EXPERTLY DESIGNED, DELIVERED TO PERFORM

Powered by nearly 70 years of relentless problem-solving and steadfast reliability, Bishop-Wisecarver delivers innovative motion solutions around the world that thrive in harsh and extreme conditions. Our linear and rotary motion solutions, custom complex assemblies, and embedded intelligence systems lead the manufacturing industry, and they are backed by The Signature Experience promise of expert guidance, confidence and customer satisfaction.

PERFECT FOR HARSH AND EXTREME ENVIRONMENTS

When you purchase from Bishop-Wisecarver, you aren't just getting a product that works; you’re getting products, systems, and industry-leading expertise you can trust, especially in harsh conditions and critical environments—always exceeding our customers’ reliability requirements.

Our Motion Products and Solutions Are Also Perfect For:

- Harsh Environments
- Long Length
- Low Noise
- High/Low Temperature
- Low Total Cost of Ownership
- Smooth, Low Friction Motion
- Moist Environments
- Food Grade
- Clean Room
- Vacuum
INTRODUCTION

MadeWell® Radial Wheels with precision ground 90° vee running surfaces are designed to be used in the radial direction and for linear guide wheel applications where simplified loading conditions exist and where an economical solution is a primary concern. MadeWell® Radial Wheels are designed to run on 90° angle running surfaces, such as our DualVee® linear guide track.

MadeWell® Crown Rollers with precision ground curved running surfaces ensure smooth linear guidance and are designed to eliminate problems with misalignment and binding which can occur when guide tracks are mounted in parallel. Crown rollers are designed to run on flat surfaces, such as our UtiliTrak® C channels.

Design Benefits

• Up to 7° of angular misalignment with the use of crown rollers
• Low noise
• Concentric and Eccentric Options
• -20°C to +100°C operating temperature

Key Industries

• Architecture
• Automated Buildings
• Engineering Services
• Equipment Manufacturing
• Laboratory Analysis Equipment
• Non-destructive Testing Equipment

Application Examples

• Motorized windows and doors
• Sliding wall panels
• Heavy duty drawer slide applications
• Adjustable furniture features
• CNC engraving
• Guided sawing
• Adjustable position jigs and fixtures
• Assembly workstation tools
• Material handing aids
• Machine doors and guarding

TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>3-4</td>
</tr>
<tr>
<td>Application Examples</td>
<td>5-7</td>
</tr>
<tr>
<td>Radial Wheels</td>
<td>8</td>
</tr>
<tr>
<td>Crown Rollers</td>
<td>9-10</td>
</tr>
<tr>
<td>Adjustment Wrenches</td>
<td>11</td>
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</table>
MadeWell® crown rollers and DualVee® vee wheels on UtiliTrak® SW Linear Guides utilizing Bridge Kit

MadeWell® Radial Vee wheel can be run on angle iron, square or round shaft.
**APPLICATION EXAMPLES**

**Pocket Door**
The MadeWell® Radial Wheels and Crown Rollers are installed on a pocket door to provide smooth and reliable motion for the heavy woodwork. The weight of the door is supported by Radial Wheels located at the bottom of the door where the vee features accurately guide the motion along the threshold. Crown Rollers are installed at the top and guide the door inside a channel.
Sliding Greenhouse Door

The combination of MadeWell® Radial Wheels and DualVee® track allow for compact and weather-resistant solution. Sliding doors are common in greenhouse applications because they save space and come in a variety of sizes. MadeWell® radial wheels are perfect for lighter loads, but still maintain durable motion despite inclement weather conditions.
APPLICATION EXAMPLES

Delta Style 3D Printer
MadeWell® Radial Wheels provide smooth and accurate motion for a delta style 3D printer. The Radial Wheels roll vertically on the vee shaped linear guide support structures. Each of the three motion axes move independently by timing belts connected to drive motors to enable precise motion anywhere within the 3D workspace.

Machine Tool Door Assembly
The sheet metal access doors of a machine tool are guided on MadeWell® Radial Wheels and DualVee® linear guide track that feature a matching vee profile for operation in debris contaminated environments. The single row ball bearing construction of the radial wheels are ideal for cost sensitive fabrications where more complex guide bearing designs are excessive.
RADIAL WHEELS

- Designed to only be run in the radial axis
- Carbon steel and stainless steel versions
- Designed to run on a 90° running surface
- Three single row bearing sizes (1, 2, 3) to accommodate design envelope and load carrying requirements
- Recommended maximum operating speed is 5.5 m/s
- Recommended operating temperature range: -20°C to +100°C

**Dimensions**

<table>
<thead>
<tr>
<th>SIZE</th>
<th>STOCK CODE</th>
<th>MATERIAL</th>
<th>OUTSIDE DIAMETER (D)</th>
<th>WHEEL WIDTH (W)</th>
<th>BORE DIAMETER (B)</th>
<th>VEE RADIUS INSIDE (VRI)</th>
<th>INNER RADIUS (C)</th>
<th>OUTER RADIUS (E)</th>
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</table>

**Working Load Capacities**

Working load capacities are based on empirical data on guide wheels used in general applications with static and dynamic load conditions. Our guide wheels can routinely achieve travel life of one million cycles or higher when these specified load capacities are observed.

Notations:
- See Technical Data catalog for more information on sizing, life estimation, and mounting.
CROWN Rollers

**Steel Series**

- Double row angular contact ball bearing design; made from AISI 52100 bearing grade steel
- Threaded mounting stud with hex features are permanently attached
- Designed to run on flat surfaces, such as UtiliTrak® C channel
- Concentric version is for mounting to a fixed location; eccentric version enables fit and preload adjustment
- Can be used in tandem with DualVee® guide wheels for wide span or high load capacity applications

**Dimensions**

<table>
<thead>
<tr>
<th>WHEEL SIZE</th>
<th>STOCK CODE</th>
<th>PROTECTION</th>
<th>STUD DESIGN</th>
<th>WHEEL WIDTH (W)</th>
<th>OVERALL LENGTH (A)</th>
<th>THREAD LENGTH (B)</th>
<th>THREAD (C)</th>
<th>OUTER DIAMETER (D)</th>
<th>PILOT LENGTH (F)</th>
<th>PILOT DIAMETER (P)</th>
<th>INTERNAL HEX (G)</th>
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<td>.024 [0.61]</td>
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<td>.024 [0.61]</td>
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<td>.448 [11.38]</td>
<td>M10 X 1.5</td>
<td>Ø.210 [53.3]</td>
<td>.030 [0.76]</td>
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<td>.1053</td>
<td>M8 X 1.25</td>
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</table>

**Notes:**

1. Values are in inches [millimeters].
2. See Technical Data catalog for more information on sizing, life estimation, and mounting.
CROWN ROLLERS

Polymer Series

• Smooth, light duty and light loading applications
• Threaded mounting stud with hex features are permanently attached
• Designed to run on flat surfaces, such as UtiliTrak® C channel
• Concentric version is for mounting to a fixed location; eccentric version enables fit and preload adjustment
• Can be used in tandem with DualVee® guide wheel for wide span or high load capacity applications
• Materials are polyamide overmolded on an AISI 440C martensitic stainless steel, single row ball bearing

<table>
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<th>WHEEL SIZE</th>
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Dimensions

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<th>STUD DESIGN</th>
<th>WHEEL WIDTH (W)</th>
<th>OVERALL LENGTH (A)</th>
<th>THREAD LENGTH (B)</th>
<th>THREAD (C)</th>
<th>OUTER DIAMETER (D)</th>
<th>(E)</th>
<th>PILOT LENGTH (F)</th>
<th>PILOT DIAMETER (P)</th>
<th>INTERNAL HEX (G)</th>
<th>HEX (H)</th>
<th>WEIGHT (g)</th>
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<td>M8 X 1.25</td>
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Notes:
1. Values are in inches [millimeters].
2. See Technical Data catalog for more information on sizing, life estimation, and mounting.
# ADJUSTMENT WRENCHES

## Wheel Bolt/Eccentric Bushing Wrench

### Dimensions

<table>
<thead>
<tr>
<th>WRENCH TYPE</th>
<th>WHEEL SIZE</th>
<th>STOCK CODE</th>
<th>WRENCH SIZE (HW)</th>
<th>LENGTH (L)</th>
<th>THICKNESS (TK)</th>
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## Wheel Stud Wrench

### Dimensions

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<th>LENGTH (A)</th>
<th>WIDTH (B)</th>
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<th>WRENCH SIZE (D)</th>
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</tbody>
</table>

### Notes:
1. Values are in inches [millimeters].
2. Wrenches are universal for metric and inch.
Components & Accessories
DualVee®
MadeWell®
GV3
SL2
PRT2
HDS2
HDRT
MCS
Motor Mounts
Gantry Brackets
Wrenches

Manual Linear Guide Systems
DualVee®
UtiliTrak®
MinVee®
GV3
Simple Select®
SL2
HDS2
MHD
HTS

Actuated Linear Guide Systems
LoPro®
XLA™
ECO60™
SlickStick™
SteadyRail™
HDSL
HDCS
PDU2
DAPDU2
SBD
PSD
SDM
DLS

Rotary Guide Systems
PRT2
DTS2
DTS
DTS+
ALR
HDRT
1-Trak
GFX

Robot Transfer Units
DualVee® RTU
LoPro® RTU

Custom Solutions
Extruded Profile Guides
Custom Bearings
Custom Subassemblies
Engineering Services
Large Diameter Ring Guides and Track

BWC.COM

Contact
Web: BWC.com
Phone: (925) 439-8272
Email: Sales@bwc.com

Corporate Office
Bishop-Wisecarver
2104 Martin Way
Pittsburg, CA 94565

Women’s Business Enterprise
- Certified WOSB

Quality Certifications
- Certified Bay Area Green Business
- Certified Evergreen

Certifications & Compliance
- EN 9100:2018
- JISQ 9100:2016
- ISO 13485 & GMP Compliance
- Responsible Minerals Initiative
- RoHS
- International Traffic in Arms Regulations Compliant