



# Product Bulletin

## WAY OILS

**BRAD PENN® Way Oils** are formulated with premium paraffinic base stocks, providing optimal slideway performance over extended periods of time. These base oils display a rich, dark color that identifies these lubricants as high quality way lubes refined from virgin PENN-GRADE™ crude oil.

**BRAD PENN® Way Oils** are fortified with a highly effective extreme pressure additive to prevent scoring of slideways and guides, and are further enhanced with non-staining lubricity agents to provide excellent “stick-slip” characteristics for smooth, chatter-free performance. The incorporation of tackifiers keeps the fluid in place on both horizontal and vertical ways, helps prevent misting, and ensures smooth table action even at low speeds and heavy work loads. Additionally, they offer the following benefits:

- Good foam resistance
- Outstanding “metal-wetting” properties
- Non-corrosive to copper and aluminum
- Excellent thermal and oxidation stability
- Exceptional rust, corrosion, and wear protection

**BRAD PENN® Way Oils** are designed for lubricating the ways of all types of machine tools, including planers, grinders, milling machines, lathes, screw machines, shapers, and boring machines, as well as other tools and machinery requiring the special properties of a way oil. **ISO VG 32** and **ISO VG 46** are lighter viscosity way oils recommended for more lightly loaded equipment. They may also be used in a variety of metal forming and removal operations including; tapping, threading, grinding, turning and milling. **ISO VG 68** is medium-heavy way oil with the proper viscosity for small and medium-sized machines. **ISO VG 220** is a heavy way oil recommended for more severe applications and machines with vertical slideways. **BRAD PENN® Way Oils** unique formulations not only provides excellent way oil performance they are extremely effective when used to lubricate other sliding contact surfaces such as worm gears and other similar applications. In addition, the anti-mist characteristics and EP protection allow our way oils to be used in pneumatic tool applications. These way oil lubricants meet the requirements of the Cincinnati Machine “Stick-Slip” test, and ISO VG 68 and 220 meet the requirements of Cincinnati Machine P-47 and P-50, respectively.



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**BRAD PENN<sup>®</sup>**  
**Way Oils - Typical Properties**

<b>ISO Viscosity Grade</b>	<b>Test Method</b>	<b>32</b>	<b>46</b>	<b>68</b>	<b>220</b>
API Gravity, 60°F	ASTM D-1298A	31.5	30.8	29.9	27.6
Density, lbs/gal (g/L)	Calculated	7.228 (866)	7.26 (870)	7.30 (875)	7.406 (887)
Viscosity, cSt @ 40°C	ASTM D-445	32.0	46.0	68.0	220.0
Viscosity, cSt @ 100°C	ASTM D-445	5.5	7.1	9.3	19.8
Viscosity, SUS @ 100°F	ASTM D-2161	165	237	351	1,160
Viscosity, SUS @ 210°F	ASTM D-2161	44.7	50.0	57.6	100.3
Viscosity Index	ASTM D-2270	108	116	112	103
Pour Point, °F (°C)	ASTM D-5949	-30 (-33)	-30 (-33)	5 (-15)	10 (-12)
Flash Point, COC, °F (°C)	ASTM D-92	375 (190)	385 (196)	410 (210)	460 (236)
Color	ASTM D-1500	7.5	L 8.0	8.0	8.0
Visual Appearance		Tacky/Stringy	Tacky/Stringy	Tacky/Stringy	Tacky/Stringy
Sulfur Content, mass %	ASTM D-4294	0.59	0.59	0.57	0.61
Cincinnati Machine		"Stick-slip" Test	"Stick-slip" Test	P-47	P-50
<b>Product Code</b>		<b>7794</b>	<b>7799</b>	<b>7795</b>	<b>7796</b>