

Measuring Drum Shingle Cutter Maintenance Tips

A series of practical tips from Reichel & Drews

CUTTING CYLINDER AND CARRIAGE

#4

The carriage provides a quick and easy method to change cutting cylinders, which is required as knives wear or when the product being manufactured changes.

The carriage rolls into the shingle cutter and is raised until it is locked into the frame. The cutting cylinder is manually raised until the knives are within .005 to .007 inches of the anvil roll.

During operation the cutting cylinder makes one revolution for each pattern length of material metered by the measuring section. The actual amount of material that will be released by the measuring drum assembly during one revolution of the cutting cylinder is dependent on the diameter of the drum, and the sprocket ratios between the drive, drum and cutting cylinder.

The carriage consists of two heavy-duty steel side plates connected by structural steel beams. Attached to the beams are four steel flange wheels, which ride on tracks inside the shingle

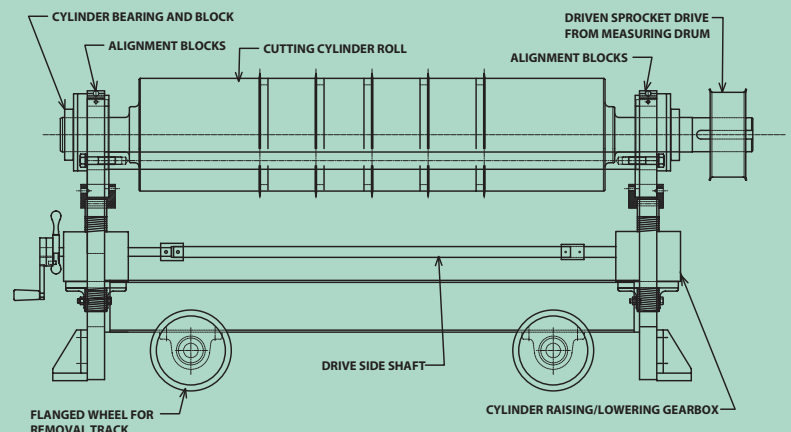
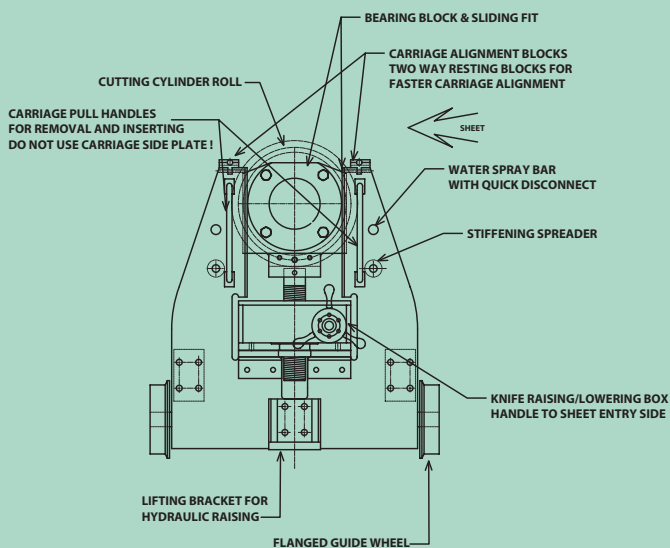
cutter frame. At the bottom of each side plate are lifting brackets for use with a hydraulic system to raise the carriage. The hydraulic cylinder rams lift the carriage off the tracks until the top of the carriage mates with replaceable locating blocks in the side frames of the shingle cutter. The hydraulic pump continues to operate at this pressure securely holding the carriage in place.

WARNING:

Do not attempt to hydraulically raise the carriage unless the cutting cylinder is sufficiently lowered using the gearboxes to allow enough clearance between the cutting cylinder knives and the anvil roll.

Mounted on the carriage side plates are worm and pinion gearboxes, which raise and lower the bearing housing assemblies in which the cutting cylinder is mounted. There are two handwheels on the operator-side carriage gearbox. By pulling the pin and turning the handwheels separately, each side can be individually raised so the knives in the cutting cylinder are parallel with the

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anvil roll. By turning the hand wheels when they are pinned together, both sides of the cylinder can be raised uniformly to compensate for knife wear.

The bearing housing assemblies travel in carriageways machined in the side plates. The ways have replaceable wear strips.

When installed in the shingle cutter, the cutting cylinder must be aligned and parallel in relation to the anvil roll. This can be done by raising the cutting cylinder to the anvil roll and setting a .010"-.015" gap between the knives and the anvil roll. Check the clearance along the entire length using a feeler gauge. Run a material such as saturated felt or a double thickness of Kraft wrapping paper between the cutting cylinder and the anvil roll and check the impression for consistency. A "high" knife will leave a deeper impression and should be checked for proper installation in the cutting cylinder. After determining that alignment of the cutting cylinder is correct, it may be raised into position for cutting shingles, adjusting the knife/anvil roll gap as needed. Proper lubrication for the shingle cutting process is necessary at all times. Inspect the machine and components regularly for signs of damage or wear.

Stay sharp.

Contact us for questions on maintenance, check lists and tips on making your shingle cutting equipment last longer.

Maintenance Check List:

- Check cutting cylinder bearing block fit to carriageways. Gap should not exceed .025". Replace bearing blocks or carriage wear strips as necessary.

- Check gearbox saddle and lifting worm. Excessive backlash will allow cylinder bounce and should not exceed .015" upward movement.
- Check carriage locating blocks. Worn carriage blocks will allow cylinder movement and knife bounce that will reduce knife life.
- Check anvil roll alignment to cutting cylinder for square. Alignment should be within .002" per foot of machine width.
- Check anvil roll alignment to measuring drum with pi tape. Anvil roll and measuring drum should be checked first for level within .0005" per foot to each other. Then check with pi tape for square, rolls to be within .001" per foot to each other.
- Check drive from drum to cutting cylinder. Worn teeth on the belt indicate excessive belt tension, misaligned sprockets, worn sprockets or too much water spray with granule/sand embedding into tooth profile.

Reichel & Drews Upgrades

- Fabricated steel gearboxes for raising the cutting cylinder, which are completely rebuildable and robust.
- Hydraulic raising & lowering power unit conversion for maximum restraint and fastest cylinder changeover.
- Carriage "cross pin" locating and resting blocks. Complete conversion for field installation in existing shingle cutters with replaceable mating surfaces.
- Motorized 2-way carriage traverse removal.
- Polychain Drive Belts replacing roller chain and worn sprockets.
- Pneumatic cylinder take-up for cutting cylinder belt. Quick dependable belt removal for carriage changes.



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