

INTERROLL®

WE MAKE THE WORLD MOVE

CONVEYOR ROLLERS

Product Finder

	Series	Description	Bearing				Load Rating		
			Commercial	Precision	Stainless	Journal	Light Duty (up to 40 lbs.)	Medium Duty (up to 100 lbs.)	Heavy (100lb
1 Conveyor Rollers	1100	Light Duty			●		●		
	1200	Metal	●					●	●
	1450	Heavy Duty		●					●
	1500	Journal Bearing				●	●	●	
	1700	Universal	●	●	●			●	●
	1800	Precision Bearing		●					●
	1900	Heavy Duty Welded							●
2 Fixed Drive Conveyor Rollers	3400	Sprocketed Drive		●				●	●
	3500	Sprocketed Drive	●					●	●
	3900	Heavy Duty Welded Drive		●					●
3 Friction Accumulating Conveyor Rollers	3800	Drive Rollers	●			●			
4 Tapered Conveyor Rollers	1300	Tapered	●						●
	1350	Tapered			●				●
	1400	Tapered		●					●

	Series	Description	Weight		
			Light Duty (up to 15 lbs.)	Medium Duty (up to 25 lbs.)	Heavy (25 lb
5 Other Components	2160	Plastic Conveyor Wheels	●		
	2190	Plastic Conveyor Wheels		●	
	2200	Metal Conveyor Wheels			●
	2300	Flanged Conveyor Wheels		●	
	2500	OMNI Wheels		●	●
	2530	OMNI Wheels			●
	5500	Medium Duty Ball Transfers		25-100 lbs.	

General Technical Information

Roller Application Data Sheet

Metric Conversion Table

	Environment			Speed		Tube Sleeve			Special Features			
Duty s. +)	Washdown	Sealed Bearings	Humid, Moist	Gravity	High Speed	Polyurethane	Soft PVC	O-ring groove	Repels Ink Buildup	Taperhex shaft configuration	Diameter (inches)	Page
	●		●	●		●	●	●			.62, .75, 1.12, 1.18, 1.90	16
				●		●	●	●			.75, 1.00, 1.38, 1.90, 2.50, 3.15	22
		●			●	●	●	●			2.50, 3.50	26
	●		●	●							1.12, 1.18, 1.90, 2.50, 3.50	30
	●		●	●	●	●	●	●	●	●	1.38, 1.90, 2.50, 3.15, 3.50	34
					●						2.00, 2.50, 3.50	42
											2.50, 3.50, 4.00, 5.00	46
					●						1.90, 2.50	52
					●						1.90, 2.50	54
					●						2.50, 3.50, 4.00, 5.00	56
	●						●	●			1.90, 2.50	62
		●	●					●			2.80, 3.06, 3.31, 3.56, 3.81, 4.06, 4.31	68
	●		●	●				●			2.80, 3.06, 3.31, 3.56, 3.81, 4.06, 4.31	68
			●		●			●			2.80, 3.06, 3.31, 3.56, 3.81, 4.06, 4.31	68

Duty . +)	Humid, Moist		
	●		74
	●		75
			76
			77
			78
			79
			80

	2
	82
	84

The Key to Efficient Materials Handling

The issue of materials flow is of vital importance within today's fast-paced business environment. The areas of production and sales are faced with complex procurement and distribution networks, highly diversified product ranges and customer requirements that call for tailor-made solutions. Indeed, against the backdrop of shorter innovation cycles, increasingly complex manufacturing processes and new channels of distribution, materials flow has become a critical success factor. Globalisation has brought about substantial changes when it comes to the handling and delivery of goods – with far-reaching consequences for companies' logistical processes. "Internet fulfillment" has forced companies to embrace the values of customer-orientated flexibility and greater efficiency. The products of the Interroll Group play a pivotal role in helping companies meet the new challenges of materials handling.

Our main focus within the Drives and Rollers unit is on the individual parts which make up an overall product offering that is more than convincing. Indeed, components are our core competence. As an integral part of Interroll's cutting-edge solutions, our conveyor rollers contribute to the overall efficiency and quality of materials handling – in all industries, throughout the world. Conveyor rollers, multi-directional Omni-wheels and ball transfers – Interroll Drives and Rollers stands for poetry in motion. Our systems move, convey, accumulate, feed and turn – day in, day out; whether motorized or in the form of gravity rollers, accumulating conveyor systems or tapered rollers. Interroll components form the basis for efficient materials handling.

Interroll Drives & Rollers.
A Business Unit of the
Interroll Worldwide Group.

www.interroll.us

General Technical Information

This catalog contains components offering solutions to a number of conveying problems. Our design facilities and material handling expertise are at your disposal for special tasks and applications. This catalog will assist you in answering questions on determining how goods can be conveyed efficiently, economically and safely.

Initially you should determine the dimensions, weight and other characteristics of the goods to be conveyed. It is also very important to know if special ambient conditions apply.

Therefore please have the following information:

- length, width and height of product to be conveyed
- unit load weight
- the condition of the product in general
- the condition of the carrying surface of the product
- are there special environmental conditions: (i.e., humidity, extreme temperatures, chemical influences)?
- is static electricity likely to be a problem?
- is the conveyor installation to be powered or gravity operated?

To guarantee trouble free transportation of conveyed goods, a minimum of three rollers must be in contact with the carrying surface of product at any time.

The length of the rollers (roller length = RL in this catalog) should be determined. This is usually the “width of the conveyed material plus two inches (2").” The weight of the conveyed products should be distributed evenly on as many rollers as the admissible load capacity of the individual rollers will allow (see load capacities of Interroll conveyor rollers). This may require that more than three rollers should be in contact with the goods being conveyed.

Equally important is the condition and construction of the product to be conveyed, especially the carrying surface which is in direct contact with the conveyor. For example, plastic tote boxes move easily on rollers or wheels, because of their rigid bottom surface. Soft cardboard cartons have a higher starting resistance, than that for plastic totes. Therefore closer roller/wheel centers and/or larger roller/wheel diameters should be chosen. When transporting pallets, because of irregularities of the boards or specific properties of the pallet, from one/third to two/thirds of the rollers carry the load.

Warranty Information

Goods furnished are warranted to be free from all latent defects in material and workmanship under normal use and service for the time indicated below. For full Terms and Conditions please call 800-830-9680 or visit our website: www.interroll.us

The permissible loads for each roller are shown in the tables for the appropriate series of roller. Roller load capacity is largely influenced by roller length, load distribution and spindle attachment.

Rollers

- Two years from date of invoice.

Load Capacity of Interroll Conveyor Rollers

The load capacity of Interroll conveyor rollers depends on load capacity of the roller components: bearing, tube, or shaft.

To determine the roller load capacity, the load capacity of each component has to be compared and calculated in combination. The lowest value determines the load capacity of the roller. The load capacity values for each roller are listed along with the respective series description. The roller load capacity is critically influenced by the roller length, the load distribution and the shaft design.

When designing a conveyor installation, be aware that when using driven rollers, the calculated load capacity quite often is limited, not by load, but by such factors as the admissible tension of the drive chain or the torque of an accumulating system. Load capacity specifications depending on roller length have been based on the following conditions:
The load is considered to be a uniformly distributed load.

The allowable deflection of the tube can reach values of up to .02" for tubes of a diameter up to 1.18", up to .03" for tubes of a diameter between 1.18" and 3" and up to .04" for tubes with a diameter above 3".

The allowed tube stress amounts to 13450 psi for steel tube, 10100 psi for aluminum tube and 720 psi for PVC tube.

The bearing deflection angle should be limited to a maximum of 0°.40' (zero degrees, 40 minutes) for a deep groove ball bearing with C3 fit and a maximum of 1° for a commercial grade bearing.

The allowed shaft stress amounts to 19200 psi.

Roller tube group
The load capacity of the roller tube group itself is defined by two conditions:

the bending stress in the tube has to be less than the limit allowed for the material used.

$$\sigma\,\textbf{(tube)} = \frac{\textbf{Mb}}{\textbf{W}} = \frac{\textbf{F*RL}}{\textbf{8*W}} \leq \sigma\,\textbf{permissible}$$

The maximum deflection of the tube should not exceed the given value (Interroll calculations are based on the roller diameter, with a maximum deflection of 1 inch)

$$ft = \frac{5*F*RL3}{384*E*I}$$

The load capacity of the tube is influenced by the distribution of the load on its surface. The load distribution can vary from a concentrated loading up to a load uniformly distributed over the whole surface of the tube. The values given in the load capacity charts refer to the load distributed uniformly; concentrated load calculations are available on request.

The load capacity of the roller tube with load uniformly distributed is much higher than with a concentrated load. If point loading occurs close to the bearings, the data that is valid for the uniformly distributed load may be used.
Interroll supplies rollers with roller tubes made of copolymer, aluminum, carbon steel or stainless steel.

Shaft Group

For this group one condition determines the load capacity of the group:
The stress in the shaft must be less than the limit value fixed for the material.

$$\sigma\,\textbf{(shaft)} = \frac{Mb}{W} = \frac{F*(EL-RL)}{4*W} \leq \textbf{permissible}$$

There are a large number of possible shaft versions, but generally they may be divided into two categories: rigidly fixed in the conveyor frame or floating. Spring loaded shafts or shafts with milled flats are floating and fast to install. Male and female threaded shafts are rigidly secured directly to the conveyor frame, providing a higher load capacity for the roller. Load capacity is also influenced by the strength and rigidity of the conveyor frame.

Assembly load capacity values for shaft assemblies are shown for both floating and fixed mounting. The conditions for threaded attachment, in a theoretical sense, are only applicable for extremely rigid conveyor structures. When using less rigid structures, reductions of the given roller loading generally have to be made.

Bearing group

Interroll refers to the two bearings used in the roller, as well as the appropriate end caps, hardware and sealing elements as a bearing “group.” When selecting the appropriate bearing “group” the following points must be checked:

What is predominate, the static or dynamic load? (Static loading refers, for example, to a storage application whereas driven conveyor installations are viewed as dynamically loaded)
How fast is the conveyor speed? The conveying speed V in ft/sec. or ft/min. is primarily determined by the required conveying performance through-put.

The loading capacity of the bearing group is limited by the load capacity of the bearing and of the roller’s end cap. The deflection of either the shaft or tube can cause the bearing to wear out quickly. This deflection determines, in many cases, allowable loading on the roller. Admissible loading values have been determined empirically, and can be found in the technical data of the corresponding roller series.

Standard Assemblies for Rollers

Standard Types of Tube

Steel Tube
As tube material, steel has the greatest rigidity and resistance to deflection. Zinc plated, galvanized steel or stainless steel tubes provide protection against corrosion. Sprockets, gears or flanges can be welded onto the tube. Special designs are available including: grooved tubes for round belts; PVC sleeved tubes; and polyurethane sleeved tubes.

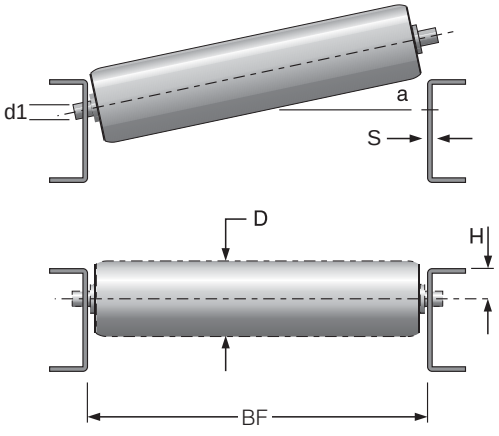
Aluminum tubes
Compared with the steel tube, an aluminum tube has reduced rigidity, approximately one-third of the flexural resistance of steel. An aluminum tube, however, weighs only 36% of a comparable steel tube. Aluminum tubes are corrosion resistant.

Plastic (Copolymer) tube
Assuming a comparable diameter, the load capacity of a steel tube is much higher than that of a PVC-copolymer tube. However, PVC tubes offer substantial advantages:

- sound insulation
- high impact resistance
- lightweight
- corrosion resistance
- easy to clean

Standard Shaft Designs

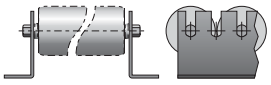
Spring loaded shafts
Spring loaded shafts are the simplest design, and are very quick and easy to install and remove. Spring loaded shafts are usually installed in gravity rollers for light and medium weight goods. The assembly holes in the frame should be at least .02" larger than the diameter of the shaft; the two frame members have to be rigidly connected with tie-bars to ensure parallelism. The shafts are not secured against rotation (except for hexagon shafts). Be sure that the between frame (BF) width is at least .12" wider than the overall roller length (RL). The installation space has to be enough to install the rollers in the side frames.



d1 - required hole diameter
S - frame wall thickness
H - distance between top of frame to center line of mounting hole
D - roller diameter
BF - distance between frame
d - roller shaft diameter

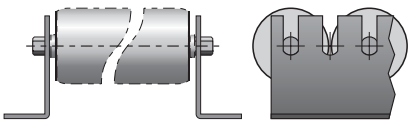
The circumstances and the formula shown in the illustration must be considered. An overall dimension of d1 to shaft diameter of approximately .02" is enough in most cases.

$$d1 \geq \frac{S \times (H + D/2)}{(BF - 1)} + d$$



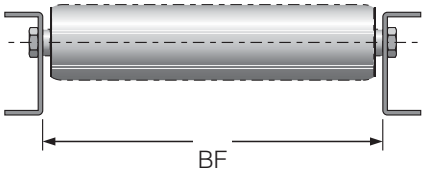
Taperhex shafts
The award winning TAPERHEX® Gold shaft is a patented spring-load design with self-adjusting hexagonal tapered shuttles. Tension from the spring causes the shuttle to lock in the conveyor frame's mounting holes. Roller rattling—the leading cause of roller shaft and side frame wear—is eliminated.

Shafts with milled flats
In this case we are talking about a floating or drop-in shaft, where the shaft is secured against rotation. The rollers can be easily assembled and disassembled utilizing an appropriate frame with open slots. The two frame members have to be rigidly spaced with tie bars, and the frame width has to be at least .12" wider than the overall roller length (RL).

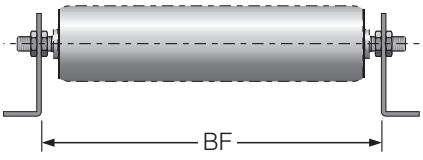


Female tapped shaft
Assembly with screws or bolts guarantees a very stable frame design, ideal for medium and heavy loads. Problems of shaft movement, with accompanying vibration and noise are completely eliminated. Roller shafts and frames work together, so that a higher load on the roller is possible compared with drop-in shafts.

In addition, the need and cost of tie bars is eliminated. Rollers are easily installed in an existing frame, if replacement is required. In addition, the need and cost of tie bars is eliminated. Rollers are easily installed in an existing frame, if replacement is required.



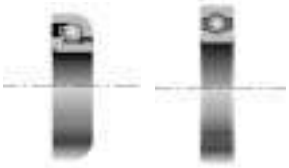
Male threaded shafts
This shaft design is installed in the frame with nuts. The characteristics are comparable to the female tapped design. However, the subsequent assembly and disassembly of the roller often cause problems.



Standard Types of Bearing

Various bearings are available for many Interroll conveyor rollers.
The most common types are:

Commercial grade bearing without ball retainer
This simply designed bearing has a relatively high load capacity. Compared to precision ball bearings, this bearing is extremely tolerant of shaft deflection.

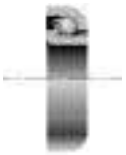


Commercial grade bearing in stainless steel
This bearing is comparable to the commercial grade bearing but is totally made of stainless steel. This bearing version has reduced speed ratings and load capacity. It is corrosion resistant.



Precision grooved ball bearing according to ABEC-1 specification
This is a standard ABEC-1 deep groove ball bearing series 6000 and 6200. This bearing version offers precise operation, reduced noise, higher load capacity and a long life span.





Precision ball bearing ZZ
This version is similar to the previously described precision ball bearing design, but has steel shields on both sides. The shields create a narrow sealing gap and do not make contact. The shields retain the grease inside the bearing and provide mild protection against entry of dirt and dust particles but not against liquids.



Precision ball bearing 2RS
This version is similar to the previously described precision ball bearing, but has seals on both sides practically sealing the bearing hermetically. However, running torque of the bearing is somewhat higher, a real consideration for gravity applications and marginally power driven conveyors.

Bearing lubrication
Oiled bearings are generally used in gravity applications requiring a low coefficient of friction. The temperature range of standard oil is 0° to 200° F.

Grease packed bearings are generally used in powered applications. The temperature range of standard grease is -10° to 225° F. They are suitable for higher humidity applications.

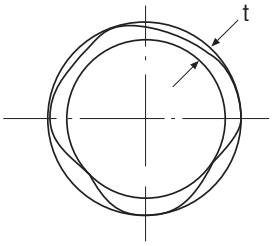
Interroll does not recommend the use of precision bearings in washdown applications.

Concentricity

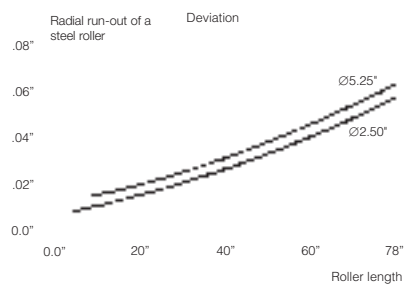
Interroll produces rollers from tubes following ANSI standards. This norm accepts certain divergence in the concentricity. Specifications on concentricity of tubes, all points of the measured surface have to be situated inside of two concentric cylinders. The center, respective to the axis of this cylinder is situated on the reference axis. The dimension “t” represents the distance between the two cylinders.
For example, according to specifications radial run-out (t) = .012" i.e. the pointer of a dial gauge can move within an area of .012".
The diagram determines the standard values for the maximum radial run-out of an Interroll conveyor roller. The given data is based on measured values.
Please note that for the tube area alone the concentricity tolerances are partly higher, so that in some cases the above mentioned data can be exceeded.

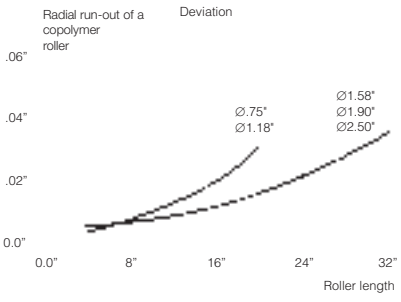
Rollers with polymer tubes should not exceed a given length, otherwise the radial run-out is proportionally larger. The following tube lengths should not be exceeded:

Tube Diameter	Tube Length
• .787"	14.00"
• 1.18"	21.00"
• 1.9"	23.00"
• 2.5"	31.00"
• 3.50"	39.00"



Note: Not applicable to series 1900 and 3900 welded rollers. Please contact the factory for more information.





Different Types of Industrial Plastics

Interroll uses plastic for many conveyor component parts. Plastic material has many advantages when compared to steel:

Sound reduction
Rollers with plastic components comply with the demands in internal transport for a quiet and pleasant working environment.

Light weight
Because the plastic tube is much lighter, the total weight of the conveyor installation will be substantially lower. Portable conveyors will be lighter and freight costs can be reduced.

Easy cleaning
In many processing applications, conveyor installations must be cleaned regularly. Interroll plastic rollers can be cleaned with most commercially available cleaning detergents (the temperature resistance of the plastic tube of up to 120°F should be taken into consideration as well as the use of stainless steel parts).

Shock resistant
An inherent property of most plastics is the ability to absorb shock loads or sudden impact without denting or deforming. The plastic materials used by Interroll are highly resistant to shock and to impact loads.

Corrosion resistance
Plastic does not rust. Bearings can be manufactured as well as the shafts from non-corroding steel. Therefore rollers with plastic tubes can run constantly in very wet and corrosive conditions.

Resistance to chemicals
The plastic materials used by Interroll have been selected to give optimum resistance against chemical attack. Plastic materials are resistant to grease, oil and petroleum products. We will be pleased to check special applications for you based on operating temperatures, chemical concentration, loading required, etc.

Approximate Figures

Property	Unit	Polyamide 6 (Nylon)	Polyoxymethylene (acetal)	Polypropylene	PVC	Polyethylene
Temp. Range	°F	–4 to + 212	–40 to + 212	14 to +176*	–40 to +122	0 to +120
Food Grade	-	yes	yes**	yes	no	no
Water Absorption	%	3 to 4	0.7	close to 0	close to 0	close to 0
Elasticity	PSI	203,042	362,575 to 435,090	116,024 to 188,539	319,066 to 435,090	105,000
Tensile Strength	PSI	7,252 to 8,702	9,717 to 10,152	2,900 to 4,786	6,961 to 7,977	3,500

It refers to an environmental temperature of 68° and a relative air humidity of 65%
For special applications please contact our engineering department.
* Copolymer 14 to 176°. Homocopolymer 32 to 176°
**Excluding POM with molybdenum sulphide

Temperature range

The ambient temperature has an impact on the mechanical features of any material. Changes of the mechanical features (load capacity, shock resistance) may occur. Optimal conditions prevail at room temperature. The listed temperature ranges are guide values, and may also be influenced by the following conditions:

Duration of the temperature influence
- type of mechanical load (direction of force, shocks, etc.)
- air humidity, solar radiation (UV)
- chemical influences
- component geometry

Properties and examples of the most common plastics:

Polyamide (PA) Nylon
- excellent mechanical properties
- high resistance to wear
- low friction
- scarcely any material fatigue
- good resistance to chemicals
- applications: sprocket heads, seals and bearing houses

Polypropylene (PP)
- low specific weight
- high resistance to heat
- good resistance to chemicals
- non-hydroscopic
- applications: wheels, seals, and bearing houses
- available in anti-static version

Polyvinyl Chloride (PVC)
- scratch proof
- impact resistance
- good resistance to chemicals
- applications: tubes for PVC rollers

Polyoxymethylene (POM) Acetal
- excellent mechanical properties
- high resistance to wear
- low friction
- high dimensional stability
- scarcely any water absorption
- used for parts with special precision requirements
- applications: toothed belt heads and slide bearings

Polyethylene (PE)
- excellent resistance to chemicals and ink
- applications: anti-litho roller tubes
- low specific weight

Types of Drive

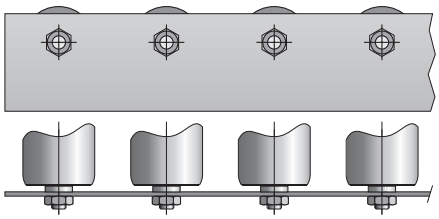
Gravity conveyor rollers
In many cases products need not be conveyed on driven rollers; they can be transported on gravity conveyors. It is very important that conveyor rollers function with the lowest possible friction and least starting resistance.

Driven rollers
Driven rollers are used in many applications and are available in many different designs. The drive can be chain or toothed belts, or with frictional drive using round or flat belts. Positive drive rollers allow no slip between the roller and drive and are subject to sudden "start and stop." The use of chain frequently creates noise, which can be considerably reduced when using a polyamid drive material instead of steel. Sprockets made of steel or plastic are both very strong. The weakest component of the drive arrangement is the chain. The chain's breaking load determines the maximum possible driving length of the conveyor.

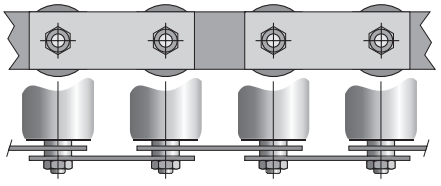
The use of frictionally engaged "slip" drives adds additional load on the rollers due to the pressure necessary to produce torque. For that reason friction drives are normally used only for the handling of light and medium weight goods.

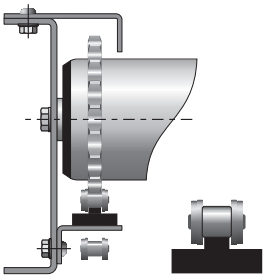
Positive drives
Interroll uses three types of positive drives:
- tangential drive roller by chain
- roller to roller drive by chain

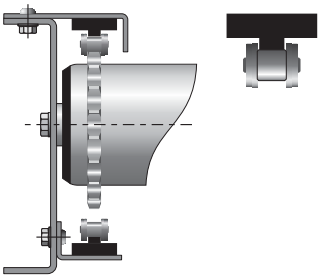
Tangential drive

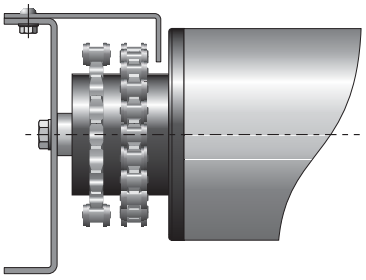


Roller to roller drive









Tangential drive
The tangential chain drive is efficient and easy to build. The length of chain is shorter than for roller to roller drive. This single chain powers all the rollers of one section. The chain engages the corresponding sprocket wheels, and is supported by a chain guiding profile made of low friction plastic, transferring the necessary driving force to a single roller sprocket tooth. The driving chain can be positioned to drive over or under the roller sprockets. The drive station must be installed to maintain the tension in the chain as tight as possible and is often equipped with a device for automatic adjustment of chain tension. Tension rollers at the drive station need to withstand normal conveyor loads plus extra vector forces. These forces should be considered carefully during roller selection. The length of conveyor, powered by a single drive unit, is determined by the breaking load of the chain, and by the weight of the load to be conveyed. In comparison to roller to roller conveyor, the tangential drive is easy to assemble.

Roller to roller drive
Assembly is relatively easy, but a certain number of restrictions must be considered when using this drive design. Chain guidance is not necessary, but roller spacing (distance from roller to roller) must be held to strict tolerances.

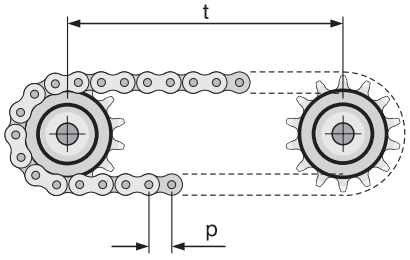
The maximum length of a conveyor powered with a single drive unit is calculated by the breaking load of the chain. The chain has to withstand the highest load at the drive. The drive unit should always be located in the middle of the conveyor, in order to optimize the tensile strength of the chain. Verify the load capacity of the rollers installed near the drive unit since those rollers function as pressure rollers.

Roller pitch
The possible roller pitch “t” for roller to roller drive is a multiple of the half chain pitch “p” of the corresponding chain, thus:

t = K p/2 [inch]
K = whole number
t min. = Max Sprocket Dia.

The total number of the chain links is given by the sum of the number of teeth “Z” of the sprocket and “K”; it should be an even number, otherwise an offset connecting link must be used. Interroll recommends the following tolerances for roller pitch “t”:

Chain pitch (#)	P (inch)	Tolerance for “t” (inch)	Breaking load (lbs)
35	.375	+0 /-.015	2,100
40	.500	+0 /-.025	3,700
50	.625	+0 /-.030	6,100
60	.750	+0 /-.032	8,500
80	1.00	+0 /-.039	14,500





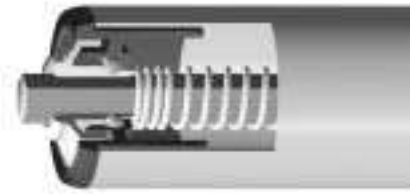
1 Conveyor Rollers

Series	Description	Bearing				Load Rating			Environment
		Commercial	Precision	Stainless	Journal	Light Duty (up to 40 lbs.)	Medium Duty (up to 100 lbs.)	Heavy Duty (100lbs. +)	Washdown
1100	Light Duty			●		●			
1200	Metal	●					●	●	
1450	Heavy Duty		●					●	
1500	Journal Bearing				●	●	●		●
1700	Universal	●	●	●			●	●	●
1800	Precision Bearing		●					●	
1900	Heavy Duty Welded		●					●	
	Application Data Sheet								



CONVEYOR ROLLERS 1

Sealed Bearings	Humid, Moist	Speed: Gravity	Speed: High Speed	Tube Sleeve: Polyurethane	Tube Sleeve: Soft PVC	Tube Sleeve: O-ring groove	Special Features: Repels Ink Buildup	Special Features: Taperhex shaft configuration	Standard Diameter	Page
	●	●		●	●				.62, .75, 1.12, 1.18, 1.90	16
		●		●	●	●			.75, 1.00, 1.38, 1.90, 2.50	22
			●			●		●	2.50, 3.50	26
	●	●			●				1.12, 1.18, 1.90, 2.50, 3.50	30
	●	●	●	●	●	●	●	●	1.38, 1.90, 2.50, 3.15, 3.50	34
		●							2.00, 2.50, 3.50	42
			●						2.50, 3.50, 4.00, 5.00	46
										82



Light Duty Conveyor Rollers Series 1100

(plastic bearings with stainless steel balls)

Bearing

Balls: Stainless steel

The bearings used are molded of either polypropylene or acetal plastic, according to size. They are provided with double labyrinth seals to prevent entry of dust, dirt and other contaminants. Balls are corrosion resistant type 302 stainless steel. Bearings may be washed or steam cleaned without damage and are suitable for operation in temperatures up to 150°F.

Due to the limited heat dissipation capacity of plastic ball bearings, Series 1100 rollers should not be used for high speed powered applications.

Tube

Diameters (inch).62, .75 (.78), 1.12 (1.18), 1.90.

A wide selection of tube material is available for this series. Selection is dependent upon application but where loads are light, PVC is recommended for maximum economy.

Shaft

Diameter: .192 .250 .312
Hexagonal: .312 .375 .437

Shaft materials include carbon steel, aluminum and stainless steel in a variety of sizes and mounting types.

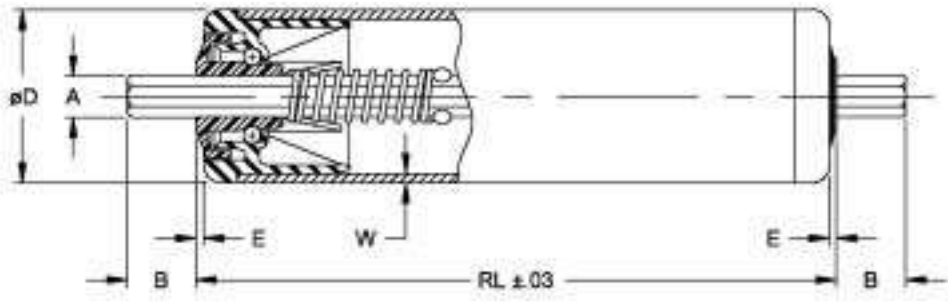
Application

These rollers are lightweight and free-rolling with a clean and attractive finish. The unique plastic design is virtually corrosion proof.
These rollers have wide application in light duty gravity conveyors, flow racks and machinery of all types.

Applications include fisheries, canneries, meat packing plants and commercial food equipment including dishwashing machinery and food-handling conveyors.

Ideal for interfacing with all types of packaging machinery.

Light Duty
Conveyor Rollers
Series 1100



(Typical RL=BF–.12)

Note: For Hex shafts, "A" dimension indicates flat-to-flat measurement.

	Part Number	D	W	E	A	B	Material	Finish	Remarks
Bearing	1.113.___.___-	0.62	.035	0.08	.192 dia		Acetal	White	Balls Stainless
	1.101.___.___-	0.75	.035 & .060	0.08	.250 dia		Acetal	White	Balls Stainless
	1.105.___.___-	1.12	.050 & .070	0.08	.192 dia		Acetal	White	Balls Stainless
	1.107.___.___-	1.12	.050 & .070	0.08	.250 dia		Acetal	White	Balls Stainless
	1.109.___.___-	1.12	.050 & .070	0.08	.312 dia		Acetal	White	Balls Stainless
	1.111.___.___-	1.12	.050 & .070	0.08	.312 hex		Acetal	White	Balls Stainless
	1.131.___.___-	1.90	.065	0.19	.437 hex		Polypro.	Gray	Balls Stainless
	1.133.___.___-	1.90	.110	0.19	.437 hex		Polypro.	Gray	Balls Stainless
	1.151.___.___-	1.90	.065	0.19	***		Polypro.	Gray	Balls Stainless
	1.153.___. -	1.90	.110	0.19	***		Polypro.	Gray	Balls Stainless
Tube	_.___.S16.___-	0.62	.035				Stainless	Polished	
	_.___.S19.___-	0.75	.035				Stainless	Polished	
	_.___.V20.___-	0.78	.060				PVC	Gray	Max. length 15", use
									with .75" dia. bearings
	_.___.A21.___-	0.75	.035				Aluminum	Anodized	
	_.___.A29.___-	1.12	.050				Aluminum	Anodized	
	_.___.V30.___-	1.18	.070				PVC	Gray	Max. length 22", use
									with 1.12" dia. bearings
	_.___.A49.___-	1.90	.065				Aluminum	None	
	_.___.G49.___-	1.90	.065				Steel	Galvanized	
	_.___.R69.___-	1.90	.065				Steel	Galvanized	Soft PVC Sleeve
	_.___.R09.___-	1.90	.065				Steel	Galvanized	Polyurethane Sleeve
	_.___.S49.___-	1.90	.065				Stainless	Polished	
	_.___.V50.___-	1.90	.110				PVC	Gray	

*** Use these bearings for the following shaft sizes: .312 dia, .312 hex and .375 hex.

Light Duty
Conveyor Rollers
Series 1100

Shaft

Part Number	D	W	E	A	B	Material	Finish	Remarks
_._____.___.C00-				.192 dia	.56	Steel	None	Spring Loaded
_._____.___.S00-				.192 dia	.56	Stainless	None	Spring Loaded
_._____.___.C07-				.192 dia	.75	Steel	None	Threaded 10-32
_._____.___.S07-				.192 dia	.75	Stainless	None	Threaded 10-32
_._____.___.C02-				.250 dia	.75	Steel	None	Threaded 1/4-20
_._____.___.S02-				.250 dia	.75	Stainless	None	Threaded 1/4-20
_._____.___.A03-				.250 dia	.56	Aluminum	None	Spring Loaded
_._____.___.C03-				.250 dia	.56	Steel	None	Spring Loaded
_._____.___.S03-				.250 dia	.56	Stainless	None	Spring Loaded
_._____.___.A04-				.250 dia	.56	Aluminum	None	Spring Loaded
_._____.___.C04-				.250 dia	.56	Steel	None	Spring Loaded
_._____.___.S04-				.250 dia	.56	Stainless	None	Spring Loaded
_._____.___.C12-				.312 dia	.75	Steel	None	Threaded 5/16-18
_._____.___.S12-				.312 dia	.75	Stainless	None	Threaded 5/16-18
_._____.___.C13-				.312 dia	.56	Steel	None	Spring Loaded
_._____.___.S13-				.312 dia	.56	Stainless	None	Spring Loaded
_._____.___.C20-				.312 hex	.56	Steel	None	Spring Loaded
_._____.___.S20-				.312 hex	.56	Stainless	None	Spring Loaded
_._____.___.C21-				.312 hex	.56	Steel	None	Spring Loaded, use with 1.9" dia. bearings
_._____.___.S21				.312 hex	.56	Stainless	None	Spring Loaded, use with 1.9" dia. bearings
_._____.___.C35				.375 hex	.56	Steel	None	Spring Loaded
_._____.___.C37				.437 hex	.56	Steel	None	Tapped 1/4-20 x 5/8 D
_._____.___.S37				.437 hex	.06	Stainless	None	Tapped 1/4-20 x 5/8 D
_._____.___.C40				.437 hex	.56	Steel	None	Spring Loaded
_._____.___.S40				.437 hex	.56	Stainless	None	Spring Loaded

Light Duty
Conveyor Rollers
Series 1100

Series 1100 load capacity in lbs.

Tube Dia. In. Material Shaft Dia. RL Inches	0.62 SS All	0.75 Alu All	0.75 SS All	0.78 PVC All	1.12 Alu All	1.18 PVC All	1.9 Alu .312 Dia.	1.9 SS All	1.9 Steel All	1.9 PVC All
4	15	20	25	20	27	27	79	79	79	40
8	15	20	25	11	27	27	79	79	79	40
12	15	20	25	5	27	16	79	79	79	40
16	15	20	25		27	5	79	79	79	40
20	10	18	22		27	2	79	79	79	36
24		11	15		27		77	79	79	20
28		7	10		27		65	79	79	
32					27		56	79	79	
36					27		52	79	79	
40							45	79	79	
44							43	79	79	
48							38	79	79	

Series 1100 Metal roller

Minimum Roller Lengths for Non-Grooved Rollers (all dimensions in inches)

Diameter	Spring Loaded	Fixed	Loose Shaft / No Shaft
0.62	3.25	3.00	3.00
0.75	3.25	3.00	3.00
1.12	*3.75	3.00	3.00
1.90	4.25	3.25	3.25

*3.25" For all shafts other than .312" (5/16") hex.

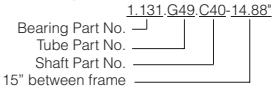
Sleeve Materials (all dimensions in inches)

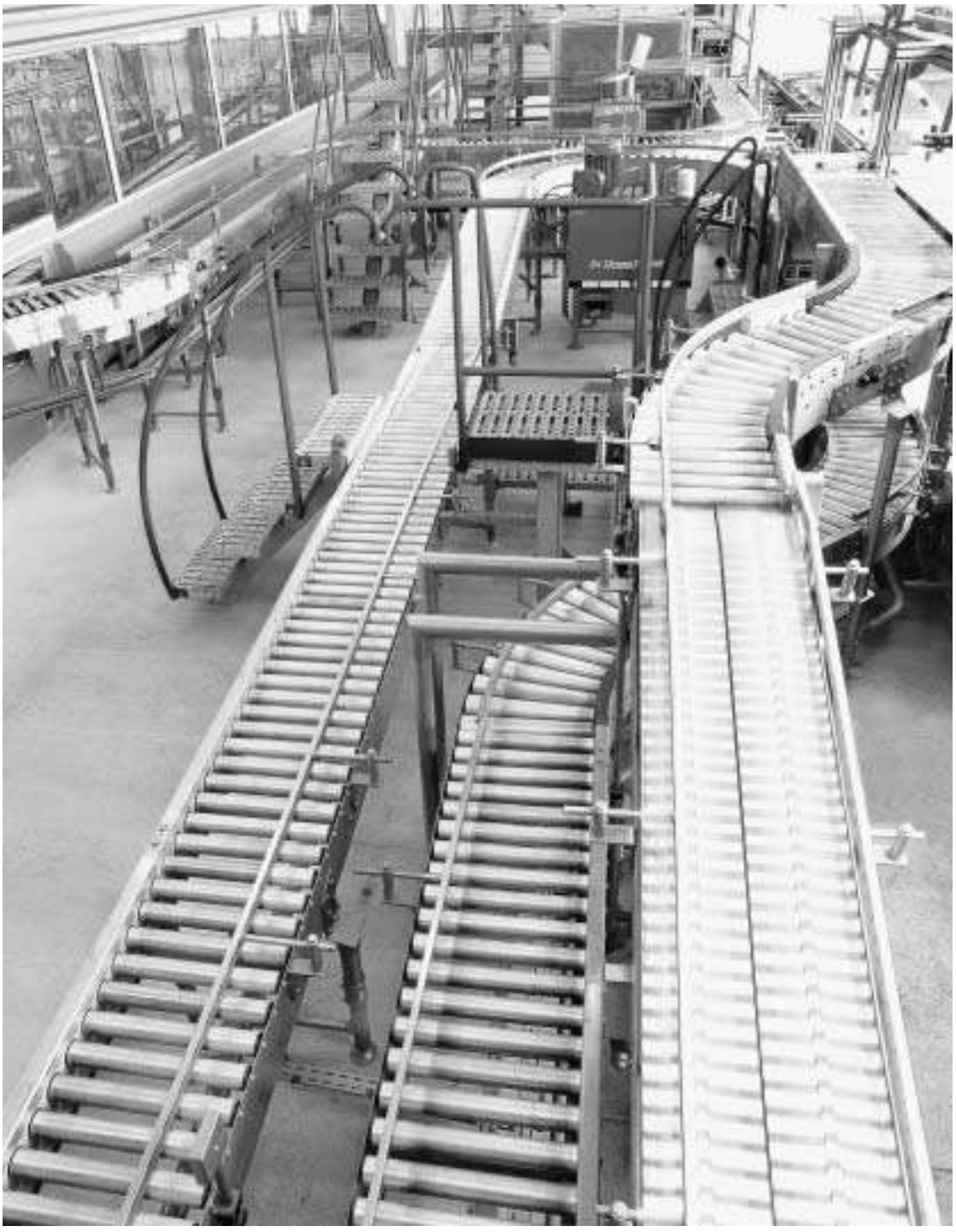
Material	Description
Soft PVC	Hardness, 63 shore A, thickness .08, Gray
Polyurethane	Hardness, 80 shore A, thickness .12, Orange

Speed Ratings

Bearing Type	Maximum Recommended Conveyor Speed
Commercial	15 fpm - gravity only

To order, use the following reference to form your ten-digit part number:






X200
FRONT SEAT
BUILD
F
FATA AUTOMATION



Metal Conveyor Rollers Series 1200
(commercial bearings)

Bearing
Balls: Steel
All rollers in this series are fitted with commercial grade steel ball bearings which are zinc-plated for mild corrosion resistance. Bearing races are burnished or coined, and then hardened, to provide smooth, low-torque operation.

Balls are made from bearing quality steel and are fully hardened and ground. Close fit between mating parts provides limited protection against entry of dust and dirt.

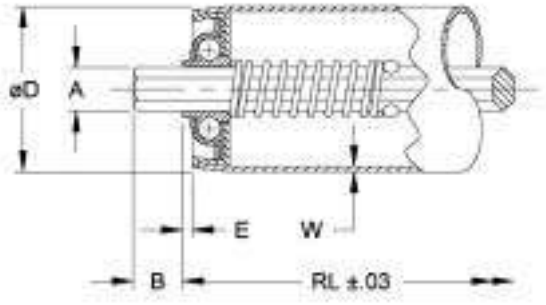
Tube
Diameters (inch) .75, 1.00, 1.38, 1.90, 2.50, 3.15.
Series 1200 rollers are supplied with metal tubes only. Steel tubing is low-carbon steel, AISI 1010-1015, electrically welded. Many of these rollers can also be supplied with stainless steel or aluminum tubes on special order.
Check with factory for availability.

Shaft
Diameter: .250
Hexagonal: .312, .437 and .687
Standard shaft metal is unplated, low-carbon steel.

Application
Series 1200 rollers are widely used in gravity and powered conveyors, packaging machinery, storage systems and cargo handling equipment.

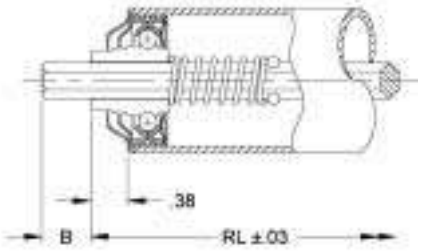
These rollers have been designed to provide maximum value in terms of load capacity versus cost.

Metal Conveyor Rollers Series 1200



Note: For Hex shafts, "A" dimension indicates flat-to-flat measurement.

* Heavy Wall Tube - See Tubes C66 and G66



(Typical RL=BF–.12)

	Part Number	D	W	E	A	B	Material	Finish	Remarks
Bearing	1.206.___.___-	.75	.035	.11	.250 dia		Steel	Zinc Plated	No grease or oil
	1.210.___.___-	1.00	.049	.06	.250 dia		Steel	Zinc Plated	No grease or oil
	1.211.___.___-	1.00	.049	.06	.312 hex		Steel	Zinc Plated	Lightly oiled
	1.212.___.___-	1.38	.049	.17	.250 dia		Steel	Zinc Plated	Lightly greased
	1.213.___.___-	1.38	.049	.17	.312 hex		Steel	Zinc Plated	Greased
	1.220.___.___-	1.90	.065	.11	.437 hex		Steel	Zinc Plated	Greased
	1.223.___.___-	1.90	0.65	.11	.437 hex		Steel	Zinc Plated	Lightly oiled
	1.226.___.___-	2.50	.120	.38	.687 hex		Steel	Zinc Plated	See Dwg. above, Greased
Tube	_.___.A18.___-	.75	.035				Aluminum	Anodized	
	_.___.A25.___-	1.00	.049				Aluminum	Anodized	
	_.___.G25.___-	1.00	.049				Steel	Galvanized	
	_.___.G36.___-	1.38	.049				Steel	Galvanized	
	_.___.S36.___-	1.38	.049				Stainless	Polished	
	_.___.R08.___-	1.38	.049				Steel	Galvanized	1 variable groove
	_.___.R49.___-	1.38	.049				Steel	Galvanized	2 variable grooves
	_.___.A48.___-	1.90	.065				Aluminum	None	
	_.___.R32.___-	1.90	.065				Aluminum	None	Soft PVC sleeve
	_.___.C48.___-	1.90	.065				Steel	None	
	_.___.G48.___-	1.90	.065				Steel	Galvanized	
	_.___.Z16.___-	1.90	.065				Steel	Galvanized	1 variable groove
	_.___.Z12.___-	1.90	.065				Steel	Galvanized	2 variable grooves
	_.___.J92.___-	1.90	.065				Steel	Mill	Soft PVC sleeve
	_.___.J73.___-	1.90	.065				Steel	Mill	Soft PVC sleeve w/1 variable groove
	_.___.P53.___-	1.90	.065				Steel	Galvanized	Soft PVC sleeve w/2 variable grooves
	_.___.P21___-	1.90	.065				Steel	Galvanized	Polyurethane sleeve
	_.___.P50.___-	1.90	.065				Steel	Galvanized	Polyurethane sleeve w/1 variable groove
	_.___.S48.___-	1.90	.065				Stainless	Polished	
	_.___.C66.___-	2.50	.120				Steel	None	See Dwg. above

Refer to Grooved Roller diagram on page 90 for indicating groove locations

Metal Conveyor Rollers Series 1200

	Part Number	D	W	E	A	B	Material	Finish	Remarks
Tube	_._____.P05._____-	2.50	.120				Steel	None	2 variable grooves
	_._____.G66._____-	2.50	.120				Steel	Galvanized	See Dwg above
	_._____.L06._____-	2.50	.120				Steel	Galvanized	2 variable grooves

Refer to Grooved Roller diagram on page 90 for indicated grooved location(s)

Shaft	_._____.C02-	.250 dia	.75	Steel	None	Threaded 1/4-20	
	_._____.C05-	.250 dia	.56	Steel	None	Spring-loaded	
	_._____.C22-	.312 hex	.56	Steel	None	Spring-loaded	
	_._____.C38-	.437 hex	.06	Steel	None	Tapped 5/16-18x5/8D	
						(removable)	
	_._____.C41-	.437 hex	.56	Steel	None	Spring-loaded	
	_._____.C66-	.687 hex	.75	Steel	None	Spring-loaded	

Tube Dia. In. Material Gauge Shaft Dia. RL Inches	0.75 Alu 20 0.25	1 Steel 18 .25/.312	1 Alu 18 .25/.312	1.38 Steel 18 0.312	1.9 Alu 16 0.437	1.9 Steel/SS 16 0.437	2.5 Steel 11 .687
Series 1200 roller load capacity in lbs.							
4	15	25	20	65	100	225	600
8	15	25	20	65	100	225	600
12	15	25	20	65	100	225	600
16	15	25	20	65	100	225	600
20	10	25	20	65	90	225	600
24	10	25	20	65	90	225	600
28	8	20	15	65	75	225	500
32	5	15	10	60	75	225	500
36	2	10	5	60	60	194	400
40		5	3	40	60	110	350
44		5	3	30	40	70	300
48		5	3	10	30	56	300

To order, use the following reference to form your ten-digit part number:

1.206.A18.C02-14.88"RL

- Bearing Part No.
- Tube Part No.
- Shaft Part No.
- 15" between frame

Metal Conveyor Rollers Series 1200

Minimum Roller Lengths for Non-Grooved Rollers (all dimensions in inches)

Diameter	Spring Loaded	Fixed	Loose Shaft/No Shaft
0.75	2.50	2.00	2.00
1.00	3.00	2.00	2.00
1.38	3.50	2.00	2.00
1.90	3.88	2.00	2.00
2.50	5.25	3.25	2.75

Minimum Groove Dimensions (all dimensions in inches)

Diameter	Minimum X & U Dimension	Minimum Y & V Dimension
1.38	.83	1.25
1.90	1.03	1.25
2.50	1.60	1.25
Material		Maximum X & Y or U & V
Stainless		Must not exceed 4.50

Sleeve Materials (all dimensions in inches)

Material	Description
Soft PVC	Hardness 63 shore A, thickness .08, Gray
Polyurethane	Hardness 80 shore A, thickness .12, Orange

Speed Ratings

Bearing Type	Maximum Recommended Conveyor Speed
Commercial	150 fpm



Heavy Duty Conveyor Roller Series 1450

Bearings

Balls: Precision ground chrome alloy steel. 6205ZZ precision bearings.

Conforming to ABEC-1 industry standards, they provide virtually infinite life in almost every conveyor application.

The bearing housings are made of either black polyamide 6 (Nylon) with a yellow polyamide shield, or conductive molded polypropylene with a polyamide shield. The sealing arrangement protects the ball bearings against coarse dust. Additionally, the use of technopolymer parts insures low noise operation.

Tube

Diameters (inch) 2.50" & 3.50"

The housing is swaged and locked in place in the roller tube. Smooth, radiused roller ends facilitate easy transfer of conveyed good, eliminating any possibility of snagging or scraping sensitive surfaces. The steel tubes have a wall thickness of .120" (11 gauge) and are supplied in either galvanized or mill finish.



Shaft

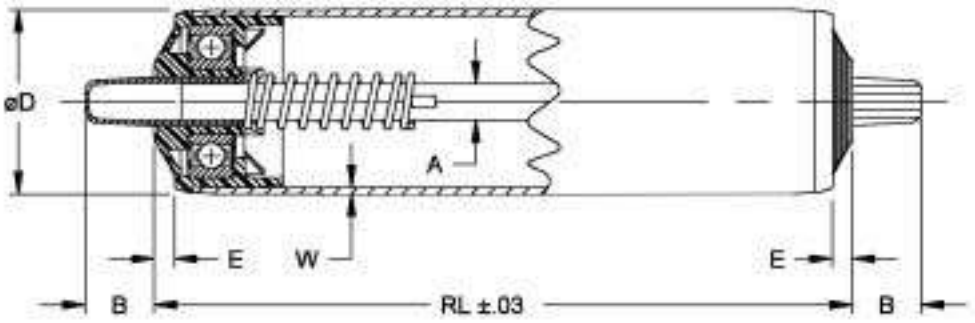
Diameter: .787" (20mm)
Hexagonal: .687" straight hex & .687" patented Taperhex

Shafts can be supplied with the sizes listed above and can be spring loaded or end drilled and tapped.

Application

This roller is suitable for conveying heavy items, particularly pallets and containers. The load capacity can be up to 1,124 lbs. (depending on conveyor width and speed).

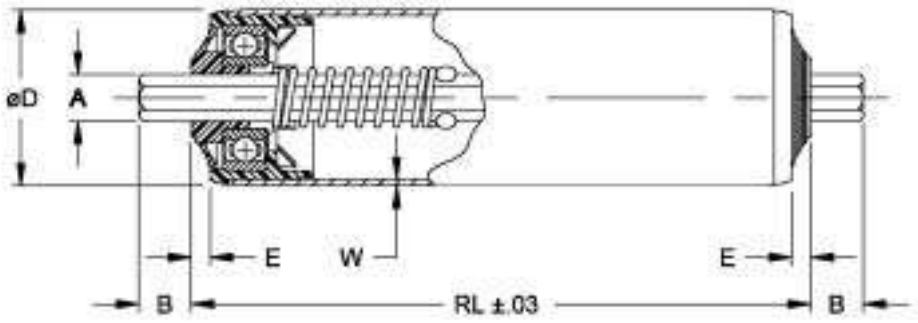
Heavy Duty Conveyor Roller Series 1450



Note: For Hex shafts, “A” dimension indicates flat-to-flat measurement.

	Part Number	D	W	E	A	B	Material	Finish	Remarks
Bearing	1.462.___.___-	2.50	0.120	0.19	.687 hex		Polypropylene	Black	6205ZZ
	1.465.___.___-	2.50	0.120	0.19	.687 taperhex		Polypropylene	Black	6205ZZ
	1.45Z.___.___-	3.50	0.120	0.19	.687 hex		Nylon	Black	6205ZZ
	1.455.___.___-	3.50	0.120	0.19	.787 dia		Nylon	Black	6205ZZ
Tube	_.___.P08.___-	2.50	0.120				Steel	Mill	
	_.___.P09.___-	2.50	0.120				Steel	Galvanized	
	_.___.J8B.___-	3.50	0.120				Steel	Mill	
Shaft	_.___.___.W54-				.687 hex	0.75	Steel	None	Spring loaded.
									Use with bearing 1.462
	_.___.___.G30-				.687 hex	0.75	Steel	None	Spring loaded.
									Use with bearing 1.45Z
	_.___.___.D45-				.687 Taperhex	1.00	Steel	None	Use for lengths of
									6.09" to 11.99"
	_.___.___.Y69-				.687 Taperhex	1.00	Steel	None	Use for lengths of
									12.00" to 88.87"
	_.___.___.P20-				.787 dia	0.06	Steel	None	Tapped 1/2-13 x .75 deep, fixed

Heavy Duty Conveyor Roller Series 1450



Load Capacity in lbs., based on a conveyor speed of 400 fpm

Tube Dia Shaft Dia. RL Inches	2.50 .687 hex	2.50 .687 Taperhex	3.50 .687 hex	3.50 .787 dia
8	800	900	1124	1124
12	800	900	1124	1124
16	800	900	1124	1124
24	800	900	1124	1124
32	800	900	1124	1124
40	675	900	913	1124
48	575	900	771	1122
55	512	836	682	1000

Minimum Roller Lengths for Non-Grooved Rollers (all dimensions in inches)

Shaft

Part Number	Minimum Roller Length
W54	4.88
D45	6.09
Y69	12.00
P20	3.00
000	3.00

Speed Ratings

Bearing Type	Maximum Recommended Conveyor Speed
Precision	500 fpm

To order, use the following reference to form your ten-digit part number:

1.462.P09.W54-14.88"RL

- 1.462 — Bearing Part No.
- P09 — Tube Part No.
- W54 — Shaft Part No.
- 14.88"RL — 15" between frame





Journal Bearing Conveyor Rollers Series 1500

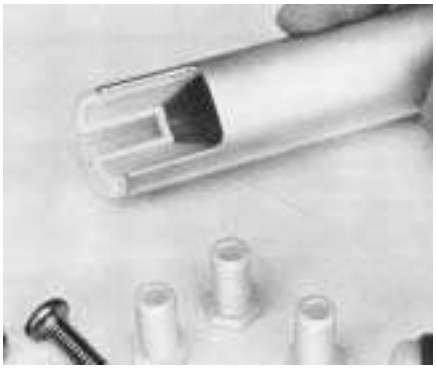
Bearings
Journal

Series 1500 rollers have been designed to operate without lubrication. However it is true with all journal bearing materials operating without lubrication, some wear will be experienced over long periods of time.

To insure the highest level of performance and maximum life, initial lubrication is recommended. A few drops of oil applied at installation assists seating and allows a good wear resistant bearing-to-shaft match to form. Initial lubrication can increase the life of the bearings up to ten times their unlubricated lifetime.

Tube
Diameters (inch) 1.12 (1.18), 1.90, 2.50, ***3.50***

A wide selection of tube material is available for this series. Selection is dependent upon application but where loads are light, PVC is recommended for maximum economy.



Shaft
Stub shaft

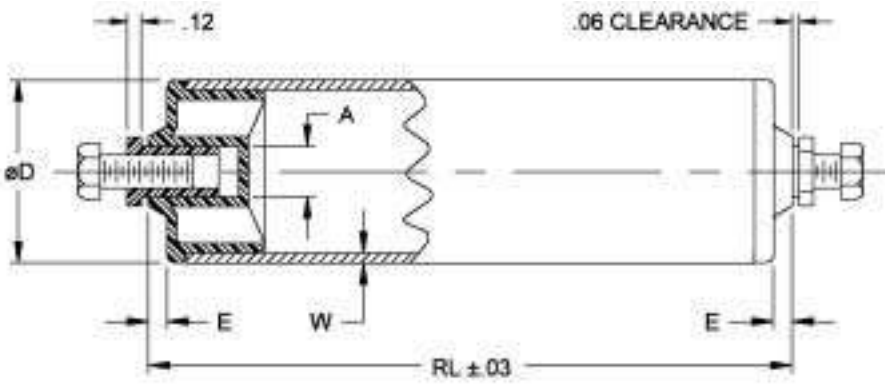
The design is based on the use of molded nylon stub shafts which are bolted to the conveyor frame and which act as cantilevered shafts. The end bearings of the roller engage the stub shafts and loads are transmitted through the roller to the stub shafts and frame. Molded of acetal plastic, the end bearings are unusually quiet in operation. Acetal bearings running on nylon stub shafts have a very low coefficient of friction, with excellent operating life.

Application

Typical applications include gravity conveyors in meat and dairy processing plants, and rollers for dish and tray conveyors in commercial kitchens.

Non-Standard

Journal Bearing
Series 1500



(Typical RL=BF–.37)

	Part Number	D	W	E	A	B	Material	Finish	Remarks
Bearing	1.505.___.___-	1.12	.050	.08	.380 dia		Acetal	White	Use A31, V31
	1.519.___.___-	1.90	.065	.19	.510 dia		Nylon Housing	Black	
	1.521.___.___-	1.90	.110	.19	.510 dia		Nylon Housing	White	Acetal Bearing
	1.525.___.___-	2.50	.065	.19	.510 dia		Nylon Housing	Black	Acetal Bearing
	1.527.___.___-	2.50	.125	.19	.510 dia		Nylon Housing	Black	Acetal Bearing
	1.536.___.___-	3.50	.280	.19	.510 dia		Nylon Housing	Black	Acetal Bearing
Tube	_.___.A31.___-	1.12	.050				Aluminum	Anodized	
	_.___.V31.___-	1.18	.070				P.V.C.	Gray	
	_.___.A49.___-	1.90	.065				Aluminum	None	
	_.___.G49.___-	1.90	.065				Steel	Galvanized	
	_.___.S49.___-	1.90	.065				Stainless	Polished	
	_.___.V50.___-	1.90	.110				P.V.C.	Gray	
	_.___.R13.___-	1.90	.110				P.V.C.	Gray	Soft PVC Sleeve
	_.___.G64.___-	2.50	.065				Steel	Galvanized	
	_.___.V64.___-	2.50	.125				P.V.C.	Gray	
	_.___.***V75***.___-	3.50	.280				P.V.C.	Gray	
Shaft	_.___.___.N89-				.370 dia	.12	Nylon	None	1/4-20 x 3/4 SS
									screw supplied
	_.___.___.N90-				.500 dia	.12	Nylon	None	5/16-18 x 7/8
									SS screw supplied

Note: Series 1500 rollers mount by use of stub shaft and screw. When ordering, roller length should be specified as .37" less than the distance between the mounting rails to insure sufficient clearance.

*When ordering spare parts: N89-P102, N064; N90-P087, N219.

Non-Standard

Journal Bearing
Series 1500

	Tube Dia. In. Material Gauge Shaft Dia. RL Inches	1.12 Alu 18 ALL	1.18 PVC 16 ALL	1.9 Alu 16 ALL	1.9 Steel 16 ALL	1.9 SS 16 ALL	1.9 PVC ALL	2.5 PVC 11 ALL	2.5 Steel 16 ALL	3.5 PVC ALL
Series 1500 roller load capacity in lbs.	8	75	60	75	100	100	75	100	100	100
	12	60	40	60	80	80	60	80	80	80
	16	30	25	30	75	75	30	75	75	75
	20	20	10	20	60	60	20	60	60	60
	24	10	5	10	50	50	10	50	50	50
	28				30	30		30	30	30
	32				15	15		15	15	15

Minimum Roller Lengths for Non-Grooved Rollers (all dimensions in inches)

		Stub Shaft Only
Series 1500 rollers	All Diameters	2.75"

Sleeve Materials (all dimensions in inches)

	Material	Description
Series 1500 rollers	Soft PVC	Hardness 63 shore A, thickness .08, Gray

Speed Ratings

	Bearing Type	Maximum Recommended Conveyor Speed
Series 1500 rollers	Journal	15 fpm – gravity only

To order, use the following reference to form your ten-digit part number:

1.505.A31.N89-14.63"RL

Bearing Part No.
Tube Part No.
Shaft Part No.
15" between frame





Universal Conveyor Rollers Series 1700

(commercial, stainless steel and precision bearings available)

Bearing
Balls: Commercial, Precision (6002) or Stainless Steel

All three styles of bearings are protected against the entry of dust and dirt by a special labyrinth seal design; the molded seal being configured to eject water in areas where moisture is a consideration.

Where speeds are low and cost considerations are paramount, use of commercial grade bearings is recommended. For higher speed applications where both noise and longevity are important parameters, precision bearings are the right choice. Although load carrying capacities are reduced when compared to other types, stainless steel bearings provide an extra measure of protection against corrosion and are frequently specified in food handling and washdown applications.

Tube
Diameters (inch). 1.38, 1.90, ***50mm***, 2.50, ***3.15***, ***3.50***

This series makes use of a resilient shock absorbing plastic housing which is swaged and locked in place in the roller tube. Smooth, radiused roller ends facilitate easy transfer of conveyed goods, eliminating any possibility of snagging or scraping sensitive surfaces.

Some sizes are also available with stainless steel, PVC, polyethylene and aluminum tubes. Please check factory for availability.

Shaft
Diameter: .500", ***12mm, 17mm***
Hexagonal: .437"

Shaft materials include carbon steel and stainless steel in a variety of sizes and mounting types.

Application

This is the universal roller for virtually every conveying application. Several alternate bearing designs are available providing users with a wide choice of load and speed capabilities. This versatile arrangement assures maximum cost effectiveness while providing unlimited design flexibility. Typical applications include gravity and powered conveyors.

Non-standard

Universal Rollers
Series 1700

	Part Number	D	W	E	A	B	Material	Finish	Remarks
Commercial Bearings	1.701.___.___-	1.90	0.065	0.19	.437 hex		Nylon	Black	Commercial bearings
	1.702.___.___-	1.90	0.065	0.19	.500 dia		Nylon	Black	Commercial bearings
	1.704.___.___-	1.90	0.110	0.19	.437 hex		Nylon	Black	Commercial bearings
	1.705.___.___-	1.90	0.110	0.19	.500 dia		Nylon	Black	Commercial bearings
	1.7AA.___.___-	50mm	1.5mm	0.19	8mm dia		Nylon	Black	Commercial bearings
	1.7AE.___.___-	50mm	1.5mm	0.19	11 hex		Nylon	Black	Commercial bearings
	1.7AC.___.___-	50mm	1.5mm	0.19	12mm dia		Nylon	Black	Commercial bearings
	1.707.___.___-	2.50	0.083	0.19	.437 hex		Nylon	Black	Commercial bearings
	1.708.___.___-	2.50	0.083	0.19	.500 dia		Nylon	Black	Commercial bearings
	1.710.___.___-	2.50	0.125	0.19	.437 hex		Nylon	Black	Commercial bearings
	1.711.___.___-	2.50	0.125	0.19	.500 dia		Nylon	Black	Commercial bearings
	1.713.___.___-	3.15	0.083	0.19	.437 hex		Nylon	Black	Commercial bearings
	1.714.___.___-	3.15	0.083	0.19	.500 dia		Nylon	Black	Commercial bearings
	1.716.___.___-	3.50	0.280	0.19	.437 hex		Nylon	Black	Commercial bearings
	1.717.___.___-	3.50	0.280	0.19	.500 dia		Nylon	Black	Commercial bearings
Stainless Bearings	1.750.___.___-	1.90	0.065	0.19	.437 hex		Nylon	Black	Stainless bearings
	1.742.___.___-	1.90	0.065	0.19	.437 hex		Nylon	Black	Stainless bearings w/food grade grease
	1.751.___.___-	1.90	0.065	0.19	.500 dia		Nylon	Black	Stainless bearings
	1.743.___.___-	1.90	0.065	0.19	.500 dia		Nylon	Black	Stainless bearings w/food grade grease
	1.753.___.___-	1.90	0.110	0.19	.437 hex		Nylon	Black	Stainless bearings
	1.744.___.___-	1.90	0.110	0.19	.437 hex		Nylon	Black	Stainless bearings w/food grade grease
	1.754.___.___-	1.90	0.110	0.19	.500 dia		Nylon	Black	Stainless bearings
	1.745.___.___-	1.90	0.110	0.19	.500 dia		Nylon	Black	Stainless bearings w/food grade grease
	1.7FX.___.___-	50mm	1.5mm	0.19	11 hex		Nylon	Black	Stainless bearings
	1.7FV.___.___-	50mm	1.5mm	0.19	12mm dia		Nylon	Black	Stainless bearings
	1.756.___.___-	2.50	0.083	0.19	.437 hex		Nylon	Black	Stainless bearings
	1.746.___.___-	2.50	0.083	0.19	.437 hex		Nylon	Black	Stainless bearings w/food grade grease
	1.757.___.___-	2.50	0.083	0.19	.500 dia		Nylon	Black	Stainless bearings
	1.747.___.___-	2.50	0.083	0.19	.500 dia		Nylon	Black	Stainless bearings w/food grade grease
	1.759.___.___-	2.50	0.125	0.19	.437 hex		Nylon	Black	Stainless bearings
	1.748.___.___-	2.50	0.125	0.19	.437 hex		Nylon	Black	Stainless bearings w/food grade grease
	1.760.___.___-	2.50	0.125	0.19	.500 dia		Nylon	Black	Stainless bearings
	1.749.___.___-	2.50	0.125	0.19	.500 dia		Nylon	Black	Stainless bearings w/food grade grease
	1.762.___.___-	3.15	0.083	0.19	.437 hex		Nylon	Black	Stainless bearings
	1.763.___.___-	3.15	0.083	0.19	.500 dia		Nylon	Black	Stainless bearings
	1.765.___.___-	3.50	0.280	0.19	.437 hex		Nylon	Black	Stainless bearings
	1.766.___.___-	3.50	0.280	0.19	.500 dia		Nylon	Black	Stainless bearings

Non-standard

Universal Rollers
Series 1700

Precision Bearings

Part Number	D	W	E	A	B	Material	Finish	Remarks
1.457.___.___-	1.38	0.049	0.19	.312 hex		Nylon	Black	6001ZZ
1.478.___.___-	1.38	0.049	0.19	.471 dia		Nylon	Black	6001ZZ
1.770.___.___-	1.90	0.065	0.19	.437 Taperhex	Nylon	Black	6002ZZ	
1.771.___.___-	1.90	0.110	0.19	.437 Taperhex	Nylon	Black	6002ZZ	
1.772.___.___-	1.90	0.065	0.19	.437 hex		Nylon	Black	6002-2RS
1.775.___.___-	1.90	0.065	0.19	.437 hex		Nylon	Black	6002ZZ
1.776.___.___-	1.90	0.065	0.19	.500 dia		Nylon	Black	6002ZZ
1.778.___.___-	1.90	0.110	0.19	.437 hex		Nylon	Black	6002ZZ
1.779.___.___-	1.90	0.110	0.19	.500 dia		Nylon	Black	6002ZZ
1.7L9.___.___-	50mm	1.5mm	0.19	11 hex		Nylon	Black	6002ZZ
1.7L7.___.___-	50mm	1.5mm	0.19	12mm dia		Nylon	Black	6002ZZ
1.75A.___.___-	50mm	1.5mm	0.19	17mm dia		Nylon	Black	6003ZZ
1.781.___.___-	2.50	0.083	0.19	.437 hex		Nylon	Black	6002ZZ
1.774.___.___-	2.50	0.083	0.19	.437 hex		Nylon	Black	6002-2RS
1.768.___.___-	2.50	0.083	0.19	.437 Taperhex	Nylon	Black	6002ZZ	
1.782.___.___-	2.50	0.083	0.19	.500 dia		Nylon	Black	6002ZZ
1.784.___.___-	2.50	0.125	0.19	.437 hex		Nylon	Black	6002ZZ
1.769.___.___-	2.50	0.125	0.19	.437 Taperhex	Nylon	Black	6002ZZ	
1.785.___.___-	2.50	0.125	0.19	.500 dia		Nylon	Black	6002ZZ
1.787.___.___-	3.15	0.083	0.19	.437 hex		Nylon	Black	6002ZZ
1.788.___.___-	3.15	0.083	0.19	.500 dia		Nylon	Black	6002ZZ
1.790.___.___-	3.50	0.280	0.19	.437 hex		Nylon	Black	6002ZZ
1.791.___.___-	3.50	0.280	0.19	.500 dia		Nylon	Black	6002ZZ

Tube

_.___.G38.___-	1.38	0.049			Steel	Galvanized	use with 1.457 bearing only
_.___.K32.___-	1.38	0.049			Steel	Galvanized	use with 1.478 bearing only - no shield
_.___.S38.___-	1.38	0.049			Stainless	Polished	use with 1.457 bearing only
_.___.F31.___-	1.90	0.065			Steel	Galvanized	Anti static option
_.___.R81.___-	1.90	0.065			Steel	Galvanized	
_.___.G10.___-	1.90	0.065			Steel	Galvanized	w/Foam insert
_.___.R82.___-	1.90	0.065			Stainless	Polished	
_.___.H74.___-	1.90	0.065			Stainless	Polished	Anti-static option
_.___.P60.___-	1.90	0.065			Stainless	Polished	1 variable groove & anti-static option
_.___.P61.___-	1.90	0.065			Stainless	Polished	2 variable grooves & anti-static option
_.___.K35.___-	1.90	0.065			Steel	Galvanized	1 variable groove & anti static option

Non-standard

Universal Rollers
Series 1700

Tube

Part Number	D	W	E	A	B	Material	Finish	Remarks
_._____M07._____-	1.90	0.065				Steel	Galvanized	2 variable grooves & anti static option
_._____K97._____-	1.90	0.065				Steel	None	2 variable grooves & anti static option
_._____K38._____-	1.90	0.065				Steel	Galvanized	PVC sleeve
_._____J74._____-	1.90	0.065				Steel	Galvanized	PVC sleeve w/1 variable groove
_._____R56._____-	1.90	0.065				Steel	Galvanized	PVC sleeve w/2 variable grooves
_._____J76._____-	1.90	0.065				Steel	Galvanized	Polyurethane sleeve
_._____J77._____-	1.90	0.065				Steel	Galvanized	Polyurethane sleeve w/1 variable groove
_._____J78._____-	1.90	0.065				Steel	Galvanized	Polyurethane sleeve w/2 variable grooves
_._____H56._____-	1.90	0.065				Steel	Galvanized	2 standard grooves & anti static option
_._____H57._____-	1.90	0.065				Steel	Galvanized	Polyurethane sleeve w/2 standard grooves & anti static option
_._____H58._____-	1.90	0.065				Steel	Galvanized	PVC sleeve w/2 standard grooves
_._____H59._____-	1.90	0.065				Stainless	Polished	2 standard grooves & anti static option
_._____H60._____-	1.90	0.065				Stainless	Polished	PVC sleeve w/2 standard grooves & anti static option
_._____H61._____-	1.90	0.065				Stainless	Polished	Polyurethane sleeve w/2 standard grooves & anti static option
_._____R79._____-	1.90	0.065				Aluminum	None	Anti static option
_._____J44._____-	1.90	0.110				Polyethylene	Yellow	Resists litho ink build up, max length is 26" RL
_._____R83._____-	1.90	0.110				PVC	Gray	
_._____M10._____-	1.90	0.110				PVC	Gray	2 variable grooves
_._____P59._____-	1.90	0.110				PVC	Gray	1 variable groove
_._____***G50.***_____-	50mm	1.5mm				Steel	Galvanized	Anti static option
_._____***H53.***_____-	50mm	1.5mm				Steel	Galvanized	1 variable groove & anti static option
_._____***H5.***_____-	50mm	1.5mm				Steel	Galvanized	2 variable grooves & anti static option
_._____***H5.***_____-	50mm	1.5mm				Steel	Galvanized	2 standard grooves & anti static option
_._____W71._____-	2.50	0.083				Steel	Galvanized	Anti static option
_._____B20._____-	2.50	0.083				Steel	Galvanized	1 variable groove & anti static option
_._____K10._____-	2.50	0.083				Steel	Galvanized	2 variable grooves & anti static option
_._____R84._____-	2.50	0.125				PVC	Gray	
_._____***W73.***_____-	3.15	0.083				Steel	None	
_._____***W72.***_____-	3.15	0.083				Steel	Galvanized	
_._____***R78.***_____-	3.50	.280				PVC	Gray	

Non-standard

Universal Rollers
Series 1700

Shaft

Part Number	D	W	E	A	B	Material	Finish	Remarks
_._____._____.Z62-				.312 hex	0.56	Steel	None	Spring-loaded
_._____._____.EAB-				.312 dia (8mm)	0.56	Steel	None	Spring-loaded
_._____._____.M70-				.437 hex	0.56	Steel	None	Spring-loaded
_._____._____.M71-				.437 hex	0.56	Steel	None	Fixed ends
_._____._____.X62-				.437 hex	0.56	Stainless	None	Spring-loaded
_._____._____.C38-				.437 hex	0.56	Steel	None	Tapped 5/16-18 x 5/8 Deep, removable
_._____._____.S38-				.437 hex	0.56	Stainless	None	Tapped 5/16-18 x 5/8 Deep, removable
_._____._____.U05-				.437 Taperhex	0.71	Steel	Brass flash plate	7.00" - 48.00"RL
_._____._____.U64-				.437 Taperhex	0.71	Steel	Brass flash plate	3.88" - 7.00" RL
_._____._____.U79-				.437 Taperhex	0.71	Steel	Brass flash plate	>48.00"RL
_._____._____.***Y39-***				.471 dia (12mm)	0.06	Steel	None	Tapped 5/16-18 x 5/8
								Deep, fixed
_._____._____.***LAE-***				.471 dia (12mm)	0.06	Steel	None	Tapped M8 x 15mm Deep, fixed
_._____._____.M72-				.500 dia	1.00	Steel	None	1/2-13 threaded, removable
_._____._____.M73-				.500 dia	0.06	Steel	None	Tapped 5/16-18 x 5/8 Deep, fixed
_._____._____.M74-				.500 dia	1.00	Steel	None	1/2-13 threaded, fixed
_._____._____.M75-				.500 dia	0.56	Steel	None	Spring-loaded
_._____._____.L37-				.500 dia	0.06	Stainless	None	Tapped 5/16-18 x 5/8 Deep, fixed
_._____._____.L57-				.500 dia	0.56	Stainless	None	Spring-loaded
_._____._____.***G31-***				.668 dia (17mm)	0.06	Steel	None	Tapped 3/8 x 16 x 3/4 Deep, fixed

Non-standard

Universal Rollers
Series 1700

Series 1700 commercial bearing load capacity in lbs.

Tube Dia. In. Material Gauge Shaft Dia. RL Inches	1.9 + 50mm Steel/SS 16 .437	1.9 + 50mm Steel/SS 16 .500	1.9 PVC .437	2.5 Steel 14 .437	2.5 Steel 14 .500	2.5 PVC .437	2.5 PVC .500	3.15 Steel 14 437	3.15 Steel 14 0.500	3.5 PVC .437	3.5 PVC .500
8	360	360	200	360	360	360	360	360	360	360	360
12	360	360	140	360	360	270	270	360	360	270	270
16	360	360	75	360	360	164	164	360	360	165	165
24	347	360	25	333	360	79	79	324	360	80	80
32	263	311	20	250	293	45	45	241	279	45	45
40	200	200		203	236	27	27	191	223	25	25
48	115	115		104	200	18	18	160	187	20	20
56	70	70		124	124			137	160		
62	47	47		83	83			119	140		

Minimum Roller Length for Non-Grooved Rollers (all dimensions in inches)

Diameter	Spring Loaded	Fixed	Loose Shaft/No Shaft
All except 1.38	4.25	2.50	2.25
1.38	3.50	2.25	2.25

Minimum Groove Dimensions (all dimensions in inches)

Diameter	Minimum X & U Dimension	Minimum Y & V Dimension
1.38	1.27	1.25
1.90	1.42	1.25
2.50	1.42	1.25

Material	Maximum Y & V or U & V Dimension
Stainless	Must not exceed 4.50
PVC	Must not exceed 4.50

Standard groove location = x = 2.15", y = 1.25"

Sleeve Materials (all dimensions in inches)

Material	Description
Soft PVC	Hardness 63 shore A, Thickness .08, Gray
Polyurethane	Hardness 80 shore A, Thickness .12, Orange

Speed Ratings

Series 1700 rollers

Bearing type	Maximum Permissible Conveyor Speed
Commercial	225 fpm
Stainless Steel	225 fpm
Precision	400 fpm

To order, use the following reference to form your ten-digit part number:

1.701.R81.M70-14.88" RL

- 1.701 — Bearing Part No.
- R81 — Tube Part No.
- M70 — Shaft Part No.
- 14.88" RL — 15" between frame

Universal Rollers
Series 1700

Series 1700 stainless steel bearing load capacity in lbs.

Tube Dia. In. Material Gauge Shaft Dia. RL Inches	1.9 + 50mm Steel/SS 16 .437	1.9 + 50mm Steel/SS 16 .500	1.9 PVC .437	2.5 Steel 14 .437	2.5 Steel 14 .500	2.5 PVC .437	2.5 PVC .500	3.15 Steel 14 .437	3.15 Steel 14 .500	3.5 PVC .437	3.5 PVC .500
8	180	180	200	180	180	180	180	180	180	180	180
12	180	180	140	180	180	135	135	180	180	135	135
16	180	180	75	180	180	82	82	180	180	83	83
24	173	180	25	167	180	39	39	162	180	40	40
32	132	155	20	125	146	23	23	162	180	40	40
40	100	100		101	118	14	14	96	111	13	13
48	57	57		52	100	9	9	80	93	10	10
56	35	35		62	62			69	80		
62	24	24		42	42			60	70		

Series 1700 precision bearing load capacity in lbs.

Tube Dia. In. Material Gauge Shaft Dia. RL Inches	1.38 Steel 18 .312/.471	1.9 + 50mm Steel/SS 16 .437	1.9 + 50mm Steel/SS 16 .500	1.9 PVC .437	2.5 Steel 14 .437	2.5 Steel 14 .500	2.5 PVC .437	2.5 PVC .500	3.15 Steel .437	3.15 Steel .500	3.5 PVC .437	3.5 PVC .500
8	100	450	450	200	450	450	360	360	450	450	360	360
12	100	450	450	140	450	450	270	270	450	450	270	270
16	75	344	403	75	338	392	164	164	331	385	165	165
24	75	230	270	25	223	259	79	79	216	250	80	80
32	65	176	207	20	167	196	45	45	160	187	45	45
40	60	144	169		135	158	27	27	128	149	25	25
48	50	115	115		113	133	18	18	106	124	20	20
56		70	70		99	115			90	106		
62		47	47		83	83			79	92		





Precision Rollers Series 1800
(precision bearings)

Bearing

Balls: Precision ground chrome alloy steel

Accuracy begins with the shielded deep-groove, chrome alloy, precision-ground ball bearings (ABEC-1). Cleanliness is insured by an external “dirtguard” with polyester felt contact seals which protects against contaminants. Axial play is eliminated by the use of bowed retaining rings on both ends of the shaft. Bearings are housed in a sintered iron housing produced to extremely “tight” tolerances for concentricity and fit.

Tube

Diameters (inch) ***2.00***, 2.50, ***3.00***, 3.50

Tubes are precision end-bored to assure proper housing fit and minimal runout.

Shaft

Diameter: ***.669***, .787, .984

Hexagonal: .437, .687

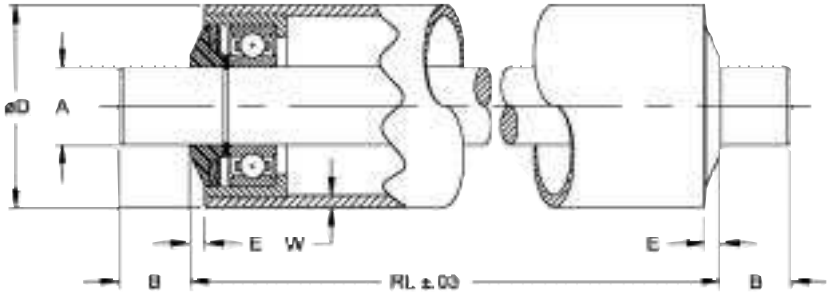
Two shafts are available; hex shafts are spring-loaded for typical mounting and for more precise applications, round shafts may be preferred. Round shafts are cold drawn steel with bearing seats precision-ground for accurate fit. Shaft ends can be milled, cross-drilled, tapped or threaded.

Application

Precise in every detail, these rollers are designed for heavy-duty applications requiring high load capacity and long life. These are well suited for high-speed powered installations where low noise levels are required. Typical applications include parts handling equipment, guided vehicles (AGV’s), transfer machines, high speed packaging lines and belt conveyors.

Non-standard

Precision Rollers
Series1800



(Typical RL = BF - .12)

	Part Number	D	W	E	A	B	Material	Bearing/Finish	Remarks
Bearing	***1.815*** .___.___-	***2.00***	.120	.19	.437 hex		Sintered	6203ZZ	Precision Bearings
	1.816 .___.___-	***2.00***	.120	.19	.669 dia		Sintered	6203ZZ	Precision Bearings
	1.817 .___.___-	***2.00***	.120	.19	.787 dia		Sintered	6204ZZ	Precision Bearings
									Use R94 tube
	1.825 .___.___-	2.50	.120	.19	.687 hex		Sintered	6205ZZ	Precision Bearings
	1.826. .___.___-	2.50	.120	.19	.787 dia		Sintered	6204ZZ	Precision Bearings
	1.827. .___.___-	2.50	.120	.19	.984 dia		Sintered	6205ZZ	Precision Bearings
	1.832 .___.___-	***3.00***	.180	.19	.687 hex		Sintered	6205ZZ	Precision Bearings
	1.835 .___.___-	***3.00***	.180	.19	.787 dia		Sintered	6204ZZ	Precision Bearings
	1.836.___.___-	***3.00***	.180	.19	.984 dia		Sintered	6205ZZ	Precision Bearings
	1.843 .___.___-	3.50	.180	.19	.687 hex		Sintered	6205ZZ	Precision Bearing
Tube	_.___.***R94.***___-	***2.00***	.120				Steel	None	Welded tubing use 1.817 bearing
	_.___.***R95.***___-	***2.00***	.120				Steel	Zinc-Plated	Welded tubing use 1.817 bearing
	_.___.***Z32.***___-	***2.00***	.120				Steel	None	Welded Tubing
	_.___.***Z33.***___-	***2.00***	.120				Steel	Zinc-Plated	Welded Tubing
	_.___.Z35.___-	2.50	.120				Steel	None	Welded Tubing
	_.___.Z36.___-	2.50	.120				Steel	Galvanized	Welded Tubing
	_.___.***Z39.***___-	***3.00***	.180				Steel	None	DOM
	_.___.Z64.___-	3.50	.180				Steel	None	Welded Tubing
Shaft	_.___.___.R60-				.437 hex	.56	Steel	None	Spring loaded
	_.___.___.C38-				.437 hex	.06	Steel	None	Tapped 5/16-18 x 5/8 deep, loose
	_.___.___.***D68-***				.669 dia	.06	Steel	None	Tapped 3/8-16 x 3/4 deep, fixed
	_.___.___.R62-				.687 hex	.75	Steel	None	Spring loaded
	_.___.___.C64-				.687 hex	.06	Steel	None	Tapped 3/8-16 x 3/4 deep, fixed
	_.___.___.B55-				.787 dia	.06	Steel	None	Tapped 3/8-16 x 3/4 deep, fixed
	_.___.___.R71-				.984 dia	.06	Steel	None	Tapped 5/16-18 x 3/4 deep, fixed

Note: For Hex shafts, “A” dimension indicates flat-to-flat measurement.
Non-standard

Precision Rollers Series 1800

Minimum Roller Lengths for Non-Grooved Rollers (all dimensions in inches)

Series 1800 metal roller

Diameter	Spring Loaded	Fixed
2.00	4.75	2.88
2.50	5.25	2.88
3.00	5.25	2.88
3.50	5.25	2.88

Speed Ratings

Bearing Type	Maximum Recommended Conveyor Speed
Precision	500 fpm

Series 1800 precision bearing load capacity in lbs.

Tube Dia. In. Material Gauge Shaft Dia. RL Inches	2 Steel 11 .437	2 Steel 11 .669	2 Steel 11 .787	2.5 Steel 11 .687	2.5 Steel 11 .787	2.5 Steel 11 .984	3 Steel 7 0.787	3.5 Steel 7 0.687	3.5 Steel 7 0.984
8	500	1013	1013	1013	1013	1013	1013	1013	1013
12	500	1013	1013	1013	1013	1013	1013	1013	1013
16	500	1013	1013	1013	1013	1013	1013	1013	1013
24	450	938	1013	1013	1013	1013	1013	1013	1013
32	350	738	774	774	1013	1013	774	1013	1013
36	250	527	533	533	1013	1013	533	1013	1013
40	175	378	383	383	797	797	383	797	797
44	140	281	284	284	590	590	284	590	590
48	100	214	216	216	450	450	216	450	450
52	80	167	169	169	351	351	169	351	351
60	50	108	108	108	225	225	108	225	225

To order, use the following reference to form your ten-digit part number:

1.815.Z32.R60-14.88"RL

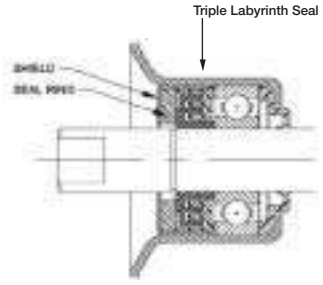
- 1.815 — Bearing Part No.
- Z32 — Tube Part No.
- R60 — Shaft Part No.
- 14.88"RL — 15" between frame



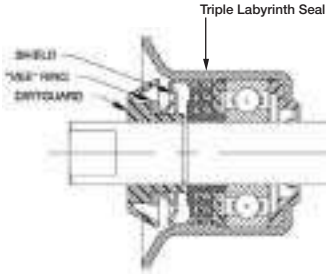


Heavy Duty Welded Conveyor Rollers Series 1940 Series 1960

(precision bearings)



Series 1.940 seal design



Series 1.960 seal design

Bearing

Balls: Precision ground chrome alloy steel

Series 1940 bearings are protected from contaminants by a series of elements as shown on left.

Series 1960 bearings utilize an additional dirtguard shield and seal. The shield, made of diecast zinc alloy, deflects large dirt particles from the bearing area. Smaller particles and liquids which work their way between the stationary dirtguard and the rotating steel shield are automatically ejected as the roller turns. The rubber "vee" ring maintains 360˚ contact with the steel shield, preventing loss of grease at the same time excluding dirt and water. A triple labyrinth seal and a seal provide an extra measure of protection for the bearings.

Tube

Diameters (inch) 2.50, 3.50, 4.00, ***5.00***

Designed for heavy-duty conveying applications, Series 1940 and 1960 rollers feature UNIBLOC welded end construction. Heavy gauge steel ends are permanently welded in place with weld seams continuous over a full 360°. Rollers are fitted with high quality precision ground ball bearings which are factory lubricated with SHELL ALVANIA EP2 grease.

Shaft

Diameter: .787

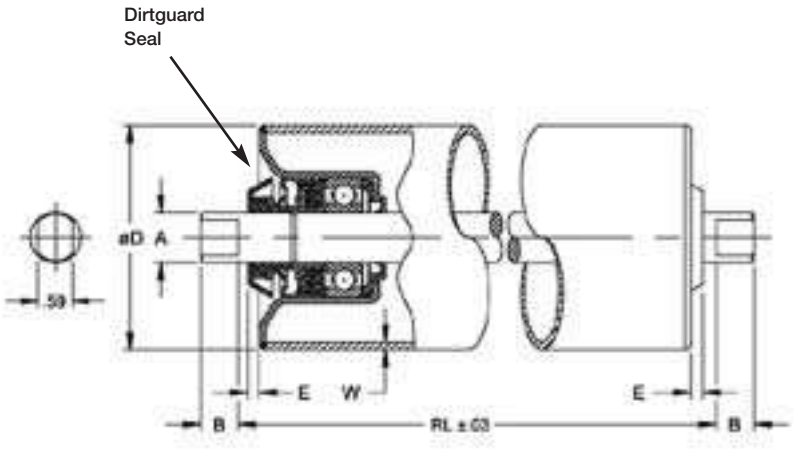
Available with milled flats, end drill and tap or threaded.

Application

Suitable for heavy duty palletizer applications as well as exposure to environmental elements such as bulk handling conveyors and foundry operations.

Non-standard

Heavy Duty
Welded Rollers
Series 1940
Series 1960

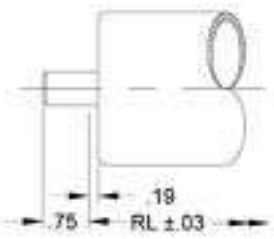


(Typical RL = BF)

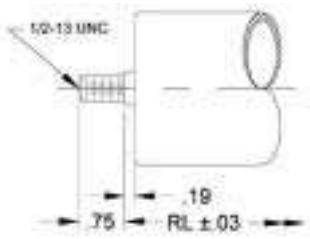
	Part Number	D	W	E	A	B	Material	Bearing/Finish	Remarks
Bearing	1.940.___.___-	**			.787 dia		Steel	6204ZZ	Without Dirtguard seal
	1.960.___.___-	**			.787 dia		Steel	6204ZZ	Dirtguard shown above
	1.941.___.___-	**			.787 dia		Steel	6204ZZ	Cantilever mounting
Tube	_.___.H19.___-	2.50	.120				Steel	Mill	
	_.___.H20.___-	3.50	.120				Steel	Mill	
	_.___.H21.___-	4.00	.134				Steel	Mill	
	_.___.*H22.*___-	5.00	.134				Steel	Mill	
Shaft	_.___.___.C70-			.19	.787 dia	.39	Steel		See drawing above
	_.___.___.C71-			.19	.787 dia	.90	Steel		See drawing below
	_.___.___.C72-			.19	.787 dia	.90	Steel		See drawing below
	_.___.___.C73-			.19	.787 dia		Steel		See drawing below

Non-standard

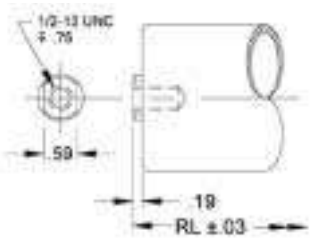
** Bearings may be used with any of the tubes listed above.



C71 Shaft (one end only)
For cantilever mounted rollers.



C72 Shaft (one end only)
Threaded end provides a quick mounting arrangement. **For cantilever mounted rollers.



C73 Shaft (both ends)
Tapped ends serve as conveyor rollermounts, and as a rigid spacer for frame assembly.

Heavy Duty
Welded Rollers
Series 1940
Series 1960

Series 1940/1960 precision bearing load capacity in lbs.

Tube Dia. In. Material Gauge Shaft Dia. RL Inches	2.5 Steel 11 .787	3.5 Steel 11 .787	4 Steel 10 .787	5 Steel 10 .787
8	1346	1346	1346	1346
16	1346	1346	1346	1346
24	1006	956	947	956
32	754	700	691	700
40	612	556	547	556
48	493	461	452	461
56	302	396	387	396
62	198	349	338	349
70	137	311	302	311
78	99	281	272	281

Minimum Roller Lengths for Non-Grooved Rollers (all dimensions in inches)

Diameter	Fixed
2.50	4.88
3.50	4.88
4.00	4.88
5.00	5.50

Speed Ratings Rollers for Non-Grooved Rollers (all dimensions in inches)

Bearing Type	Maximum Recommended Conveyor Speed
Precision	500 fpm

To order, use the following reference to form your ten-digit part number:

1.940.H20.C70-15.00"RL

- Bearing Part No.
- Tube Part No.
- Shaft Part No.
- 15" between frame





2 Fixed Drive Conveyor Rollers

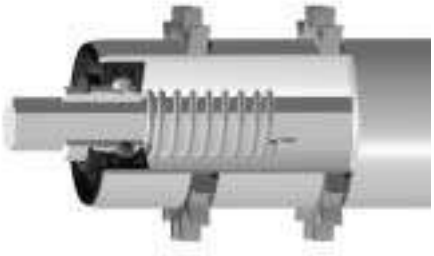
Series	Description	Bearing				Load Rating			Environment
		Commercial	Precision	Stainless	Journal	Light Duty (up to 40 lbs.)	Medium Duty (up to 100 lbs.)	Heavy Duty (100lbs. +)	Washdown
3400	Sprocket Driven		●				●	●	
3500	Sprocket Driven	●					●	●	
3900	Heavy Duty Welded Drive		●					●	
	Application Data Sheet								



FIXED DRIVE CONVEYOR ROLLERS

2

		Speed		Tube Sleeve			Special Features			
Sealed Bearings	Humid, Moist	Gravity	High Speed	Polyurethane	Soft PVC	O-ring groove	Repels Ink Buildup	Taperhex shaft configuration	Standard Diameter	Page
			•	•	•				1.90, 2.50	52
			•	•	•				1.90, 2.50	54
			•						2.50, 3.50, 4.00, 5.00	56
										82



Sprocket Driven Rollers with Welded Construction Series 3400
(precision bearings)
Series 3500
(commercial bearings)

Bearing

Series 3500 Commercial

Commercial grade steel ball bearings which are zinc plated for mild corrosion resistance.

Series 3400 Precision

Precision ground chrome alloy steel ball bearings 6203ZZ and 6205ZZ.

Tube

Diameters (inch).1.90, 2.50

Steel roller tube for 1.90" diameter is 16 gauge (.065) supplied in mill finish. Steel roller tube for 2.50" diameter is 11 gauge (.120) supplied in mill finish.

Shaft

Hexagonal: .437, .687

Standard shaft material is unplated low-carbon steel. For mounting convenience both .437 and .687 hex shafts can be supplied either spring-loaded for snap-in assembly, or with tapped ends for bolted construction.

Sprockets

1.90" diameter:

15 teeth - #50 chain
18 teeth - #40 Chain

2.50" diameter:

15 teeth - #60 chain
18 teeth - #50 chain

Application

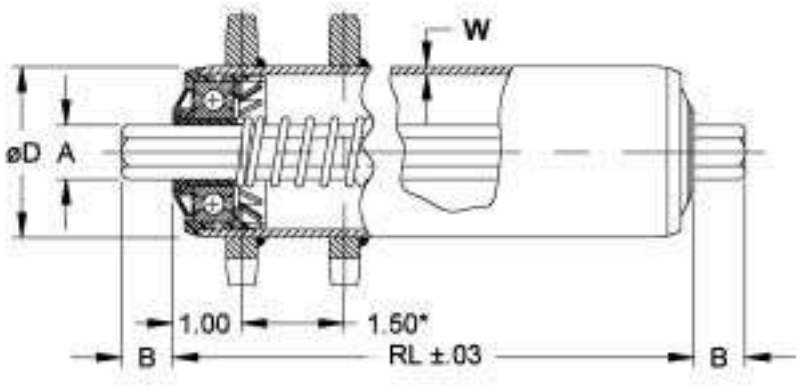
Series 3400 and 3500 drive rollers provide a simple and economical means for building powered roller conveyors.

These drive rollers are available with either single or double sprockets. Sprockets are MIG welded with 360˚ continuous weld.

The double sprocket design is particularly well suited for heavy duty applications where short lengths of chain connect each roller to the next.

Single sprocket rollers, driven by a continuous chain that engages the sprocket teeth tangentially, are better suited for light duty applications.

Sprocket Driven Rollers Series 3400

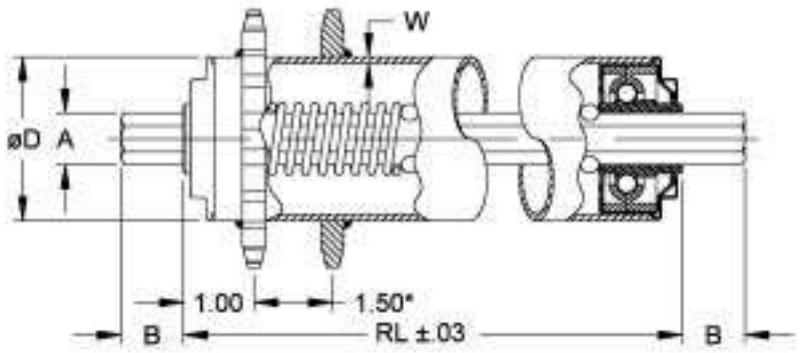


(Typical RL = BF - .12)

	Part Number	D	W	A	B	Material	Bearing/Finish	Remarks
Bearing	3.450.___.___-	1.90	.065	.437 hex		Sintered Iron	6203ZZ	Precision Bearing
	3.462.___.___-	2.50	.120	.687 hex		Sintered Iron	6205ZZ	Precision Bearing
Tube	_.___.J30.___-	1.90	.065			Steel	None	2 - #40 - 18 Sprockets
	_.___.P65.___-	1.90	.065			Steel	None	1 - #50 - 15 Sprocket
	_.___.H47.___-	1.90	.065			Steel	None	2 - #50 - 15 Sprockets
	_.___.M93.___-	2.50	.120			Steel	None	2 - #50 - 18 Sprockets
	_.___.P98.___-	2.50	.120			Steel	None	2 - #60 - 15 Sprockets
Shaft	_.___.___.C38-			.437 hex	.06	Steel	None	Tapped 5/16-18 x 5/8D
	_.___.___.V15-			.437 hex	.56	Steel	None	Spring-loaded
	_.___.___.W54-			.687 hex	.75	Steel	None	Spring-loaded
	_.___.___.C64-			.687 hex	.06	Steel	None	Tapped 3/8-16 x 3/4D

Note: For Hex shafts, “A” dimension indicates flat-to-flat measurement.

Sprocket Driven Rollers Series 3500



(Typical RL = BF - .12)

	Part Number	D	W	A	B	Material	Finish	Remarks
Bearing	3.520.___.___-	1.90	.065	.437 hex		Steel	Zinc-Plated	Commercial bearings
	3.525.___.___-	2.50	.120	.687 hex		Steel	Zinc-Plated	Commercial bearings
Tube	_.___.D42.___-	1.90	.065			Steel	None	1 - #40 - 18 Sprocket
	_.___.D43.___-	1.90	.065			Steel	None	2 - #40 - 18 Sprocket
	_.___.D44.___-	1.90	.065			Steel	None	1 - #50 - 15 Sprocket
	_.___.D46.___-	1.90	.065			Steel	None	2 - #50 - 15 Sprocket
	_.___.D61.___-	2.50	.120			Steel	None	1 - #50 - 18 Sprocket
	_.___.D67.___-	2.50	.120			Steel	None	2 - #50 - 18 Sprocket
	_.___.D68.___-	2.50	.120			Steel	None	1 - #60 - 15 Sprocket
	_.___.D69.___-	2.50	.120			Steel	None	2 - #60 - 15 Sprocket
Shaft	_.___.___.C38-			.437 hex	.06	Steel	None	Tapped 5/16-18 x 5/8D
	_.___.___.C41-			.437 hex	.56	Steel	None	Spring-loaded
	_.___.___.C64-			.687 hex	.06	Steel	None	Tapped 3/8-16 x 3/4D
	_.___.___.C66-			.687 hex	.75	Steel	None	Spring-loaded

Note: For Hex shafts, “A” dimension indicates flat-to-flat measurement.

To order, use the following reference to form your ten-digit part number:

3.525.D69.C66-14.88"RL

- Bearing Part No.
- Tube Part No.
- Shaft Part No.
- 15" between frame

Sprocket Driven Rollers Series 3400, 3500

	Tube Dia. In. Material Gauge Shaft Dia. Sprocket RL Inches	1.9 Steel 16 .437 #50 - 15	2.5 Steel 11 .687 #60 - 15	2.5 Steel 11 .687 #50 - 18
Series 3400 precision bearing roller load capacity in lbs.	8	675	800	800
	12	675	800	800
	16	675	800	800
	24	675	800	800
	32	403	600	600
	40	200	350	350
	48	115	190	190
	54	70	150	150
	62	47	120	120
	70	32	100	100

	Tube Dia. In. Material Gauge Shaft Dia. Sprocket RL Inches	1.9 Steel 16 .437 #40 - 18	1.9 Steel 16 .437 #50 - 15	2.5 Steel 11 .687 #60 - 15	2.5 Steel 11 .687 #50 - 18
Series 3500 commercial bearing roller load capacity in lbs.	8	225	225	600	600
	12	225	225	600	600
	16	225	225	600	600
	24	225	225	600	600
	32	225	225	300	500
	40	110	110	300	350
	48	56	56	300	300

Minimum Roller Lengths for Non-Grooved Rollers (all dimensions in inches)

	Diameter	Spring Loaded	Fixed	Loose Shaft/No Shaft
Series 3400 metal roller	1.90	4.25	3.75	3.75
	2.50	4.50	3.75	3.75

Minimum Roller Lengths for Non-Grooved Rollers

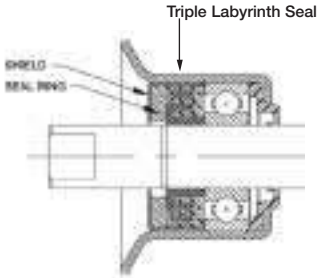
	Diameter	Spring Loaded	Fixed	Loose Shaft/No Shaft
Series 3500 metal roller	1.90	3.75	3.75	3.75
	2.50	5.25	3.75	3.75

Speed Ratings

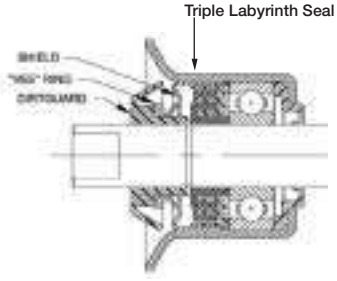
Bearing Type	Maximum Recommended Conveyor Speed
Precision – Series 3400	100 fpm
Commercial – Series 3500	60 fpm



Heavy Duty Welded Drive Rollers Series 3900



Series 3940 seal design



Series 3960 seal design

Bearing
Balls: Precision ground

Bearings are protected from contaminants by a series of elements. A zinc-plated steel shield deflects large dirt particles away from the bearing area. Behind this shield is an oil impregnated cellular plastic ring which acts as a wiping seal. A triple labyrinth seal provides further protection and a molded plastic back-seal effectively prevents grease loss.

Rollers are fitted with high quality precision ground ball bearings which are factory lubricated with SHELL ALVANIA EP2 grease.

Tube
Diameters (inch) 2.50, 3.50, 4.00, ***5.00***

The welded assembly is supplied in mill finish.

Shaft
Diameter: .787

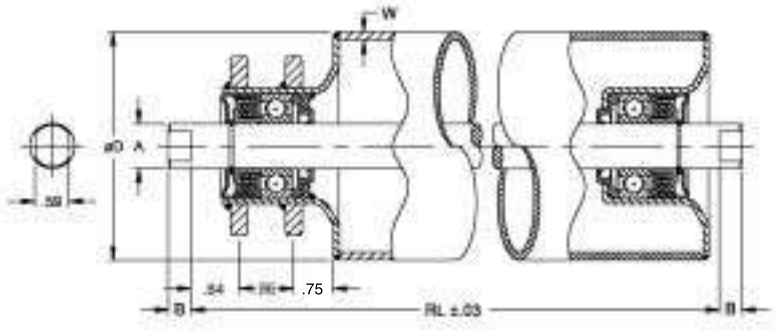
Sprocket
All tube diameters:
15 teeth - #50 chain
18 teeth - #40 chain

The steel bearing housing includes two steel sprockets. The bearing housing is welded (360° continuous bead) to the steel tube.

Application
Series 3900 RollerDrives are used for pallet handling and other heavy duty applications.

Non-standard

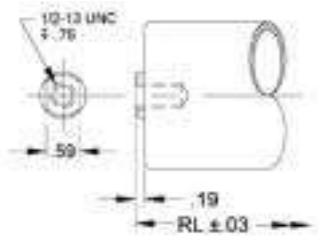
Heavy Duty Welded Drive Rollers Series 3900



Typical RL=BF

	Part Number	D	W	E	A	B	Material	Bearing/Finish	Remarks
Bearing	3.940.___.___-	All			.787 dia		Steel	6204ZZ	Milled Shaft Design
	3.960.___.___-	All			.787 dia		Steel	6204ZZ	Dirtguard seal
Tube	_.___.H23.___-	2.50	.120				Steel	Mill	2-#50-15 Sprockets
	_.___.H24.___-	2.50	.120				Steel	Mill	2-#40-18 Sprockets
	_.___.H25.___-	3.50	.120				Steel	Mill	2-#50-15 Sprockets
	_.___.H26.___-	3.50	.120				Steel	Mill	2-#40-18 Sprockets
	_.___.H27.___-	4.00	.134				Steel	Mill	2-#50-15 Sprockets
	_.___.H28.___-	4.00	.134				Steel	Mill	2-#40-18 Sprockets
	_.___.***H29.***___-	5.00	.134				Steel	Mill	2-#50-15 Sprockets
	_.___.***H30.***___-	5.00	.134				Steel	Mill	2-#40-18 Sprockets
Shaft	_.___.___.C73			.19	.787 dia		Steel		See drawing below
	_.___.___.C76			.19	.787 dia	.39	Steel		See drawing above

Non-standard



C73 Shaft (both ends)
Tapped ends serve as conveyor roller mounts, and as a rigid spacer for frame assembly.

To order, use the following reference to form your ten-digit part number:

3.940.H25.C73-15.00"RL

- 3.940 — Bearing Part No.
- H25 — Tube Part No.
- C73 — Shaft Part No.
- 15.00"RL — 15" between frame

Heavy Duty
Welded
Drive Rollers
Series 3900

Series 3900
Heavy duty
welded roller
load capacity
in lbs.

Tube Dia. In. Material Gauge Shaft Dia. Welded RL Inches	2.5 Steel 11 .787 2–#50–15	2.5 Steel 11 .787 2–#40–18	3.5 Steel 11 .787 2–#50–15	3.5 Steel 11 .787 2–#40–18	4 Steel 10 .787 2–#50–15	4 Steel 10 .787 2-#40–18	5 Steel 10 .787 2–#50–15	5 Steel 10 .787 2–#40–18
8	950	950	1046	1046	1046	1046	1346	1346
16	950	950	1046	1046	1046	1046	1346	1346
24	950	950	1046	1046	1046	1046	1346	1346
32	950	950	1046	1046	1046	1046	1346	1346
40	950	950	1046	1046	1046	1046	1346	1346
48	950	950	1046	1046	1046	1046	1346	1346
54	950	950	1046	1046	1046	1046	1346	1346
62	700	700	776	776	776	776	1346	1346
70	500	500	536	536	536	536	1346	1346
78	350	350	385	385	385	385	1341	1341

Minimum Roller Lengths for Non-Grooved Rollers (all dimensions in inches)

Diameter	All shaft configrations
2.50	8.00
3.50	8.00
4.00	8.00
5.00	8.00
5.00	8.00

Speed Ratings

Bearing Type	Maximum Recommended Conveyor Speed
Precision	The permissible conveyor speed is 160 fpm. However, when conveying pallets, 60 fpm should not be exceeded.





Friction Accumulating Conveyor Rollers

Series	Description	Bearing				Load Rating			Environment
		Commercial	Precision	Stainless	Journal	Light Duty (up to 40 lbs.)	Medium Duty (up to 100 lbs.)	Heavy Duty (100lbs. +)	Washdown
3800	Drive Rollers	●						●	
	Application Data Sheet								



FRICTION ACCUMULATING CONVEYOR ROLLERS

3

Sealed Bearings	Humid, Moist	Speed: Gravity	Speed: High Speed	Tube Sleeve: Polyurethane	Tube Sleeve: Soft PVC	Tube Sleeve: O-ring groove	Special Features: Repels Ink Buildup	Special Features: Taperhex shaft configuration	Standard Diameter	Page
		•		•	•				1.90, 2.50	62
										82



Drive Rollers with Slip Drive or Direct Drive Series 3800

Bearing
Balls: Commercial grade

Tube
Diameters (inch) 1.90, 2.50.
Aluminum, stainless steel and galvanized steel tubes are available in the 1.90" diameter drive rollers, only galvanized steel is available in the 2.50" diameter.

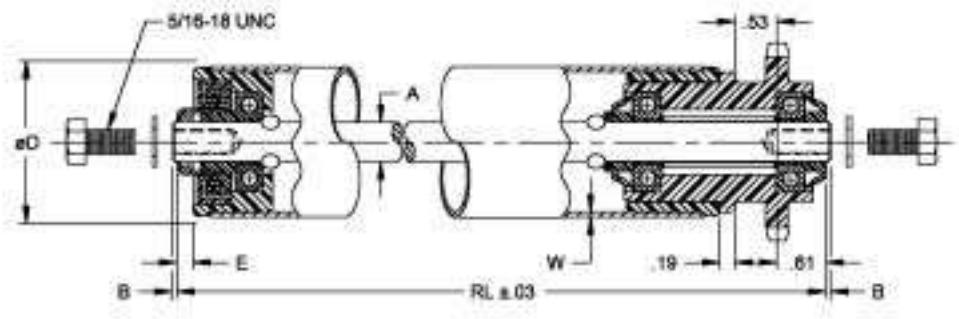
Shaft
Diameter: .500

Application
The Series 3800 has been designed to provide a simple and economical means of building powered conveyor systems with accumulation capability. Loads can be stopped and released at any point without stopping the chain drive. The slip drive relies on friction between two coaxial members. The inner member rotates continuously as it is chain driven. The outer member, the conveyor roller, is in sliding contact with the inner member through a bushing. Transmitted torque between the inner and outer member is proportional to both load and speed.

This series is recommended for speeds up to 60 fpm where continuous slippage is a requirement. For intermittent slippage applications speeds up to 90 fpm are possible.

For applications where accumulation is not required Series 3800 rollers may also be supplied for direct drive. This is accomplished using mating keys and keyways in the contact area of the inner roller and outer members. For both direct and slip drive, these rollers are available with single and double sprockets. Single sprockets are used with tangential chain drive, double sprockets are used where chains connect one roller to the next.

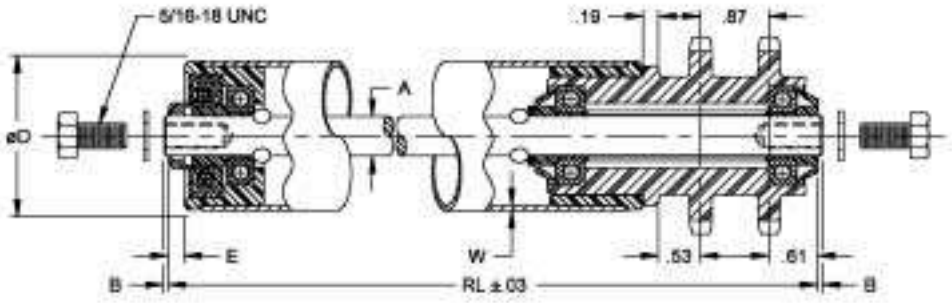
Drive Rollers with Slip or Direct Drive Series 3800



	Part Number	D	W	A	B	Material	Finish	Type	Remarks
Bearing	3.801.___.___-	1.90	.065	.500 dia		Nylon Housing	Black	Slip Drive	1 - #40-9 Nylon Spkt
	3.802.___.___-	1.90	.065	.500 dia		Nylon Housing	Black	Slip Drive	1 - #40-14 Nylon Spkt
	3.803.___.___-	1.90	.065	.500 dia		Nylon Housing	Black	Slip Drive	2 - #40-14 Nylon Spkts
	3.804.___.___-	2.50	.065	.500 dia		Nylon Housing	Black	Slip Drive	1 - #40-9 Nylon Spkt
	3.805.___.___-	2.50	.065	.500 dia		Nylon Housing	Black	Slip Drive	1 - #40-14 Nylon Spkt
	3.806.___.___-	2.50	.065	.500 dia		Nylon Housing	Black	Slip Drive	2 - #40-14 Nylon Spkts
	3.811.___.___-	1.90	.065	.500 dia		Nylon Housing	Black	Direct Drive	1 - #40-9 Nylon Spkt
	3.812.___.___-	1.90	.065	.500 dia		Nylon Housing	Black	Direct Drive	1 - #40-14 Nylon Spkt
	3.813.___.___-	1.90	.065	.500 dia		Nylon Housing	Black	Direct Drive	2 - #40-14 Nylon Spkts
	3.814.___.___-	2.50	.065	.500 dia		Nylon Housing	Black	Direct Drive	1 - #40-9 Nylon Spkt
	3.815.___.___-	2.50	.065	.500 dia		Nylon Housing	Black	Direct Drive	1 - #40-14 Nylon Spkt
	3.816.___.___-	2.50	.065	.500 dia		Nylon Housing	Black	Direct Drive	2 - #40-14 Nylon Spkts
Tube	_.___.A01.___-	1.90	.065			Aluminum	None	For 1 Sprocket	
	_.___.A02.___-	1.90	.065			Aluminum	None	For 2 Sprockets	
	_.___.G01.___-	1.90	.065			Steel	Galvanized	For 1 Sprocket	
	_.___.G02.___-	1.90	.065			Steel	Galvanized	For 2 Sprockets	
	_.___.J63.___-	1.90	.065			Steel	None	For 2 Sprockets	Soft PVC sleeve
	_.___.S01.___-	1.90	.065			Stainless	320 Grit	For 1 Sprocket	
	_.___.S02.___-	1.90	.065			Stainless	320 Grit	For 2 Sprockets	
	_.___.G03.___-	2.50	.065			Steel	Galvanized	For 1 Sprocket	
	_.___.G04.___-	2.50	.065			Steel	Galvanized	For 2 Sprockets	
Shaft	_.___.___.T20-			.500 dia.	.06	Steel	None	Double	Tapped 5/16-18
									x 5/8 deep
	_.___.___.M92-			.500 dia.	.06	Steel	None	Single	Tapped 5/16-18
									x 5/8 deep

Note: Plastic Journal Bearing Used With 9 Tooth Sprocket.
Commercial Ball Bearing Used With 14 Tooth Sprocket.

Drive Rollers with Slip or Direct Drive Series 3800



(Typical RL = BF - .12)

	Tube Dia. In. Material Gauge Shaft Dia. Sprocket RL Inches	1.9 Steel 16 0.5 1–#40–9	1.9 Steel 16 0.5 1–#40–14	1.9 Steel 16 0.5 2–#40–14	2.5 Steel 16 0.5 1–#40–9	2.5 Steel 16 0.5 1–#40–14	2.5 Steel 16 0.5 2–#40–14
Series 3800 slip drive sprocket driven roller load capacity in lbs.	8	45	110	110	45	110	110
	16	45	110	110	45	110	110
	24	45	110	110	45	110	110
	28	45	110	110	45	110	110
	32	45	110	110	45	110	110
	36	45	110	110	45	110	110
	40	45	110	110	45	110	110
	44	45	110	110	45	110	110
	52	45	100	100	45	100	100
	62	45	65	65	45	65	65

To order, use the following reference to form your ten-digit part number:

3.801.A01.T20-14.88"RL

- Bearing Part No.
- Tube Part No.
- Shaft Part No.
- 15" between frame

Drive Rollers with Slip or Direct Drive Series 3800

Series 3800 direct drive sprocket driven roller load capacity in lbs.

Tube Dia. In. Material Gauge Shaft Dia. Sprocket RL Inches	1.9 Steel 16 0.5 1–#40–9	1.9 Steel 16 0.5 1–#40–14	1.9 Steel 16 0.5 2–#40–14	2.5 Steel 16 0.5 1–#40–9	2.5 Steel 16 0.5 1–#40–14	2.5 Steel 16 0.5 2–#40–14
8	67.5	126	126	67.5	126	126
16	68	126	126	68	126	126
20	68	126	126	68	126	126
24	68	126	126	68	126	126
28	68	126	126	68	126	126
32	68	126	126	68	126	126
36	68	126	126	68	126	126
40	68	126	126	68	126	126
44	68	126	126	68	126	126
52	65	104	104	68	126	126
60	56	65	65	68	126	

Minimum Roller Lengths for Non-Grooved Rollers

Series 3800 slip drive/ direct drive rollers

Diameter	Fixed
1.90" Single Sprocket	4.63"
1.90" Double Sprocket	5.50"
2.50" Single Sprocket	4.63"
2.50" Double Sprocket	5.50"

Sleeve Materials (all dimensions in inches)

Material	Description
Soft PVC	Hardness 63 shore A, thickness .08, Gray

Speed Ratings

Bearing Type	Maximum Recommended Conveyor Speed
Commercial	60 fpm for continuous slippage
Commercial	90 fpm for intermittent slippage



4 Tapered Conveyor Rollers

		Bearing				Load Rating			Environment	
Series	Description	Commercial	Precision	Stainless	Journal	Light Duty (up to 40 lbs.)	Medium Duty (up to 100 lbs.)	Heavy Duty (100lbs. +)	Washdown	Sealed Bearings
1300	Tapered	●						●		
1350	Tapered			●				●		
1400	Tapered		●					●		
	Application Data Sheet									



TAPERED CONVEYOR ROLLERS

4

Humid, Moist	Speed: Gravity	Speed: High Speed	Special Features: O-ring groove	Large end Diameter	Page
•	•		•	2.	68
•	•		•	2.80, 3.06, 3.31, 3.56, 3.81, 4.06, 4.31	68
•		•	•	2.80, 3.06, 3.31, 3.56, 3.81, 4.06, 4.31	68
					82



Contact factory for special
Grooved tapered part numbers

Tapered Conveyor Rollers

Series 1300
(commercial bearings)

Series 1350
(stainless steel bearings)

Series 1400
(precision bearings)

Bearing
Balls: Commercial, Precision or Stainless Steel

This innovative series of tapered rollers offers the designer a choice of three distinct bearing systems for building roller curves. Tapered rollers with commercial grade ball bearings, stainless steel ball bearings or chrome alloy steel precision bearings are all available. Bearings are fitted into nylon housings. Double labyrinth seals, snapped into place, complete and assembled providing a pre-lubricated bearing cartridge which is fully protected from dust and dirt and requires no maintenance.

Tube
Diameters (inch) 2.07 (small end)

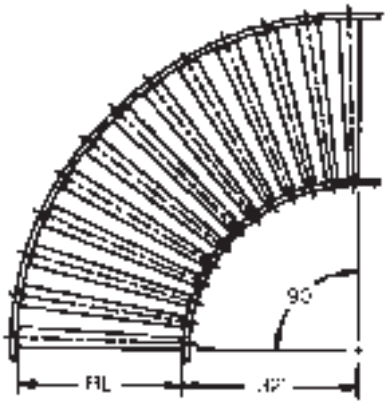
Steel roller tubes (or optional aluminum or stainless tubes) are overlaid with several high impact molded polypropylene conical segments to form a continuous tapered roller assembly to desired length. The completed assembly offers excellent wear properties, noise dampening and shock resistance. For powered applications, the smaller end of the tube can be friction driven by polyurethane “O” rings.

Shaft
Diameter: .500,
Hexagonal: .437

Shafts may be spring-loaded, tapped or threaded.

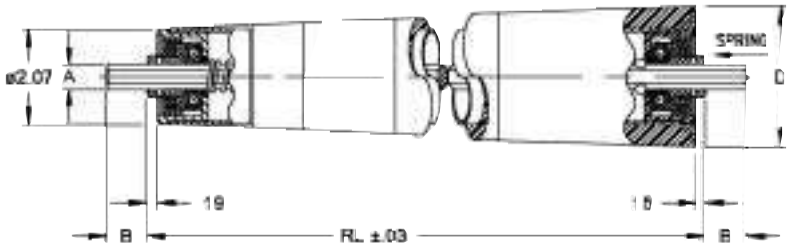
Application

45°, 90° and 180° conveyor curves with a 32" inside radius.



Tapered Conveyor Rollers Series 1300, 1350, 1400

Spring loaded shafts move in direction of arrow



(Typical RL=BF–.12)

	Part Number	D	A	B	Material	Finish	Remarks
Bearing	1.318.___.___-		.437 hex		Nylon	Black	Commercial bearings
	1.319.___.___-		.500 dia		Nylon	Black	Commercial bearings
	1.368.___.___-		.437 hex		Nylon	Black	Stainless bearings
	1.369.___.___-		.500 dia		Nylon	Black	Stainless bearings
	1.418.___.___-		.437 hex		Nylon	Black	Precision bearings
	1.419.___.___-		.500 round		Nylon	Black	Precision bearings
Tube	_.___.T12.___-	2.80			polypropylene/steel	Black	RL Range 9.52”-12.27”
	_.___.T14.___-	3.06			polypropylene/steel	Black	RL Range 13.47”-16.22”
	_.___.T18.___-	3.31			polypropylene/steel	Black	RL Range 17.42”-20.17”
	_.___.T22.___-	3.56			polypropylene/steel	Black	RL Range 21.37”-24.13”
	_.___.T26.___-	3.81			polypropylene/steel	Black	RL Range 25.32”-28.07”
	_.___.T32.___-	4.06			polypropylene/steel	Black	RL Range 29.27”-32.02”
	_.___.T36.___-	4.31			polypropylene/steel	Black	RL Range 33.22”-35.97”
Shaft	_.___.___.C42-		.437 hex	.56	steel	None	Spring-loaded
	_.___.___.S42-		.437 hex	.56	stainless	None	Spring-loaded
	_.___.___.C50-		.500 dia	1.00	steel	None	1/2-13" threaded removable
	_.___.___.S50-		.500 dia	1.00	stainless	None	1/2-13" threaded removable
	_.___.___.C51-		.500 dia	.06	steel	None	Tapped 5/16-18" x 5/8D
	_.___.___.S51-		.500 dia	.06	stainless	None	Tapped 5/16-18 x 5/8D
	_.___.___.C52-		.500 dia	1.00	steel	None	1/2-13" threaded-fixed
	_.___.___.S52-		.500 dia	1.00	stainless	None	1/2-13" threaded-fixed

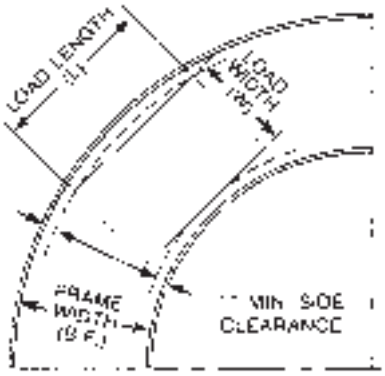
Note: For grooved tube part numbers, please contact the factory for further information. For Hex shafts, “A” dimension indicates flat-to-flat measurement.

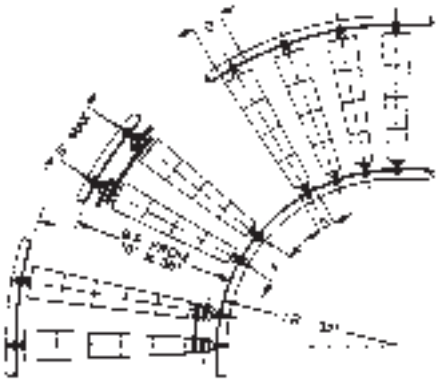
To order, use the following reference to form your ten-digit part number:

1.318.T14.C42-14.88"RL

Bearing Part No.
Tube Part No.
Shaft Part No.
15" between frame

Tapered Conveyor Rollers Series 1300, 1350, 1400





Curved design
Interroll plastic tapered rollers increase in diameter by 0.062" each inch of many lengths. Rollers may be ordered in many roller lengths from 9.88" to 35.88" for a range of 10" to 36" between conveyor frames.

The small (S) and large (D) diameters of the rollers are dependent upon the roller length. The small diameter is typically 2.07". The large diameter is wholly dependent upon the small diameter (S), the roller length (RL) and the roller taper.

The required number of rollers per 90° curve is dependent upon the inside frame pitch (P) of the rollers. It should be close enough for a minimum of three rollers to be supporting the load at any point in its travel.

For loads outside the range of the chart, the following formula may be used:

$$BF = \sqrt{[(32" + 1" + 18")2 + (24"/2)2]} + 1" - 32"$$

Example:

Load width (W) = 18"
Load length (L) = 24"
Chart shows (BF) = 22"
Inside Radius of curve (R)=32"

For the same sample, the formula would give ...

$$BF = \sqrt{[(32" + 1" + 18")2 + (24"/2)2]} + 1" - 32"$$

Answer 21.39" or 22"

On conveyor curves using Interroll tapered rollers, the between frame (B.F.) width for various size loads may be calculated as follows:

(a) Determine the length (L) and the width (W) of the largest load.
(b) Select the B.F. width from the B.F. selection chart given below.
(c) If the load is outside of the chart's range, or the inside radius (I.R.) of the curve is other than 32", use the formula given to the side of the chart.

Tapered Conveyor Rollers Series 1300, 1350, 1400

Series 1300, 1350, 1400 tapered roller load capacity in lbs.

Tube Dia. In. Material Bearing Shaft Dia.RL Inches	2.07" Diameter Plastic over Steel Commercial and Precision Bearings* All	2.07" Diameter Plastic over Steel Stainless Bearings All
10	113	56
12	113	56
14	113	56
16	113	56
18	113	56
20	113	56
22	113	56
24	113	56
26	113	56
28	113	56
30	113	56
32	113	56
34	106	53
36	90	45

Minimum Roller Lengths for Non-Grooved Rollers (all dimensions in inches)

Diameter	Spring Loaded	Fixed	Loose Shaft/No Shaft
1300-1400	9.88	9.88	9.88

Speed Ratings

Bearing Type	Maximum Recommended Conveyor Speed
Commercial	125 fpm
Stainless	125 fpm
Precision	236 fpm



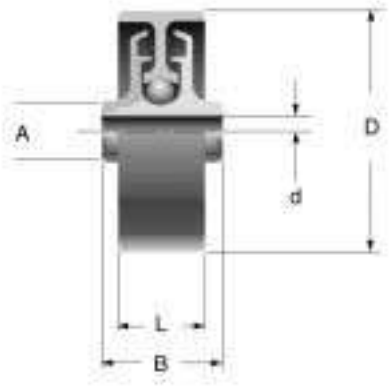
Other Components

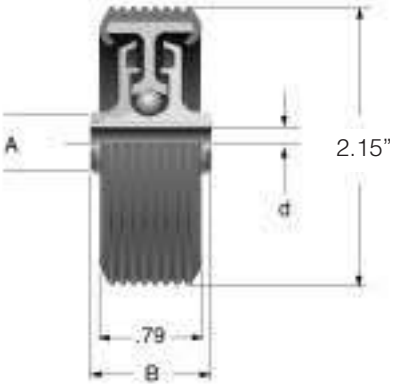
Series	Description	Load Rating		
		Light Duty (up to 40 lbs.)	Medium Duty (up to 100 lbs.)	Heavy Duty (100lbs. +)
2160	Plastic Conveyor Wheels	●		
2190	Plastic Conveyor Wheels	●		
2200	Metal Conveyor Wheels		●	
2300	Flanged Conveyor Wheels		●	
2500	OMNI Wheels		●	●
2530	OMNI Wheels			●
5500	Medium Duty Ball Transfers		25-100 lbs.	



5 OTHER COMPONENTS

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Plastic Conveyor Wheels Series 2160

Wheel
Diameters (inch) 1.90.

A totally new concept in conveyor wheel design, Series 2160 wheels are molded of high impact strength polypropylene... a versatile plastic which is both light weight and corrosion resistant.

These shock absorbing wheels are elastic to a degree and impact loads are absorbed by the wheel rather than transmitted through it which is important in transporting fragile items such as glassware, delicate instruments.

Bearing
Balls: Carbon or stainless steel

Load capacity (in lbs.)
Up to 15 lbs. per wheel

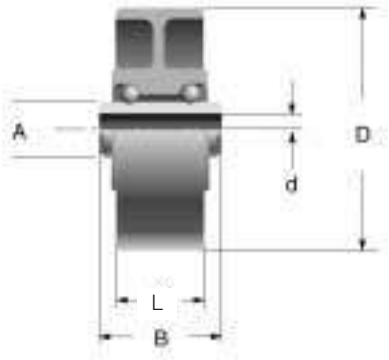
Application
These easy rolling wheels are well suited for transporting light goods, such as lightbulbs, cereals and empty cardboard boxes. They have widespread application in gravity conveyors, flow-racks, casters and other material handling equipment.

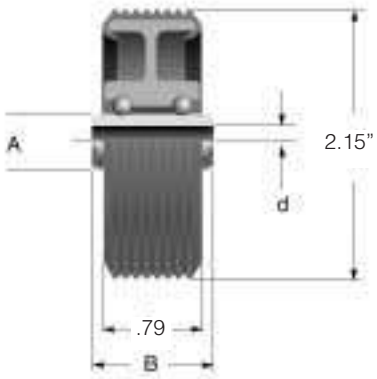
Since they are half the weight of comparable aluminum wheels these wheels are ideal for portable conveyors used on trucks and in busy loading areas. Manufacturers’ shipping charges can also be substantially reduced.

Note: Snap-on rubber tires are available for Series 2160 conveyor wheels (see drawings above). They are generally used to provide silent operation, to eliminate skidding or to protect fragile items. Order separately as part number 2100.

Wheels

Part Number	D	d	A	B	L	Finish	Balls
2162	1.90	.25	.48	.81	.67	Blue	Carbon Steel
2163	1.90	.25	.48	.81	.67	Gray	Stainless Steel
2166	1.90	.31	.48	.81	.67	Blue	Carbon Steel
2167	1.90	.31	.48	.81	.67	Gray	Stainless Steel





Plastic Conveyor Wheels Series 2190

Wheel

Diameters (inch) 1.90.

Series 2190 wheels are molded of acetal and Nylon materials.
Wheels are protected from contamination with integral shields.

If wheels are to be mounted using bolted construction, we recommend the use of either 2190 or 2191 wheels. Both are bushed to a .25 inch inside diameter using zinc-plated carbon steel reducer bushings. The bushing acts as a spacer tube and eliminates any chance of binding the wheel as a result of over tightening. The bushings are supplied loose and are simple to install at final assembly.

Bearing

Balls: Carbon or stainless steel

The double row ball bearing construction provides higher load carrying capacity than our Series 2160 as well as high impact strength.

Load capacity (in lbs)

Up to 25 lbs. per wheel

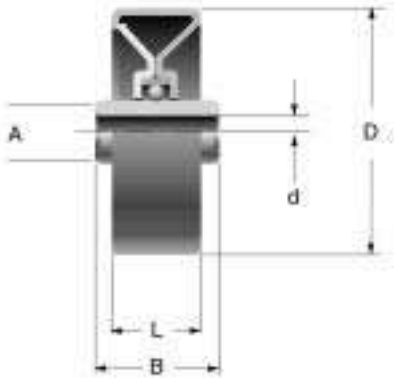
Application

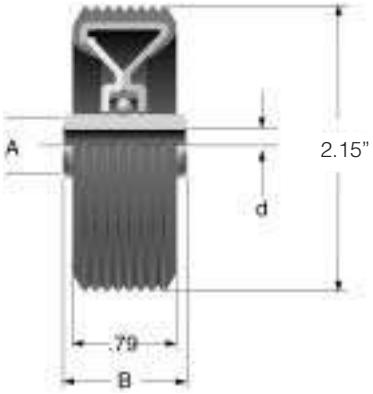
These wheels may be used as a direct replacement for conventional steel or aluminum wheels in many applications. They provide all the desirable properties of plastic wheels; quiet operation, non-marking, corrosion resistance, etc., while maintaining high load capacity.

Note: Snap-on rubber tires are available for Series 2190 conveyor wheels (see drawings above). They are generally used to provide silent operation, to eliminate skidding or to protect fragile items. Order separately as part number 2100.

Wheels

Part Number	D	d	A	B	L	Finish	Balls
2190	1.90	.25	.59	.94	.63	Wh/Blk	Carbon Steel
2191	1.90	.25	.59	.94	.63	White	Stainless Steel
2192	1.90	.31	.59	.94	.63	Wh/Blk	Carbon Steel
2193	1.90	.31	.59	.94	.63	White	Stainless Steel





Steel Conveyor Wheels Series 2200

Wheel
Diameters (inch) 1.94, 2.50

Series 2200 wheels feature rugged all metal construction. Both inner and outer raceways are fully heat-treated for long trouble-free life. All external parts are zinc-plated for good appearance and mild corrosion resistance.

Bearing
Balls: Carbon steel

Load capacity (in lbs.)
See table below

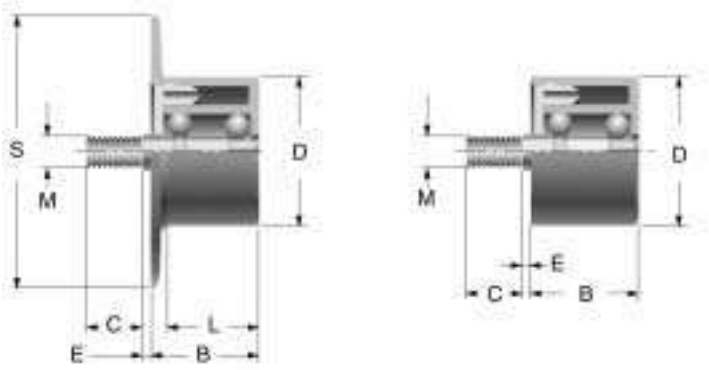
Applications
All Series 2200 wheels find wide application in wheel conveyors and live storage systems where their free rolling characteristics provide exceptional performance. They are also suitable for use as guide wheels around curves and along straight sections.

Note: Snap-on rubber tires are available for Series 2200 conveyor wheels (see drawings above). They are generally used to provide silent operation, to eliminate skidding or to protect fragile items. Order separately as part number 2100.

Wheels

Part Number	D	d	A	B	L	Material	Capacity
2211	2.50	.31	.62	.97	.80	Steel	150 lbs.
2220*	1.94	.31	.47	.81	.63	Steel	50 lbs.
2225*	1.94	.31	.50	.88	.56	Steel	100 lbs.
2263*	1.94	.25	.48	.81	.67	Steel	75 lbs.

* Rubber tire available



Flanged Conveyor Wheels Series 2300

Wheel
Diameters (inch) 1.50
These wheels have low inertia and start rolling easily. An incline as low as 1 percent is all that is needed for free movement.

The polypropylene plastic outer race for most applications can be considered as chemically inert. Polypropylene resists attack by most acids, alkalies and other chemicals. The glasslike rolling surface resists pick-up of foreign material.

Close fit-up between parts prevents entry of dirt and grime into the bearing area. Lubrication is never required.

Bearing
Balls: Carbon or stainless steel
The Series 2300 flanged conveyor wheels are equipped with double row ball bearings for maximum load capacity ... a total of sixteen 3/16" diameter balls is used in each unit. The steel inner race is accurately machined and is zinc plated.

Load capacity (in lbs)
Up to 25 lbs. per wheel

Application
Series 2300 flanged conveyor wheels are designed for use in flow racks (first-in first-out storage systems) and other material handling applications where side guidance is required (see drawings above). They provide true ball-bearing performance at minimum cost.

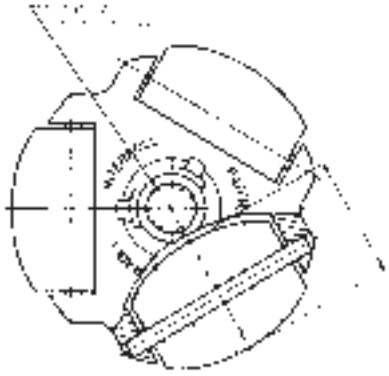
A companion series of wheels without flanges is also available for use where side guidance is not required and the internal construction is identical to the flanged units.

Wheels

Part Number	D	B	C	E	L	M	S	Finish	Balls
2374	1.50	1.11	.50	.12	.98	1/4-20	2.38	Black	Carbon Steel
2375	1.50	1.11	.50	.12	.98	1/4-20	2.38	Gray	Stainless Steel
2376*	1.50	1.11	.50	.12		1/4-20	_	Black	Carbon Steel
2379*	1.50	1.11	.50	.12		1/4-20	_	Gray	Stainless Steel

* without flange





Plastic Omni Wheels for Multi-Directional Movement Series 2500

Construction

Diameters (inch) 1.90" and 3.15".

The unique Omni wheel design is based upon the use of a series of free turning barrel-shaped rollers which are mounted in a staggered pattern around the periphery of a larger diameter main wheel. The combination of these two rolling elements provides a compact and inexpensive unit for moving heavy loads in any direction along a plane; doing so smoothly and with a minimum effort. Unlike competitive transfer devices (ball transfers, swivel casters, etc.).

Mounting

Mounting of Omni wheel units is both simple and direct. They may be fitted with axles or spacer bushings and installed in "U" shaped steel or aluminum channels. Alternately, they may be mounted on shafts and installed on conveyors in place of wheels or rollers, providing a convenient transfer station without the expense of designing and building transfer tables.

Omni wheels with hexagonal bores make building powered transfer systems a simple task. By simply mounting the Omni wheels on mating hexagonal shafts which are powered, single or double (X-Y) axis movement may be obtained.

Load Capacity (in lbs.)

25 - 75 lbs per set

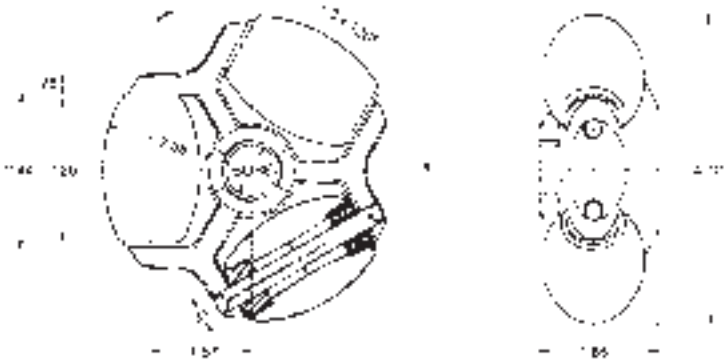
Application

Omni wheels are corrosion resistant and well suited for applications where dirt, dust and moisture may be present. They require no lubrication or field maintenance.

Ordering Note:
At least two Omni wheels must be used together to provide support over 360° of rotation. Please order accordingly.

Omni wheel	Part No.	Shaft	Size	Dia.	A	B	C	Capacity	Remarks
	2570	.312"	round	1.90"	.12	.85	.69	25 lbs.	Also for .25 shaft*
	2571	.312"	hex	1.90"	.12	.85	.69	25 lbs.	For powered applications
	2580	.500"	round	3.15"	.16	1.34	1.18	75 lbs.	
	2581	.437"	hex	3.15"	.16	1.34	1.18	75 lbs.	For powered applications

*Note: Bushing part number for .25" shaft is N001



Heavy duty Omni Wheels for Manual and Powered Transfer Systems Series 2530

Construction
Diameters (inch) 4.72"

Series 2530 Omni wheel barrels are made of die cast aluminum for manual systems; with polyurethane barrels also available for powered applications (to prevent slippage). Barrels and frame are fitted with zinc-plated ball bearings.

Mounting
Series 2530 Omni wheels feature die cast aluminum frame with built in keys for coupling multiple units. This arrangement provides maximum mounting flexibility to suit almost any transfer requirement.

Load capacity (in lbs.)
220 lbs. per pair

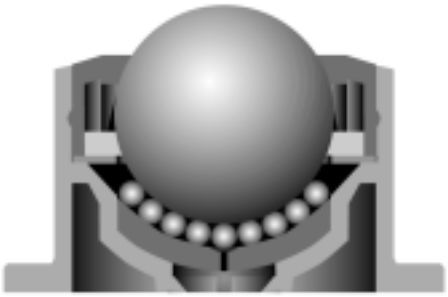
Application
Series 2530 Omni wheels are well suited for use in heavy-duty manual or powered transfer systems.

Ordering Note:
At least two Omni wheels must be used together to provide support over 360° of rotation. Please order accordingly.

Heavy Duty Omni Wheels for Manual & Powered Transfer Systems Series 2530

Part Number	Bore	Barrel Material	Barrel Bearing	Main Bearing
2530	.315 dia	Aluminum	Ball bearing	Ball bearing
2532	.315 dia	Polyurethane	Ball bearing	Ball bearing
2537	.875 hex	Aluminum	Ball bearing	None
2538	.875 hex	Polyurethane	Ball bearing	None

Non-standard Omni Wheel order item – average lead time is 12 weeks.



Medium duty ball transfers Series 5500

Construction

Interroll ball transfers allow objects to be moved in any horizontal direction with minimum effort. They are well suited for transfer applications on conveyor lines, production machinery, packaging equipment and in air cargo handling. A variety of mounting styles offers the user maximum flexibility in building transfer equipment. The housing of the Interroll ball transfers are made with plastic materials and the spherical ball cup is hardened. Steel and stainless bearing elements are protected against contamination by a felt seal which is fitted around the main ball to wipe away dust and grime.

Under dynamic conditions, these support balls continually recirculate providing constant support for the applied load. For unusual application requirements, Interroll ball transfers may be supplied with plastic main balls for non-marking, or stainless steel main and support balls for outdoor use.

All load capacity information has been based on absolutely flat, horizontal and surface hardened platforms of conveyed goods.

Mounting

- Flange mount
- Inverted flange mount
- Top flange mount
- Stud mount

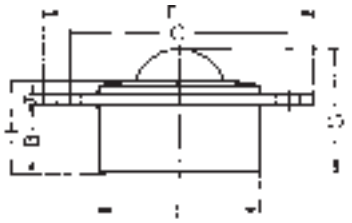
Load capacity

Main Ball Material	Load-Lbs.
Carbon Steel	100
Stainless Steel	65
Nylon	90

Application

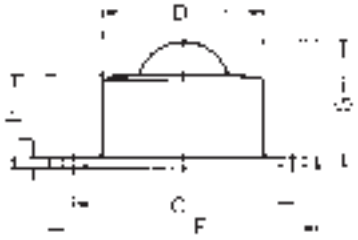
They are well suited for transfer applications on conveyor lines, production machinery, packaging equipment and in air cargo handling.

Medium Duty
Ball Transfers
Series 5500



Series 5500 — Inverted Flange Mount

Part No.	Ball Dia. Inch	D	G	H	B	T	F	C	Hole	M	K
5501	1.0 Steel	1.73	1.38	1.02	0.77	0.12	2.91	2.36	0.28		
5521	1.0 Plastic	1.73	1.38	1.02	0.77	0.12	2.91	2.36	0.28		
5506	1.0 Stainless	1.73	1.38	1.02	0.77	0.12	2.91	2.36	0.28		



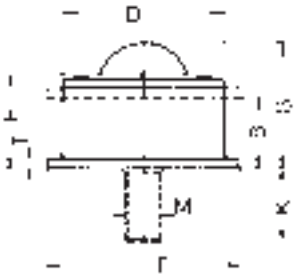
Series 5500 — Flange Mount

Part No.	Ball Dia. Inch	D	G	H	B	T	F	C	Hole	M	K
5500	1.0 Steel	1.73	1.38	1.02		0.12	2.91	2.36	0.28		
5520	1.0 Plastic	1.73	1.38	1.02		0.12	2.91	2.36	0.28		
5505	1.0 Stainless	1.73	1.38	1.02		0.12	2.91	2.36	0.28		



Series 5500 — Top Flange Mount

Part No.	Ball Dia. Inch	D	G	H	B	T	F	C	Hole	M	K
5503	1.0 Steel	1.73	1.38	1.02	.77	0.12	2.05				
5522	1.0 Plastic	1.73	1.38	1.02	.77	0.12	2.05				
5508	1.0 Stainless	1.73	1.38	1.02	.77	0.12	2.05				



Series 5500 — Stud Mount (5/16 - 18 Threads)

Part No.	Ball Dia. Inch	D	G	H	B	T	F	C	Hole	M	K
5594	1.0 Steel	1.73	1.38	1.02		0.12	2.05			5/16-18	0.63
5514	1.0 Plastic	1.73	1.38	1.02		0.12	2.05			5/16-18	0.63
5524	1.0 Stainless	1.73	1.38	1.02		0.12	2.05			5/16-18	0.63

Roller Application Data Sheet

Phone: 800-830-9680
Fax: 800-830-9679
www.interroll.us

Please photocopy these pages and fax to Interroll (800-830-9679) with your inquiry/order.

Please fax me a quote by: _____
(Date needed)

Name: _____

Company: _____

Address: _____

State: _____ Zip: _____

Tel: _____

Fax: _____

Application Data Needed For Quote: (For proper quoting all data is required)

If known, Interroll Part Number:
_____

Roller Length _____inches
Between frame (BF) dimension of conveyor _____
Diameter of roller _____
Power or gravity conveyor _____
Speed of Conveyor _____ (fpm)
Sprocketed _____
Load per roller _____
Operating Temperature _____
Bearing Type _____
(commercial, stainless, precision)
Washdown _____
Tube Material _____
Outside Diameter _____inches
Wall Thickness: _____inches

Tube Material

- PVC - Copolymer ❒
- Aluminum ❒
- Steel Mill Finish ❒
- Steel Stainless ❒

Gauge _____
Finish _____
Cover _____

Shaft Configuration

Shaft Size (round or hex) _____

- Spring Loaded ❒
- Fixed Spindle ❒
- Male Threaded ___ x ___ ❒
- Female Threaded ___ x ___ ❒

Shaft Material

- Steel Mill Finish ❒
- Steel Stainless ❒

Other _____

Present quantity of rollers required _____

Future requirements _____

General description/diagram of your application and roller:

Miscellaneous

What is the designed conveyor speed?
_____

What is the maximum roller load?
_____

The roller is mainly loaded statically or dynamically? _____

Is there any peculiar ambient condition (i.e., Chemical influences, Temperature)? _____

Special Instructions:

_____

_____

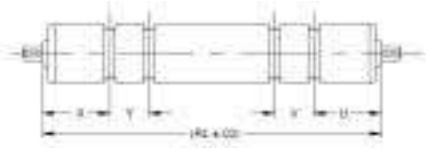
_____

_____

_____

Number of rollers _____pieces
Roller Series Part Number: _____
OE#: _____
Roller Length: _____

To Order Grooved Rollers, Specify the Following:



Spring loaded shafts move in direction of arrow. →

X= _____
CONTACT FACTORY FOR MINIMUM "X" DIMENSION
IF NO "X" GROOVE REQUIRED, WRITE "NONE".

U= _____
CONTACT FACTORY FOR MINIMUM "U" DIMENSION
IF NO "UÅ" GROOVE REQUIRED, WRITE "NONE".

Y= _____
NOTE: MINIMUM "Y" IS 1.25"
IF NO "Y" GROOVE REQUIRED, WRITE "NONE"

V= _____
NOTE: MINIMUM "V" IS 1.25"
IF NO "V" GROOVE REQUIRED, WRITE "NONE".

Metric Conversion Chart

When You Know	Multiply By	To Find
Length		
Inches	25.4	Millimeters
Millimeters	.04	Inches
Mass		
Pounds	0.4536	Kilograms
Kilograms	2.20	Pounds
Pounds	4.448	Newtons
Newtons	.2248	Pounds
Speed		
Feet per minute	0.00508	Meters per second
Meters per second	196.74	Feet per minute
Temperature		
Degrees Farenheit	Subtract 32, multiply by 5, divide by 9	Degrees Celcius
Degrees Celcius	Multiply by 9, divide by 5, add 32	Degrees Farenheit

Common Roller Tube Wall Thicknesses

Gauge	Decimal Equivalent in Inches	Nominal Metric Equivalent in Millimeters
20	.035	
18	.049	1.25
16	.065	1.5
14	.083	2.0
11	.120	3.0
10	.134	

INTERROLL

DRIVES & ROLLERS

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Zihni Sakaryali Ali Sok.
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