

[MID CORR EXPANSION JOINTS]

Mid Corr expansion joints employ a standardized bellows design ideally suited for general industrial applications. Offered with flanges or butt weld ends from 2" to 24" nominal diameter for design pressures to 300 psig at 800° F. Larger diameters are available in our Metal Catalogue. (Consult factory for larger sizes)

How to order:

Example P/N

DIA	STYLE	ENDS	PRESSURE	CONS	LINER	COVER
8	MCB	FF	300	6	L	C

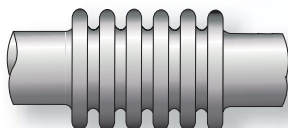
MID CORR DATA

	SINGLE
Size Range	2" to 24" NPS
Allowable Pressure Stainless Steel Bellows	Vacuum to 300 psig
Temperature Limits Stainless Steel Bellows	-20°F to 800°F. **
Axial Traverse	To 6.28" . . . (depending on size)
Lateral Motion	Up to 2.51" . . . (depending on size)

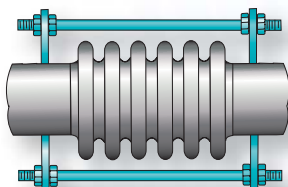
* For sizes larger than 24" consult factory for information.

**With special alloys, temperatures of minus 425°F. to plus 1600°F. can be handled.

STYLE

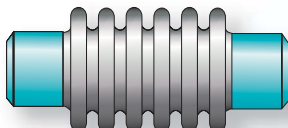


MCS SINGLE

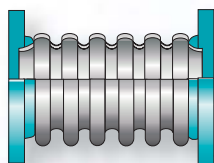


MCT TIED

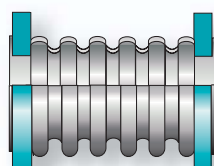
END CONNECTION



WW WELD END



FF FLANGED END



VV VANSTONE END

MATERIALS OF CONSTRUCTION

BELLOWS: ASTM A240 T304 (standard)

• Other materials available

PIPE: ASTM A53/A106

50 lb. Series: Sch. 40

150 lb. Series: Sch. 40

300 lb. Series: Sch. 40

FLANGES: A36/A516-70 Plate (Std) A105 (Opt)

50 lb. Series: 150 lb. ANSI B16.5 R.F.S.O.

150 lb. Series: 150 lb. ANSI B16.5 R.F.S.O.

300 lb. Series: 300 lb. ANSI B16.5 R.F.S.O.

COVERS: Carbon Steel

TIE RODS: Carbon Steel

LINERS: 300 Series Stainless Steel

1. Rated cycle life is 2000 cycles per EJMA 7th edition for any one movement tabulated.
2. To combine axial, lateral movements, refer to page 7.
3. Maximum axial extension movement is 10% of tabulated axial value.
4. To obtain greater movements or cycle life, contact the factory.
5. Catalogue pressure ratings are based upon a maximum bellows temperature of 800°F. Actual operating temperature should always be specified.
6. Maximum test pressure: 1 1/2 x maximum working pressure.

MID CORR: STYLE MCB

Nominal Diameter (in.)	Press (PSIG)	Con. Count	Axial (in.)	Lateral (in.)	Angular (Deg.)	Axial Sp Rate (lbs/in.)	Lateral Sp Rate (lbs/in.)	Angular Sp Rate (in.-lb/Deg)	WW		FF/VV		FW/VW	
									OAL (in.)	Wt. (lbs.)	OAL (in.)	Wt. (lbs.)	OAL (in.)	Wt. (lbs.)
2" Effective Area 5.7 in. ²	50	4	0.32	0.05	10.0	598	4148	9	7 1/4	2	2 1/2	10	4 7/8	6
	50	8	0.64	0.20	10.0	299	518	5	8 1/2	2	3 3/4	11	6 1/8	6
	50	12	0.96	0.45	10.0	199	154	3	9 3/4	2	5	11	7 3/8	7
	50	16	1.28	0.79	*	150	65	2	11	2	6 1/4	12	8 5/8	7
2" Effective Area 5.7 in. ²	150	4	0.23	0.04	10.0	1168	8101	18	7 1/4	2	2 1/2	10	4 7/8	6
	150	8	0.47	0.15	10.0	584	1013	9	8 1/2	2	3 3/4	11	6 1/8	6
	150	12	0.70	0.33	10.0	389	300	6	9 3/4	2	5	12	7 3/8	7
	150	16	0.97	0.61	*	413	175	6	11	2	6 1/4	14	8 5/8	8
2" Effective Area 5.7 in. ²	300	4	0.18	0.03	7.7	2019	13999	32	7 1/4	2	3 1/4	14	5 1/4	8
	300	8	0.36	0.11	10.0	1009	1750	16	8 1/2	2	4 1/2	15	6 1/2	8
	300	12	0.54	0.25	10.0	673	518	11	9 3/4	2	5 3/4	16	7 3/4	9
	300	16	0.72	0.45	*	806	341	12	11	3	7	19	9	11
2.5" Effective Area 8.3 in. ²	50	4	0.42	0.05	10.0	419	4252	10	7 1/4	3	2 1/2	14	4 7/8	9
	50	8	0.84	0.21	10.0	210	531	5	8 1/2	3	3 3/4	15	6 1/8	9
	50	12	1.26	0.48	*	140	157	3	9 3/4	3	5	15	7 3/8	9
	50	16	1.63	0.83	*	210	133	5	11	4	6 1/4	19	8 5/8	12
2.5" Effective Area 8.3 in. ²	150	4	0.30	0.04	10.0	819	8304	19	7 1/4	3	2 1/2	14	4 7/8	9
	150	8	0.60	0.15	10.0	409	1038	9	8 1/2	3	3 3/4	15	6 1/8	9
	150	12	0.89	0.34	10.0	546	615	13	9 3/4	4	5	18	7 3/8	11
	150	16	1.18	0.61	*	409	259	9	11	4	6 1/4	21	8 5/8	12
2.5" Effective Area 8.2 in. ²	300	4	0.21	0.03	7.6	1612	16186	37	7 1/4	3	3 1/4	20	5 1/4	12
	300	8	0.43	0.11	10.0	806	2023	18	8 1/2	3	4 1/2	21	6 1/2	12
	300	12	0.63	0.25	10.0	1074	1199	25	9 3/4	4	5 3/4	24	7 3/4	14
	300	16	0.85	0.44	*	806	506	18	11	4	7	28	9	16
3" Effective Area 12.4 in. ²	50	4	0.46	0.07	10.0	881	6794	30	7 1/4	4	3 3/4	16	5 1/2	10
	50	8	0.92	0.27	10.0	440	849	15	8 1/2	4	5	17	6 3/4	11
	50	12	1.38	0.61	10.0	294	252	10	9 3/4	5	6 1/4	19	8	12
	50	16	1.85	1.09	*	220	106	8	11	5	7 1/2	21	9 1/4	13
	50	20	2.40	1.78	*	252	76	9	12 1/4	6	8 3/4	29	10 1/2	17
3" Effective Area 12.4 in. ²	150	4	0.24	0.04	6.9	4077	31455	140	7 1/4	4	3 3/4	17	5 1/2	10
	150	8	0.48	0.14	10.0	2039	3932	70	8 1/2	5	5	18	6 3/4	11
	150	12	0.72	0.32	10.0	1359	1165	47	9 3/4	5	6 1/4	21	8	13
	150	16	0.96	0.56	10.0	1019	491	35	11	6	7 1/2	24	9 1/4	15
	150	20	1.20	0.88	*	815	252	28	12 1/4	6	8 3/4	29	10 1/2	18
3" Effective Area 12.2 in. ²	300	4	0.21	0.03	6.0	5035	38232	170	7 1/4	4	3 1/4	27	5 1/4	15
	300	8	0.41	0.12	10.0	2517	4779	85	8 1/2	5	4 1/2	28	6 1/2	16
	300	12	0.62	0.28	10.0	1678	1416	57	9 3/4	5	5 3/4	31	7 3/4	18
	300	16	0.83	0.49	10.0	1259	597	43	11	6	7	34	9	20
	300	20	1.11	0.83	*	1293	387	43	12 1/4	7	8 1/4	45	10 1/4	26
3.5" Effective Area 15.9 in. ²	50	4	0.50	0.06	10.0	833	8258	37	7 3/4	4	3	22	5 3/8	13
	50	8	1.00	0.26	10.0	416	1032	18	9 1/2	4	4 3/4	23	7 1/8	14
	50	12	1.50	0.58	*	278	306	12	11 1/4	5	6 1/2	25	8 7/8	15
	50	16	2.00	1.04	*	208	129	9	13	5	8 1/4	27	10 5/8	16
	50	20	2.69	1.76	*	235	92	10	14 3/4	6	10	35	12 3/8	21
3.5" Effective Area 15.9 in. ²	150	4	0.26	0.03	6.7	3855	38232	170	7 3/4	4	3	23	5 3/8	13
	150	8	0.53	0.14	10.0	1927	4779	85	9 1/2	5	4 3/4	24	7 1/8	15
	150	12	0.79	0.31	10.0	1285	1416	57	11 1/4	5	6 1/2	27	8 7/8	16
	150	16	1.06	0.55	*	964	597	43	13	6	8 1/4	31	10 5/8	18
	150	20	1.32	0.86	*	771	306	34	14 3/4	7	10	36	12 3/8	21
3.5" Effective Area 15.9 in. ²	300	4	0.26	0.03	6.6	2967	28613	127	7 3/4	4	4	34	5 7/8	19
	300	8	0.51	0.14	10.0	1483	3577	64	9 1/2	5	5 3/4	36	7 5/8	20
	300	12	0.77	0.30	10.0	989	1060	42	11 1/4	5	7 1/2	38	9 3/8	21
	300	16	0.96	0.50	10.0	1927	1195	85	13	8	9 1/4	52	11 1/8	30
	300	20	1.19	0.77	*	1542	612	68	14 3/4	9	11	62	12 7/8	36

*Movements shown are non-concurrent.

*For available angular rotation-consult factory.

MID CORR: STYLE MCB (CONTINUED)

Nominal Diameter (in.)	Press (PSIG)	Con. Count	Axial (in.)	Lateral (in.)	Angular (Deg.)	Axial Sp Rate (lbs/in.)	Lateral Sp Rate (lbs/in.)	Angular Sp Rate (in.-lb/Deg)	WW		FF/VV		FW/VW	
									OAL (in.)	Wt. (lbs.)	OAL (in.)	Wt. (lbs.)	OAL (in.)	Wt. (lbs.)
4" Effective Area 19.1 in. ²	50	4	0.39	0.05	9.0	1416	16905	75	7 3/4	6	3	26	5 3/8	16
	50	8	0.78	0.18	10.0	708	2113	38	9 1/2	6	4 3/4	27	7 1/8	17
	50	12	1.17	0.41	10.0	472	626	25	11 1/4	6	6 1/2	29	8 7/8	18
	50	16	1.55	0.73	*	354	264	19	13	7	8 1/4	31	10 5/8	19
	50	20	1.94	1.15	*	283	135	15	14 3/4	7	10	34	12 3/8	20
4" Effective Area 20.1 in. ²	150	4	0.32	0.04	7.2	3046	38232	170	7 3/4	6	3	27	5 3/8	16
	150	8	0.64	0.15	10.0	1523	4779	85	9 1/2	7	4 3/4	28	7 1/8	18
	150	12	0.96	0.33	10.0	1015	1416	57	11 1/4	7	6 1/2	32	8 7/8	19
	150	16	1.28	0.59	*	761	597	43	13	8	8 1/4	36	10 5/8	22
	150	20	1.75	1.02	*	743	368	41	14 3/4	11	10	49	12 3/8	30
4" Effective Area 20.1 in. ²	300	4	0.25	0.03	5.7	5263	66065	294	7 3/4	6	4	45	5 7/8	25
	300	8	0.50	0.12	10.0	2631	8258	147	9 1/2	7	5 3/4	47	7 5/8	27
	300	12	0.76	0.26	10.0	1754	2447	98	11 1/4	8	7 1/2	51	9 3/8	29
	300	16	1.01	0.47	10.0	1316	1032	74	13	9	9 1/4	56	11 1/8	32
	300	20	1.32	0.76	*	1451	719	80	14 3/4	12	11	73	12 7/8	43
5" Effective Area 30.4 in. ²	50	4	0.54	0.05	10.0	1218	23065	103	7 3/4	8	5 7/8	31	6 7/8	19
	50	8	1.08	0.20	10.0	609	2883	51	9 1/2	9	7 5/8	32	8 5/8	21
	50	12	1.62	0.46	10.0	406	854	34	11 1/4	10	9 3/8	35	10 3/8	22
	50	16	2.17	0.81	*	304	360	26	13	10	11 1/8	39	12 1/8	25
	50	20	2.71	1.27	*	244	185	21	14 3/4	11	12 7/8	44	13 7/8	28
5" Effective Area 29.5 in. ²	150	4	0.31	0.03	5.9	3805	69923	311	7 3/4	8	5 7/8	31	6 7/8	19
	150	8	0.63	0.12	10.0	1903	8740	156	9 1/2	9	7 5/8	32	8 5/8	21
	150	12	0.94	0.27	10.0	1268	2590	104	11 1/4	10	9 3/8	36	10 3/8	23
	150	16	1.25	0.48	10.0	951	1093	78	13	11	11 1/8	40	12 1/8	25
	150	20	1.57	0.75	*	761	559	62	14 3/4	12	12 7/8	45	13 7/8	28
5" Effective Area 29.2 in. ²	300	4	0.27	0.03	5.1	4529	82368	367	7 3/4	8	4 1/4	57	6	32
	300	8	0.54	0.10	10.0	2264	10296	183	9 1/2	9	6	58	7 3/4	34
	300	12	0.81	0.23	10.0	1510	3051	122	11 1/4	10	7 3/4	61	9 1/2	36
	300	16	1.08	0.42	10.0	1696	1889	135	13	12	9 1/2	70	11 1/4	41
	300	20	1.35	0.65	10.0	1357	967	108	14 3/4	13	11 1/4	77	13	45
6" Effective Area 43 in. ²	50	4	0.62	0.07	9.7	1902	24823	226	8 1/2	11	6 1/2	39	7 1/2	25
	50	8	1.25	0.28	10.0	951	3103	113	11	12	9	41	10	27
	50	12	1.87	0.63	10.0	634	919	75	13 1/2	14	11 1/2	45	12 1/2	30
	50	16	2.50	1.13	*	475	388	56	16	15	14	51	15	33
	50	20	3.12	1.76	*	380	199	45	18 1/2	16	16 1/2	59	17 1/2	38
6" Effective Area 43 in. ²	150	4	0.48	0.05	7.5	3286	42895	390	8 1/2	11	6 1/2	39	7 1/2	25
	150	8	0.97	0.22	10.0	1643	5362	195	11	13	9	42	10	27
	150	12	1.45	0.49	10.0	1095	1589	130	13 1/2	14	11 1/2	47	12 1/2	31
	150	16	1.98	0.90	*	1240	994	145	16	20	14	63	15	41
	150	20	2.47	1.41	*	992	509	116	18 1/2	22	16 1/2	77	17 1/2	49
6" Effective Area 42 in. ²	300	4	0.32	0.04	5.0	6694	83720	761	8 1/2	11	5 1/2	79	7	45
	300	8	0.64	0.15	10.0	3347	10465	381	11	12	8	81	9 1/2	47
	300	12	0.95	0.33	10.0	2231	3101	254	13 1/2	14	10 1/2	85	12	50
	300	16	1.20	0.55	10.0	2539	2036	296	16	18	13	98	14 1/2	58
	300	20	1.50	0.85	10.0	2031	1043	237	18 1/2	20	15 1/2	109	17	64
8" Effective Area 70 in. ²	50	4	0.69	0.06	8.4	1964	41983	382	8 1/2	16	7	61	7 3/4	39
	50	8	1.38	0.24	10.0	982	5248	191	11	18	9 1/2	64	10 1/4	41
	50	12	2.07	0.55	10.0	655	1555	127	13 1/2	20	12	68	12 3/4	44
	50	16	2.77	0.98	*	491	656	95	16	22	14 1/2	74	15 1/4	48
	50	20	3.46	1.53	*	393	336	76	18 1/2	24	17	82	17 3/4	53
8" Effective Area 69 in. ²	150	4	0.47	0.04	5.8	4329	91322	830	8 1/2	16	7	61	7 3/4	39
	150	8	0.95	0.17	10.0	2165	11415	415	11	19	9 1/2	64	10 1/4	41
	150	12	1.42	0.38	10.0	1443	3382	277	13 1/2	21	12	69	12 3/4	45
	150	16	1.90	0.67	10.0	1082	1427	208	16	23	14 1/2	76	15 1/4	49
	150	20	2.39	1.07	*	1305	1087	247	18 1/2	31	17	99	17 3/4	65
8" Effective Area 69 in. ²	300	4	0.34	0.03	4.1	10262	216468	1968	8 1/2	17	5 1/2	117	7	67
	300	8	0.68	0.12	8.3	5131	27058	984	11	20	8	121	9 1/2	71
	300	12	1.01	0.27	10.0	3421	8017	656	13 1/2	23	10 1/2	128	12	75
	300	16	1.35	0.48	10.0	2566	3382	492	16	26	13	137	14 1/2	81
	300	20	1.69	0.75	10.0	2052	1732	394	18 1/2	29	15 1/2	149	17	89

*Movements shown are non-concurrent.

*For available angular rotation-consult factory.

MID CORR: STYLE MCB (CONTINUED)

Nominal Diameter (in.)	Press (PSIG)	Con. Count	Axial (in.)	Lateral (in.)	Angular (Deg.)	Axial Sp Rate (lbs/in.)	Lateral Sp Rate (lbs/in.)	Angular Sp Rate (in.-lb/Deg)	WW		FF/VV		FW/VW	
									OAL (in.)	Wt. (lbs.)	OAL (in.)	Wt. (lbs.)	OAL (in.)	Wt. (lbs.)
10" Effective Area 109 in. ²	50	4	0.98	0.10	9.6	2067	35133	626	9 1/2	24	9	87	9 1/4	56
	50	8	1.97	0.39	10.0	1034	4392	313	13	28	12 1/2	91	12 3/4	60
	50	12	2.95	0.88	10.0	689	1301	209	16 1/2	31	16	98	16 1/4	65
	50	16	3.94	1.56	*	517	549	156	20	35	19 1/2	108	19 3/4	71
	50	20	5.04	2.51	10.0	639	428	191	23 1/2	49	23	139	23 1/4	94
10" Effective Area 110 in. ²	150	4	0.62	0.06	6.1	5927	99661	1776	9 1/2	25	9	88	9 1/4	56
	150	8	1.24	0.25	10.0	2963	12458	888	13	30	12 1/2	93	12 3/4	61
	150	12	1.86	0.55	10.0	1976	3691	592	16 1/2	34	16	102	16 1/4	68
	150	16	2.48	0.99	10.0	1482	1557	444	20	39	19 1/2	114	19 3/4	76
	150	20	3.00	1.48	*	1600	1099	490	23 1/2	52	23	146	23 1/4	99
10" Effective Area 108 in. ²	300	4	0.49	0.05	4.8	10510	177675	3166	9 1/2	26	7	164	8 1/4	95
	300	8	0.99	0.20	9.6	5255	22209	1583	13	32	10 1/2	171	11 3/4	102
	300	12	1.48	0.44	10.0	3503	6581	1055	16 1/2	38	14	182	15 1/4	110
	300	16	1.97	0.78	10.0	2627	2776	791	20	44	17 1/2	198	18 3/4	121
	300	20	2.70	1.35	10.0	2619	1752	781	23 1/2	66	21	247	22 1/4	156
12" Effective Area 154 in. ²	50	4	0.98	0.08	8.0	3260	78244	1394	9 1/2	33	9	130	9 1/4	81
	50	8	1.97	0.33	10.0	1630	9781	697	13	40	12 1/2	137	12 3/4	88
	50	12	2.95	0.74	10.0	1087	2898	465	16 1/2	46	16	147	16 1/4	97
	50	16	3.93	1.31	*	815	1223	349	20	53	19 1/2	162	19 3/4	108
	50	20	4.91	2.05	*	652	626	279	23 1/2	60	23	182	23 1/4	121
12" Effective Area 153 in. ²	150	4	0.68	0.06	5.6	7443	177051	3154	9 1/2	34	9	131	9 1/4	82
	150	8	1.36	0.23	10.0	3722	22131	1577	13	42	12 1/2	138	12 3/4	90
	150	12	2.03	0.51	10.0	2481	6557	1051	16 1/2	50	16	151	16 1/4	101
	150	16	2.71	0.91	10.0	1861	2766	789	20	59	19 1/2	169	19 3/4	114
	150	20	3.39	1.42	*	1489	1416	631	23 1/2	67	23	192	23 1/4	129
12" Effective Area 151 in. ²	300	4	0.56	0.05	4.6	9558	224309	3996	9 1/2	34	7 1/2	232	8 1/2	133
	300	8	1.12	0.19	9.3	4779	28039	1998	13	41	11	240	12	140
	300	12	1.68	0.43	10.0	3186	8308	1332	16 1/2	49	14 1/2	252	15 1/2	150
	300	16	2.38	0.81	10.0	3213	4648	1325	20	71	18	287	19	179
	300	20	2.98	1.26	10.0	2570	2380	1060	23 1/2	83	21 1/2	319	22 1/2	201
14" Effective Area 177 in. ²	50	4	0.95	0.07	7.3	2720	75249	1341	9 1/2	36	6	89	7 3/4	63
	50	8	1.91	0.30	10.0	1360	9406	670	13	41	9 1/2	93	11 1/4	67
	50	12	2.86	0.67	10.0	907	2787	447	16 1/2	46	13	100	14 3/4	73
	50	16	3.81	1.18	*	680	1176	335	20	51	16 1/2	110	18 1/4	80
	50	20	4.77	1.85	*	544	602	268	23 1/2	55	20	122	21 3/4	89
14" Effective Area 182 in. ²	150	4	0.70	0.05	5.3	7582	215017	3831	9 1/2	41	6	183	7 3/4	112
	150	8	1.41	0.22	10.0	3791	26877	1915	13	50	9 1/2	190	11 1/4	120
	150	12	2.11	0.49	10.0	2527	7964	1277	16 1/2	60	13	204	14 3/4	132
	150	16	2.81	0.86	10.0	1895	3360	958	20	69	16 1/2	222	18 1/4	145
	150	20	3.52	1.35	*	1516	1720	766	23 1/2	78	20	246	21 3/4	162
14" Effective Area 180 in. ²	300	4	0.58	0.04	4.4	9669	270853	4826	9 1/2	40	7 1/2	332	8 1/2	186
	300	8	1.16	0.18	8.8	4835	33857	2413	13	49	11	340	12	194
	300	12	1.74	0.40	10.0	3223	10032	1609	16 1/2	58	14 1/2	352	15 1/2	205
	300	16	2.49	0.77	10.0	3224	5574	1589	20	83	18	389	19	236
	300	20	3.11	1.21	10.0	2579	2854	1271	23 1/2	95	21 1/2	421	22 1/2	258
16" Effective Area 229 in. ²	50	4	1.04	0.07	7.0	2612	93453	1665	9 1/2	41	6	117	7 3/4	79
	50	8	2.08	0.28	10.0	1306	11682	833	13	47	9 1/2	122	11 1/4	84
	50	12	3.12	0.64	10.0	871	3461	555	16 1/2	53	13	129	14 3/4	91
	50	16	4.16	1.13	*	653	1460	416	20	59	16 1/2	139	18 1/4	99
	50	20	5.20	1.77	*	522	748	333	23 1/2	64	20	152	21 3/4	108
16" Effective Area 234 in. ²	150	4	0.73	0.05	4.8	8064	293825	5235	9 1/2	47	6	199	7 3/4	123
	150	8	1.45	0.20	9.6	4032	36728	2618	13	58	9 1/2	207	11 1/4	132
	150	12	2.18	0.44	10.0	2688	10882	1745	16 1/2	68	13	220	14 3/4	144
	150	16	2.90	0.79	10.0	2016	4591	1309	20	79	16 1/2	239	18 1/4	159
	150	20	3.63	1.23	10.0	1613	2351	1047	23 1/2	90	20	263	21 3/4	176
16" Effective Area 231 in. ²	300	4	0.60	0.04	4.0	10217	368226	6561	9 1/2	46	8	383	8 3/4	214
	300	8	1.20	0.16	8.0	5108	46028	3280	13	56	11 1/2	390	12 1/4	223
	300	12	1.80	0.37	10.0	3406	13638	2187	16 1/2	66	16	403	15 3/4	234
	300	16	2.59	0.71	10.0	3380	7531	2147	20	95	18 1/2	440	19 1/4	268
	300	20	3.24	1.11	10.0	2704	3856	1717	23 1/2	110	22	474	22 3/4	292

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*For available angular rotation-consult factory.

MID CORR: STYLE MCB (CONTINUED)

Nominal Diameter (in.)	Press (PSIG)	Con. Count	Axial (in.)	Lateral (in.)	Angular (Deg.)	Axial Sp Rate (lbs/in.)	Lateral Sp Rate (lbs/in.)	Angular Sp Rate (in.-lb/Deg)	WW		FF/VV		FW/VW	
									OAL (in.)	Wt. (lbs.)	OAL (in.)	Wt. (lbs.)	OAL (in.)	Wt. (lbs.)
18" Effective Area 287 in. ²	50	4	1.08	0.07	6.5	2708	121273	2161	9 1/2	46	6 1/2	119	8	83
	50	8	2.16	0.26	10.0	1354	15159	1080	13	53	10	124	11 1/2	88
	50	12	3.24	0.59	10.0	903	4492	720	16 1/2	60	13 1/2	131	15	95
	50	16	4.32	1.05	10.0	677	1895	540	20	66	17	142	18 1/2	104
	50	20	5.40	1.65	*	542	970	432	23 1/2	73	20 1/2	155	22	114
18" Effective Area 294 in. ²	150	4	0.81	0.05	4.8	7314	335135	5971	9 1/2	53	10	263	9 3/4	158
	150	8	1.63	0.20	9.6	3657	41892	2986	13	66	13 1/2	273	13 1/4	170
	150	12	2.44	0.44	10.0	2438	12412	1990	16 1/2	79	17	290	16 3/4	184
	150	16	3.25	0.78	10.0	1829	5236	1493	20	92	20 1/2	312	20 1/4	202
	150	20	4.07	1.23	10.0	1463	2681	1194	23 1/2	105	24	339	23 3/4	222
18" Effective Area 295 in. ²	300	4	0.79	0.05	4.6	13643	627118	11173	9 1/2	67	8 1/2	506	9	286
	300	8	1.57	0.19	9.3	6822	78390	5587	13	93	12	523	12 1/2	308
	300	12	2.36	0.43	10.0	4548	23227	3724	16 1/2	119	15 1/2	552	16	336
	300	16	3.14	0.76	10.0	3411	9799	2793	20	145	19	593	19 1/2	369
	300	20	3.93	1.18	10.0	2729	5017	2235	23 1/2	171	22 1/2	645	23	408
20" Effective Area 352 in. ²	50	4	1.12	0.06	6.1	2777	152215	2712	9 1/2	51	6 1/2	140	8	95
	50	8	2.24	0.25	10.0	1389	19027	1356	13	59	10	144	11 1/2	101
	50	12	3.36	0.56	10.0	926	5638	904	16 1/2	66	13 1/2	152	15	109
	50	16	4.49	0.99	10.0	694	2378	678	20	74	17	162	18 1/2	118
	50	20	5.61	1.55	*	555	1218	542	23 1/2	82	20 1/2	176	22	129
20" Effective Area 359 in. ²	150	4	0.84	0.05	4.5	7606	425551	7582	9 1/2	59	10	333	9 3/4	196
	150	8	1.68	0.18	9.0	3803	53194	3791	13	74	13 1/2	342	13 1/4	208
	150	12	2.52	0.41	10.0	2535	15761	2527	16 1/2	88	17	356	16 3/4	222
	150	16	3.36	0.73	10.0	1902	6649	1896	20	103	20 1/2	376	20 1/4	240
	150	20	4.20	1.15	10.0	1521	3404	1516	23 1/2	117	24	403	23 3/4	260
20" Effective Area 361 in. ²	300	4	0.84	0.05	4.5	13294	748115	13329	9 1/2	90	8 1/2	636	9	363
	300	8	1.69	0.18	9.0	6647	93514	6665	13	120	12	654	12 1/2	387
	300	12	2.53	0.41	10.0	4431	27708	4443	16 1/2	150	15 1/2	684	16	417
	300	16	3.38	0.73	10.0	3324	11689	3332	20	180	19	726	19 1/2	453
	300	20	4.22	1.15	10.0	2659	5985	2666	23 1/2	210	22 1/2	781	23	495
22" Effective Area 422 in. ²	50	4	1.16	0.06	5.7	2825	186005	3314	9 1/2	56	6 1/2	154	8	105
	50	8	2.32	0.23	10.0	1413	23251	1657	13	65	10	158	11 1/2	112
	50	12	3.48	0.53	10.0	942	6889	1105	16 1/2	73	13 1/2	166	15	120
	50	16	4.64	0.93	10.0	706	2906	829	20	82	17	177	18 1/2	129
	50	20	5.80	1.46	*	565	1488	663	23 1/2	90	20 1/2	190	22	140
22" Effective Area 429 in. ²	150	4	0.84	0.04	4.1	8392	561448	10003	9 1/2	65	10	373	9 3/4	219
	150	8	1.67	0.17	8.2	4196	70181	5002	13	81	13 1/2	382	13 1/4	231
	150	12	2.51	0.38	10.0	2797	20794	3334	16 1/2	97	17	396	16 3/4	246
	150	16	3.34	0.67	10.0	2098	8773	2501	20	113	20 1/2	416	20 1/4	264
	150	20	4.18	1.04	10.0	1678	4492	2001	23 1/2	129	24	443	23 3/4	286
22" Effective Area 431 in. ²	300	4	0.84	0.04	4.1	14668	986650	17579	9 1/2	98	9	746	9 1/4	422
	300	8	1.68	0.17	8.2	7334	123331	8790	13	131	12 1/2	764	12 3/4	448
	300	12	2.52	0.38	10.0	4889	36543	5860	16 1/2	164	16	794	16 1/4	479
	300	16	3.36	0.67	10.0	3667	15416	4395	20	198	19 1/2	836	19 3/4	517
	300	20	4.20	1.04	10.0	2934	7893	3516	23 1/2	231	23	891	23 1/4	561
24" Effective Area 501 in. ²	50	4	1.26	0.06	5.7	2645	206485	3679	9 1/2	62	6 1/2	232	8	147
	50	8	2.51	0.23	10.0	1322	25811	1839	13	72	10	236	11 1/2	154
	50	12	3.77	0.52	10.0	882	7648	1226	16 1/2	81	13 1/2	244	15	163
	50	16	5.02	0.93	10.0	661	3226	920	20	91	17	256	18 1/2	173
	50	20	6.28	1.45	*	529	1652	736	23 1/2	100	20 1/2	270	22	185
24" Effective Area 506 in. ²	150	4	0.83	0.04	3.8	9177	723559	12892	9 1/2	70	6 1/2	443	8	257
	150	8	1.66	0.15	7.5	4589	90445	6446	13	88	10	452	11 1/2	270
	150	12	2.50	0.34	10.0	3059	26798	4297	16 1/2	105	13 1/2	466	15	286
	150	16	3.33	0.61	10.0	2294	11306	3223	20	122	17	486	18 1/2	304
	150	20	4.16	0.96	10.0	1835	5788	2578	23 1/2	140	20 1/2	513	22	326
24" Effective Area 508 in. ²	300	4	0.84	0.04	3.8	16043	1271132	22648	9 1/2	106	9	956	9 1/4	531
	300	8	1.67	0.15	7.5	8022	158892	11324	13	143	12 1/2	974	12 3/4	558
	300	12	2.51	0.34	10.0	5348	47079	7549	16 1/2	179	16	1004	16 1/4	592
	300	16	3.34	0.61	10.0	4011	19861	5662	20	215	19 1/2	1046	19 3/4	631
	300	20	4.18	0.96	10.0	3209	10169	4530	23 1/2	251	23	1101	23 1/4	676

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