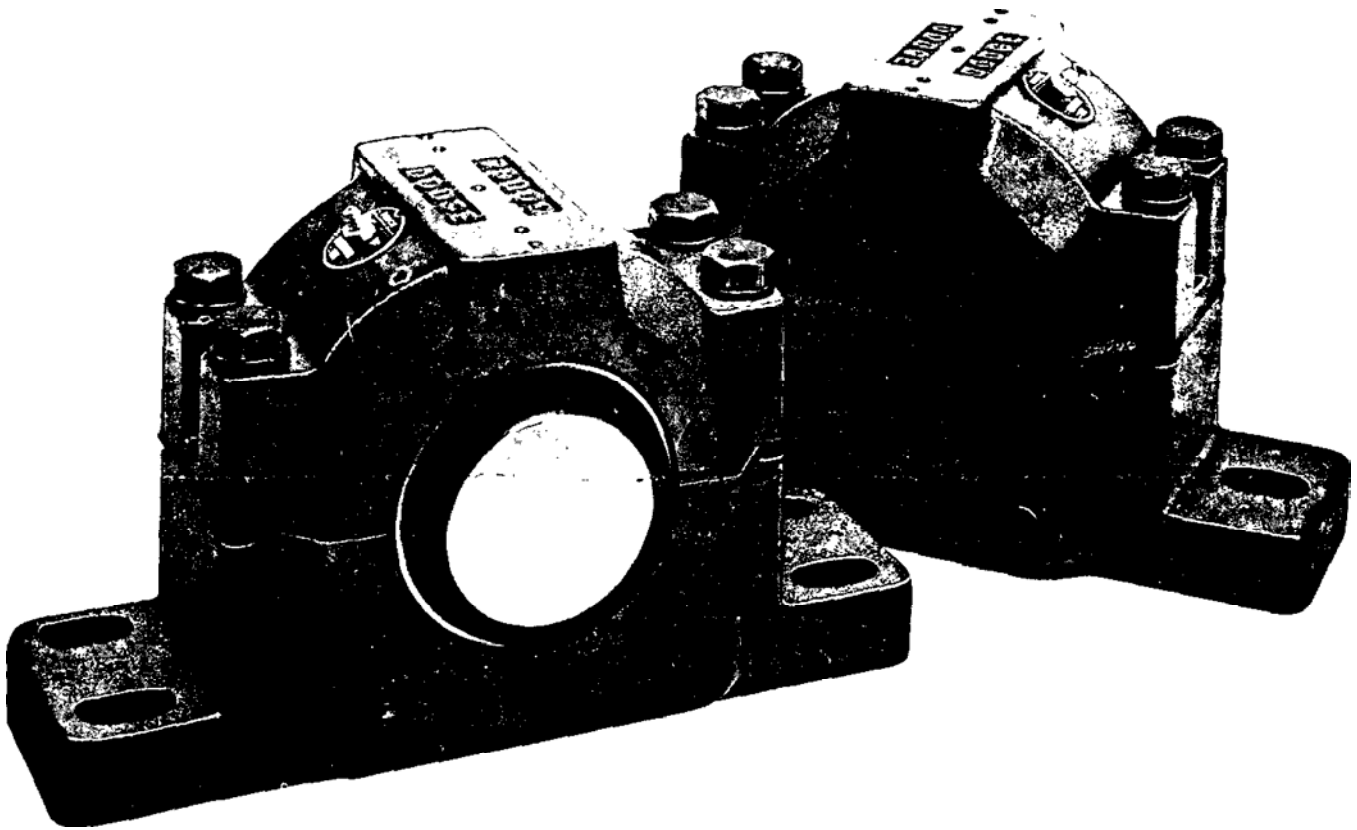


## INSTRUCTION MANUAL

for

# DODGE<sup>®</sup> USAF 200 Series Direct Mount Pillow Blocks



**WARNING:** Because of the possible danger to persons(s) or property from accidents which may result from the improper use of products, it is important that correct procedures be followed. Products must be used in accordance with the engineering information specified in the catalog. Proper installation, maintenance and operation procedures must be observed. The instructions in the instruction manuals must be followed. Inspections should be made as necessary to assure safe operation under prevailing conditions. Proper guards and other suitable safety devices or procedures as may be desirable or as may be specified in safety codes should be provided, and are neither provided by Baldor Electric Company nor are the responsibility of Baldor Electric Company. This unit and its associated equipment must be installed, adjusted and maintained by qualified personnel who are familiar with the construction and operation of all equipment in the system and the potential hazards involved. When risk to persons or property may be involved, a failsafe device must be an integral part of the driven equipment beyond the speed reducer output shaft.

## GENERAL INFORMATION

DODGE USAF bearings conform with all appropriate AFBMA standards. They are available in either adapter or direct mounting styles for 1<sup>7</sup>/<sub>16</sub>" through 8", and up to 220 mm diameter shafts. A wide variety of seals is available including metallic LER, TRIPLE-TECT non-metallic with v-ring, Drop-in TRIPLE-TECT with neoprene v-ring, Auxiliary Taconite, or Split non-metallic. TRIPLE-TECT is provided as standard on complete assemblies. DODGE USAF housings provide you with maximum application flexibility. Cast-in dimples allow for easy field modification for vents, lube ports and sensors. Oversized drains and an oil equalization hole make USAF ready for circulating oil systems off the shelf. For hostile environments, USAF offers optional cast-closed end housings, stainless hardware kits, and nylon coating. Complete installation, maintenance, and modification instructions for direct mounted units are provided in this manual. Modification instructions are shown on Table 7.

## INSPECTION

Inspect shaft. Ensure that the shaft is smooth, straight, clean, and within commercial tolerances.

Inspect bearing. Do not allow bearing to be exposed to any dirt or moisture. Do not remove slushing compound as it acts as both a protectant and lubricant and is also compatible with standard greases.

### WARNING

To ensure that drive is not unexpectedly started, turn off and lock out or tag power source before proceeding. Failure to observe these precautions could result in bodily injury.

## INSTALLATION

**NOTE: Housing caps and bases are not interchangeable; they must be matched with mating half. Install non-expansion bearing first.**

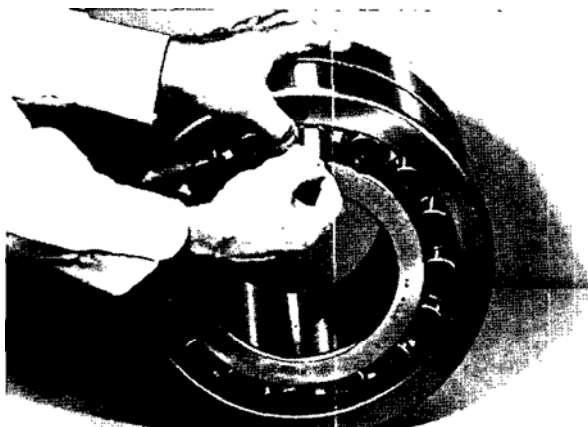


Figure 1 Internal Clearance

### DIRECT MOUNTED BEARINGS

1. **Measure the internal clearance of the bearing before mounting.** Place the bearing in a upright position as shown in Figure 1. Seat the inner ring and roller elements by pressing down firmly on the inner ring bore while rotating the inner ring a few times. Position the roller

assemblies so that a roller is at the top-most position on both sides. For bore sizes above 6<sup>1</sup>/<sub>2</sub>" only, press these top rollers inward ensuring contact with center guide flange. Using a feeler gauge measure the clearance for both sides by inserting as far as possible and sliding over top of roller (Figure 1). Write down the measured clearance and compare with specifications (Table A). **NOTE: Do not rotate bearing when moving feeler between roller and outer ring.**

**NOTE:** TRIPLE TECT™ seals are standard seals up to 10 (220 mm) bore. For assistance in installing seals use seal instruction manual 499665 supplied with the seals.

2. Install the bearing parts in the following sequence: (refer to the replacement parts drawing and table.)

a) **V-ring Seal** – Slide one of the V-ring seals onto the shaft, making sure lip is toward the bearing. (**NOTE:** Do not install V-ring seal on seal ring until housing cap has been set in place and tightened.)

b) **Seal Ring** – Install a seal ring on shaft with largest O.D. toward bearing.

c) **Bearing** – Make sure that the internal clearance has been written down. Install bearing. Bearings with cylindrical bore up to 2<sup>3</sup>/<sub>4</sub> (70 mm) may be cold mounted on the shaft. Apply coat of light oil to the shaft and bearing bore, then press the bearing on by using a mechanical or hydraulic device or use the mounting nut to drive the bearing onto the shaft.

Bearings with cylindrical bore above 2<sup>3</sup>/<sub>4</sub> (70 mm) are heated for mounting on shaft. Bearings, heated in oil between 200°F - 215°F, when still in a heated condition, should have the bore wiped dry with a clean cloth. The bearing should be rapidly pushed on the shaft and positioned squarely against the shoulder. A slight screwing motion during fitting facilitates the mounting. It is advisable to use gloves. Large bearings are generally handled with a hoist or crane.

For cylindrical bore direct mounted bearings, it is not necessary to check internal clearance after mounting. It is, however, important to verify the shaft diameters (Tables 1 & 2) and to measure the unmounted internal clearance to ensure conformance to specifications (Table A).

**Table A.**

**Radial Internal Clearance in Self-Aligning Roller Bearings (Values in .0000 inches)**

Bore Diameter		With Cylindrical Bore	
MM			
Over	Incl.	Low	High
14	24	14	18
24	30	16	22
30	40	18	24
40	50	22	30
50	65	26	36
65	80	32	44
80	100	39	53
120	140	57	75
140	160	65	87
160	180	71	95
180	200	79	103
200	225	87	114

**TABLE 1 – SHAFT BEARING SEAT DIAMETERS FOR  
CYLINDRICAL BORE MOUNTED PILLOW BLOCKS**

Bearing Bore Diameter			Normal Load			High Load		
MM	Inches		Shaft Diameter (S-1)		MEAN	Shaft Diameter (S-1)		MEAN
Nom.	Max.	Min.	Max.	Min.	FIT	Max.	Min.	FIT
75	2.9528	2.9522	2.9540	2.9532	.0011T	2.9543	2.9536	.0014T
80	3.1496	3.1490	3.1508	3.1500		3.1511	3.1504	.0015T
85	3.3464	3.3457	3.3179	3.3470	.0014T	3.3484	3.3475	.0019T
90	3.5433	3.5425	3.5447	3.5438		3.5452	3.5443	
95	3.7402	3.7394	3.7416	3.7407		3.7421	3.7412	
100	3.9370	3.9362	3.9384	3.9375		3.9389	3.9380	
105	4.1338	4.1331	4.1353	4.1344		4.1358	4.1349	
110	4.3307	4.3299	4.3321	4.3312	.0016T	4.3326	4.3317	.0022T
120	4.7244	4.7236	4.7258	4.7249		4.7263	4.7254	
125	4.9212	4.9203	4.9229	4.9219		4.9235	4.9225	
130	5.1181	5.1171	5.1197	5.1187		5.1203	5.1193	
140	5.5118	5.5108	5.5134	5.5124	.0019T	5.5140	5.5130	.0026T
150	5.9055	5.9045	5.9071	5.9061		5.9077	5.9067	
160	6.2992	6.2982	6.3008	6.2998		6.3014	6.3004	
170	6.6929	6.6919	6.6945	6.6935		6.6951	6.6941	
180	7.0866	7.0856	7.0882	7.0872	.0032T	7.0888	7.0878	.0032T
190	7.4803	7.4791	7.4821	7.4809		7.4829	7.4817	
200	7.8740	7.8728	7.8758	7.8746		7.8772	7.8760	
220	8.6614	8.6602	8.6632	8.6620		8.6646	8.6634	

These fits apply to roller bearings with inner ring rotation under radial and thrust loads.

<b>Bearing Bore Diameter</b>	<b>Normal Load</b>	<b>High Load</b>
Up to 220 mm	P/C = 0.10 to 0.15	P/C>0.15

**Where**

P = Equivalent Dynamic Load on the Bearing (lbs.)

C = Basic Dynamic Load Rating of Bearing (lbs.)

**TABLE 2 – TOLERANCE**

Shaft Diameter (S-2 & S3)		Tolerance
Over	Including	
2" (50 mm)	4" (100 mm)	+ .000" to -.004"
4" (100 mm)	6" (150 mm)	+ .000" to -.005"
Over 6" (150 mm)		+ .000" to -.006"

d. **Lockwasher and Locknut** – Install the lock-washer with inner prong located in the keyway of the shaft and pointing towards the bearing. Install locknut, chamfered face toward bearing. Tighten locknut using a spanner wrench.

Locate a lockwasher tab that aligns with a locknut slot and bend tab into slot. If slot is past tab, then tighten, not loosen, locknut to meet a washer tab.

e. **Seal Ring** – Install second seal ring with large O.D. toward locknut.

f. **V-ring Seal** – Slide second V-ring seal onto the shaft, again making certain lip is toward bearing. **NOTE: Do not install V-ring seal on seal ring until housing cap has been set in place and tightened.**

Steps e. and f. are not necessary if pillow block housing is a "cast closed end" style.

3. Remove any paint, dirt or burrs from the mating surfaces of the housing halves. Thoroughly clean seal grooves on both sides. Set lower half of housing on base and apply oil to the bearing seats.

4. Apply grease to the bearing and seal rings. The lubricant should be smeared between the rolling elements. (See Grease Lubrication Section below.) This step and the first sentence of Step 8 do not apply for oil lubricated bearings.

5. Place shaft with bearing into lower half while carefully guiding the seal rings into the housing grooves.

6. Bolt lower half of the non-expansion bearing to the base. Move shaft endwise so that spacer ring can be inserted as shown on sketch A. **Center all other bearings on same shaft in their housing seats. (NOTE: Only one bearing per shaft is non-expansion, other bearings should be expansion.)**

7. When closed end is required and the block is not a cast closed, the end plug supplied should be fit into the center seal ring groove of the housing. Shaft should not extend beyond adapter end to ensure no rubbing with end plug.

8. Grease the bearing seal grooves in the housing cap and place over the bearing after wiping the mating surfaces. The two dowel pins will align the cap with the lower housing half. **NOTE: Each cap must be matched with its mating lower half, as these parts are not interchangeable. Cap and base have serial numbers stamped at joint. The serial numbers should line up for proper match.**

9. Tighten cap bolts to the recommended torque in Table 2.

10. Assure that there is running clearance at seal ring as shown on Sketch A.

**TABLE 3 – SHAFT DIAMETERS  
S-2 AND S-3, INCHES**

Bearing Bore Diameter, MM (Inches)	S-2	S-3
75 (2.9528)	3 <sup>7</sup> / <sub>16</sub>	2 <sup>13</sup> / <sub>16</sub>
80 (3.1496)	3 <sup>5</sup> / <sub>8</sub>	3
85 (3.3465)	3 <sup>15</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>16</sub>
90 (3.5493)	4 <sup>1</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub>
100 (3.9370)	4 <sup>1</sup> / <sub>2</sub>	3 <sup>13</sup> / <sub>16</sub>
110 (4.3370)	4 <sup>7</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub>
120 (4.7244)	5 <sup>5</sup> / <sub>16</sub>	4 <sup>9</sup> / <sub>16</sub>
130 (5.1181)	5 <sup>7</sup> / <sub>8</sub>	4 <sup>15</sup> / <sub>16</sub>
140 (5.5118)	6 <sup>1</sup> / <sub>4</sub>	5 <sup>5</sup> / <sub>16</sub>
150 (5.9055)	6 <sup>5</sup> / <sub>8</sub>	5 <sup>3</sup> / <sub>4</sub>
160 (6.2992)	7	6 <sup>1</sup> / <sub>16</sub>
170 (6.6929)	7 <sup>7</sup> / <sub>16</sub>	6 <sup>7</sup> / <sub>16</sub>
180 (7.0866)	7 <sup>13</sup> / <sub>16</sub>	6 <sup>7</sup> / <sub>8</sub>
190 (7.4803)	8 <sup>3</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>4</sub>
200 (7.8740)	8 <sup>3</sup> / <sub>4</sub>	7 <sup>5</sup> / <sub>8</sub>
220 (8.6614)	9 <sup>9</sup> / <sub>16</sub>	8 <sup>5</sup> / <sub>16</sub>

## MAINTENANCE

### WARNING

To ensure that drive is not unexpectedly started, turn off and lock out or tag power source before proceeding. Failure to observe these precautions could result in bodily injury.

**Remove the housing cap in order to inspect bearing and grease. Before reassembly it is important that the V-ring seals be removed if TRIPLE TECT seal installation tools are not available. If available, do not remove seals and follow cap installation outlined in the seals instruction manual.**

### GREASE LUBRICATION

USAF bearings are specifically designed for dirty, dusty or wet environments. In order to properly protect bearings during installation, pack the bearing **insert** 100% full of grease immediately after having properly mounted bearing on the shaft.

If the RPM of the application falls between 20% and 80% of maximum RPM (Table 6), pack the lower half of the housing one half full. If the RPM of the application is less than 20% of maximum RPM, pack bearing housing cavity 100% full. If the RPM exceeds 80% of maximum RPM, pack the lower half of the housing 1/3 full.

### WARNING

Regreasing requires rotating parts to be exposed. Exercise extreme care during such operations. Failure to observe these precautions could result in bodily injury.

At each regreasing cycle, for applications up to 80% of maximum RPM, slowly add grease until fresh grease is seen purging at the seals. Regreasing should be done while running. Remote regreasing lines should be added to avoid endangering personnel.

If the RPM is greater than 80% of maximum RPM, add 4 strokes of a handgun at each regreasing cycle for bores up to 55 mm. For bores greater than 55 mm up to 140 mm, add 8 strokes of handgun at each regreasing cycle. For bores greater than 140 mm up to 220 mm, add 16 strokes of a handgun at each regreasing cycle. For units running above 80% of maximum RPM, running temperature should be monitored. If a drastic change in running temperature is noted, it is recommended to remove the used grease completely and recharge with fresh grease per the above instructions.

Select a grease with a viscosity at operating temperature which will provide full film lubrication (See Table 4). Use a 50°F - 100°F increase in bearing temperature above ambient, depending on RPM and load.

Use Table 5 as a general guide for regreasing and bearings. A small amount of grease at frequent intervals is preferable to a large amount of grease at infrequent intervals. For special applications involving high speeds or high temperatures Consult DODGE.

**TABLE 4 – VISCOSITY OF OIL IN THE GREASE**

DN Δ	Viscosity for Loads Up to 18% of Dynamic Capacity (SUS @ Operating Temp.)	DN Δ	Viscosity for Loads Up to 18% of Dynamic Capacity (SUS @ Operating Temp.)
2,500	3500	35,000	625
5,000	3150	40,000	525
7,500	2750	45,000	450
10,000	2375	50,000	400
12,500	2000	75,000	300
15,000	1750	100,000	200
17,500	1500	125,000	150
20,000	1300	150,000	130
22,500	1075	175,000	110
25,000	900	200,000	100

DN = *Bore Diameter* (MM) × RPM

\* = For loads above 18% of dynamic capacity an EP grease with the above viscosity oil is recommended.

**TABLE 5 – REGREASING INTERVALS (MONTHS)\*  
(Based on 12 Hours Per Day 150°F Max.)**

Size, MM	RPM*									
	250	500	750	1000	1250	1500	2000	2500	3000	3500
40–60	8	6	4	3	2	1	.5	.5	.25	.25
65	7	5	3	2	1	1	.5	.25	.25	
70–85	6	4	3	2	1	.5	.5	.25		
90–100	5	3	2	1	.5	.5	.25			
110–130	4	3	2	1	.5	.25				
140–160	3	2	1	.5	.25					
170–190	2	1	.5	.25						
200–220	1	5	.25							

\*FOR OTHER SPEEDS CONSULT DODGE ENGINEERING

### LONG-TERM STORAGE OF PRE-ASSEMBLED BEARINGS

Applications such as conveyor pulleys and fans are shipped to a job site with bearings already mounted to the shafts. Since these units may be stored for long periods of time in unprotected areas subject to rain, dust, etc. bearings should be packed 100% full of grease and so tagged at bearing assembly to prevent contamination or corrosion of the bearings.

Prior to installation on the structure, if the application RPM is greater than 20% of catalog maximum speed, excess grease must be removed to the levels outlined previously. Removal of excess grease must be done in a clean, protected environment.

**TABLE 6  
MAXIMUM RPM (DIRECT MOUNT)**

Shaft Size, MM	Basic Bearing Description	Max. RPM	
		Grease	Oil
75	22215	3400	4300
80	22216	3200	4000
85	22217	3000	3800
90	22218	2600	3400
100	22220	2200	3000
110	22222	2000	2800
120	22224	1800	2400
130	22226	1700	2200
140	22228	1600	2000
150	22230	1500	1900
160	22232	1400	1800
170	22234	1300	1700
180	22236	1200	1600
190	22238	950	1300
200	22240	900	1200
220	22244	800	1000

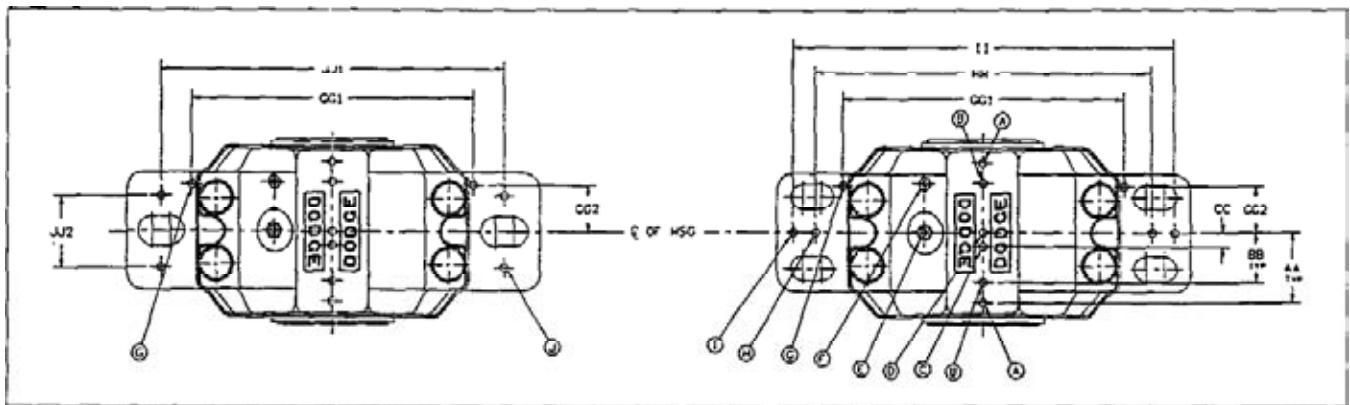
### OIL LUBRICATION

USAF bearings are specifically designed to handle both grease and oil lubrication. Oil lubrication is normally required at high speeds as well as high loads or whenever heat from an external source is flowing into the bearing. Oil lubrication may be static or circulating. With static oil, fill the bearing cavity with oil up to the centerline of the lower roller. The dimension is identified as "w" and is shown on Table 8. Mount an oil sight gauge on one of the drilled and tapped drain holes on the side of the pillow block for visual indication of this level. The oil level may drop or rise during operation depending on the rotation of the bearing. Oil should only be added when the bearing is not operating. Both the static oil level and the running oil level should be marked on the oil sight gauge and properly identified.

For circulating oil, the flow rate, and size of return drains are shown on Table 8.

**TABLE 7 – USAF PILLOW BLOCK  
DOWEL PIN, LUBRICATION & MOUNTING HOLE POSITIONS**

USAF		AA	BB	CC	GG1	GG2	G MAX DIA.	HH	H		II	JJ1	JJ2	J	
HSG SERIES	BRG SERIES								HOLD SIZE	BOLT SIZE				HOLE SIZE	BOLT SIZE
	22209														
	22210														
	22211														
	22213														
215	22215	1 <sup>1</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>32</sub>	2 <sup>3</sup> / <sub>64</sub>	7 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>4</sub>	5 <sup>5</sup> / <sub>16</sub>	9 <sup>1</sup> / <sub>16</sub>	11 <sup>1</sup> / <sub>16</sub>	5 <sup>5</sup> / <sub>8</sub>	10 <sup>1</sup> / <sub>4</sub>	8 <sup>21</sup> / <sub>32</sub>	1 <sup>1</sup> / <sub>8</sub>	9 <sup>1</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>2</sub>
216	22216	2 <sup>1</sup> / <sub>32</sub>	1 <sup>3</sup> / <sub>8</sub>	5 <sup>7</sup> / <sub>16</sub>	8 <sup>19</sup> / <sub>32</sub>	1 <sup>3</sup> / <sub>8</sub>	5 <sup>7</sup> / <sub>16</sub>	10 <sup>1</sup> / <sub>4</sub>	13 <sup>1</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>4</sub>	11 <sup>19</sup> / <sub>32</sub>	9 <sup>15</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>16</sub>	11 <sup>1</sup> / <sub>16</sub>	5 <sup>7</sup> / <sub>8</sub>
217	22217	2 <sup>1</sup> / <sub>16</sub>	1 <sup>15</sup> / <sub>32</sub>	13 <sup>1</sup> / <sub>32</sub>	8 <sup>19</sup> / <sub>32</sub>	1 <sup>3</sup> / <sub>8</sub>	5 <sup>7</sup> / <sub>16</sub>	10 <sup>1</sup> / <sub>4</sub>	13 <sup>1</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>4</sub>	11 <sup>19</sup> / <sub>32</sub>	9 <sup>15</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>16</sub>	11 <sup>1</sup> / <sub>16</sub>	5 <sup>7</sup> / <sub>8</sub>
218	22218	2 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>16</sub>	9 <sup>1</sup> / <sub>16</sub>	1 <sup>29</sup> / <sub>64</sub>	5 <sup>7</sup> / <sub>16</sub>	11 <sup>13</sup> / <sub>3</sub>	13 <sup>1</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>4</sub>	12 <sup>5</sup> / <sub>8</sub>	11 <sup>1</sup> / <sub>32</sub>	2 <sup>3</sup> / <sub>32</sub>	11 <sup>1</sup> / <sub>16</sub>	5 <sup>7</sup> / <sub>8</sub>
220	22220	2 <sup>11</sup> / <sub>16</sub>	1 <sup>23</sup> / <sub>32</sub>	17 <sup>1</sup> / <sub>32</sub>	10 <sup>1</sup> / <sub>4</sub>	1 <sup>39</sup> / <sub>64</sub>	5 <sup>7</sup> / <sub>16</sub>	12 <sup>19</sup> / <sub>3</sub>	15 <sup>1</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>8</sub>	14 <sup>23</sup> / <sub>64</sub>	11 <sup>13</sup> / <sub>16</sub>	2 <sup>19</sup> / <sub>32</sub>	13 <sup>1</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>4</sub>
222	22222	2 <sup>13</sup> / <sub>16</sub>	1 <sup>15</sup> / <sub>16</sub>	19 <sup>1</sup> / <sub>32</sub>	11 <sup>1</sup> / <sub>32</sub>	1 <sup>25</sup> / <sub>32</sub>	15 <sup>1</sup> / <sub>32</sub>	13 <sup>25</sup> / <sub>3</sub>	15 <sup>1</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>8</sub>	15 <sup>1</sup> / <sub>2</sub>	12 <sup>9</sup> / <sub>32</sub>	2 <sup>29</sup> / <sub>32</sub>	13 <sup>1</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>4</sub>
224	22224	3 <sup>1</sup> / <sub>8</sub>	1 <sup>29</sup> / <sub>32</sub>	11 <sup>1</sup> / <sub>16</sub>	11 <sup>27</sup> / <sub>6</sub>	1 <sup>25</sup> / <sub>32</sub>	15 <sup>1</sup> / <sub>32</sub>	13 <sup>7</sup> / <sub>8</sub>	15 <sup>1</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>8</sub>	15 <sup>5</sup> / <sub>8</sub>	13	2 <sup>29</sup> / <sub>32</sub>	13 <sup>1</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>4</sub>
226	22226	3 <sup>1</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>32</sub>	3 <sup>3</sup> / <sub>4</sub>	12 <sup>25</sup> / <sub>3</sub>	2 <sup>3</sup> / <sub>64</sub>	15 <sup>1</sup> / <sub>32</sub>	14 <sup>41</sup> / <sub>3</sub>	1 <sup>1</sup> / <sub>16</sub>	1	17 <sup>3</sup> / <sub>8</sub>	14 <sup>9</sup> / <sub>16</sub>	3 <sup>5</sup> / <sub>32</sub>	15 <sup>1</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>8</sub>
228	22228	3 <sup>31</sup> / <sub>64</sub>	2 <sup>17</sup> / <sub>32</sub>	3 <sup>3</sup> / <sub>4</sub>	13 <sup>19</sup> / <sub>3</sub>	2 <sup>3</sup> / <sub>32</sub>	15 <sup>1</sup> / <sub>32</sub>	16 <sup>1</sup> / <sub>3</sub>	1 <sup>5</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>4</sub>	18 <sup>1</sup> / <sub>16</sub>	15 <sup>3</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>16</sub>	1
230	22230	3 <sup>27</sup> / <sub>32</sub>	2 <sup>17</sup> / <sub>32</sub>	13 <sup>1</sup> / <sub>16</sub>	14 <sup>3</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>8</sub>	15 <sup>1</sup> / <sub>32</sub>	17 <sup>23</sup> / <sub>3</sub>	1 <sup>5</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>4</sub>	19 <sup>1</sup> / <sub>2</sub>	16 <sup>15</sup> / <sub>16</sub>	3 <sup>15</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>16</sub>	1
232	22232	4 <sup>9</sup> / <sub>32</sub>	2 <sup>9</sup> / <sub>16</sub>	2 <sup>9</sup> / <sub>32</sub>	15 <sup>9</sup> / <sub>16</sub>	2 <sup>23</sup> / <sub>64</sub>	15 <sup>1</sup> / <sub>32</sub>	18 <sup>1</sup> / <sub>2</sub>	1 <sup>5</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>4</sub>	20 <sup>9</sup> / <sub>32</sub>	17 <sup>23</sup> / <sub>32</sub>	3 <sup>15</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>16</sub>	1
234	22234	4 <sup>1</sup> / <sub>8</sub>	3	1	—	—	—	20 <sup>1</sup> / <sub>2</sub>	1 <sup>9</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>2</sub>	23 <sup>3</sup> / <sub>8</sub>	—	—	—	—
236	22236	4 <sup>7</sup> / <sub>16</sub>	3	1	—	—	—	22 <sup>1</sup> / <sub>4</sub>	1 <sup>9</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>2</sub>	25 <sup>1</sup> / <sub>4</sub>	—	—	—	—
238	22238	4 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	—	—	—	23	1 <sup>9</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>2</sub>	26 <sup>5</sup> / <sub>8</sub>	—	—	—	—
244	22244	5 <sup>3</sup> / <sub>64</sub>	3 <sup>9</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>16</sub>	—	—	—	26 <sup>5</sup> / <sub>8</sub>	1 <sup>13</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>4</sub>	30 <sup>3</sup> / <sub>4</sub>	—	—	—	—

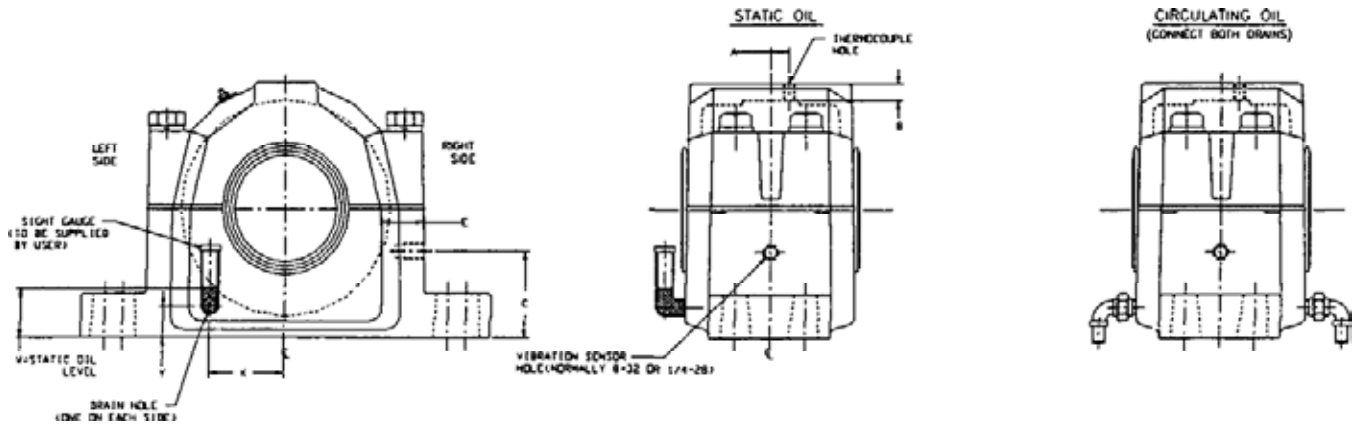


ITEM	DESCRIPTION
A	Optional Seal Grease Location
B	Optional Location for Vent. Vibration Pickup and/or Grease Location for Non W33 Grooved Bearing
C	Position for Thermocouple Location
D	Position for Lubrication of Bearing with W33 Groove
E	Lubrication Port for W33 Groove Bearing Drilled Standard on Pillow Blocks
F	Per Drilled and Tap Location for Vent or Side Lubrication for Bearing without W33 Groove
G	Dowel Pin Location for Metric Plummer Blocks
H	Drilling Location for Two Bolt Mounting or Optional Dowel Pin Location
I	Optional Location for Dowel Pin Location
J	Drilling Location for Four Bolt Mounting or Optional Dowel Pin Location

**TABLE 8  
USAF CIRCULATING OIL CHART**

BEARING SEAT MM	HSG. ERIES	CIRCULATING OIL FLOW*		STATIC OIL LEVEL/IN.	DRAIN HOLE, DRY SUMP***		THERMOCOUPLE HOLE	VIBRATION SENSOR HOLE			
		AMOUNT SUFFICIENT FOR NORMAL LUBRICATION	MAXIMUM AMOUNT FOR HEAT DISSIPATION DUE TO EXTERNAL HEAT SOURCE		LOCATION			LOCATION	WALL THICK.	LOCATION	WALL THICK.
					GAL./MIN.	GAL./MIN.					
75	215	.0060	.175	1 <sup>5</sup> / <sub>32</sub>	1 <sup>25</sup> / <sub>32</sub>	7/8	1/4-18	23/64	5/8	2 1/4	1 3/16
80	216	.0065	.195	1 1/4	1 <sup>31</sup> / <sub>32</sub>	61/64	1/4-18	5/16	1/2	2 <sup>9</sup> / <sub>32</sub>	1 <sup>33</sup> / <sub>64</sub>
85	217	.0075	.20	1 <sup>3</sup> / <sub>8</sub>	2 1/8	1 1/16	3/8-18	13/32	43/64	2 1/2	1 7/16
90	218	.0080	.25	1 <sup>15</sup> / <sub>32</sub>	2 1/4	1 1/8	3/8-18	7/16	39/64	2 <sup>23</sup> / <sub>32</sub>	1 <sup>29</sup> / <sub>64</sub>
100	220	.011	.35	1 <sup>41</sup> / <sub>64</sub>	2 <sup>5</sup> / <sub>8</sub>	1 1/4	3/8-18	17/32	45/64	3 <sup>5</sup> / <sub>64</sub>	1 <sup>43</sup> / <sub>64</sub>
110	222	.015	.42	1 <sup>51</sup> / <sub>64</sub>	2 <sup>7</sup> / <sub>8</sub>	1 <sup>11</sup> / <sub>32</sub>	3/8-18	19/32	17/32	3 <sup>23</sup> / <sub>64</sub>	1 <sup>23</sup> / <sub>32</sub>
120	224	.0175	.48	1 <sup>27</sup> / <sub>32</sub>	3 <sup>3</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>8</sub>	1/2-14	11/16	49/64	3 <sup>3</sup> / <sub>8</sub>	1 <sup>55</sup> / <sub>64</sub>
130	226	.019	.55	2 <sup>11</sup> / <sub>32</sub>	3 <sup>5</sup> / <sub>16</sub>	1 <sup>5</sup> / <sub>8</sub>	1/2-14	3/4	1"	4 <sup>1</sup> / <sub>32</sub>	2 <sup>5</sup> / <sub>32</sub>
140	228	.023	.60	2 <sup>1</sup> / <sub>32</sub>	3 <sup>5</sup> / <sub>8</sub>	1 <sup>15</sup> / <sub>32</sub>	1/2-14	3/4	57/64	4 <sup>1</sup> / <sub>32</sub>	2 <sup>5</sup> / <sub>32</sub>
150	230	.025	.75	2 <sup>1</sup> / <sub>32</sub>	3 <sup>19</sup> / <sub>32</sub>	1 <sup>23</sup> / <sub>64</sub>	1/2-14	13/16	7/8	4 <sup>11</sup> / <sub>32</sub>	2 1/4
160	232	.030	.80	2 <sup>3</sup> / <sub>32</sub>	4 <sup>1</sup> / <sub>32</sub>	1 <sup>21</sup> / <sub>64</sub>	1/2-14	29/32	59/64	4 <sup>33</sup> / <sub>64</sub>	2 <sup>7</sup> / <sub>32</sub>
170	234	.035	.85	2 <sup>3</sup> / <sub>16</sub>	4 <sup>5</sup> / <sub>32</sub>	1 <sup>21</sup> / <sub>64</sub>	1/2-14	1"	1 <sup>25</sup> / <sub>64</sub>	4 <sup>31</sup> / <sub>32</sub>	2 <sup>45</sup> / <sub>64</sub>
180	236	.037	.875	2 <sup>27</sup> / <sub>64</sub>	4 <sup>7</sup> / <sub>32</sub>	1 <sup>5</sup> / <sub>8</sub>	1/2-14	1"	1 <sup>21</sup> / <sub>64</sub>	5 1/4	2 3/4
190	238	.039	1.0	2 <sup>17</sup> / <sub>32</sub>	4 3/4	1 <sup>39</sup> / <sub>64</sub>	1/2-14	1 1/8	1 1/4	5 1/2	3 <sup>3</sup> / <sub>32</sub>
220	244	.050	1.4	3 1/4	5 <sup>7</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>32</sub>	1/2-14	1 3/16	1 1/2	6 <sup>5</sup> / <sub>8</sub>	3 <sup>23</sup> / <sub>64</sub>

- \* Based on oil temperature of 130°F–150°F & oil level at centerline of lowest roller. For maximum oil flow values, both drains should be used.  
Mount block with drain holes on right side of block centerline when rotation is CCW.  
Mount block with drain holes on left side of block centerline when rotation is CW.
- \*\* Static oil level is measured from bottom of block base to meniscus on oil sight gauge. (Non-rotating mode).
- \*\*\* For wet sump consult DODGE Engineering.

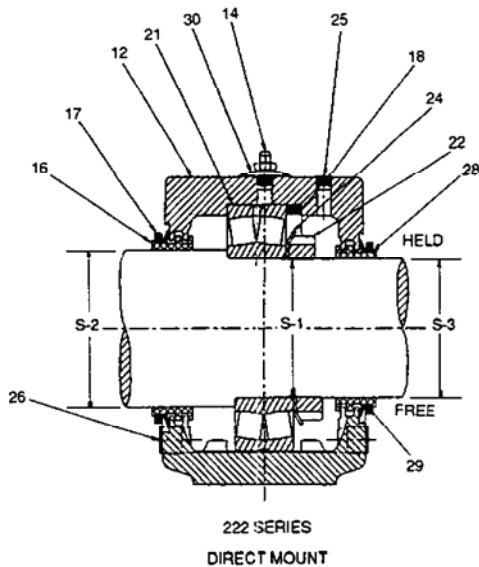


**REPLACEMENT PARTS FOR DIRECT MOUNT USAF PILLOW BLOCKS  
DIRECT MOUNTED BEARING SEAT DIAMETER, MM (INS.)**

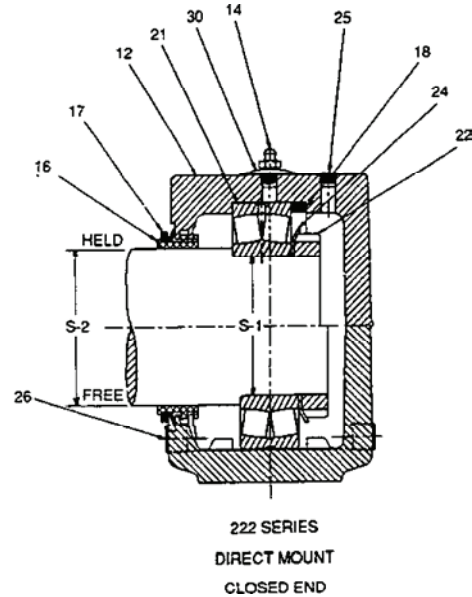
REF.	NAME OF PART	STYLE	QTY.	40 (1.5748)	45 (1.7717)	55 (2.1654)	60 (2.3622)	65 (2.5591)	70 (2.7559)	75 (2.9628)	80 (3.1496)	85 (3.3465)	90 (3.5493)	100 (3.9370)
12	2 Bolt Base Hsg. Ass. 222 Series	Std.	1	-	-	-	-	-	-	039682	039686	039690	039694	039698
		Closed End	1	-	-	-	-	-	-	039883	039687	039691	039695	039699
12	4 Bolt Base Hsg. Ass. 222 Series	Std.	1	-	-	-	-	-	-	039684	039688	039692	039696	039700
		Closed End	1	-	-	-	-	-	-	039685	039689	039693	039697	039701
21	Roller Bearing	222 Series	1	-	-	-	-	-	-	421265	421266	421267	421268	421269
16	Seal Ring (S2)		1	042050	046592	046594	046596	046597	046599	042058	046602	042060	046607	042064
17	V-Ring (S2)		1	042225	046226	042227	042228	042229	042230	042230	042230	042231	042232	042233
28	Seal Ring (S3)		1	043389	043390	046593	046595	042052	046598	046600	042058	042057	046605	046608
29	V-Ring (S3)		1	042243	042224	042226	042226	042227	042228	042228	042229	042230	042230	042231
18	Non-Expansion Spacer	222 Series	1	-	-	-	-	-	-	041174	041172	041175	041173	041176
14	Lube Fitting 223 Series	405015	1											
26	Drain Plug	222 Series	2	-	-	-	-	-	-	430029	430031	430031	430031	430031

**REPLACEMENT PARTS FOR DIRECT MOUNT USAF PILLOW BLOCKS**

REF.	NAME OF PART	STYLE	QTY.	110 (4.3370)	120 (4.7244)	130 (5.1181)	140 (5.5118)	150 (5.9055)	160 (6.2992)	170 (6.6929)	180 (7.0866)	190 (7.4803)	200 (7.8740)	220 (8.6614)
12	2 Bolt Base Hsg. Ass. 222 Series	Std.	1	-	-	-	-	-	-	-	-	-	-	-
		Closed End	1	-	-	-	-	-	-	-	-	-	-	-
12	4 Bolt Base Hsg. Ass. 222 Series	Std.	1	039702	039704	039706	039708	039710	039711	039712	039713	039714	039715	039716
		Closed End	1	039703	039705	039707	039709	039229	039230	039231	039232	039233	039234	049235
21	Roller Bearing	222 Series	1	421270	421271	421272	421273	421274	421275	421276	421277	421278	421279	421280
16	Seal Ring (S2)		1	046609	046612	046611	046613	046615	042075	046618	046619	046622	046625	046627
17	V-Ring (S2)		1	042234	042235	042236	042237	042237	042238	042239	042239	042240	042240	042241
28	Seal Ring (S3)		1	042062	046610	042065	046612	046614	046617	042072	046620	046621	046624	046628
29	V-Ring (S3)		1	042232	042233	042234	042235	042236	042236	042237	042245	042238	042239	042240
18	Non-Expansion Spacer	222 Series	1	041177	046636	041178	041179	041186	041180	041181	041184	041182	046639	041183
14	Lube Fitting 223 Series	405015	1											
			1	046635	046634	046637	046638	041184	041182	046639	-	041183		
26	Drain Plug	222 Series	2	430031	430033	430033	430033	430033	430033	430033	430033	430033	430033	430033



**SKETCH A**



World Headquarters  
P.O. Box 2400, Fort Smith, AR 72902-2400 U.S.A., Ph: (1) 479.646.4711, Fax (1) 479.648.5792, International Fax (1) 479.648.5895  
Baldor - Dodge  
6040 Ponders Court, Greenville, SC 29615-4617 U.S.A., Ph: (1) 864.297.4800, Fax: (1) 864.281.2433  
www.baldor.com



## Free Manuals Download Website

<http://myh66.com>

<http://usermanuals.us>

<http://www.somanuals.com>

<http://www.4manuals.cc>

<http://www.manual-lib.com>

<http://www.404manual.com>

<http://www.luxmanual.com>

<http://aubethermostatmanual.com>

Golf course search by state

<http://golfingnear.com>

Email search by domain

<http://emailbydomain.com>

Auto manuals search

<http://auto.somanuals.com>

TV manuals search

<http://tv.somanuals.com>