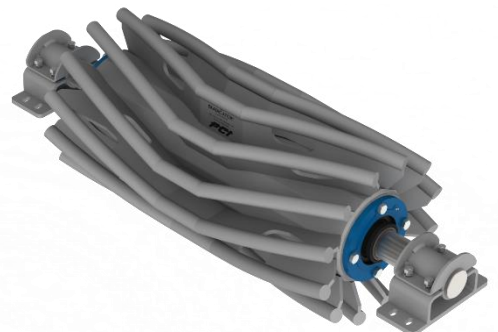
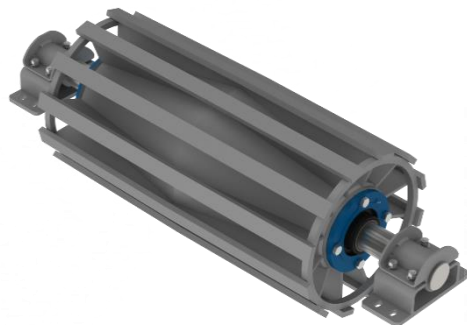
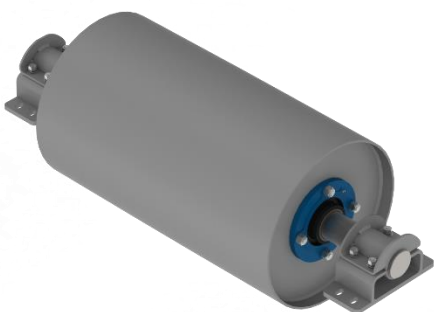
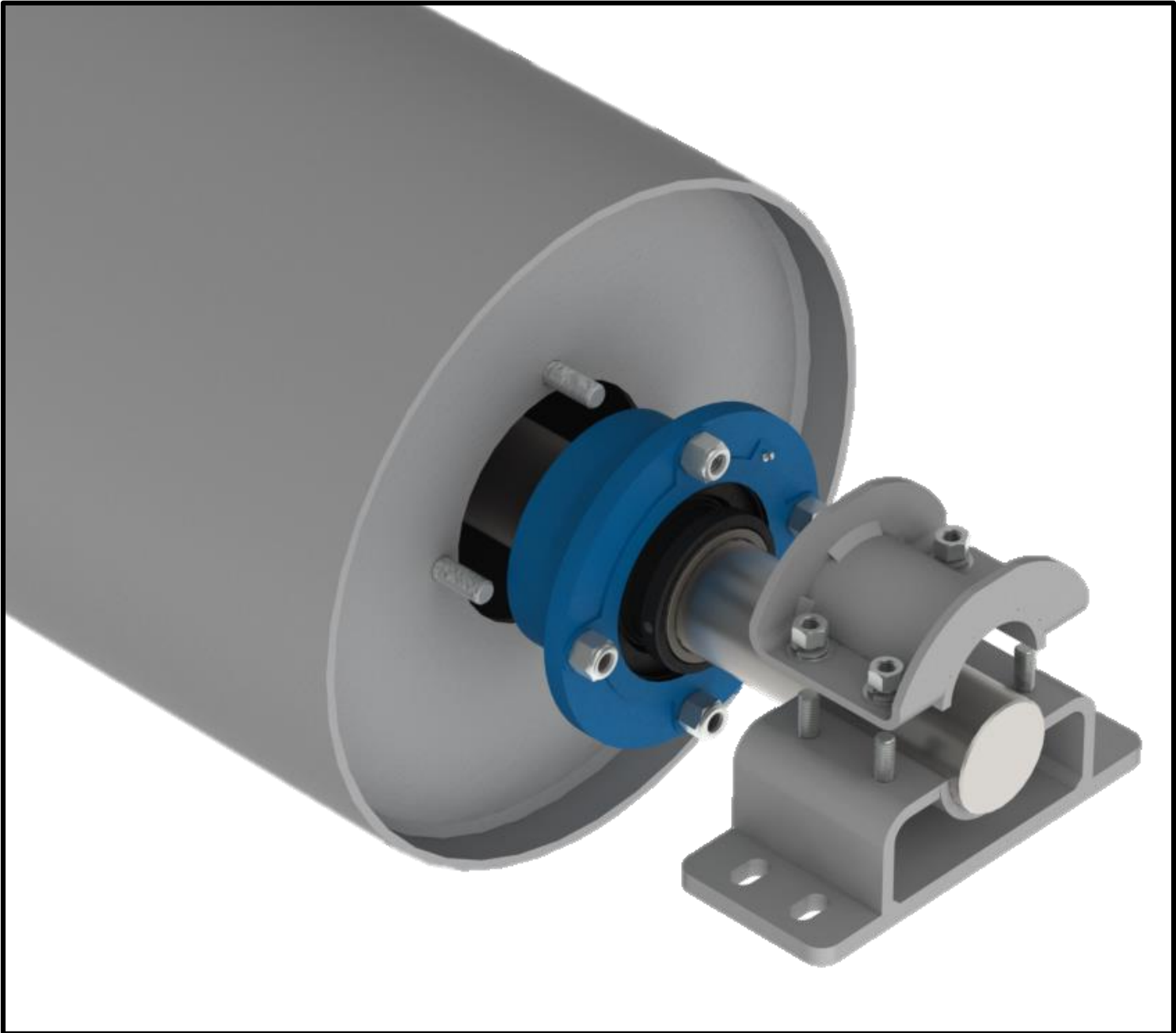


# CONVEYOR PULLEYS

Technical Information  
Dead Shaft Assemblies

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## Technical Information

### Dead Shaft Assemblies



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Based on known shaft size, bearing center and pulley face width dimensions, find the load rating for the shaft and dynamic load rating for the bearings based on current specifications in Table 1 below.

**Table 1: Load Ratings of Shaft & Bearings:**

Shaft Size (in)	Bearing Dynamic Load Rating (lbs)	Shaft Extension to Pedestal Center (in)	Shaft Rating (lbs) Pulley Face Width																	
			12	14	16	18	20	22	26	32	38	44	51	57	63	66	72	78		
1.4375	16600	2	1,300	1,300	1,200	1,000	930	830	686	540	440	-	-	-	-	-	-	-		
		3	1,000	1,000	950	820	720	640	530	420	350	-	-	-	-	-	-	-		
		5	700	700	660	570	500	450	370	290	-	-	-	-	-	-	-	-		
		7	540	540	510	440	390	350	290	-	-	-	-	-	-	-	-	-		
1.9375	19000	2	3,040	3,040	3,040	3,040	3,010	2,690	2,210	1,740	1,440	1,220	1,040	931	830	790	720	-		
		3	2,500	2,500	2,500	2,500	2,400	2,100	1,800	1,400	1,100	980	840	740	670	-	-	-		
		5	1,700	1,700	1,700	1,700	1,700	1,500	1,200	970	800	680	580	-	-	-	-	-		
		8	1,200	1,200	1,200	1,200	1,100	1,000	840	670	550	470	-	-	-	-	-	-		
2.4375	33300	2	6,300	6,300	6,300	6,300	6,300	6,300	5,600	4,400	3,700	3,100	2,700	2,400	2,100	2,000	1,800	1,600		
		4	4,000	4,000	4,000	4,000	4,000	4,000	3,600	2,900	2,400	2,000	1,700	1,500	1,400	1,300	1,200	1,100		
		6	3,000	3,000	3,000	3,000	3,000	3,000	2,700	2,100	1,700	1,500	1,300	1,100	1,000	970	880	810		
		9	2,100	2,100	2,100	2,100	2,100	2,100	1,900	1,500	1,300	1,100	910	810	730	690	-	-		
2.9375	35500	2	10,600	10,600	10,600	10,600	10,600	10,600	10,600	9,100	7,500	6,400	5,500	4,900	4,400	4,200	3,800	3,500		
		4	6,900	6,900	6,900	6,900	6,900	6,900	6,900	6,000	4,900	4,200	3,600	3,200	2,900	2,700	2,500	2,300		
		7	4,600	4,600	4,600	4,600	4,600	4,600	4,600	3,900	3,200	2,800	2,300	2,100	1,900	1,800	1,600	1,500		
		10	3,400	3,400	3,400	3,400	3,400	3,400	3,400	2,900	2,400	2,000	1,700	1,600	1,400	1,300	1,200	1,100		
3.4375	56900	3	11,900	11,900	11,900	11,900	11,900	11,900	11,900	11,900	11,900	10,400	8,800	7,400	6,600	5,900	5,600	5,100	4,700	
		5	8,700	8,700	8,700	8,700	8,700	8,700	8,700	8,700	8,700	7,500	6,400	5,400	4,800	4,300	4,100	3,700	3,400	
		7	6,800	6,800	6,800	6,800	6,800	6,800	6,800	6,800	6,800	5,900	5,000	4,300	3,800	3,400	3,200	2,900	2,700	
		10	5,200	5,200	5,200	5,200	5,200	5,200	5,200	5,200	5,200	4,500	3,800	3,200	2,900	2,600	2,400	2,200	2,000	
3.9375	69900	3	17,800	17,800	17,800	17,800	17,800	17,800	17,800	17,800	17,800	17,800	15,100	12,800	11,300	10,200	9,700	8,800	8,100	
		5	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	11,000	9,300	8,300	7,400	7,100	6,400	5,900	
		7	10,200	10,200	10,200	10,200	10,200	10,200	10,200	10,200	10,200	10,200	8,700	7,300	6,500	5,800	5,500	5,100	4,600	
		10	7,800	7,800	7,800	7,800	7,800	7,800	7,800	7,800	7,800	7,800	6,600	5,600	4,900	4,400	4,200	3,800	3,500	
4.4375	104000	4	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	15,400	13,500	12,100	11,500	10,400	9,500	
		6	14,300	14,300	14,300	14,300	14,300	14,300	14,300	14,300	14,300	14,300	14,300	12,200	10,730	9,600	9,100	8,200	7,500	
		8	11,800	11,800	11,800	11,800	11,800	11,800	11,800	11,800	11,800	11,800	11,800	10,100	8,900	7,900	7,500	6,800	6,200	
		11	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400	9,400	8,000	7,100	6,300	6,000	5,400	5,000	
4.9375	146000	4	24,800	24,800	24,800	24,800	24,800	24,800	24,800	24,800	24,800	24,800	24,800	23,600	20,800	18,500	17,600	16,000	14,600	
		6	19,600	19,600	19,600	19,600	19,600	19,600	19,600	19,600	19,600	19,600	19,600	19,600	18,700	16,400	14,700	13,900	12,600	11,600
		8	16,300	16,300	16,300	16,300	16,300	16,300	16,300	16,300	16,300	16,300	16,300	16,300	15,500	13,600	12,200	11,500	10,500	9,600
		11	12,900	12,900	12,900	12,900	12,900	12,900	12,900	12,900	12,900	12,900	12,900	12,900	12,300	12,800	9,700	9,200	8,300	7,600

Capacity Limited by Shaft Stress

Capacity Limited by Shaft Deflection

Calculate the Resultant Load (RL) and the Minimum Bearing Rating (MBR) using application information and the following formulas:

**RESULTANT LOAD (RL)** (value should be less than Shaft Rating obtained in Table 1)

$$RL = Tension (T) * 2 * \sin(\text{Degree of Belt Wrap} / 2)$$

**MINIMUM BEARING RATING (MBR)** (value should be less than Bearing Dynamic Load Rating in Table 1)

$$MBR = .05413 * \text{Resultant Load (RL)} * ((L10 * FPM / \pi * OD / 12)^{0.3}) / 2$$

The calculated RL should be less than the Shaft Rating obtained in Table 1 and the calculated MBR should be less than the Bearing Dynamic Load Rating obtained in Table 1. If either of these values is greater than the values obtained in Table 1, the pulley and/or shaft may require consideration for resizing. For additional information on pulley selection, please consult PCI Conveyor Pulley Selection Guide.

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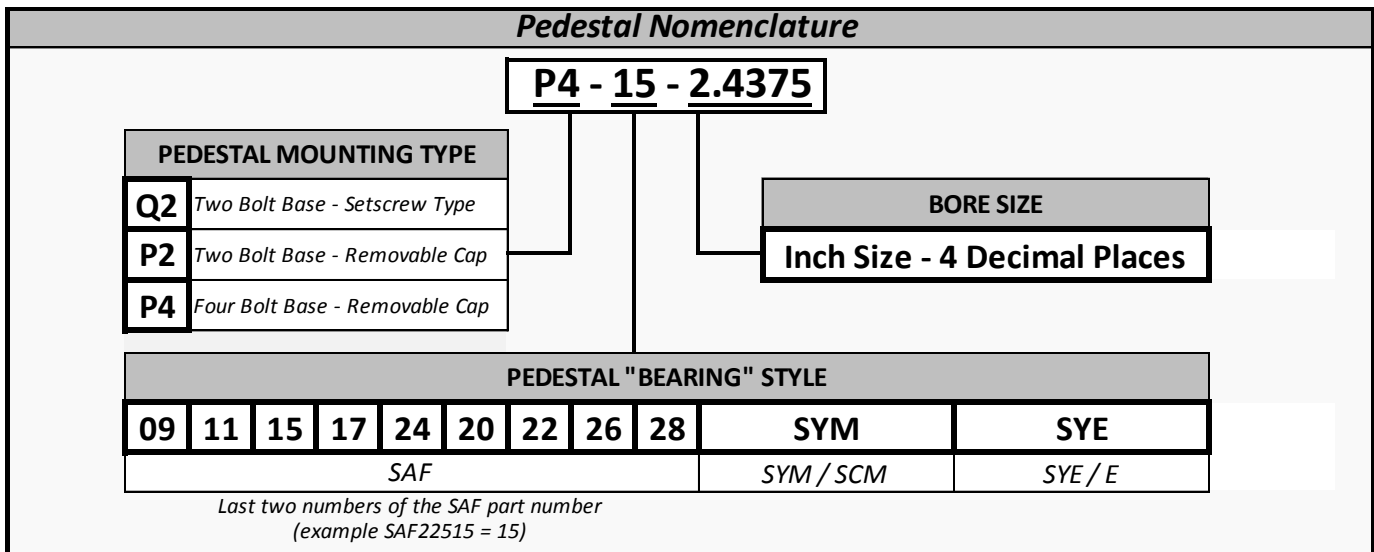
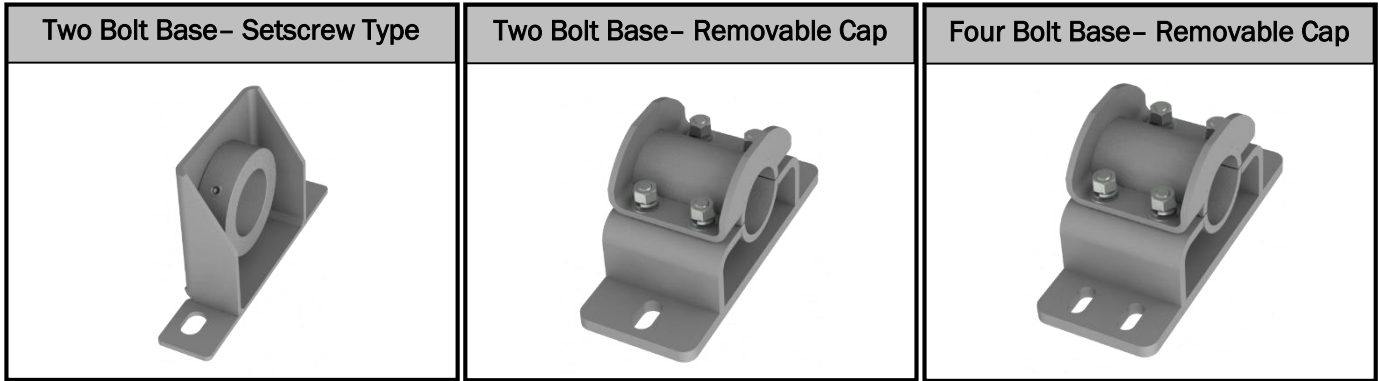
## Technical Information Dead Shaft Assemblies



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Choose a pedestal style either based on the pillow block bearings currently utilized in the application or your preferred pedestal style combined with the shaft size obtained in the previous step.



Calculate the Minimum Load Rating (MLR) for the pedestal using the formula below. The calculated MLR should be less than the pedestal Load Rating found in the product specification chart. (Load Ratings are based on the use of Grade 5 bolts in securing the pedestal to the mounting surface.)

**MINIMUM LOAD RATING (MLR)** (value should be less than Load Rating obtained in the product specification chart)

$$MLR = \text{Resultant Load (RL)} / 2$$

# CONVEYOR PULLEYS

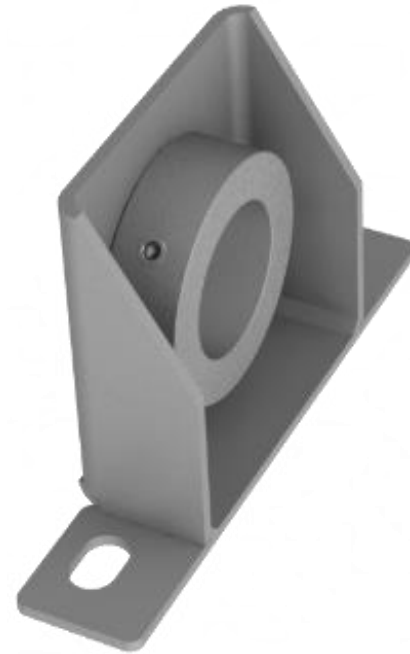
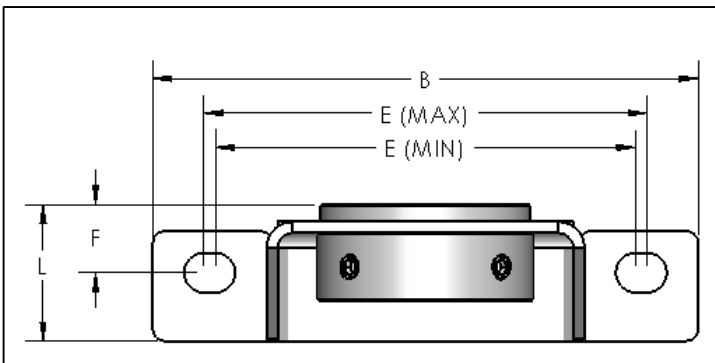
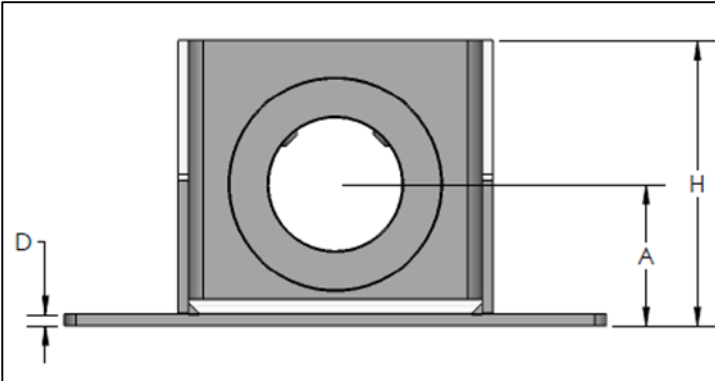
## Dead Shaft Assemblies

### Two Bolt Base – Setscrew Type Pedestals



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Bearing Type	PCI Part Number	Load Rating	Shaft Size	A	B	D	E		F	H	L	Bolt Size
							min	max				
SAF	Q2-09-1.4375	9000	1 7/16	2 1/4	8 1/4	1/4	6 1/4	7	1 13/16	4 3/8	3 5/8	1/2
	Q2-11-1.9375	9000	1 15/16	2 3/4	9 5/8	1/4	6 1/2	7 7/8	1 15/16	4 13/16	3 7/8	5/8
	Q2-15-2.4375	9000	2 7/16	3 1/4	11 1/4	1/4	8 1/8	9 5/8	2 1/4	5 21/32	4 1/2	5/8
	Q2-17-2.9375	14000	2 15/16	3 1/2	13	1/4	8 5/8	11	2 5/32	6 19/32	4 11/16	3/4
SYM SCM	Q2-SYM-1.4375	9000	1 7/16	2 1/8	7 3/8	1/4	5 5/16	6	7/8	4 7/32	1 3/4	1/2
	Q2-SYM-1.9375	9000	1 15/16	2 1/2	8 5/8	1/4	6 3/8	7 1/8	1 3/16	5	2 3/8	5/8
	Q2-SYM-2.4375	14000	2 7/16	3	10 15/64	1/4	7 1/2	8 1/2	1 9/32	6 1/32	2 9/16	3/4
	Q2-SYM-2.9375	14000	2 15/16	3 1/2	12	1/4	8 1/2	9 1/2	1 17/32	6 31/32	3 1/16	3/4
SYE E	Q2-SYE-1.4375	9000	1 7/16	1 7/8	7 3/8	1/4	5 1/2	6	1 1/16	3 7/8	2 1/8	1/2
	Q2-SYE-1.9375	9000	1 15/16	2 1/4	8 7/8	1/4	6 3/4	7 1/4	1 1/4	4 1/2	2 1/2	5/8
	Q2-SYE-2.4375	9000	2 7/16	2 3/4	10 1/2	1/4	8 1/4	8 3/4	1 7/16	5 11/16	2 7/8	5/8
	Q2-SYE-2.9375	14000	2 15/16	3 1/8	12	1/4	9 1/4	9 3/4	1 1/2	6 5/16	3	3/4

Verify dimensions for suitability for the intended application. Load Ratings based on use of Grade 5 bolts or greater. Additional pedestal and mounting styles available upon request. Specifications subject to change without notice.

# CONVEYOR PULLEYS

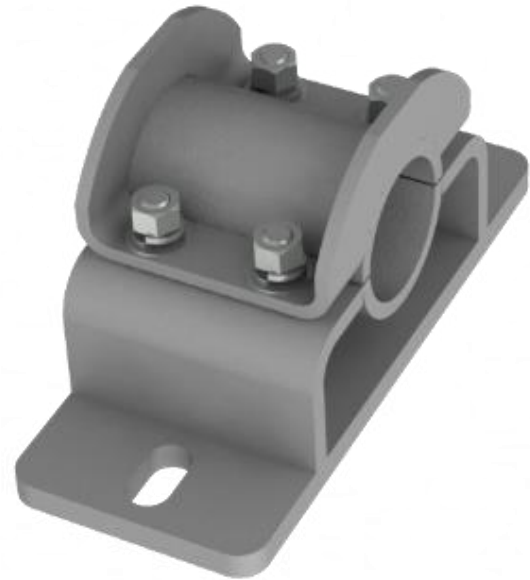
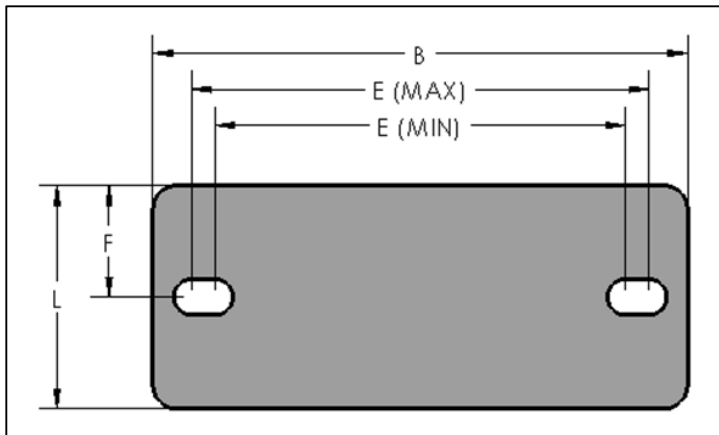
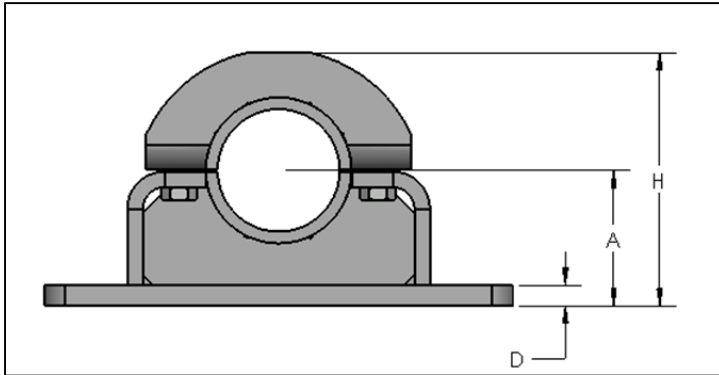
## Dead Shaft Assemblies

### Two Bolt Base – Removable Cap Pedestals



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Bearing Type	PCI Part Number	Load Rating	Shaft Size	A	B	D	E		F	H	L	Bolt Size
							min	max				
SAF	P2-13-2.4375	4300	2 7/16	3	11	1/2	8 1/8	9 1/2	2 1/4	5 1/2	4 1/2	5/8
	P2-13-2.9375	4300	2 15/16	3	11	1/2	8 1/8	9 1/2	2 1/4	5 7/8	4 1/2	5/8
	P2-15-2.4375	9000	2 7/16	3 1/4	11 1/4	1/2	8 5/8	9 5/8	2 11/32	5 3/4	4 11/16	5/8
	P2-15-2.9375	9000	2 15/16	3 1/4	11 1/4	1/2	8 5/8	9 5/8	2 11/32	6 1/8	4 11/16	5/8
	P2-15-3.4375	9000	3 7/16	3 1/4	11 1/4	1/2	8 5/8	9 5/8	2 11/32	6 1/8	4 11/16	5/8
	P2-17-2.9375	14000	2 15/16	3 3/4	13	1/2	9 7/8	11	2 1/2	6 5/8	5	3/4
	P2-17-3.4375	14000	3 7/16	3 3/4	13	1/2	9 7/8	11	2 1/2	7	5	3/4
	P2-17-3.9375	14000	3 15/16	3 3/4	13	1/2	9 7/8	11	2 1/2	7	5	3/4
	P2-20-3.4375	28000	3 7/16	4 1/2	15 1/4	3/4	11 5/8	13 1/8	3 1/16	7 3/4	6 1/8	7/8
	P2-20-3.9375	28000	3 15/16	4 1/2	15 1/4	3/4	11 5/8	13 1/8	3 1/16	7 3/4	6 1/8	7/8
	P2-20-4.4375	28000	4 7/16	4 1/2	15 1/4	3/4	11 5/8	13 1/8	3 1/16	8 1/4	6 1/8	7/8
SYE	P2-SYE-3.4375	28000	3 7/16	3 3/4	14	1/2	10 11/16	11 5/16	1 7/16	7	4 1/32	7/8

Verify dimensions for suitability for the intended application. Load Ratings based on use of Grade 5 bolts or greater. Additional pedestal and mounting styles available upon request. Specifications subject to change without notice.

# CONVEYOR PULLEYS

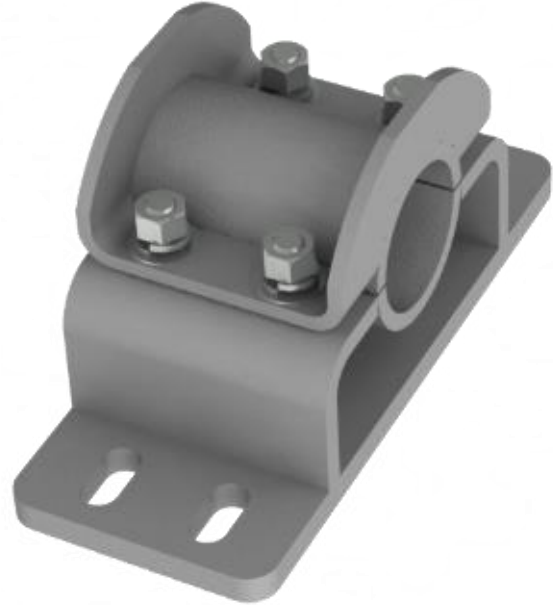
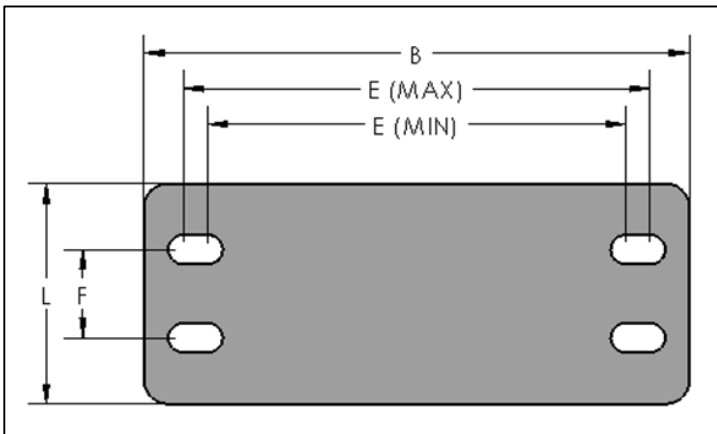
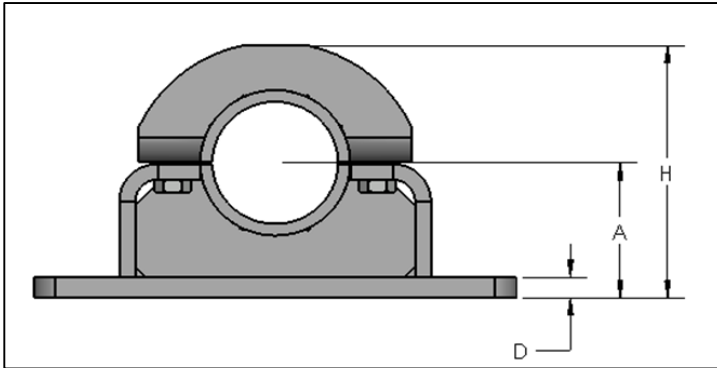
## Dead Shaft Assemblies

### Four Bolt Base – Removable Cap Pedestals



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Bearing Type	PCI Part Number	Load Rating	Shaft Size	A	B	D	E		F	H	L	Bolt Size
							min	max				
SAF	P4-15-2.4375	9000	2 7/16	3 1/4	11 1/4	1/2	8 5/8	9 5/8	1 7/8	5 3/4	4 11/16	1/2
	P4-15-2.9375	9000	2 15/16	3 1/4	11 1/4	1/2	8 5/8	9 5/8	1 7/8	6 1/8	4 11/16	1/2
	P4-15-3.4375	9000	3 7/16	3 1/4	11 1/4	1/2	8 5/8	9 5/8	1 7/8	6 1/8	4 11/16	1/2
	P4-17-2.9375	9000	2 15/16	3 3/4	13	1/2	9 7/8	11	2 1/8	6 5/8	5	5/8
	P4-17-3.4375	9000	3 7/16	3 3/4	13	1/2	9 7/8	11	2 1/8	7	5	5/8
	P4-17-3.9375	9000	3 15/16	3 3/4	13	1/2	9 7/8	11	2 1/8	7	5	5/8
	P4-20-3.4375	14000	3 7/16	4 1/2	15 1/4	3/4	11 5/8	13 1/8	2 3/8	7 3/4	6 1/8	3/4
	P4-20-3.9375	14000	3 15/16	4 1/2	15 1/4	3/4	11 5/8	13 1/8	2 3/8	7 3/4	6 1/8	3/4
	P4-20-4.4375	14000	4 7/16	4 1/2	15 1/4	3/4	11 5/8	13 1/8	2 3/8	8 1/4	6 1/8	3/4
	P4-22-3.9375	20000	3 15/16	4 15/16	16 1/2	3/4	12 5/8	14 1/2	2 3/4	8 3/4	6 1/2	3/4
	P4-22-4.4375	20000	4 7/16	4 15/16	16 1/2	3/4	12 5/8	14 1/2	2 3/4	8 3/4	6 1/2	3/4
	P4-24-4.9375	20000	4 15/16	5 1/4	16 1/2	3/4	13 1/4	14 1/2	2 3/4	9	7 3/8	3/4
	P4-26-4.4375	28000	4 7/16	6	18 3/8	3/4	14 5/8	16	3 1/4	9 3/4	8 1/8	7/8
	P4-26-4.9375	28000	4 15/16	6	18 3/8	3/4	14 5/8	16	3 1/4	9 3/4	8 1/8	7/8
P4-28-4.9375	36000	4 15/16	6	20 1/8	3/4	16	17 1/8	3 3/8	9 3/4	7 5/8	1	

Verify dimensions for suitability for the intended application. Load Ratings based on use of Grade 5 bolts or greater. Additional pedestal and mounting styles available upon request. Specifications subject to change without notice.