

Jones

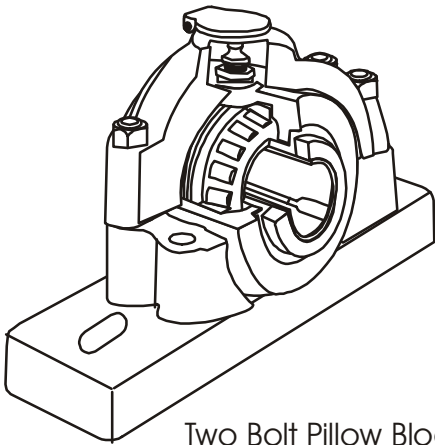
....*Since 1890*

Installation Operation Lubrication and parts list For:

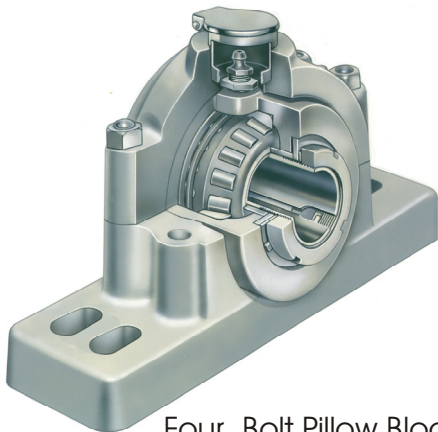
- **Pillow Blocks**
- **Spherical Units**
- **Take-Ups**

Jones

Jones Bearing Company
P.O. Box 274
Pelham, AL. 35124



Two Bolt Pillow Block
Exposed View



Four Bolt Pillow Block
Exposed View

General

Jones Pillow Blocks, taper bearing equipped, are manufactured in two types designated as EXPANSION and NO-EXPANSION. Each pillow block carries a colored name plate indication the type and also the size of shaft the pillow block will accommodate.

EXPANSION TYPE
PILLOW BLOCKS ARE
IDENTIFIED BY THIS
BLUE NAME PLATE



NON- EXPANSION TYPE
PILLOW BLOCKS ARE
IDENTIFIED BY THIS
BLUE NAME PLATE



When Two or more pillow blocks are used on a shaft, one should ordinarily be of the NON-EXPANSION TYPE (RED NAME PLATE) to prevent the shaft from moving endwise. The other(s) should be of the EXPANSION TYPE (BLUE NAME PLATE). After an installation is made any slight change in center distance between the pillow block such as that caused by expansion or contraction in the shaft and supports due to temperature condition, for example, is taken care of automatically in the EXPANSION TYPE pillow block.

The amount of space provided for expansions or contraction in the Jones EXPANSION TYPE pillow block is easily observed through the grease fitting cover. It is not necessary to take the pillow block apart for this purpose when installing or later when greasing and servicing. The various component parts mentioned in the following comments may be readily identified by referring to the spare parts list and diagrams.

General Information (Cont'd).

The tapered bearing is in a self contained unit designated as a housing with a bearing adjusting cover. The bearing has been adjusted at the factory for proper running clearance and the adjusting cover has been locked in place. This adjustment is based on normal ambient temperature conditions and for operation within the speed range indicated in the Jones pillow block bulletin and should not be disturbed when mounting the unit on the shaft. If the pillow block is to be used under higher temperature conditions for speeds in excess of those shown in the Jones pillow block bulletin, consult the factory for further information.

The Cap may be removed from the base for convenience in handling, if necessary when installing, but the cap should always be mounted on the same base and in the same position as originally assembled as they are machined as matched parts and the original assembly should be maintained.

Jones pillow blocks do not require round shafts, shoulders, or threaded shaft portions. They may be mounted on any shaft which is straight and of the correct diameter. Loose adapter sleeves permit the bearings to move on the shaft: therefore, they should be securely locked to the shafts before the pillow blocks are bolted to the support structure.

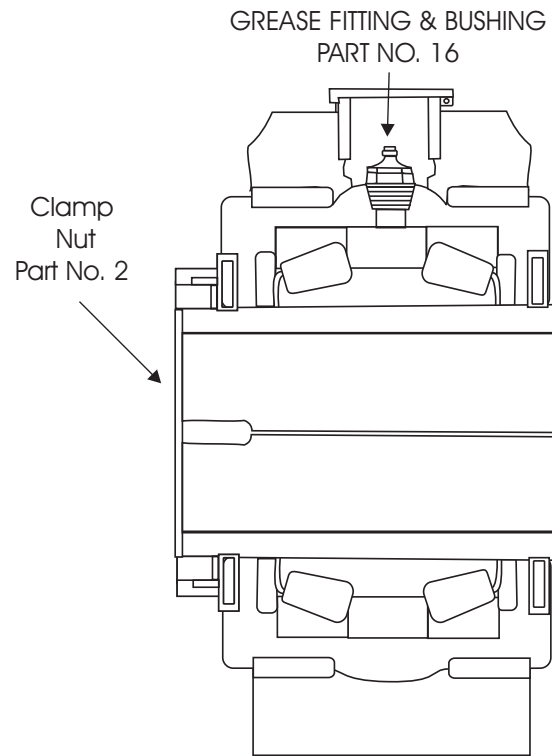
Jones pillow blocks from 1-15/16 to 3-3/16" shaft sizes inclusive are provided with adapter sleeves have a Clamp Nut, Part Number 2 at the small end. The purpose of the clamp nut is to draw the adapter sleeve in to the tapered bore of the roller bearing and thus, by compression secure the sleeve tightly to the shaft.

In the 3-15/16 size and larger, the adapter sleeve is equipped with two nuts. The Clamp Nut, Part Number 2, located at the small end of the adapter sleeve is used for securing the sleeve to the shaft by means of drawing it tightly in the tapered bore of the bearing in the same manner as employed in the smaller sizes. The Backing-Off Nut, as the name implies, Part Number 17 locating the large end of the adapter sleeve is used for loosening the sleeve from the shaft when necessary for removal.

When Locating pillow blocks on shafts and securing them in place, the Backing-Off Nut should be loosened so it will not interfere with tightening of the clamp nut when drawing the adapter sleeve tightly in to the tapered bore in the bearing. Only after the clamp nut has been drawn up tight and locked in place then the backing off nut be drawn up until it is in contact with the lock washer, Part No. 18, and seal ring., Part No. 20. And then locked in place. The BACKING OFF NUT SHOULD NEVER BE DRAWN UP EXTREMELY TIGHT, as in the case of the clamp nut, as that obviously tends to loosen the adapter sleeve on the shaft.

INSTALLING PILLOW BLOCKS

1. Shaft should be smooth and free from burrs. They should be round and of the diameter specified for the pillow block. When mounting two or more pillow blocks on the same shaft, the NON-EXPANSION TYPE (RED NAME PLATE)



SECTION THROUGH PILLOW BLOCKS
1-15/16 TO 3-7/16 SIZES, INCLUSIVE

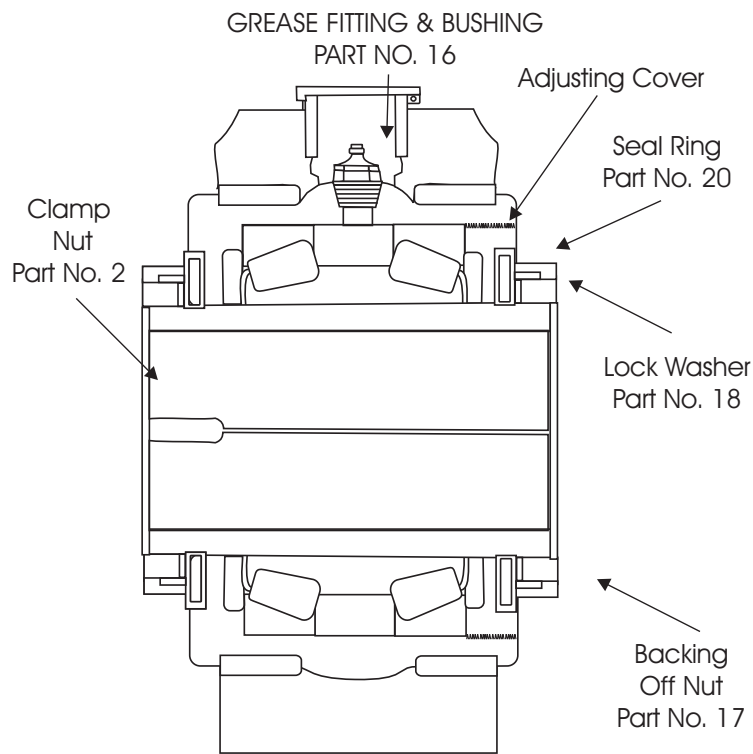
Should be installed first as one of its functions is to locate the shaft axially in the correct position. Pillow blocks should be placed on the shafts by the clamp Nut Part number 2 will be easily accessible and convenient when tightening and for future inspection and servicing.

2. Shaft and bores in the adapter sleeves should be clean and dry when installing. A thin coat of powdered graphite is desirable between the adapter sleeves and shaft as it helps to prevent corrosion and assist in the easy removal of the sleeves if that should be necessary at some future time. Oils, greases or white lead should not be used for this purpose.

3. Loosen Clamp Nut, Part No. 2, about five turns and tap the face of the nut if necessary to be sure to expand the adapter sleeve. Also, loosen the Backing-Off Nut, Part No. 17, on the larger sizes about five turns so there is no possibility of it preventing the adapter sleeve from being drawn securely in to the taper bore in the bearing by the clamp nut. **THIS IS IMPORTANT.**

4. Locate the pillow block at the proper position on the shaft. If it does not slide freely into place examine the shaft as well as the bore in the sleeve for burrs or other inaccuracies. When sliding the sleeve on the shaft, it may be helpful to place a block between the adaptor sleeve Backing-Off Nut, Part No. 17, on the larger sizes and the pillow block housing to keep the adaptor sleeve open and thus preventing the clamping action of the tapered sleeve from making it difficult to move on the shaft. The pillow block should then be moved into the proper position on the shaft.

5. To put an initial clamp effect into the adapter sleeve, tap against the large end of the sleeve, opposite the clamp nut, or on the larger sizes.



SECTION THROUGH PILLOW BLOCKS
3-15/16 And Larger Sizes

Against the face of the Backing-Off Nut, Part Number 17, using a babbitt hammer or wood block to prevent the possibility of damage.

6. Use a spanner wrench on Clamp Nut, Part Number 2, tightening by hand. On EXPANSION TYPE (BLUE NAME PLATE) pillow blocks check through the grease fitting cover to make certain that the grease fitting and bushings, Part Number 16, is centered in the opening to permit endwise movement for possible shaft expansion or contraction.
7. Clamp adapter sleeve tightly to the shaft by a few blows with a hammer on the spanner wrench, thus setting the clamp nut up tight.
8. After the adaptor sleeve and clamp nut have been located and tightened, bend a prong of the lock washer into one of the slots in the clamp nut to prevent the nut from working loose. Do not back off or loosen the clamp nut in order to engage a prong on the lockwasher as the proper indexing for engagement must be done only while tightening to be sure or prevent any movement late between the sleeve and shaft.
9. On the larger sizes having a Backing -Off Nut, Part number 17, a spanner wrench should be used to move it into place for snug metal to metal fit against the lockwasher. Only tighten the Backing-Off Nut moderately as excessive force used here is unnecessary and likely to be harmful as it tends to loosen the sleeve on the shaft. The purpose of the Clamp Nut is to keep the adapter sleeve tight on the shaft while the purpose of the Backing-Off Nut is for easy removal of the adaptor sleeve if this should ever be necessary. Bend a prong of the lockwasher into a slot in the Backing-Off Nut to keep it from working loose.
10. The Pillow Blocks may now be bolted on the supports on which they are to be mounted. The EXPANSION TYPE

General Information (Cont'd).

(BLUE NAME PLATE) pillow blocks again should be checked through the grease fitting covers to make sure that grease fittings and bushings are centered in the opening to permit the spherical units free endwise movement without interference. Any slight changes in center distance between the pillow blocks such as that caused by expansion or contraction, due to the temperature conditions, are taken care of automatically in the EXPANSION TYPE pillow blocks.

11. Pillow blocks supplied with standard slotted cored holes may be adjusted for alignment during assembly by the amount of movement allowed in the slotted holes. The bolts in such cases are first tightened to prevent the pillow blocks from movement largely by friction between the base of the pillow blocks and the supports to which they are bolted. When pillow block are mounted on either plain or wedge adjusting base plates, adjusting screws are provided to prevent movement in addition to the base bolts. When base plates are not employed and pillow blocks are mounted on structural steel or other supports, it is common practice after the pillow blocks are assembled and aligned to bolt or weld flat steel bars to the supports, bearing against the ends of the pillow block bases, to prevent any possible future movement or displacement, instead of depending entirely upon the clamping action of the bolts.

12. After pillow blocks have been in operation for a short period, it is always desirable to check the adapter sleeves and clamp nuts to make sure they are tight and to insure there is no movement between the sleeves and shafts.

REMOVING PILLOW BLOCKS FROM SHAFTS

1-15/16" to 3-7/16 sizes Inclusively

1. Free the lockwasher prong from the slot in the clamp nut.
2. Using a spanner wrench loosen the clamp nut, Part Number 2, about five turns.
3. Using a babbitt hammer or wood block, to prevent damage, give the clamp nut a few light blows on the outer face parallel with the shaft to start the adaptor sleeve out of the taper bore in the bearing.
4. When the initial tight fit of the adaptor sleeve in the taper bore is broken and the sleeve loose, the unit may be removed from the shaft.

3-15/16" and Larger Sizes

1. Free the lockwasher prong from the slot in the clamp nut and also in the backing-off nut.
2. Using a spanner wrench, loosen the clamp nut, Part number 2, about five turns.
3. Again using a spanner wrench on the Backing- Off Nut, Part Number 17, tighten the backing -off nut until the adaptor sleeve is loose in the taper bore of the bearing and on the shaft.
4. It may be necessary to tap the clamp nut with a few light blows with a babbitt hammer or wood block to assist the backing-off nut in breaking the initial tight fit in the taper bore. As soon as the adaptor sleeve is loose, the entire unit may be removed from the shaft.

LUBRICATION INSTRUCTIONS

GENERAL

The internal parts of all Jones Roller Bearing equipped items are covered with a coating of grease before they leave the factory. Bearings should in all cases be filled with grease before they are put in operation. Lubricant should be applied with a gun thru the hydraulic type fitting located in the unit. In the pillow block the fitting is recessed in the cap and protected by a snap top cover. The amount of lubricant used and the frequency of application should be governed by the conditions under which the bearing is installed and the speed at which it is operated

There are several functions of the lubricant:

1. To reduce the friction of the parts and protect them against excessive wear.
2. To protect the highly polished bearing surfaces from corrosion.
3. To aid in carrying away heat.
4. To help the seals in keeping foreign matter out of the bearings.

OPERATION

It is considered desirable to lubricate new pillow blocks several times at short intervals after they have been placed in operation. Under normal conditions of service, they should then only require lubrication at intervals as shown in the table below.

Surrounding Conditions	Temperature	Lubrication Intervals
Clean	Up to 120 Degrees F	6-12 Months
	Over 120 Degrees F to 250 degrees F	1-4 Weeks
Moderate & Heavy Dust and Dirt	Up to 120 Degrees F	1-4 Weeks
	Over 120 Degrees F to 250 degrees F	One or more times a week
Water Splash or Moisture		One or more times a week

Some sizes cannot be operated at this speed. This table is to be used as a suggested lubrication interval guide only and is not for determining maximum permissible R.P. M. See table for maximum R.P.M. Red commended. CAUTION--this table does not take into consideration the radial load capacity of the bearing-Refer to Jones Pillow Block Catalog.

MAXIMUM R.P. M .RECOMMENDED

STANDARD SHAFT SIZE IN INCHES											
1 $\frac{15}{16}$	2 $\frac{3}{16}$	2 $\frac{15}{16}$	2 $\frac{7}{16}$	3 $\frac{7}{16}$	3 $\frac{15}{16}$	4 $\frac{7}{16}$	4 $\frac{15}{16}$	6	7	8	9
MAXIMUM SHAFT SPEED--R.P.M.											
2500	2500	2000	1700	1500	1000	1250	1250	750	750	500	500

No definite rules can be given to cover all applications. The frequency of greasing should be governed by the specific conditions under which the pillow block is installed and the speed at which it is operated. Faulty lubrication is generally indicated by an unusually high operating temperature or by noise coming from the bearing if it is running dry. High temperatures with excessive leakage of thin grease through the labyrinth seals indicates that too much grease has been supplied to the bearing. High temperature with no grease showing at the seals usually indicates an insufficient amount of grease in the bearing. A normal operating temperature with a slight amount of grease showing the seals indicates proper lubrication. The normal operating temperature of a bearing (depending on size speed and surrounding temperature conditions) ay vary from cool or warm to the hand to the point where it is too hot to leave the hand on for more than a few seconds at a time.

For new installations, where pillow blocks are subject to wet or dusty conditions or to corrosive vapors, it is advisable to add extra grease before putting them into operation. In these cases the bearing should be filled with as much grease as the operation speed will permit. This might cause a slight leakage at the seals, but this flushing action is desirable and is the best means of presenting dust, dirt and water from entering he bearing.

GREASE RECOMMENDATIONS

Use a high grade grease specially prepares for roller bearing service. For applications where extreme ambient temperatures, high speeds or high loads are expected, Jones can provide a variety of special greases or the customer can provide grease in the field. Standard grease provided is Shell Avania#2. Any other greases are available including Chevron, Exxon, SRI, and a variety of EP greases. Non standard greases are available in inclding Mobiltemp 1, Aeroshell7 and 17 and Shell Darna #2. Special greases are available as an option and can special ordered. (Set up charges and premiums may apply) For applications or greases not listed , please contact the Jones Engineering Department.

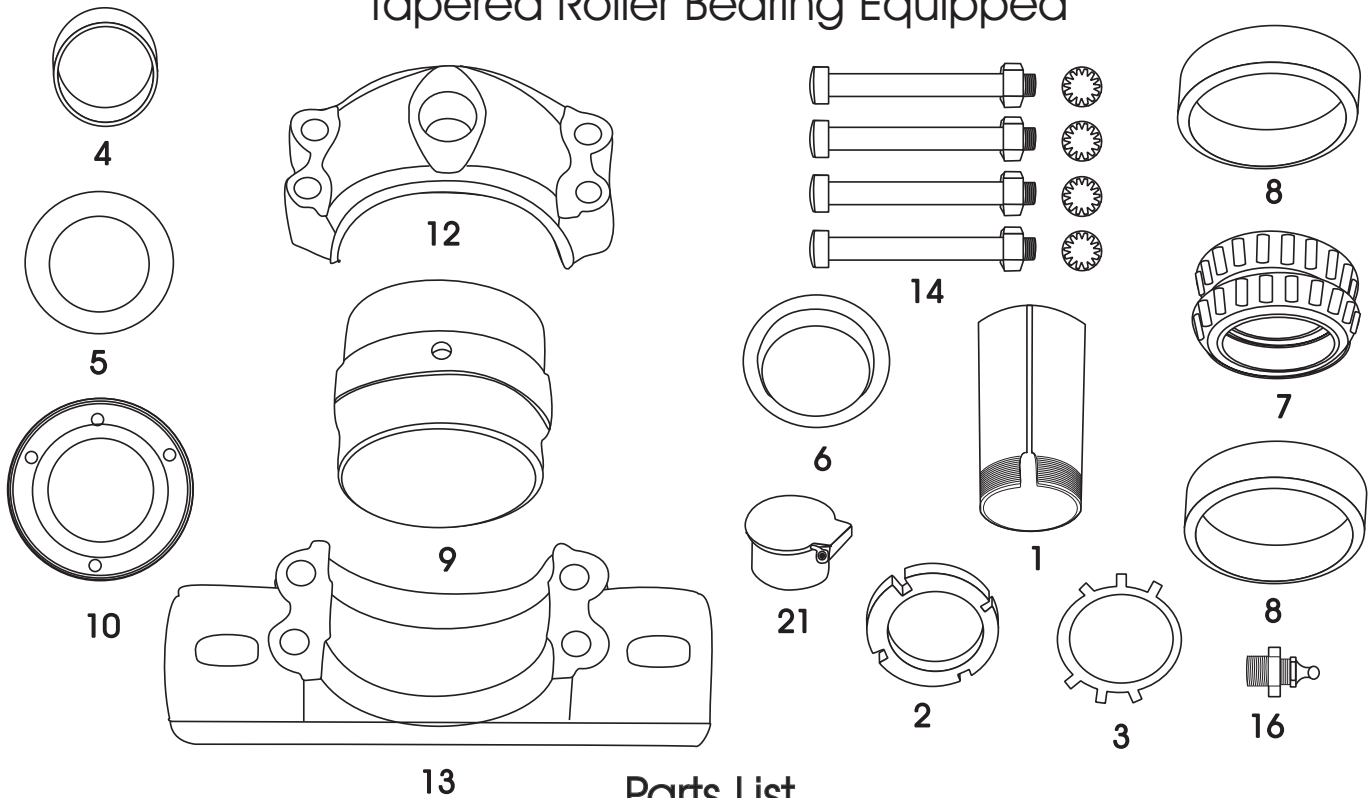
Parts List

1000 Series Extra Heavy Duty

Jones
...Since 1890

FOR PILLOW BLOCK SIZES UP TO AND INCLUDING 3-7/16

Jones Self-Aligning Pillow Blocks
Tapered Roller Bearing Equipped



Parts List

Number	Quantity Each	Description	Number	Quantity Each	Description
1	1	Adapter Sleeve.	9	1	Bearing, Housing.
2	1	Clamp nut for securing adaptor sleeve to shaft.	10	1	Bearing adjusting cover.
3	1	Lock Washer for clamp nut	11	1	Lock screw for bearing adjusting cover.
4	1	Spacer collar.	* 12	1	Cap.
5	1	Seal Ring.	* 13	1	Base.
6	1	Clamp seal.	14	4	Cap bolts.
7	1	Bearing inner race and roller assembly.	15	4	Cap bolt lock washers.
8	2	Bearing outer races..	16	1	Grease Fitting and bushing.
			21	1	Grease fitting cover.

When ordering a part, always specify the shaft size. This dimension is stamped on the metal tag attached to the bearing cap.

The cap and base are machined as a unit, thus assuring the proper fit with the spherical unit. If a cap or base require replacement both will be furnished with the bolts and lock washers. BE SURE TO SPECIFY EXPANSION OR NON EXPANSION TYPE.

* Bases for 1 15/16 and 2 3/16 Pillow Blocks will be furnished with 2 slotted bot holes unless otherwise specified.

* Bases for 2 7/16", 2 15/16" and 3 7/16" Pillow Blocks will be furnished with 4 slotted bolt holes unless otherwise specified.

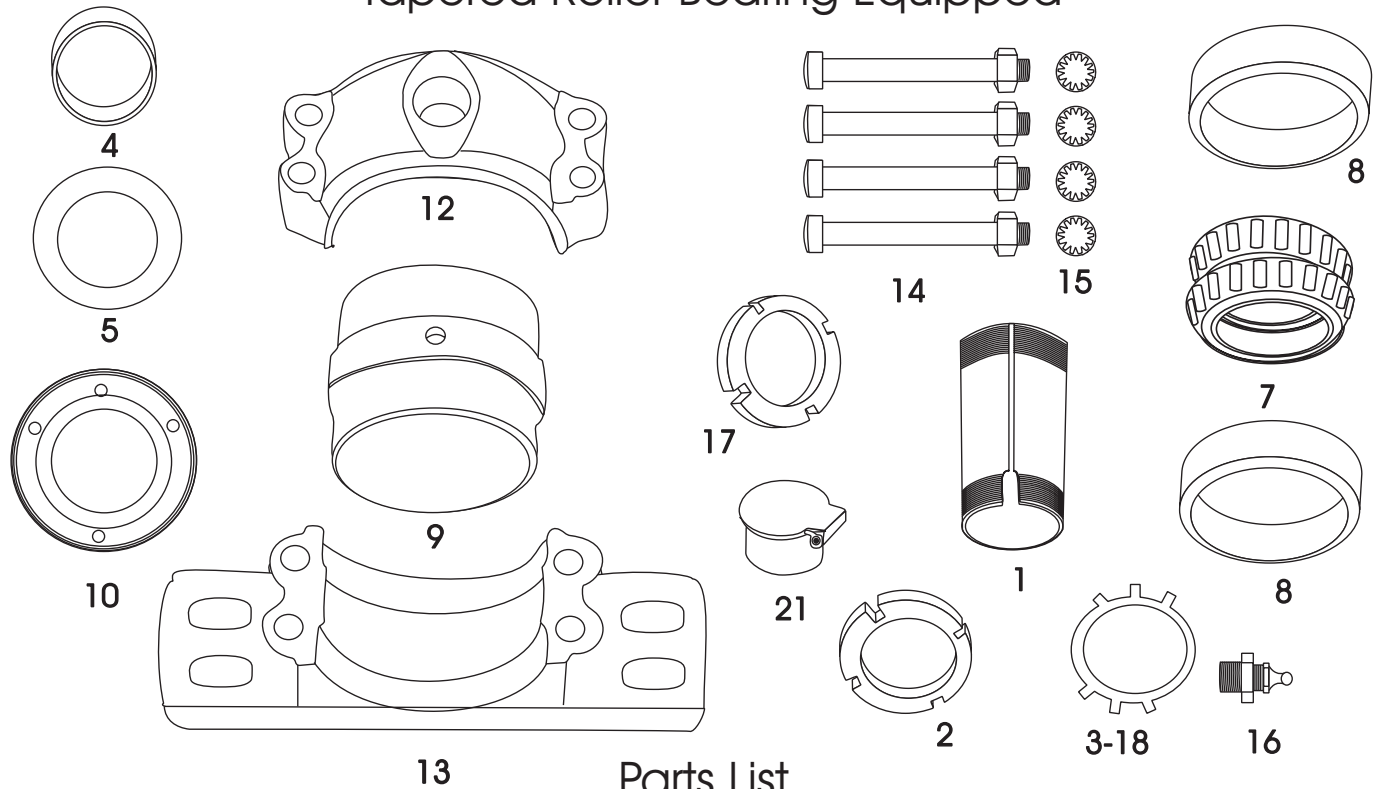
Parts List

1000 Series Extra Heavy Duty

Jones
...Since 1890

FOR PILLOW BLOCK SIZES 3-15/16" TO 10" INCLUSIVE

Jones Self-Aligning Pillow Blocks
Tapered Roller Bearing Equipped



Parts List

Number	Quantity Each	Description	Number	Quantity Each	Description
1	1	Adapter Sleeve.	12	1	Cap.
2	1	Clamp nut for securing adaptor sleeve to shaft.	13	1	Base.
3	1	Lock Washer for clamp nut	14	4	Cap bolts.
4	1	Spacer collar adjacent to clamp nut.	15	4	Cap bolt lock washers.
5	1	Seal Ring adjacent to clamp nut.	16	1	Grease Fitting and bushing.
6	1	Bearing inner race and roller assembly.	17	1	Backing-off nut.
7	1	Bearing outer races.	18	1	Lock washer for backing-off nut.
8	2	Bearing outer races.	19	1	Spacer collar adjacent to backing off nut.
9	1	Bearing housing.	20	1	Seal ring adjacent to backing off nut.
10	1	Bearing adjusting cover.	21	1	Grease fitting cover.
11	1	Lock screw for bearing adjusting cover.			

When ordering a part, always specify the shaft size. This dimension is stamped on the metal tag attached to the bearing cap. The cap and base are machined as a unit, thus assuring the proper fit with the spherical unit. If a cap or base require replacement both will be furnished with the bolts and lock washers. BE SURE TO SPECIFY EXPANSION OR NON EXPANSION TYPE