

METAL EXPANSION JOINTS

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METAL EXPANSION JOINTS

Model MN

Expansion joints with high corrugation

The Model MN uses a hydroformed bellows for minimal residual stresses and minimal thinning at the convolution root and crown. It is an excellent choice for any application within the pressure ratings of the 150 and 50 psi classes.

Maximum Working Pressure: 50 or 150 psi*

Working Temperature: 850°F

Test Pressure: 75/225 psi

End Fittings:

Flanges: ANSI B16.5

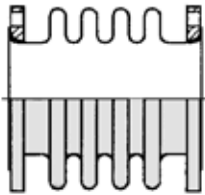
Weld Ends: A 53 / A 105

Bellows: Hydroformed T304 S/S

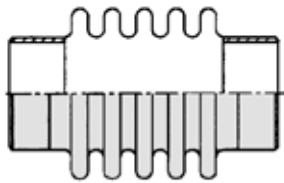
* Full vacuum rating.

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FLANGED END



WELD END

Flanged Ends – Single 50 lb Class

Part No	Nom size	No Corr	Compression Inches	OAL	Weight lbs	Max Working Pressure PSIG	Max Working Temp Deg F.	Max Test Pressure PSIG	Effective Area Sq In	Spring Rate lbs/inch	Spring Constant lbs/inch/cor	Extension	Lateral
MN01C50F0250	2-1/2"	1	0.375	6.25	19	50	850	75	18	1525	3050	0.13	0.00
MN02C50F0250		2	0.75	7.5	20	50	850	75	18	1017	3050	0.38	0.13
MN03C50F0250		3	1.13	8.75	21	50	850	75	18	763	3050	0.50	0.13
MN04C50F0250		4	1.50	10	22	50	850	75	18	610	3050	0.75	0.13
MN05C50F0250		5	1.88	11.25	23	50	850	75	18	508	3050	1	0.25
MN06C50F0250		6	2.25	12.5	24	50	850	75	18	436	3050	1.13	0.25
MN07C50F0250		7	2.63	13.75	25	50	850	75	18	381	3050	1.25	0.38
MN08C50F0250		8	3	15	26	50	850	75	18	381	3050	1.50	0.38
MN01C50F0300	3"	1	0.375	6.25	19	50	850	75	18	1525	3030	0.13	0.00
MN02C50F0300		2	0.75	7.5	20	50	850	75	18	1017	3030	0.38	0.13
MN03C50F0300		3	1.13	8.75	21	50	850	75	18	763	3030	0.50	0.13
MN04C50F0300		4	1.50	10	22	50	850	75	18	610	3030	0.75	0.13
MN05C50F0300		5	1.88	11.25	23	50	850	75	18	508	3030	1	0.25

MN06C50F0300		6	2.25	12.5	24	50	850	75	18	436	3030	1.13	0.25
MN07C50F0300		7	2.63	13.75	25	50	850	75	18	381	3030	1.25	0.38
MN08C50F0300		8	3	15	26	50	850	75	18			1.50	0.38
MN01C50F0400	4"	1	0.38	6.25	28	50	850	75	26	3160	3180	0.25	0.00
MN02C50F0400		2	0.75	7.5	29	50	850	75	26	1580	3180	0.38	0.13
MN03C50F0400		3	1.13	8.75	30	50	850	75	26	0153	3180	0.50	0.13
MN04C50F0400		4	1.50	10	31	50	850	75	26	790	3180	0.75	0.13
MN05C50F0400		5	1.88	11.25	32	50	850	75	26	632	3180	1	0.25
MN06C50F0400		6	2.25	12.5	33	50	850	75	26	527	3180	1.13	0.25
MN07C50F0400		7	2.63	13.75	34	50	850	75	26	451	3180	1.25	0.38
MN08C50F0400		8	3	15	35	50	850	75	26	395	3180	1.50	0.38
MN01C50F0500	5"	1	0.375	6.75	33	50	850	75	39	4000	4000	0.25	0.00
MN02C50F0500		2	0.75	8	35	50	850	75	39	2000	4000	0.38	0.13
MN03C50F0500		3	1.125	9.25	37	50	850	75	39	1333	4000	0.50	0.13
MN04C50F0500		4	1.5	10.5	39	50	850	75	39	1000	4000	0.75	0.13
MN05C50F0500		5	1.875	11.75	41	50	850	75	39	800	4000	1	0.25
MN06C50F0500		6	2.25	13	43	50	850	75	39	667	4000	1.13	0.25
MN07C50F0500		7	2.625	14.25	45	50	850	75	39	571	4000	1.25	0.38
MN08C50F0500		8	3	15.5	47	50	850	75	39	500	4000	1.50	0.38
MN01C50F0600	6"	1	0.5	6.25	43	50	850	75	60	4960	4960	0.25	0.00
MN02C50F0600		2	1	8	46	50	850	75	60	2480	4960	0.50	0.13
MN03C50F0600		3	1.5	9.75	49	50	850	75	60	1653	4960	0.75	0.13
MN04C50F0600		4	2	11.5	52	50	850	75	60	1240	4960	1.00	0.13
MN05C50F0600		5	2.5	13.25	55	50	850	75	60	992	4960	1.25	0.25
MN06C50F0600		6	3	15	58	50	850	75	60	827	4960	1.50	0.25
MN07C50F0600		7	3.5	16.75	61	50	850	75	60	709	4960	1.75	0.50
MN08C50F0600		8	4	18.5	64	50	850	75	60	620	4960	2	0.50
MN09C50F0600		9	4.5	20.25	67	50	850	75	60	551	4960	2.25	0.50
MN10C50F0600		10	5	22	70	50	850	75	60	496	4960	2.50	0.63
MN01C50F0800	8"	1	0.5	6.25	43	50	850	75	91	5480	5480	0.25	0.00
MN02C50F0800		2	1	8	46	50	850	75	91	2740	5480	0.50	0.13
MN03C50F0800		3	1.5	9.75	49	50	850	75	91	1827	5480	0.75	0.13
MN04C50F0800		4	2	11.5	52	50	850	75	91	1370	5480	1	0.25
MN05C50F0800		5	2.5	13.25	55	50	850	75	91	1096	5480	1.25	0.25
MN06C50F0800		6	3	15	58	50	850	75	91	913	5480	1.50	0.38
MN07C50F0800		7	3.5	16.75	61	50	850	75	91	783	5480	1.75	0.50
MN08C50F0800		8	4	18.5	64	50	850	75	91	685	5480	2	0.50
MN09C50F0800		9	4.5	20.25	67	50	850	75	91	609	5480	2.25	0.63
MN10C50F0800		10	5	22	70	50	850	75	91	548	5480	2.50	0.63
MN01C50F1000	10"	1	0.5	6.875	76	50	850	75	133	6000	6000	0.25	0.00
MN02C50F1000		2	1	8.75	80	50	850	75	133	3000	6000	0.50	0.13
MN03C50F1000		3	1.5	10.625	84	50	850	75	133	2000	6000	0.75	0.13
MN04C50F1000		4	2	12.5	88	50	850	75	133	1500	6000	1.00	0.25
MN05C50F1000		5	2.5	14.375	92	50	850	75	133	1200	6000	1.25	0.25
MN06C50F1000		6	3	16.25	96	50	850	75	133	1000	6000	1.50	0.38
MN07C50F1000		7	3.5	18.125	100	50	850	75	133	857	6000	1.75	0.50
MN08C50F1000		8	4	20	104	50	850	75	133	750	6000	2.00	0.50
MN09C50F1000		9	4.5	21.875	108	50	850	75	133	667	6000	2.25	0.63
MN10C50F1000		10	5	23.75	11	50	850	75	133	600	6000	2.50	0.63
MN01C50F1200	12"	1	0.5	7.875	118	50	850	75	177	6520	6520	0.25	0.00
MN02C50F1200		2	1	9.75	123	50	850	75	177	3260	6520	0.50	0.13
MN03C50F1200		3	1.5	11.625	128	50	850	75	177	2173	6520	0.75	0.13

MN04C50F1200	12"	4	2	13.5	133	50	850	75	177	1630	6520	1	0.25
MN05C50F1200		5	2.5	15.375	138	50	850	75	177	1304	6520	1.25	0.25
MN06C50F1200		6	3	17.25	143	50	850	75	177	1087	6520	1.50	0.38
MN07C50F1200		7	3.5	19.125	148	50	850	75	177	931	6520	1.75	0.50
MN08C50F1200		8	4	21	153	50	850	75	177	815	6520	2	0.63
MN09C50F1200		9	4.5	22.875	158	50	850	75	177	724	6520	2.25	0.50
MN10C50F1200		10	5	24.75	163	50	850	75	177	652	6520	2.50	0.63
MN01C50F1400	14"	1	0.625	8.375	160	50	850	75	218	4540	4540	0.25	0.00
MN02C50F1400		2	1.25	10.25	166	50	850	75	218	2270	4540	0.63	0.13
MN03C50F1400		3	1.875	12.125	172	50	850	75	218	1513	4540	1	0.25
MN04C50F1400		4	2.5	14	178	50	850	75	218	1135	4540	1.25	0.25
MN05C50F1400		5	3.125	15.875	184	50	850	75	218	908	4540	1.50	0.38
MN06C50F1400		6	3.75	17.75	190	50	850	75	218	757	4540	1.88	0.50
MN07C50F1400		7	4.375	19.625	196	50	850	75	218	649	4540	2.13	0.63
MN08C50F1400		8	5	21.5	202	50	850	75	218	568	4540	2.50	0.63
MN09C50F1400		9	5.625	23.375	208	50	850	75	218	504	4540	2.75	0.75
MN10C50F1400		10	6.25	25.25	214	50	850	75	218	454	4540	3.13	0.88
MN01C50F1600	16"	1	0.625	8.375	177	50	850	75	274	5070	5070	0.25	0.00
MN02C50F1600		2	1.25	10.25	184	50	850	75	274	2535	5070	0.63	0.13
MN03C50F1600		3	1.875	12.125	191	50	850	75	274	1690	5070	1	0.25
MN04C50F1600		4	2.5	14	198	50	850	75	274	1268	5070	1.25	0.25
MN05C50F1600		5	3.125	15.875	205	50	850	75	274	1014	5070	1.50	0.38
MN06C50F1600		6	3.75	17.75	212	50	850	75	274	845	5070	1.88	0.50
MN07C50F1600		7	4.375	19.625	219	50	850	75	274	724	5070	2.13	0.63
MN08C50F1600		8	5	21.5	226	50	850	75	274	634	5070	2.50	0.63
MN09C50F1600		9	5.625	23.375	233	50	850	75	274	563	5070	2.75	0.75
MN01C50F1800	18"	1	0.625	8.875	233	50	850	75	236	5350	5350	0.25	0.00
MN02C50F1800		2	1.25	10.75	241	50	850	75	236	2675	5350	0.63	0.13
MN03C50F1800		3	1.875	12.625	249	50	850	75	236	1783	5350	1	0.25
MN04C50F1800		4	2.5	14.5	257	50	850	75	236	1338	5350	1.25	0.25
MN05C50F1800		5	3.125	16.375	265	50	850	75	236	1070	5350	1.50	0.38
MN06C50F1800		6	3.75	18.25	273	50	850	75	236	892	5350	1.88	0.50
MN07C50F1800		7	4.375	20.125	281	50	850	75	236	764	5350	2.13	0.63
MN08C50F1800		8	5	22	289	50	850	75	236	669	5350	2.50	0.63
MN09C50F1800		9	5.625	23.875	297	50	850	75	236	594	5350	2.75	0.75
MN10C50F1800		10	6.25	25.75	305	50	850	75	236	535	5350	3.13	0.88
MN01C50F2000	20"	1	0.625	9.125	296	50	850	75	465	5850	5850	0.25	0.00
MN02C50F2000		2	1.25	11	305	50	850	75	465	2925	5850	0.63	0.13
MN03C50F2000		3	1.875	12.875	314	50	850	75	465	1950	5850	1	0.25
MN04C50F2000		4	2.5	14.75	323	50	850	75	465	1463	5850	1.25	0.25
MN05C50F2000		5	3.125	16.625	332	50	850	75	465	1170	5850	1.50	0.38
MN06C50F2000		6	3.75	18.5	341	50	850	75	465	975	5850	1.88	0.50
MN07C50F2000		7	4.375	20.375	350	50	850	75	465	836	5850	2.13	0.63
MN08C50F2000		8	5	22.25	359	50	850	75	465	731	5850	2.50	0.63
MN09C50F2000		9	5.625	24.125	368	50	850	75	465	650	5850	2.75	0.75
MN10C50F2000		10	6.25	26	377	50	850	75	465	585	5850	2.13	0.88
MN01C50F2400	24"	1	0.625	9.5	225	50	850	75	561	12600	12600	0.25	0.00
MN02C50F2400		2	1.25	11.5	233	50	850	75	561	6300	12600	0.63	0.13
MN03C50F2400		3	1.875	13.5	241	50	850	75	561	4200	12600	1	0.25
MN04C50F2400		4	2.5	15.5	248	50	850	75	561	3150	12600	1.25	0.25
MN05C50F2400		5	3.125	17	255	50	850	75	561	2520	12600	1.50	0.38
MN06C50F2400		6	3.75	19	265	50	850	75	561	2100	12600	1.88	0.50
MN07C50F2400		7	4.375	21	275	50	850	75	561	1800	12600	2.13	0.63

MN08C50F2400	8	5	22.75	280	50	850	75	561	1575	12600	2.50	0.63
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Flanged Ends – Single 150 lb Class

Part No	Nom size	No Corr	Compression Inches	OAL	Weight lbs	Max Working Pressure PSIG	Max Working Temp Deg F.	Max Test Pressure PSIG	Effective Area Sq In	Spring Rate lbs/inch	Spring Constant lbs/inch/cor	Extension	Lateral
MN01C15F0250	2-1/2"	1	0.25	6.25	19	150	850	225	15	5380	5380	0.125	0
MN02C15F0250		2	0.5	7.5	20	150	850	225	15	2690	5380	0.25	0
MN03C15F0250		3	0.75	8.75	21	150	850	225	15	1793	5380	0.375	0.125
MN04C15F0250		4	1	10	22	150	850	225	15	1345	5380	0.5	0.125
MN04C15F0250		5	1.25	11.25	23	150	850	225	15	1076	5380	0.625	0.125
MN06C15F0250		6	1.5	12.5	24	150	850	225	15	897	5380	0.75	0.125
MN01C15F0300	3"	1	0.25	6.25	19	150	850	225	15	5380	5380	0.125	0
MN02C15F0300		2	0.5	7.5	20	150	850	225	15	2690	5380	0.25	0
MN03C15F0300		3	0.75	8.75	21	150	850	225	15	1793	5380	0.375	0.125
MN04C15F0300		4	1	10	22	150	850	225	15	1345	5380	0.5	0.125
MN04C15F0300		5	1.25	11.25	23	150	850	225	15	1076	5380	0.625	0.125
MN06C15F0300		6	1.5	12.5	24	150	850	225	15	897	5380	0.75	0.125
MN01C15F0400	4"	1	0.25	6.25	28	150	850	225	22	6700	6700	0.125	0
MN02C15F0400		2	0.5	7.5	29	150	850	225	22	3350	6700	0.25	0
MN03C15F0400		3	0.75	8.75	30	150	850	225	22	2233	6700	0.375	0.125
MN04C15F0400		4	1	10	31	150	850	225	22	1675	6700	0.5	0.125
MN05C15F0400		5	1.25	11.25	32	150	850	225	22	1340	6700	0.625	0.125
MN06C15F0400		6	1.5	12.5	33	150	850	225	22	1117	6700	0.75	0.125
MN01C15F0500	5"	1	0.25	6.75	33	150	850	225	38	5600	5600	0.125	0
MN02C15F0500		2	0.5	8	35	150	850	225	38	2800	5600	0.25	0
MN03C15F0500		3	0.75	9.25	37	150	850	225	38	1867	5600	0.375	0.125
MN04C15F0500		4	1	10.5	39	150	850	225	38	1400	5600	0.5	0.125
MN05C15F0500		5	1.25	11.75	41	150	850	225	38	1120	5600	0.625	0.125
MN06C15F0500		6	1.5	13	43	150	850	225	38	933	5600	0.75	0.125
MN01C15F0600	6"	1	0.375	6.25	43	150	850	225	50	11500	11500	0.125	0
MN02C15F0600		2	0.75	8	46	150	850	225	50	5750	11500	0.375	0.125
MN03C15F0600		3	1.125	9.75	49	150	850	225	50	3830	11500	0.375	0.125
MN04C15F0600		4	1.5	11.5	52	150	850	225	50	2880	11500	0.75	0.125
MN05C15F0600		5	1.875	13.25	55	150	850	225	50	2300	11500	1	0.25
MN06C15F0600		6	2.25	15	58	150	850	225	50	1920	11500	1.125	0.25
MN01C15F0800	8"	1	0.375	6.5	64	150	850	225	78	11680	11680	0.125	0
MN02C15F0800		2	0.75	8.25	66	150	850	225	78	5840	11680	0.375	0.125
MN03C15F0800		3	1.125	10	68	150	850	225	78	3893	11680	0.375	0.125
MN04C15F0800		4	1.5	11.75	70	150	850	225	78	2920	11680	0.75	0.125
MN05C15F0800		5	1.875	13.5	74	150	850	225	78	2336	11680	1	0.25
MN06C15F0800		6	2.25	15.25	78	150	850	225	78	1947	11680	1.125	0.25
MN07C15F0800		7	2.625	17	82	150	850	225	78	1669	11680	1.25	0.375
MN08C15F0800		8	3	18.75	86	150	850	225	78	1460	11680	1.5	0.375
MN01C15F1000	10"	1	0.375	6.875	89	150	850	225	115	14660	14660	0.125	0
MN02C15F1000		2	0.75	8.75	91	150	850	225	115	7330	14660	0.375	0.125
MN03C15F1000		3	1.125	10.625	93	150	850	225	115	4887	14660	0.375	0.125
MN04C15F1000		4	1.5	12.5	95	150	850	225	115	3665	14660	0.75	0.125
MN05C15F1000		5	1.875	14.375	97	150	850	225	115	2932	14660	1	0.25
MN06C15F1000		6	2.25	16.25	99	150	850	225	115	2443	14660	1.125	0.25
MN07C15F1000		7	2.625	18.125	102	150	850	225	115	2094	14660	1.25	0.375

MN08C15F1000		8	3	20	105	150	850	225	115	1833	14660	1.5	0.375
MN01C15F1200	12"	1	0.375	7.875	135	150	850	225	156	15000	15000	0.125	0
MN02C15F1200		2	0.75	9.75	137	150	850	225	156	7500	15000	0.375	0.125
MN03C15F1200		3	1.125	11.625	141	150	850	225	156	5000	15000	0.375	0.125
MN04C15F1200		4	1.5	13.5	142	150	850	225	156	3750	15000	0.75	0.125
MN05C15F1200		5	1.875	15.375	144	150	850	225	156	3000	15000	1	0.25
MN06C15F1200		6	2.25	17.25	145	150	850	225	156	2500	15000	1.125	0.25
MN07C15F1200		7	2.625	19.125	147	150	850	225	156	2143	15000	1.25	0.375
MN08C15F1200		8	3	21	150	150	850	225	156	1875	15000	1.5	0.375
MN01C15F1400	14"	1	0.375	8.375	177	150	850	225	186	14300	14300	0.125	0
MN02C15F1400		2	0.75	10.25	180	150	850	225	186	7150	14300	0.375	0.125
MN03C15F1400		3	1.125	12.125	184	150	850	225	186	4767	14300	0.375	0.125
MN04C15F1400		4	1.5	14	188	150	850	225	186	3575	14300	0.75	0.125
MN05C15F1400		5	1.875	15.875	192	150	850	225	186	2860	14300	1	0.25
MN06C15F1400		6	2.25	17.75	196	150	850	225	186	2383	14300	1.125	0.25
MN07C15F1400		7	2.625	19.625	200	150	850	225	186	2043	14300	1.25	0.375
MN08C15F1400		8	3	21.5	206	150	850	225	186	1788	14300	1.5	0.375
MN01C15F1600	16"	1	0.375	8.375	197	150	850	225	238	14100	14100	0.125	0
MN02C15F1600		2	0.75	10.25	201	150	850	225	238	7050	14100	0.375	0.125
MN04C15F1600		3	1.5	14	209	150	850	225	238	3525	14100	0.75	0.125
MN05C15F1600		4	1.875	15.875	213	150	850	225	238	2820	14100	1	0.25
MN06C15F1600		5	2.25	17.75	218	150	850	225	238	2350	14100	1.125	0.25
MN07C15F1600		6	2.625	19.625	223	150	850	225	238	2014	14100	1.25	0.375
MN08C15F1600		7	3	21.5	230	150	850	225	238	1763	14100	1.5	0.375
MN09C15F1600		8	3.375	23.375	136	150	850	225	238	1567	14100	1.625	0.5
MN01C15F1800	18"	1	0.375	8.88	250	150	850	225	328	14700	14700	0.125	0
MN02C15F1800		2	0.75	10.75	253	150	850	225	328	7350	14700	0.375	0.125
MN03C15F1800		3	1.125	12.63	256	150	850	225	328	4900	14700	0.375	0.125
MN04C15F1800		4	1.5	14.50	160	150	850	225	328	3675	14700	0.75	0.125
MN05C15F1800		5	1.875	16.38	265	150	850	225	328	2940	14700	1	0.25
MN06C15F1800		6	2.25	18.25	178	150	850	225	328	2450	14700	1.125	0.25
MN07C15F1800		7	2.625	20.13	283	150	850	225	328	2100	14700	1.25	0.375
MN08C15F1800		8	3	22	288	150	850	225	328	1838	14700	1.5	0.375
MN01C15F2000	20"	1	0.375	9.125	320	150	850	225	361	15100	15100	0.125	0
MN02C15F2000		2	0.75	11	325	150	850	225	361	7550	15100	0.375	0.125
MN03C15F2000		3	1.125	12.875	330	150	850	225	361	5033	15100	0.375	0.125
MN04C15F2000		4	1.5	14.75	335	150	850	225	361	3775	15100	0.75	0.125
MN05C15F2000		5	1.875	16.625	340	150	850	225	361	3020	15100	1	0.25
MN06C15F2000		6	2.25	18.5	345	150	850	225	361	2517	15100	1.125	0.25
MN07C15F2000		7	2.625	20.375	350	150	850	225	361	2157	15100	1.25	0.375
MN08C15F2000		8	3	22.25	355	150	850	225	361	1888	15100	1.5	0.375
MN01C15F2400	24"	1	0.375	9.5	450	150	850	225	520	17400	17400	0.125	0
MN02C15F2400		2	0.75	11.5	455	150	850	225	520	8700	17400	0.375	0.125
MN03C15F2400		3	1.125	13.5	461	150	850	225	520	5800	17400	0.375	0.125
MN04C15F2400		4	1.5	15.5	466	150	850	225	520	4350	17400	0.75	0.125
MN05C15F2400		5	1.875	17	470	150	850	225	520	3480	17400	1	0.25
MN06C15F2400		6	2.25	19	475	150	850	225	520	2900	17400	1.125	0.25
MN07C15F2400		7	2.625	21	480	150	850	225	520	2486	17400	1.25	0.375
MN08C15F2400		8	3	22.75	485	150	850	225	520	2175	17400	1.5	0.375

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Weld Ends – Single 50 lb Class

Part No	Nom size	No Corr	Compression Inches	OAL	Weight lbs	Max Working Pressure PSIG	Max Working Temp Deg F.	Max Test Pressure PSIG	Effective Area Sq In	Spring Rate lbs/inch	Spring Constant lbs/inch/cor	Extension	Lateral
MN01C50W0250	2-1/2"	1	0.38	8.125	9	50	850	75	18	1525	3050	0.13	0.00
MN02C50W0250		2	0.75	9.375	10	50	850	75	18	1017	3050	0.38	0.13
MN03C50W0250		3	1.13	10.625	11	50	850	75	18	763	3050	0.50	0.13
MN04C50W0250		4	1.50	11.875	12	50	850	75	18	610	3050	0.75	0.13
MN05C50W0250		5	1.88	13.125	13	50	850	75	18	508	3050	1	0.25
MN06C50W0250		6	2.25	14.375	14	50	850	75	18	436	3050	1.13	0.25
MN07C50W0250		7	2.63	15.625	15	50	850	75	18	381	3050	1.25	0.38
MN08C50W0250		8	3	16.875	16	50	850	75	18	381	3050	1.50	0.38
MN01C50W0300	3"	1	0.38	8.125	9	50	850	75	18	1525	3030	0.13	0.00
MN02C50W0300		2	0.75	9.375	10	50	850	75	18	1017	3030	0.38	0.13
MN03C50W0300		3	1.13	10.625	11	50	850	75	18	763	3030	0.50	0.13
MN04C50W0300		4	1.50	11.875	12	50	850	75	18	610	3030	0.75	0.13
MN05C50W0300		5	1.88	13.125	13	50	850	75	18	508	3030	1	0.25
MN06C50W0300		6	2.25	14.375	14	50	850	75	18	436	3030	1.13	0.25
MN07C50W0300		7	2.63	15.625	15	50	850	75	18	381	3030	1.25	0.38
MN08C50W0300		8	3	16.875	16	50	850	75	18			1.50	0.38
MN01C50W0400	4"	1	0.38	8.375	11	50	850	75	26	3160	3180	0.25	0.00
MN02C50W0400		2	0.75	9.625	12	50	850	75	26	1580	3180	0.38	0.13
MN03C50W0400		3	1.13	10.875	13	50	850	75	26	0153	3180	0.50	0.13
MN04C50W0400		4	1.50	12.125	14	50	850	75	26	790	3180	0.75	0.13
MN05C50W0400		5	1.88	13.375	15	50	850	75	26	632	3180	1	0.25
MN06C50W0400		6	2.25	14.625	16	50	850	75	26	527	3180	1.13	0.25
MN07C50W0400		7	2.63	15.875	17	50	850	75	26	451	3180	1.25	0.38
MN08C50W0400		8	3	17.125	18	50	850	75	26	395	3180	1.50	0.38
MN01C50W0500	5"	1	0.375	8.375	14	50	850	75	39	4000	4000	0.25	0.00
MN02C50W0500		2	0.75	9.625	16	50	850	75	39	2000	4000	0.38	0.13
MN03C50W0500		3	1.125	10.875	18	50	850	75	39	1333	4000	0.50	0.13
MN04C50W0500		4	1.5	12.125	20	50	850	75	39	1000	4000	0.75	0.13
MN05C50W0500		5	1.875	13.375	22	50	850	75	39	800	4000	1	0.25
MN05C50W0500		6	2.25	13.375	22	50	850	75	39	667	4000	1.13	0.25
MN06C50W0500		7	2.625	14.625	24	50	850	75	39	571	4000	1.25	0.38
MN07C50W0500		8	3	15.875	26	50	850	75	39	500	4000	1.50	0.38
MN01C50W0600	6"	1	0.5	6.5	58	50	850	75	60	4960	4960	0.25	0.00
MN02C50W0600		2	1	8.25	62	50	850	75	60	2480	4960	0.50	0.13
MN03C50W0600		3	1.5	10	66	50	850	75	60	1653	4960	0.75	0.13
MN04C50W0600		4	2	11.75	70	50	850	75	60	1240	4960	1.00	0.13
MN05C50W0600		5	2.5	13.5	74	50	850	75	60	992	4960	1.25	0.25
MN06C50W0600		6	3	15.25	78	50	850	75	60	827	4960	1.50	0.25
MN07C50W0600		7	3.5	17	82	50	850	75	60	709	4960	1.75	0.50
MN08C50W0600		8	4	18.75	86	50	850	75	60	620	4960	2	0.50
MN09C50W0600		9	4.5	10.5	90	50	850	75	60	551	4960	2.25	0.50
MN10C50W0600		10	5	22.25	94	50	850	75	60	496	4960	2.50	0.63
MN01C50W0800	8"	1	0.5	9.625	28	50	850	75	91	5480	5480	0.25	0.00
MN02C50W0800		2	1	11.375	32	50	850	75	91	2740	5480	0.50	0.13
MN03C50W0800		3	1.5	13.125	36	50	850	75	91	1827	5480	0.75	0.13
MN04C50W0800		4	2	14.875	40	50	850	75	91	1370	5480	1	0.25
MN05C50W0800		5	2.5	16.625	44	50	850	75	91	1096	5480	1.25	0.25
MN06C50W0800		6	3	18.375	48	50	850	75	91	913	5480	1.50	0.38
MN07C50W0800		7	3.5	20.125	52	50	850	75	91	783	5480	1.75	0.50
MN08C50W0800		8	4	21.875	56	50	850	75	91	685	5480	2	0.50

MN09C50W0800		9	4.5	23.625	60	50	850	75	91	609	5480	2.25	0.63
MN01C50W0800		10	5	25.375	64	50	850	75	91	548	5480	2.50	0.63
MN01C50W1000	10"	1	0.5	9.75	31	50	850	75	133	6000	6000	0.25	0.00
MN02C50W1000		2	1	11.625	35	50	850	75	133	3000	6000	0.50	0.13
MN03C50W1000		3	1.5	13.5	39	50	850	75	133	2000	6000	0.75	0.13
MN04C50W1000		4	2	15.375	43	50	850	75	133	1500	6000	1.00	0.25
MN04C50W1000		5	2.5	17.25	47	50	850	75	133	1200	6000	1.25	0.25
MN06C50W1000		6	3	19.125	51	50	850	75	133	1000	6000	1.50	0.38
MN07C50W1000		7	3.5	21	55	50	850	75	133	857	6000	1.75	0.50
MN08C50W1000		8	4	22.875	59	50	850	75	133	750	6000	2.00	0.50
MN09C50W1000		9	4.5	24.75	63	50	850	75	133	667	6000	2.25	0.63
MN10C50W1000		10	5	26.625	67	50	850	75	133	600	6000	2.50	0.63
MN01C50W1200	12"	1	0.5	10.375	33	50	850	75	177	6520	6520	0.25	0.00
MN02C50W1200		2	1	12.25	38	50	850	75	177	3260	6520	0.50	0.13
MN03C50W1200		3	1.5	14.25	43	50	850	75	177	2173	6520	0.75	0.13
MN04C50W1200		4	2	16	48	50	850	75	177	1630	6520	1	0.25
MN05C50W1200		5	2.5	17.875	53	50	850	75	177	1304	6520	1.25	0.25
MN06C50W1200		6	3	19.75	58	50	850	75	177	1087	6520	1.50	0.38
MN07C50W1200		7	3.5	21.625	63	50	850	75	177	931	6520	1.75	0.50
MN08C50W1200		8	4	23.5	68	50	850	75	177	815	6520	2	0.63
MN09C50W1200		9	4.5	25.375	73	50	850	75	177	724	6520	2.25	0.50
MN10C50W1200		10	5	27.25	78	50	850	75	177	652	6520	2.50	0.63
MN01C50W1400	14"	1	0.625	10.375	70	50	850	75	218	4540	4540	0.25	0.00
MN02C50W1400		2	1.25	12.25	76	50	850	75	218	2270	4540	0.63	0.13
MN03C50W1400		3	1.875	14.125	82	50	850	75	218	1513	4540	1	0.25
MN04C50W1400		4	2.5	16	88	50	850	75	218	1135	4540	1.25	0.25
MN05C50W1400		5	3.125	17.875	94	50	850	75	218	908	4540	1.50	0.38
MN06C50W1400		6	3.75	19.75	100	50	850	75	218	757	4540	1.88	0.50
MN07C50W1400		7	4.375	21.625	106	50	850	75	218	649	4540	2.13	0.63
MN08C50W1400		8	5	23.5	112	50	850	75	218	568	4540	2.50	0.63
MN09C50W1400		9	5.625	25.375	118	50	850	75	218	504	4540	2.75	0.75
MN10C50W1400		10	6.25	27.25	124	50	850	75	218	454	4540	3.13	0.88
MN01C50W1600	16"	1	0.625	10.375	80	50	850	75	274	5070	5070	0.25	0.00
MN02C50W1600		2	1.25	12.25	87	50	850	75	274	2535	5070	0.63	0.13
MN03C50W1600		3	1.875	14.125	94	50	850	75	274	1690	5070	1	0.25
MN04C50W1600		4	2.5	16	101	50	850	75	274	1268	5070	1.25	0.25
MN05C50W1600		5	3.125	17.875	108	50	850	75	274	1014	5070	1.50	0.38
MN06C50W1600		6	3.75	19.75	115	50	850	75	274	845	5070	1.88	0.50
MN07C50W1600		7	4.375	21.625	122	50	850	75	274	724	5070	2.13	0.63
MN08C50W1600		8	5	23.5	129	50	850	75	274	634	5070	2.50	0.63
MN09C50W1600		9	5.625	25.375	136	50	850	75	274	563	5070	2.75	0.75
MN01C50W1800	18"	1	0.625	10.375	88	50	850	75	236	5350	5350	0.25	0.00
MN02C50W1800		2	1.25	12.25	96	50	850	75	236	2675	5350	0.63	0.13
MN03C50W1800		3	1.875	14.125	104	50	850	75	236	1783	5350	1	0.25
MN04C50W1800		4	2.5	16	112	50	850	75	236	1338	5350	1.25	0.25
MN05C50W1800		5	3.125	17.875	120	50	850	75	236	1070	5350	1.50	0.38
MN06C50W1800		6	3.75	19.75	128	50	850	75	236	892	5350	1.88	0.50
MN07C50W1800		7	4.375	21.625	136	50	850	75	236	764	5350	2.13	0.63
MN08C50W1800		8	5	23.5	144	50	850	75	236	669	5350	2.50	0.63
MN09C50W1800		9	5.625	25.375	152	50	850	75	236	594	5350	2.75	0.75
MN10C50W1800		10	6.25	27.25	160	50	850	75	236	535	5350	3.13	0.88
MN01C50W2000		1	0.625	10.375	100	50	850	75	465	5850	5850	0.25	0.00

MN02C50W2000	20"	2	1.25	12.25	109	50	850	75	465	2925	5850	0.63	0.13
MN03C50W2000		3	1.875	14.125	118	50	850	75	465	1950	5850	1	0.25
MN04C50W2000		4	2.5	16	127	50	850	75	465	1463	5850	1.25	0.25
MN05C50W2000		5	3.125	17.875	136	50	850	75	465	1170	5850	1.50	0.38
MN06C50W2000		6	3.75	19.75	145	50	850	75	465	975	5850	1.88	0.50
MN07C50W2000		7	4.375	21.625	154	50	850	75	465	836	5850	2.13	0.63
MN08C50W2000		8	5	23.5	163	50	850	75	465	731	5850	2.50	0.63
MN09C50W2000		9	5.625	25.375	172	50	850	75	465	650	5850	2.75	0.75
MN10C50W2000		10	6.25	27.25	181	50	850	75	465	585	5850	2.13	0.88
MN01C50W2400	24"	1	0.625	10.5	123	50	850	75	561	12600	12600	0.25	0.00
MN02C50W2400		2	1.25	12.5	130	50	850	75	561	6300	12600	0.63	0.13
MN03C50W2400		3	1.875	14.5	140	50	850	75	561	4200	12600	1	0.25
MN04C50W2400		4	2.5	16.5	150	50	850	75	561	3150	12600	1.25	0.25
MN05C50W2400		5	3.125	18	160	50	850	75	561	2520	12600	1.50	0.38
MN06C50W2400		6	3.75	20	170	50	850	75	561	2100	12600	1.88	0.50
MN07C50W2400		7	4.375	22	180	50	850	75	561	1800	12600	2.13	0.63
MN08C50W2400		8	5	23.75	190	50	850	75	561	1575	12600	2.50	0.63

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Weld Ends – Single 150 lb Class

Part No	Nom size	No Corr	Compression Inches	OAL	Weight lbs	Max Working Pressure PSIG	Max Working Temp Deg F.	Max Test Pressure PSIG	Effective Area Sq In	Spring Rate lbs/inch	Spring Constant lbs/inch/cor	Extension	Lateral
MN01C15W0300	2-1/2"	1	0.25	8.125	9	150	850	225	15	5380	5380	0.125	0
MN02C15W0300		2	0.5	9.375	10	150	850	225	15	2690	5380	0.25	0
MN03C15W0300		3	0.75	10.625	11	150	850	225	15	1793	5380	0.375	0.125
MN04C15W0300		4	1	11.875	12	150	850	225	15	1345	5380	0.5	0.125
MN05C15W0300		5	1.25	13.125	13	150	850	225	15	1076	5380	0.625	0.125
MN06C15W0300		6	1.5	14.375	14	150	850	225	15	897	5380	0.75	0.125
MN01C15W0300	3"	1	0.25	8.125	9	150	850	225	15	5380	5380	0.125	0
MN02C15W0300		2	0.5	9.375	10	150	850	225	15	2690	5380	0.25	0
MN03C15W0300		3	0.75	10.625	11	150	850	225	15	1793	5380	0.375	0.125
MN04C15W0300		4	1	11.875	12	150	850	225	15	1345	5380	0.5	0.125
MN05C15W0300		5	1.25	13.125	13	150	850	225	15	1076	5380	0.625	0.125
MN06C15W0300		6	1.5	14.375	14	150	850	225	15	897	5380	0.75	0.125
MN01C15W0400	4"	1	0.25	8.375	11	150	850	225	22	6700	6700	0.125	0
MN02C15W0400		2	0.5	9.625	12	150	850	225	22	3350	6700	0.25	0
MN03C15W0400		3	0.75	10.875	13	150	850	225	22	2233	6700	0.375	0.125
MN04C15W0400		4	1	12.125	14	150	850	225	22	1675	6700	0.5	0.125
MN05C15W0400		5	1.25	13.375	15	150	850	225	22	1340	6700	0.625	0.125
MN06C15W0400		6	1.5	14.625	16	150	850	225	22	1117	6700	0.75	0.125
MN01C15W0500	5"	1	0.25	8.375	14	150	850	225	38	5600	5600	0.125	0
MN02C15W0500		2	0.5	9.625	16	150	850	225	38	2800	5600	0.25	0
MN03C15W0500		3	0.75	10.875	18	150	850	225	38	1867	5600	0.375	0.125
MN04C15W0500		4	1	12.125	20	150	850	225	38	1400	5600	0.5	0.125
MN05C15W0500		5	1.25	13.375	22	150	850	225	38	1120	5600	0.625	0.125
MN06C15W0500		6	1.5	14.625	33	150	850	225	38	933	5600	0.75	0.125
MN01C15W0600	6"	1	0.375	7.625	20	150	850	225	50	11500	11500	0.125	0
MN02C15W0600		2	0.75	9.375	23	150	850	225	50	5750	11500	0.375	0.125
MN03C15W0600		3	1.125	11.125	26	150	850	225	50	3830	11500	0.375	0.125
MN04C15W0600		4	1.5	12.875	29	150	850	225	50	2880	11500	0.75	0.125
MN05C15W0600		5	1.875	14.625	32	150	850	225	50	2300	11500	1	0.25
MN06C15W0600		6	2.25	16.375	35	150	850	225	50	1920	11500	1.125	0.25

MN01C15W0800	8"	1	0.375	9.625	11	150	850	225	78	11680	11680	0.125	0
MN02C15W0800		2	0.75	11.375	32	150	850	225	78	5840	11680	0.375	0.125
MN03C15W0800		3	1.125	13.125	36	150	850	225	78	3893	11680	0.375	0.125
MN04C15W0800		4	1.5	14.875	40	150	850	225	78	2920	11680	0.75	0.125
MN05C15W0800		5	1.875	16.625	44	150	850	225	78	2336	11680	1	0.25
MN06C15W0800		6	2.25	18.375	48	150	850	225	78	1947	11680	1.125	0.25
MN07C15W0800		7	2.625	20.125	52	150	850	225	78	1669	11680	1.25	0.375
MN08C15W0800		8	3	12.875	60	150	850	225	78	1460	11680	1.5	0.375
MN01C15W1000	10"	1	0.375	9.75	31	150	850	225	115	14660	14660	0.125	0
MN02C15W1000		2	0.75	11.625	35	150	850	225	115	7330	14660	0.375	0.125
MN03C15W1000		3	1.125	13.5	39	150	850	225	115	4887	14660	0.375	0.125
MN04C15W1000		4	1.5	15.375	43	150	850	225	115	3665	14660	0.75	0.125
MN05C15W1000		5	1.875	17.25	47	150	850	225	115	2932	14660	1	0.25
MN06C15W1000		6	2.25	19.125	51	150	850	225	115	2443	14660	1.125	0.25
MN07C15W1000		7	2.625	21	55	150	850	225	115	2094	14660	1.25	0.375
MN08C15W1000		8	3	22.875	59	150	850	225	115	1833	14660	1.5	0.375
MN01C15W1200	12"	1	0.375	10.375	33	150	850	225	156	15000	15000	0.125	0
MN02C15W1200		2	0.75	12.25	38	150	850	225	156	7500	15000	0.375	0.125
MN03C15W1200		3	1.125	14.125	43	150	850	225	156	5000	15000	0.375	0.125
MN04C15W1200		4	1.5	16	48	150	850	225	156	3750	15000	0.75	0.125
MN05C15W1200		5	1.875	17.875	53	150	850	225	156	3000	15000	1	0.25
MN06C15W1200		6	2.25	19.75	58	150	850	225	156	2500	15000	1.125	0.25
MN07C15W1200		7	2.625	21.625	63	150	850	225	156	2143	15000	1.25	0.375
MN08C15W1200		8	3	23.5	68	150	850	225	156	1875	15000	1.5	0.375
MN01C15W1400	14"	1	0.375	10.375	70	150	850	225	186	14300	14300	0.125	0
MN02C15W1400		2	0.75	12.25	76	150	850	225	186	7150	14300	0.375	0.125
MN03C15W1400		3	1.125	14.125	82	150	850	225	186	4767	14300	0.375	0.125
MN04C15W1400		4	1.5	16	88	150	850	225	186	3575	14300	0.75	0.125
MN05C15W1400		5	1.875	17.875	94	150	850	225	186	2860	14300	1	0.25
MN06C15W1400		6	2.25	19.75	100	150	850	225	186	2383	14300	1.125	0.25
MN07C15W1400		7	2.625	21.625	106	150	850	225	186	2043	14300	1.25	0.375
MN08C15W1400		8	3	23.5	211	150	850	225	186	1788	14300	1.5	0.375
MN01C15W1600	16"	1	0.375	10.375	80	150	850	225	238	14100	14100	0.125	0
MN02C15W1600		2	0.75	12.25	87	150	850	225	238	7050	14100	0.375	0.125
MN03C15W1600		3	1.5	14.125	94	150	850	225	238	3525	14100	0.75	0.125
MN04C15W1600		4	1.875	16	101	150	850	225	238	2820	14100	1	0.25
MN05C15W1600		5	2.25	17.875	108	150	850	225	238	2350	14100	1.125	0.25
MN06C15W1600		6	2.625	19.75	115	150	850	225	238	2014	14100	1.25	0.375
MN07C15W1600		7	3	21.625	122	150	850	225	238	1763	14100	1.5	0.375
MN08C15W1600		8	3.375	23.5	129	150	850	225	238	1567	14100	1.625	0.5
MN01C15W1800	18"	1	0.375	10.375	88	150	850	225	328	14700	14700	0.125	0
MN02C15W1800		2	0.75	12.25	96	150	850	225	328	7350	14700	0.375	0.125
MN03C15W1800		3	1.125	14.125	104	150	850	225	328	4900	14700	0.375	0.125
MN04C15W1800		4	1.5	16	112	150	850	225	328	3675	14700	0.75	0.125
MN05C15W1800		5	1.875	17.875	120	150	850	225	328	2940	14700	1	0.25
MN06C15W1800		6	2.25	19.75	128	150	850	225	328	2450	14700	1.125	0.25
MN07C15W1800		7	2.625	21.625	136	150	850	225	328	2100	14700	1.25	0.375
MN08C15W1800		8	3	23.5	144	150	850	225	328	1838	14700	1.5	0.375
MN01C15W2000		1	0.375	10.375	100	150	850	225	361	15100	15100	0.125	0
MN02C15W2000		2	0.75	12.25	109	150	850	225	361	7550	15100	0.375	0.125
MN03C15W2000		3	1.125	14.125	118	150	850	225	361	5033	15100	0.375	0.125

MN04C15W2000	20"	4	1.5	16	127	150	850	225	361	3775	15100	0.75	0.125
MN05C15W2000		5	1.875	17.875	136	150	850	225	361	3020	15100	1	0.25
MN06C15W2000		6	2.25	19.75	145	150	850	225	361	2517	15100	1.125	0.25
MN07C15W2000		7	2.625	21.625	154	150	850	225	361	2157	15100	1.25	0.375
MN08C15W2000		8	3	23.5	163	150	850	225	361	1888	15100	1.5	0.375
MN01C15W2400	24"	1	0.375	10.5	125	150	850	225	520	17400	17400	0.125	0
MN02C15W2400		2	0.75	11.5	133	150	850	225	520	8700	17400	0.375	0.125
MN03C15W2400		3	1.125	13.5	135	150	850	225	520	5800	17400	0.375	0.125
MN04C15W2400		4	1.5	15.5	146	150	850	225	520	4350	17400	0.75	0.125
MN05C15W2400		5	1.875	17	153	150	850	225	520	3480	17400	1	0.25
MN06C15W2400		6	2.25	19	160	150	850	225	520	2900	17400	1.125	0.25
MN07C15W2400		7	2.625	21	168	150	850	225	520	2486	17400	1.25	0.375
MN08C15W2400		8	3	22.75	175	150	850	225	520	2175	17400	1.5	0.375

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