



## Multi-Way Oil HD

Phillips 66® Multi-Way Oil HD is a circulating oil developed for the lubrication of lathes and heavily loaded machine tool slideways. It is specially formulated to prevent stick-slip problems to ensure good surface finish on the machined part.

Multi-Way Oil HD is formulated with a special tackifier additive that allows machine tool carriages to start easily and move smoothly throughout their travel, thus preventing stick-slip problems. This reduces carriage chatter and ensures a smooth finish on the machined part. Its mild extreme-pressure properties prevent scoring of the slideways during carriage travel. The tackifier improves adhesion and prevents the oil from being squeezed off the slideways. It also helps prevent the oil from being washed away by cutting fluids. Additional additives provide protection against rust and corrosion and allow optimum coolant separation.

Multi-Way Oil HD, ISO VG 32 and 68, may be used as a combination way oil, hydraulic oil, and gear oil in machine tools where the circulating oil is supplied from a central reservoir.

### Applications

- Horizontal and vertical slideways on machine tools, such as lathes, planers, shapers, drilling machines, milling machines, and screw machines
- Lumber mill saw carriages
- Pneumatic equipment such as jackhammers, pavement breakers, and rock drills
- Moderately loaded enclosed industrial gear drives that require an adhesive gear oil with mild extreme-pressure (EP) properties (ISO VG 220)
- Hydraulic systems operating at less than 1,000 psi (ISO VG 32, 68)

### Features/Benefits

- Excellent anti-stick-slip performance
- Good surface finish
- Protects against scoring and wear
- Good adhesion for retention on slideways
- Protects against rust and corrosion
- Excellent coolant-separating properties

## Machine Tool Slideway Lubricant





## Multi-Way Oil HD

Typical Properties			
ISO Grade	32	68	220
Specific Gravity @ 60°F	0.860	0.872	0.880
Density, lbs/gal @ 60°F	7.16	7.26	7.33
Color, ASTM D1500	5.0	5.0	6.0
Flash Point (COC), °C (°F)	213 (415)	234 (453)	260 (500)
Pour Point, °C (°F)	-18 (0)	-15 (5)	-15 (5)
Viscosity			
cSt @ 40°C	32.0	68.0	220
cSt @ 100°C	5.6	9.0	19.6
SUS @ 100°F	165	352	1,160
SUS @ 210°F	45.0	56.6	99.4
Viscosity Index	114	107	101
Acid Number, ASTM D664, mg KOH/g	0.35	0.35	0.35
Demulsibility, ASTM D1401, minutes to pass	15	15	15
Rust Test, ASTM D665 A&B	Pass	Pass	Pass
Stick-Slip Performance, ASTM D2877	0.74	0.73	0.67

## Health & Safety Information

For recommendations on safe handling and use of this product, please refer to the Safety Data Sheet via <http://www.phillips66.com/EN/products/Pages/MSDS.aspx>.