



## PRODUCT TECHNICAL BULLETIN

### SPROCKETS FOR GRID, FLEX AND FLAT WIRE BELT FAMILIES

INSTALLATION INSTRUCTIONS

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#### SPROCKET QUANTITY AND LOCATION

##### ➤ Location of Omni-Grid Sprockets

Two (2) sprockets are used to drive these belts and are located on each belt edge engaging the links.

- 3/4 inch Pitch Omni-Grid®
- 1 inch Pitch Omni-Grid®
- Omni-Lite®
- Reduced Radius Omni-Grid®
- Fusion Grid®
- Hybri-Grid™ 120



One (1) dual tooth sprocket engages the two rows of inside links. One (1) toothless flanged idler supports the outside row of links.

- 3/4 inch Pitch Space Saver Omni-Grid®
- 1 inch Pitch Space Saver Omni-Grid®

One (1) sprocket will engage the inside row of links and one (1) sprocket will engage the middle row of links.

One (1) toothless flanged idler support roll supports the outside row of links

- 3/4 inch Pitch Small Radius Omni-Grid®
- 1 inch Small Radius Omni-Grid®
- Super Small Radius Omni-Grid®

##### ➤ Location of Flat Wire Sprockets

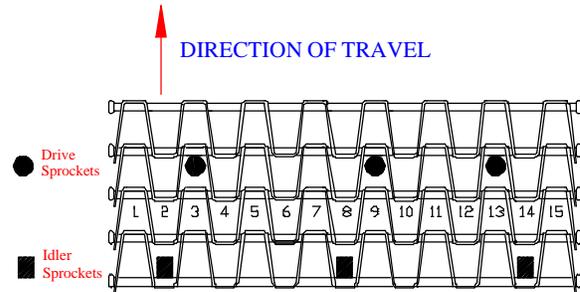
- Standard Weight Flat Wire
- Standard Weight Omniflex®
- Heavy Duty Flat Wire
- Heavy Duty Omniflex®
- Small Radius Omniflex®
- Mega-Flex® 125

Space sprockets evenly along drive and idler shafts

insuring that the outside drive sprockets are located exactly three mesh openings from each belt edge. Drive sprockets are located in odd numbered mesh openings. Idler sprockets are located in even numbered mesh openings.

Insure that the hubs of all sprockets on the same shaft are facing in the same direction. This will insure that each drive sprocket tooth will be contacting the round connecting wire and sharing in its part of the load.

With Small Radius Omniflex, the above rules apply to the inside belt portion only. Position the driving and idler sprockets on the inside belt portion only. Space toothless idlers at 6 inch [152.4 mm] intervals on the outside belt portion.



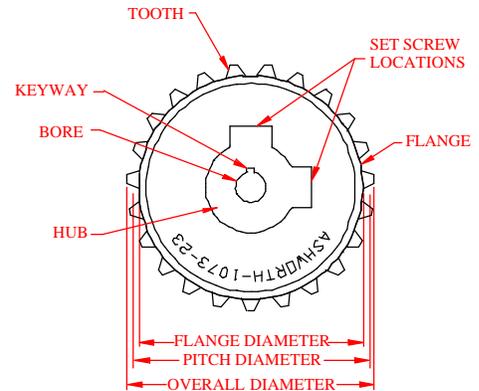
**SPROCKET MATERIAL AND SIZE**

**Sprocket Materials**

- **Cast Iron**  
Non-Food applications
- **Stainless Steel**  
Applications where the calculated tension at the drive sprockets is greater than 300 lbs. [4378 Newtons].  
Applications involving corrosives.
- **UHMW Polyethylene**  
Any application where the calculated tension at the drive sprockets is less than 300 lbs. [4378 N] and operating temperatures are less than 150° F [66° C].  
Applications operating with belt speeds of 75 feet per minute [22.9 meters/minute] or greater in temperatures less than 150° F [66° C] when tensions at drive sprockets do not exceed 300 lbs. [4378 N].

**Sprocket Size**

- Use large diameter sprockets whenever possible to minimize tooth wear and to promote smooth belt/sprocket engagement.
- Use the smaller diameter sprockets when transferring product either from infeed conveyors or on take off conveyors to minimize product disturbance.
- A minimum of 11 teeth is recommended to minimize chordal action and provide smooth operation.



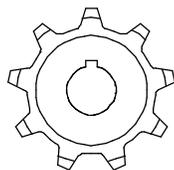
INSTALLATION INSTRUCTIONS

**TERMINOLOGY**

- Bore.....** Hole cut through the hub of the sprocket for fitting the sprocket on a shaft.
- Cast Sprocket.....** Sprocket formed by casting material in a mold.
- Flame Hardened Teeth.....** Heat treatment that hardens the tooth surface to improve resistance to wear.
- Flange.....** A projecting rim at the base of the teeth, which provides structural integrity for the sprocket.
- Flange Diameter.....** Distance measured through the center of the sprocket from base of teeth on one side to base of teeth on opposite side.
- Hub.....** Raised section on face of sprocket.
- Key.....** Provides a positive means of transmitting the torque between the shaft and hub.
- Keyway.....** Rectangular groove cut through the sprocket along the edge of the bore to house a key.
- Machined Sprocket.....** Sprocket formed by precision machining tools.
- Narrow Hub.....** Standard hub is machined to a smaller thickness through bore.
- Overall Diameter.....** The extreme diameter of the sprocket. Distance measured through the center of the sprocket from top of tooth on one side to same point after tooth has transversed 180°.
- Pitch.....** Center-to-center between two adjacent teeth.
- Pitch Diameter.....** The Diameter of the circle whose radius is equal to the distance from sprocket axis to the point of belt contact.
- Set Screws.....** Socket head screw, which is tightened down on the shaft or keyway through the hub or flange of a sprocket to hold it in position on the shaft.
- Tooth.....** Portion of sprocket, which engages the belt or chain. Fits inside the belt link, picket, or chain to propel it in a positive manner. The front and back surfaces are usually cut at an angle to facilitate entry into the driving part of a belt.
- Tooth Height.....** Distance tooth extends above the flange, measured from base of tooth to top of tooth.



True 1/2 x 1/2  
Flat wire sprocket



#3, 9 TOOTH  
1 inch Pitch Omni-Grid, Omni-Lite  
and Reduced Radius Omni-Grid



#6, 18 tooth  
Heavy Duty Flat  
wire & Omniflex



#3, 12 TOOTH  
3/4 inch Pitch Omni-Grid and  
3/4 inch Small Radius Omni-Grid

**OPTIONS**

**Bore**

Bores are typically circular, but square bores may be special ordered. Size of the bore depends on the sprocket size and application.

**Keyway**

American standard keyways are provided unless specified otherwise. Quantity: 0, 1, or 2

**Set Screw**

If extreme temperature gradient is present and tracking problems occur, suggest customer only set the middle sprockets onto shaft as outer sprockets may need to "float" along the shaft allowing for expansion and contraction of the belt. Quantity: 0, 1, or 2

**Flame Hardened Teeth**

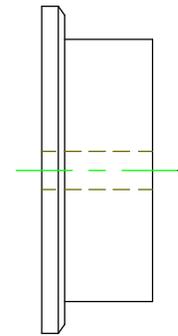
Recommended where unusually severe abrasive conditions are encountered. Flame hardened sprockets should not be used as a remedy for excessive tooth wear under normal operating conditions. These will merely transfer the excessive wear to the belt. Available only with cast iron material.

**Narrow Hub**

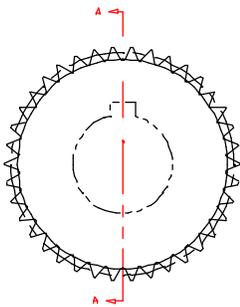
Sprocket width (through the bore) is reduced allowing more sprockets to fit on a shaft. Cut can be made from one side or both sides of sprocket.

**Cast or Machined:**

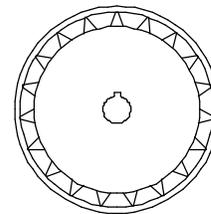
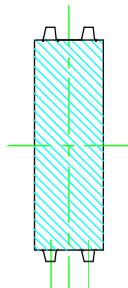
To manufacture sprockets, they will either be cast or machined. Disregarding special orders, the majority of iron and stainless steel sprockets are cast. Machined 1/2 x 1/2 metal sprockets have dual rows of teeth. Cast sprockets have a single row of teeth. All UHMW sprockets are machined.



**INSTALLATION INSTRUCTIONS**



#6, 38 Dual Tooth Sprocket profile  
Standard Weight 1/2 x 1/2 Flat Wire



19 dual tooth  
1 inch Pitch Space Saver



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