

Ralphs-Pugh Conductive Urethane Hex Shaft Adapters

Question: What is the best way to protect my conveyor system against frame wear?

Answer: The Ralphs-Pugh Quiet Roller with Urethane Shaft Adaptors.

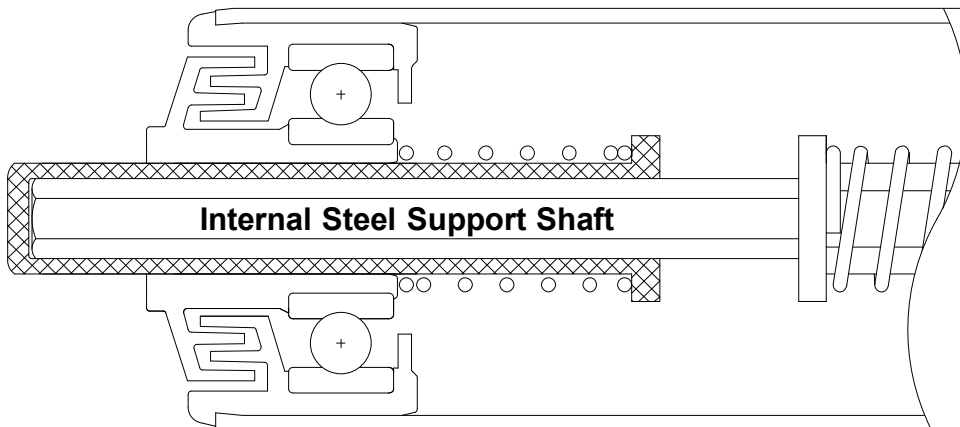
As conveyors achieve higher speeds they will vibrate due to roller tubes that are not perfectly round. Over time this vibration/chatter causes the conveyor frame and roller shafts to wear as illustrated in the pictures. The Ralphs-Pugh Urethane shaft adapter eliminates frame and shaft wear, and metal to metal contact.

Our “Quiet Roller” features the Urethane Shaft Adapter and ABEC-1 precision ball bearings. The advantages of urethane are wear, tear, abrasion resistance, and the reduction of noise by eliminating metal to metal contact. Coupled with ABEC-1 precision bearings, the “Quiet Roller” provides the ultimate in wear resistance and noise dampening. The result is a quiet conveyor with lower maintenance, repair, and operating costs than a system with standard steel shaft rollers.

To hear the difference call us for an on-site demonstration.

Limitations and Considerations

- Temperature:** Not recommended over 200°F.
Hydrolysis: Can withstand water for years at low temperature. Cannot withstand steam.
Chemicals: Strong acids and bases will degrade urethane rapidly. Inquire before ordering.
Loads: Maximum load per roller is 100 lbs.



Noise Reduction Data

The table below gives a comparison between stamped commercial bearings with standard steel shafts and precision bearings with urethane shaft adapters. An electric motor mounted under a bed of 6 rollers with urethane “O” rings was used for the drive. The frame was a standard 7/16” hex punched unit on 3” centers. Speeds from 100-600 FPM were tested. The noise generated from the drive itself was measured and recorded first. Rollers were then added and the noise level measured again with the drive included. Motor noise was then backed out to reflect only the noise generated by the rollers. Results were recorded using the A scale of the decibel meter. The rollers used for the test are described as follows:

Precision with Urethane Shaft Adapters:

Tube: Galvanized 1.9” diameter x .065” wall thickness; grooved for 3/16” urethane “O” rings
 Bearings: ABEC-1 precision ball bearing with C3 clearance in a conductive plastic housing
 Shaft: 7/16” hex urethane adapters with a 5/16” hex internal steel support shaft

Commercial with Carbon Steel Shaft:

Tube: Galvanized 1.9” diameter x .065” wall thickness; grooved for 3/16” urethane “O” rings
 Bearings: Stamped zinc plated commercial
 Shaft: 7/16” hex carbon steel shaft

FPM	Drive Only	Precision w/ Urethane	Commercial w/ Steel shaft	OSHA Threshold Limit
100	49.5	36	67	85
150	49.6	50	72	85
200	52.2	51	75	85
250	52.2	53	77	85
300	52.8	53	79	85
350	52.8	53	81	85
400	53.5	53	82	85
450	54	55	84	85
500	55	55	85	85
550	55.6	56	86	85
600	56	56	87	85

Results vary with different types of drives, varying types of building construction and proximity of conveyor to walls as examples. In every test conducted in a controlled atmosphere, precision rollers with urethane shaft adapters have reduced noise levels a minimum of 9 decibels.

Your results may vary depending on a variety of variables unrelated to the roller. This data is offered as an example and guideline only.



Ralphs-Pugh Co.

Conveyor Roller and Component Specialists for over 50 years



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Urethane Hexagonal Shaft Adapter FAQ

(Frequently Asked Questions)

Q. Why should I consider conductive urethane hexagonal shaft adapters?

A. Two reasons: a) To eliminate shaft and frame wear caused by traditional metal to metal contact and b) to eliminate noise caused by shaft vibration. Urethane has exceptional wear resistance and noise deadening properties.

Q. My frames are older and vary in width, what will a urethane adapter do for me?

A. They will prevent additional wear to the punched hole, greatly reduce the noise level of your system and due to 5/8" standard shaft extensions no further deterioration of the frame should occur. Ralphs-Pugh rollers do not use preload to "lock" the shaft into the punched hole. Our tests indicate that this locking style roller can increase wear and deterioration of frames.

Q. What is the maximum load rating for a roller with conductive urethane hexagonal adapters?

A. The maximum load rating for this style roller is 100 pounds. However, the concept of this adapter is to eliminate noise and wear which are typically caused by shaft vibration in the frame at higher speeds and with lighter loads.

Q. What does conductive mean?



A. When rollers are in motion they build up a static electrical charge. Non-conductive materials do not have the ability to dissipate this electrical charge. Persons coming into contact with the frame can receive painful shocks as this charge now dissipates through the person. Conductive materials allow this static charge to safely pass from the roller to the frame and eventually to ground.

Q. Are there any applications where these adapters shouldn't be used?

A. Yes - In areas where the temperature exceeds 200 degrees Fahrenheit or where steam is used for cleaning and around strong acids or bases.

Q. Can I use these adapters around water?

A. Yes - Urethane can withstand water for years at low temperatures (less than 200 degrees Fahrenheit)

Q. What is inside this adapter to support the load? (i.e. are my mechanics safe on this roller?)

A. The adapter is supported by an internal 5/16" hexagonal steel shaft that extends to within 1/8" of the end of the adapter.

Q. Can this adapter be used in accumulation conveying systems?

A. Yes, the exceptional wear resistance of urethane makes it an ideal choice for this application (similar to urethane engine mounts) with the added benefits of sound reduction and no traditional metal to metal contact causing frame and shaft deterioration.

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Ralphs-Pugh products - 1-800-486-0021

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