



OPERATION & MAINTENANCE
SPRING IMPACT

IMPORTANT – SAFETY INSTRUCTIONS

Compliance with safety standards, including OSHA and other federal, state and local codes or regulations, is the responsibility of the user of the conveyor installation. Placement of guards and other safety equipment in accordance with safety standards is dependent upon the area and use of the system. A safety study should be made of the conveyor application and guards should be installed wherever appropriate. *Safety Standards for Conveyors and Related Equipment* ANSI B20.1 is a guide for safe construction, installation, operation and maintenance of conveyors and related equipment.

The stated purpose of ANSI Standard B20.1 is to present certain guidelines and safety practices that will assist in establishing a safe work place. It is important to realize that the best design and safety features can be useless in conjunction with faulty maintenance and operating practices.

The broad scope of ASME/ANSI Standard B20.1 precludes its inclusion in this manual. However, it is highly recommended that those responsible for assuring safety in the installation, operation and maintenance of belt conveyors and equipment, acquire and use Standard B20.1 as a reference and guide.

INTENDED USE

The Spring Impact is designed to be used in areas of light to moderate impact loads. The flexibility and low profile of the design make the Spring Impact particularly suited for installation in tight loading zones under hoppers and chutes.

The continuous flexing during operation may cause the Spring Impact to shed material in locations where material build-up on rolls is a problem.

STORAGE AND PREPARATION

Reliable operation and long service life of this product depends upon the care taken during installation and operation. Periodic inspection and maintenance are required. The following information can be considered to be the minimum care recommended. Local environment, working conditions, and regulations may require more frequent servicing.

Prior to installation, check all product for evidence of damage due to mishandling. Check the bearing housings to make sure that they turn freely. Clear any foreign matter that may have accumulated during transit or storage. Foreign matter on the spring can cause damage to the belt.

Spring Impacts are usually shipped to the job site on skids. As the products often arrive well in advance of their installation, they should be stored under cover to protect them from exposure to the weather and other adverse conditions.

INSTALLATION

Remove mud, stones or any other debris from conveyor stringers and deck plate. Remove all burrs, dents and bumps caused by excessive weld spatter to allow the product to be securely positioned level with the plane of the conveyor and perpendicular to the line of conveyor belt travel.

Rotate each bearing housing to verify that it turns freely. Thoroughly inspect for any blocking or shipping wires that have not been removed. Visually inspect for any shipping or installation damage.

Ensure that there is sufficient clearance below the intended position of each Spring Impact to allow for the maximum spring deflection under load. The maximum deflection is shown in Dimension G in the DIMENSIONS section below. The end stands are designed so that the roll can be mounted in either a high or low hanging arrangement. The high arrangement allows for higher loads but will make the belt ride higher relative to the conveyor frame under light or no load and may be more difficult to install due to the increased spring tension.

The Spring Impact can be installed with the belt in place by sliding the roll into place under the belt from one side of the conveyor. Depending on how much clearance is available above the ends of the roll, it may be easier or necessary to mount the roll into the brackets before the brackets are bolted to the conveyor frame. Lifting the middle of the belt and the roll so that the roll is straight during installation will relieve some of the spring tension and make it easier to pull the ends of the assembly into place. Make sure that the middle of the roll is aligned with the middle of adjacent idlers and that the center line of the roll is perpendicular to the direction of belt travel. A misaligned or skewed roll will tend to push the belt off center during operation.

MAINTENANCE

Spring Impacts are shipped greased with an NLGI #2 lithium complex grease and ready for service. Each end should be regreased with a compatible grease with a sufficient amount and frequency to ensure that fresh clean grease is present at the bearings. The amount of grease needed can be determined by greasing until the grease being purged around the shaft is no longer dirty. The frequency of greasing should be adjusted so that the amount of dirty grease being purged is minimal. A suggested starting point for greasing intervals is shown to the right.

CONDITIONS	UP TO 120°F (50°C)	120° TO 200°F (50° TO 90°C)
Clean	2 to 6 Months	1 to 2 Months
Moderate	Monthly	1 to 4 Weeks
Dirty	Weekly	1 to 7 Days
Extremely Dirty	Daily	Every Shift

LOAD RATING

The maximum rated loads and maximum impact energy are listed in the tables below. The impact energy *WH* can be calculated by multiplying the weight of the lump in pounds by the height of fall in feet ($WH = \text{LumpWeight}(\text{lbs}) \times \text{FallHeight}(\text{ft})$).

Consult the tables below for the *WH* value for the number of springs used in the application. Consideration must be given that each spring is sharing the impact force for the largest lump that is dropped on the load zone.

If Spring Impacts are spaced 1 foot apart or less, the impact from larger lumps will be shared by multiple Spring Impacts, so the maximum impact energy will increase with additional springs.

HIGH MOUNTING POSITION

Belt Width	Max Load (lbs)	Max WH (ft-lbs)				
		1 Spring	2 Springs	3 Springs	4 Springs	≥ 5 Springs
24	240	40	80	125	165	210
30	310	85	170	260	350	440
36	440	155	320	490	655	825
42	530	180	375	575	775	975
48	730	330	700	1070	1440	1815
54	450	140	330	520	710	900
60	535	205	500	790	1085	1380

Contact PPI for recommendations for heavier applications

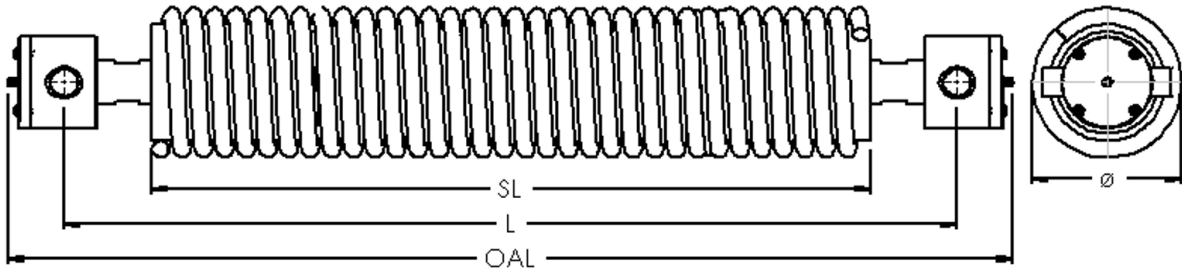
LOW MOUNTING POSITION

Belt Width	Max Load (lbs)	Max WH (ft-lbs)				
		1 Spring	2 Springs	3 Springs	4 Springs	≥ 5 Springs
24	180	20	40	65	85	110
30	230	40	85	135	180	225
36	330	95	195	300	400	505
42	365	90	195	305	410	515
48	500	165	360	560	755	950
54	380	95	230	370	505	640
60	400	100	260	425	585	750

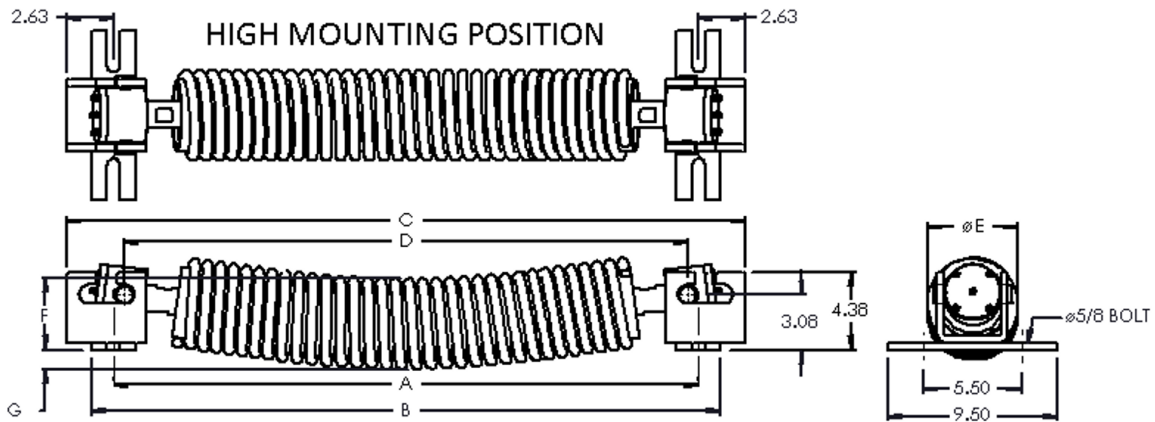
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DIMENSIONS

SPRING IMPACT ROLLER ONLY



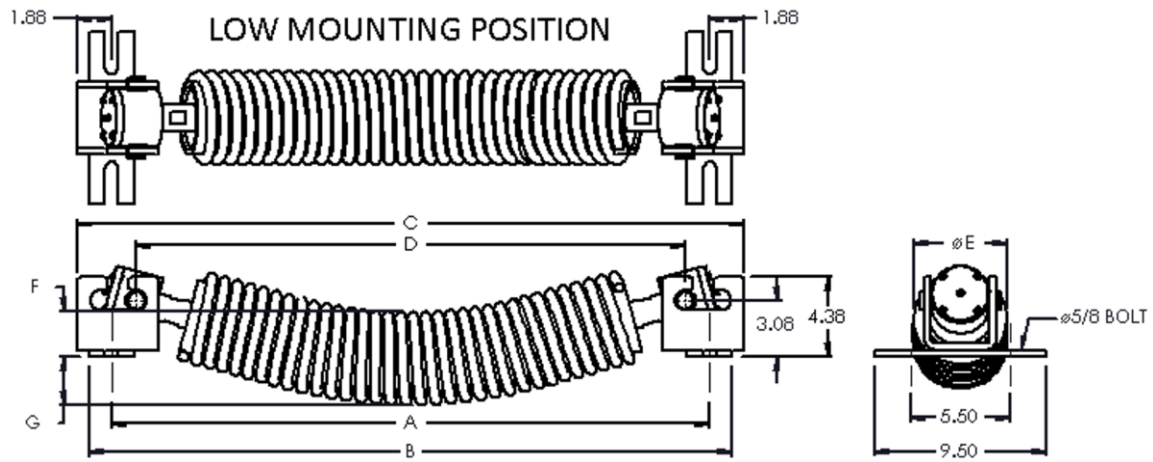
Belt Width	Part Number	SL	L	OAL	Weight (lbs)
24	33997-24	24.72	30.71	34.56	61.8
30	33997-30	29.35	35.34	39.18	68.1
36	33997-36	34.29	40.28	44.12	74.8
42	33997-42	40.46	46.45	50.29	96.6
48	33997-48	46.03	52.02	55.86	106.1
54	33997-54	52.75	58.74	62.58	117.5
60	33997-60	58.55	64.54	68.38	127.3



HIGH MOUNTING POSITION

Belt Width	Part Number*	A	B	C	D	ØE	No Load		Maximum Load		Weight (lbs)
							F	G	F	G	
24	33997-24A	33	35.5	38.25	31.75	5.13	4.06	1.06	-0.13	5.25	75
30	33997-30A	39	41.5	44.25	37.75	5.13	4.19	0.94	-2.69	7.81	81
36	33997-36A	45	47.5	50.25	43.75	5.13	3.88	1.25	-5.25	10.38	88
42	33997-42A	51	53.5	56.25	49.75	5.25	3.44	1.81	-5.56	10.81	110
48	33997-48A	57	59.5	62.25	55.75	5.25	2.75	2.50	-9.44	14.69	119
54	33997-54A	63	65.5	68.25	61.75	5.25	0.88	4.38	-9.25	14.50	130
60	33997-60A	69	71.5	74.25	67.75	5.25	-0.13	5.38	-13.25	18.50	140

* Product Shipped unassembled



LOW MOUNTING POSITION

Belt Width	Part Number*	A	B	C	D	øE	No Load		Maximum Load		Weight (lbs)
							F	G	F	G	
24	33997-24A	33	35.5	36.75	30.25	5.13	2.50	2.63	-0.44	5.56	75
30	33997-30A	39	41.5	42.75	36.25	5.13	3.19	1.94	-1.56	6.69	81
36	33997-36A	45	47.5	48.75	42.25	5.13	3.06	2.06	-4.44	9.56	88
42	33997-42A	51	53.5	54.75	48.25	5.25	2.44	2.81	-4.56	9.81	110
48	33997-48A	57	59.5	60.75	54.25	5.25	1.69	3.56	-7.75	13.00	119
54	33997-54A	63	65.5	66.75	60.25	5.25	-0.38	5.63	-9.00	14.25	130
60	33997-60A	69	71.5	72.75	66.25	5.25	-1.38	6.63	-11.13	16.38	140

* Product Shipped unassembled

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