AirStar®

HYDROSTATIC SEPARATOR ROLLS

Air Lubricated for High-Speed Processing and Low Torque

AirStar Bearings, LLC
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AirStar is One of the Largest Independent Separator Roll Manufacturers in the USA Today.

AirStar Separator Rolls have been engineered and manufactured in Sandusky, Ohio, for more than 50 years.

New Departure Hyatt, a former division of General Motors, began production of AirStar bearings in 1968 after six years of intensive engineering, research, and development with the cooperative efforts of engineers at multiple GM divisions and research laboratories.

Today, AirStar Separator Rolls are manufactured by AirStar Bearings, LLC, a partnership located in Sandusky, Ohio.

Throughout the years there have been many new designs and enhancements made through cooperative efforts with AirStar customers.

AirStar separator rolls, sometimes called air bearings, are used in various types of textile machinery, but typically in synthetic fiber and yarn extrusion and drawing processes. Our bearings are ideal for fine filament drawing, draw-twisting, texturing, and winding equipment to guide and turn both hot and cold threads, yarns, wires, and filaments.

» Our goal is to satisfy our customers' needs and exceed their expectations.

AirStar Technology

The AirStar Separator Roll (sometimes called an air bearing) is a hydrostatic bearing. The rotating roll and stationary carbon bushing are separated by a thin film of pressurized air, which is supplied through the shaft.

This thin film of air eliminates friction and supports both radial and thrust loads. The pressurized flow of air exhausts at the ends of the roll and aids in protecting the bearing against external solid, liquid, and gaseous contaminants.

AirStar bearings have a unique construction with a carbon liner pressed in the rotating outer roll and a carbon bushing on the stationary shaft. This construction tolerates intermittent overloads from excessive wraps, tension, vibration, or transient loss of air supply.

AirStar bearings are dynamically balanced for vibration-free performance.

The AirStar design results in a superior separator roll with the following benefits:

- Extremely long bearing life
- Very low friction and bearing torque for production of fine denier products
- Ability to operate at very high speeds
- Ability to operate in high temperature environments

AirStar Installation and Maintenance

AirStar separator rolls provide continuous and consistent performance for extended periods of time when properly installed and recommended maintenance procedures are followed.

Visit our website at AirStarBearings.com or contact us for more information.

AirStar has produced and sold hundreds of designs that have been successfully used in many applications throughout the world.

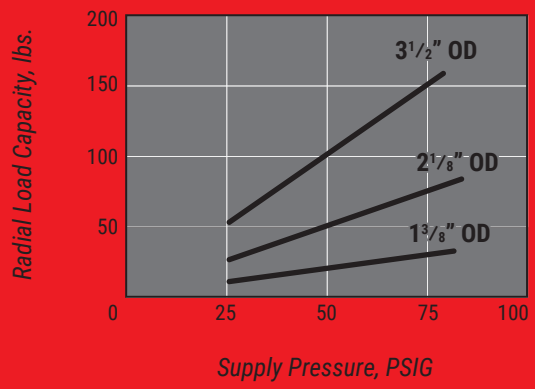
AirStar Products

While countless coatings and surface finishes are available, common roll coatings include alumina titania, chrome oxide, and chrome plate. A plasma nickel undercoating can also be applied. The outer rings and shafts can be manufactured from many materials including, but not limited to, carbon steel, aluminum, stainless steel, and carpenter 20 stainless steel. Shafts can be designed with or without set screw grooves and with English or metric internal threads. AirStar also manufactures self-rotating bearings. These bearings use the air supply to rotate the roll. On the larger size bearings, the rotational feature can be turned off to reduce air consumption.

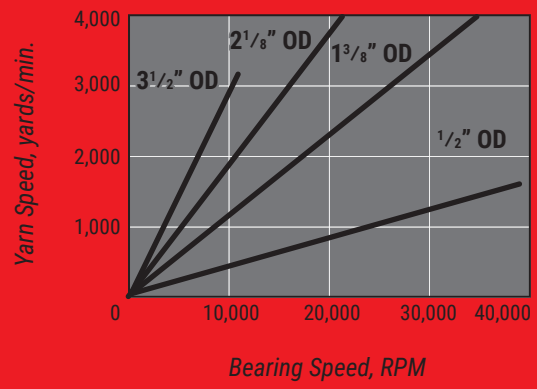
A table on the back page lists operating characteristics for some standard sizes. Please provide information about your specific application, and our knowledgeable team will recommend an existing design or develop a custom separator roll design to meet your requirements.

AirStar Performance Graphs

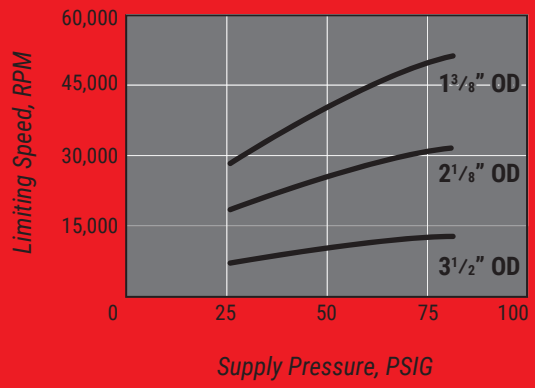
Load Capacity vs. Pressure



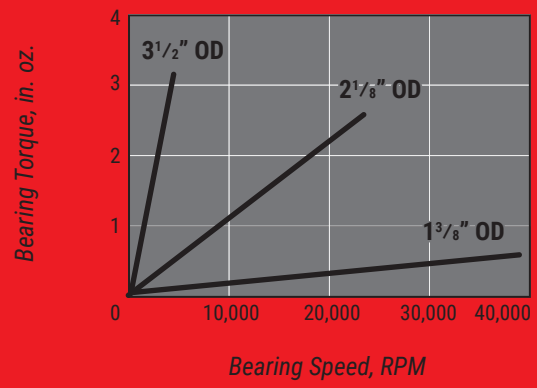
Yarn Speed vs. RPM



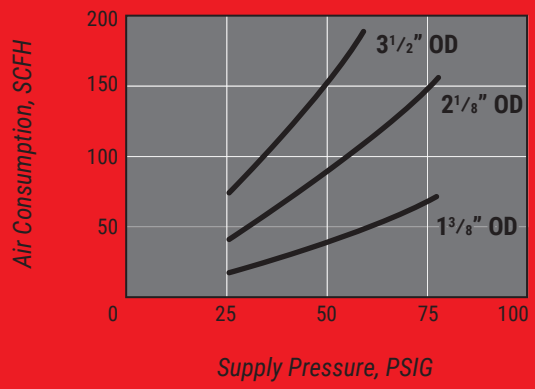
Limiting Speed vs. Pressure



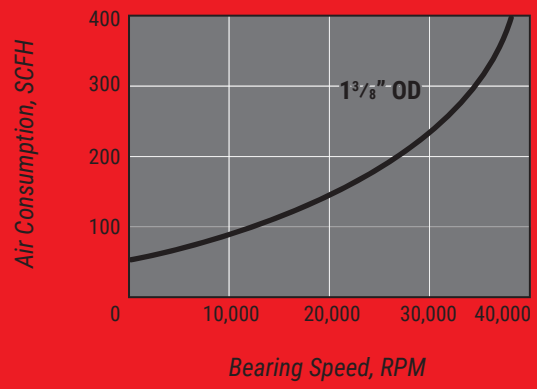
Torque vs. RPM



Air Consumption vs. Pressure



Air Consumption vs. Self Rotating Speed



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Operating Characteristics by Roll Diameter

A	B	C	D	E	F	G	Operating Characteristics at 70°F and 50 psig				
Roll Diameter	Roll Length	Flange Diameter	Shaft Mounting Diameter	Shaft Mounting Length	Pipe Thread	Offset	Maximum Load Capacity			Limiting Speed	Typical Air Consumption
							Radial	Thrust	Moment		
Inches	Inches	Inches	Inches	Inches	Inches	Inches	Pounds	Pounds	Inch Pounds	RPM	SCFH
1/2	0.75	-	10-32 UNF	0.322	-	0.039	2	0.1	0.1	100,000	10
3/4	2.00	1.000	1/4 - 28 UNF	0.250	-	0.093	5	0.5	0.5	40,000	40
1 3/8	2.7, 3.2, 4.2, 5.2, 6.2	1.625	0.496	0.875	1/8 - 27	0.081	20	2	7.5, 12.5	40,000	40, 50, 60
2 1/8	4.75, 9, 13	2.750	1.000	1.250, 2.250	3/8 - 18	0.100	50	5	25, 50	25,000	80
3 1/2	9, 13, 14	-	1.000	2.250	3/8 - 18	0.250	100	10	100	10,000	150