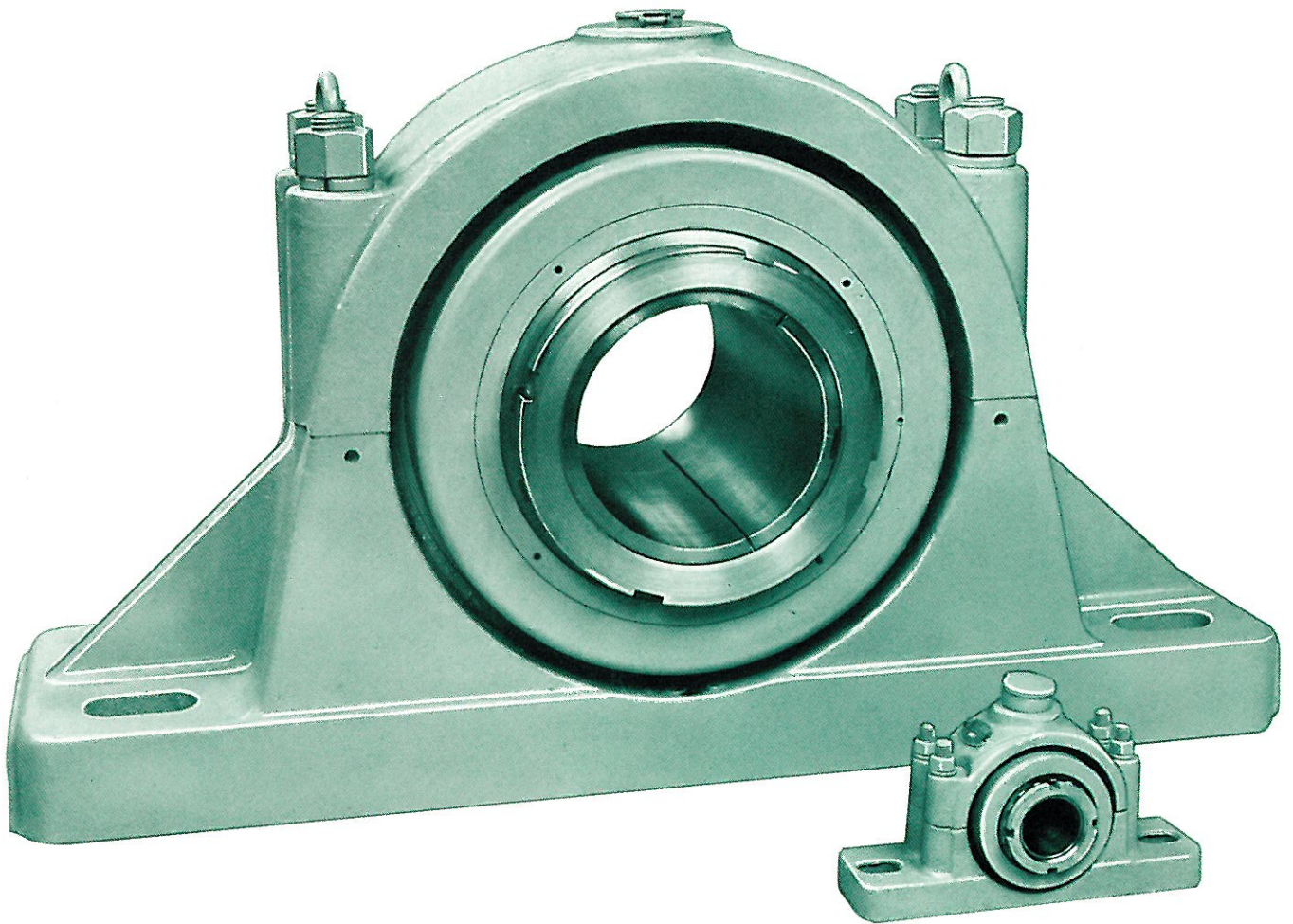


Pillow Blocks

PT-230



Foot-Jones

FOOTE-JONES OPERATIONS POWER TRANSMISSION DIVISION DRESSER INDUSTRIES, INC.

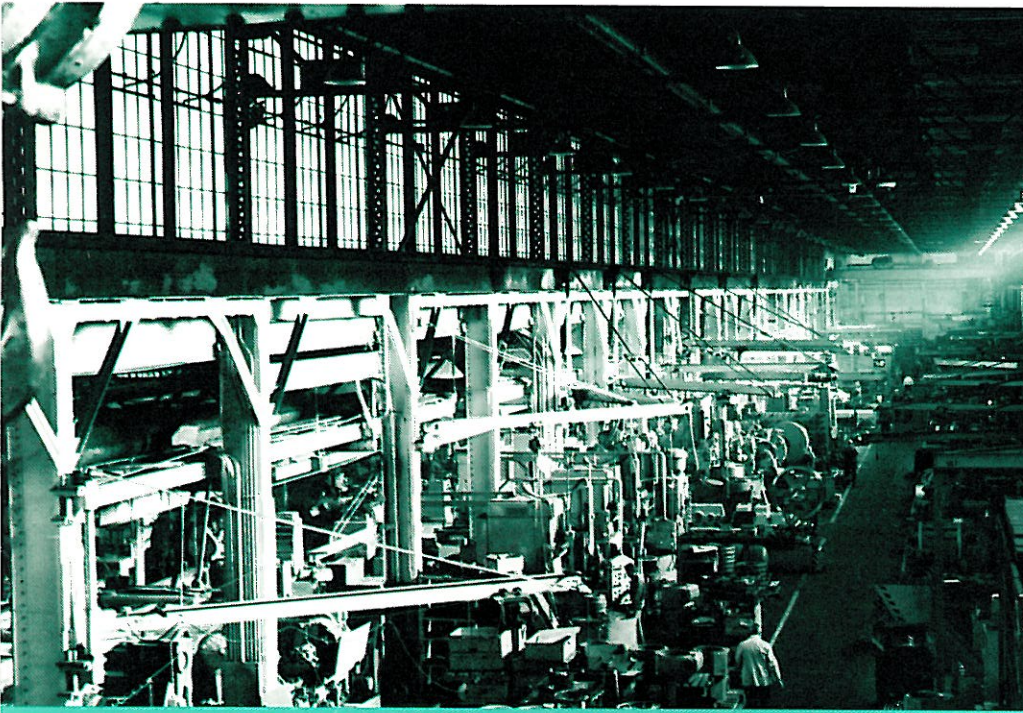
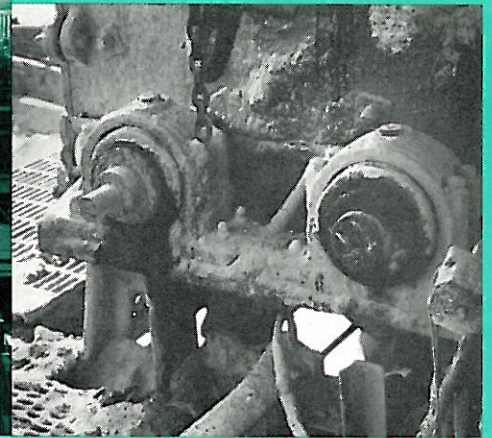
The Foote-Jones Operations combines two of the most highly respected names in the Power Transmission Industry. Foote Brothers Gear and Machinery Corporation, founded in 1859, is a leading producer of helical concentric speed reducers. W.A. Jones Foundry and Machine Company, established in 1890, continues to be one of the major manufacturers of parallel shaft and spiral bevel reducers, high speed and medium speed gear drives, car pullers, pillow blocks, and special gear reduction drives. These two companies merged in 1962 and were acquired by Dresser Industries, Inc. in 1974. Foote-Jones' extensive power transmission experience including innovative product design, research and development, combined with important manufacturing advancements has enabled the company to keep pace with industry's ever-increasing demand for greater and more efficient plant productivity while satisfying higher ecological standards for quieter, safer and more reliable operation.

Foote-Jones meets these requirements by producing products that are designed and manufactured to operate with the increased service life desired by industry today.



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Plant No. 1—Chicago, Illinois

Plant No. 3—Downers Grove, Illinois

Plant No. 2—Chicago, Illinois

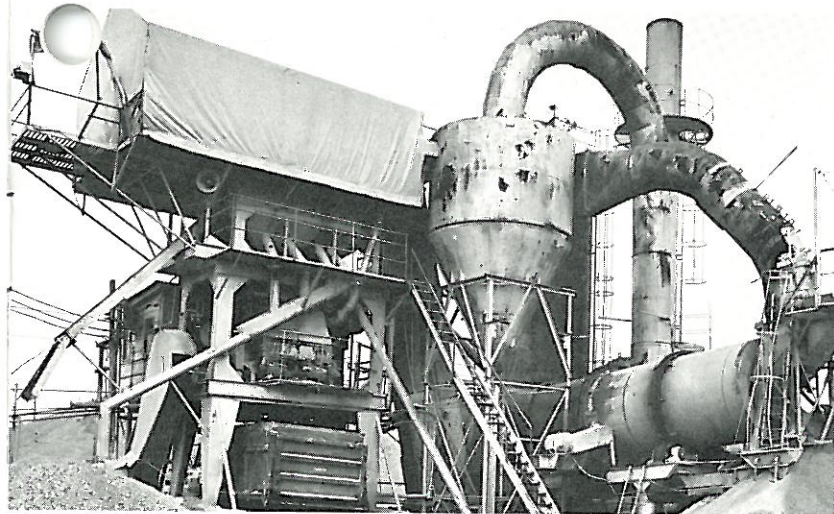


Fig. 3-1: Cement Kiln: A typical industry served by Foote-Jones Heavy Duty Pillow Blocks.

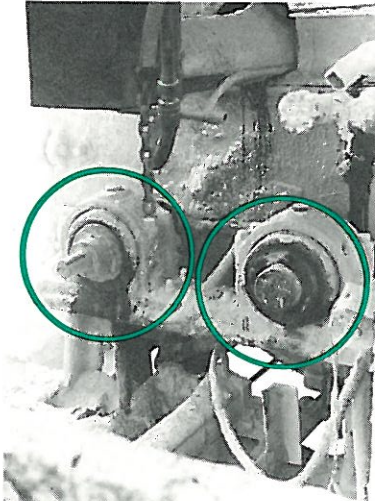


Fig. 3-2: Close-up of Foote-Jones Heavy Duty Pillow Blocks caked with cement.



Fig. 3-3: Foote-Jones Heavy Duty Pillow Block supporting a V-Belt Drive.

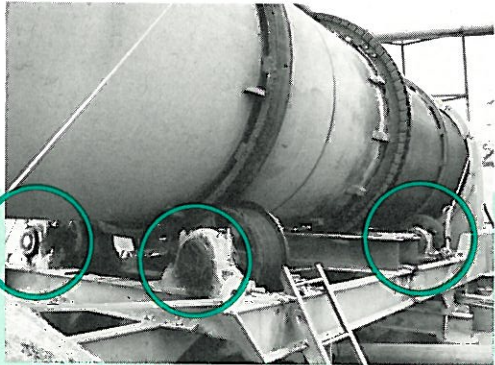


Fig. 3-4: Foote-Jones Heavy Duty Pillow Blocks supporting the cement kiln and mounted on a Heavy Duty Steel Frame Work.

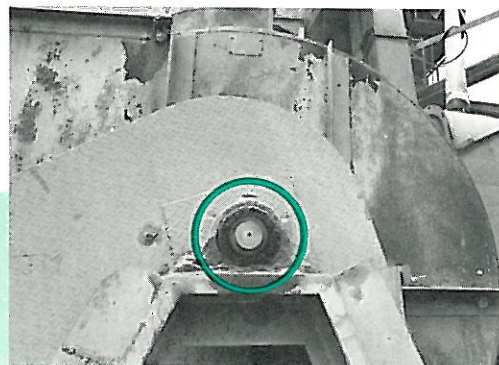


Fig. 3-5: Close-up of the Foote-Jones Heavy Duty Pillow Block shown in 3-3. Note the amount of cement caked on the drive guard and on the Pillow Block Housing.

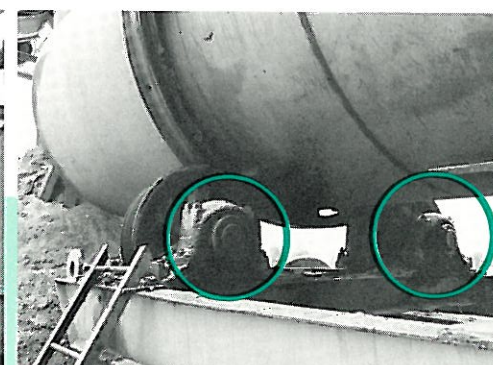


Fig. 3-6: Foote-Jones Heavy Duty Pillow Blocks symmetrical grease chambers and labyrinth grease seals insure that with proper maintenance a film of grease is always present and no chance for the grease chamber to draw in damaging cement aggregate.

TIMKEN BEARING EQUIPPED

Every heavy industry has important power transmission jobs for production, material handling, and process equipment where the operating conditions are so severe that no ordinary anti-friction bearing pillow block can deliver satisfactory service.

It is for these industries, in which standard products are not acceptable, that the Foote-Jones Heavy Duty Roller Bearing Pillow Block was designed.

These Foote-Jones Heavy Duty Pillow Blocks cannot be compared with other pillow blocks of ordinary design and construction. The superiority of the Foote-Jones Pillow Blocks is particularly apparent when the operating conditions are unusually severe—where shock loads, excessive dust, dirt, abrasion and moisture are encountered. Many of the most successful Foote-Jones Pillow Block installations have resulted from making replacements for other units which, under adverse conditions, incurred exorbitantly high maintenance expenses or caused costly shutdowns of equipment.

The Foote-Jones Heavy Duty Roller Bearing Pillow Blocks are economical because of their dependability. They generate an overall savings by providing more service life for the difficult jobs, while holding maintenance and operating costs to a minimum.

SAFETY

Accidents can be prevented. As with any machinery, it is essential that personnel directly responsible for the installation, maintenance, and operation of the equipment be properly trained in order to insure safety. It is the user's responsibility to install guards that are appropriate for his specific application. The customer should provide guards to protect personnel from any rotating shafts, gearing, chain & sprockets, V-Belts & pulleys, and/or couplings used with Foote-Jones Dresser's Pillow Blocks.

Fig. 3-7: Foote-Jones Self Aligning Pillow Block, Timken Roller Bearing equipped with a tapered adaptor sleeve.

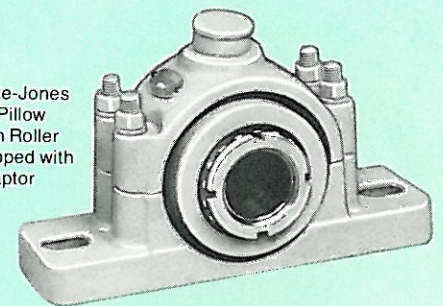
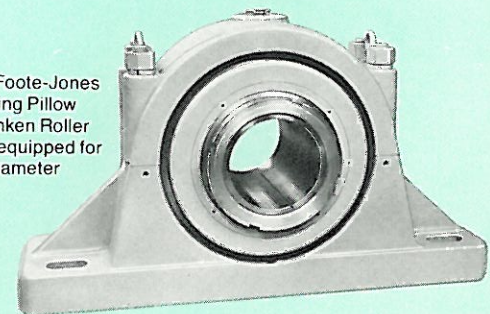
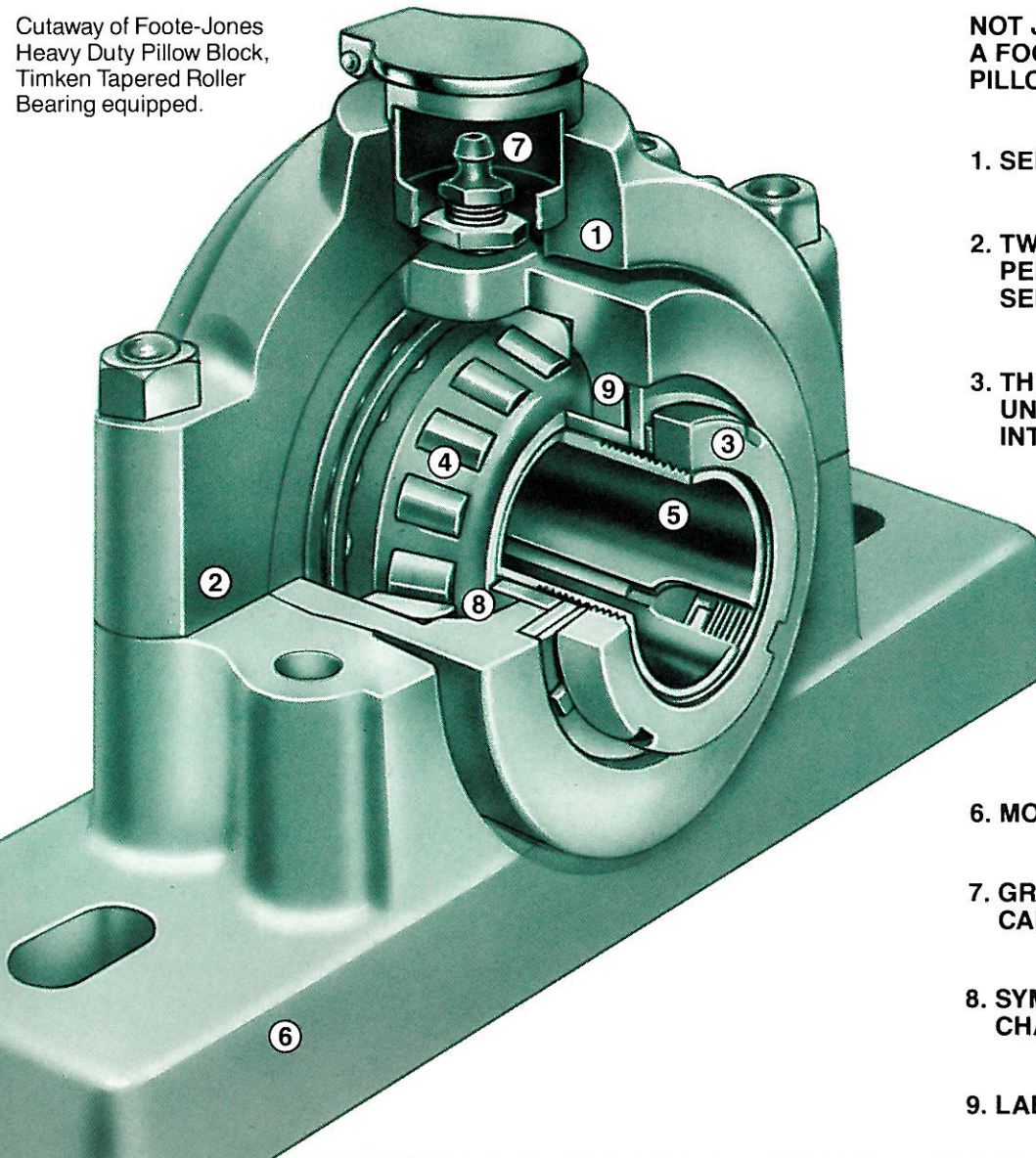


Fig. 3-8: Foote-Jones Self Aligning Pillow Block, Timken Roller Bearings equipped for a 9 inch diameter shaft.

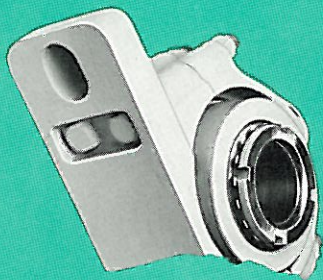


Cutaway of Foote-Jones Heavy Duty Pillow Block, Timken Tapered Roller Bearing equipped.



**NOT JUST A PILLOW BLOCK...
A FOOTE-JONES ENGINEERED
PILLOW BLOCK**

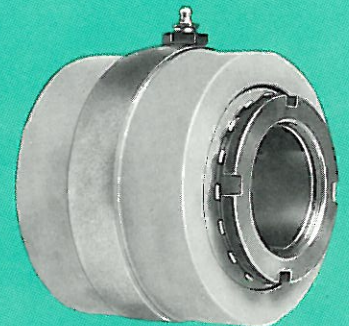
1. SELF-ALIGNING
2. TWO PIECE HOUSING—
PERMITS ACCESS FOR
SERVICING, LUBRICATING
3. THE FOOTE-JONES SPHERICAL
UNIT IS THE BASIS OF BEARING
INTERCHANGEABILITY
4. TIMKEN TAPERED
ROLLER BEARINGS.
ONLY ONE SPARE
BEARING CARTRIDGE
NEEDED
5. SPLIT ADAPTOR
SLEEVE
6. MOUNTING
7. GREASE FITTING AND DUST
CAP
8. SYMMETRICAL GREASE
CHAMBERS
9. LABYRINTH GREASE SEALS



Bases are solid with cored recessed bolt holes. Foote-Jones puts the strength where it counts.



All Foote-Jones Heavy Duty Pillow Blocks are equipped with double row Timken Bearings utilizing a one piece inner race.



The Foote-Jones Spherical Unit is the basis of bearing interchangeability.

SELF ALIGNMENT:

Self Alignment is independent of the roller bearing, occurring between the spherical unit and the pillow block housing. Self Alignment occurs as the spherical unit pivots or slides in the pillow block housing on the machined spherical ring of the spherical housing. This design maintains gaps or labyrinths between the seals and the housing under all conditions of operation, permitting them to be positively sealed with grease.

HOUSING: CAP & BASE:

The outer housing is a two piece design made of sturdy and generously proportioned cast iron. The housing is designed for heavy duty service utilizing a solid casting with no cored sections in the mounting feet to weaken the bearing support. The cap & base are machined as a matched unit to assure close tolerances and a precise fit of the spherical unit in the straight bore (expansion type) or the spherical bore (non-expansion type). **The two piece construction permits easy removal of the spherical bearing unit and shaft without changing the alignment position.**

SPHERICAL UNIT INTERCHANGEABILITY:

The spherical unit's interchangeability was engineered into the Foote-Jones Pillow Block Housing not the bearings. One Foote-Jones Spherical Unit may be used in either the expansion type (floating) or non-expansion type (fixed) pillow blocks. **This means only one Foote-Jones Spherical Unit need be stocked thus minimizing maintenance inventory cost.**

TIMKEN TAPERED ROLLER BEARINGS:

The Foote-Jones Pillow Block features Double Row Timken Tapered Roller Bearings with a one piece inner race and widely spaced roller tracks. These bearings provide improved stability and better load distribution over a greater length of shaft resulting in a longer service life.

The Timken Tapered Roller Bearings are factory sealed in the spherical unit at the time of assembly and need not be disassembled on the jobsite at the time of installation.

SPLIT ADAPTOR SLEEVE:

The steel adaptor sleeve is tapered on its outside to fit the bore of the Timken Tapered Roller Bearing. The bore of the adaptor sleeve is ground to fit the shaft diameter. The sleeve is split, and when drawn up into the tapered bearing bore, grips the shaft through its entire length with the equivalent of a press or shrink fit. **No shoulders or threaded shaft portions are required to attach the pillow block to the shaft.** There is no danger of the sleeve loosening during service; it is held in place by a locking collar with tabs. There are no set screws to mar or cut the shaft. The split in the sleeve is completely covered by close fitting collars preventing grease from escaping along the shaft or allowing damaging dirt and grit to enter the bearing.

The removal of the adaptor sleeve is accomplished by removing the locking collar, and taking out the shaft and the adaptor sleeve. This allows replacement of the shaft on the jobsite without disturbing the factory sealed spherical unit.

MOUNTING:

The mounting feet are designed to accept heavy loads. The additional strength is located where the strain is the greatest to provide a rigid foundation that will resist vibration and shock. The mounting base is solid under the mounting bolts for a rigid support and is generously proportioned so that a dowel pin may be used if necessary. **The slotted, cored base bolt holes simplify mounting and permit maximum lateral adjustment.** Cored base holes are standard, but drilled base holes (optional) are available if desired.

GREASE FITTING & DUST CAP:

The hydraulic-type grease fitting mounted in a bushing is fully protected from dust, dirt and possible damage by a spring type dust cap. The bushing projects into the cap recess to keep the bearing unit from revolving in the pillow block housing and to prevent bending or pressure against the grease fitting. The tightly fitted dust cap prevents even the smallest amount of dirt or abrasive material from entering the bearing through the opening in the grease fitting. **The dust cap is permanently attached to the pillow block housing cap and cannot be lost or discarded.**

SYMMETRICAL GREASE CHAMBERS:

Grease chambers of equal size and shape insure the proper lubrication of each bearing and provide a reservoir of grease to the labyrinth grease seals. With every application of fresh lubricant, the symmetrical arrangement permits the lubricant to enter each of the chambers in equal volumes. The lubricant travels outward and the fresh lubricant completely flushes both bearings and the labyrinth seal passages.

LABYRINTH GREASE SEALS:

A sling at each end of the bearings is recessed in the bearing housing and forms a metallic labyrinth of a constant proportion which cannot be altered by any shaft misalignment. This is the simplest, most effective bearing protection known and presents up to ten times more actual sealing area than any other arrangement. This greater sealing area effectively resists the breathing action of the grease chamber caused by internal temperature changes. **Grease is retained in the symmetrical grease chamber with no possibility for the grease chamber to draw in damaging dirt and grit.** These seals are self-relieving through the annular labyrinth barrier. The all-steel labyrinth seals will not fall out or be damaged by over lubrication or by a high pressure greasing system.

Close-up of pillow block in cement plant application, note the dust cap covering the grease fitting. This snap type dust cap allows easy lubrication of the Foote-Jones Pillow Blocks to insure long life.



TYPES OF FOOTE-JONES HEAVY DUTY PILLOW BLOCKS

The Foote-Jones Timken Equipped Roller Bearing Pillow Blocks are available in two types, expansion and non-expansion.

When two or more pillow blocks are used on a shaft, one should be of the non-expansion type to prevent the shaft from moving axially. The balance of the pillow blocks should be of the expansion type to allow for axial movement. When conditions such as thermal growth are encountered, the expansion type pillow block allows for differences in the length of the shafting in relationship to the same length in the supporting structure.

EXPANSION TYPE

In the Foote-Jones Expansion Type Pillow Block, the amount of space provided for expansion is easily observed. The expansion is the axial movement of the spherical unit in the housing base and cap. Jamming may occur in other designs where the expansion takes place within the bearing and cannot be checked without taking the bearing apart. The Foote-Jones design prevents the possibility of jamming.

The pillow block housing consists of high test cast iron cap and base held firmly together by means of four bolts.

The bore in the cap and base are machined straight for the expansion type, shown in Figure 7-1. The spherical bearing housing is made with a finished spherical portion on the outside which fits in the straight bore of the cap and base. Self alignment is accomplished between the spherical bear-

ing housing and the bore of the pillow block housing without disturbing the setting of the roller bearings or labyrinth grease seals.

A hydraulic type grease fitting is located in the spherical bearing unit with a bushing that projects into the cap recess. The bushing will bear against the cap and keep the unit from revolving in the pillow block housing. There is no bending or pressure against the grease fitting as the bushing is in direct contact with the housing.

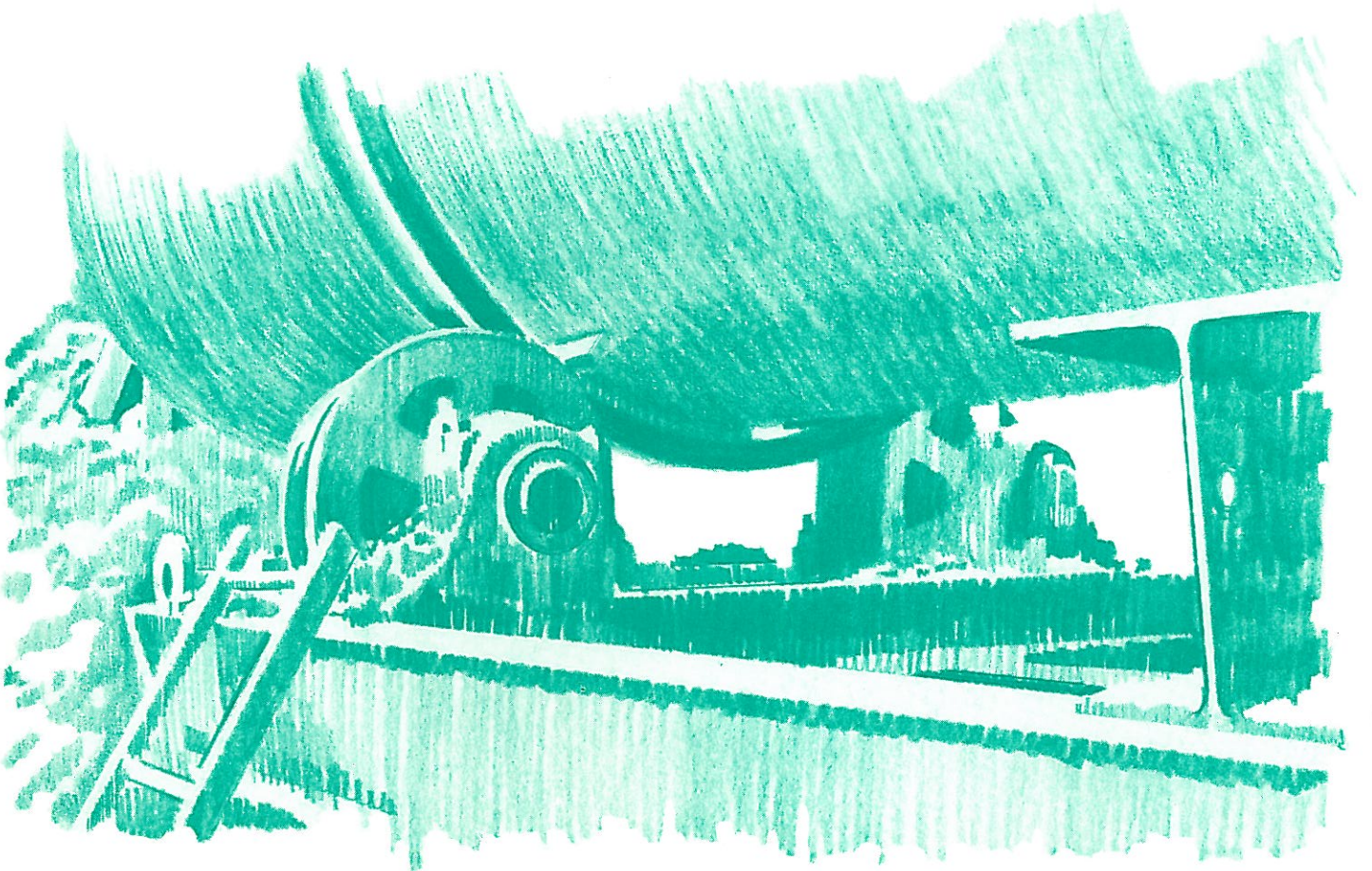
A snap type dust cover covers the hole over the grease fitting to protect it against damage.

NON-EXPANSION TYPE

In the Foote-Jones Non-expansion Type Pillow Block, the bore in the cap and base are machined to match the spherical seat of the spherical unit, shown in Figure 7-3. This matched mounting surface holds the spherical unit in place while mounted in the housing and prevents the pillow block assembly from moving axially.

The spherical unit is the same for both the expansion and non-expansion type pillow blocks. This feature simplifies ordering and stocking replacement parts. The shaft size is the determining factor for all other standardized parts.

The non-expansion type pillow block has the same external housing dimensions, spherical unit, grease fitting, and dust cap as the expansion type pillow block.



STANDARD HOUSING AND MODIFICATIONS

The foundation bolt holes in the standard pillow block are slotted for adjustment and cored straight through the depth of the foot with no weakening relief cores. The foot is of substantial thickness to provide a bearing area for adjusting screws. The feet are proportioned to permit the use of a dowel pin to hold the pillow block base in place.

The Foote-Jones Heavy Duty Pillow Blocks can be furnished as required with drilled holes for foundation bolts. This places the foundation bolts in direct shear while holding the pillow block in the correct position.

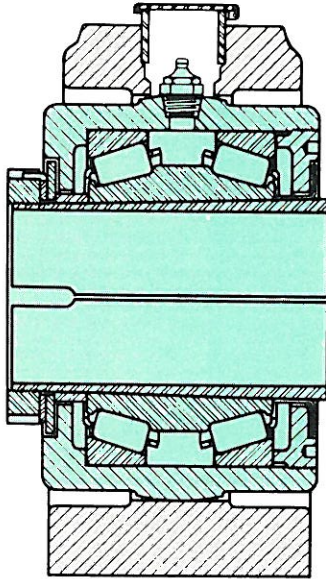


Fig. 7-1: Section through Expansion Type Pillow Block showing the straight bore in the cap and base. This design is used in the adaptor for bearings with shaft diameters of 1¹⁵/₁₆" to 3⁷/₁₆" inclusive.

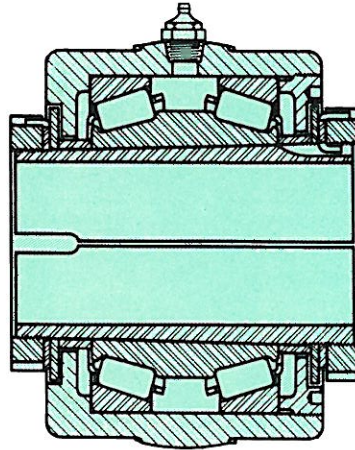


Fig. 7-2: Section through a Spherical Unit. Note how the spherical ring will fit in either the straight bore of the Expansion Type Pillow Block Housing in Figure 7-1 or in the mating spherical ring bore of the Non-Expansion Type Pillow Block Housing in Figure 7-3.

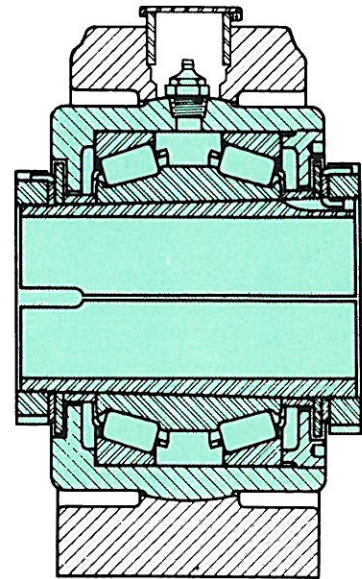


Fig. 7-3: Section through a Non-Expansion Type Pillow Block with a Spherical Bore in the cap and base. This adaptor design with a backing off nut is used for the bearings with a shaft diameter of 3¹⁵/₁₆" to 9" inclusive.

NAMEPLATE IDENTIFICATION

Each pillow block carries an attached nameplate on which is stamped the shaft size and the type of grease to be used. The red background plates designate the non-expansion (NXP) type and the blue background plates designate the expansion (EXP) type.

BEARING UNITS

The Foote-Jones Spherical Units are a complete and self-contained unit and may be used by Engineers and Manufacturers directly in their own equipment. The dimensions of the spherical bearing units are shown on Page 11.



Fig. 7-4: Expansion Type Pillow Blocks are identified by a blue name plate like this.



Fig. 7-5: Non-Expansion Type Pillow Blocks are identified by a red name plate like this.

PILLOW BLOCKS – SPHERICAL UNITS

The allowable load carrying capacity of all anti-friction bearings varies with the operating conditions. The length of life to be expected is dependent on the duty which they are required to perform as well as the conditions under which they are expected to operate.

The chief function of pillow blocks and spherical units shown in this catalog is to carry radial loads, although there is some thrust carrying capacity from the roller bearing. Where thrust loads are encountered the complete conditions should be sent to Foote-Jones to check not only the bearing capacity, but, the complete unit for stability against overturning or axial movement.

LIFE FACTORS

The Table on Page 9 gives the tabulated radial load capacities based on 30,000 hours L10, bearing life. This is the rating at which 90% or more of a large number of identically loaded bearings will still be operating at the end of a specific time. The average life is generally five times

longer. The allowable load will vary with the length of life desired. The modifying LIFE FACTORS are shown in the Table 8-1 (below) for several lengths of time. The tabulated loads are for the roller bearings only and do not account for the shaft capacities.

SERVICE FACTORS

The allowable capacities given represent safe loads at various speeds for the roller bearings when properly installed and lubricated. These capacities are also based on ordinary conditions of service where the loads are smooth, even and uniform in character. Where the conditions of service are considered somewhat severe, modifications should be made to the tabulated bearing capacities on Page 9. SERVICE FACTORS in the Table 8-2 (below) are suggested for various conditions.

Each installation should be analyzed to place it in a definite service class. If the conditions are more severe or unusual, refer the application data to Foote-Jones.

LIFE FACTORS (TABLE 8-1)			
HOURS L10	FACTOR	HOURS L10	FACTOR
3,000	2.00	30,000	1.00
5,000	1.71	40,000	.92
7,000	1.55	50,000	.86
10,000	1.39	75,000	.76
20,000	1.13	100,000	.70

For L10 hours of operation other than 30,000 hours, multiply the ratings in the table on Page 9 by the above factors:

SERVICE FACTORS (TABLE 8-2)	
	MODIFYING FACTOR
Application General Machinery Smooth, Even Loads.	1.00
Heavy Machinery Up to 1000 R.P.M. Varying Uneven Loads, Slight Shocks or Peaks.	.75
Machinery Subjected to Heavy Shocks or Peaks, High Speed Applications 1000 R.P.M. and Above.	.60

RECOMMENDED L10 HOURS FOR INDUSTRIAL APPLICATIONS

The following is a table of the recommended L10 hours for most industries that use the Foote-Jones Heavy Duty Pillow

Block. This is to be used as a guide in determining the life factor shown in the Table 8-1 (above).

APPLICATION	L10 LIFE HOURS SELECTION GUIDE	APPLICATION	L10 LIFE HOURS SELECTION GUIDE
AERIAL CABLE TRAMWAYS	11,750	LAUNDRY MACHINERY (COMMERCIAL)	30,500
BAKERY AND RESTAURANT MACHINERY		LOGGING EQUIPMENT	3,000
Bone Cutters, Dough Mixers, etc.	30,500	MACHINE TOOLS (FACTORY)	30,500
Bread Slicers, Grinders and Meat Slicers	3,000	MINING EQUIPMENT	
BLOWER	30,500	Classifiers, Drum Hoists and Head Pulleys	30,500
BOTTLING EQUIPMENT	30,500	Misc. Mining Equipment	11,750
CARS (Kiln)	30,500	OILFIELD EQUIPMENT	
CLAY WORKING MACHINERY	11,750	(Drawworks and Pumps)	30,500
COMPRESSORS		PAPER MILL MACHINERY	100,000+
Large Stationary Units	100,000+	PRINTING MACHINERY	30,500
Portable and Refrigeration Units	30,500	PULVERIZING AND SCREENING EQUIPMENT	11,750
CONVEYORS	11,750	PUMPS	
CRANES		Dredge	30,500
Roll Shop, Mill, Mold Yard	30,500	Paper Mill	100,000+
Stripper, Machine Shop		ROAD BUILDING EQUIPMENT	3,000
Power House	6,300	RUBBER MACHINERY	30,500
Industrial Storage and Shipping	6,300	SAND BLAST MACHINES	11,750
Locomotive, Gantry and Mobile	3,000	SAW MILL MACHINERY	3,000
ELEVATORS AND MOVING STAIRWAYS	30,500	SEWAGE SCREENS	30,500
EXTRACTORS	30,500	STEEL MILL MACHINERY	6,300
FANS AND BLOWERS	30,500	STOKERS (COMMERCIAL)	11,750
FARM MACHINERY	3,000	SUGAR MILL EQUIPMENT	30,500
GLASS MAKING MACHINERY	30,500	TEXTILE MACHINERY	30,500
GRAIN MILLING MACHINERY (INDUSTRIAL)	30,500	WIRE FORMING MACHINERY	30,500
		WOODWORKING MACHINERY	30,500

TABLE OF RADIAL LOAD CAPACITIES BASED ON 30,000 L10 HOURS OF OPERATION

STANDARD SHAFT SIZE INCHES	SHAFT SPEED—REVOLUTIONS PER MINUTE (RPM)												
	50	100	200	300	400	500	750	1000	1250	1500	1750	2000	2500
	ALLOWABLE RADIAL LOAD IN POUNDS												
1 ¹⁵ / ₁₆	6850	5560	4520	4000	3670	3430	3040	2790	2610	2470	2360	2270	2120
2 ³ / ₁₆	7650	6210	5050	4470	4100	3830	3390	3110	2910	2760	2630	2530	2360
2 ⁷ / ₁₆	11300	9180	7450	6600	6060	5660	5010	4600	4300	4070	3890	3740	
2 ¹⁵ / ₁₆	16800	13650	11080	9810	9000	8420	7460	6840	6400	6060	5780		
3 ⁷ / ₁₆	21900	17790	14450	12790	11740	10980	9720	8910	8340	7890			
3 ¹⁵ / ₁₆	32200	26150	21240	18810	17260	16140	14290	13110	12240				
4 ⁷ / ₁₆	32800	26640	21640	19160	17580	16440	14560	13350	12260				
4 ¹⁵ / ₁₆	44000	35740	29030	25700	23580	22050	19530	17910					
6	57400	46300	37610	33300	30550	28570	25300						
7	65800	53450	43410	38440	35260	32980	29200						
8	72200	58640	47630	42180	38690	36190							
9	74200	60270	48950	43350	39760	37190							

NOTES: 1) The load ratings in the above table are those of Timken Roller Bearings and do not take into account the shaft capacities.
 2) Capacities for intermediate speeds can be obtained by interpolation.

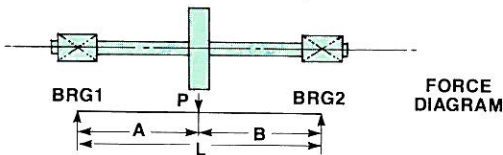
MAXIMUM R.P.M. RECOMMENDED

STANDARD SHAFT SIZE IN INCHES											
1 ¹⁵ / ₁₆	2 ³ / ₁₆	2 ⁷ / ₁₆	2 ¹⁵ / ₁₆	3 ⁷ / ₁₆	3 ¹⁵ / ₁₆	4 ⁷ / ₁₆	4 ¹⁵ / ₁₆	6	7	8	9
MAXIMUM SHAFT SPEED—R.P.M.											
2500	2500	2000	1750	1500	1250	1250	1000	750	750	500	500

EXAMPLE 1: Load Between Two Bearings;

REQUIREMENTS:

Load—Slight Shocks Desired Life—20,000 Hours
 Speed—300 RPM Shaft Size—2⁷/₁₆"
 L = 24" A & B = 12" P = 7,000#



BEARING REACTIONS:

$$BRG\ 1 = \frac{P \times B}{L} = \frac{7000 \times 12}{24} = 3,500\ \text{LBS.}$$

$$BRG\ 2 = \frac{P \times A}{L} = \frac{7000 \times 12}{24} = 3,500\ \text{LBS.}$$

FROM CATALOG:

Life Factor 1.13 (From Page 8, This is to alter the desired L10 hours length of operation.)

Service Factor 0.75 (From Page 8, This is to alter the desired load based on installation conditions.)

Bearing Rating 6,600# (From Page 9, Bearing Capacity for a radial load based on 30,000 L10 Hours length of operation for a 1.0 Service Factor.)

Permissible Bearing Load, Lp

$$Lp = \text{Bearing Capacity} \times \text{Life Factor} \times \text{Service Factor}$$

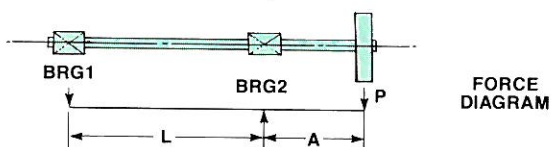
$$Lp = 6,600\# \times 1.13 \times 0.75 = 5,593.5\ \text{LBS.}$$

Lp > Bearing Reaction #1 or #2 (3,500#); therefore the 2⁷/₁₆" Pillow Block is capable of carrying the bearing reaction loads.

EXAMPLE 2: Overhung Load;

REQUIREMENTS:

Load—Smooth, Even Loads Desired Life—5,000 Hours
 Speed—300 RPM Shaft Size—2⁷/₁₆"
 L = 24" A = 12" P = 7,000#



BEARING REACTIONS:

$$BRG\ 1 = \frac{P \times A}{L} = \frac{7000 \times 12}{24} = 3,500\ \text{LBS.}$$

$$BRG\ 2 = \frac{P \times (A+L)}{L} = \frac{7000 \times (12+24)}{24} = 10,500\ \text{LBS.}$$

FROM CATALOG:

Life Factor 1.71 (From Page 8, This is to alter the desired L10 hours length of operation.)

Service Factor 1.00 (From Page 8, This is to alter the desired load based on installation conditions.)

Bearing Rating 6,600# (From Page 9, Bearing Capacity for a radial load based on 30,000 L10 Hours length of operation for a 1.0 Service Factor.)

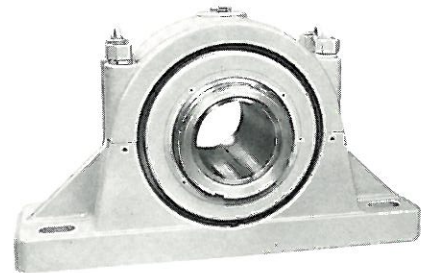
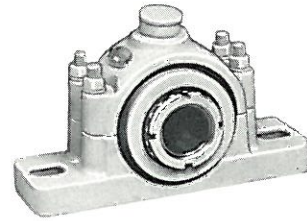
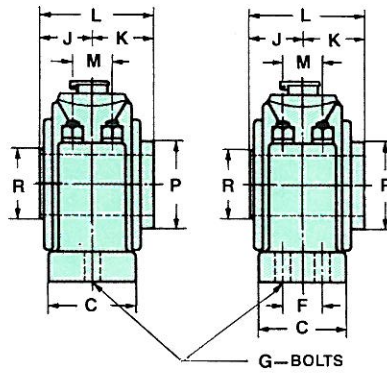
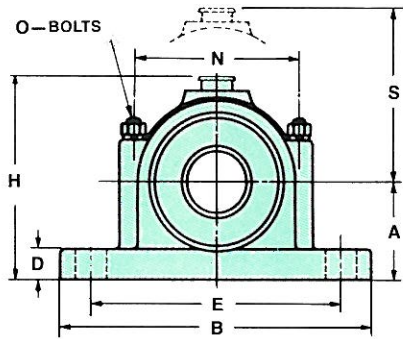
Permissible Bearing Load, Lp

$$Lp = \text{Bearing Capacity} \times \text{Life Factor} \times \text{Service Factor}$$

$$Lp = 6,600\# \times 1.71 \times 1.00 = 11,286\ \text{LBS.}$$

Lp > Bearing Reaction #1 (3,500#) or #2 (10,500#); therefore the 2⁷/₁₆" Pillow Block is capable of carrying the bearing Reaction Loads.

DIMENSIONS: NON-EXPANSION AND EXPANSION TYPES



STANDARD DIMENSIONS IN INCHES

STD. SHAFT SIZE	OTHER SHAFT SIZES †	A	B	C	D	E++ SLOTTED CORED HOLES		DRILLED HOLES ▲	F	G		H	J	K	L	M	N	O	P	R	S	APPROX. NET WEIGHT LBS.
						MIN.	MAX.			TWO BOLT BASE	FOUR BOLT BASE											
1 ¹⁵ / ₁₆	1 ¹³ / ₁₆ -2	2 ⁷ / ₈	11 ¹ / ₂	3 ³ / ₄	1 ¹ / ₈	8 ⁷ / ₈	9 ⁷ / ₈	9 ³ / ₈	—	3 ³ / ₄	—	6 ⁵ / ₈	1 ¹⁵ / ₁₆	2 ³ / ₁₆	4 ¹ / ₈	1 ¹ / ₂	6	1 ¹ / ₂	3	2 ⁵ / ₁₆	5 ⁷ / ₈	30
2 ³ / ₁₆	2 ¹ / ₁₆ -2 ¹ / ₄	3 ³ / ₈	12 ¹ / ₂	3 ¹ / ₂	1 ¹ / ₄	9 ¹ / ₂	10 ¹ / ₂	10	—	3 ³ / ₄	—	7 ¹ / ₈	2 ¹ / ₁₆	2 ³ / ₈	4 ⁷ / ₁₆	1 ⁵ / ₈	6 ¹ / ₂	1 ¹ / ₂	3 ³ / ₈	2 ⁵ / ₈	6 ³ / ₄	40
2 ⁷ / ₁₆	2 ⁵ / ₁₆ -2 ¹ / ₂	4	14 ¹ / ₄	3 ⁷ / ₈	1 ³ / ₈	10 ³ / ₄	12	11 ³ / ₈	2 ¹ / ₄	—	5 ⁵ / ₈	8 ⁵ / ₁₆	2 ⁵ / ₁₆	2 ⁵ / ₈	4 ¹⁵ / ₁₆	1 ³ / ₄	7 ¹ / ₄	5 ⁵ / ₈	3 ⁵ / ₈	2 ⁷ / ₈	7 ³ / ₁₆	53
2 ¹⁵ / ₁₆	2 ⁵ / ₈ -2 ⁷ / ₈	4 ³ / ₄	15 ¹ / ₂	4 ³ / ₈	1 ¹ / ₂	11 ³ / ₄	13 ³ / ₄	12 ¹ / ₂	2 ³ / ₄	—	5 ⁵ / ₈	9 ⁵ / ₈	2 ⁵ / ₈	3 ¹ / ₁₆	5 ¹¹ / ₁₆	2	8 ¹ / ₄	5 ⁵ / ₈	4 ¹ / ₈	3 ⁷ / ₁₆	7 ¹⁵ / ₁₆	79
3 ⁷ / ₁₆	3-3 ¹ / ₂	5 ¹ / ₂	17	5 ¹ / ₄	1 ⁵ / ₈	13	14 ¹ / ₂	13 ³ / ₄	3 ¹ / ₄	—	3 ³ / ₄	11 ⁵ / ₁₆	2 ¹⁵ / ₁₆	3 ⁷ / ₁₆	6 ³ / ₈	2 ³ / ₈	9 ¹ / ₂	3 ³ / ₄	5	4	9 ¹¹ / ₁₆	124
3 ¹⁵ / ₁₆	3 ⁵ / ₈ -4	6 ³ / ₈	20	6 ¹ / ₄	1 ⁷ / ₈	15 ¹ / ₂	17 ¹ / ₄	16 ³ / ₈	3 ¹ / ₄	—	7 ⁵ / ₈	13 ⁵ / ₁₆	4 ³ / ₈	4 ³ / ₈	8 ³ / ₄	2 ⁷ / ₈	11 ¹ / ₂	3 ³ / ₄	6	6 ³ / ₄	11 ³ / ₁₆	220
4 ⁷ / ₁₆	4 ¹ / ₈ -4 ¹ / ₂	7 ¹ / ₄	22	6 ¹ / ₂	2 ¹ / ₈	16 ¹ / ₂	18 ¹ / ₂	17 ¹ / ₂	3 ¹ / ₂	—	1	14 ¹¹ / ₁₆	4 ¹¹ / ₁₆	4 ¹¹ / ₁₆	9 ³ / ₈	3	12 ³ / ₈	7 ⁵ / ₈	6 ³ / ₄	7	12 ¹ / ₁₆	290
4 ¹⁵ / ₁₆	4 ⁵ / ₈ -5	7 ¹ / ₂	24 ¹ / ₂	7	2 ¹ / ₄	18 ³ / ₄	20 ³ / ₄	19 ³ / ₄	3 ³ / ₄	—	1 ¹ / ₈	15 ³ / ₄	5	5	10	3 ³ / ₄	14	7 ⁵ / ₈	7	7 ³ / ₄	13 ³ / ₈	365
6	5 ⁷ / ₁₆ -5 ¹⁵ / ₁₆	10	35	8 ¹ / ₄	2 ³ / ₄	27 ³ / ₄	30 ¹ / ₄	29	4 ¹ / ₂	—	1 ¹ / ₄	20 ³ / ₈	6	6	12	3 ⁷ / ₈	17 ¹ / ₂	1 ¹ / ₈	8 ⁵ / ₈	9	17 ¹ / ₄	690
7	6 ⁷ / ₁₆ -6 ¹⁵ / ₁₆	11 ¹ / ₂	39	9 ³ / ₄	3 ¹ / ₄	30 ¹ / ₂	33 ¹ / ₂	32	5 ¹ / ₂	—	1 ¹ / ₂	23 ¹ / ₁₆	6 ³ / ₄	6 ³ / ₄	13 ¹ / ₂	4 ⁵ / ₈	19 ¹ / ₂	1 ¹ / ₄	9 ³ / ₄	10 ¹ / ₂	19 ⁷ / ₁₆	1125
8	7 ⁷ / ₁₆ -7 ¹⁵ / ₁₆	13	44	11 ¹ / ₄	3 ⁵ / ₈	34 ¹ / ₄	37 ³ / ₄	36	6 ¹ / ₂	—	1 ³ / ₄	26	7 ⁹ / ₁₆	7 ⁹ / ₁₆	15 ¹ / ₈	5 ¹ / ₄	22	1 ¹ / ₂	11	11 ³ / ₄	22 ³ / ₈	1600
9	8 ⁷ / ₁₆ -8 ¹⁵ / ₁₆	15	49	13	4	38	42	40	8	—	2	30	8 ⁹ / ₁₆	8 ⁹ / ₁₆	17 ¹ / ₈	6	25	1 ³ / ₄	12 ¹ / ₄	13	26 ⁵ / ₈	2100

REFERENCE ONLY. Certified prints are to be used for construction purposes.

NOTES:

- 1) Specify Non-Expansion or Expansion type Pillow Blocks on all orders.
- 2) Pillow Blocks are normally supplied with slotted cored base bolt holes unless the order specifically states standard drilled holes. See the ++ above.
- 3) Pillow Blocks ordered with drilled base bolt holes will be drilled for the same size bolts shown in the table above and will be located by dimension "E" & "F" as noted above. See symbol ▲ above.
- 4) Pillow Blocks requiring special shaft sizes not listed in the other shaft sizes column consult Foote-Jones for Engineering review. See † symbol above.
- 5) The Pillow Block Bearing radial capacities are shown in the Rating Table on Page 9.

SEE SAFETY NOTE ON PAGE 3.

Manufacturers and machine builders sometimes desire to incorporate anti-friction bearing units into the design of their product using their frame for the bearing support.

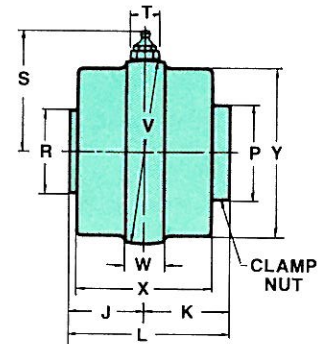
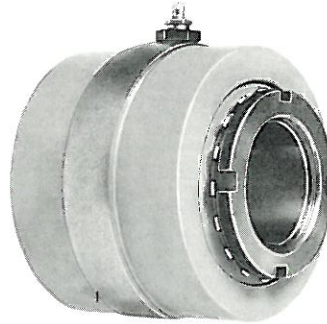
The internal unit as used in the Foote-Jones Pillow Block is self-contained and can be used in this manner. The standard spherical ring on the housing allows manufacturers to design around the Foote-Jones Spherical Unit.

The Foote-Jones Spherical Units are fitted with the same standard grease fitting and bushing as used in the pillow block. The bushing when installed in a recess can be a means of keeping the unit from revolving or the unit can in some cases be pinned in place.

The grease fitting can be used by making it accessible for a grease gun or attaching a pipe to the tapped hole for some other type of greasing system.

The spherical bore in the equipment housing frame is machined to match the spherical ring on the bearing housing. This provides for self-alignment and holds the unit in a fixed axial position. A spherical unit can be used in a straight housing bore the same as in the standard expansion type pillow block. This provides for self-alignment and allows the unit to move axially.

Illustration 7-2 on Page 7 shows the section through the spherical unit detailing how it locks to the shaft. The installation as well as the load capacity and lubrication recommendations, are the same as for the pillow blocks.



The advantage offered by the spherical units are that they are a standard integral part of the Foote-Jones Heavy Duty Pillow Blocks. Standard dimensions are listed below.

STD. SHAFT SIZE	OTHER SHAFT SIZES †	J	K	L	P	R	S	T	V+	W	X	Y	APPROX. NET WEIGHT LBS.
1 ¹⁵ / ₁₆	1 ¹³ / ₁₆ -2	1 ¹⁵ / ₁₆	2 ³ / ₁₆	4 ¹ / ₈	3	2 ⁵ / ₁₆	3 ³ / ₁₆	7 ⁸ / ₁₆	4 ¹¹ / ₁₆	1	3 ¹ / ₂	4 ⁷ / ₁₆	10
2 ³ / ₁₆	2 ¹³ / ₁₆ -2 ¹ / ₄	2 ¹ / ₁₆	2 ³ / ₈	4 ⁷ / ₁₆	3 ³ / ₈	2 ⁵ / ₈	3 ³ / ₈	7 ⁸ / ₁₆	5 ¹ / ₈	1 ¹ / ₁₆	3 ³ / ₄	4 ⁷ / ₈	13
2 ⁷ / ₁₆	2 ⁵ / ₁₆ -2 ¹ / ₂	2 ⁵ / ₁₆	2 ⁵ / ₈	4 ¹⁵ / ₁₆	3 ⁵ / ₈	2 ⁷ / ₈	3 ⁵ / ₈	7 ⁸ / ₁₆	5 ¹¹ / ₁₆	1 ³ / ₁₆	4 ¹ / ₄	5 ³ / ₈	18
2 ¹⁵ / ₁₆	2 ³ / ₈ -2 ⁷ / ₈	2 ⁵ / ₈	3 ¹ / ₁₆	5 ¹¹ / ₁₆	4 ¹ / ₈	3 ⁷ / ₁₆	4 ¹ / ₈	7 ⁸ / ₁₆	6 ⁹ / ₁₆	1 ³ / ₈	4 ⁷ / ₈	6 ³ / ₁₆	28
3 ⁷ / ₁₆	3-3 ¹ / ₂	2 ¹⁵ / ₁₆	3 ⁷ / ₁₆	6 ³ / ₈	5	4	5	1 ¹ / ₈	8	1 ³ / ₄	5 ¹ / ₂	7 ⁵ / ₈	48
3 ¹⁵ / ₁₆	3 ⁵ / ₈ -4	4 ³ / ₈	4 ³ / ₈	8 ³ / ₄	6	6 ³ / ₄	6	1 ¹ / ₈	10	2	6 ³ / ₄	9 ⁵ / ₈	92
4 ⁷ / ₁₆	4 ¹ / ₈ -4 ¹ / ₂	4 ¹¹ / ₁₆	4 ¹¹ / ₁₆	9 ³ / ₈	6 ³ / ₄	7	6 ³ / ₈	1 ¹ / ₈	10 ³ / ₄	2 ¹ / ₄	7 ¹ / ₄	10 ¹ / ₄	130
4 ¹⁵ / ₁₆	4 ⁵ / ₈ -4 ¹⁵ / ₁₆	5	5	10	7	7 ³ / ₄	7	1 ¹ / ₈	12	2 ¹ / ₂	7 ³ / ₄	11 ³ / ₈	170
6	5 ⁷ / ₁₆ -5 ¹⁵ / ₁₆	6	6	12	8 ⁵ / ₈	9	8 ⁵ / ₈	1 ³ / ₈	15	3 ¹ / ₂	9 ¹ / ₄	14	340
7	6 ⁷ / ₁₆ -6 ¹⁵ / ₁₆	6 ³ / ₄	6 ³ / ₄	13 ¹ / ₂	9 ³ / ₄	10 ¹ / ₂	9 ¹ / ₂	1 ³ / ₈	16 ³ / ₄	4 ¹ / ₄	10 ³ / ₄	15 ¹ / ₂	560
8	7 ⁷ / ₁₆ -7 ¹⁵ / ₁₆	7 ⁵ / ₁₆	7 ⁵ / ₁₆	15 ¹ / ₈	11	11 ³ / ₄	10 ⁵ / ₈	1 ³ / ₈	19	4 ³ / ₄	12	17 ³ / ₄	785
9	8 ⁷ / ₁₆ -8 ¹⁵ / ₁₆	8 ⁵ / ₁₆	8 ⁵ / ₁₆	17 ¹ / ₈	12 ¹ / ₄	13	12	1 ³ / ₈	21 ³ / ₄	5 ¹ / ₂	13 ¹ / ₂	20 ¹ / ₄	1030

REFERENCE ONLY. Certified prints to be used for construction purposes.

NOTES:

- 1) + Spherical unit diameters "V" are noted in fractional dimensions to simplify construction work; however, the actual dimension would be held to decimal having the following tolerances.
 - A) Spherical unit sizes 1¹⁵/₁₆ inches to 7 inches inclusive will have a "V" dimension of +.000"/-.001".
 - B) Spherical unit sizes 8 inches & 9 inches will have a "V" dimension of +.000"/-.002".
- 2) Spherical units requiring special shaft sizes not listed in the other shaft sizes column consult Foote-Jones for Engineering Review. See † above.
- 3) The Spherical units radial capacities are shown in the Rating Table on Page 9.

SEE SAFETY NOTE ON PAGE 3.



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