

# Wood's Sure-Grip<sup>®</sup> Pulleys

**B5**



- **Statically Balanced**
- **Up to 6500 feet per minute rim speed**
- **Dynamic balance based on rim speed and face width**

# Sure-Grip® Pulleys

## Dimensions

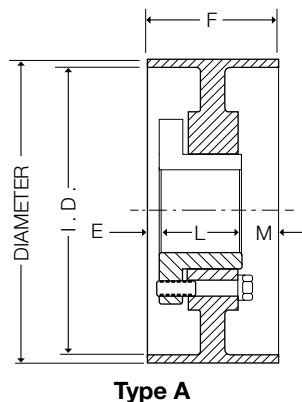
### Dimensions (in inches)

Diameter	I.D.	2" FACE ■						2-3/4" FACE *						3-1/4" FACE *					
		DIMENSIONS						DIMENSIONS						DIMENSIONS					
		E	Type †	Bush.	L	M	Wt.	E	Type †	Bush.	L	M	Wt.	E	Type †	Bush.	L	M	Wt.
4	3.50	-	-	-	-	-	-	1/2	A1	SD	1-13/16	7/16	5.1	1/2	A1	SD	1-13/16	15/16	5.4
5	4.50	-	-	-	-	-	-	1/2	A1	SD	1-13/16	7/16	7.7	1/2	A1	SD	1-13/16	15/16	6.5
6	5.50	1/16	A3	SH	1-1/4	11/16	4.6	1/2	A2	SD	1-13/16	7/16	7.9	1/2	A2	SD	1-13/16	15/16	7.2
7	6.50	1/16	A3	SH	1-1/4	11/16	5.1	1/2	A3	SD	1-13/16	7/16	7.3	1/2	A3	SD	1-13/16	15/16	7.9
8	7.50	1/16	A3	SH	1-1/4	11/16	5.7	1/2	A3	SD	1-13/16	7/16	8.4	1/2	A3	SD	1-13/16	15/16	9.8
9	8.50	1/16	A3	SH	1-1/4	11/16	6.3	1/2	A3	SD	1-13/16	7/16	8.9	1/2	A3	SD	1-13/16	15/16	10.0
10	9.50	1/16	A3	SH	1-1/4	11/16	7.5	1/2	A3	SD	1-13/16	7/16	12.1	1/2	A3	SD	1-13/16	15/16	13.1
11	10.44	1/16	A3	SH	1-1/4	11/16	9.0	1/2	A3	SD	1-13/16	7/16	14.0	1/2	A3	SD	1-13/16	15/16	13.2
12	11.44	1/16	A3	SH	1-1/4	11/16	11.1	1/2	A3	SD	1-13/16	7/16	16.5	3/4	A3	SD	1-13/16	11/16	17.4
14	13.38	0	A3	SDS	1-5/16	11/16	14.0	7/16	A3	SF	2	5/16	22.5	11/16	A3	SF	2	9/16	25.4
16	15.38	0	A3	SDS	1-5/16	11/16	16.6	7/16	A3	SF	2	5/16	25.3	11/16	A3	SF	2	9/16	37.9
18	17.38	-	-	-	-	-	-	0	A3	SF	2	3/4	28.2	1/4	A3	SF	2	1	34.0
20	19.31	-	-	-	-	-	-	0	A3	SF	2	3/4	35.5	1/4	A3	SF	2	1	43.0
24	23.31	-	-	-	-	-	-	-	-	-	-	-	-	1/4	A3	SF	2	1	50.0

Diameter	I.D.	4-1/4" FACE *						5-1/4" FACE *						6-3/8" FACE *					
		DIMENSIONS						DIMENSIONS						DIMENSIONS					
		E	Type †	Bush.	L	M	Wt.	E	Type †	Bush.	L	M	Wt.	E	Type †	Bush.	L	M	Wt.
4	3.50	1/2	A1	SD	1-13/16	1-15/16	6.1	-	-	-	-	-	-	-	-	-	-	-	-
5	4.50	1/2	A1	SD	1-13/16	1-15/16	8.9	-	-	-	-	-	-	-	-	-	-	-	-
6	5.50	5/8	A2	SD	1-13/16	1-13/16	8.4	9/16	A1	SF	2	2-11/16	14.0	9/16	A1	SF	2	3-13/16	15.0
7	6.50	5/8	A3	SD	1-13/16	1-13/16	9.8	9/16	A2	SF	2	2-11/16	17.3	9/16	A1	SF	2	3-13/16	19.8
8	7.50	5/8	A3	SD	1-13/16	1-13/16	10.7	9/16	A2	SF	2	2-11/16	15.5	9/16	A2	SF	2	3-13/16	16.9
9	8.50	13/16	A3	SD	1-13/16	1-5/8	11.9	3/4	A3	SF	2	2-1/2	19.3	3/4	A2	SF	2	3-5/8	22.4
10	9.50	13/16	A3	SD	1-13/16	1-5/8	15.4	3/4	A3	SF	2	2-1/2	19.2	3/4	A3	SF	2	3-5/8	21.0
11	10.44	13/16	A3	SD	1-13/16	1-5/8	17.6	3/4	A3	SF	2	2-1/2	31.1	3/4	A3	SF	2	3-5/8	28.7
12	11.44	1-3/16	A3	SF	2	1-1/16	23.0	1-1/4	A3	SF	2	2	27.3	1-3/4	A3	SF	2	2-5/8	28.4
14	13.38	1-3/16	A3	SF	2	1-1/16	28.5	1-1/4	A3	SF	2	2	36.3	1-3/4	A3	SF	2	2-5/8	34.2
16	15.38	1-3/16	A3	SF	2	1-1/16	32.3	1-1/4	A3	SF	2	2	38.3	1-3/4	A3	SF	2	2-5/8	41.3
18	17.38	3/4	A3	SF	2	1-1/2	39.0	1-1/4	A3	SF	2	2	42.6	1-3/4	A3	SF	2	2-5/8	47.2
20	19.31	3/4	A3	SF	2	1-1/2	43.4	1-1/4	A3	SF	2	2	51.5	1-3/4	A3	SF	2	2-5/8	57.5
24	23.31	3/4	A3	SF	2	1-1/2	65.2	31/32	A3	E	2-5/8	1-21/32	69.6	1-15/32	A3	E	2-5/8	2-9/32	88.5

Weights for all Sure-Grip bushed items are approximate and include the bushing.  
 \* When ordering it is necessary to specify if face is to be S = Straight or C = Crown.  
 ■ The 2" face width is available with straight face only.

† Type refers to construction:  
 A1 – Solid, A2 – Web, A3 – Arms



### Dimensions (in inches)

Diameter	I.D.	8-3/8" FACE *						10-1/2" FACE *						12-1/2" FACE *						
		DIMENSIONS					Wt.	DIMENSIONS					Wt.	DIMENSIONS					Wt.	
		E	Type †	Bush.	L	M		E	Type †	Bush.	L	M		E	Type †	Bush.	L	M		
8	7.50	1-3/32	A1	E	2-5/8	4-21/32	32.4	-	-	-	-	-	-	-	-	-	-	-	-	-
9	8.50	1-15/32	A2	E	2-5/8	4-9/32	33.8	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9.50	1-15/32	A2	E	2-5/8	4-9/32	38.1	1-15/32	A2	E	2-5/8	6-13/32	45.8	-	-	-	-	-	-	-
11	10.44	1-15/32	A3	E	2-5/8	4-9/32	40.6	1-15/32	A2	E	2-5/8	6-13/32	53.8	-	-	-	-	-	-	-
12	11.44	2-15/32	A3	E	2-5/8	3-9/32	39.7	3-15/32	A3	E	2-5/8	4-13/32	52.8	3-7/16	A2	J	4-1/2	4-9/16	94.8	
14	13.38	2-15/32	A3	E	2-5/8	3-9/32	49.4	3-15/32	A3	E	2-5/8	4-13/32	65.7	3-7/16	A3	J	4-1/2	4-9/16	107.9	
16	15.38	2-15/32	A3	E	2-5/8	3-9/32	60.8	3-15/32	A3	E	2-5/8	4-13/32	80.0	3-7/16	A3	J	4-1/2	4-9/16	117.4	
18	17.38	2-15/32	A3	E	2-5/8	3-9/32	69.3	2-7/16	A3	J	4-1/2	3-9/16	110.8	3-7/16	A3	J	4-1/2	4-9/16	132.0	
20	19.31	2-15/32	A3	E	2-5/8	3-9/32	75.6	2-7/16	A3	J	4-1/2	3-9/16	122.8	3-7/16	A3	J	4-1/2	4-9/16	151.1	
24	23.31	2-15/32	A3	E	2-5/8	3-9/32	104.2	2-7/16	A3	J	4-1/2	3-9/16	152.5	3-7/16	A3	J	4-1/2	4-9/16	175.5	

Weights for all Sure-Grip bushed items are approximate and include the bushing.  
 \* When ordering it is necessary to specify if face is to be S = Straight or C = Crown.

† Type refers to construction:  
 A1 – Solid, A2 – Web, A3 – Arms

### Ordering Example

16838S = 16.0 O.D. x 8-3/8 Straight Face  
 16838C = 16.0 O.D. x 8-3/8 Crown Face

# MTO Sheaves And Pulleys

## Specifications

The flexibility of Wood's engineering, foundry and machine shop facilities allows us to design and manufacture special non-standard sheaves and pulleys to meet a variety of customer requirements. Sheaves and pulleys up to 108 inches O.D., with any face width can be built to customer designs or can be designed by Wood's experienced engineers to customer specification.

### BALANCE

**STATIC** – All sheaves and pulleys are statically (one plane) balanced.

**DYNAMIC** – The need for dynamic (two plane) balance is based on both rim speed and face width.

All pulleys and sheaves are given either a static or dynamic balance which is equal to or better than the standards established by The Mechanical Power Transmission Association.

### BELT LOADS

Single arm pulleys, with standard rims, are designed for 80 lbs. maximum effective belt tension per inch of width. Multiple arm pulleys are designed for and have rims for 120 lbs. maximum effective belt tension per inch of width (extra heavy construction). Both single arm and multiple arm pulleys can be furnished for belts having higher effective tensions than indicated above. See table below.

Effective Tension	Construction
80 lb.	DB
120 lb.	XH
160 lb.	XXH
200 lb.	XXXH
over 200 lb.	Special

If pulley is used with Nylon belting imposed belt loads or manufacturer's belt code, belt width, horsepower, rpm, and installation tension must be furnished to establish construction needed.

### BORE

Sheaves and pulleys may be furnished bored-to-size or with mating hubs to accept Sure-Grip bushings at slight extra cost. Sure-Grip bushings are equivalent to a press fit and are preferable to straight machined bores. Straight machined bores, unless otherwise specified, are furnished with tolerances in accordance to MPTA standards. Actual tolerances will be furnished upon application for the specific hub length and bore size.

### CAST IRON

Unless specified otherwise, all made-to-order sheaves and pulleys are constructed of fine grain, high tensile cast iron, and have been carefully engineered to assure maximum performance. Wood's cast iron sheaves and pulleys are designed for safe operation up to 6500 feet per minute rim speed.

### CONSTRUCTION

The number and type of arms, including web centers, is determined by the diameter, face width, rim speed and type of service for which the sheave or pulley is intended. Split pulleys to operate at rim speeds of 4,000 fpm and faster must be made split-thru-the-arm construction. All ductile iron split-type pulleys are furnished only with split-thru-the-arm construction.

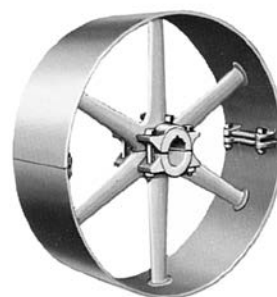
For heavy-duty application and where specifications are such that arm construction cannot be used, web center construction is recommended.



Solid



Clamp Hub



Split



Split Thru Arm

### CONVEYOR PULLEYS

Conveyor head and tail pulleys may be furnished in any width and with crowned or straight faces. In specifying your requirements, give both the desired face width and the actual belt width.

### CROWN

All pulleys are furnished with standard crowns unless otherwise specified. The height of this crown equals .008 times the face width with a maximum height of .2". The crown is either a round or a modified round crown on all pulleys up to and including 36" diameter. Straight taper crowns are furnished on pulleys over 36" O.D. Straight faced pulleys can be supplied at no additional cost when specified with order.



### DIAMETER

Pulleys are specified by nominal outside diameter measured at the highest point of the crown. Nominal diameters generally finish smaller than diameters listed compensating for belt thickness in speed calculations. Diameters will vary in accordance with the following tolerances.

Sheaves are specified according to pitch diameter. They are available in all standard Classical and Narrow cross sections in diameters ranging up to 108" O.D. All sheaves are machined to industry tolerances.

Exact diameters to closer tolerances can be furnished at additional cost when so specified. Sheaves and pulleys are available in any diameter up to and including 108" O.D. Pulley diameters are usually specified in increments of inches, but fractional inch diameters are also available.

### DUCTILE IRON

When specified or when an application requires it, Ductile Iron can be furnished instead of Cast Iron. Alloy 80-55-06 "as cast" Ductile Iron is furnished unless otherwise specified. Alloy 65-45-12 "as cast" or "annealed" can be furnished for maximum toughness on shock loaded applications; and alloy 100-70-03 "as cast" can be supplied when maximum tensile strength is required. A limiting rim speed of 10,000 FPM is normally applied to all Ductile Iron products.

### FLYWHEELS

Flywheels to provide any desired  $WR^2$  can be supplied with a variety of features. Special programs for our engineering computer helps Wood's designers provide prompt assistance with flywheel design.

The  $WR^2$ , [(flywheel effect) = Wt. (lbs.) x mean radius (feet) square], of standard pulleys will be given upon application. If additional flywheel effect is required on a pulley or sheave, additional weight can be added to the rim to obtain the desired  $WR^2$ . The approximate rim weight from which the approximate  $WR^2$  can be calculated is determined as follows: Mean diameter (inches) x width (inches) x thickness (inches) x .82 = Weight, lbs.



# MTO Sheaves And Pulleys

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## Specifications

### HUBS

Diameter of cast iron sheave and pulley hubs are proportioned to diameter, face, bore and conditions of service. Lengths of cast iron sheave and pulley hubs vary in accordance with construction but usually equal approximately two-thirds of the face width; the exception being for pulleys or sheaves with face widths less than 3", then the hub length is greater than two-thirds of the face width. Exact diameter and length of a specific pulley or sheave hub will be furnished upon application.

### IDLERS

Idler pulleys and sheaves are available on special order for either porous bronze bushings or ball bearings. RPM, radial load, length and location of hub should be specified on the order. Sure-Grip idler bushings can be used for idler service.

### KEYSEAT

Pulleys and sheaves, when bored-to-size, are furnished with one keyseat and two setscrews, one over the key, the other at 90°. The size of the keyseat will be to MPTA Standard unless otherwise specified. Special and additional keyseats, straight or tapered, can be supplied when specified. When two keyseats are required, they will be located 180° apart unless otherwise specified. However, if pulleys are of split construction, they must be 180° apart.

### LAGGED PULLEYS

Rubber lagging of 65-70 durometer with a minimum thickness of 1/4-inch can be furnished vulcanized to the pulley. The type of rubber and thickness will be furnished to customer specifications.



### SPEEDS

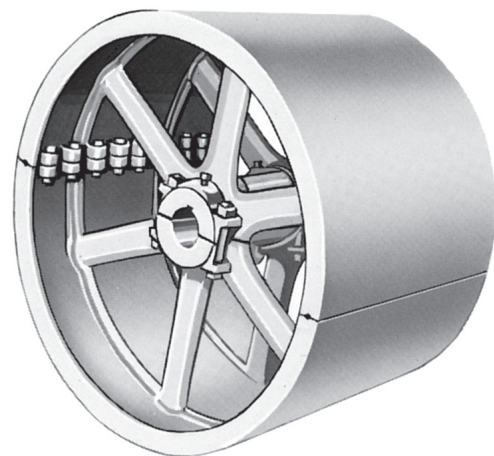
Sheaves and pulleys made in solid cast iron construction may be run safely at rim speeds up to 6500 fpm. For rim speeds above 6500 fpm, ductile iron is required.

Dynamic balance may be required for safe operation at these speeds depending upon face width or number of grooves.

Limiting rim speed for cast iron pulleys of split-between-the-arms construction is 4000 fpm; for split-thru-the-arm construction, 6000 fpm. Limiting rim speed for Wood's ductile iron split-thru-the-arm construction pulleys is 10,000 fpm.

### TAPER CONE PULLEYS

Taper cone pulleys are built to customer specifications in cast or ductile iron and with any hub and arm design.



### V-FLAT PULLEYS

Straight face cast iron pulleys are suitable for use with V-belts on V-flat drives. Standard pulleys can be used with "A", "B" and "C" belts. Extra heavy pulleys must be used with "D" and "E" V-belts.