

Pandora Spindle Oil

Spindle Oils

Description

The **Pandora Spindle Oil Series**, formulated from select high-quality, low viscosity base oils and additives imparting excellent resistance to oxidation and corrosion, were developed specifically for the lubrication of high-speed and precision machine tool spindle bearings. They can also be used in some critical low pressure hydraulic and circulation systems where the appropriate viscosity grade is selected.

Performance Benefits

- Good thermal and oxidative stability leads to longer operating life, reduction in lubricant costs and minimizes deposit formation giving a cleaner system.
- Good filterability characteristics, even in the presence of water, enables cost savings to be made from increased filter life and reduced maintenance.
- Excellent rust and oxidation resistance improves equipment life and provides increased precision long-term
- Excellent water separation and hydrolytic stability means reduced down time through prolonged lubricant life and increased equipment reliability.

Recommended Applications

The **Pandora Spindle Oil Series** provide exceptional lubrication of close-tolerance bearings to keep the bearings running cool and maintain the precision required by many of today's critical machine tools. Pandora Spindle Oils are compatible with elastomer materials commonly used for static and dynamic seals such as nitrile, silicone and Viton.

Typical applications include:

- High speed spindle bearings in machine tools and equipment where high speeds and fine clearances are involved
- Pandora 2 is recommended for "zero clearance" type spindle bearings which operate with extremely close clearances
- Low pressure hydraulic systems where appropriate viscosity is selected
- Airline oilers (Pandora 22)

Pandora Spindle Oils meet or exceed the following industry specifications:

Cincinnati Lamb (formerly Milacron) P-45 (FC-22) - Pandora 22

Cincinnati Lamb (formerly Milacron) P-62 (FC-10) - Pandora 10

Cincinnati Lamb (formerly Milacron) P-65 (FC-2) - Pandora 2

Characteristics

			Pandora 2	Pandora 5	Pandora 10	Pandora 15	Pandora 22
ISO Viscosity Grade	-	-	2	5	10	15	22
Viscosity @ 40°C	cSt	ASTM D44	2	5	10	15	22
Viscosity @ 100°C	cSt	ASTM D445	-	-	2.6	3.4	4.4
Viscosity Index	-	ASTM D2270	-	-	98	98	>100
Flash Point, COC	°F	ASTM D92	210	300	350	370	385
Pour Point	°C/°F	ASTM D97	-40/-40	-38/-38	-38/-38	-30/-22	-30/-22
Copper corrosion	3 hr at 100°C	ASTM D130	1a	1a	1a	1a	1a
Foam Seq 1	ML	ASTM D892	10/0	10/0	10/0	10/0	10/0
Demulsibility	Min 40-40-0	ASTM D1401	10	10	10	10	10
Rust Test A&B		ASTM D665	Pass	Pass	Pass	Pass	Pass

Subject to usual manufacturing tolerances