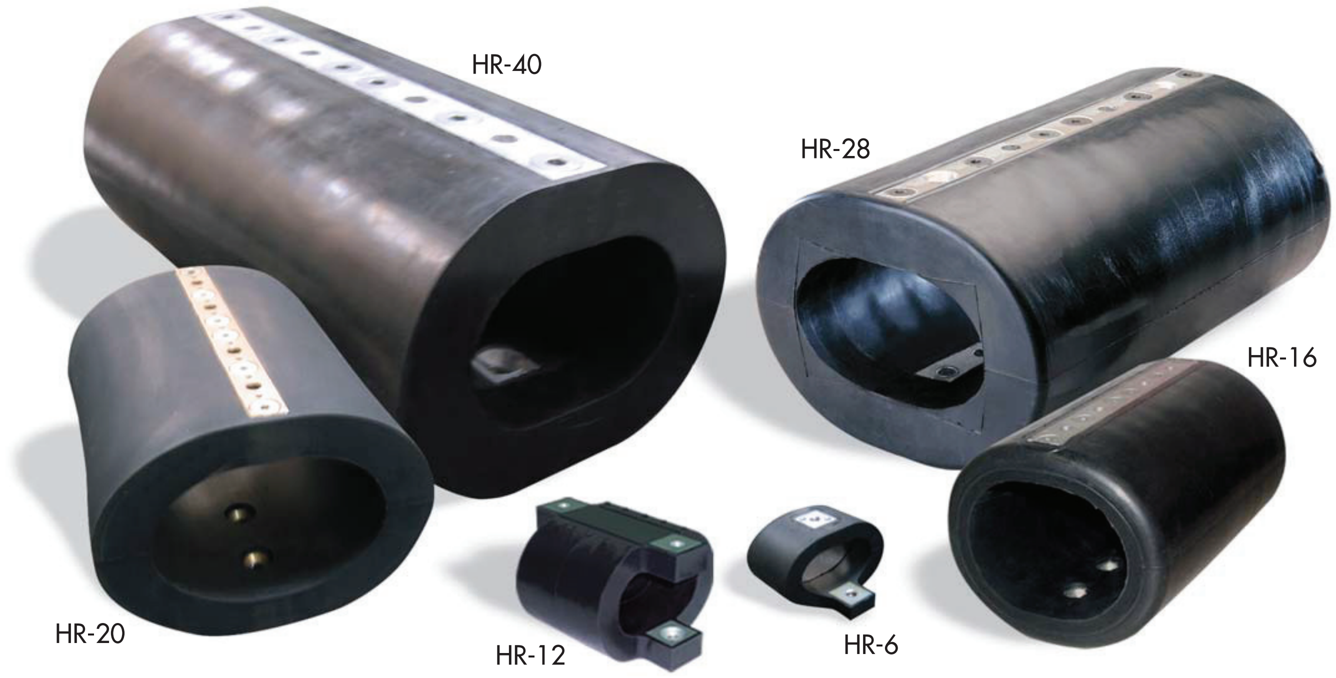
HERM (High Energy Rope Mount)
HR6-HR40 Series

Overview



The HERM isolator incorporates the use of a traditional Enidine helical wire rope isolator encased in a proprietary elastomeric compound. The stainless steel cable of the mount provides for a rugged construction, while the elastomer provides additional damping and stiffness. This unique design results in a fail safe mount with a higher stiffness and energy absorption capacity.

The mount is readily scalable and performance easily tuned by varying the wire diameter, loop size, number of loops and elastomeric properties. The HERM isolator has proven particularly strong in low natural frequency "soft deck" applications of 12-16 Hz, reducing output G's to below 15G's. Its sealed nature of construction also provides for easy NBC washdown. Since the mounting size of the HERM isolator is virtually identical to that of standard wire rope isolators used in many shipboard applications, equipment upgrades are both simple and seamless with drop-in replacement capability.

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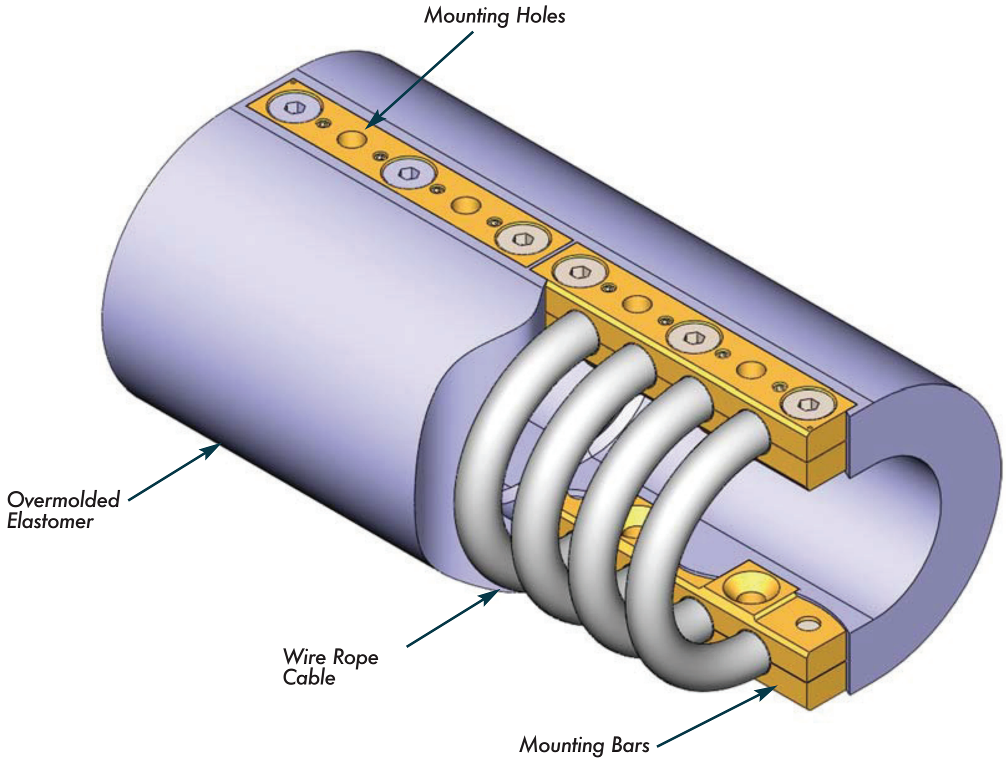

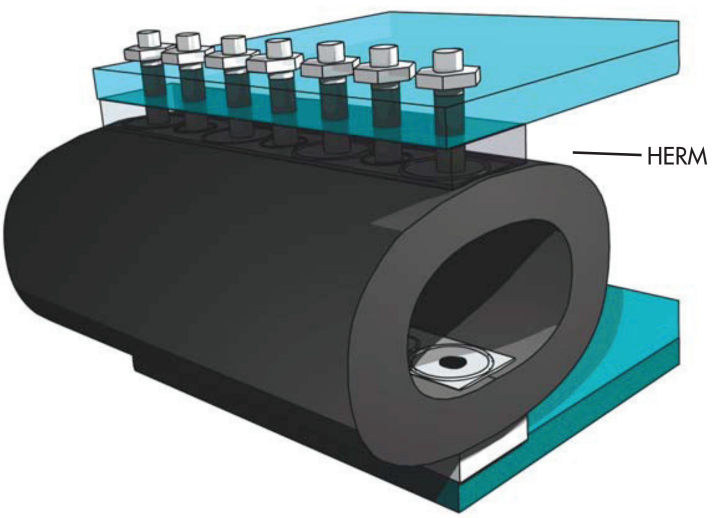

HERM Features:

- Lowest profile design for a 14 Hz deck solution
- A variety of material combinations available
- Mounting identical to traditional Wire Rope Isolators
- Readily "tunable" to meet a wide range of natural frequencies
- Greater load carrying capability

HERM Benefits:

- Easy retrofit on fielded equipment
- Fewer mounts required to support a given load
- Smaller "footprint" than other mounts
- Compatible with NBC wash down requirements
- Improved noise attenuation compared to standard Wire Rope Isolators

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Materials and Finishes:

Standard: Elastomer: Proprietary Enidine Compound
Wire Rope: 302/304 Stainless Steel
Mount Bars: 6061-T6 Aluminum, Chemical Conversion Coated per MIL-C-5541, Class 1A
Hardware: Alloy Steel per ASTM F835, Zinc Plated (HR16, HR20, HR28 and HR40)

Optional: Mount Bars: 6061-T6 Aluminum, Anodized per MIL-A-8625, Type II, Class 1
302/304 Stainless Steel per ASTM A276, Passivated
Hardware: 302/304 Stainless Steel (when stainless steel bars are specified)

Special: Consult Enidine

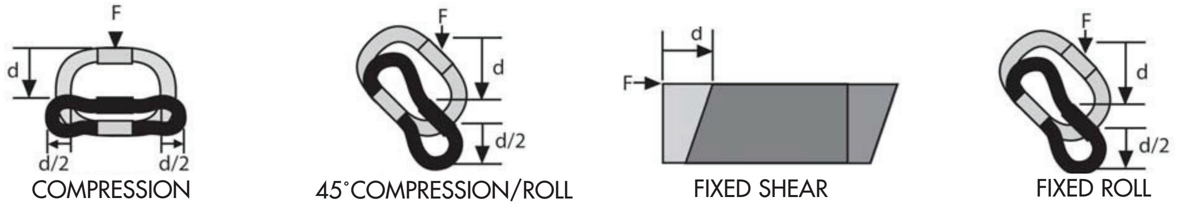
Isolator Options:

Mounting: Enidine offers various mounting combinations of thru-hole, countersunk, and threaded bars depending upon the HERM model selected.
Consult Enidine if a preferred mounting configuration is not listed.

Performance:

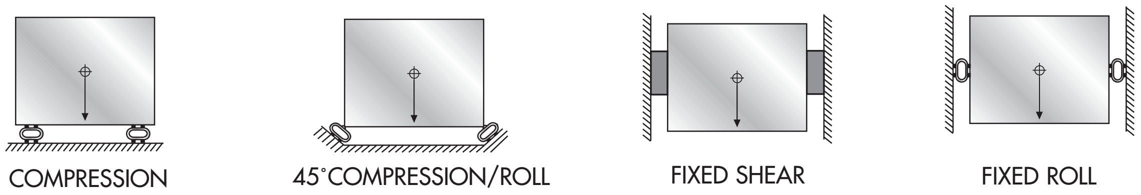
Stiffness (Kv or Ks):
HERM's exhibit non-linear stiffness behavior. Small deflections, usually associated with vibration isolation, will have a different spring rate than larger shock deflections. Enidine publishes typical vibration stiffness values (Kv), and average shock stiffness values (Ks) within the catalog. These values can be used with the provided equations listed on Page 54 to predict system performance.

Isolator Axes:
HERM are multi-axis isolators. The diagram below includes load axis definitions and deflection considerations.



Damping: Typically 15-25%, depending on size and input level. For specific damping considerations, please consult Enidine.

Mounting Orientation:
The diagrams below illustrate typical mounting orientations.



Stabilizers:
Stabilizers are used to control deflections of tall supported masses. Stabilizers are typically recommended when the height equals 2-times the width or depth dimension.

Application Worksheet

APPLICATION WORKSHEET - INPUTS IMPERIAL/METRIC		IMPERIAL	METRIC
PART I: SYSTEM DATA:			
1. Total Supported Load (W_T):	W_T = _______ lbs. W_T = _______ Kg x 9.81 = _______ N		
2. Number of Isolators (n):	n = _______		
3. Static Load per Isolator (W): * Assumes a central CG	$W = \frac{W_T}{n}$	W = _______ lbs.*	W = _______ N*
4. Load Axis: Compression Shear or Roll 45° Compression/Roll		Load Axis _______	Load Axis _______
PART II: VIBRATION SIZING:			
1. Input Excitation Frequency	(f_i) = _______ Hz $\left(= \frac{rpm}{60}\right)$		
2. System Response Natural Frequency for 80% isolation:	$f_n = \frac{f_i}{3.0}$ = _______ Hz		
3. Maximum Isolator Vibration Stiffness: (K_v)	$K_v = \frac{W(2\pi f_n)^2}{g}$ g = 386 in/sec² or 9.81 m/sec²	K_v = _______ lbs./in.	K_v = _______ N/m
4. Select an isolator by comparing calculated values with technical data for the desired load axis provided in tables for each isolator. a.) Calculated "W" must be less than the isolator's max static load and b.) Isolator's vibration stiffness must be less than the calculated maximum K_v			
PART III: SHOCK SIZING:			
1. Maximum Allowable Transmitted Acceleration:	A_T = _______ G's		
2. Shock Input Velocity:	V = _______ in./sec. V = _______ m/sec.		
Free Fall Impact:	$V = \sqrt{2gh}$ g = 386 in./sec.² or 9.81 m/sec.² h = Drop Height (in. or m)		
3. Min. Isolator Response Deflection:	$D_{min} = \frac{V^2}{g(A_T)}$	D_{min} = _______ in.	D_{min} = _______ m
4. Maximum Isolator Shock Stiffness:	$K_s = \frac{W(V/D_{min})^2}{g}$	K_s = _______ lbs./in.	K_s = _______ N/m
5. Select an isolator by comparing calculated values with technical data for the desired load axis provided in tables for each isolator. a.) Calculated "W" must be less than the isolator's max static load and b.) Calculated D_{min} must be less than the isolator's max deflection Note: Metric deflections are calculated in meters (m) and technical data is in millimeters (mm). and c.) Isolator's shock stiffness must be less than calculated maximum "K_s"			
6. Check actual deflection using "K_s" from technical data to ensure that the isolator's max deflection is not exceeded.	$D_{actual} = \frac{V}{\sqrt{\frac{K_s(Isolator)g}{W}}}$	D_{actual} = _______ in.	D_{actual} = _______ m
7. If isolator's max deflection is exceeded, select another isolator and repeat steps 5 and 6.			