# The PACER Method of Paper Mill - Roll Grinding

*- a system approach to easier grinding and better finishes -*

This is a summary of the Pacer four page "Operating Instructions" booklet for roll grinding wheels. These recommendations are for PM or cork wheel use mainly on chilled iron. **For more details, refer to the Operating Instructions booklet.** For it, other technical literature, any operating questions or sales, call **1-800-225-0315**

For proper wheel performance, the machine settings, coolant, dressing, etc. should be as stated. The operator, however, may find other ways for wheels to work as well or better. If the machine does not display roll and wheel speeds, the operator should have a tachometer available and also a refractometer to check coolant concentration.

Pacer manufactures new technology grinding wheels that have earned a wide reputation across North America for stock removal, easier use and roll quality. Operators have seen advantages over shellac wheels and belts. Considering the shorter grinding time, longer life and moderate price, these wheels are a good way to reduce overall costs while achieving higher surface quality.

PM (Paper Mill) resin bond wheels are for fast roughing of all roll types. They self dress, cut freely and have very little chatter tendency. They operate well at high or low amps. Cork filled, rubber bond wheels are for fast finishing of hard rolls . The new C120A3RC formula is a recent improvement. The new wheel removes stock easily and polishes better. Cork wheels reduce the difficult and time consuming job of roll finishing to a matter of hours.

## PM Roughing Wheels (.001" to .003"/hr removal)

**Wheel specs.** - C60H7PM or C46H7PM (or harder I )
**Roll speed** - 60 sfm (13 rpm for 18" roll, 8 rpm for 28").
Can try 75 sfm later if 60 sfm works well.
Decrease to 45 sfm if wheel seems to "sing"
**Wheel speed** - 3200 sfm (600 rpm for 20", 400 for 30").
Lower the speed if wheel acts hard.
**Traverse speed** - 2-1/2" per rev. for 3" wide wheel.
**Wheel amps** -10 to 15 over idle. Infeed across roll.
(auto or manual). Can go to 25 over idle.
**Coolant** - Full flow. Decrease if wheel acts hard. Use **RollCool** or equal low-lubricity synthetic.

**ONLY 1% NEEDED!**

A common cause of roll grinding problems is coolant related. Many types have mineral oil, soap, paraffin or silicone lubricants. These can slick the hard roll and load the wheels. **RollCool** has no lubricants. Its Job is to inhibit rust. Non-foaming. Clear and clean on the roll. Long tank life. Settles fines. Better environmentally.

**Dressing - Use DiaNib** or equal coarse impregnated nib for sharper dress than by a dulled single point.

A single point often wears flat. **DiaNib** has many chips imbedded in a metal block. As it wears, sharp points surface. No need to rotate as with single point nibs. It works well on PM and cork.

**Miscellaneous** - Wheel must break down well in order to cut well. Should be able to see and feel some grit on roll surface. Keep amps up. A new wheel may act harder for an hour or two. If using cork next, make some light passes. 60 or 46 grit PM can finish although cork wheels often finish faster and better. Use 100 or 80 grit PM if same wheel roughing/finishing is wanted. Total time, however, will be longer than with 60 or 46 PM and cork.

60PM works well on all hard rolls such as iron, stainless, granite, stone-like, hard rubber, etc. Use 30 grit PM on soft rolls (over 10 P&J). Rubber (except poly) can be ground dry. PM cuts rubber coolly and should not load.

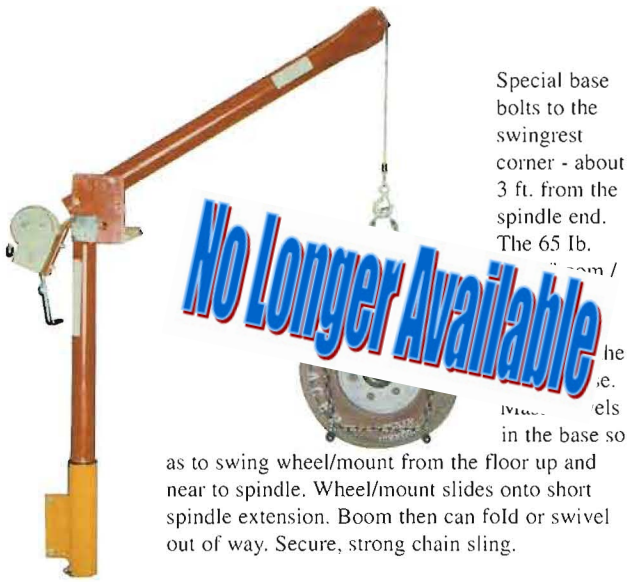
## Cork Finishing Wheel- roughing phase (9/12 passes)

**Wheel specification** - C120A3RC Cork
**Roll speed** - Same as for PM wheel.
**Wheel speed** - 2100 sfm (400 rpm for 20", 275 rpm-30") If wheel breaks down little or some chatter appears, increase wheel rpm about 25%.
**Traverse speed** - Same as for PM wheel.
**Wheel amps** -10 to 15 over idle. The new formula does require auto or manual infeed to hold amps.
**Coolant** - Use moderate to low flow. The flow must cover full wheel face to avoid dry-grind pattern. 1% to 2% (100:1 to 50:1) **RollCool** ratio will prevent rust. Use **Pacer filter** if low Ra finish is needed or if coolant is contaminated.

Bypass during roughing and use just during finishing. 18" high, 2.5" dia, 25 micron cartridges are [illegible]. Housing bowl [illegible] tridge [illegible]ble, [illegible]scharge [illegible]ter prevents swarf or [illegible]n coolant lines from scratching roll or loading face of wheel.

**Dressing** - Same as for PM. Should not need redressing. Stop wheel edges about 3/8" off roll ends. Leadlines erase faster if edges are chamfered.

**Miscellaneous** - Like the PM, cork wheels must break down well in order to remove all roughing wheel marks The use of low-lubricity coolant is very important. New formula cork wheels can remove stock (.0003"/hr) and improve profile. Cork leadlines erase in next phase. For a Farrel grinder, use **Pacer crane** to make changes from roughing to finishing wheels quick and safe. No lifting.




Special base bolts to the swingrest corner - about 3 ft. from the spindle end. The 65 lb. [illegible] / [illegible]he [illegible]e. [illegible]els in the base so as to swing wheel/mount from the floor up and near to spindle. Wheel/mount slides onto short spindle extension. Boom then can fold or swivel out of way. Secure, strong chain sling.

## Cork Finishing Wheel - finishing phase (12/15 passes)

**Wheelspecs.** - C120A3RC or C240A3RC Cork
**Roll speed** - 90 sfm (19 rpm for 18" roll, 12 rpm for 28") Increasing to 105 or 120 sfm can brighten the roll more while reducing finishing time.
**Wheel speed** - Low, like previous phase, usually is best but 25% higher rpm may improve finish.
**Traverse speed** - Increase if roll speed was increased. It may not be necessary to then gradually decrease. Leadlines may erase easier at high traverse speed (2-1/2" for 3" wheel)
**Wheel amps** - allow to drop only about 1/2 amp per pass to eventually 4 over idle. If auto infeed is used, gradually decrease and then turn off.
**Coolant** - Same as above.
**Dressing** - Should not need redressing. Stop at roll ends.

**Miscellaneous** - Removes marks from roughing phase. If amps drop too fast, deeper scratches and leadlines will remain. Make sure each pass removes leadlines from previous pass. If it doesn't, add an amp or two and make pass again or try a wheel speed change. Finish should be 5 to 8 Ra - with no leadlines. If using a 240 grit, start it after the 120 roughing phase. Finish should be 2 to 5 Ra.

Improper use of grinding wheels can be dangerous. Follow the instructions set forth in the ANSI B7. 1 American Standard Safety Code for "The Use, Care and Protection of Abrasive Wheels".

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