

**HELPFUL HINTS TO SUCCESSFUL ROLL GRINDING.** The following is given as a starting point only; final grinding parameters for a specific application may have to be determined via field testing.

1. The speed of rotation of the workpiece should be 100 — 150 SFPM for mild steel. A slower speed should be used for harder material and a faster speed for softer material.\*Roll should rotate in reverse or against rotation of belt.
2. On the smaller diameters heat buildup may cause the roll to bow or deform, resulting in an uneven grind. If this happens, the use of coolant is strongly recommended. Some users have reported that filling a hollow roll with water resolves this problem.
3. The grinder should traverse at the maximum speed available. Generally, thread cutting speed of 1" per 2 revolutions of the part will be the maximum; some lathes are limited to 1" per 4 revolutions.
4. If a lathe is being used for grinding only, it may be converted so that a separate drive can be added for traverse. If this can be added, 1" per revolution would be a satisfactory speed for a 4" wide belt.
5. Depth of cut: When the travel speed of the grinder is between 1 and 2 inches per revolution of the part, the grinding depth of cut can be around .003. If the travel speed is 1 inch or less per revolution, as much as .005 can be ground.
6. If several thousandths of material are to be removed, it is advisable to start with a coarse grit (50 grit or less) and follow with a series of finer grits.

**EXAMPLE:** For a 4" dia. mild steel roll requiring .012 stock removal and a 15-20 RMS finish, the following sequence might be used:

Make three quick passes with a 50 grit belt, removing about .010, one pass with a 120 grit belt removing about .001, then one pass with a 180 grit belt, removing approximately .0005, followed by 280 grit or 320 grit.

For close tolerance requirements, two or three final passes are recommended using light pressure with no infeed between the passes.

To some extent, the grit sequence is governed by the length of a roll.

Any given grit sequence will produce a different finish on a four foot long roll than on a twelve foot long roll.

A 50 grit belt will be reduced to the equivalent of 60-80 grit after grinding 10 to 12 feet, and each succeeding pass will continue to reduce the size of the grain.

7. See bulletin BRG-3B regarding the choice of the proper contact wheel for best results.
8. Be sure the abrasive belt is the type for roll grinding. The belts should have a butt splice reinforced with a mylar strip.
9. Rubber rolls and hard chrome rolls must be ground with silicon carbide abrasives or flexible diamond products.
10. Steel rolls are ground with ceramic aluminum oxide and aluminum oxide for roughing and finishing respectively.
11. For good finish, the belt should not be quite as wide as the contact wheel. Our contact wheels are 1/16" to 1/8" wider than the nominal width of the belt. Never break the edges of the contact wheel.
12. **Always wear eye protection. Keep hands away from running belt and roll.**
13. Keep all guards in place with doors closed when grinder is running.

\*For safety reasons the roll should turn against the belt rotation. It creates a safety hazard when rotating with the belt.



GRINDING & POLISHING MACHINERY CORP.  
2801 TOBEY DRIVE, INDIANAPOLIS, IN 46219-1419  
PHONE - 317 - 898-0750

**MACHINERY**