

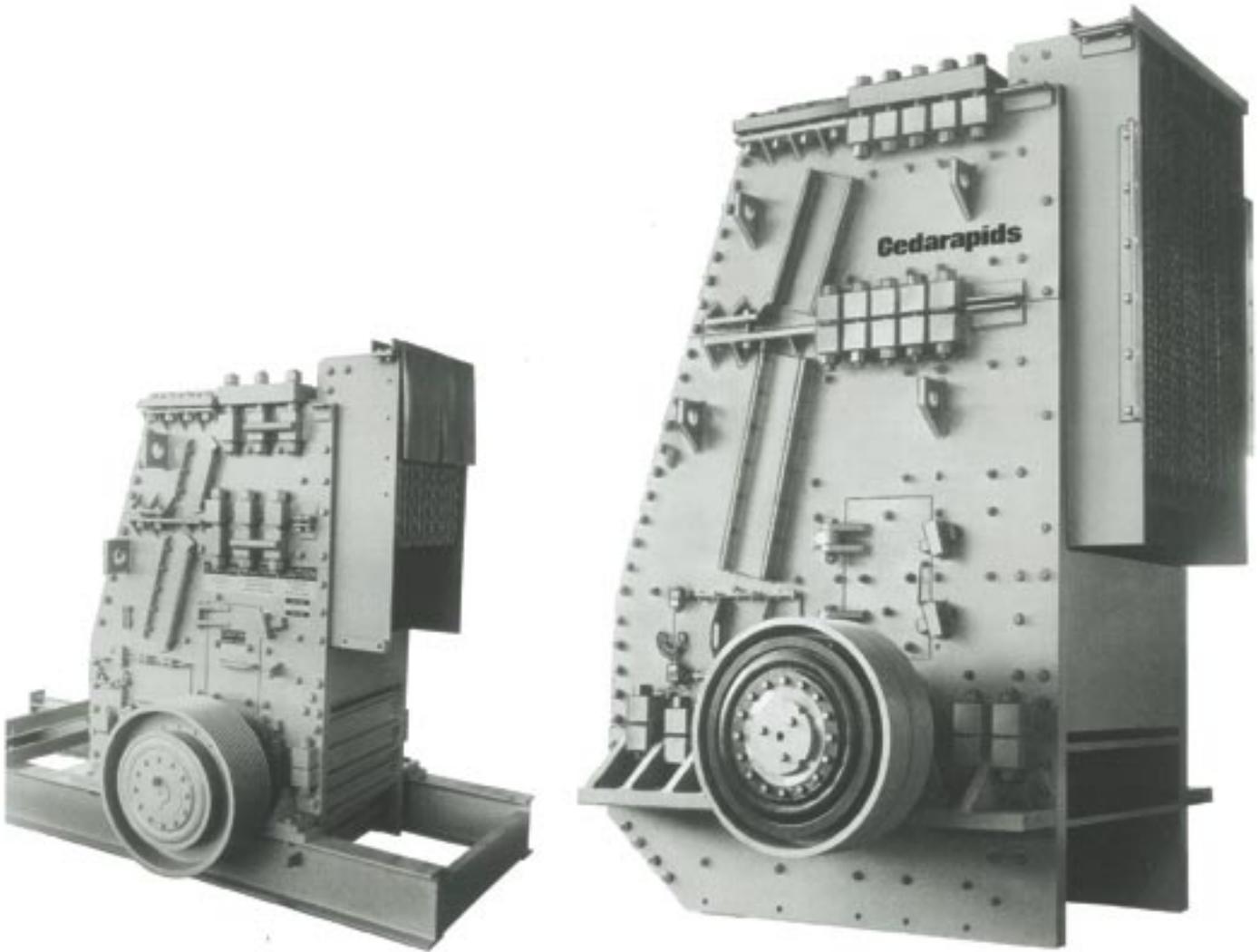
Cedarapids

A Terex Company

Single Impeller Impact Breakers



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Improved Product Quality

Single Impeller Impact Breakers provide a cubical product even in slabby material, improve aggregate quality and increase overall plant efficiency.

Rock is broken along natural cleavage lines, leaving few, thin, sharp edges. Soft rock is reduced to fines which can be screened out, leaving only the harder rock for specification material.

Impact Breakers, in some applications, can reduce raw aggregate to specification size in one pass, thereby eliminating a secondary crusher. Or, a small breaker can be used as a secondary, thereby allowing the primary to

be set to produce larger material for the breaker. Overall plant production is increased because much of the product from the breaker will be to size.

Among the many features built into a Single Impeller to give long service life, minimum maintenance and improved plant performance are: heavy chain curtain over feed opening; high feed angle to give better penetration; thickest side plates and liners in the industry; heavy cast impeller; free-turning breaker bars with sleeves; groove-locked impeller bars; unobstructed discharge opening; breaker plate/grate on Model 3020.

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Single impeller impact breakers can be skid-mounted or portable. Skid units, which can include feeder, grizzly and drive, are completely engineered and ready to install on piers. Portable units have the same components and a discharge conveyor on a single chassis for easy transport. Electric motor or combustion engine provide power.



Feed Opening

Feeders discharge directly into breaker, eliminating long, restrictive feed chutes. Heavy chain curtain helps prevent rock from rebounding out of the crushing chamber. High feed angle drops rock in front of the impeller bars, providing maximum penetration of the hammer circle for greater impact and less scuffing.

Massive Impellers

Impellers are heat-treated cast nickel steel. They curve away from the striking face of the impeller bar to reduce chance of rock striking impeller surface. Each bar is backed by the massive weight of the impeller, providing enough force at operating rpm to drive the bar into the rock, not scuff or grind. Heavy impeller also acts as a flywheel to smooth operation even under surge loads.

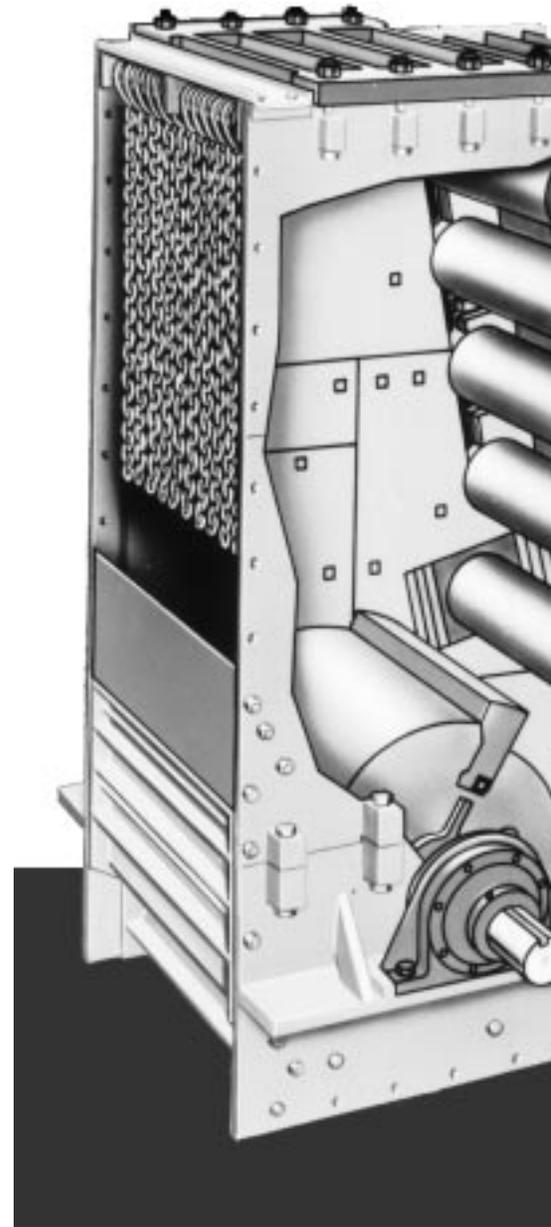
Impeller bars are cast manganese steel for maximum resistance to impact and abrasive wear. Three bars are used on the larger 5348 and 6360 impellers. All others use two bars to accomplish the same penetration and impact effectiveness.



Exclusive Impeller Bars

The unique groove locking system prevents bars from being thrown out of the crusher during operation. In addition, wedges and locking bolts hold bars tightly in place.

Bars are changed using side access doors on both sides of breaker. Removing wedges and bolts permits bars to be driven out of impeller. This method eliminates hoisting heavy bars in and out of feed opening.

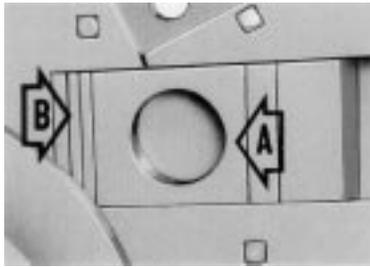


Large Shaft and Bearings

An oversize heat-treated shaft of alloy steel absorbs heavy torsional and bending stresses. Shaft is extra long so breaker can be driven from either side.

The shaft turns on extra heavy spherical double-row self-aligning bearings in a cast steel housing. Hydraulic bearing removal is standard on all but the smallest breakers.

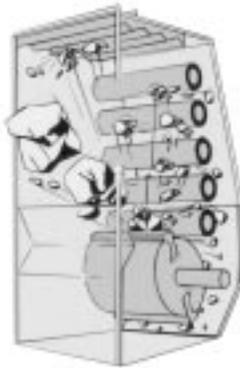




Product Size Control

Product top size control is by an adjustable breaker bar adjacent to the impeller. Bar socket (A) can be positioned by moving shims (B). Close spacing between bar and impeller gives a smaller size product while larger sizes are obtained by wider spacing. The shim method gives a wide range of product sizes.

Varying the impeller rpm gives a second major control of product size. Higher speeds produce a smaller finished product.

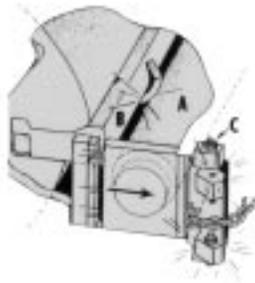


Grates and Breaker Bars

Primary units have breaker bars which prevent rock struck by the impeller from passing directly through and hitting the end plates. Rock must rebound off bars or other rock to pass. Rock is retained in the crushing chamber until reduced to proper size.

The bars are free-turning to give equal wear. Bars in the high impact zone have free-turning replaceable manganese sleeves for long service life.

A heavy cast manganese steel grate is used in the smallest unit. It serves as a breaker plate when struck by rock hit by the impeller. Rock will either pass through with finer material or rebound into the hammer circle for further reduction. The grate is readily accessible through the side door.



Safety Shear Bolts

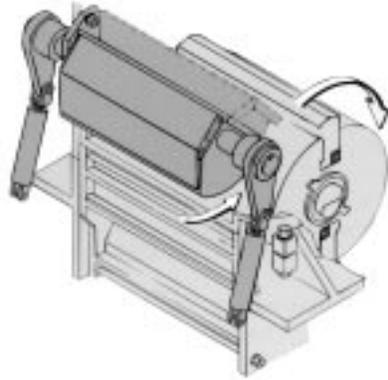
Shear bolts protect impeller and shaft from possible damage from tramp iron. When uncrushable material lodges between horizontally adjustable breaker bar (A) and impeller bar (B), bolts (C) break, releasing retaining plate and allowing breaker bar to move away from impeller. Tramp iron will then pass through breaker.



Breaker Plates and Liners

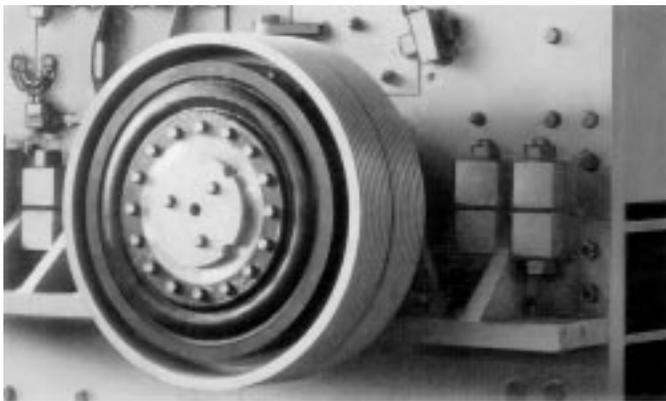
Extra-heavy steel breaker plates and liners protect the crushing chamber from wear and impact. The breaker plates, directly across from the feed opening, shatter any rock not first broken by the breaker bars.

The bolt-in sectionalized liners cover the sides of the chamber. Liners are cast manganese steel in high impact areas and others are abrasion-resistant steel.



Hydraulic Bridge Breaker

Optional hydraulically-actuated pivoted bridge breaker relieves wedging or bridging of large rock inside crushing chamber. Double-acting cylinders swing feed plate up to lift and free bridged rock so normal crushing can continue.



Airflex Sheave

An Airflex sheave is used with the drive on 3633 and larger sizes to absorb shock loads. Flexible gland between hub and sheave “gives” to dampen shock to drive components and power unit, lengthening their service life. The gland also minimizes the flywheel effect of the heavy-duty outer sheave. Hub and sheave are fabricated steel for strength and maximum life.



Optional Gemini Bar

The Gemini bar, or dual lower breaker plate, dramatically reduces bridging of slabby feed material. The plate fits over the two lower standard breaker bars replacing the individual sleeves.

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