

MINIATURE MOUNTS

MAA SERIES, MGN/MGS SERIES, MCB SERIES



STANDARDIZED SOLUTIONS FOR LIGHTWEIGHT ELECTRONIC EQUIPMENT

The Miniature Mount Series offer standardized solutions drawn from broad experience in the design of space conserving isolators for a variety of lightweight applications. They are suitable for use with circuit boards, sensors, displays, instruments, control and other electronic modules. Their compactness permits designs utilizing internal suspension arrangements, eliminating the need for sway space outside the case and providing an overall savings in weight.

A variety of configurations is offered so that the designer can select the geometry most appropriate to the applications. Miniature Mounts use specially compounded elastomers to assure control during resonant response.

All configurations are available with BTR® (Broad Temperature Range) elastomer, which provides excellent resonant control and is suitable for use over the temperature range of -65°F to +300°F (-54°C to +149°C). For applications where vibration isolation and returnability are paramount, selected styles are available using BTR® II elastomer which is suitable for use over the temperature range of -40°F to +300°F (-40°C to +149°C). For less demanding temperature requirements, the MGN Series uses natural rubber which is useful from -40°F to +180°F (-40°C to +82°C).

MINIATURE MOUNTS

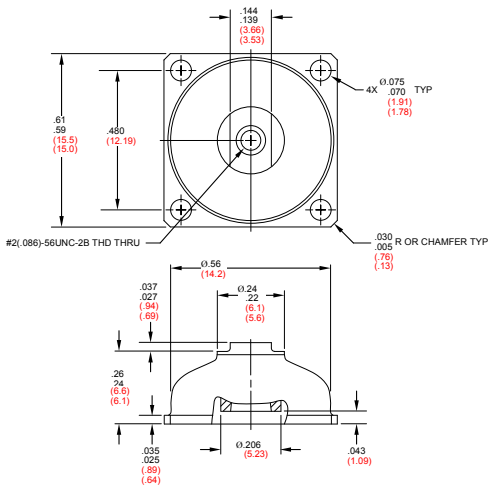
MAA001 SERIES



- **Maximum rated load per mount:**
0.5 lb (0.23 kg)
- **Maximum dynamic input at resonance and rated load:**
0.011 in (0.279 mm) D.A.

- **Materials:**
Inner member – 304 stainless steel, passivated
Outer member – 2024-T351 aluminum, chromate treated per MIL-DTL-5541, Class 1A
Elastomer – LORD BTR® or BTR® II Silicone

FIGURE 1 – PART DIMENSIONS



Metric values in parenthesis.

TABLE 1 – PERFORMANCE CHARACTERISTICS

Part Number	Dynamic Axial Spring Rate		Natural Frequency* – f_n (Hz)
	lb/in	N/mm	
BTR®			
MAA001-1	55	9.6	32
MAA001-2	65	11	36
MAA001-3	85	15	41
MAA001-4	95	17	43
MAA001-5	125	22	50
MAA001-6	152	27	55
MAA001-7	205	36	63
BTR® II			
MAA001-8	37	6.5	27
MAA001-9	43	7.5	30
MAA001-10	55	9.6	33
MAA001-11	72	13	38
MAA001-12	98	17	44

* Natural frequency at rated load and rated input.

To correct for loads below rated loads, use:

$$f_n = f_{nm} \sqrt{P_R/P_A}$$

where:

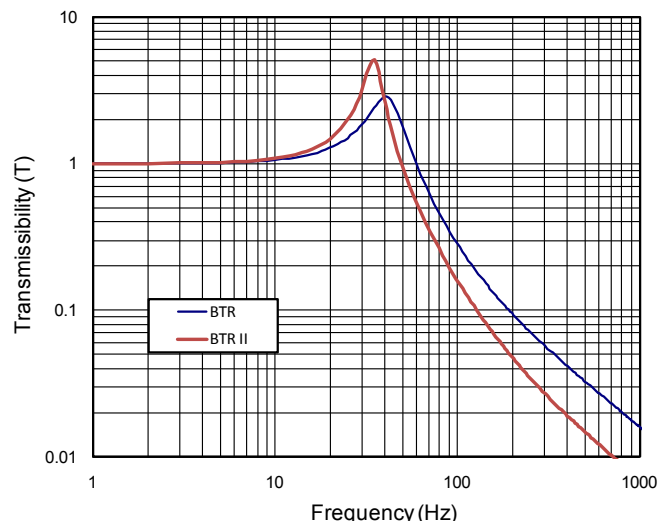
f_n = natural frequency at actual load

f_{nm} = nominal natural frequency

P_A = actual load

P_R = rated load

FIGURE 2 – TRANSMISSIBILITY VS. FREQUENCY



MINIATURE MOUNTS

MAA002 SERIES



- **Maximum rated load per mount:**
1 lb (0.45 kg)
- **Maximum dynamic input at resonance and rated load:**
0.011 in (0.279 mm) D.A.

- **Materials:**
Inner member – 304 stainless steel, passivated
Outer member – 2024-T351 aluminum, chromate treated per MIL-DTL-5541, Class 1A
Elastomer – LORD BTR® or BTR® II Silicone

TABLE 1 – PERFORMANCE CHARACTERISTICS

Part Number	Dynamic Axial Spring Rate		Natural Frequency* – f _n (Hz)
	lb/in	N/mm	
BTR®			
MAA002-1	99	17	31
MAA002-2	105	18	32
MAA002-3	115	20	34
MAA002-4	128	22	35
MAA002-5	140	25	37
MAA002-6	160	28	39
MAA002-7	180	32	42
BTR® II			
MAA002-8	76	13	27
MAA002-9	82	14	28
MAA002-10	90	16	30
MAA002-11	102	18	32
MAA002-12	120	21	34

* Natural frequency at rated load and rated input.

To correct for loads below rated loads, use:

$$f_n = f_{nn} \sqrt{P_R / P_A}$$

where:

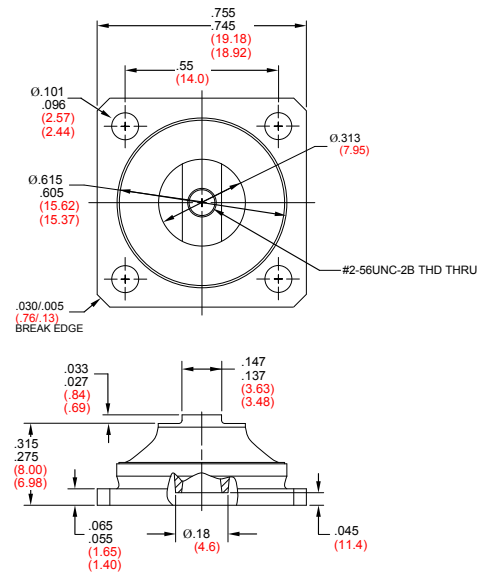
f_n = natural frequency at actual load

f_{nn} = nominal natural frequency

P_A = actual load

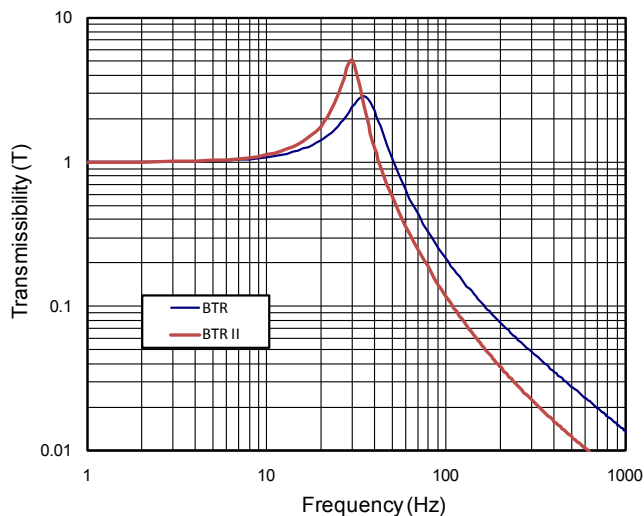
P_R = rated load

FIGURE 1 – PART DIMENSIONS



Metric values in parenthesis.

FIGURE 2 – TRANSMISSIBILITY VS. FREQUENCY



MINIATURE MOUNTS

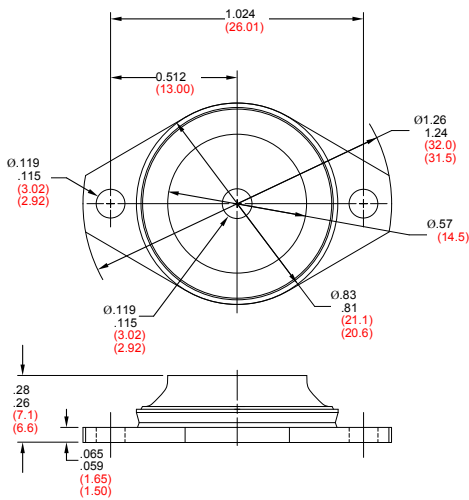
MAA003 SERIES



- **Maximum rated load per mount:**
1.5 lb (0.68 kg)
- **Maximum dynamic input at resonance and rated load:**
0.011 in (0.279 mm) D.A.

- **Materials:**
Metal parts and finish – aluminum alloy, chromate treated per MIL-DTL-5541, Class 1A
Inner member – 2024-T315 or 2024-T4 aluminum
Outer member – 2024-T315 or 2024-T4 aluminum
Elastomer – LORD BTR® or BTR® II or MEB Silicone

FIGURE 1 – PART DIMENSIONS



Metric values in parenthesis.

TABLE 1 – PERFORMANCE CHARACTERISTICS

Part Number	Dynamic Axial Spring Rate		Natural Frequency* – f_n (Hz)
	lb/in	N/mm	
BTR®			
MAA003-1	490	86	57
MAA003-2	625	109	64
MAA003-3	875	153	76
MAA003-4	1250	219	90
MAA003-5	1875	328	110
MEB			
MAA003-6	2685	470	132
MAA003-7	4185	732	165
BTR® II			
MAA003-8	315	55	45
MAA003-9	415	73	52
MAA003-10	560	98	60
MAA003-11	875	153	76

* Natural frequency at rated load and rated input.

To correct for loads below rated loads, use:

$$f_n = f_{nn} \sqrt{P_R/P_A}$$

where:

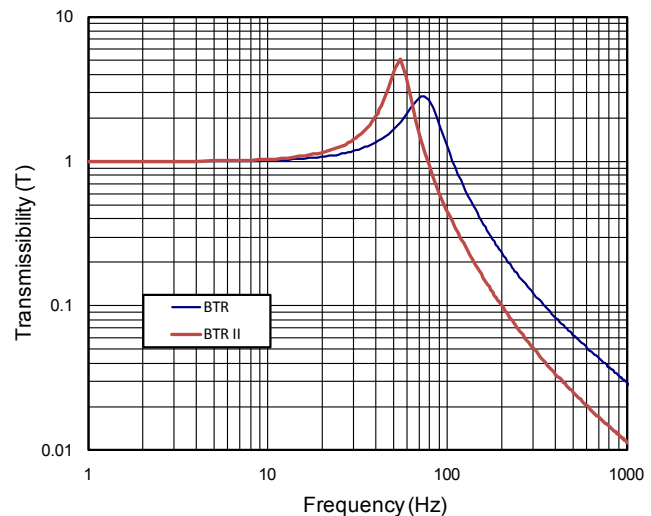
f_n = natural frequency at actual load

f_{nn} = nominal natural frequency

P_A = actual load

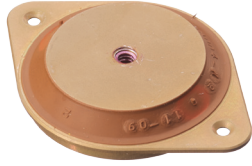
P_R = rated load

FIGURE 2 – TRANSMISSIBILITY VS. FREQUENCY



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MAA004 SERIES



- **Maximum rated load per mount:**
2 lb (0.91 kg)
- **Maximum dynamic input at resonance and rated load:**
0.011 in (0.279 mm) D.A.

- **Materials:**
Metal parts and finish – aluminum alloy, chromate treated per MIL-DTL-5541, Class 1A
Inner member and Outer member – 2024-T315 aluminum
Threaded insert – stainless steel
Elastomer – LORD BTR® or BTR® II Silicone

TABLE 1 – PERFORMANCE CHARACTERISTICS

Part Number	Dynamic Axial Spring Rate		Natural Frequency* – f_n (Hz)
	lb/in	N/mm	
BTR®			
MAA004-1	800	140	63
MAA004-2	1000	175	70
MAA004-3	1250	219	78
MAA004-4	1625	284	90
MAA004-5	2190	383	104
MAA004-6	2875	503	120
BTR® II			
MAA004-8	550	96	52
MAA004-9	665	116	57
MAA004-10	875	153	65
MAA004-11	1130	198	75
MAA004-12	1200	219	77

* Natural frequency at rated load and rated input.

To correct for loads below rated loads, use:

$$f_n = f_{nn} \sqrt{P_R/P_A}$$

where:

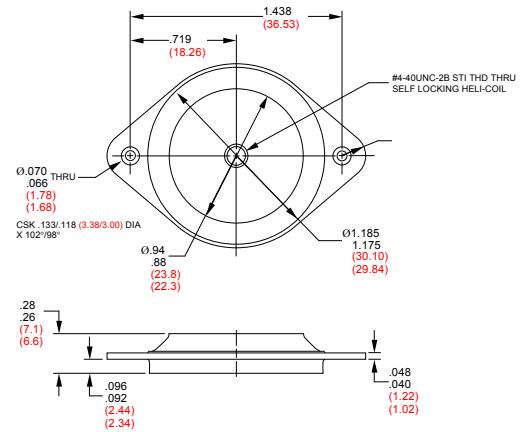
f_n = natural frequency at actual load

f_{nn} = nominal natural frequency

P_A = actual load

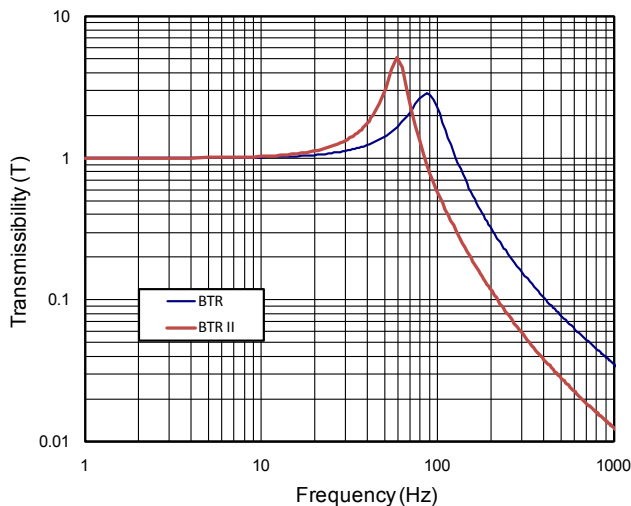
P_R = rated load

FIGURE 1 – PART DIMENSIONS



Metric values in parenthesis.

FIGURE 2 – TRANSMISSIBILITY VS. FREQUENCY



MINIATURE MOUNTS

MGN/MGS001 SERIES



• **Maximum rated load per mount:**
1 to 4 lb (0.5 to 1.8 kg)

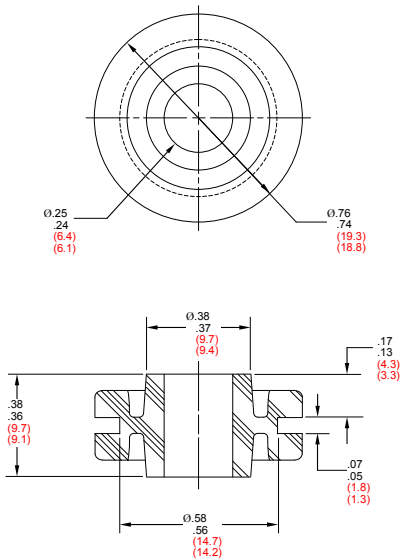
• **Maximum dynamic input at resonance:**
0.01 in (0.254 mm) D.A.

• **Materials:**

Optional Ferrule – brass

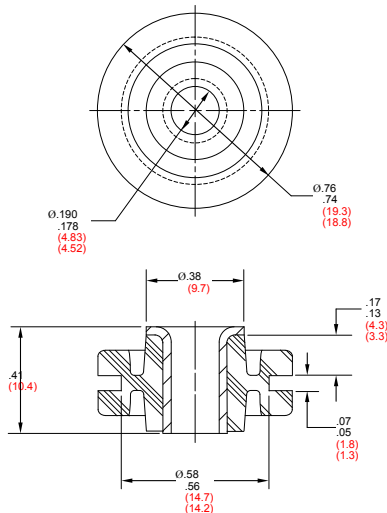
Elastomer – LORD BTR® or MEM Silicone or Natural rubber

FIGURE 1 – PART DIMENSIONS WITHOUT FERRULE



Metric values in parenthesis.

FIGURE 2 – PART DIMENSIONS WITH PLAIN FERRULE



Metric values in parenthesis.

TABLE 1 – PERFORMANCE CHARACTERISTICS

Part Number	Rated Load		Rated Input		Dynamic Axial Spring Rate		Natural Freq [†] – f _n (Hz)
	lb	kg	in D.A.	mm D.A.	lb/in	N/mm	
NR							
MGN001-* ⁻ 1	1.5	0.7	0.010	0.254	43	7.5	18
MGN001-* ⁻ 2	2.0	0.9	0.010	0.254	66	12	18
MGN001-* ⁻ 3	3.0	1.4	0.010	0.254	102	18	18
MGN001-* ⁻ 4	4.0	1.8	0.010	0.254	137	24	18
MEM							
MGS001-* ⁻ 1	1.0	0.5	0.010	0.254	42	7.4	20
BTR®							
MGS001-* ⁻ 2	1.5	0.7	0.010	0.254	62	11	20
MGS001-* ⁻ 3	2.5	1.1	0.010	0.254	95	17	20
MGS001-* ⁻ 4	3.5	1.6	0.010	0.254	144	25	20

* When ordering, use the following in place of the (*):
W = Without ferrule^{††}
P = Includes plain ferrule (LORD p/n Y-10879-B)

† Natural frequency at rated load and rated input.

†† If no ferrule, recommended space dimensions for positive tightening are:
Length = 0.365 in (9.27 mm)
O.D. = 0.255 in (6.48 mm)

Recommended support member plate dimensions:
Thickness = 0.062 in
Diameter = 0.555 in
Break all sharp edges.

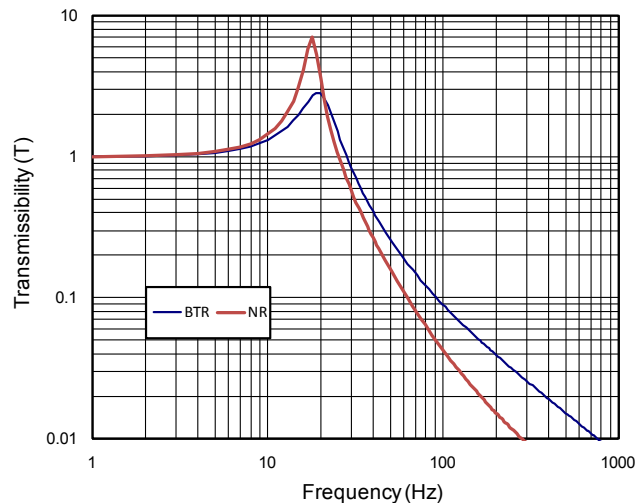
To correct for loads below rated loads, use:

$$f_n = f_{nn} \sqrt{P_R/P_A}$$

where:

f_n = natural frequency at actual load
f_{nn} = nominal natural frequency
P_A = actual load
P_R = rated load

FIGURE 3 – TRANSMISSIBILITY VS. FREQUENCY



MINIATURE MOUNTS

MGN/MGS002 SERIES



- **Maximum rated load per mount:**
1 to 4 lb (0.5 to 1.8 kg)
- **Maximum dynamic input at resonance:**
0.01 in (0.254 mm) D.A.

- **Materials:**
Optional Ferrule – SAE 1010 steel, zinc plated
Elastomer – LORD BTR® or MEM Silicone or Natural rubber

TABLE 1 – PERFORMANCE CHARACTERISTICS

Part Number	Rated Load		Rated Input		Dynamic Axial Spring Rate		Natural Freq† – f_n (Hz)
	lb	kg	in D.A.	mm D.A.	lb/in	N/mm	
NR							
MGN002- [*] -1	1.5	0.7	0.010	0.254	43	7.5	18
MGN002- [*] -2	2.0	0.9	0.010	0.254	66	12	18
MGN002- [*] -3	3.0	1.4	0.010	0.254	102	18	18
MGN002- [*] -4	4.0	1.8	0.010	0.254	137	24	18
MEM							
MGS002- [*] -1	1.0	0.5	0.010	0.254	42	7.4	20
BTR®							
MGS002- [*] -2	1.5	0.7	0.010	0.254	62	11	20
MGS002- [*] -3	2.5	1.1	0.010	0.254	95	17	20
MGS002- [*] -4	3.5	1.6	0.010	0.254	144	25	20

* When ordering, use the following in place of the (*):
W = Without ferrule††
T = Includes threaded ferrule (LORD p/n Y-31124-4-1)

† Natural frequency at rated load and rated input.

†† If no ferrule, recommended space dimensions for positive tightening are:
Length = 0.365 in (9.27 mm)
O.D. = 0.255 in (6.48 mm)

Recommended support member plate dimensions:
Thickness = 0.062 in
Diameter = 0.555 in
Break all sharp edges.

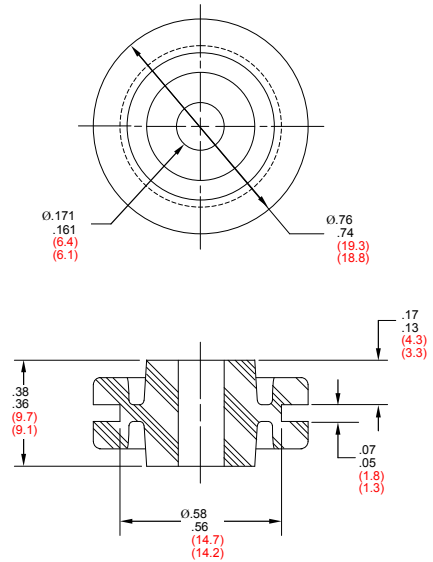
To correct for loads below rated loads, use:

$$f_n = f_{nm} \sqrt{P_R/P_A}$$

where:

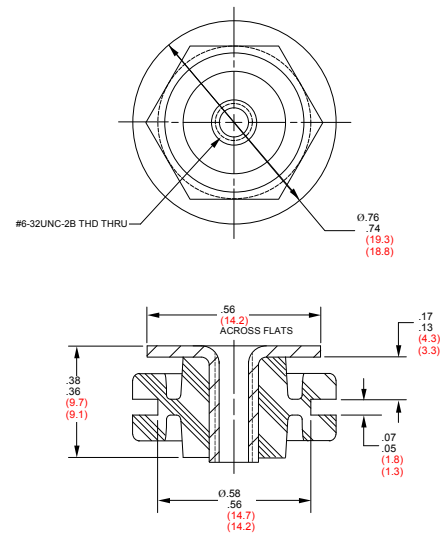
f_n = natural frequency at actual load
 f_{nm} = nominal natural frequency
 P_A = actual load
 P_R = rated load

FIGURE 1 – PART DIMENSIONS WITHOUT FERRULE



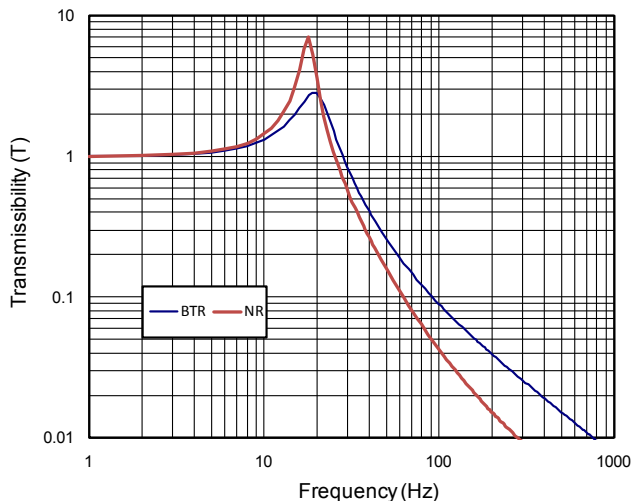
Metric values in parenthesis.

FIGURE 2 – PART DIMENSIONS WITH THREADED FERRULE



Metric values in parenthesis.

FIGURE 3 – TRANSMISSIBILITY VS. FREQUENCY



MINIATURE MOUNTS

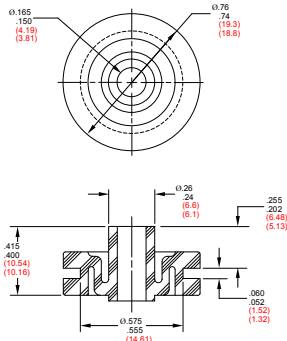
MGN/MGS003 SERIES



- **Maximum rated load per mount:**
1 to 2 lb (0.5 to 0.9 kg)
- **Maximum dynamic input at resonance:**
0.015 in (0.381 mm) D.A.

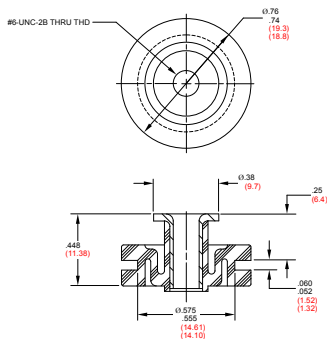
- **Materials:**
Ferrule – SAE 1010 steel, zinc plated
Elastomer – LORD BTR® Silicone or Natural rubber

FIGURE 1 – PART DIMENSIONS WITHOUT FERRULE



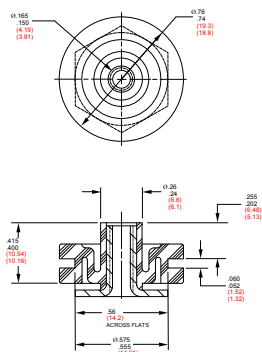
Metric values in parenthesis.

FIGURE 2 – PART DIMENSIONS WITH PLAIN FERRULE



Metric values in parenthesis.

FIGURE 3 – PART DIMENSIONS WITH THREADED FERRULE



Metric values in parenthesis.

TABLE 1 – PERFORMANCE CHARACTERISTICS

Part Number	Rated Load		Rated Input		Dynamic Axial Spring Rate		Natural Freq [†] – f _n (Hz)
	lb	kg	in D.A.	mm D.A.	lb/in	N/mm	
NR							
MGN003-1	1.5	0.7	0.015	0.381	29	5.1	14
MGN003-2	2.0	0.9	0.015	0.381	42	7.4	14
BTR®							
MGS003-1	1.0	0.5	0.015	0.381	26	4.6	16
MGS003-2	1.5	0.7	0.015	0.381	35	6.1	16

* When ordering, use the following in place of the (*):

W = Without ferrule††
P = Includes plain ferrule (LORD p/n Y-31124-7-1)
T = Includes threaded ferrule (LORD p/n Y-31124-4-1)

† Natural frequency at rated load and rated input.

†† If no ferrule, recommended space dimensions for positive tightening are:

Length = 0.365 in (9.27 mm)

O.D. = 0.175 in (4.45 mm)

Recommended support member plate dimensions:

Thickness = 0.062 in

Diameter = 0.555 in

Break all sharp edges.

To correct for loads below rated loads, use:

$$f_n = f_{nn} \sqrt{P_R/P_A}$$

where:

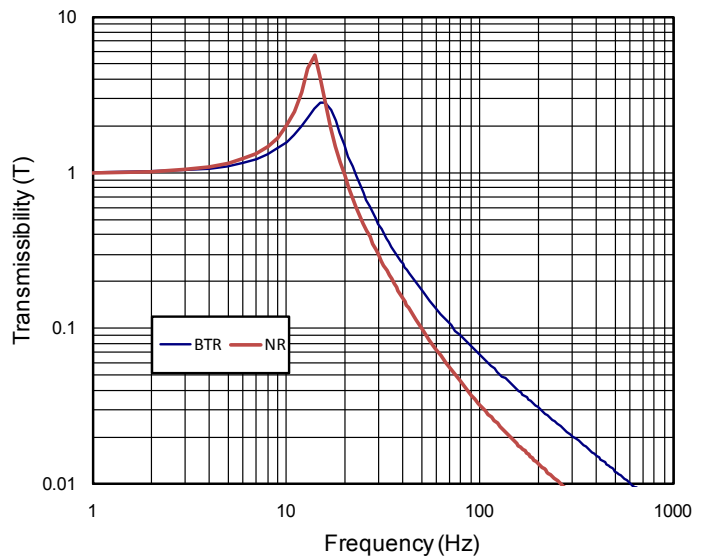
f_n = natural frequency at actual load

f_{nn} = nominal natural frequency

P_A = actual load

P_R = rated load

FIGURE 4 – TRANSMISSIBILITY VS. FREQUENCY



MINIATURE MOUNTS

MCB002 SERIES



- **Maximum rated load per mount:**
0.75 lb (0.34 kg)
- **Maximum dynamic input at resonance and rated load:**
2 g

- **Materials:**
Inner member – 303 stainless steel, passivated
Elastomer – LORD BTR® Silicone

TABLE 1 – PERFORMANCE CHARACTERISTICS

Part Number	Dynamic Axial Spring Rate		Natural Frequency* – f_n (Hz)
	lb/in	N/mm	
MCB002-1	1000	175	115
MCB002-2	1840	322	155
MCB002-3	2340	410	175

* Natural frequency at rated load and rated input.

To correct for loads below rated loads, use:

$$f_n = f_{nn} \sqrt{P_R / P_A}$$

where:

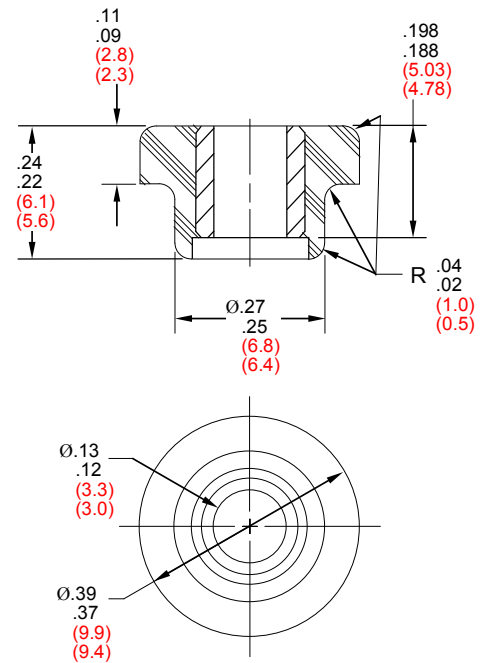
f_n = natural frequency at actual load

f_{nn} = nominal natural frequency

P_A = actual load

P_R = rated load

FIGURE 1 – PART DIMENSIONS



Metric values in parenthesis.

NOTE: Install one per mounting location.

FIGURE 3 – TRANSMISSIBILITY VS. FREQUENCY

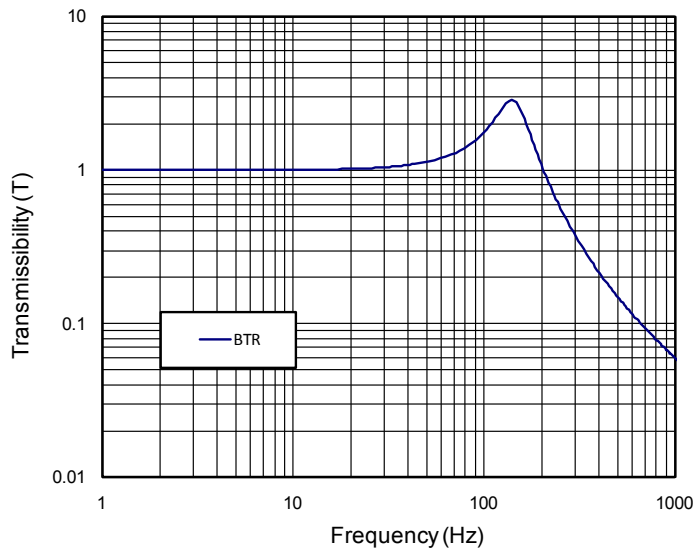
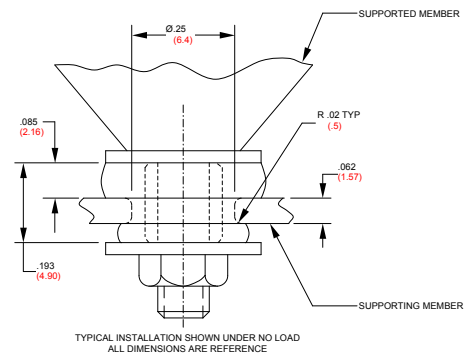


FIGURE 2 – INSTALLATION DRAWING



Metric values in parenthesis.

NOTE: Install one per mounting location.

MINIATURE MOUNTS

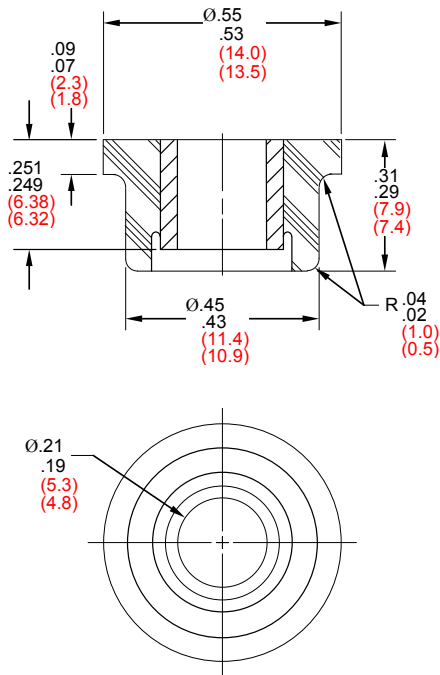
MCB003 SERIES



- **Maximum rated load per mount:**
1.5 lb (0.68 kg)
- **Maximum dynamic input at resonance and rated load:**
2 g

- **Materials:**
Inner member – 303 stainless steel, passivated
Elastomer – LORD BTR® Silicone

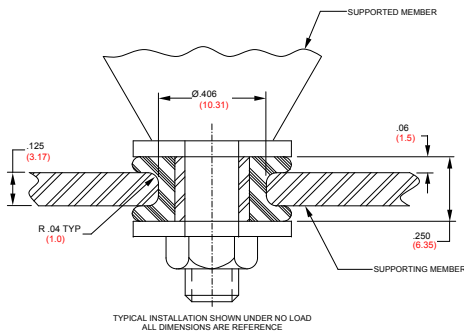
FIGURE 1 – PART DIMENSIONS



Metric values in parenthesis.

NOTE: Install one per mounting location.

FIGURE 2 – INSTALLATION DRAWING



Metric values in parenthesis.

NOTE: Install one per mounting location.

TABLE 1 – PERFORMANCE CHARACTERISTICS

Part Number	Dynamic Axial Spring Rate		Natural Frequency* – f_n (Hz)
	lb/in	N/mm	
MCB003-1	5130	900	183
MCB003-2	6750	1190	210
MCB003-3	8100	1420	230

* Natural frequency at rated load and rated input.

To correct for loads below rated loads, use:

$$f_n = f_{nn} \sqrt{P_R/P_A}$$

where:

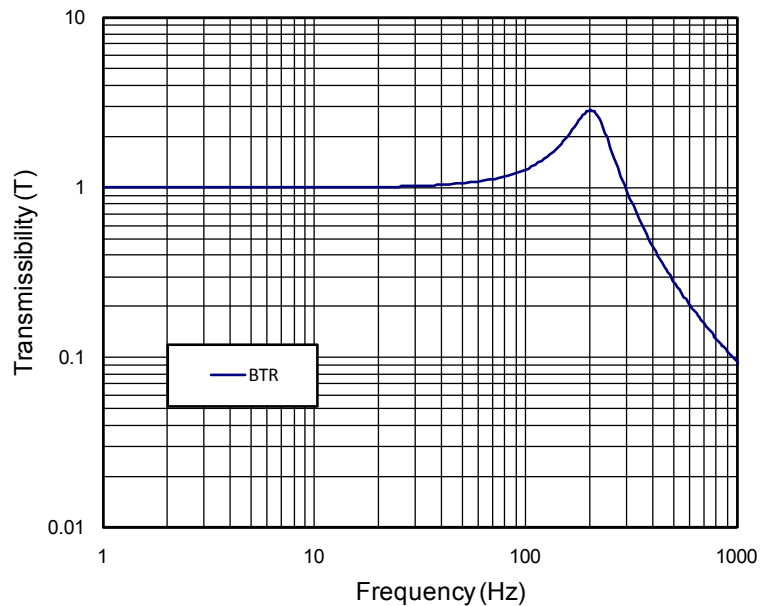
f_n = natural frequency at actual load

f_{nn} = nominal natural frequency

P_A = actual load

P_R = rated load

FIGURE 3 – TRANSMISSIBILITY VS. FREQUENCY



MINIATURE MOUNTS

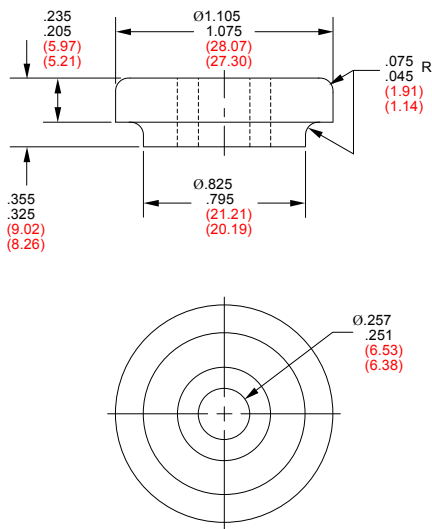
MCB005 SERIES



- **Maximum rated load per pair:**
10 lb (4.55 kg)
- **Maximum dynamic input at resonance and rated load:**
2 g

- **Materials:**
Inner member – 2024-T4 aluminum, chromate treated per MIL-DTL-5541, Class 1A
Elastomer – LORD BTR® Silicone

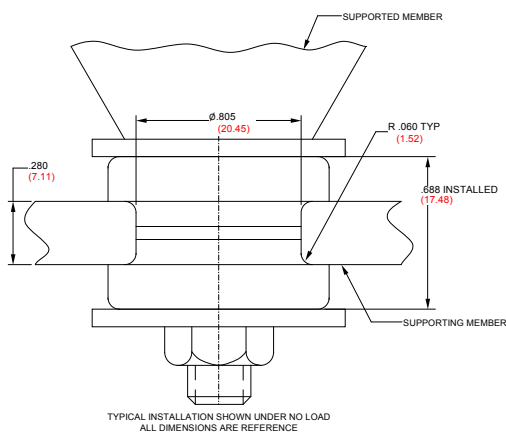
FIGURE 1 – PART DIMENSIONS



Metric values in parenthesis.

NOTE: Install in pairs at each mounting location.

FIGURE 2 – INSTALLATION DRAWING



Metric values in parenthesis.

NOTE: Install in pairs at each mounting location.

TABLE 1 – PERFORMANCE CHARACTERISTICS (PER PAIR)

Part Number	Dynamic Axial Spring Rate per Pair		Natural Frequency* – f_n (Hz)
	lb/in	N/mm	
MCB005-1	5000	875	70
MCB005-2	6000	1050	75
MCB005-3	7400	1295	85
MCB005-4	8300	1453	90
MCB005-5	9400	1645	95
MCB005-6	10500	1838	100
MCB005-7	11600	2030	105
MCB005-8	13000	2275	110
MCB005-9	14700	2573	120

* Natural frequency at rated load and rated input.

To correct for loads below rated loads, use:

$$f_n = f_{nm} \sqrt{P_R/P_A}$$

where:

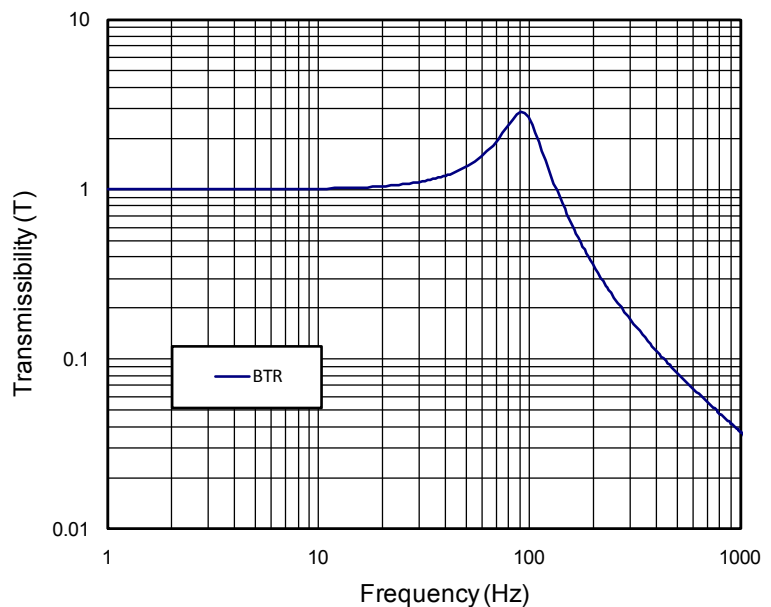
f_n = natural frequency at actual load

f_{nm} = nominal natural frequency

P_A = actual load

P_R = rated load

FIGURE 3 – TRANSMISSIBILITY VS. FREQUENCY



MINIATURE MOUNTS

MCB006 SERIES



- **Maximum rated load per pair:**
5 lb (2.27 kg)
- **Maximum dynamic input at resonance and rated load:**
2 g

- **Materials:**
Inner member – 2024-T4 aluminum, chromate treated per MIL-DTL-5541, Class 1A
Elastomer – LORD BTR® Silicone

TABLE 1 – PERFORMANCE CHARACTERISTICS (PER PAIR)

Part Number	Dynamic Axial Spring Rate per Pair		Natural Frequency* – f_n (Hz)
	lb/in	N/mm	
MCB006-1	2500	438	70
MCB006-2	2900	508	75
MCB006-3	3300	578	80
MCB006-4	3675	643	85
MCB006-5	4200	735	90
MCB006-6	4775	836	95
MCB006-7	5600	980	105
MCB006-8	6200	1085	110
MCB006-9	6900	1208	115

* Natural frequency at rated load and rated input.

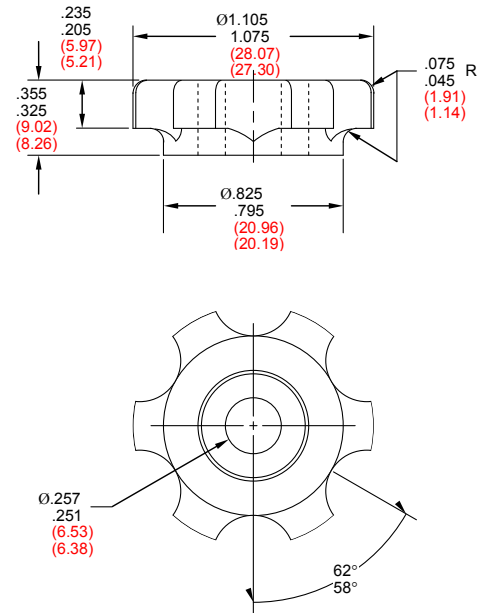
To correct for loads below rated loads, use:

$$f_n = f_{nn} \sqrt{P_R / P_A}$$

where:

- f_n = natural frequency at actual load
- f_{nn} = nominal natural frequency
- P_A = actual load
- P_R = rated load

FIGURE 1 – PART DIMENSIONS



Metric values in parenthesis.

NOTE: Install in pairs at each mounting location.

FIGURE 3 – TRANSMISSIBILITY VS. FREQUENCY

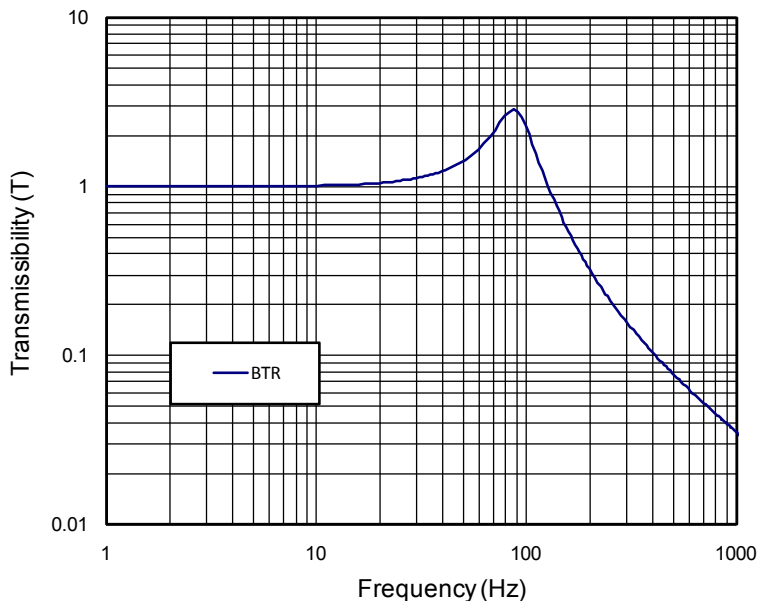
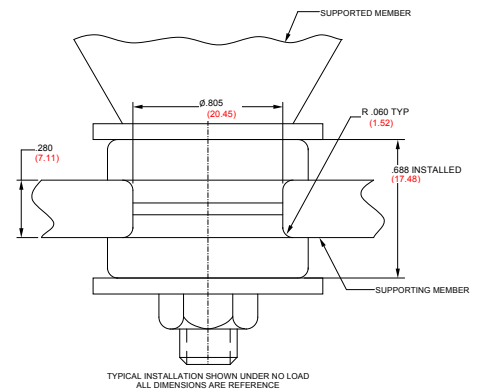


FIGURE 2 – INSTALLATION DRAWING



TYPICAL INSTALLATION SHOWN UNDER NO LOAD
ALL DIMENSIONS ARE REFERENCE

Metric values in parenthesis.

NOTE: Install in pairs at each mounting location.