

Wet Grinding System

DJH Designs Roll Grinding System is a complete turnkey solution to grinding and finishing your coater and squeegee rollers. The system is comprised of the following.

- ◆ Heavy Duty, High speed grinder, with variable speed control
- ◆ Heavy Duty precision lathe
- ◆ Finish Sanding attachment
- ◆ Filter Bed

Wet Grinding option is Included, the advantages of wet grinding as opposed to dry grinding are numerous. The biggest advantage of wet grinding is dust abatement and bar far the most significant feature is cool grinding. By using a coolant we are able to minimize the bow wave effect ahead of the grinding wheel, this in conjunction with our industry leading bearing cradle design, and the HD precision lathe guarantees a superior finish with unparalleled accuracy. Equally important, the dust associated with dry grinding is virtually eliminated, removing a significant source of air contamination and a potential health hazard. The integrated filter bed system collects and simplifies the disposal of the grinding sediment, while minimizing the usage and loss of coolant.



Advantages of Wet Grinding vs. Dry Grinding

- Time savings - Reduction in time it takes to grind rolls: Dry grinding can typically take up to 2 hours depending on the roll type and finish required. Typical wet grinding cycle can be done in as little as 15 minutes.
- Superior Roll finish with a single pass grinding cycle: Dry grinding cause's a significant heat buildup on the surface of the roll due to the friction of the grinding wheel in contact with the roll surface. This friction build up not only causes surface distortions but can also can burn or damage the roll surface if too heavy a cut is attempted. Surface friction from dry grinding also exasperates a phenomenon called the bow wave effect. The bow wave effect is a pressure wave that builds up in the surface of the roll ahead of the leading edge of the grinding wheel, exactly the same way a boat creates a bow wave in the water ahead of its prow. As the depth of cut increases the amount of friction also increases and the coating becomes softer, this amplifies the bow wave effect. The grinding wheel also has a tendency to ride up on the wave and as it rollercoasters over the pressure wave if the feed rate is too high you end up with micro ridges in the roll surface. Wet grinding significantly reduces the bow wave effect by keeping the surface of the roll well cooled and lubricated so that you get a very clean cutting action on the face of the roll without the problem of ridges.
- Low Durometer Rolls can be ground without any modification to the grinding process. Dry grinding of low durometer rolls requires a significant change in the approach to grinding rolls. It requires lower feed rates and greater reduction in the depth of ach pass. This greatly increases the cycle time over wet grinding. With wet grinding there is no need to significantly alter the grinding process.
- Dust abatement: Dry grinding requires the use of high volume dust extractors to control the grinding dust coming off the roll. This dust is not only hazardous to the operator and the environment it possess a significant fire hazard. With the Wet Grinding System there is no dust to contend with, the cutting fluid draws the grindings away as a slurry that is pumped into a filter bed and disposed of automatically into to hopper. Disposal is simpler and can be included in your normal waste stream.
- Superior Roll concentricity: DJH Designs Wet Grinding System utilizes our unique bearing cradle design to grind your rolls on their bearings. This process results in far superior roll concentricity then does systems that grind rolls on the shaft centers. Grinding with the bearings ensures the roll concentricity is true to the bearing journals so your rolls run true when installed on the line.

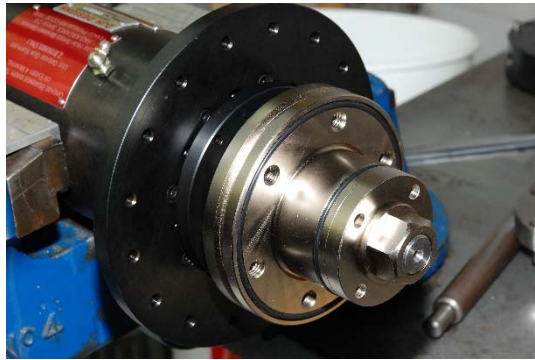
Grinding Head

Grinding Head Specifications

- ◆ Self-contained unit mounts to lathe cross slide



- ◆ Heavy Duty, special balanced spindle design and wheel hub.



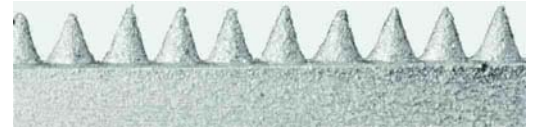
- ◆ Specially designed grinder chassis frame to absorb vibrations.
- ◆ Heavy Duty wheel guard
- ◆ Long life smooth transmission belt drive.
- ◆ Grinding wheel secured onto a 2½" diameter hub, taper fit to 2" diameter shaft, fully balanced 10" diameter x 1¼" face x 2½" bore grinding wheel.
- ◆ 7000 RPM wheel speed – Variable speed control
- ◆ Totally enclosed 10 HP 3ph, 440V motor special balance 3600 RPM

Standard Equipment:

- ◆ HD wheel guard
- ◆ 10" diameter x 1 1/4" face Rubberhog grinding wheel. One of the features that make the Rubberhog wheels your best choice for elastomer grinding is the wide selection of coating types and tooth sizes. This broad coating choice assures that we can offer a wide selection of grinding wheels to meet your specific requirements. The carbide teeth are positioned to provide fast penetration into the material and unrestricted flow of debris away from the wheel. This provides a free-cutting action, drastically reducing the time required for grinding. In conjunction the finish sanding attachment provides the ability to finish rolls to a high degree of ultra-smooth roll finishes.



Roll being ground with coolant



Carbide Teeth



Finish Sanding Pass

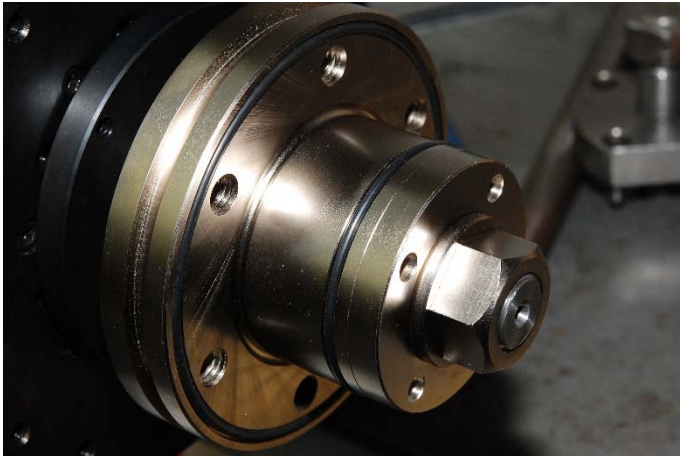


The combined selection of the grinding wheel tooth, and finish pass paper grit ensure an ultra-smooth roll finish for the ultimate in coating finish. Wheel type and finish paper selection are selected, and can be tailored to meet the specific requirements of the customers application.

- ◆ Tool kit



- ◆ Grinding wheel hub



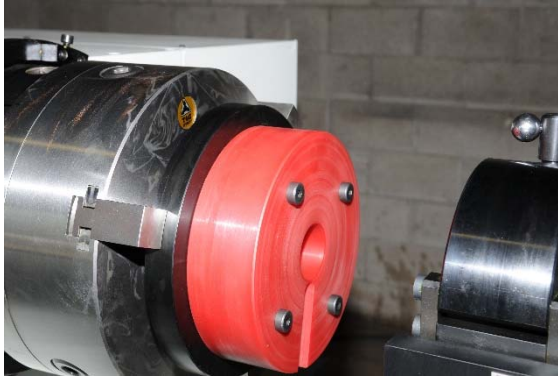
- ◆ Drive transmission guard
- ◆ Variable Speed Control
- ◆ Dynamic Brake

Lathe

- ◆ Heavy Duty center lathe
- ◆ Rapid traverse to cross and longitudinal slides by a separate motor
- ◆ Automatic lubrication to carriage slides
- ◆ Hardened and precision ground bedways
- ◆ All geared totally enclosed headstock with hardened and ground gears and splines, forced and filtered oil supply to all parts.
- ◆ Roller bearing spindle
- ◆ Roller Bearing Spindle with D1-11 camlock spindle nose
- ◆ Multi disk clutch for brake and drive both in forward and reverse mode.
- ◆ Totally enclosed quick change gear box, positive oil feed.

Standard Equipment

- ◆ 3 jaw self centering 12" chuck
- ◆ Chip tray
- ◆ Drive plate



- ◆ Steady rest
- ◆ Two dead centers and sleeve
- ◆ Set of change gears
- ◆ Work lamp
- ◆ DJH Designs Bearing Cradles with 1 set of bearing adapters to accommodate the different sizes in use with the plant. Note: for rolls that utilize pillow block bearings we typically recommend that the pillow block bearing be removed and a standard cartridge bearing be install to allow the roll to be ground on the bearing journals. Alternatively as an option the operator can install the centers and grind theses specific rolls between centers with the same setup. When grinding on centers you are relying on the condition of the shaft ends to control the concentricity of the roll.



** Special cradle to support the coater roll in its own bearings, guaranteeing concentricity between Spindle bearings and coater surface. Squeegee roll can also be modified with bolt on

bearings to use the same features. 2 sets of bearing adapters included – (customer to provide bearing specifications)

- ◆ Sanding attachment for finishing roller surface.
- ◆ Tool kit
- ◆ Manuals



Specifications:

Swing over cross slide	16.93"
Distance between centers	156.69"
Max. Weight of roll	3306 lb.
Main motor	15 HP
Tail Stock taper	#6 MT
Total Weight	8572 lb.
Voltage	TBA

Filter Bed model G30AC48

Features:

The gravity bed filter is a continuous self cleaning gravity filter. Solids are removed as liquid flows through the filter media and are discharged in a relatively dry condition into an outside container.



The blanket type filter media is carried by an endless conveyor. The conveyor's sloping sides create a deep pool for the liquid, while an inclined discharge ramp provides carry off for the waste.



As unfiltered liquid flows onto the filter media, it passes through the blanket and deposits solids on the media surface (thus forming an additional filtering stage). When the rate of liquid flow

through the filter media is appreciably slowed by the accumulation of waste, the level of standing liquid rises and actuates a the level control. The motor driven conveyor belt is advanced, dumping the waste off the end of the unit into your bin and bringing a section of fresh media into position under the liquid flow.

The float control senses when the liquid flow has resumed its proper rate, and controls media advance accordingly.

Standard Equipment

- ◆ Filter paper
- ◆ Air operated pumps
- ◆ Ratio motor
- ◆ Stand
- ◆ Tanks, pipe/ tube and fittings.
- ◆ One pail of coolant
- ◆ Coolant Spectrometer

Specifications:

Length	83"
Width	37"
Filter Media Width	30"
Tank Capacity	85 gals
Dry Weight	577 lbs



[WGS Video](#)