

Ralphs-Pugh Urethane Products

Urethane elastomers are unique because they combine many of the advantages of rigid plastics, metals and ceramics with the elasticity of rubber. Urethane resists abrasion and reduces the affects of shock and impact loading on the tubes and bearings. Urethane covered rollers will not slip like PVC and in most applications will not mar conveyed materials. Urethane provides the ultimate in wear resistance and noise dampening making it the material of choice for our sleeved and tapered rollers. In addition, our urethane shaft adapters will eliminate frame wear caused by metal to metal contact and extend the life of your conveyor frame.



Ralphs-Pugh offers several types of urethane products; **Cast Sleeves and Tapers, Foam Tapers, Extruded Sleeves and Shaft Adapters.**

Cast Urethane is a high density polymer material. Standard hardness is 70 and 90 Shore A durometer. Cast urethane is available on tapered and sleeved rollers.

Urethane Foam is a lower density material. It is lighter than cast material and requires less power to start up on powered systems. Its hardness is typically between 50-55 Shore A durometer. Urethane foam is limited to tapered rollers.

Extruded Sleeves are available in various lengths and colors. Standard color is black. Hardness is 85 Shore A durometer.

Urethane Shaft Adapters - 7/16" hex adapter over an interior 5/16" hex steel inner support shaft.

Urethane Limitations and Considerations:

When evaluating an application the following material limitations need to be considered:

- Temperature: **200 degrees F. maximum recommended.**
- Hydrolysis: Steam- Not suited for exposure to steam.
Water- Wet environments okay. Note maximum temperature limit.
- Chemicals: Strong Acids and base chemicals can rapidly degrade material.
Inquire before ordering.

Drive Options for Tapered and Sleeved Rollers: (See drawings this section)

- Grooves for line shaft or motorized slave rollers
- Sprockets on either end.
- Open area on core tube for drive belts
- Metal drive ring over urethane for drive belt

Ralps-Pugh Urethane Product Advantages

The table below highlights the advantages of urethane versus metal, plastic, and rubber materials. For assistance in determining which type of material is best for your application, contact us today.

	Metal / Urethane	Plastic / Urethane	Rubber / Urethane
Abrasion Resistance	Urethane		
Corrosion Resistance (rust)	Urethane		
Impact Resistance	Urethane		
Noise Abatement	Urethane		
Non-Brittle Upon Impact		Urethane	
Elastomeric Memory		Urethane	
Abrasion Resistance		Urethane	
Abrasion Resistance			Urethane
Cut/Tear Resistance			Urethane
Load Bearing Capacity			Urethane
Ozone Resistance			Urethane
Harder Durometer Range			Urethane
Mold/Fungi Resistance			Urethane
Non- Marking			Urethane
Color Availability			Urethane

Notes:

Ralphs-Pugh Urethane Tapered Rollers

Ralphs-Pugh Urethane Tapered Rollers are recommended for continuous and intermittent gravity or powered turns. Our proprietary casting process assures the urethane will not “walk”. Our tapered rollers are manufactured to standard turn radius designs or custom turn radius designs offering a “True Taper”. True tapers eliminate the need for sideboards and results in directionally stable package handling. Urethane offers a variety of advantages versus steel shells. Most notable advantages are shock and impact resistance, non-marking surface and superior cut, tear, and wear resistance. *When combined with **Ralphs-Pugh Urethane Hexagonal Shaft Adapters and precision bearings, these rollers are the quietest available.***

How to use this section:

Our Customer Service Department will require the following information to assist in the proper selection of a Urethane Tapered Roller:

- Small and Large End Diameters or Inside Turn Radius
- Durometer of Urethane
- Gravity or Powered – (if powered, grooves, sprockets or steel drive rings)
- Load and Speed
- Environment
- Shaft Size and Configuration
- I.F. – Inside Frame Dimension

Tube Information:

Tube Materials: Galvanized Steel, Carbon Steel, Stainless Steel and Aluminum.

Drive Options: Location and dimensions of sprockets, grooves, one way clutch, or steel drive rings- (see drawings in this section).

Shaft Information:

Shaft Materials: Carbon steel, stainless steel, and aluminum. Zinc and nickel plating are available.

Shaft Configurations: Hexagonal and round



Shaft Extensions: Standard is 9/16" from the hub of the bearing to the end of the shaft per side. If you require a specific shaft length, notify customer service when ordering.

Shaft Deburring: Standard on all shaft ends.

Springs: Standard is dual spring loaded with shaft depressing to the hub of the bearing.

Shaft End Options: Plastic or urethane adapters over an internal metal shaft, fixed shaft, through shaft, threaded ends, drilled and tapped ends, drilled holes, milled flats, D-shaft ends, plastic flat caps.

Bearing Information:

Stamped Commercial: An economical commercial grade plated steel bearing with hardened steel balls and raceways and a full compliment of balls. There is no ball retainer and outer raceways are either machined or stamped. Normal lubrication is light oil, however they can be ordered grease packed for powered applications. Loads and speed capabilities are classified as light to moderate. These bearings are identified by a 22 prefix in the part number. They are manufactured to our specifications by outside vendors. Example – 22A6

Steel, Commercial: These are an economical commercial grade plated steel ball bearing in an engineered conductive or non-conductive plastic housing with or without labyrinth seals. All plastic housings are designed, engineered, and molded in our facility. The raceways and full compliment of balls are hardened steel. Loads and speeds are classified as light to moderate. Normal lubrication is light oil with grease packing available for powered systems. For optimum performance and bearing life these units are swaged into the metal tubes. These bearings are identified by a 2 prefix in the part number. Example - 2A6

Stainless Steel: These are commercial grade stainless steel ball bearings in an engineered conductive or non-conductive plastic housing with or without labyrinth seals. All plastic housings are designed, engineered, and molded in our facility. The combination of stainless steel and available labyrinth seals offers the ultimate solution to wet and corrosive applications. The raceways and full compliment of balls are series 300 stainless steel. Loads and speeds are classified as light to moderate. Normal lubrication is light oil with grease packing available for powered systems. Food grade lubricants are also available. For optimum performance and bearing life, these units are swaged into the metal tubes. These bearings are identified by a 2 prefix in the part number. Example – 2A7

ABEC-1 Precision: These are ABEC – 1 precision chrome alloy steel bearings grease packed with hardened and ground balls and raceways and a ball retainer. They are housed in an engineered plastic housing designed, engineered, and molded in our facility in conductive or non-conductive materials with or without labyrinth seals. These bearings offer the highest load and speed capabilities, the lowest noise levels and have the longest life span of any available bearing unit. For optimum performance and bearing life, they are swaged into the metal tubes. These bearings are identified by a 3 prefix in the part number. Example - 3A6.



ABEC-1 Precision bearings in stamped zinc plated steel housings: Economical alternative to ABEC-1 bearings in plastic housings. These bearing inserts work well in higher load and speed applications while maintaining very low noise levels. The ABEC-1 bearing has hardened and ground balls and raceways, a ball retainer and is grease packed (25% pack) at the factory. Non-Contact Rubber Seals (LLB) protect the caged ball compliment. The stamped zinc plated housing on some variations incorporates a dust shield for added protection to the precision bearing. The life expectancy of a precision bearing is many times that of a non-precision bearing. For optimum performance and bearing life we recommend the bearing units be swedged into the metal tubes. These bearings have a 33 prefix in the part number. **Available for metal tubes only.** Example - 33RP

Bushing: These non ball bearing style bearing units are designed for light to medium loads and slow speeds. Typical installations are push conveyors and gravity conveyors. They are ideal for sanitary, rust and corrosion resistant, maintenance free wet or dry applications. Bearing surface materials include Ultra (Acetal plastic with Teflon additives), CS2 (Acetal) and ABS plastic. Bushing inserts include nylon, stainless steel, and carbon steel. These bearings are identified by a 5 in the prefix of the part number. Example - 5B5

Urethane Information:

Color: Standard: Black
Options: Inquire with Customer Service

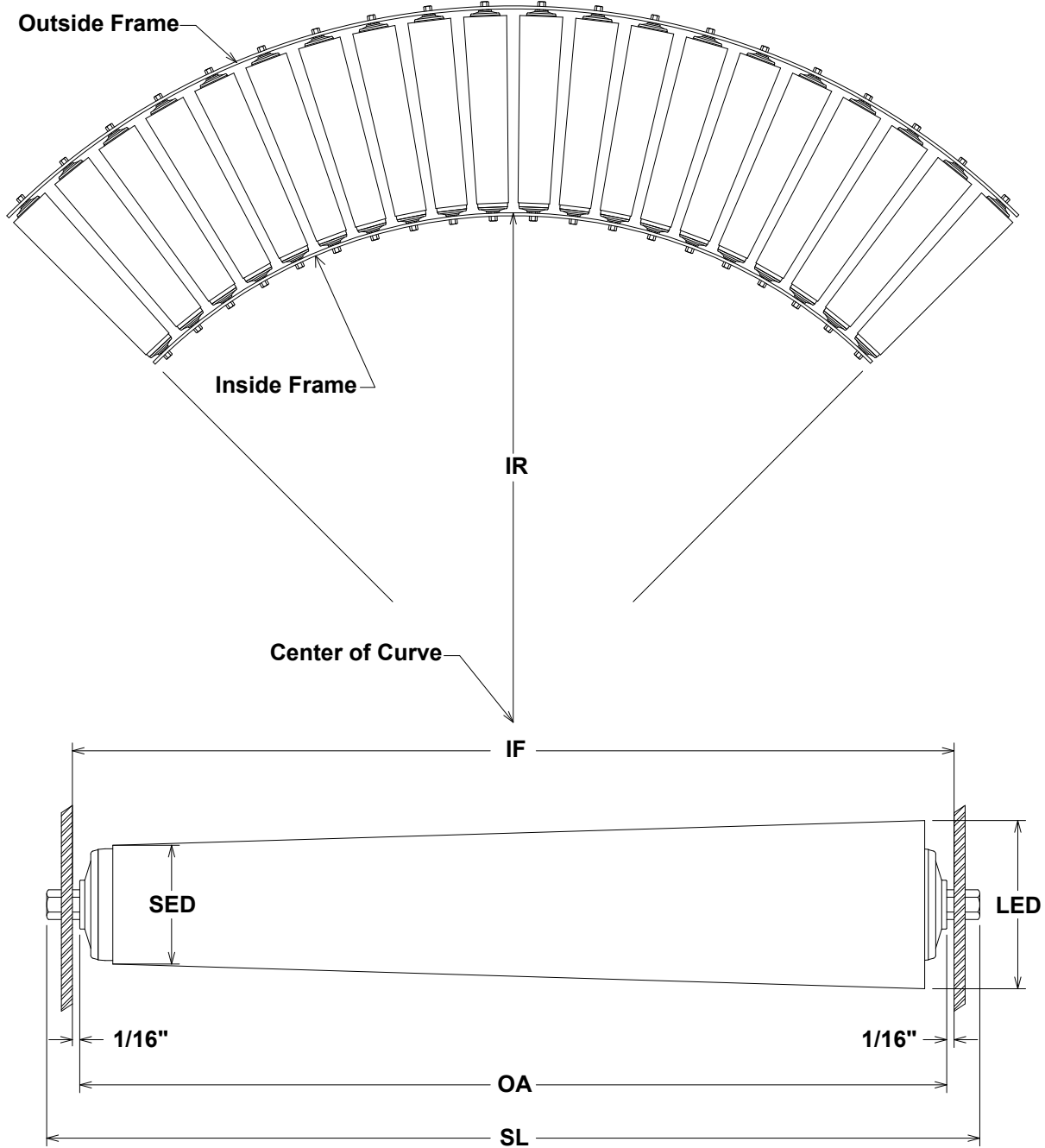
Durometer: Cast Urethane - 70-90 Shore A standard
Foam Tapers - 50-55 Shore A
Options: Available, inquire with Customer Service

Optional Material: Food grade available

Roller Length: I. F. = Inside Frame distance. This measurement allows 1/16" of freeplay per side for a total of 1/8" per roller. O.A. = Overall roller length. This is the measurement from bearing hub to bearing hub of the roller. For calculation purposes $I.F. - 1/8" = O.A.$

Drawings are provided to illustrate the required configuration and dimensional information.
Please have them available when talking to Customer Service.

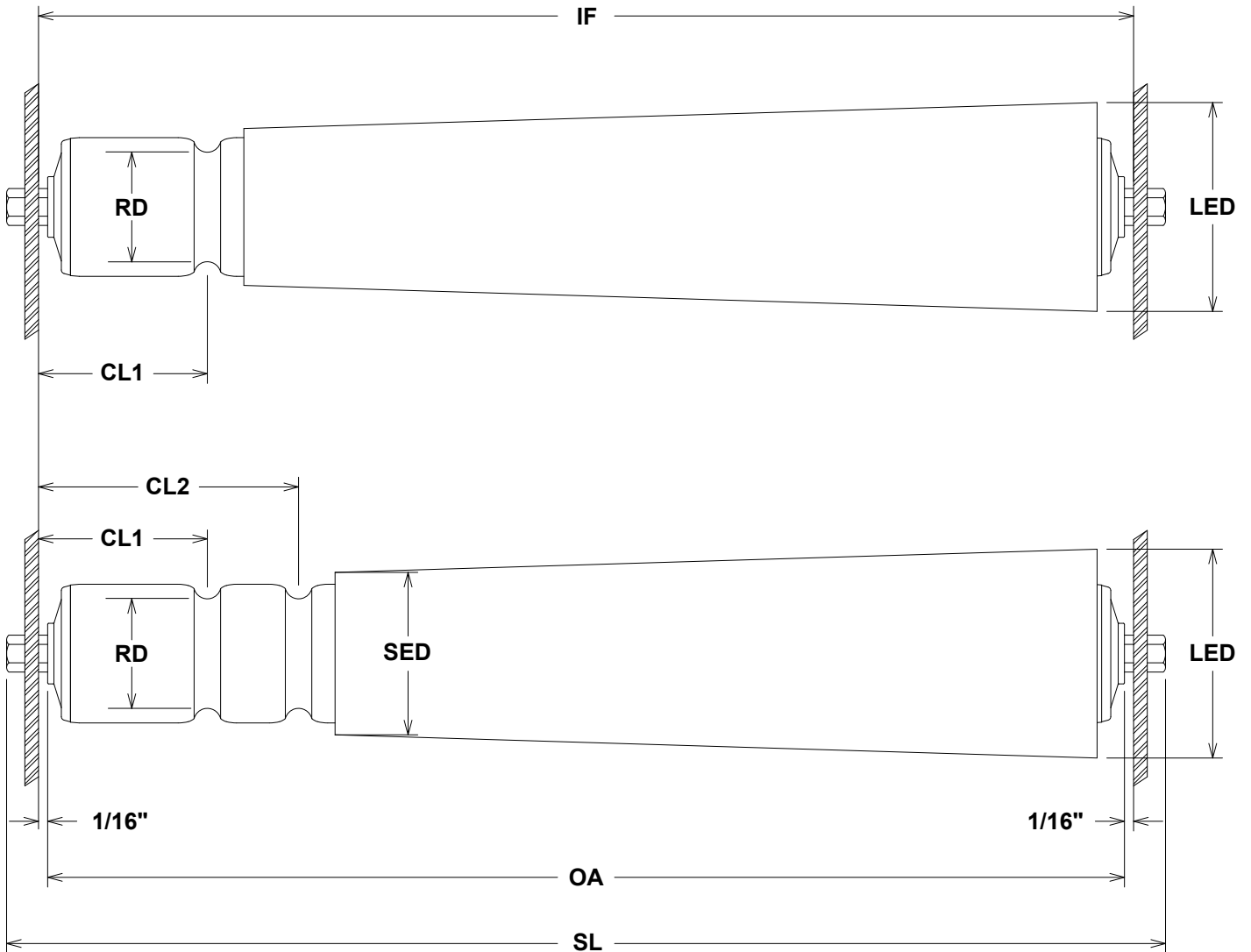
Gravity Urethane Tapered Roller



Company: _____
 Contact: _____
 Phone: _____
 Fax: _____

Bearing = _____ Commercial / ABEC-1 (Precision)
 Tube = _____ Material - CS / SS / GALV
 Shaft = _____ Size / Configuration / Material
 SL = _____ Shaft Length Overall
 OA = _____ Overall Roller Length (hub to hub)
 IF = _____ Inside Frame Width
 IR = _____ Inside Radius of Curve
 SED = _____ Small End Diameter
 LED = _____ Large End Diameter

“O” Ring Driven Urethane Tapered Roller



- | | |
|-----------------|------------------------------------|
| Bearing = _____ | Commercial / ABEC-1 (Precision) |
| Tube = _____ | Material - CS / SS / GALV |
| Shaft = _____ | Size / Configuration / Material |
| SL = _____ | Shaft Length Overall |
| OA = _____ | Overall Roller Length (hub to hub) |
| IF = _____ | Inside Frame Width |
| IR = _____ | Inside Radius of Curve |
| SED = _____ | Small End Diameter |
| LED = _____ | Large End Diameter |
| CL1 = _____ | Frame to Groove Center |
| CL2 = _____ | Frame to Groove Center |
| RD = _____ | Root Diameter of Grooves |

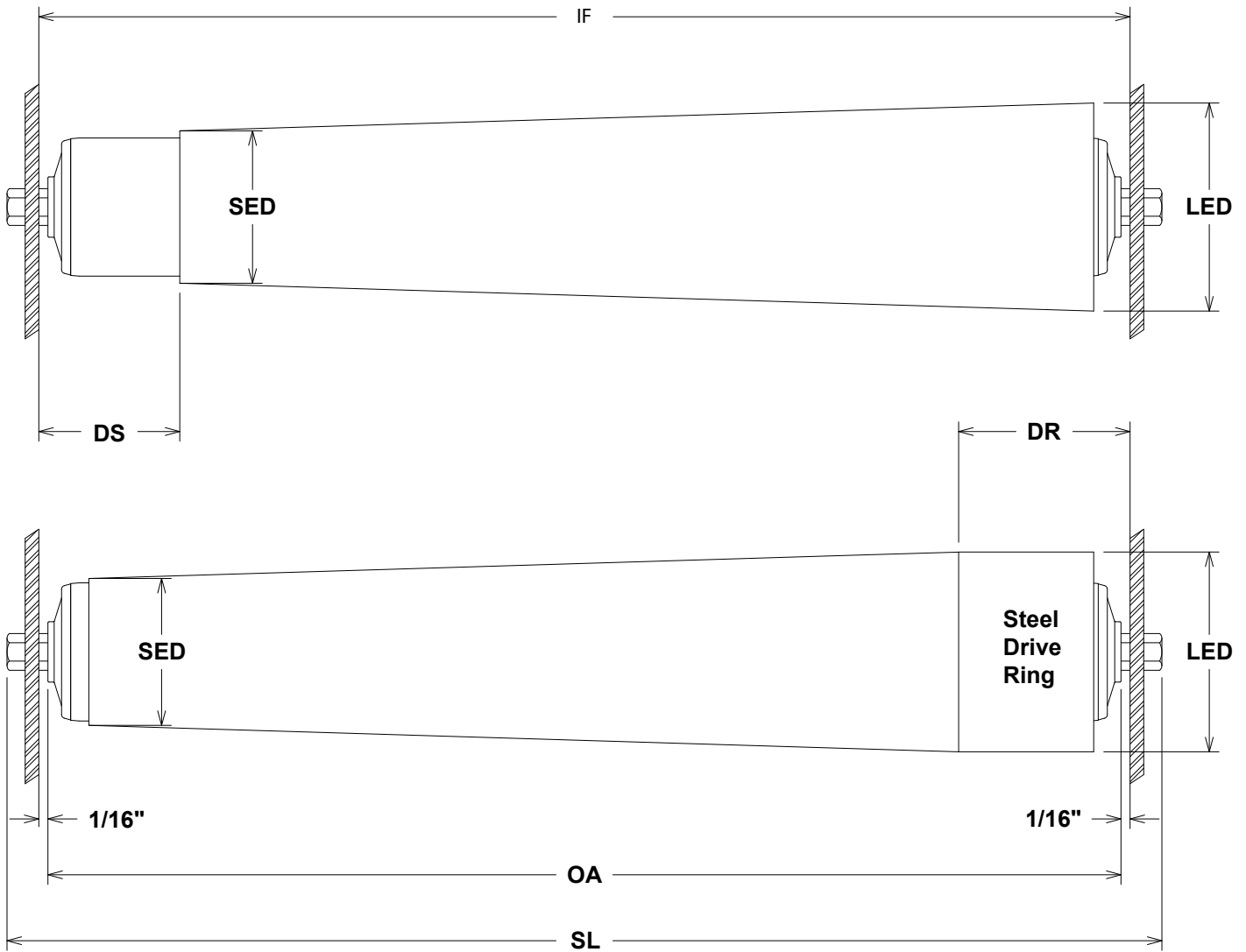
Company: _____

Contact: _____

Phone: _____

Fax: _____

“V” Belt Driven Urethane Tapered Roller



Company: _____

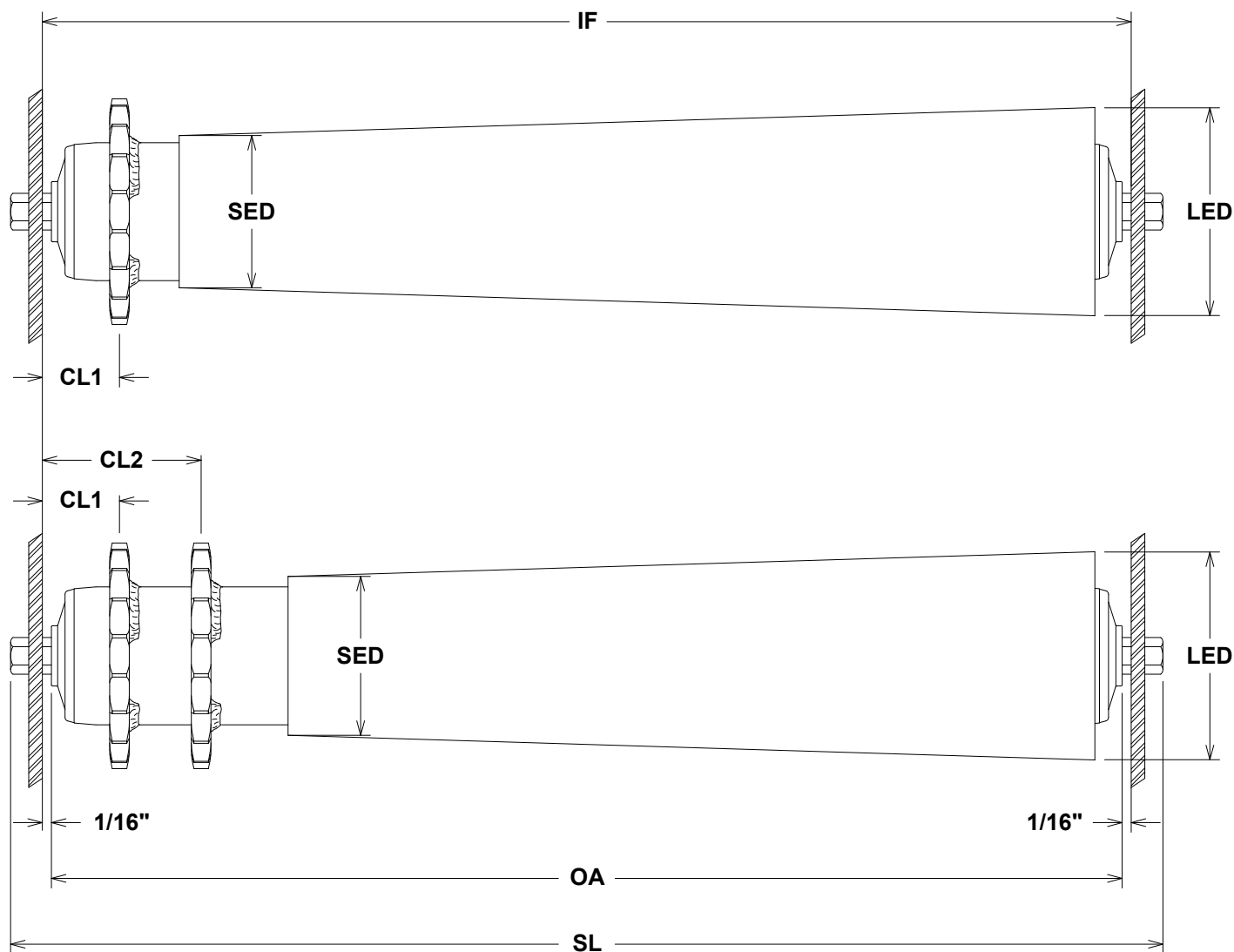
Contact: _____

Phone: _____

Fax: _____

- | | |
|-----------------|------------------------------------|
| Bearing = _____ | Commercial / ABEC-1 (Precision) |
| Tube = _____ | Material - CS / SS / GALV |
| Shaft = _____ | Size / Configuration / Material |
| SL = _____ | Shaft Length Overall |
| OA = _____ | Overall Roller Length (hub to hub) |
| IF = _____ | Inside Frame Width |
| IR = _____ | Inside Radius of Curve |
| SED = _____ | Small End Diameter |
| LED = _____ | Large End Diameter |
| DS = _____ | Drive Section (BARE) |
| DR = _____ | Drive Ring Information |

Sprocket Driven Urethane Tapered Roller



Company: _____

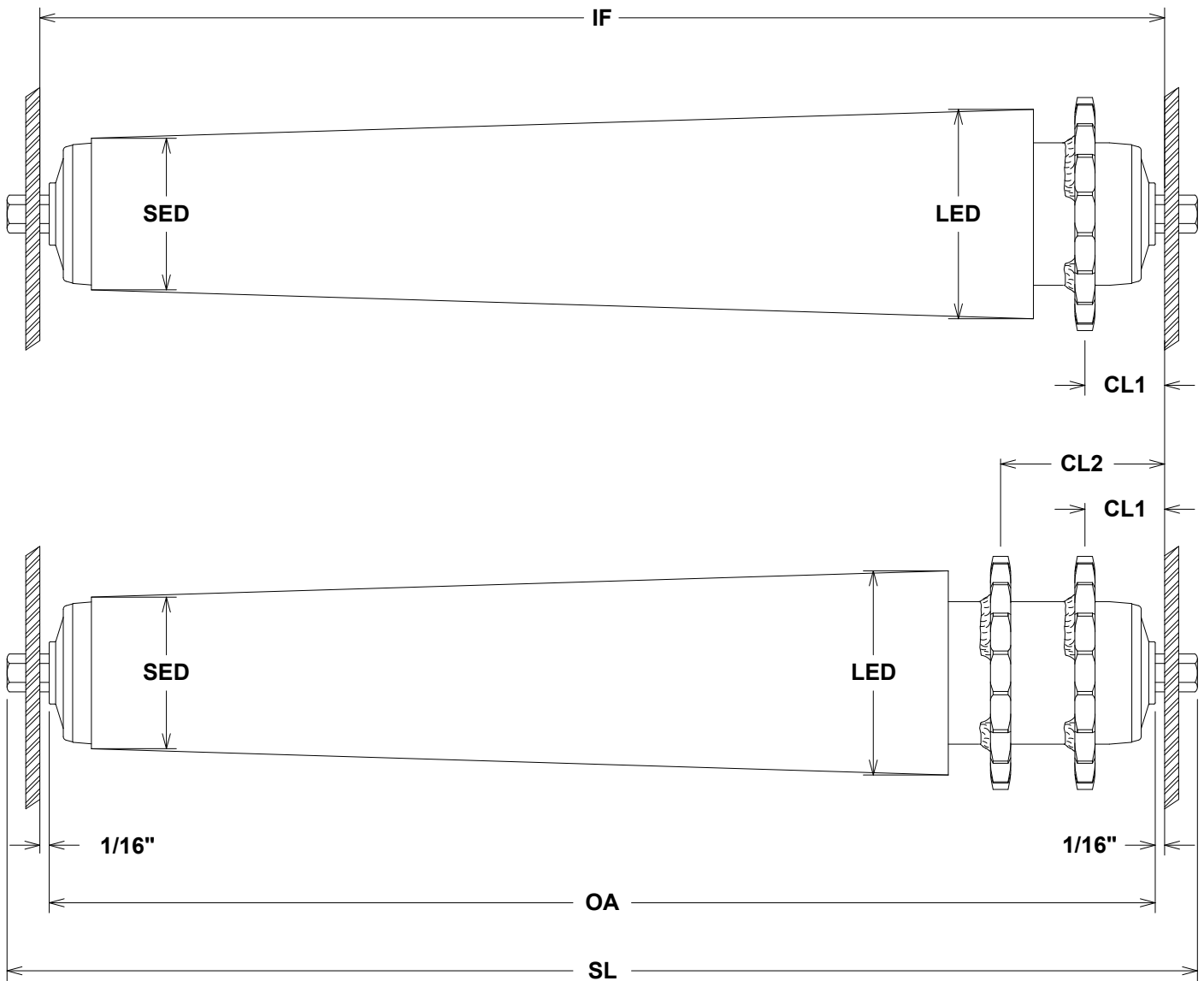
Contact: _____

Phone: _____

Fax: _____

- Bearing = _____ Commercial / ABEC-1 (Precision)
- Tube = _____ Material - CS / SS / GALV
- Shaft = _____ Size / Configuration / Material
- SL = _____ Shaft Length Overall
- OA = _____ Overall Roller Length (hub to hub)
- IF = _____ Inside Frame Width
- IR = _____ Inside Radius of Curve
- SED = _____ Small End Diameter
- LED = _____ Large End Diameter
- CL1 = _____ Frame to Sprocket Center
- CL2 = _____ Frame to Sprocket Center
- Sprocket = _____ Chain Size / # of Teeth

Sprocket Driven Urethane Tapered Roller



- Bearing = _____
- Tube = _____
- Shaft = _____
- SL = _____
- OA = _____
- IF = _____
- IR = _____
- SED = _____
- LED = _____
- CL1 = _____
- CL2 = _____
- Sprocket = _____
- Commercial / ABEC-1 (Precision)
- Material - CS / SS / GALV
- Size / Configuration / Material
- Shaft Length Overall
- Overall Roller Length (hub to hub)
- Inside Frame Width
- Inside Radius of Curve
- Small End Diameter
- Large End Diameter
- Frame to Sprocket Center
- Frame to Sprocket Center
- Chain Size / # of Teeth

Company: _____

Contact: _____

Phone: _____

Fax: _____

Ralphs-Pugh Urethane Sleeved Rollers

Ralphs-Pugh urethane sleeved rollers are available in two styles, cast (for the best properties) or an extruded sleeve. Cast urethane prevents the sleeve from “walking” through the use of our proprietary casting process. Extruded sleeves utilize an interference fit. Urethane offers a variety of advantages over a standard steel tube. The most notable are shock and impact resistance, non-marking surface and superior cut, tear, and wear resistance. *When combined with Ralphs-Pugh Urethane Hexagonal Shaft Adapters and precision bearings, these rollers are the quietest available.*

How to use this section:

Our Customer Service department will require the following information to assist in the proper selection of a urethane sleeved roller:

- Finished diameter of sleeved roller
- Durometer of urethane
- Surface Finish – As cast (smooth) or ground (matte)
- Gravity or powered – (if powered, grooves or sprockets)
- Load and speed
- Environment
- Shaft size and configuration
- I.F. – Inside frame dimension
- Any side impact

Tube Information:

Tube Materials: Galvanized steel, carbon steel, stainless steel and aluminum.

Drive options: Location and dimensions of sprockets or grooves, one way clutch - (See drawings in this section).

Shaft Information:

Shaft Materials: Carbon steel, stainless steel, and aluminum. Zinc and nickel plating are available.

Shaft Configurations: Hex and Round

Shaft Extensions: Standard is 9/16” from the hub of the bearing to the end of the shaft per side. If you require a specific shaft length notify Customer Service when ordering.

Shaft Deburring: Standard on all shaft ends

Springs: Standard is dual spring loaded with shaft depressing to the hub of the bearing



Shaft End Options: Plastic or urethane adapters over an internal metal shaft, fixed shaft, through shaft, threaded ends, drilled and tapped ends, drilled holes, milled flats, D-shaft ends, plastic flat caps.

Bearing Information:

Stamped Commercial: *An economical commercial grade plated steel bearing with hardened steel balls and raceways and a full compliment of balls.* There is no ball retainer and outer raceways are either machined or stamped. Normal lubrication is light oil, however they can be ordered grease packed for powered applications. Loads and speed capabilities are classified as light to moderate. These bearings are identified by a 22 in the prefix of the part number. They are manufactured to our specifications by outside vendors.

Example – 22A6

Steel, Commercial: *These are an economical commercial grade plated steel ball bearing in an engineered conductive or non-conductive plastic housing with or without labyrinth seals.* All plastic housings are designed, engineered, and molded in our facility. The raceways and full compliment of balls are hardened steel. Loads and speeds are classified as light to moderate. Normal lubrication is light oil with grease packing available for powered systems. For optimum performance and bearing life, these units are swaged into the metal tubes. These bearings are identified by a 2 in the prefix in the part number. Example - 2A6

Stainless Steel: These are commercial grade stainless steel ball bearings in an engineered conductive or non-conductive plastic housing with or without labyrinth seals. All plastic housings are designed, engineered, and molded in our facility. *The combination of stainless steel and available labyrinth seals offers the ultimate solution to wet and corrosive applications.* The raceways and full compliment of balls are series 300 stainless steel. Loads and speeds are classified as light to moderate. Normal lubrication is light oil with grease packing available for powered systems. Food grade lubricants are also available. For optimum performance and bearing life, these units are swaged into the metal tubes. These bearings are identified by a 2 in the prefix of the part number. Example – 2A7

ABEC-1 Precision: These are ABEC-1 precision chrome alloy steel bearings grease packed with hardened and ground balls and raceways and a ball retainer. They are housed in an engineered plastic housing designed, engineered, and molded in our facility in conductive or non-conductive materials with or without labyrinth seals. *These bearings offer the highest load and speed capabilities, the lowest noise levels and have the longest life span of any available bearing unit.* For optimum performance and bearing life, they are swaged into the metal tubes. These bearings are identified by a 3 in the prefix of the part number. Example - 3A6



ABEC-1 Precision bearings in stamped zinc plated steel housings: Economical alternative to ABEC-1 bearings in plastic housings. These bearing inserts work well in higher load and speed applications while maintaining very low noise levels. The ABEC-1 bearing has hardened and ground balls and raceways, a ball retainer and is grease packed (25%

pack) at the factory. Non-Contact Rubber Seals (LLB) protect the caged ball compliment. The stamped zinc plated housing on some variations incorporates a dust shield for added protection to the precision bearing. The life expectancy of a precision bearing is many times that of a non-precision bearing. For optimum performance and bearing life we recommend the bearing units be swaged into the metal tubes. These bearings have a 33 prefix in the part number. Available for metal tubes only. Example - 33RP

Bushing: These non ball bearing style bearing units are designed for light to medium loads and slow speeds. Typical installations are push conveyors and gravity conveyors. *They are ideal for sanitary, rust and corrosion resistant, maintenance free wet or dry applications.* Bearing surface materials include Ultra (Acetal plastic with Teflon additives), CS2 (Acetal) and ABS plastic. Bushing inserts include nylon, stainless steel, and carbon steel. These bearings are identified by a 5 in the prefix of the part number. Example - 5B5

Urethane Information:

Color: Standard: Black and orange
Options: Available, inquire with Customer Service

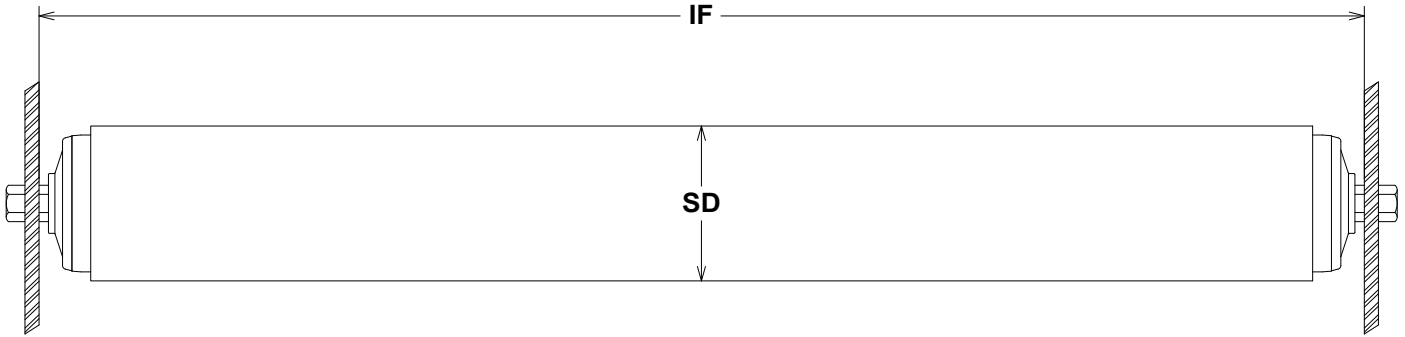
Durometer: Cast: 70 (shore A)
Extruded: 80-85 (shore A)

Optional Material: Food grade available

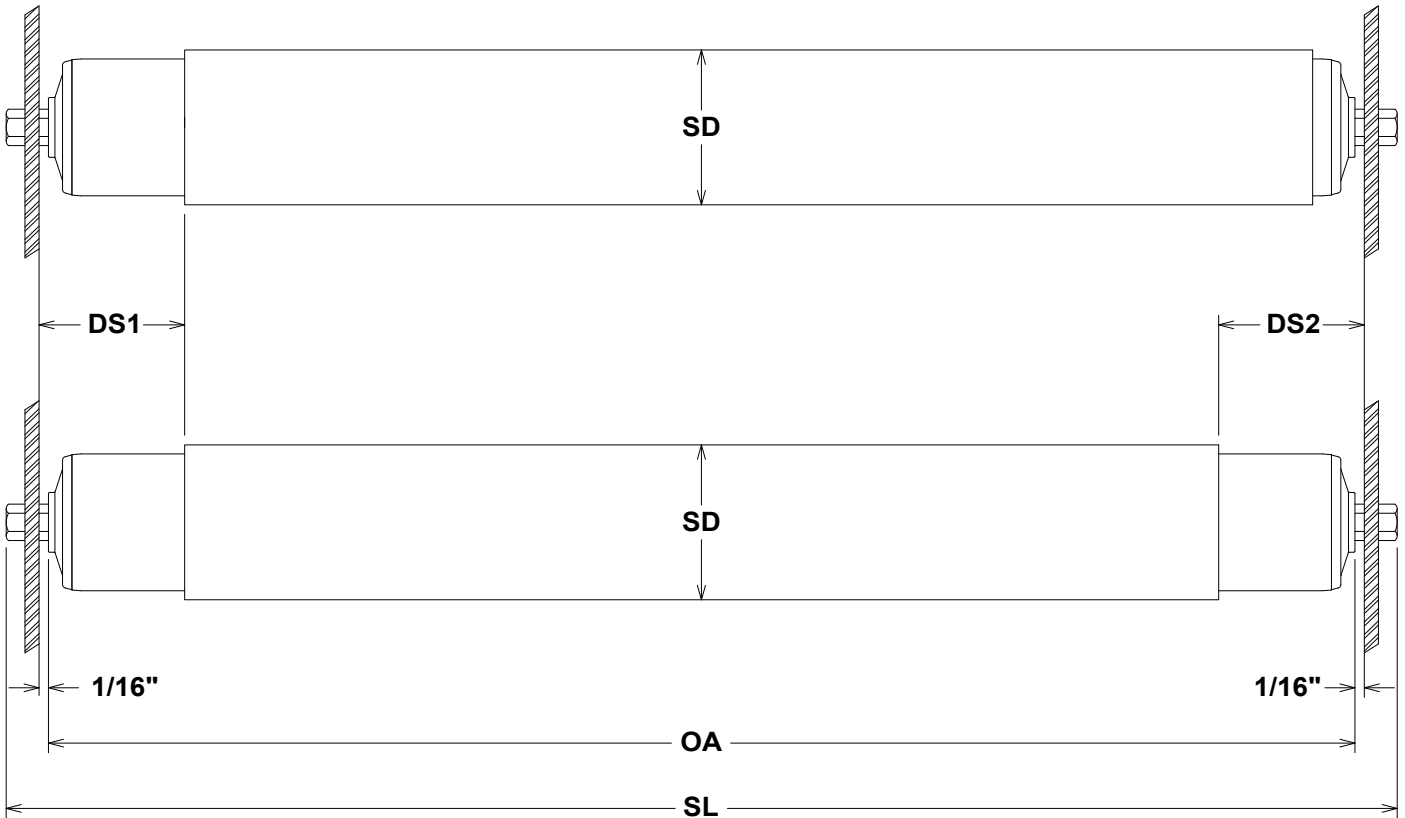
Roller Length: I. F. = Inside Frame distance. This measurement allows 1/16" of freeplay per side for a total of 1/8" per roller. O.A. = Overall roller length. This is the measurement from bearing hub to bearing hub of the roller. For calculation purposes I.F. - 1/8" = O.A.

Drawings are provided to illustrate the required configuration and dimensional information.
Please have them available when talking to Customer Service.

Gravity Urethane Sleeved Roller

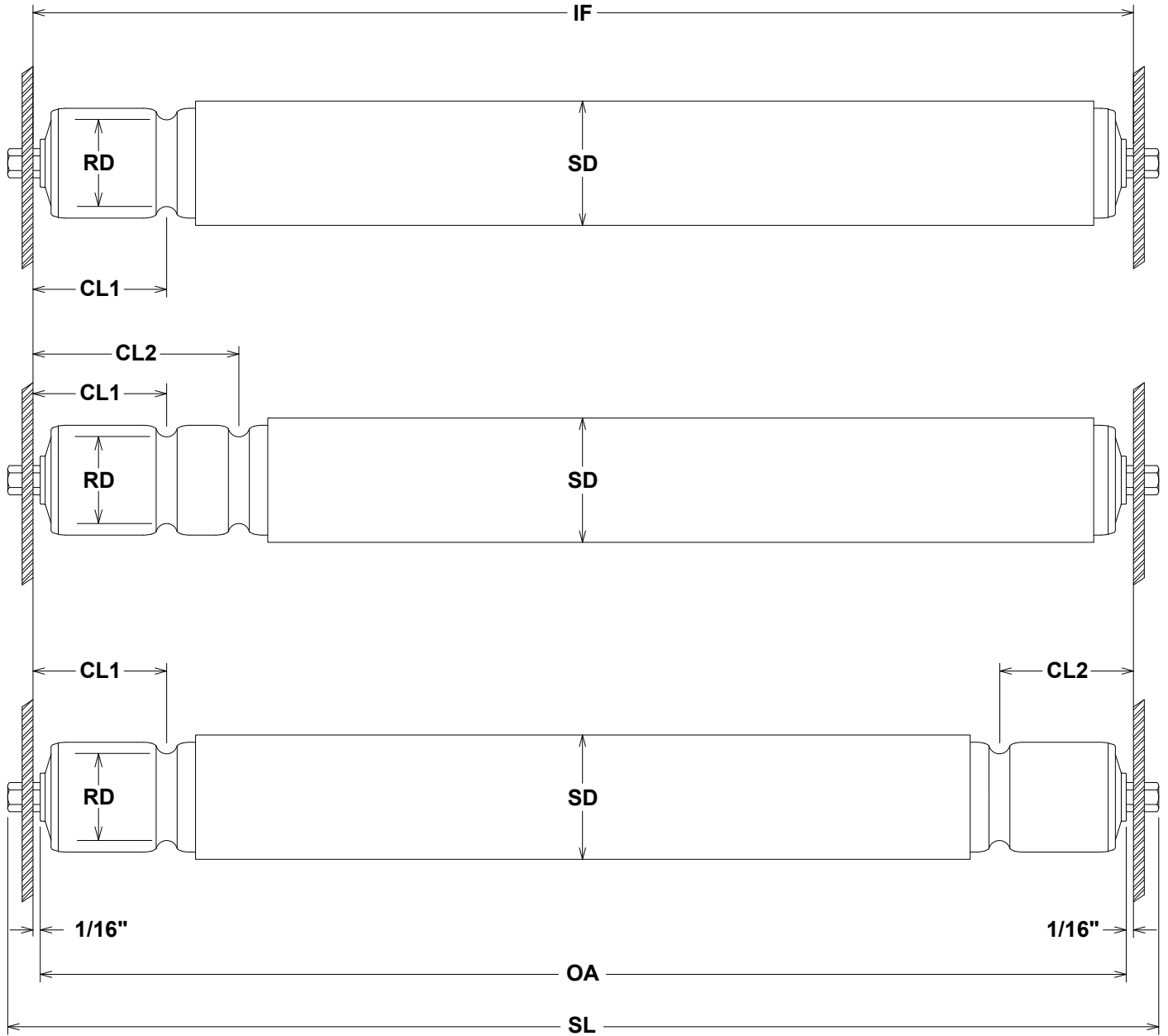


Belt Driven Urethane Sleeved Roller



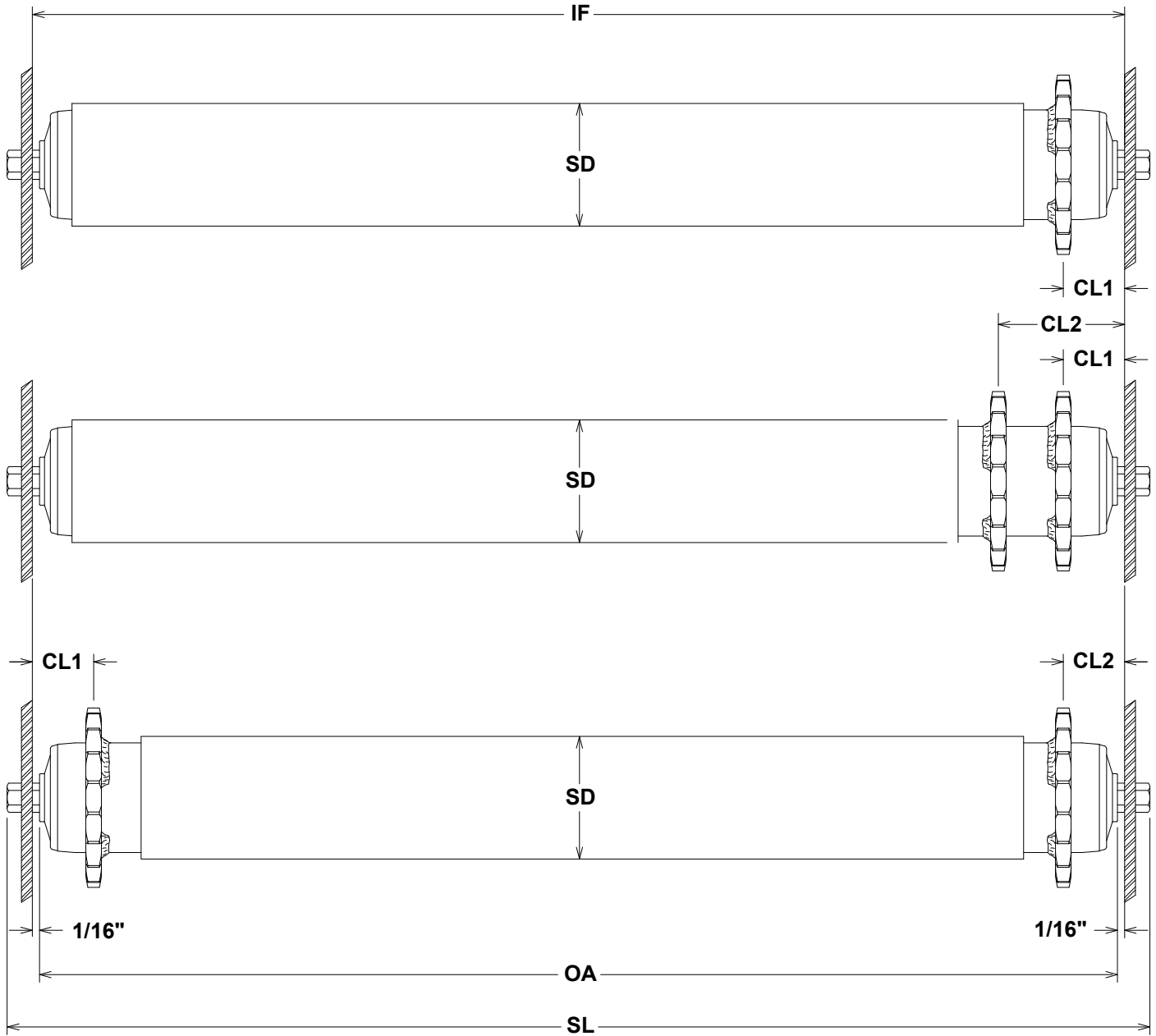
<p>Company: _____</p> <p>Contact: _____</p> <p>Phone: _____</p> <p>Fax: _____</p>	<p>Bearing = _____</p> <p>Tube = _____</p> <p>Shaft = _____</p> <p>SL = _____</p> <p>OA = _____</p> <p>IF = _____</p> <p>SD = _____</p> <p>DS1 = _____</p> <p>DS2 = _____</p>	<p>Commercial / ABEC-1 (Precision)</p> <p>Material - CS / SS / GALV</p> <p>Size / Configuration / Material</p> <p>Shaft Length Overall</p> <p>Overall Roller Length (hub to hub)</p> <p>Inside Frame Width</p> <p>Sleeve Diameter</p> <p>Drive Section Length</p> <p>Drive Section Length</p>
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“O” Ring Driven Urethane Sleeved Rollers



<p>Company: _____</p> <p>Contact: _____</p> <p>Phone: _____</p> <p>Fax: _____</p>	<p>Bearing = _____</p> <p>Tube = _____</p> <p>Shaft = _____</p> <p>SL = _____</p> <p>OA = _____</p> <p>IF = _____</p> <p>SD = _____</p> <p>CL1 = _____</p> <p>CL2 = _____</p> <p>RD = _____</p>	<p>Commercial / ABEC-1 (Precision)</p> <p>Material - CS / SS / GALV</p> <p>Size / Configuration / Material</p> <p>Shaft Length Overall</p> <p>Overall Roller Length (hub to hub)</p> <p>Inside Frame Width</p> <p>Sleeve Diameter</p> <p>Frame to Groove Center</p> <p>Frame to Groove Center</p> <p>Root Diameter of Grooves</p>
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Sprocket Driven Urethane Sleeved Rollers



Company: _____	Bearing = _____	Commercial / ABEC-1 (Precision)
Contact: _____	Tube = _____	Material - CS / SS / GALV
Phone: _____	Shaft = _____	Size / Configuration / Material
Fax: _____	SL = _____	Shaft Length Overall
	OA = _____	Overall Roller Length (hub to hub)
	IF = _____	Inside Frame Width
	SD = _____	Sleeve Diameter
	CL1 = _____	Frame to Sprocket Center
	CL2 = _____	Frame to Sprocket Center
	Sprocket = _____	Chain Size / # of Teeth