

TOZEN

PRODUCT CATALOG

VIBRATION ISOLATOR 2025



TOZEN

CORPORATE PROFILE TOZEN CORPORATION

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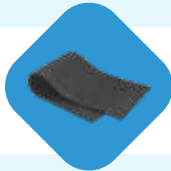
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TOZEN

SALES REPRESENTATIVE

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Establishment Date	August 03, 1972
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Factories	Saitama, Japan Shanghai, China Bangkok, Thailand Serang, Indonesia Ipoh, Malaysia
No. of Employee	±500 persons
Nature of business	<ul style="list-style-type: none"> • Manufacturing and sales of construction, civil, mechanical and piping related products. • Rubber flexible & expansion joints, stainless steel flexible & expansion joints, Teflon flexible & expansion joints, noise & vibration control products and various industrial rubber products. • Valves, fitting, pipes, pumps, other piping materials and equipment, etc.



DESCRIPTION

TOZEN PTM-GP series vibration isolator are one-piece moulded neoprene with one cast-in load transfer steel plate at the top and base-plate at the bottom. The rubber is loaded in both shear and compression to provide the desirable straight line rubber-in-shear deflection curves as well as overload protection. The rubber-ribbed base plate provides skid resistance and need not be bolted to the floor on most installations. The standard neoprene rubber is oil resistant and had been designed to operate within the strain limits of the isolator to provide the maximum isolation and longest expectancy.

PTM-GP is available in 9 sizes with load capacity from 30 Kgs to 450 Kgs. Standard static deflection of PTM-GP is 8-10mm.

APPLICATION

TOZEN PTM-GP series rubber floor mounted can be used to isolate noise and high frequency vibration generated by mechanical equipments located on a grade supported structural slab or pier. PTM-GP series is recommended for the isolation of vibration produced by small pumps, vent sets, low pressure packaged air handling units, etc., and usually selected when first cost must be minimized.

SPECIFICATION

Vibration isolators shall be moulded from neoprene or oil resistant synthetic rubber. Rubber isolator shall incorporated with a cast-in-top steel load transferplate in the load surface for bolting to the supported equipment and skid resistant baseplate withholes provided for anchoring to supporting structure.

MATERIAL

Body - Neoprenerubber
Inserts - Mild Steel

DIMENSIONS



(mm)

Model	Rate Capacity		Colour Code	Dura-Meter	Free Height (H)	A	B	C	D	E	F	G
	(Kgs)	(Lbs)										
PTM-GP-30	30	66	White	40								
PTM-GP-50	50	110	Yellow	50	35	40	84	60	8	5	30	M8
PTM-GP-75	75	165	Red	60								
PTM-GP-100	100	220	White	40								
PTM-GP-150	150	330	Yellow	50	50	60	104	80	9	6	45	M10
PTM-GP-200	200	440	Red	60								
PTM-GP-250	250	550	White	40								
PTM-GP-350	350	770	Yellow	50	70	87	147	117	13	7	65	M12
PTM-GP-450	450	990	Red	60								

Note:
Specifications are subject to change without prior notice.

DESCRIPTION

TOZEN Model PTM-A & PTM-AM series isolators are unboxed spring vibration isolators designed for high deflection. The PTM-A employs the use of a single spring element, while the PTM-AM employs multiple spring elements for heavier applications. These laterally stable steel spring isolators are constructed with a leveling device at the top of the isolator and a non-skid acoustical pad at the bottom. Both models are constructed with upper and lower ductile cast iron holding cups to hold the spring element. In addition, PTM-A & PTM-AM have a mounting base plate to allow the isolator to be bolted to a structure and a resilient washer as part of the non-skid acoustical pad. The resilient washer helps prevent the transmission of noise and vibration from the base plate and mounting bolt to the structure.

The design of the spring elements, within the isolators, complies with established standard JIS B2704, for semi-permanent use. To assure lateral stability, the outside diameter of the spring element is greater than 80% of the height of the compressed spring element when at rated load. All the spring elements are designed to provide a minimum of overloading capacity of 50%.

PTM-A & PTM-AM series vibration isolator are available in the standard deflections at 25mm, and also available in deflections of 50mm and 75mm (single spring). 25mm with load capacity of range from 10Kgs to 5,600Kgs. 50mm with load capacity of range from 25Kgs to 6,200Kgs and 75mm with load capacity from 180Kgs to 1065kgs only.

Tozen PTM-A & PTM-AM series of spring isolators are highly effective in the control of both high and low frequency vibrations produced by mechanical equipment, such as Reciprocating Air or Refrigeration Compressors, Pumps, Air Conditioning and Air Handling Equipment, Centrifugal and Axial Fans, Internal Combustion Engines and similar types of equipment.

APPLICATION

PTM-A & PTM-AM series spring isolators are recommended for use in isolating floor mounted sources of noise & vibration located near critical quiet areas.

PTM-A & AM series spring isolators are typically used to reduce the transmission of noise & vibration from low speed mechanical equipment into a building structure.

PTM-A & AM series spring isolators can be used in a wide range of applications involving the isolation of mechanical equipment, such as Reciprocating Air or Refrigeration Compressors, Close Coupled & Base Mounted Pumps, Package Air Handling & Refrigeration Equipment, Centrifugal Fans, Internal Combustion Engines & similar equipment.

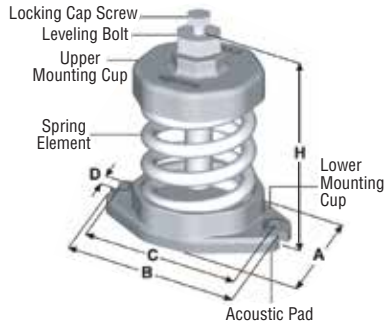
SPECIFICATION

The vibration isolators shall be free standing, with laterally stable steel spring elements, without housings, shubbers or guides. The isolators shall be constructed with the ductile cast iron upper mounting cup and the ductile cast iron lower mounting cup to hold the spring element, and a non-skid acoustical pad is attached under the lower cup. The isolators shall be provided with an adjusting bolt, cap screw and washer in top of the isolator for leveling and attachment to the equipment. The spring elements of the isolator shall have an outside diameter greater than 80% of the height of the compressed spring element at rated load. All spring elements shall be designed to provide a minimum overloading capacity of 50%.

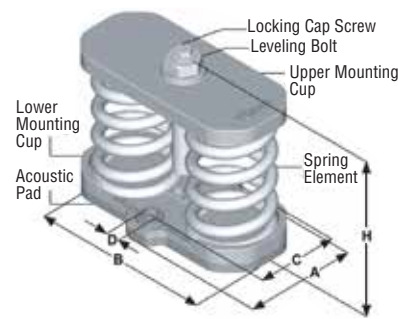
The isolators shall be selected to provide operating static deflection shown on the Vibration Isolation Schedule or as indicated by the project specifications. Isolators shall be color coded or otherwise identified to indicate load capacity.



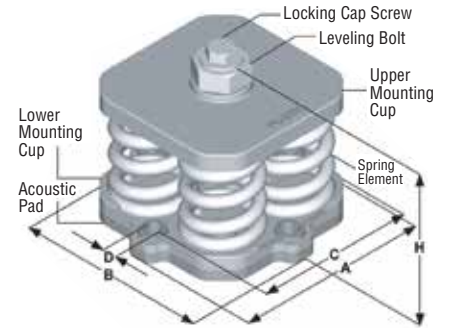
STRUCTURE



PTM-A, A2, A3 series



PTM-AM, AM2 series (2-spring)



PTM-AM, AM2 series (4-spring)

PTM-A Type

25mm Deflection Single Spring Vibration Isolator

(mm)

Model	Rated Capacity		Spring Constant (Kg/mm)	Spring Element			Operating Height (H)	Dimension				Locking Cap Screw (LS)	Leveling Bolt (LB)
	Kgs	Lbs		Spring Color	OD	Free Height		A	B	C	D		
PTM-A-10S	10	22	0.4	Green	50	80	120	61	107	89	10	M10x32	M16x70
PTM-A-15S	15	33	0.6	Blue									
PTM-A-25S	25	55	1.0	White									
PTM-A-35S	35	77	1.4	Yellow									
PTM-A-50S	50	110	2.0	Orange									
PTM-A-80S	80	176	3.2	Violet									
PTM-A-120S	120	264	4.8	Red									
PTM-A-175ES	175	385	7.0	Silver									
PTM-A-225ES	225	495	9.0	Brown	75	100	150	88	136	177	3	M12x43	M22x80
PTM-A-150M	150	330	6.0	Orange									
PTM-A-200M	200	440	8.0	Violet									
PTM-A-300M	300	660	12.0	Red									
PTM-A-350EM	350	770	14.0	Violet + White									
PTM-A-450M	450	990	18.0	Green									
PTM-A-500EM	500	1100	24.0	Violet + Brown									
PTM-A-600EM	600	1320	24.0	Silver									
PTM-A-750EM	750	1650	30.0	Green + Brown									
PTM-A-825EM	825	1815	33.0	Brown									
PTM-A-900EM	900	1980	36.0	Silver + Brown									

Note:

We reserve the right to change without notice for error rectification or design modification.

PTM-A Type

25mm Deflection Single Spring Vibration Isolator

(mm)

Model	Rated Capacity		Spring Constant (Kg/mm)	Spring Element			Operating Height (H)	Dimension				Locking Cap Screw (LS)	Leveling Bolt (LB)		
	Kgs	Lbs		Spring Color	OD	Free Height		A	B	C	D				
PTM-A-975EM	975	2145	39.0	Brown + White			75	100	150	88	136	177	13	M12x43	M22x80
PTM-A-1100EM	1100	2420	44.0	Blue											
PTM-A-1125EM	1125	2475	45.0	Brown + Brown											
PTM-A-1250EM	1250	2750	50.0	Blue + White											
PTM-A-1400EM	1400	3080	56.0	Blue + Brown											

PTM-AM Type

25mm Deflection Multiple Spring Vibration Isolator

(mm)

Model	Rated Capacity		Spring Constant (Kg/mm)	Spring Element			Operating Height (H)	Dimension				Locking Cap Screw (LS)	Leveling Bolt (LB)		
	Kgs	Lbs		Spring Color	OD	Free Height		A	B	C	D				
PTM-AM-1502EM	1500	3300	60.0	Green + Brown			75	100	144	112	198	75	14x18	M12x43	M22x80
PTM-AM-1652EM	1650	3630	66.0	Brown											
PTM-AM-1802EM	1800	3960	72.0	Silver + Brown											
PTM-AM-1952EM	1950	4290	78.0	Brown + White											
PTM-AM-2202EM	2200	4840	88.0	Blue											
PTM-AM-2252EM	2250	4950	90.0	Brown + Brown											
PTM-AM-2502EM	2500	5500	100.0	Blue + White											
PTM-AM-2802EM	2800	6160	112.0	Blue + Brown											
PTM-AM-3004EM	3000	6600	120.0	Green + Brown			75	100	152	197	197	161	14x18	M16x45	M30x90
PTM-AM-3304EM	3300	7260	132.0	Brown											
PTM-AM-3604EM	3600	7920	144.0	Silver + Brown											
PTM-AM-3904EM	3900	8580	156.0	Brown + White											
PTM-AM-4404EM	4400	9680	176.0	Blue											
PTM-AM-4504EM	4500	9900	180.0	Brown + Brown											
PTM-AM-5004EM	5000	11000	200.0	Brown + White											
PTM-AM-5604EM	5600	12320	224.0	Blue + Brown											

Note:

We reserve the right to change without notice for error rectification or design modification.



PTM-A2 Type

50mm Deflection Single Spring Vibration Isolator

(mm)

Model	Rated Capacity		Spring Constant (Kg/mm)	Spring Element			Operating Height (H)	Dimension				Locking Cap Screw (LS)	Leveling Bolt (LB)
	Kgs	Lbs		Spring Color	OD	Free Height		A	B	C	D		
PTM-A2-25S	25	56	0.5	White	75	120	170	88	136	117	13	M12x43	M22x80
PTM-A2-35S	35	77	0.7	Yellow									
PTM-A2-50S	50	110	1.0	Orange									
PTM-A2-80ES	80	176	1.6	Violet									
PTM-A2-125ES	125	275	2.5	Red									
PTM-A2-175ES	175	385	3.5	Silver									
PTM-A2-250ES	250	550	5.0	Brown									
PTM-A2-175EM	175	385	3.5	Orange	90	145	195	101	155	130	13	M12x43	M22x115
PTM-A2-245EM	245	539	4.9	Violet									
PTM-A2-350EM	350	770	7.0	Red									
PTM-A2-475EM	475	1045	9.5	Orange + Brown									
PTM-A2-525EM	525	1155	10.5	Green									
PTM-A2-545EM	545	1199	10.9	Violet + Brown									
PTM-A2-650EM	650	1430	13.0	Red + Brown									
PTM-A2-725EM	725	1595	14.5	Orange + White									
PTM-A2-750EM	750	1650	15.0	Silver									
PTM-A2-795EM	795	1749	15.9	Violet + White									
PTM-A2-825EM	825	1815	16.5	Green + Brown									
PTM-A2-900EM	900	1980	18.0	Red + White									
PTM-A2-1000EM	1000	2200	20.0	Blue									
PTM-A2-1050EM	1050	2310	21.0	Silver + Brown									
PTM-A2-1075EM	1075	2365	21.5	Green + White									
PTM-A2-1300EM	1300	2860	26.0	Blue + Brown									
PTM-A2-1550EM	1550	3410	31.0	Blue + White									

Note:

We reserve the right to change without notice for error rectification or design modification.

PTM-AM2 Type

50mm Deflection Multiple Spring Vibration Isolator

(mm)

Model	Rated Capacity		Spring Constant (Kg/mm)	Spring Element			Operating Height (H)	Dimension				Locking Cap Screw (LS)	Leveling Bolt (LB)
	Kgs	Lbs		Spring Color	OD	Free Height		A	B	C	D		
PTM-AM2-1092EM	1090	2398	21.8	Violet + Brown	90	145	189	130	230	92	14x18	M12x43	M22x80
PTM-AM2-1302EM	1300	2860	26.0	Red + Brown									
PTM-AM2-1452EM	1450	3190	29.0	Orange + White									
PTM-AM2-1502EM	1500	3300	30.0	Silver									
PTM-AM2-1592EM	1950	3498	31.8	Violet + White									
PTM-AM2-1652EM	1650	3630	33.0	Green + Brown									
PTM-AM2-1802EM	1800	3960	36.0	Red + White									
PTM-AM2-2002EM	2000	4400	40.0	Blue									
PTM-AM2-2102EM	2100	4620	42.0	Silver + Brown									
PTM-AM2-2152EM	2150	4730	43.0	Green + White									
PTM-AM2-2602EM	2600	5720	52.0	Blue + Brown									
PTM-AM2-3102EM	3100	6820	62.0	Blue + White									
PTM-AM2-1904EM	1900	4180	38.0	Orange + Brown	90	145	196	244	244	203	14x18	M16x45	M30x90
PTM-AM2-2104EM	2100	4620	42.0	Green									
PTM-AM2-2184EM	2180	4796	43.6	Violet + Brown									
PTM-AM2-2604EM	2600	5720	52.0	Red + Brown									
PTM-AM2-2904EM	2900	6380	58.0	Orange + White									
PTM-AM2-3004EM	3000	6600	60.0	Silver									
PTM-AM2-3184EM	3180	6996	63.6	Violet+white									
PTM-AM2-3304EM	3300	7260	66.0	Green + Brown									
PTM-AM2-3604EM	3600	7920	72.0	Red + White									
PTM-AM2-4004EM	4000	8800	80.0	Blue									
PTM-AM2-4204EM	4200	9240	84.0	Silver + Brown									
PTM-AM2-4304EM	4300	9460	86.0	Green + White									
PTM-AM2-5204EM	5200	11440	104.0	Blue + Brown									
PTM-AM2-6204EM	6200	13640	124.0	Blue + White									

Note:

We reserve the right to change without notice for error rectification or design modification.



PTM-A3 Type

75mm Deflection Single Spring Vibration Isolator

(mm)

Model	Rated Capacity		Spring Constant (Kg/mm)	Spring Element			Operating Height (H)	Dimension				Locking Cap Screw (LS)	Leveling Bolt (LB)
	Kgs	Lbs		Spring Color	OD	Free Height		A	B	C	D		
PTM-A3-180S	180	396	2.4	Orange	90	170	220	101	155	130	13	M12x43	M22x115
PTM-A3-255S	255	561	3.4	Violet									
PTM-A3-375S	375	825	5.0	Red									
PTM-A3-555L	555	1221	7.4	Violet	110	190	242	121	181	149	13	M12x43	M22x115
PTM-A3-810L	810	1782	10.8	Red									
PTM-A3-1065L	1065	2343	14.2	Red + Brown									

Note:

1. All springs are laterally stable and suitable for free standing application. (Outside diameter > 80% of deflection height)
2. All springs are designed with additional travel to solid at least 50% of rated load.
3. Please refer to relevant brochure or our technical division for greater deflection and loading.

INSTALLATION INSTRUCTION

1. Block or lift up the equipment to a level so that the equipment's leg or base is 5mm higher than isolator's operating height (see catalogue). If common base & height saving isolator bracket is used, keep 50mm clearance between the base and floor. Maintain this height until piping installation is completed.
2. Locate the spring isolator under the hole in equipment's leg or isolator's bracket. Connect locking cap screw and washer, but do not tighten.
3. Transfer the equipment weight to the spring by taking two counter-clockwise turns on each leveling bolt around the unit until springs are compressed just enough to remove the blocks.
4. Tighten the locking cap screw to lock the assembly.

REMARKS

- a. DO NOT install the equipment on the support of a free spring. This will cause an insufficient operating height for the spring isolator when the installation is completed.
- b. Weight of vertical piping and valves must be supported by the suspension hangers or supports.
- c. Install the flexible joint at the end of the installation, following the pre-extension instruction which may specified or suggested by the flexible joint manufacturer.
- d. Bolting down the isolator to the floor, in most cases, is not necessary as the non-slip rubber pad or mounting cup will prevent movement. Where bolting is required, avoid a direct metal contact between bolt and mounting, to prevent transmission of noise; the bolt shank shall be clear in the hole and a rubber washer used under the bolt head. Bolts shall only be tightened a half turn more than hand tight.

Note:

We reserve the right to change without notice for error rectification or design modification.

DESCRIPTION

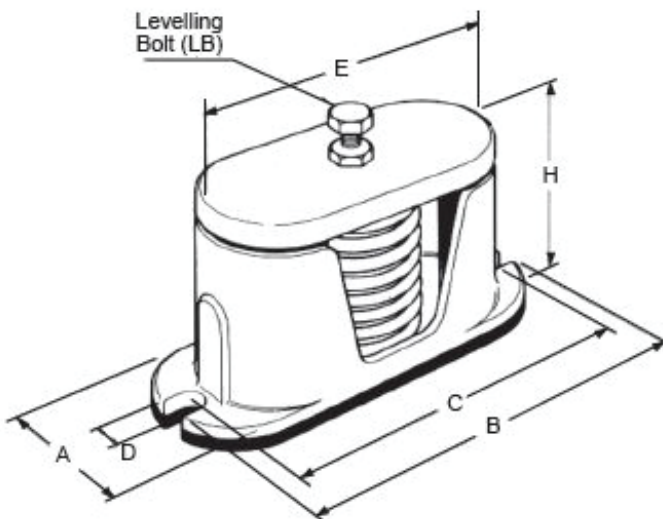
TOZEN PTM-C series isolators consist of high deflection, laterally stable spring assembled into telescoping cast ductile iron housing is equipped with an 8mm thick, ribbed, noise absorbing pad bonded to the bottom. Each isolator has an internal or external adjusting and levelling bolt as a part of the top assembly. Holes or slots are provided in all isolators for bolting to the structure. PTM-C series spring isolator are typically used to isolate vibration produced by mechanical, industrial, or process machinery where more damping is required and less motion can be tolerated than with free standing spring isolators. The design of the spring elements, within the isolators, complies with established standard JIS B2704, for semi-permanent use. To assure lateral stability, outside diameter of the spring elements do not less than 0.8 times of the compressed height of the spring at rated load. All the spring are designed to provide a minimum of 50% overload capacity.

APPLICATION

TOZEN PTM-C series housing spring isolators are used to isolate high and low frequency vibration generated by floor mounted mechanical equipment located in non-critical and semi-critical areas.

TOZEN PTM-C series spring isolator are typically used to isolate vibration produced by light weight mechanical equipment, having lowest operating speeds of 1,200rpm, located on grade supported slabs, or short structure floor spans, or when the isolator to equipment connection is such that a levelling and attachment bolt for the supporting equipment.

STRUCTURE





PTM-C Type

25mm Deflection Housed Spring Isolator.

Unit: mm

Model	Rated Capacity		Spring Constant (Kg/mm)	Spring Element			Operating Height (H)	(A)	(B)	Slot Pitch (C)	Slot Hole (D)	Top Plate length (E)	Leveling Bolt (LB)
	(Kgs)	(Lbs)		Colour Code	O.D.	Free Height							
PTM-C-150M	150	330	6	Orange	75	100	145	94	216	194	13	162	M16
PTM-C-200M	200	440	8	Violet									
PTM-C-300M	300	660	12	Red									
PTM-C-350M	350	770	14	Violet + White									
PTM-C-450M	450	990	18	Green									
PTM-C-500M	500	1100	20	Violet + Brown									
PTM-C-600EM	600	1320	24	Silver									
PTM-C-750M	750	1650	30	Green + Brown									
PTM-C-825EM	825	1815	33	Brown									
PTM-C-900EM	900	1980	36	Silver + Brown									
PTM-C-975EM	975	2145	39	Brown + White									
PTM-C-1100EM	1100	2420	44	Blue									
PTM-C-1250EM	1250	2750	50	Blue + White									
PTM-C-1100EM	1100	2420	44	Blue									
PTM-C-1125EM	1125	2475	45	Brown + Brown									
PTM-C-1250EM	1250	2750	50	Blue + White									
PTM-C-1400EM	1400	3080	56	Blue + Brown									

Note:

We reserve the right to change without notice for error rectification or design modification.

DESCRIPTION

TOZEN PTM-D series vibration isolators consist of free standing laterally stable steel springs assembled into ductile iron housing assemblies fabricated to limit vertical movement of the isolated equipments when equipment loads are reduced or if the equipments are subjected to large external forces. Spring elements are complete with an internal adjusting and leveling bolt. Holes are provided at the upper plate for bolting to supported equipment. A 10mm thick non-skid noise absorbing rubber pad is bonded at the bottom plate with holes for bolting to the structure. All the spring elements are comply to JIS 2704 for semi-permanent use. To assure lateral stability, outside diameter of the spring elements do not less than 0.8 times of the compressed height of the spring at rated load. All the spring are designed to provide a minimum of 50% overload capacity.

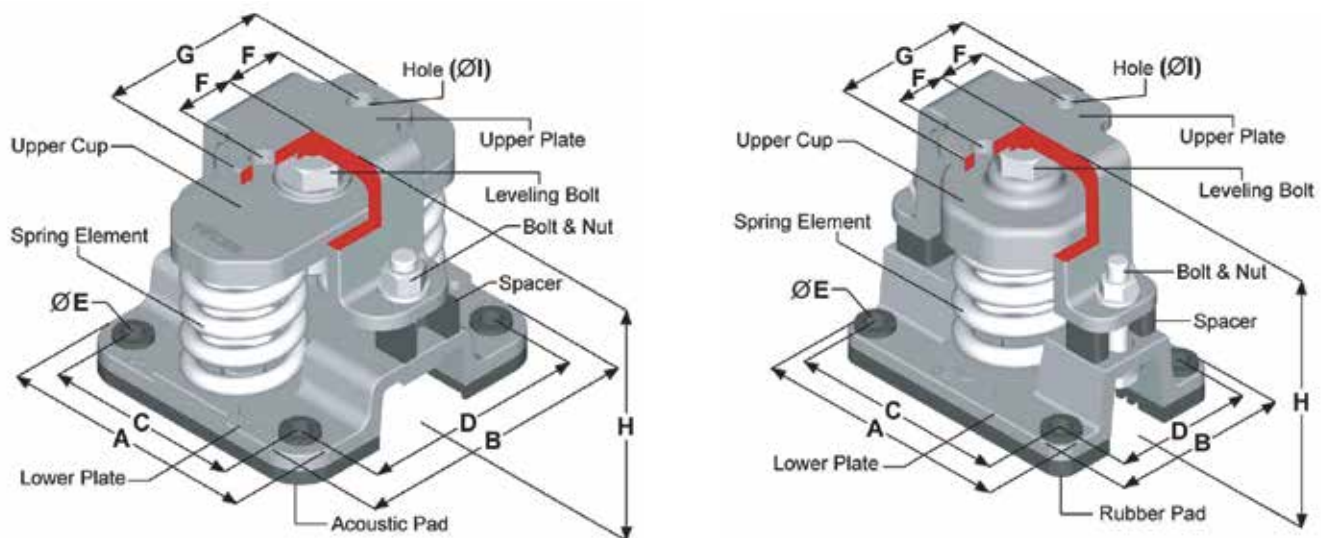
TOZEN PTM-D series vibration isolator are shipped with standard deflections of 25 and 50mm. 25mm with load capacities up to 5,600Kgs and 50mm with load capacities up to 6,200kgs.

APPLICATION

TOZEN PTM-D series mounts are typically used to reduce the transmission of noise and vibration into supporting structures from equipment carrying a large fluid load that may be drained, such as boilers and chillers, and for the isolation of cooling towers, air cooled condensers, etc, which also require hold down for wind loads.

SPECIFICATION

Housing assembly shall be of ductile iron members and consist of a load transfer plate at the top complete with holes, adjusting and leveling bolts, vertical restraints, isolation washers and a bottom plate with non-skid noise isolation pad and holes provided for anchoring to supporting structure.



* These images are sectioned for better appearance.

Note:

The contents of this catalogue are subject to change without notice.



PTM-D TYPE

25mm Deflection Restrained Spring Isolator

(mm)

Model	Rate Capacity		Spring Constant (Kg/mm)	Spring Colour Code	Operating Height (H)	Dimension							
	(Kgs)	(Lbs)				A	B	C	D	E	F	G	H
PTM-D-151M	150	330	6	Orange	170	172	121	137	86	16	30	88	14
PTM-D-201M	200	440	8	Violet									
PTM-D-301M	300	660	12	Red									
PTM-D-351M	350	770	14	Violet + White									
PTM-D-451M	450	990	18	Green									
PTM-D-501M	500	1100	20	Violet + Brown									
PTM-D-601M	600	1320	24	Silver									
PTM-D-751M	750	1650	30	Green + Brown									
PTM-D-826M	825	1815	33	Brown									
PTM-D-901M	900	1980	36	Silver + Brown									
PTM-D-976M	975	2145	39	Brown + White									
PTM-D-1101M	1100	2420	44	Blue									
PTM-D-1126M	1125	2475	45	Brown + Brown									
PTM-D-1251M	1250	2750	50	Blue + White									
PTM-D-1401M	1400	3080	56	Blue + Brown									
PTM-D-602M	600	1320	24	Red	170	180	200	136	156	20	40	118	18
PTM-D-702M	700	1540	28	Violet + White									
PTM-D-902M	900	1980	36	Green									
PTM-D-1002M	1000	2200	40	Violet + Brown									
PTM-D-1202M	1200	2640	48	Silver									
PTM-D-1502M	1500	3300	60	Green + Brown									
PTM-D-1652M	1650	3630	66	Brown									
PTM-D-1802M	1800	3960	72	Silver + Brown									
PTM-D-1952M	1950	4290	78	Brown + White									
PTM-D-2202M	2200	4840	88	Blue									
PTM-D-2252M	2250	4950	90	Brown + Brown									
PTM-D-2502M	2500	5500	100	Blue + White									
PTM-D-2802M	2800	6160	112	Blue + Brown									

Note:

We reserve the right to change without notice for error rectification or design modification.

PTM-D

25mm Deflection Restrained Spring Isolator

(mm)

Model	Rate Capacity		Spring Constant (Kg/mm)	Spring Colour Code	Operating Height (H)	Dimension							
	(Kgs)	(Lbs)				A	B	C	D	E	F	G	H
PTM-D-1404M	1400	3080	56	Violet + White	185	255	167	211	123	20	48.5	135	18
PTM-D-2004M	2000	4400	80	Violet + Brown									
PTM-D-2404M	2400	5280	96	Silver									
PTM-D-3004M	3000	6600	120	Green + Brown									
PTM-D-3304M	3300	7260	132	Brown									
PTM-D-3604M	3600	7920	144	Silver + Brown									
PTM-D-3904M	3900	8580	156	Brown + White									
PTM-D-4404M	4400	9680	176	Blue									
PTM-D-4504M	4500	9900	180	Brown + Brown									
PTM-D-5004M	5000	11000	200	Blue + White									
PTM-D-5604M	5600	12320	224	Blue + Brown									

PTM-D2

50mm Deflection Restrained Spring Isolator

(mm)

Model	Rate Capacity		Spring Constant (Kg/mm)	Spring Colour Code	Operating Height (H)	Dimension							
	(Kgs)	(Lbs)				A	B	C	D	E	F	G	H
PTM-D2-176M	175	385	3.5	Orange	215	190	130	152	95	16	38	106	16
PTM-D2-246M	245	539	4.9	Violet									
PTM-D2-351M	350	770	7	Red									
PTM-D2-476M	475	1045	9.5	Orange + Brown									
PTM-D2-526M	525	1155	10.5	Green									
PTM-D2-546M	545	1199	10.9	Violet + Brown									
PTM-D2-651M	650	1430	13	Red + Brown									
PTM-D2-726M	725	1595	14.5	Orange + White									
PTM-D2-751M	750	1650	15	Silver									
PTM-D2-796M	795	1749	15.9	Violet + White									
PTM-D2-826M	825	1815	16.5	Green + Brown									
PTM-D2-901M	900	1980	18	Red + White									
PTM-D2-1001M	1000	2200	20	Blue									
PTM-D2-1051M	1050	2310	21	Silver + Brown									
PTM-D2-1076M	1075	2365	21.5	Green + White									
PTM-D2-1301M	1300	2860	26	Blue + Brown									
PTM-D2-1551M	1550	3410	31	Blue + White									

Note:

We reserve the right to change without notice for error rectification or design modification.



PTM-D2

50mm Deflection Restrained Spring Isolator

(mm)

Model	Rate Capacity		Spring Constant (Kg/mm)	Spring Colour Code	Operating Height (H)	Dimension							
	(Kgs)	(Lbs)				A	B	C	D	E	F	G	H
PTM-D2-952M	950	2090	19	Orange + Brown	215	196	232	152	187	20	42	120	16
PTM-D2-1052M	1050	2310	21	Green									
PTM-D2-1092M	1090	2398	21.8	Violet + Brown									
PTM-D2-1302M	1300	2860	26	Red + Brown									
PTM-D2-1452M	1450	3190	29	Orange + White									
PTM-D2-1502M	1500	3300	30	Silver									
PTM-D2-1592M	1590	3498	31.8	Violet + White									
PTM-D2-1652M	1650	3630	33	Green + Brown									
PTM-D2-1802M	1800	3960	36	Red + White									
PTM-D2-2002M	2000	4400	40	Blue									
PTM-D2-2102M	2100	4620	42	Silver + Brown									
PTM-D2-2152M	2150	4730	43	Green + White									
PTM-D2-2602M	2600	5720	52	Blue + Brown									
PTM-D2-3102M	3100	6820	62	Blue + White									
PTM-D2-1904M	1900	4180	38	Orange + Brown	225	300	200	260	162	20	66.5	170	20
PTM-D2-2104M	2100	4620	42	Green									
PTM-D2-2184M	2180	4796	43.6	Violet + Brown									
PTM-D2-2604M	2600	5720	52	Red + Brown									
PTM-D2-2904M	2900	6380	58	Orange + White									
PTM-D2-3004M	3000	6600	60	Silver									
PTM-D2-3184M	3180	6996	63.6	Violet + White									
PTM-D2-3304M	3300	7260	66	Green + Brown									
PTM-D2-3604M	3600	7920	72	Red + White									
PTM-D2-4004M	4000	8800	80	Blue									
PTM-D2-4204M	4200	9240	84	Silver + Brown									
PTM-D2-4304M	4300	9460	86	Green + White									
PTM-D2-5204M	5200	11440	104	Blue + Brown									
PTM-D2-6204M	6200	13640	124	Blue + White									

Note:

We reserve the right to change without notice for error rectification or design modification.

INSTALLATION INSTRUCTION

1. Check that the internal leveling nut is adjusted up to underside of the upper plate.
2. Lift or block up the equipment to 5mm higher than isolator's operating height (see catalogue) and slide the isolators into position and adjust the leveling nut until the upper plate is in contact with equipment base. Insert fastening screws (if used) through the equipment base into top of the mounting and tighten.
3. Check alignment of the base so that restraining bolts are central with clearance holes in the restraining bracket.
4. Transfer the equipment weight to the spring by taking two counter-clockwise turns on each leveling bolt around the unit until springs are compressed just enough to remove blocks.
5. Adjust restraining nuts to give 2-3mm clearance between the restrain washer and the underside of the restraining bracket. Check the leveling again after the system is filled with water.
6. Tighten the lock nut to lock the assembly.

REMARKS

- a. When the equipment is not subject to raise to the required height, height saving bracket may be attached to the equipment. The height of bracket connection from the bottom of the base shall be 50mm less than the isolator's operating height or to keep a 50mm clearance between the ground and equipment.
- b. DON'T install the equipment on the support of free spring, it would cause an insufficient operating height for the spring isolator when the installation is completed.
- c. Weight of vertical piping and valves shall be taken over by the suspension hangers or support.
- d. Install the flexible joint at final, follow the pre-extension instruction which may specified or suggested by the flexible joint manufacturer.
- e. Where bolting is required, avoid a direct metal contact between bolt and mouting, to prevent transmission of acoustical frequencies; the bolt shank shall be clear in the hole and a rubber washer used under the bolt head. Bolts shall only be tightened a half turn more than hand tight.



DESCRIPTION

TOZEN PTH-G vibration isolating rubber hangers are designed to reduce the transmission of vibration and noise produced by suspended equipment, piping, and ductwork. PTH-G hangers incorporated with a noise absorbing rubber insert with cast-in load transfer plate at the top and bottom, assembled into a steel box. Ultimate design of PTH-G hanger rubbers allows greater deflection without accelerating deterioration. PTH-G hangers are available in deflection maximum up to 6 mm with capacities from 25 Kgs to 450 Kgs. PTH-G rubber hangers may be selected where first cost must be minimized. Model PTH-G is recommended for the isolation of vibration produced by suspended mechanical equipment, axial and exhausts fans, ductwork, piping, etc. Double deflection model PTH-GG adds another rubber element at the top of the hanger box.

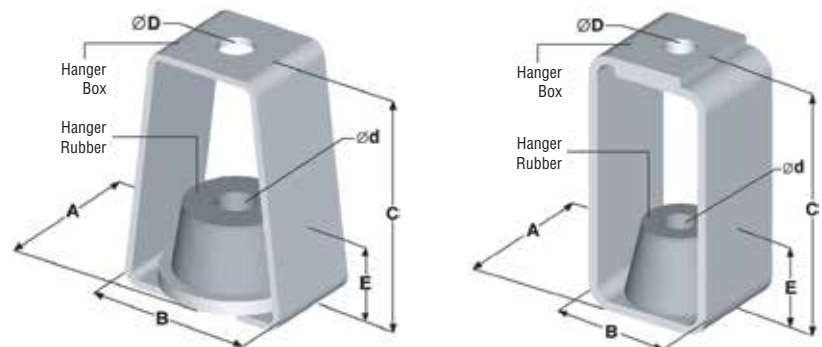
APPLICATION

TOZEN PTH-G vibration-isolating hangers are used to isolate suspended sources of audible frequency vibration, or isolation of noise in piping and ductwork systems. Model PTH-G hangers are shipped fully assembled and ready for installation in threaded rod suspended systems. Model PTH-G hangers can be provided with labour saving accessories for adaption to wire or strap suspension systems.

SPECIFICATION

Vibration isolators for suspended equipment, piping and ductwork with maximum static deflection requirements under operation load conditions not exceeding 6 mm shall be hangers consisting of a neoprene or synthetic rubber noise absorbing insert encased in a welded steel box .

The rubber insert shall be moulded from oil resistant compounds with cast in load transfer plate at the top and bottom, shall be color-coded or otherwise identified to indicate load capacity.



Model	Design Loading		Rubber Colour Code	Maximum Static Defl.	Duro Meter	A	B	C	D	E	Max. Rod Dia. (MRD)
	(Kgs)	(Lbs)									
PTH-G-25	25	55	White	4	40	37	45	90	11	25	10
PTH-G-35	35	77	Yellow		50						
PTH-G-50	50	110	Orange		55						
PTH-G-80	80	176	Violet	5	40	60	70	110	15	28	14
PTH-G-120	120	264	Red		50						
PTH-G-150	150	330	Orange		55						
PTH-G-200	200	440	Violet	6	40	85	98	135	18	39	18
PTH-G-300	300	660	Red		50						
PTH-G-450	450	990	Green		55						

Note:

- Hanger elements have similar straight line deflection curve.
- Please refer to relevant brochure or consult factory for wire or strap suspension systems.
- Specifications are subject to change without prior notice.

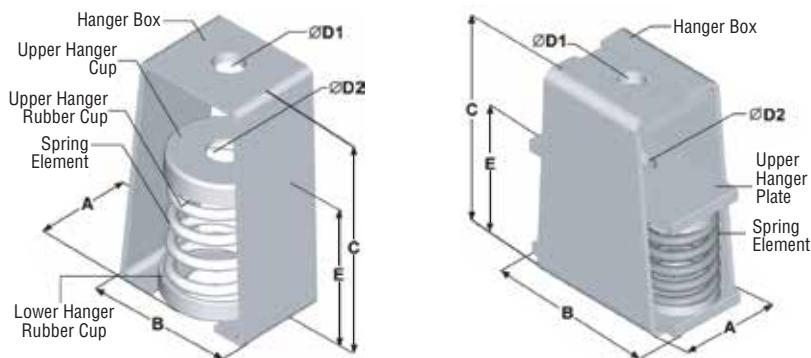
DESCRIPTION

TOZEN PTH-S series vibration isolating hangers consist of a rectangular steel box incorporated with a free standing, laterally stable steel spring with load transfer steel cup with rubber washer. PTH-SG comes in series with a noise absorbing hanger rubber for better performance. This combination takes advantage of the best properties of both materials. Both design permits installation in the hanger rods or at the ceiling.

APPLICATION

TOZEN PTH-S & PTH-SG hangers are used to isolate suspended sources of both audible and inaudible noise and vibration. Suspended mechanical equipment such as in-line fans, cabinet fans, and piping and ductwork in close proximity to mechanical equipment, are typical uses of Tozen PTH-S & PTH-SG hangers. Standard PTH-S & PTH-SG hangers are shipped fully assembled and ready for installation in threaded metal rod suspension systems. TOZEN PTH-S & PTH-SG hangers can be provided with labour saving accessories for adaption to wire or strap suspensions systems. Both models may be factory preloaded or provided with positioning plate for ease in erecting piping at a fixed elevation. Higher load capacities, larger deflections and 30 degree ARC capacity are available.

STRUCTURE

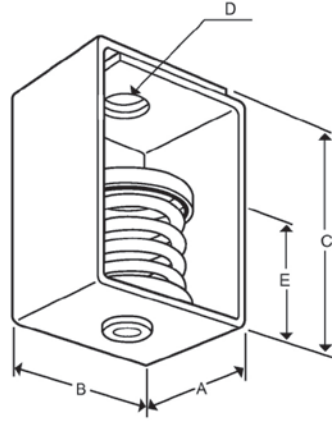


INSTALLATION INSTRUCTION

1. Consider the height and location of the hanger, then prepare the upper & lower hanging rods (bolts) in same proper length.
2. Attach the upper hanging rod (bolt) to the ceiling.
3. Connect the lower hanging rod (bolt) to the hanger. Pre-compress the hanger spring element (approx. 10mm) by tighten a restrain nut and washer at the bottom of the hanger.
4. Attach the hanger to the upper hanging rod (bolt).
5. Attach the hanging rod (bolt) to the pipe, duct or equipment bracket.
6. Install all other hangers by repeating instruction 1~5.
7. After the pipe or equipment is filled with water, release the restraint nut. Leveling adjust the hanger by the nut at the top of the element to obtain even level installation.
8. Final check the spring hanger in a proper deflection and don't install the hanging rod (bolt) in a inclined position.



PTH-S TYPE



25mm Deflection Spring Vibration Isolating Hanger

(mm)

Model	Rated Capacity		Spring Constant (Kg/mm)	Spring Colour Code	Dimensions (mm)					Max. Rod Dia. (MRD)
	(Kgs)	(Lbs)			A	B	C	D	E	
PTH-S-10	10	22	0.4	Green	60	85	140	15	92	14
PTH-S-15	15	33	0.6	Blue						
PTH-S-25	25	55	1.0	White						
PTH-S-35	35	77	1.4	Yellow						
PTH-S-50	50	110	2.0	Orange						
PTH-S-80	80	176	3.2	Violet						
PTH-S-120	120	264	4.8	Red						
PTH-S-175E	175	385	7.0	Silver						
PTH-S-225E	225	495	9.0	Brown	85	115	180	18	115	16
PTH-S-150	150	330	6.0	Orange						
PTH-S-200	200	440	8.0	Violet						
PTH-S-300	300	660	12.0	Red						
PTH-S-450	450	990	18.0	Green						
PTH-S-600E	600	1320	24.0	Silver						
PTH-S-825E	825	1815	33.0	Brown	85	115	180	24	120	22
PTH-S-1100E	1100	2420	44.0	Blue						
PTH-S-1202E	1200	2640	48.0	Silver						
PTH-S-1502E	1500	3300	60.0	Green+brown						
PTH-S-1652E	1650	3630	66.0	Brown						
PTH-S-1802E	1800	3960	72.0	Silver+brown						
PTH-S-1952E	1950	4290	78.0	Brown+white						
PTH-S-2202E	2200	4840	88.0	Blue						
PTH-S-2252E	2250	4950	90.0	Brown+brown	230	124	290	30	145	27
PTH-S-2502E	2500	5500	100.0	Blue+white						
PTH-S-2802E	2800	6160	112.0	Blue+brown						

Note:

We reserve the right to change without notice for error rectification or design modification.

FEATURE

Easy Installation

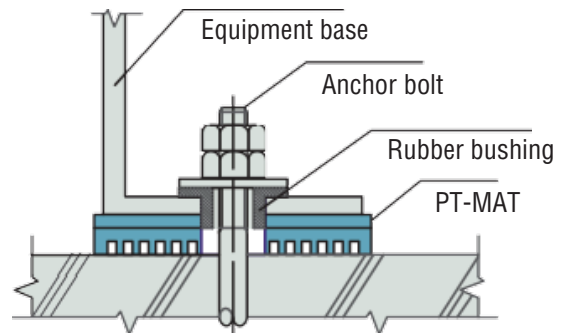
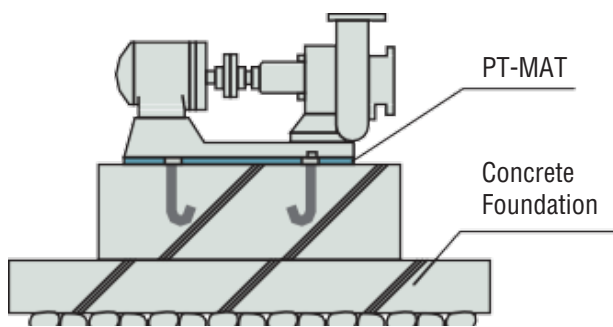
Reduces Soundproofing Requirements

Many users just cut off the required amount and install it.

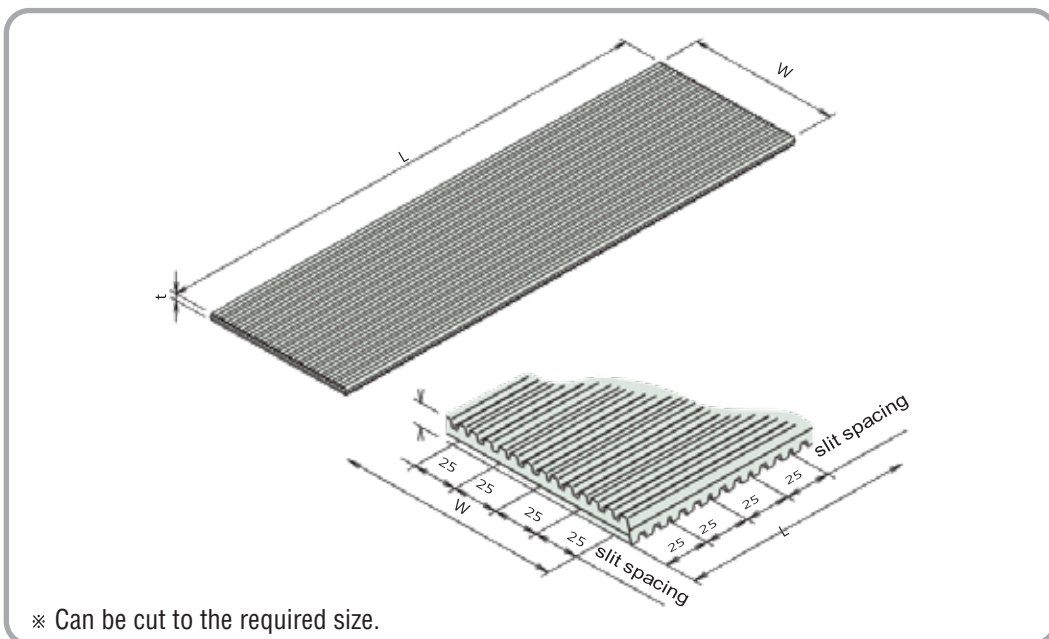
Can be used as isolation for equipment or plumbing support, wherever noise reduction is required. The pads can be used for impact load dissipation, vibration absorption, and reduction of movement during earthquakes, depending on the type of PT Mat and the pad's shape.

APPLICATION

- Vibration reduction for pumps, packaging machinery, etc.
- Isolating pipes from their supports

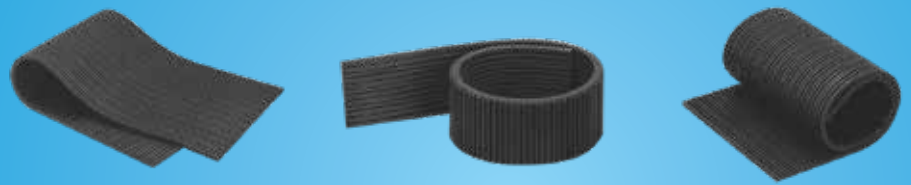


STRUCTURE



Note:

The contents of this catalogue are subject to change without notice.



CHARACTERISTICS

Figure 1. Deflection Characteristics

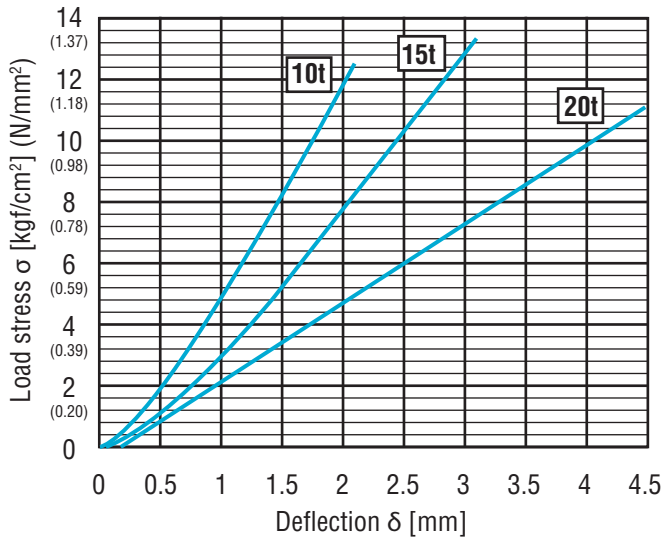
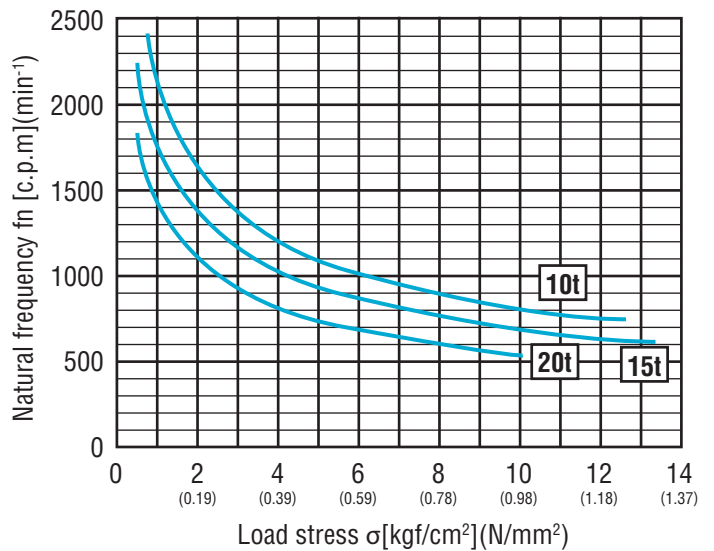


Figure 2. Natural Frequency - Applied Characteristics



Reference

Reference vibration transmissibility $Tr(\%)$

$$Tr = \frac{1}{\left| 1 - \left(\frac{f}{f_n} \right)^2 \right|} \times 100 (\%)$$

f : equipment frequency (rpm)

f_n : anti-vibration pad resonant frequency (cpm)

(The resonant frequency-stress characteristics are shown in Figure 2)

DIMENSIONS

Reference number	Dimensions(mm)			Mass (kg)	Packing quantity (Sheet/packing)
	t	W	L		
PT- 1030	10	300	300	0.9	20
PT- 1100	10	100	1000	1	10
PT- 1150	10	150	1000	1.5	10
PT- 1300	10	300	1000	3	10
PT- 1510	15	100	1000	1.6	10
PT- 1515	15	150	1000	2.4	10
PT- 1530	15	300	1000	4.8	5
PT- 2010	20	100	1000	2.2	5
PT- 2015	20	150	1000	3.3	5
PT- 2030	20	300	1000	6.5	5



* Other sizes also available

Note:

Yellow highlight means stock available in Indonesia.

The contents of this catalogue are subject to change without notice.

BENEFIT

- Noise reduction and vibration control for outdoor equipment.
- High performance, reasonable and long lasting

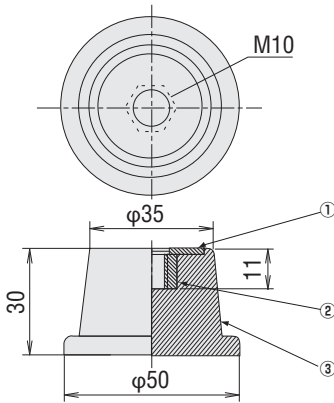
FEATURE

- Weather resistance rubber and stainless plate are used. Long lasting with outdoor usage.
- Easy construction and outstanding vibration control.
- Easy level adjustment.

APPLICATIONS

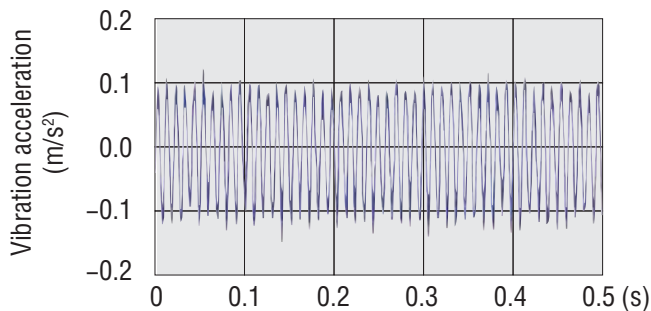
Used as vibration proof device of A/C outdoor equipment, small fan, electrical mortar, compressor.

STRUCTURE AND DIMENSION

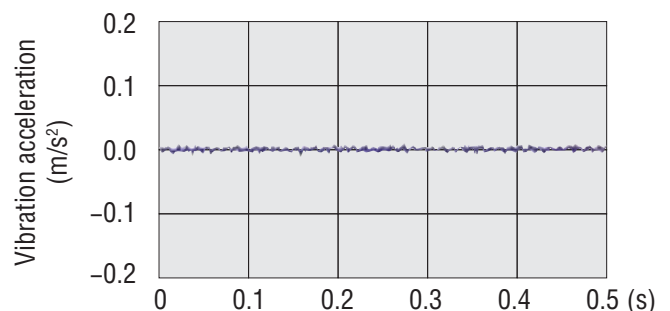


Number	Name	Material
①	Metal fittings	SUS304
②	Nut	SUS304
③	Rubber itself	Synthetic rubber
Model number	Spring constant	Allowable load
ACM-30	147N/mm (15.0Kg/mm)	490N (50kg)

VIBRATION CONTROL MEASUREMENT WHEN OUTDOOR UNIT RUNS.



MAX : 0.14 (m/s²) Without vibration control rubber



MAX : 0.01 (m/s²) With vibration control rubber

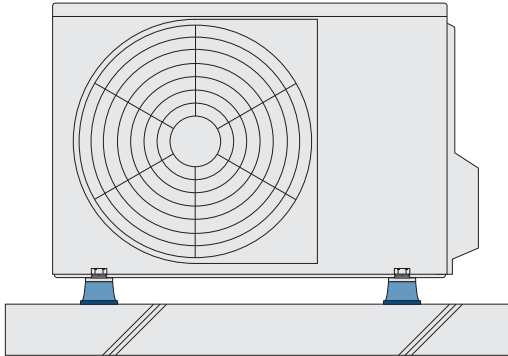
- Around 80% of vibration isolation effect has proved.

Note:

This brochure may be revised without prior notice. We apologize in advance for any inconvenience this may cause.



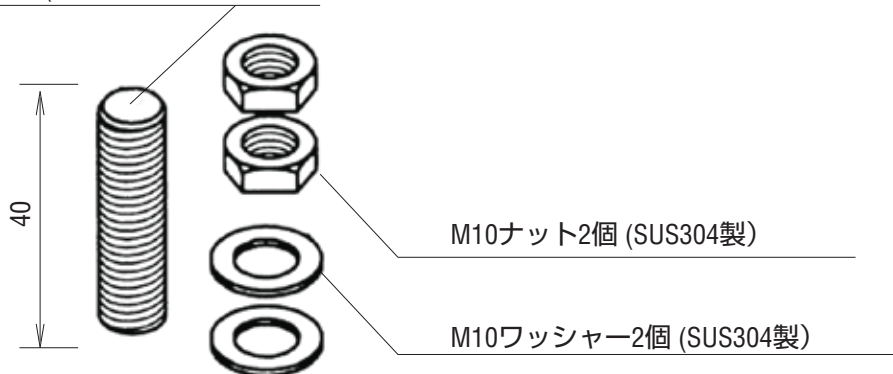
TYPICAL APPLICATIONS



Outdoor equipment

OPTIONAL (OPTIONAL)

M10Head screw (SUS304製)



HANDLING INSTRUCTIONS

- Some cases need extra support to A/C leg part with using copper metals, depending on the weight of A/C outdoor unit or shape of leg part.
- Please note that the product must be avoided adhesion such as strong acid, strong alkali, organic solvent, fat and oil.
- Please be sure to attach the device with equable loading to compression direction
- Please make sure to use the device within a given load range.
- The product must be protected from spark like welding.
- As non-transferable and specific rubber is used for the product, curing sheet is required when the device is temporary placing on the vinyl chloride sheet.

Note:

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BENEFIT

- For foundation of bolt and ceiling type bolt
- For vibration and noise control of ceiling equipment

FEATURE

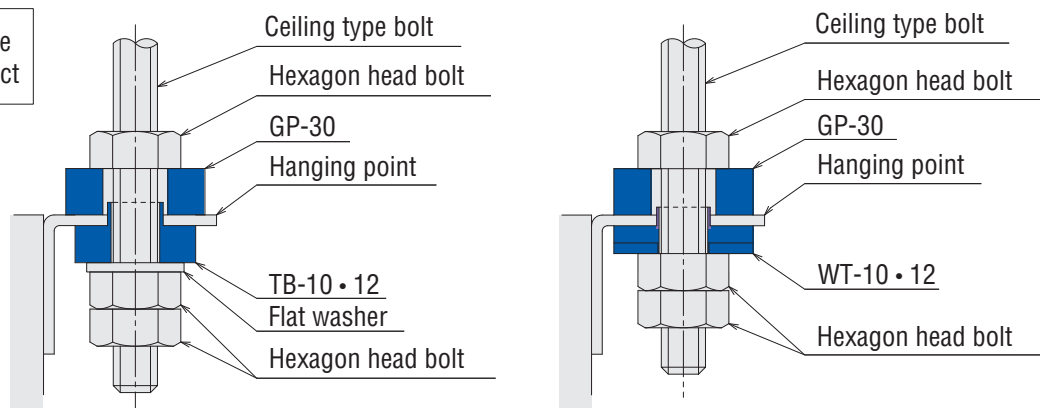
- Isolating of vibration/electrical corrosion can be done with small space and low cost.
- Various combinations are available.

APPLICATIONS

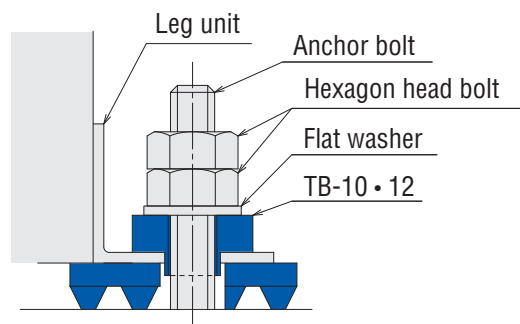
- Easy construction of vibration Isolation Hanger or light weight ceiling equipment with duct and plumbing. Used for the isolation of anchor bolt that is for fixing vibration proof or equipment attachment bolt.
- Easy electronic isolation process can be done; coat or painting protection and dissimilar metal.

TYPICAL APPLICATIONS

Ceiling type cassette
A/C • Horizontal duct

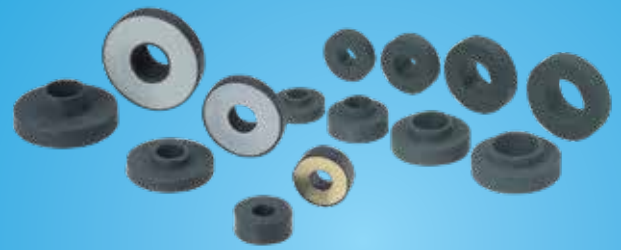


Outdoor equipment



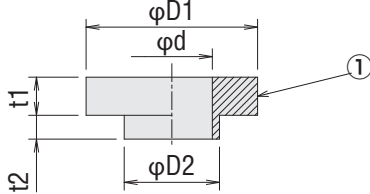
Note:

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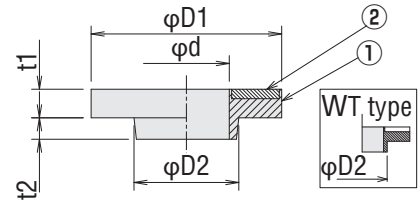


STRUCTURE AND DIMENSION

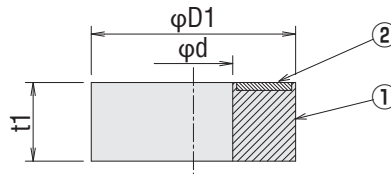
TB type
B type



XT type
WT type



X type
GP type



Number	Name	Material
①	Rubber itself	Synthetic rubber
②	Metal fittings	SS400

※TB/B/GP types are not included metal fitting.
Please prepare washers if necessary.

Type	φD1	φD2	φd	t1	t2	Allowable load N (kgf)
TB-10	26	12	10.5	8	5	245.2 (25.0)
TB-12	28	14	12.7	8	5	294.2 (30.0)
B-16	36	20	17	8	5	343.2 (35.0)
B-20	40	25	21	8	5	490.3 (50.0)
XT-10	22	15	12	8	3	147.1 (15.0)
XT-18	40	18	14	6	4.5	1176.8 (120.0)
XT-22	40	22	18	6	4.5	784.6 (80.0)
XT-23	50	23	18	9	10	1961.3 (200.0)
XT-26	50	26	22	8	5	980.7 (100.0)
WT-10	30	11.5	10.5	6	4	1471.0 (150.0)
WT-12	35	14	13	6	4	1961.3 (200.0)
X-10	26	-	10	10	-	245.2 (25.0)
GP-30	30	-	14	10	-	490.3 (50.0)

HANDLING INSTRUCTIONS

- Please note that the product must be avoided adhesion such as strong acid, strong alkali, organic solvent, fat and oil.
- Please be sure to attach the device with equable loading to compression direction
- The product must be protected from spark like welding.
- The other "bush" series could be the better option as metal fitting may get rusty when X-10, WT-10/20 are used at outside.
- TB/B/GB types need washer(s) separately when using those devices.

Note:

This brochure may be revised without prior notice. We apologize in advance for any inconvenience this may cause.

FEATURE

Water Hammer Absorption

It can be directly connected in the piping that is different from the accumulator type. It has excellent water hammer absorption effect without inhibiting the fluid flow.

Easy Installation

It can be installed easily and freely even in a narrow space. Please choose a direction for installation according to the site situation.

OPERATING CONDITIONS AND PERFORMANCE

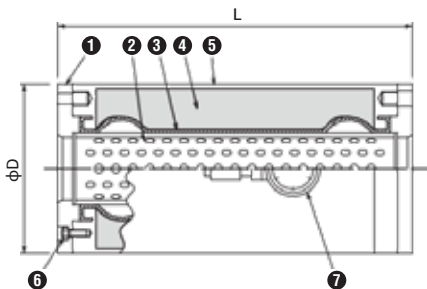
Maximum allowable working pressure: 1.6MPa {16.3kgf/cm²} and below

Maximum operating temperature: 60° and below

- Before using, check that the maximum working pressure and temperature are within the working range.

- Perforated Pipe** — Small holes are drilled in the pipe regularly placed in series with the flow, and connected with the inner side of the elastic tube.
- Elastic Tube** — The tube outside of the perforated pipe uses the rubber with excellent elasticity and airtightness, and the both ends are fixed with flanges.
- Air Chamber** — There is an air chamber between the tube and the casing. The 0.5MPa air is filled in advance in the air chamber.

STRUCTURE



No.	Parts	Material	No.	Parts	Material
①	Flange	SS400	⑤	Casing	S20C
②	Perforated Pipe	Stainless	⑥	Hex. Socket Head Cap Screw	S45C
③	Elastic Tube	CSM	⑦	Pressure Gauge	—
④	Air Chamber	Nitrogen			

- The above materials given here are for the standard products.

Flange compatible dimension	Standard	PN16	
	Changeable	○	JIS16K
○		JIS10K	
○		JIS20K	
○		ANSI 150LB	
Material	Standard	SS400	
	Changeable	×	FCD450
		○	SUS304
		○	SUS316
		×	PVC

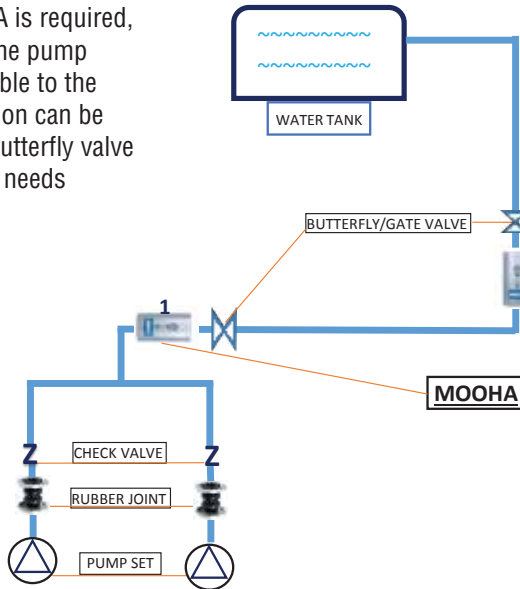
Note:

The contents of this catalogue are subject to change without notice.

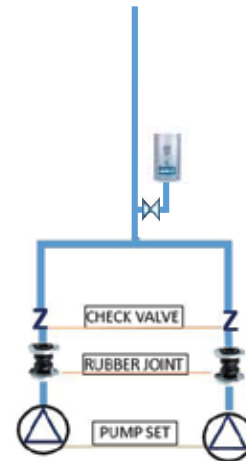


MOOHA INSTALLATION

If only 1 unit of MOOHA is required, it should be placed in the pump room/as close as possible to the pump (1). The installation can be vertical or horizontal. Butterfly valve function when MOOHA needs maintenance.



*MOOHA can also be installed off-line, as in the example below.



DIMENSIONS

Model	Nominal Dia. [mm]	Dimension [mm]		Capacity of Air Chamber [£]	Mass [kg]
		ϕD	L		
MH-25	25	127	156	1	7
MH-50	50	168	270	3	16
MH-80	80	194	380	6	28
MH-100	100	219	440	8	36
MH-125	125	273	560	16	66
MH-150	150	325	640	27	97

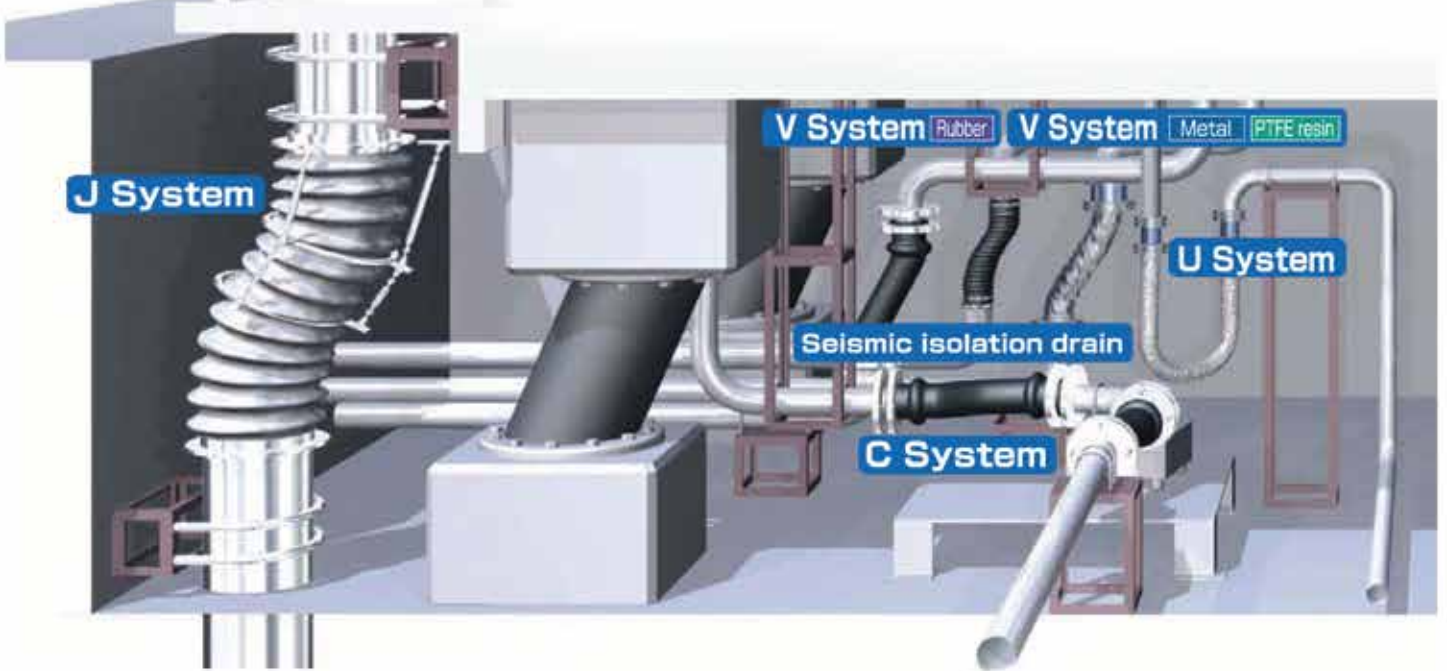
PERFORMANCE

When the pressure wave that generates water hammer passes through the Mooha, its pressure is transmitted to the tube through the pipe. The tube that keeps balance in the normal pressure is instantly swollen due to its elasticity, and serves to absorb the water hammer.



Note:

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F System



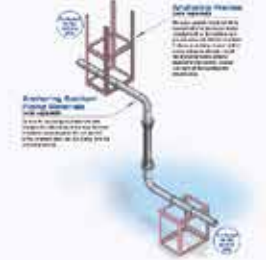
H System



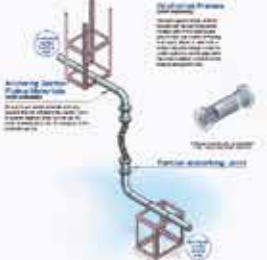
C System



V System



V System



Rubber

Registered with the Japan Water Works Association

Reinforcement layer (synthetic fiber)
Two layers are attached with bias in opposite directions. As a result, there is virtually no slippage in the axial or diametrical direction.

Reinforcing ring
As a flat type reinforcing ring is used, there is no need for concern about the severance and/or removal of the flange.

Filler (embedded rubber)
The structure of the inner surface is flat and uses special high polymer rubber. Therefore it is particularly suited for application for sewage water and powder.

Arch structure
with the smoothness of the inner surface, the arch structure of the outer surface and the shock damping effect of rubber. It can withstand repeated displacement as well as expansion and contraction.

Flange (JIS10K)
SS400 which is used as the standard material for the flange, can be changed to SUS304, SUS316, etc.

Rubber on the outer surface (flat structure)
Uses special synthetic rubber (high performance rubber). Adequate durability and reliability have been assured through a series of tests for tensile strength, hardness, creep over time, and fatigue.

F System

C System

H System

V System

Metal

※1 Type approved by the Fire Equipment and Safety Center of Japan (pressurized water supply 10K)

※2 Registered with the Japan Water Works Association

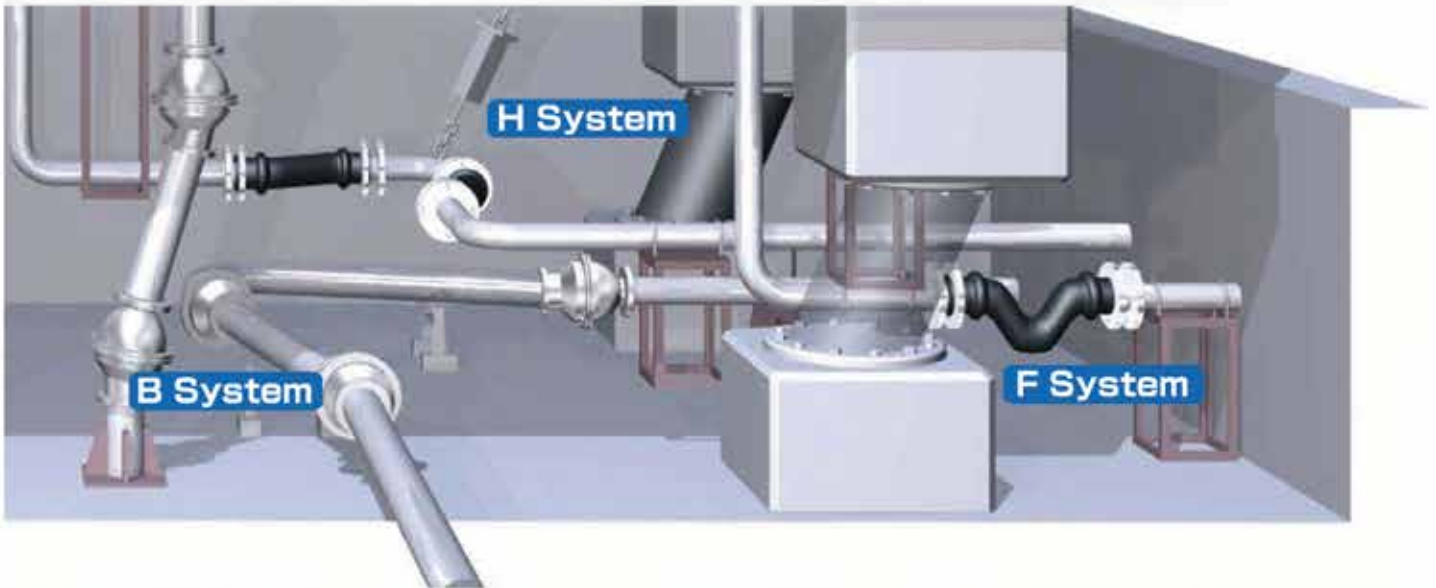
Tube
Omega tube is used.

Wetted Part
SUS is used.

• Please consult with us separately regarding cooling medium.

C System

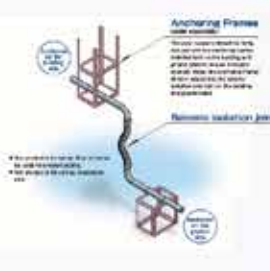
H System



U System



Seismic Isolation drain



J System



B System Vertical



B System Horizontal



Flange (JIS 10K)
Flange can be changed to 20K and other specifications, SS400, which is used as the standard material for the flange, can be changed to SUS304, SUS316, etc.

Blade
Maintains pressure resistance without losing flexibility.

※3 Type rated by the Fire Equipment and Safety Center of Japan (NO. 20)
※4 Type approved by the Fire Equipment and Safety Center of Japan (pressurized water supply 20K)

V System U System

PTFE Resin

Tube
PTFE tube is used. No change will occur over time.

Wetted part
PTFE resin is used.

Blade
Maintains pressure resistance without losing flexibility and protects the exterior.

Flange (JIS 10K)
SS400, which is used as the standard material for the flange, can be changed to SUS304, SUS316, etc.

C System H System



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