ElJay Rollercone® II

Cedarapids

Rollercone® II

Increased output from advanced engineering

The Cedarapids/ElJay Rollercone® II sets the standard for second generation cone crushers. The Rollercone II features advanced crushing chamber technology that yields impressive capacity increases, finer output gradations and a more cubical product. With improved crushing capabilities, the Rollercone II is capable of increasing output up to 35% over conventional cone crushers. Couple the Rollercone II's advanced chamber technology with interchangeable liner configurations for fine or coarse crushing and you have the industry's most versatile second generation cone crusher.

Advanced crushing chamber technology is the result of using the proper combination of stroke, speed and head angle. All three factors are equally important to optimum cone performance.

Optimum performance requires closer attention to operating principles than conventional cone crushers. Proper liner selection, adherence to proper reduction ratios, adequate screening, good material conditions and proper operating speed are all necessary for successful operation at tight closed side settings.

The Rollercone II is capable of increasing output up to 35%.

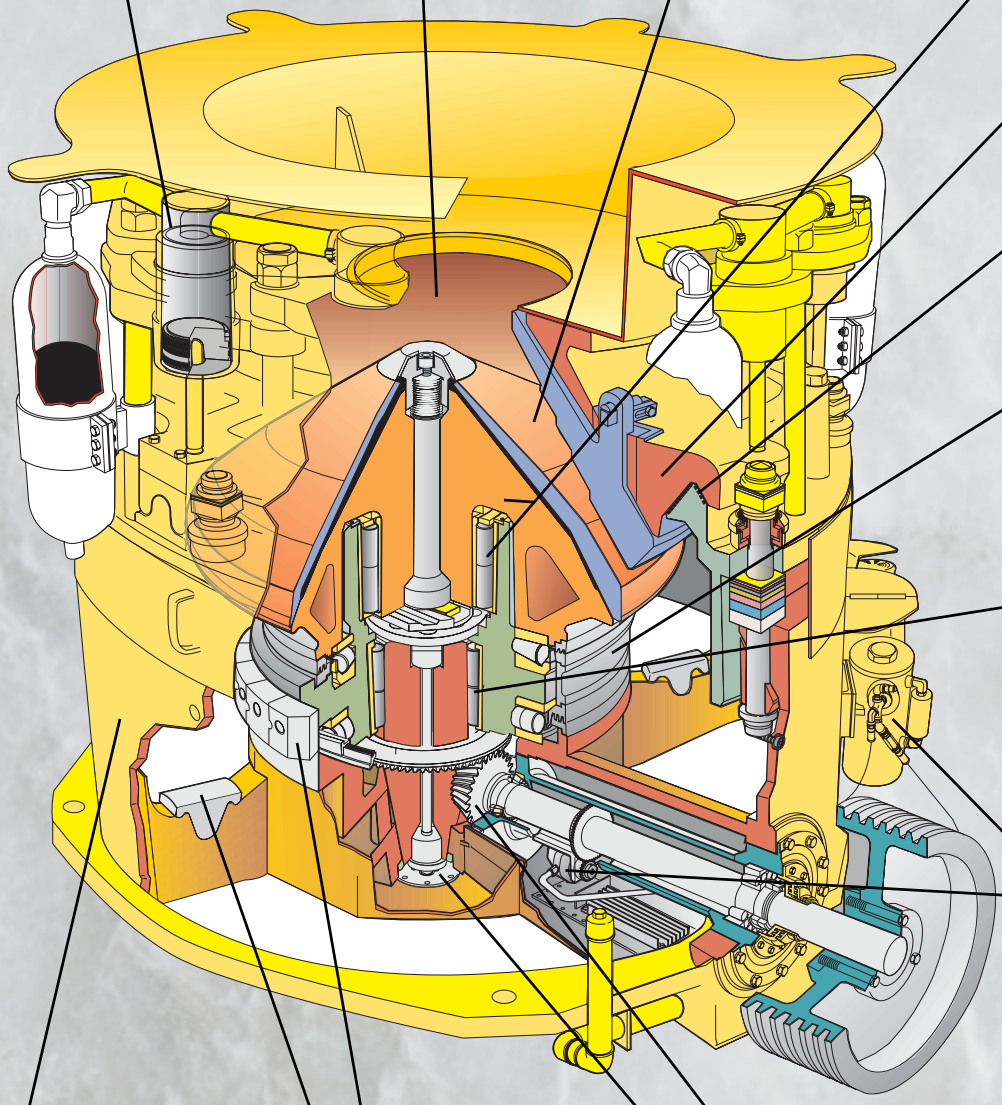
Patented replaceable Cedarapids/ElJay Vee seats significantly reduce crusher downtime and repair costs — up to 75%! Replacing the Vee seats is a simple fitting procedure that can be done on-site by field personnel and eliminates metal transfer and downtime associated with extended bowl float.

For unmatched high capacity crushing performance, field tested and proven engineering, state-of-the-art features and application versatility, the Cedarapids/ElJay Rollercone II is truly the world's leading second generation cone crusher.

Heavy-duty tramp iron relief assembly with larger-bore relief cylinders allows lower operating pressures. Large-diameter tubing with minimum restrictions limit pressure spikes. High hydropneumatic hold-down force permits closer settings before bowl float occurs.

This full size cone features a large unobstructed feed opening to permit true choke feed. Motion at the top of the cone helps position oversize and slabs for entering the chamber.

Interchangeable crushing chambers allow conversion from standard to fine configurations with a simple liner change. No special parts are required to change chamber configuration.



Heavy-duty cone head and close tolerance bearings assure tight closed side settings at all load conditions.

Heavy-duty bonnet has thicker cross sections and bolt on stop blocks.

Patented replaceable Vee seat inserts allow quick, cost effective maintenance. Bonnet support is independent of the base frame.

Roller bearings allow usage of non-contact, maintenance-free labyrinth oil seals. The close-running, deep-tapered, multi-grooved labyrinth seal is the best cone crusher oil seal available.

The Rollercone II's roller bearings have capacities far in excess of maximum load, providing a proven long service life. Highly concentrated thrust loads are spread completely around the entire bearing area. More power can be applied directly to crushing.

The internal oil system provides increased oil flow. The main oil pump is gear driven off the pinion shaft. A redundant pre-lube system reduces wear at start-up. All lube oil is self-contained within the crusher.

Heavy-duty field-proven fabricated steel base frame. State-of-the-art design ensures structural integrity.

Counterweights balance the cone allowing smooth operation with minimal vibration.

Replaceable wear resistant guards protect the struts.

Spiral bevel gears are sized for extra production capabilities.

Anti-spin mechanism prevents spinning of cone head when empty.

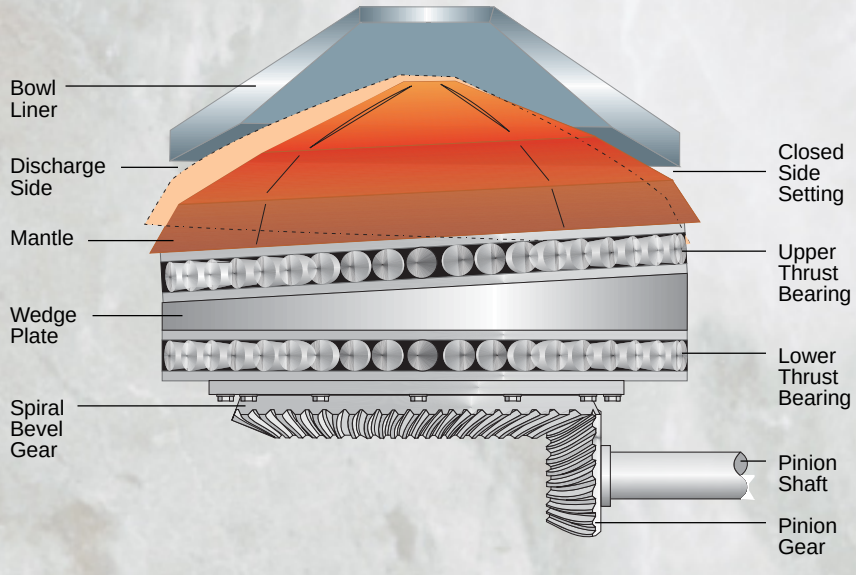
More Crushing Power

The unique Cedarapids/ElJay rotating wedge plate transmits 80% of the force through it to direct compression crushing. A Rollercone II produces more product passing the crusher's closed side setting *on the first pass than any competitive cone.*

The combination of the balanced wedge plate with bolt-on counterweights along with large roller thrust and radial bearings produce an action that is smooth, efficient and nearly vibration free.

The cone head rides the wedge plate with a slight eccentric motion, squeezing rock between the mantle and stationary bowl liner.

Rock is crushed as the thick part of the wedge closes the mantle on the liner, creating the closed-side setting. Crushed material discharges simultaneously as the thicker portion of the wedge moves away, creating the open side setting.



More Sized Product

All Rollercone II bearings are designed for capacities in excess of maximum design loads. The Rollercone II will produce more net tons during the life of its bearings than any other crusher on the market. The Rollercone's superior bearing life has been proven in the field for over thirty years.

High capacity roller bearings have a greater-than-average load carrying capacity, can withstand greater forces, minimize friction and generate a fraction of the heat, thus doing more work than bronze bushings in shaft-type cones.

The wedge plate rides on the lower thrust bearings in the base and rotates around the massive central spindle on the lower radial bearings distributing crushing load over a full 360 degrees. The upper thrust and radial bearings allow the wedge plate to rotate inside the cone head.

Due to the tighter tolerances of the wedge plate's roller bearing's —1/10 those of a bronze-bushing cone—a true setting is maintained. The tighter tolerances reduce oversize to about 20% instead of the 50% as with bronze-bushing cones when making a 1/2" (12.7 mm) minus product. This allows more feed material in the circuit with less recirculation and that means more production.

Self-Contained Oil Lubrication System

The Rollercone II runs cooler than competitive cones. This is due to the fact that the weight and crushing stresses are spread over two radial and thrust bearings so pressure in any one area is reduced.

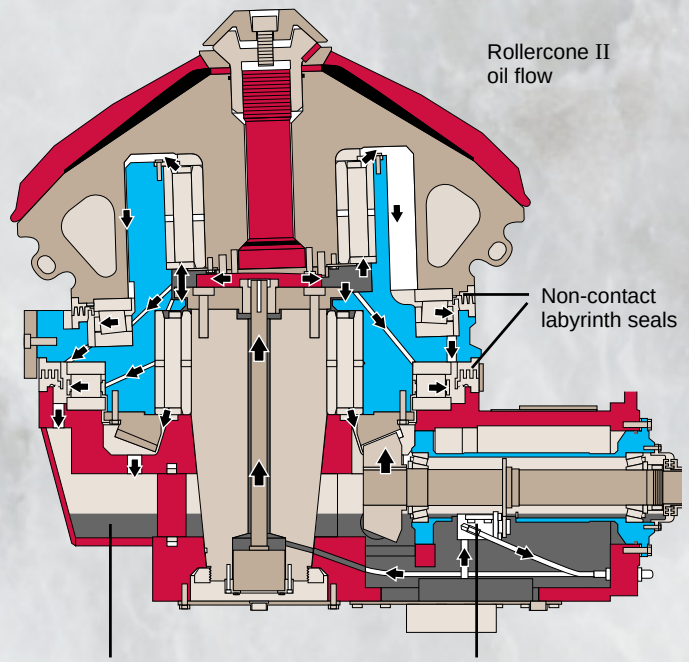
Compare this to the bronze bushings in an old style cone which must withstand all the forces often concentrated in one spot which can lead to breakdown of the oil film, heat producing metal-to-metal contact and increased tolerances.

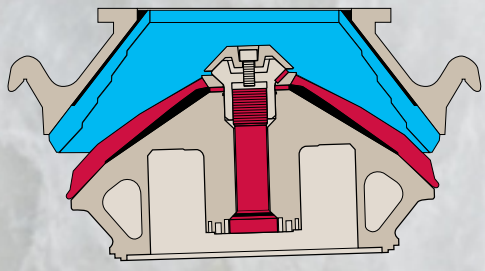
Low friction generates less heat making less oil necessary. The 54" (1372 mm) Rollercone II requires only 24 gallons (91 liters), the 45" (1143 mm) Rollercone II only 16 gallons (61 liters). A comparable shaft-type cone requires up to 200 gallons (757 liters), plus needs an extra cooler to dissipate heat.

All Rollercone II oil is self-contained in the crusher base. No external cooling tanks are necessary. The tightly sealed system reduces the chance of contamination by water and grit.

A separate external pre-lubrication pump assures an adequate oil supply to the bearings prior to start-up.

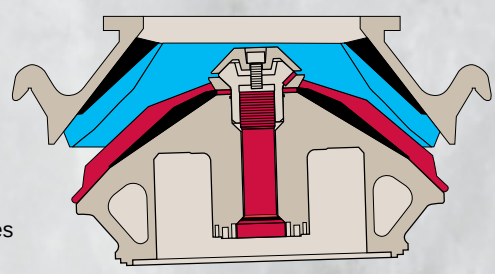
While operating, lubrication is supplied from a pinion driven internal pump. A fail-safe alarm horn alerts the operator if oil flow drops below the required level.





Standard chamber

Changing crushing chambers only requires installing manganese bowl and mantle.



Fine chamber

One Crusher For All Applications

The Rollercone II features easy-to-change crushing chambers. Changing from a standard to a fine crushing chamber is all that's required to match the Rollercone II to a new application.

With several liner configurations for the fine and standard crushing chambers, the Rollercone II is truly a highly versatile cone crusher. Rollercone II crushing chambers incorporate the same advanced engineering technology as found in all Cedarapids/ElJay products.

Chamber liners are designed for maximum wear life with a minimum loss of feed opening during normal lifetime operation. Liners are easily changed without dismantling the upper section or removing the cone head.

Best Crusher Protection

The Rollercone II's hydro-pneumatic tramp iron relief system provides unequaled protection against damage and allows much higher crushing forces. The Rollercone II features larger diameter bore relief cylinders that allow high hold down force at lower operating pressures. Heavy duty piston seals and protective wear sleeves make servicing the tramp iron relief system quick and easy. The lift on a Rollercone II enables it to pass objects up to 5½ inches (140 mm).

The hydro-pneumatic relief system was pioneered and patented by ElJay. The system offers a heavy-duty design with few moving parts that requires minimum maintenance.

The closed circuit relief system has large diameter tubing with a minimum of angles and oversized accumulators minimizing shock levels to the crusher.

The hold-down pressure of a 45" (1143 mm) Rollercone II — 400,000 lbs (181,440 kg) — is 1.5 times that used on most competitive cones. That means the Rollercone II can be set closer without bowl float and produce more work.

The relief system operates by forcing the bonnet upward against the system's oil pressure in the relief cylinders as an uncrushable object enters the cone's crushing chamber. The oil pressure in turn compresses a nitrogen gas bladder in the accumulator. Once the crushing cavity is cleared, the gas forces the oil back into the relief cylinder and the bonnet lowers to its original position.

This relief system also speeds clearing the cone should it ever become blocked due to power failure or other difficulty. The bonnet is raised by relieving oil pressure without loss of gas pressure. The cavity can be cleaned quickly and easily without damage to the crusher or danger to employees.

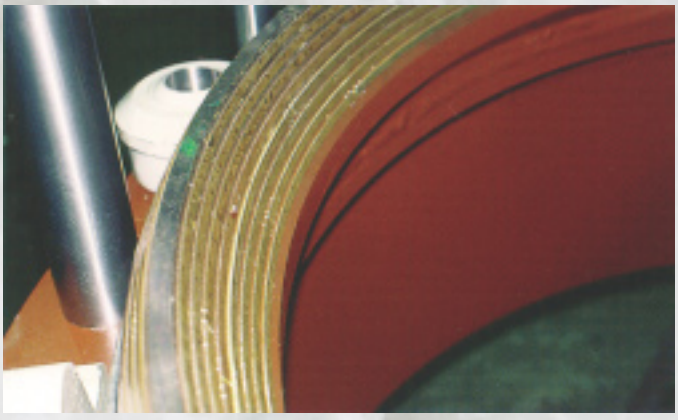
Quick Adjustment System

Hydraulic/shim adjustment makes changing the discharge opening fast and easy. Adjustment is vertical using hydraulic rams, therefore bowl rotation is not necessary.

This design requires less headroom, less weight and eliminates the problems associated with thread galling.

Exact setting is maintained by shim stacks of equal height. Shims vary in thickness and are color-coded and numbered for quick recognition. The shims have offset slots for easy installation and are interlocking.

To tighten the settings, release the clamp ring and raise the bonnet. Remove shims from the lower stack to establish the new setting. Removed shims are stored in the upper stack. The bonnet is then lowered and the clamp ring tightened. Tensioning of clamp bolts is done hydraulically.



Patented Replaceable Vee Seat Inserts

The Rollercone II's brass lined Vee seats eliminate all metal erosion and metal transfer associated with bowl float. Vee seat inserts fit into grooves cut into the bonnet support and cushion the impact of the bonnet on the bonnet support.

If bowl float is allowed to occur, Rollercone II crushers can be repaired easily on site without having to wait until a planned shutdown. Repair to the Vee seat is independent of cone's base frame, gearing, and bearings further simplifying repairs.

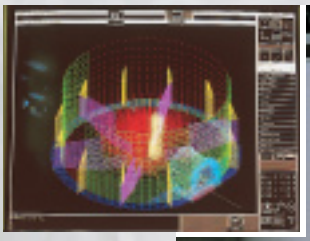
Replacing worn Rollercone II Vee seats is a simple quick fit procedure, eliminating the more costly repairs normally associated with conventional vee seat repair.

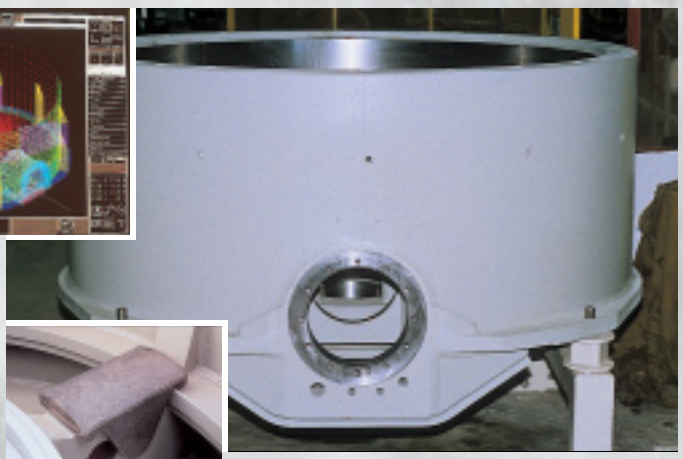
Strongest Base Frame Available

The Rollercone II's base frame features a 1¼" (32 mm) thick side wall, T-1 alloy steel external flanges for hoop strength, and fortified pinion tunnel which all provide added strength. The base design is the direct result of using state of the art engineering analysis tools and extensive field testing.

A reinforced base frame center section, added under the lower thrust bearing seat, provides extra support. High sweeping base frame struts with extra thick cross sections spread loading over a greater area. Internal flanges further strengthen and stiffen the base frame. Wear resistant strut guards limit build-up problems and are easily replaced.

The Rollercone II's ultra-solid construction permits the utilization of increased horsepower in the crushing operation.





The Cedarapids/ElJay Rollercone® II is the industry's most versatile second generation cone crusher.

Cedarapids Inc
909 17th Street NE
Cedar Rapids IA 52402 USA

Telephone 319 363 3511
1 800 821 5600
Fax 319 399 4871
www.cedarapids.com

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