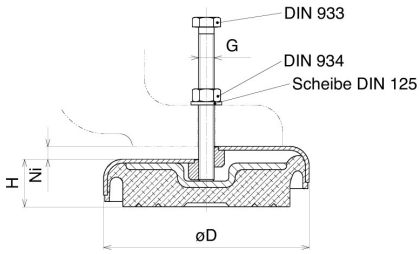
NM160

elasto-Machine-Feet
160x37 Machine / Shore A

Dimensions:	
6.30	1.46
Elastomer	ShoreA
	70



1. Table of Contents

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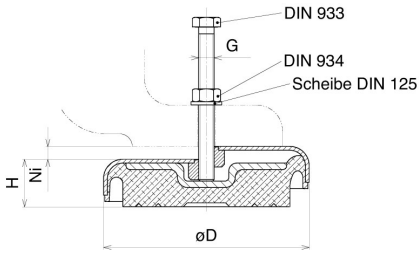

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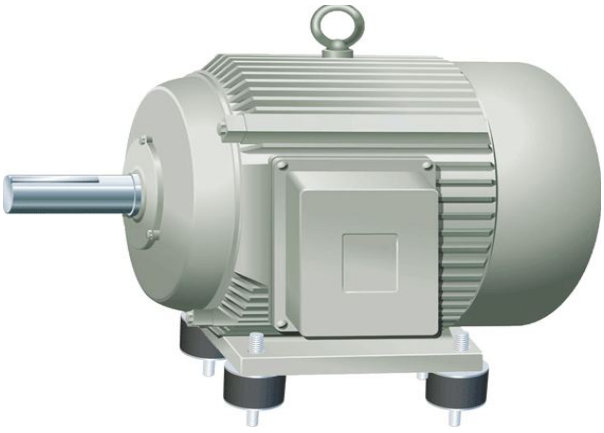
2. Application Analysis Data

Total supported weight:		
Mounting Quantity		Qty
Force per Mount		[N]
		kgf
		lbf
		[kN]
Frequency Source		cpm
		Hz

Example Application



2.1 Calculated Result

Compression:		
Deflection	?	
Spring Rate	?	
Natural Frequency	?	cpm
	?	Hz
Frequency Ratio	?	N/mm2
Calculated Isolation	?	

Shear:		
Deflection	?	
Spring Rate	?	
Natural frequency	?	cpm
	?	Hz
Frequency Ratio	?	N/mm2
Isolation	?	

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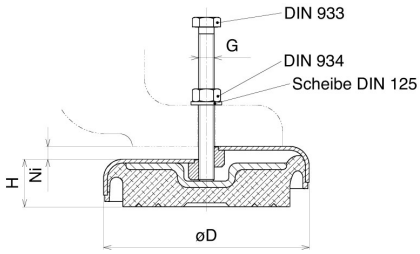

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3. Recommended Compression Load

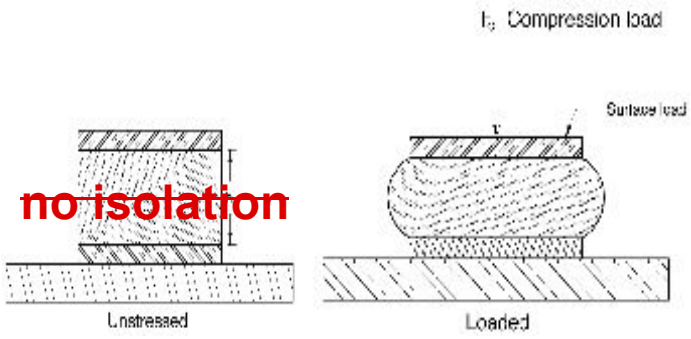
~~Compression Information~~

Deflection	?
Spring Rate	?
Maximum Stress	?

Compression Deflection Information

?
?
? Natural Frequency at max. load
?Isolation at

Maximum Force		
Maximum Deflection		
Stress	0.00	
max. force at 15%	?	
Natural Frequency	?	cpm
	?	Hz
Frequency Ratio	?	N/mm2
Calculated Isolation	?	



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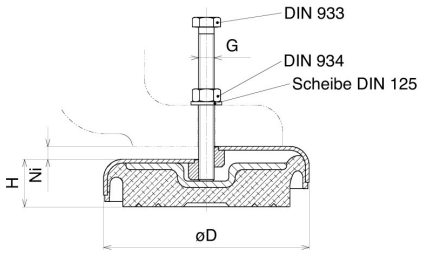


4. Recommended Shear Load

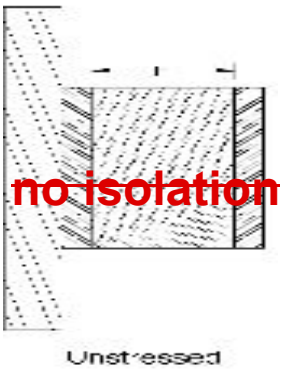
Shear Information

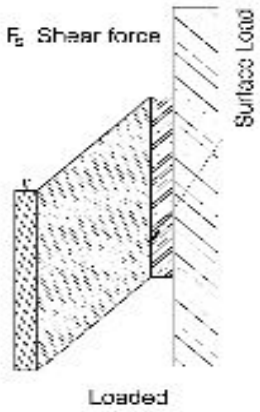
Deflection	?
Spring Rate	?
max. stress	?

Shear Deflection Information

?
?
? Natural Frequency by max. load
? Isolation by

max. Force		
max. Deflection		
Stress	0.00	
max. Shear Stress at 15 %	?	
Natural frequency	?	1/min
	?	Hz
Frequency Ratio	?	N/mm2
Calculated Isolation	?	





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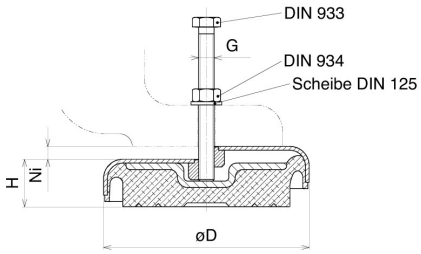

5. Compression/Injection Molded Standard Product Tolerances

Standard compression molded product dimensional tolerances conform to DIN ISO 3302-1 M3 C
Standard Injection molded product tolerances conform to DIN ISO 3302-1 M3 F
Further information regarding product/process quality can be provided upon request.

Dimensions mm		Dimensions inch		Tolerance in mm Class M3-F DIN ISO 3302-1	Tolerance in Inch Class M3-F DIN ISO 3302-1	Tolerance in mm Class M3-C DIN ISO 3302-1	Tolerance in Inch Class M3-C DIN ISO 3302-1
from	to	from	to	mm	inch	mm	inch
0	4	0	.15"	± 0.25	± .010	± 0.40	± .016
4	6.3	.16"	.25"	± 0.25	± .010	± 0.40	± .016
6.3	10	.25"	.39"	± 0.30	± .012	± 0.50	± .020
10	16	.39"	.63"	± 0.40	± .016	± 0.60	± .024
16	25	.63"	.98"	± 0.50	± .020	± 0.80	± .032
25	40	.98"	1.57"	± 0.60	± .024	± 1.00	± .040
40	64	1.57"	2.52"	± 0.80	± .032	± 1.30	± .051
63	100	2.38"	3.94"	± 1.00	± .040	± 1.60	± .063
100	160	3.94"	6.30"	± 1.30	± .051	± 2.00	± .079
160	-	6.30"	-	± 1.3 %	± 1.3 %	± 1.3 %	± 1.3 %

Standard rubber hardness tolerance ± 5 Shore A Durometer per ASTM D2000

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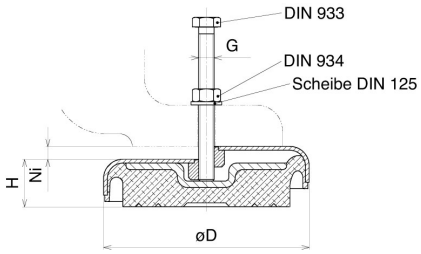

6. Rubber Selection

Hardness Range (ShoreA)	Temperature Resistance Range °C (F°)	Short Term Peak Temperature C° (F°)	Tensile Strength (N/mm²) (PSI)	Tensile Eloangariotion %	Elastomer Basic Material / Chemical-Technical Discription / Below: (Trade Name)	International Description	PROPERTIES: Tensile Strength	Tear Resistance	Abrasion Resistance	Restoring Ability	Rebound Resilience	Ozone Resistance	Flame Resistance	Acid Resistance	Benzene & Mineral Oil Resistance	Gas Impermeability	Water Absorption Resistance	- Temperature Resistance	+ Temperature Resistance
25 - 95	**-40°- 75°** (-40°- 167°)	**+100°** (212°)	**31** (4496)	800	Natural Rubber	NR	2	2	2	2	1	4	5	3	5	4	3	2	4
30 - 90	**-30°- 120°** (-22°- 248°)	**+150°** (302°)	**27.5** (3988)	450	Chloroprene (Baypren, Neoprene)	CR	2	3	2	3	2	2	2	2	3	3	4	4	3
30 - 90	**-40°- 150°** (-40°- 302°)	**+180°** (356°)	**20** (2901)	450	Ethylene-Propylene - Terpolymer	EPDM	3	4	3	3	3	1	6	3	5	3	2	3	2
25 - 95	**-40°- +140°** (-40°- 248°)	**+160°** (320°)	**25** (3626)	500	Ntrile Butadine (Perbunan)	NBR	3	4	3	3	3	5	5	3	1	3	3	4	3
35 - 95	**-30°- +110°** (-22°- 230°)	**+150°** (302°)	**25** (3626)	450	Styrene-Butadiene	SBR	3	3	2	3	3	5	5	3	5	3	3	3	3
30 - 85	**-40°- +130°** (-40°- 266°)	**+150°** (302°)	**17** (2466)	800	Butyl	IIR	3	2	2	3	5	1	4	4	6	4	2	2	3
55 - 98	**-30°- +80°** (-22°- 176°)	**+100°** (212°)	**30** (4351)	800	Polyurethane	PUR	1	2	1	3	3	2	4	5	2	4	5	3	4
40 - 80	**-70°- +180°** (-94°- 356°)	**+225°** (437°)	**8** (1160)	250	Silicone Rubber	SI	5	5	5	5	2	1	4	3	5	5	4	1	1
65 - 90	**-30°- +225°** (-22°- 437°)	**+350°** (662°)	**20** (2901)	400	Fluorocarbon (Viton)	FPM	3	2	5	5	4	1	1	1	1	1	-	4	1

1 = Very Good 2 = Good 3 = Satisfactory 4 = Adequate 5 = Poor 6 = Inadequate

The above mentioned information are used for a guide and can be modified by elatometall to improve certain characteristis.

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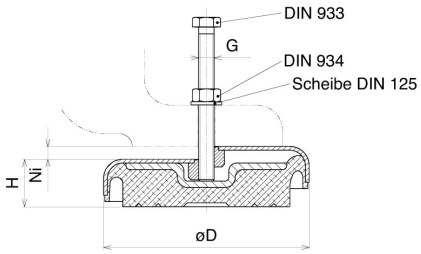

7. Tightening Torque and Bolt Grades & Class

Tightening Torque per ASTM A193 and A194

Metric Units: (Metric Thread)

Thread Size & Pitch	CLASS 5.6 Tightening Torque (Nm)	CLASS 8.8 Tightening Torque (Nm)	CLASS 10.9 Tightening Torque (Nm)
M2	0.16	0.37	0.52
M2.3	0.26	0.6	0.84
M2.6	0.37	0.86	1.21
M3	0.59	1.34	1.88
M3.5	0.9	2.06	2.89
M4	1.34	3.04	4.31
M5	2.65	6.03	8.48
M6	4.51	10.3	14.71
M7	7.45	17.16	24.52
M8	10.79	25.5	35.3
M10	21.57	50.01	70.61
M12	38.25	87.28	122.58
M14	60.8	138.27	194.17
M16	93.16	210.84	299.1
M18	127.49	411.88	411.88
M20	180.44	558.98	578.5
M22	245.17	558.98	784.54
M24	308.91	710.99	1000.28
M27	460.92	1049.32	1480.81
M30	522.73	1421.97	2010.38

Non-Standard

English Units: (Coarse Thread)

Thread Size & Pitch	GRADE 2 Tightening Torque (ft-lb)	GRADE 5 Tightening Torque (ft-lb)	GRADE 8 Tightening Torque (ft-lb)
6-32	0.86	1.33	1.88
8-32	1.58	2.44	3.44
10-24	2.29	3.53	499
12-24	3.59	5.55	7.84
1/4-20	5.47	8.45	11.9
5/16-18	11.3	17.4	24.6
3/8-16	20	30.9	43.6
7/16-14	32	39.4	69.8
1/2-13	48.8	75.4	106
9/16-12	70.4	109	154
5/8-11	97.1	150	212
3/4-10	103	366	376
7/8-9	167	430	606
1-8	250	561	909
1-1/8-7	354	794	1288
1-1/4-7	500	1120	1817
1-3/8-6	655	1469	2382
1/2-6	869	1949	3161

English Units: (Fine Thread)

Thread Size & Pitch	GRADE 2 Tightening Torque (ft-lb)	GRADE 5 Tightening Torque (ft-lb)	GRADE 8 Tightening Torque (ft-lb)
6-40	0.96	1.49	2.1
8-36	1.66	2.57	3.63
10-32	2.61	4.04	5.7
12-28	3.83	5.92	8.36
1/4-28	6.26	9.7	13.7
5/16-24	12.5	19.3	27.2
3/8-24	22.66	35	49.4
7/16-20	35.7	55.2	77.9
1/2-20	55	84.9	120
9/16-18	78.5	121	171
5/8-18	110	170	240
3/4-16	115	297	420
7/8-14	184	473	668
1-12	273	613	995
1-1/8-12	397	891	1445
1-1/4-12	553	1241	2012
1-3/8-12	746	1673	2712
1-1/2-12	978	2194	3557

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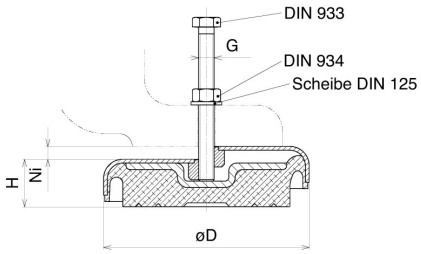
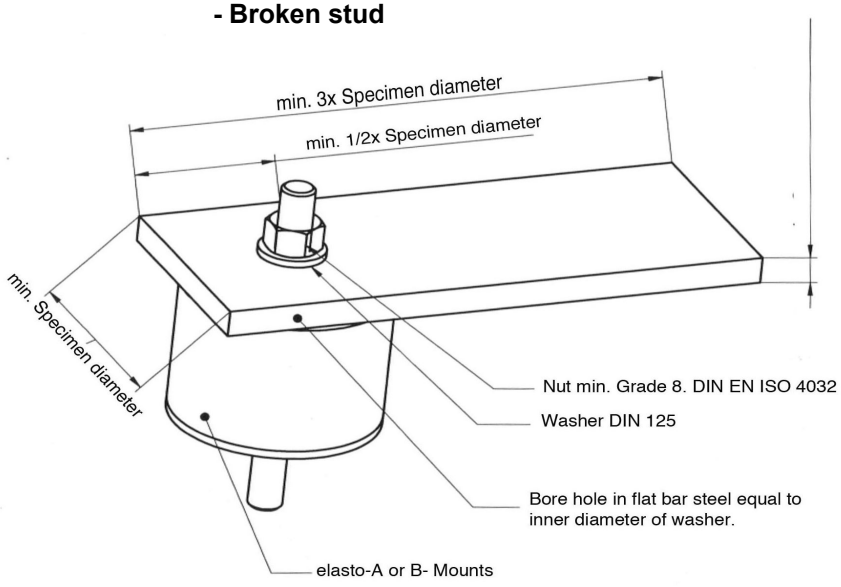


8. Torque Threaded Stud Test of elasto-A- and B-Mounts

Tighten flat bar steel on jaw vise. Setup required torque wrench per table. Use a nut for specimen and tighten it with torque wrench until the required torque is achieved. Loosen nut from specimen and visual check threaded studs for:

- **Stud extension**
- **Thread pitch damaged or sheered**
- **Connection between washer**
- **Broken stud**



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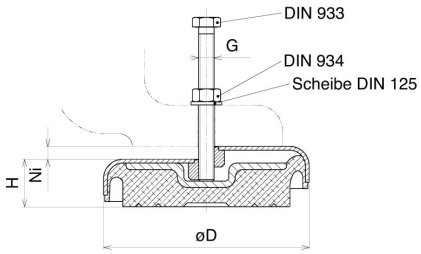

9. Certificate of RoHS Compliance

Customer _____

We confirm that these mounts are RoHS Compliance.

9. Shelf Life Expectancy

Rubber to metal bonded products have a shelf life expectancy of up to 20 years under certain conditions such as room temperature and avoiding direct sunlight or artificial lights.

- ALWAYS KEEP PARTS AWAY FROM DIRECT SUNLIGHT AND BETWEEN 10° - 30° CELSIUS -