bolt material.  
3. For largest available 316 strain-hardened stainless steel stem.  
4. SA-193-B16 bolts and SA-194-7 nuts must be used to obtain maximum rating shown.  
5. Consult your Emerson Process Management sales office.  
6. Derating due to bolting limitations, higher ratings may be possible with alternate bolt materials. Consult your Emerson Process Management sales office for ratings with other bolt materials.

**Table 5. NPS 1-1/2 x 1 CL1500 EH Series Valves with Intermediate 1789 Rating**

TEMP, °F	PRESSURE RATINGS, PSIG								MAXIMUM STEM LOAD, <sup>(2)</sup> POUNDS
	Valve Body Material and Intermediate Class Designation								
	WCC		LCC		WC9		CF8M <sup>(1)</sup>		
Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class		
100	4475	4475	4475	4475	4475	4475	4295	4475	11110
200	4475	4475	4475	4475	4475	4475	3690	4115	9920
300	4345	4475	4345	4475	4340	4420	3335	3720	9020
400	4212	4475	4212	4475	4210	4320	3065	3400	8120
450	4080	4475	4080	4475	4080	4305	2905	3205	7860
500	3967	4475	3967	4475	3965	4295	(4)	(4)	7660
600	3609	4475	3609	4475	3605	4295	(4)	(4)	7320
650	3510	4475	3510	4475	3510	4270	(4)	(4)	7140
700	3388	4247	3388	4247	3385	4240	(4)	(4)	6970
750	3007	3759	---	---	3170	4115	(4)	(4)	6910
800	2457	3067	---	---	3030	4010	(4)	(4)	6850
850	---	---	---	---	2905	3835	(4)	(4)	2950
900	---	---	---	---	2680	3580 <sup>(3)</sup>	(4)	(4)	2930
950	---	---	---	---	2250 <sup>(3)</sup>	2810 <sup>(3)</sup>	(4)	(4)	2900
1000	---	---	---	---	1555 <sup>(3)</sup>	1945 <sup>(3)</sup>	(4)	(4)	2870
1050	---	---	---	---	1045 <sup>(3)</sup>	1305 <sup>(3)</sup>	(4)	(4)	2870
1100	---	---	---	---	--- <sup>(4)</sup>	--- <sup>(4)</sup>	(4)	(4)	2870

1. Ratings based on SA-193-B7 bolts up to 450°F and SA-193-B8M annealed bolts above 450°F, consult your Emerson Process Management sales office for ratings with other bolt material.  
2. For largest available 316 strain-hardened stainless steel stem.  
3. SA-193-B16 bolts and SA-194-7 nuts must be used to obtain maximum rating shown.  
4. Consult your Emerson Process Management sales office.

Table 6. NPS 1-1/2 x 1 CL2500 EH Series Valves with Intermediate 3021 Rating

TEMP, °F	PRESSURE RATINGS, PSIG								MAXIMUM STEM LOAD <sup>(2)</sup> POUNDS
	Valve Body Material and Intermediate Class Designation								
	WCC		LCC		WC9		CF8M <sup>(1)</sup>		
Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class		
100	7555	7555	7555	7555	7555	7555	7250	7555	11110
200	7555	7555	7555	7555	7555	7555	6235	6950	9920
300	7335	7555	7335	7555	7335	7465	5630	6285	9020
400	7105	7555	7105	7555	7105	7295	5170	5740	8120
450	6890	7555	6890	7555	6890	7270	4800	5410	7860
500	6693	7555	6693	7555	6695	7250	(4)	(4)	7660
600	6090	7555	6090	7555	6090	7250	(4)	(4)	7320
650	5925	7555	5925	7555	5925	7210	(4)	(4)	7140
700	5715	7165	5715	7165	5715	7165	(4)	(4)	6970
750	5075	6345	---	---	5350	6950	(4)	(4)	6910
800	4145	5180	---	---	5110	6775	(4)	(4)	6850
850	---	---	---	---	4905	6475	(4)	(4)	2950
900	---	---	---	---	4525	6040 <sup>(3)</sup>	(4)	(4)	2930
950	---	---	---	---	3800 <sup>(3)</sup>	4750 <sup>(3)</sup>	(4)	(4)	2900
1000	---	---	---	---	2625 <sup>(3)</sup>	3280 <sup>(3)</sup>	(4)	(4)	2870
1050	---	---	---	---	1760 <sup>(3)</sup>	2200 <sup>(3)</sup>	(4)	(4)	2870
1100	---	---	---	---	---(4)	---(4)	(4)	(4)	2870

1. Ratings based on SA-193-B7 bolts up to 450°F, consult your Emerson Process Management sales office for ratings with other bolt material.  
 2. For largest available 316 strain-hardened stainless steel stem.  
 3. SA-193-B16 bolts and SA-194-7 nuts must be used to obtain maximum rating shown.  
 4. Consult your Emerson Process Management sales office.

Table 7. NPS 2 CL1500 EH Series Valves with Intermediate 1758 Rating

TEMP, °F	PRESSURE RATINGS, PSIG								MAXIMUM STEM LOAD <sup>(2)</sup> POUNDS
	Valve Body Material and Intermediate Class Designation								
	WCC		LCC		WC9		CF8M <sup>(1)</sup>		
Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class		
100	4395	4395	4395	4395	4395	4395	4220	4395	15920
200	4395	4395	4395	4395	4395	4395	3630	4045	14200
300	4265	4395	4265	4395	4265	4345	3275	3655	12910
400	4135	4395	4135	4395	4135	4245	3010	3340	11610
450	4005	4395	4005	4395	4005	4230	2760	3150	11240
500	3895	4395	3895	4395	3895	4220	(4)	(4)	10960
600	3545	4395	3545	4395	3545	4220	(4)	(4)	10460
650	3445	4395	3445	4395	3445	4195	(4)	(4)	10220
700	3325	4170	3325	4170	3330	4170	(4)	(4)	9970
750	2955	3690	---	---	3115	4045	(4)	(4)	9890
800	2415	3010	---	---	2975	3945	(4)	(4)	9800
850	---	---	---	---	2855	3765	(4)	(4)	5250
900	---	---	---	---	2630	3515 <sup>(3)</sup>	(4)	(4)	5200
950	---	---	---	---	2210 <sup>(3)</sup>	2760 <sup>(3)</sup>	(4)	(4)	5160
1000	---	---	---	---	1530 <sup>(3)</sup>	1910 <sup>(3)</sup>	(4)	(4)	5110
1050	---	---	---	---	1025 <sup>(3)</sup>	1280 <sup>(3)</sup>	(4)	(4)	5110
1100	---	---	---	---	---(4)	---(4)	(4)	(4)	5110

1. Ratings based on SA-193-B7 bolts up to 450°F, consult your Emerson Process Management sales office for ratings with other bolt material.  
 2. For largest available 316 strain-hardened stainless steel stem.  
 3. SA-193-B16 bolts and SA-194-7 nuts must be used to obtain maximum rating shown.  
 4. Consult your Emerson Process Management sales office.

**Table 8. NPS 2 CL2500 EH Series Valves with Intermediate 3273 Rating**

TEMP, °F	PRESSURE RATINGS, PSIG								MAXIMUM STEM LOAD <sup>(2)</sup> POUNDS
	Valve Body Material and Intermediate Class Designation								
	WCC		LCC		WC9		CF8M <sup>(1)</sup>		
Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class		
100	8185	8185	8185	8185	8185	8185	7855	8185	15920
200	8185	8185	8185	8185	8185	8185	6755	7530	14200
300	7950	8185	7950	8185	7945	8090	6100	6810	12910
400	7700	8185	7700	8185	7700	7900	5605	6220	11610
450	7465	8185	7465	8185	7465	7875	5095	5860	11240
500	7250	8185	7250	8185	7250	7855	(4)	(4)	10960
600	6600	8185	6600	8185	6600	7855	(4)	(4)	10460
650	6420	8185	6420	8185	6420	7810	(4)	(4)	10220
700	6195	7765	6195	7765	6195	7760	(4)	(4)	9970
750	5500	6875	---	---	5800	7530	(4)	(4)	9890
800	4490	5610	---	---	5535	7340 <sup>(3)</sup>	(4)	(4)	9800
850	---	---	---	---	5315	7015 <sup>(3)</sup>	(4)	(4)	5250
900	---	---	---	---	4905 <sup>(3)</sup>	6545 <sup>(3)</sup>	(4)	(4)	5200
950	---	---	---	---	4120 <sup>(3)</sup>	5145 <sup>(3)</sup>	(4)	(4)	5160
1000	---	---	---	---	2845 <sup>(3)</sup>	3555 <sup>(3)</sup>	(4)	(4)	5110
1050	---	---	---	---	1905 <sup>(3)</sup>	2110 <sup>(3,5)</sup>	(4)	(4)	5110
1100	---	---	---	---	---(4)	---(4)	(4)	(4)	5110

1. Ratings based on SA-193-B7 bolts up to 450°F, consult your Emerson Process Management sales office for ratings with other bolt material.  
2. For largest available 316 strain-hardened stainless steel stem.  
3. SA-193-B16 bolts and SA-194-7 nuts must be used to obtain maximum rating shown.  
4. Consult your Emerson Process Management sales office.  
5. Derating due to bolting limitations, higher ratings may be possible with alternate bolt materials. Consult your Emerson Process Management sales office for ratings with other bolt materials.

**Table 9. NPS 3 CL1500 EH Series Valves with Intermediate 1756 Rating**

TEMP, °F	PRESSURE RATINGS, PSIG								MAXIMUM STEM LOAD <sup>(2)</sup> POUNDS
	Valve Body Material and Intermediate Class Designation								
	WCC		LCC		WC9		CF8M <sup>(1)</sup>		
Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class		
100	4390	4390	4390	4390	4390	4390	4215	4390	15920
200	4390	4390	4390	4390	4390	4390	3625	4040	14200
300	4260	4390	4260	4390	4260	4340	3270	3650	12910
400	4130	4390	4130	4390	4130	4240	3010	3335	11610
450	4000	4390	4000	4390	4000	4225	2860	3215	11240
500	3890	4390	3890	4390	3890	4215	(4)	(4)	10960
600	3540	4390	3540	4390	3540	4215	(4)	(4)	10460
650	3445	4390	3445	4390	3445	4190	(4)	(4)	10220
700	3325	4165	3325	4165	3325	4165	(4)	(4)	9970
750	2950	3690	---	---	3115	4040	(4)	(4)	9890
800	2410	3010	---	---	2975	3940	(4)	(4)	9800
850	---	---	---	---	2850	3765	(4)	(4)	5250
900	---	---	---	---	2630	3510	(4)	(4)	5200
950	---	---	---	---	2210	2760 <sup>(3)</sup>	(4)	(4)	5160
1000	---	---	---	---	1525 <sup>(3)</sup>	1910 <sup>(3)</sup>	(4)	(4)	5110
1050	---	---	---	---	1025 <sup>(3)</sup>	1280 <sup>(3)</sup>	(4)	(4)	5110
1100	---	---	---	---	---(4)	---(4)	(4)	(4)	5110

1. Ratings based on SA-193-B7 bolts up to 450°F, consult your Emerson Process Management sales office for ratings with other bolt material.  
2. For largest available 316 strain-hardened stainless steel stem.  
3. SA-193-B16 bolts and SA-194-7 nuts must be used to obtain maximum rating shown.  
4. Consult your Emerson Process Management sales office.

Table 10. NPS 3 CL2500 EH Series Valves with Intermediate 2932 Rating

TEMP, °F	PRESSURE RATINGS, PSIG								MAXIMUM STEM LOAD,(2) POUNDS
	Valve Body Material and Intermediate Class Designation								
	WCC		LCC		WC9		CF8M(1)		
Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class		
100	7330	7330	7330	7330	7330	7330	7035	7330	15920
200	7330	7330	7330	7330	7330	7330	6050	6745	14200
300	7120	7330	7120	7330	7120	7245	5465	6100	12910
400	6895	7330	6895	7330	6895	7080	5020	5570	11610
450	6685	7330	6685	7330	6685	7055	4655	5250	11240
500	6495	7330	6495	7330	6495	7035	(4)	(4)	10960
600	5910	7330	5910	7330	5910	7035	(4)	(4)	10460
650	5750	7330	5750	7330	5750	6995	(4)	(4)	10220
700	5550	6955	5550	6955	5550	6955	(4)	(4)	9970
750	4925	6155	---	---	5195	6745	(4)	(4)	9890
800	4020	5025	---	---	4960	6575	(4)	(4)	9800
850	---	---	---	---	4760	6280(3)	(4)	(4)	5250
900	---	---	---	---	4390	5865(3)	(4)	(4)	5200
950	---	---	---	---	3690(3)	4610(3)	(4)	(4)	5160
1000	---	---	---	---	2545(3)	3185(3)	(4)	(4)	5110
1050	---	---	---	---	1710(3)	2135(3)	(4)	(4)	5110
1100	---	---	---	---	---(4)	---(4)	(4)	(4)	5110

1. Ratings based on SA-193-B7 bolts up to 450°F, consult your Emerson Process Management sales office for ratings with other bolt material.  
 2. For largest available 316 strain-hardened stainless steel stem.  
 3. SA-193-B16 bolts and SA-194-7 nuts must be used to obtain maximum rating shown.  
 4. Consult your Emerson Process Management sales office.

Table 11. NPS 4 CL1500 EH Series Valves with Intermediate 2083 Rating

TEMP, °F	PRESSURE RATINGS, PSIG								MAXIMUM STEM LOAD(2) POUNDS
	Valve Body Material and Intermediate Class Designation								
	WCC		LCC		WC9		CF8M(1)		
Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class		
100	5210	5210	5210	5210	5210	5210	5000	5210	15920
200	5210	5210	5210	5210	5210	5210	4300	4790	14200
300	5055	5210	5055	5210	5055	5150	3880	4335	12910
400	4900	5210	4900	5210	4900	5030	3565	3960	11610
450	4750	5210	4750	5210	4750	5015	3240	3730	11240
500	4615	5210	4615	5210	4615	5000	(4)	(4)	10960
600	4200	5210	4200	5210	4200	5000	(4)	(4)	10460
650	4085	5210	4085	5210	4085	4970	(4)	(4)	10220
700	3940	4940	3940	4940	3940	4940	(4)	(4)	9970
750	3500	4375	---	---	3690	4790	(4)	(4)	9890
800	2860	3570	---	---	3525	4670	(4)	(4)	9800
850	---	---	---	---	3380	4465(3)	(4)	(4)	5250
900	---	---	---	---	3120	4165(3)	(4)	(4)	5200
950	---	---	---	---	2620(3)	3275(3)	(4)	(4)	5160
1000	---	---	---	---	1810(3)	2265(3)	(4)	(4)	5110
1050	---	---	---	---	1215(3)	1485(3,5)	(4)	(4)	5110
1100	---	---	---	---	---(4)	---(4)	(4)	(4)	5110

1. Ratings based on SA-193-B7 bolts up to 450°F, consult your Emerson Process Management sales office for ratings with other bolt material.  
 2. For largest available 316 strain-hardened stainless steel stem.  
 3. SA-193-B16 bolts and SA-194-7 nuts must be used to obtain maximum rating shown.  
 4. Consult your Emerson Process Management sales office.  
 5. Derating due to bolting limitations, higher ratings may be possible with alternate bolt materials. Consult your Emerson Process Management sales office for ratings with other bolt materials.

**Table 12. NPS 4 CL2500 EH Series Valves with Intermediate 3294 Rating**

TEMP, °F	PRESSURE RATINGS, PSIG								MAXIMUM STEM LOAD, <sup>(2)</sup> POUNDS
	Valve Body Material and Intermediate Class Designation								
	WCC		LCC		WC9		CF8M <sup>(1)</sup>		
Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class		
100	8235	8235	8235	8235	8235	8235	7905	8235	15920
200	8235	8235	8235	8235	8235	8235	6800	7575	14200
300	7995	8235	7995	8235	7995	8140	6140	6850	12910
400	7750	8235	7750	8235	7750	7955	5640	6260	11610
450	7510	8235	7510	8235	7510	7930	5130	5900	11240
500	7295	8235	7295	8235	7295	7905	(4)	(4)	10960
600	6640	8235	6640	8235	6640	7905	(4)	(4)	10460
650	6460	8235	6460	8235	6460	7860	(4)	(4)	10220
700	6235	7810	6235	7810	6235	7810	(4)	(4)	9970
750	5535	6915	---	---	5835	7575 <sup>(3)</sup>	(4)	(4)	9890
800	4520	5645	---	---	5570	7390 <sup>(3)</sup>	(4)	(4)	9800
850	---	---	---	---	5350	7060 <sup>(3)</sup>	(4)	(4)	5250
900	---	---	---	---	4935 <sup>(3)</sup>	6590 <sup>(3)</sup>	(4)	(4)	5200
950	---	---	---	---	4145 <sup>(3)</sup>	5175 <sup>(3)</sup>	(4)	(4)	5160
1000	---	---	---	---	2860 <sup>(3)</sup>	3575 <sup>(3)</sup>	(4)	(4)	5110
1050	---	---	---	---	1920 <sup>(3)</sup>	2035 <sup>(3,5)</sup>	(4)	(4)	5110
1100	---	---	---	---	--- <sup>(4)</sup>	--- <sup>(4)</sup>	(4)	(4)	5110

1. Ratings based on SA-193-B7 bolts up to 450°F, consult your Emerson Process Management sales office for ratings with other bolt material.  
2. For largest available 316 strain-hardened stainless steel stem.  
3. SA-193-B16 bolts and SA-194-7 nuts must be used to obtain maximum rating shown.  
4. Consult your Emerson Process Management sales office.  
5. Derating due to bolting limitations, higher ratings may be possible with alternate bolt materials. Consult your Emerson Process Management sales office for ratings with other bolt materials.

**Table 13. NPS 6 CL1500 EH Series Valves with Intermediate 1876 Rating**

TEMP, °F	PRESSURE RATINGS, PSIG								MAXIMUM STEM LOAD, <sup>(2)</sup> POUNDS
	Valve Body Material and Intermediate Class Designation								
	WCC		LCC		WC9		CF8M <sup>(1)</sup>		
Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class		
100	4690	4690	4690	4690	4690	4690	4500	4690	20340
200	4690	4690	4690	4690	4690	4690	3870	4315	18130
300	4555	4690	4555	4690	4555	4635	3495	3900	16470
400	4415	4690	4415	4690	4415	4530	3215	3565	14810
450	4280	4690	4280	4690	4280	4515	2920	3355	14330
500	4160	4690	4160	4690	4160	4500	(4)	(4)	13970
600	3785	4690	3785	4690	3785	4500	(4)	(4)	13360
650	3680	4690	3680	4690	3680	4475	(4)	(4)	13030
700	3550	4450	3550	4450	3550	4450	(4)	(4)	12710
750	3150	3940	---	---	3325	4315	(4)	(4)	12610
800	2575	3215	---	---	3175	4205	(4)	(4)	12510
850	---	---	---	---	3045	4020 <sup>(3)</sup>	(4)	(4)	8200
900	---	---	---	---	2810 <sup>(3)</sup>	3750 <sup>(3)</sup>	(4)	(4)	8130
950	---	---	---	---	2360 <sup>(3)</sup>	2945 <sup>(3)</sup>	(4)	(4)	8060
1000	---	---	---	---	1630 <sup>(3)</sup>	2040 <sup>(3)</sup>	(4)	(4)	7990
1050	---	---	---	---	1095 <sup>(3)</sup>	1280 <sup>(3,5)</sup>	(4)	(4)	7990
1100	---	---	---	---	--- <sup>(4)</sup>	--- <sup>(4)</sup>	(4)	(4)	7990

1. Ratings based on SA-193-B7 bolts up to 450°F, consult your Emerson Process Management sales office for ratings with other bolt material.  
2. For largest available 316 strain-hardened stainless steel stem.  
3. SA-193-B16 bolts and SA-194-7 nuts must be used to obtain maximum rating shown.  
4. Consult your Emerson Process Management sales office.  
5. Derating due to bolting limitations, higher ratings may be possible with alternate bolt materials. Consult your Emerson Process Management sales office for ratings with other bolt materials.

Table 14. NPS 6 CL2500 EH Series Valves with Intermediate 2987 Rating

TEMP, °F	PRESSURE RATINGS, PSIG								MAXIMUM STEM LOAD, <sup>(2)</sup> POUNDS
	Valve Body Material and Intermediate Class Designation								
	WCC		LCC		WC9		CF8M <sup>(1)</sup>		
Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class		
100	7470	7470	7470	7470	7470	7470	7170	7470	20340
200	7470	7470	7470	7470	7470	7470	6165	6870	18130
300	7255	7470	7255	7470	7250	7385	5570	6215	16470
400	7025	7470	7025	7470	7025	7210	5115	5675	14810
450	6810	7470	6810	7470	6810	7190	4650	5345	14330
500	6620	7470	6620	7470	6615	7170	(4)	(4)	13970
600	6020	7470	6020	7470	6020	7170	(4)	(4)	13360
650	5860	7470	5860	7470	5860	7125	(4)	(4)	13030
700	5650	7085	5650	7085	5650	7085	(4)	(4)	12710
750	5020	6275	---	---	5290	6870	(4)	(4)	12610
800	4095	5120	---	---	5055	6700 <sup>(3)</sup>	(4)	(4)	12510
850	---	---	---	---	4850	6400 <sup>(3)</sup>	(4)	(4)	8200
900	---	---	---	---	4475 <sup>(3)</sup>	5975 <sup>(3)</sup>	(4)	(4)	8130
950	---	---	---	---	3760 <sup>(3)</sup>	4695 <sup>(3)</sup>	(4)	(4)	8060
1000	---	---	---	---	2595 <sup>(3)</sup>	3245 <sup>(3)</sup>	(4)	(4)	7990
1050	---	---	---	---	1740 <sup>(3)</sup>	2065 <sup>(3,5)</sup>	(4)	(4)	7990
1100	---	---	---	---	--- <sup>(4)</sup>	--- <sup>(4)</sup>	(4)	(4)	7990

1. Ratings based on SA-193-B7 bolts up to 450°F, consult your Emerson Process Management sales office for ratings with other bolt material.  
 2. For largest available 316 strain-hardened stainless steel stem.  
 3. SA-193-B16 bolts and SA-194-7 nuts must be used to obtain maximum rating shown.  
 4. Consult your Emerson Process Management sales office.  
 5. Derating due to bolting limitations, higher ratings may be possible with alternate bolt materials. Consult your Emerson Process Management sales office for ratings with other bolt materials.

Table 15. NPS 8 CL1500 EH Series Valves with Intermediate 1866 Rating

TEMP, °F	PRESSURE RATINGS, PSIG								MAXIMUM STEM LOAD, <sup>(2)</sup> POUNDS
	Valve Body Material and Intermediate Class Designation								
	WCC		LCC		WC9		CF8M <sup>(1)</sup>		
Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class		
100	4665	4665	4665	4665	4665	4665	4480	4665	34810
200	4665	4665	4665	4665	4665	4665	3850	4290	30980
300	4529	4665	4529	4665	4530	4610	3480	3880	28000
400	4378	4665	4378	4665	4390	4505	3195	3545	25730
450	4257	4665	4257	4665	4255	4490	2905	3340	24700
500	4136	4665	4136	4665	4135	4480	(4)	(4)	24060
600	3762	4665	3762	4665	3760	4480	(4)	(4)	22740
650	3659	4665	3659	4665	3660	4455	(4)	(4)	22260
700	3454	4434	---	---	3530	4425	(4)	(4)	21780
750	3155	3944	---	---	3310	4290	(4)	(4)	21480
800	2558	3198	---	---	3160	4185	(4)	(4)	21180
850	---	---	---	---	3030	4000 <sup>(3)</sup>	(4)	(4)	20990
900	---	---	---	---	2795 <sup>(3)</sup>	3730 <sup>(3)</sup>	(4)	(4)	20810
950	---	---	---	---	2345 <sup>(3)</sup>	2930 <sup>(3)</sup>	(4)	(4)	20630
1000	---	---	---	---	1620 <sup>(3)</sup>	2025 <sup>(3)</sup>	(4)	(4)	20450
1050	---	---	---	---	1085 <sup>(3)</sup>	1180 <sup>(3,5)</sup>	(4)	(4)	20450
1100	---	---	---	---	--- <sup>(4)</sup>	--- <sup>(4)</sup>	(4)	(4)	20450

1. Ratings based on SA-193-B7 bolts up to 450°F, consult your Emerson Process Management sales office for ratings with other bolt material.  
 2. For largest available 316 strain-hardened stainless steel stem.  
 3. SA-193-B16 bolts and SA-194-7 nuts must be used to obtain maximum rating shown.  
 4. Consult your Emerson Process Management sales office.  
 5. Derating due to bolting limitations, higher ratings may be possible with alternate bolt materials. Consult your Emerson Process Management sales office for ratings with other bolt materials.



**Table 16. NPS 8 CL2500 EH Series Valves with Intermediate 2943 Rating**

TEMP, °F	PRESSURE RATINGS, PSIG								MAXIMUM STEM LOAD, <sup>(2)</sup> POUNDS
	Valve Body Material and Intermediate Class Designation								
	WCC		LCC		WC9		CF8M <sup>(1)</sup>		
	Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class	
100	7358	7358	7358	7358	7360	7360	7065	7360	19670
200	7358	7358	7358	7358	7360	7360	6075	6770	17610
300	7145	7358	7145	7358	7145	7275	5485	6120	16030
400	6904	7358	6904	7358	6920	7105	5040	5590	14450
450	6712	7358	6712	7358	6710	7085	4580	5265	13990
500	6520	7358	6520	7358	6520	7065	(4)	(4)	13640
600	5933	7358	5933	7358	5935	7065	(4)	(4)	13050
650	5773	7358	5773	7358	5775	7020	(4)	(4)	12740
700	5450	6988	---	---	5570	6980	(4)	(4)	12430
750	4979	6222	---	---	5215	6770	(4)	(4)	12330
800	4037	5045	---	---	4980	6600	(4)	(4)	12230
850	---	---	---	---	4780	6305	(4)	(4)	6680
900	---	---	---	---	4410	5885 <sup>(3)</sup>	(4)	(4)	6620
950	---	---	---	---	3705 <sup>(3)</sup>	4625 <sup>(3)</sup>	(4)	(4)	6530
1000	---	---	---	---	2555 <sup>(3)</sup>	3195 <sup>(3)</sup>	(4)	(4)	6510
1050	---	---	---	---	1715 <sup>(3)</sup>	2145 <sup>(3)</sup>	(4)	(4)	6510
1100	---	---	---	---	---(4)	---(4)	(4)	(4)	6510

1. Ratings based on SA-193-B7 bolts up to 450°F, consult your Emerson Process Management sales office for ratings with other bolt material.  
 2. For largest available 316 strain-hardened stainless steel stem.  
 3. SA-193-B16 bolts and SA-194-7 nuts must be used to obtain maximum rating shown.  
 4. Consult your Emerson Process Management sales office.

**Table 17. NPS 10 CL1500 EH Series Valves with Intermediate 1568 Rating**

TEMP, °F	PRESSURE RATINGS, PSIG								MAXIMUM STEM LOAD, <sup>(2)</sup> POUNDS
	Valve Body Material and Intermediate Class Designation								
	WCC		LCC		WC9		CF8M <sup>(1)</sup>		
	Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class	
100	3920	3920	3920	3920	3920	3920	3765	3920	34810
200	3920	3920	3920	3920	3920	3920	3235	3605	30980
300	3805	3920	3805	3920	3805	3875	2920	3260	28000
400	3679	3920	3679	3920	3690	3785	2685	2980	25730
450	3578	3920	3578	3920	3575	3775	2550	2805	24700
500	3476	3920	3476	3920	3475	3765	(4)	(4)	24060
600	3162	3920	3162	3920	3160	3765	(4)	(4)	22740
650	3074	3920	3074	3920	3075	3740	(4)	(4)	22260
700	2901	3727	---	---	2970	3715	(4)	(4)	21780
750	2650	3314	---	---	2780	3605	(4)	(4)	21480
800	2149	2687	---	---	2655	3515	(4)	(4)	21180
850	---	---	---	---	2545	3360	(4)	(4)	20990
900	---	---	---	---	2345	3135 <sup>(3)</sup>	(4)	(4)	20810
950	---	---	---	---	1970 <sup>(3)</sup>	2460 <sup>(3)</sup>	(4)	(4)	20630
1000	---	---	---	---	1365 <sup>(3)</sup>	1705 <sup>(3)</sup>	(4)	(4)	20450
1050	---	---	---	---	915 <sup>(3)</sup>	1145 <sup>(3)</sup>	(4)	(4)	20450
1100	---	---	---	---	---(4)	---(4)	(4)	(4)	20450

1. Ratings based on SA-193-B7 bolts up to 450°F, consult your Emerson Process Management sales office for ratings with other bolt material.  
 2. For largest available 316 strain-hardened stainless steel stem.  
 3. SA-193-B16 bolts and SA-194-7 nuts must be used to obtain maximum rating shown.  
 4. Consult your Emerson Process Management sales office.

Table 18. NPS 10 CL2500 EH Series Valves with Intermediate 2522 Rating

TEMP, °F	PRESSURE RATINGS, PSIG								MAXIMUM STEM LOAD, <sup>(2)</sup> POUNDS
	Valve Body Material and Intermediate Class Designation								
	WCC		LCC		WC9		CF8M <sup>(1)</sup>		
Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class		
100	6305	6305	6305	6305	6305	6305	6055	6305	19670
200	6305	6305	6305	6305	6305	6305	5205	5800	17610
300	6123	6305	6123	6305	6125	6235	4700	5245	16030
400	5917	6305	5917	6305	5930	6090	4320	4790	14450
450	5753	6305	5753	6305	5750	6070	4110	4515	13990
500	5589	6305	5589	6305	5590	6055	(4)	(4)	13640
600	5084	6305	5084	6305	5085	6055	(4)	(4)	13050
650	4948	6305	4948	6305	4950	6015	(4)	(4)	12740
700	4671	5992	---	---	4770	5980	(4)	(4)	12430
750	4267	5332	---	---	4470	5800	(4)	(4)	12330
800	3460	4323	---	---	4265	5655	(4)	(4)	12230
850	---	---	---	---	4095	5400	(4)	(4)	6680
900	---	---	---	---	3780	5045	(4)	(4)	6620
950	---	---	---	---	3175	3965 <sup>(3)</sup>	(4)	(4)	6530
1000	---	---	---	---	2190 <sup>(3)</sup>	2740 <sup>(3)</sup>	(4)	(4)	6510
1050	---	---	---	---	1470 <sup>(3)</sup>	1835 <sup>(3)</sup>	(4)	(4)	6510
1100	---	---	---	---	---(4)	---(4)	(4)	(4)	6510

1. Ratings based on SA-193-B7 bolts up to 450°F, consult your Emerson Process Management sales office for ratings with other bolt material.  
 2. For largest available 316 strain-hardened stainless steel stem.  
 3. SA-193-B16 bolts and SA-194-7 nuts must be used to obtain maximum rating shown.  
 4. Consult your Emerson Process Management sales office.

Table 19. NPS 12 and 14 CL1500 EH Series Valves with Intermediate 1650 Rating

TEMP, °F	PRESSURE RATINGS, PSIG								MAXIMUM STEM LOAD, <sup>(2)</sup> POUNDS
	Valve Body Material and Intermediate Class Designation								
	WCC		LCC		WC9		CF8M <sup>(1)</sup>		
Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class		
100	4125	4125	4125	4125	4125	4125	3960	4125	34810
200	4125	4125	4125	4125	4125	4125	3405	3795	30980
300	4005	4125	4005	4125	4005	4075	3075	3430	28000
400	3872	4125	3872	4125	3885	3980	2825	3135	25730
450	3765	4125	3765	4125	3760	3970	2690	2950	24700
500	3657	4125	3657	4125	3655	3960	(4)	(4)	24060
600	3327	4125	3327	4125	3325	3960	(4)	(4)	22740
650	3235	4125	3235	4125	3235	3940	(4)	(4)	22260
700	3053	3921	---	---	3125	3910	(4)	(4)	21780
750	2789	3487	---	---	2925	3795	(4)	(4)	21480
800	2261	2827	---	---	2795	3700	(4)	(4)	21180
850	---	---	---	---	2680	3535	(4)	(4)	20990
900	---	---	---	---	2470	3300 <sup>(3)</sup>	(4)	(4)	20810
950	---	---	---	---	2075 <sup>(3)</sup>	2590 <sup>(3)</sup>	(4)	(4)	20630
1000	---	---	---	---	1475 <sup>(3)</sup>	1795 <sup>(3)</sup>	(4)	(4)	20450
1050	---	---	---	---	960 <sup>(3)</sup>	1205 <sup>(3)</sup>	(4)	(4)	20450
1100	---	---	---	---	---(4)	---(4)	(4)	(4)	20450

1. Ratings based on SA-193-B7 bolts up to 450°F, consult your Emerson Process Management sales office for ratings with other bolt material.  
 2. For largest available 316 strain-hardened stainless steel stem.  
 3. SA-193-B16 bolts and SA-194-7 nuts must be used to obtain maximum rating shown.  
 4. Consult your Emerson Process Management sales office.

**Table 20. NPS 12 CL2500 EH Series Valves with Intermediate 2940 Rating**

TEMP, °F	PRESSURE RATINGS, PSIG								MAXIMUM STEM LOAD, <sup>(2)</sup> POUNDS
	Valve Body Material and Intermediate Class Designation								
	WCC		LCC		WC9		CF8M <sup>(1)</sup>		
	Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class	
100	7350	7350	7350	7350	7350	7350	7055	7350	34810
200	7350	7350	7350	7350	7350	7350	6070	6760	30980
300	7138	7350	7138	7350	7140	7265	5480	6115	28000
400	6897	7350	6897	7350	6915	7100	5035	5585	25730
450	6705	7350	6705	7350	6705	7075	4580	5260	24700
500	6514	7350	6514	7350	6515	7055	(4)	(4)	24060
600	5927	7350	5927	7350	5925	7055	(4)	(4)	22740
650	5767	7350	5767	7350	5765	7015	(4)	(4)	22260
700	5444	6981	---	---	5565	6975	(4)	(4)	21780
750	4974	6216	---	---	5210	6760	(4)	(4)	21480
800	4033	5040	---	---	4975	6595	(4)	(4)	21180
850	---	---	---	---	4775	6300 <sup>(3)</sup>	(4)	(4)	20990
900	---	---	---	---	4405 <sup>(3)</sup>	5880 <sup>(3)</sup>	(4)	(4)	20810
950	---	---	---	---	3700 <sup>(3)</sup>	4620 <sup>(3)</sup>	(4)	(4)	20630
1000	---	---	---	---	2555 <sup>(3)</sup>	3190 <sup>(3)</sup>	(4)	(4)	20450
1050	---	---	---	---	1710 <sup>(3)</sup>	1892 <sup>(3,5)</sup>	(4)	(4)	20450
1100	---	---	---	---	---(4)	---(4)	(4)	(4)	20450

1. Ratings based on SA-193-B7 bolts up to 450°F, consult your Emerson Process Management sales office for ratings with other bolt material.  
2. For largest available 316 strain-hardened stainless steel stem.  
3. SA-193-B16 bolts and SA-194-7 nuts must be used to obtain maximum rating shown.  
4. Consult your Emerson Process Management sales office.  
5. Derating due to bolting limitations, higher ratings may be possible with alternate bolt materials. Consult your Emerson Process Management sales office for ratings with other bolt materials.

**Table 21. NPS 14 CL2500 EH Series Valves with Intermediate 2754 Rating**

TEMP, °F	PRESSURE RATINGS, PSIG								MAXIMUM STEM LOAD, <sup>(2)</sup> POUNDS
	Valve Body Material and Intermediate Class Designation								
	WCC		LCC		WC9		CF8M <sup>(1)</sup>		
	Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class	Standard Class	Special Class	
100	6885	6885	6885	6885	6885	6885	6610	6885	34810
200	6885	6885	6885	6885	6885	6885	5685	6335	30980
300	6687	6885	6687	6885	6685	6805	5135	5730	28000
400	6461	6885	6461	6885	6480	6650	4715	5235	25730
450	6281	6885	6281	6885	6290	6630	4285	4935	24700
500	6102	6885	6102	6885	6100	6610	(4)	(4)	24060
600	5552	6885	5552	6885	5550	6610	(4)	(4)	22740
650	5403	6885	5403	6885	5405	6570	(4)	(4)	22260
700	5100	6541	---	---	5210	6530	(4)	(4)	21780
750	4659	5822	---	---	4880	6335	(4)	(4)	21480
800	3778	4721	---	---	4660	6175	(4)	(4)	21180
850	---	---	---	---	4470	5900	(4)	(4)	20990
900	---	---	---	---	4125	5510 <sup>(3)</sup>	(4)	(4)	20810
950	---	---	---	---	3465 <sup>(3)</sup>	4330 <sup>(3)</sup>	(4)	(4)	20630
1000	---	---	---	---	2390 <sup>(3)</sup>	2990 <sup>(3)</sup>	(4)	(4)	20450
1050	---	---	---	---	1600 <sup>(3)</sup>	1890 <sup>(3,5)</sup>	(4)	(4)	20450
1100	---	---	---	---	---(4)	---(4)	(4)	(4)	20450

1. Ratings based on SA-193-B7 bolts up to 450°F, consult your Emerson Process Management sales office for ratings with other bolt material.  
2. For largest available 316 strain-hardened stainless steel stem.  
3. SA-193-B16 bolts and SA-194-7 nuts must be used to obtain maximum rating shown.  
4. Consult your Emerson Process Management sales office.  
5. Derating due to bolting limitations, higher ratings may be possible with alternate bolt materials. Consult your Emerson Process Management sales office for ratings with other bolt materials.

**Table 22. NPS 12 x 8 CL900 EW Series Valve with Intermediate 1150 Rating**

TEMPERATURE, °F	PRESSURE RATINGS, PSIG				MAXIMUM STEM LOAD, POUNDS
	Valve Body Material and Intermediate Class Designation				
	WCC		WC9		
	Standard Class	Special Class	Standard Class	Special Class	
100	2875	2875	2870	2870	17000
200	2875	2875	2745	2870	16740
300	2791	2875	2590	2870	16420
400	2698	2875	2485	2870	16100
500	2549	2875	2450	2820	15830
600	2319	2875	2315	2820	15540
650	2255	2875	2255	2820	15420
700	2128	2734	2175	2810	15280
750	1943	2432	2035	2790	15180
800	1577	1972	1945	2760	15060
850	---	---	1865	2590	14820
900	---	---	1725	2300	14590
950	---	---	1440	1805	13630
1000	---	---	1025	1285	12680

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