

Plant Service Bulletin

MPS Roll Wheel Oil

Purpose

This plant service bulletin (PSB) advises owners and operators of B&W MPS pulverizers on the latest recommendations for roll wheel oil lubricants. This bulletin applies to all MPS mill sizes.

Background

The roll wheel lubricant is selected based on the temperature of the coal/air mixture leaving the mill — mill outlet temperature (MOT). Most coals require a MOT of 175°F (79°C) or less. However, there are applications where a MOT of 175 – 200°F (79 – 93°C) is needed, such as for direct-fired boilers burning a low volatile coal or for pulverized coal injection (PCI) systems. The higher mill outlet temperature applications prompted a review of suitable roll wheel lubricants.

Recommendations

B&W's roll wheel lubricant recommendation for pulverizers operating with a MOT greater than 150°F (66°C) is Mobilgear SHC 3200 or an equivalent. This is a synthetic extra-heavy-duty gear lubricant with the specifications listed in Table 1.

AGMA	10 EP
Color	ASTM 0.5
API Gravity	27.5
Pour Point	-4°F (-20°C)
Flash Point	428°F (220°C)
ISO Viscosity Grade	3200
SUS Viscosity @ 100°F	14,000
SUS Viscosity @ 210°F	780
cSt Viscosity @ 100°C	171
cSt Viscosity @ 40°C	3023
Viscosity Index	160

The above lubricant can be used at any MOT, but may be considered too costly at a lower MOT when a petroleum-based product is adequate. B&W lubricant #14 is recommended for pulverizers operating with a MOT of 150°F (66°C) or less. This is a petroleum-based, sulphur-phosphorus compound and is recommended for extreme pressure (EP) applications with the specifications listed in Table 2.

Previously, B&W lubricant #14 was the recommended roll wheel lubricant for pulverizers with a MOT of 175°F (79°C) or less.

However, this temperature limit has been reduced to assure that the lubricant maintains a high enough viscosity at its operating temperature.

In all cases where a synthetic lubricant is used, check to ensure compatibility with any silicone O-rings used in the roll wheels. If it is not positively known that the proposed synthetic lubricant is compatible with silicone O-rings, refer to PSB-48 entitled *MPS Pulverizer Roll Wheel Silicone O-Rings and the Use of Synthetic Oils*. To avoid the risk of incompatibility, it is recommended to

AGMA	8 EP
Color	ASTM 8+
API Gravity	24.2
Pour Point, Max.	20°F (-7°C)
Flash Point, Min.	435°F (224°C)
SUS Viscosity @ 100°F (38°C)	3050-3250 (650-700 cSt)
SUS Viscosity @ 210°F (99°C)	170-180 (35 cSt)
Timken OK Load	55 lb (25 kg)

(continued on reverse side)

Note:

If substitute materials other than silicone or viton are in use, compatibility must be checked. Fluid compatibility with seal materials is extremely temperature sensitive. The use temperature should be assumed to be 25°F (14°C) above the MOT for roll wheel seals.

If synthetic lubricants are being considered for other applications, including MPS gear drives, the compatibility between the lubricants themselves, as well as the seal materials being used, must be checked.

change the roll wheel O-rings to a viton material.

Support

Contact Field Service Engineering through your local B&W district service office to coordinate your inspection and repair efforts, and to answer any questions.

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