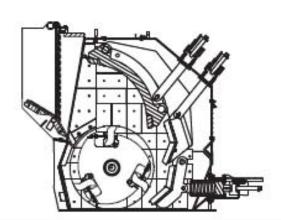
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# VERSACAP RECYCLE IMPACTOR



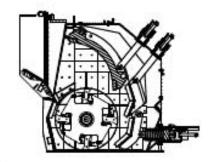
Universal Engineering has manufactured a wide range of processing equipment for recycling applications since 1966. Over the years continuous design refinements have been incorporated into our processing systems for enhanced performance and efficiency.

The VersaCap Recycle Impactor is designed to provide a level of versatility to the producer which is virtually unmatched in the industry today. In addition to those features common to most recycling impactors, the VersaCap also allows for a number of features that enable it to function cost-effectively in the

recycling of highly friable materials. The reason for developing the VersaCap was to provide each customer with an "application specific" impactor that fits their individual needs.

In recycling applications, the VersaCap will convert large slabby feed into 1-1/2" minus at 200 tph, 300 tph, and 400 tph depending on the model size. The cast monoblock primary curtain is reversible, but also features replaceable wear edges to add longer life to this massive casting. If so desired, the monoblock may be replaced by a fully-lined primary curtain weldment. The fully-lined second curtain is known for its unmatched "forgiveness" with almost twice the retraction capability for hydraulic relief over competitive models. The VersaCap is also available with a selection of rotor assemblies designed for a wide variety of applications. The typical "3-Bar" and "4-Bar" arrangements are both available, and can accomodate medium or heavy hammers (blowbars). These reversible hammers feature a protruding leading edge that provides for greater through-put capacity over the wear life of the hammer. The robust housing of the VersaCap accepts a variety of feed chute arrangements for every application,

and an optional third curtain (apron) may be added in the field to enhance the wide range of output gradations. Perhaps the most unique feature of the VersaCap is the "Adjust-on-the-fly" capability available as an option. Adjusting the VersaCap curtains may be done with a simple hydraulic-shim arrangement, or with the optional hydraulic operating system. The hydraulic operating system can be further enhanced with PLC controls for the ultimate in system integration. This remarkable impactor, the Universal VersaCap Recycle Impactor, is a culmination of technologies developed, tested and field-proven over the past 25 years by Universal Engineering Corp.



VersaCap Recycle Cast MonoBlock Curtain with HD 4-Bar Rotor and Third Curtain Option

# RCP RECYCLE IMPACTOR

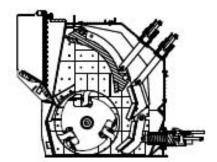


The RCP Impactors have been specifically designed to meet the need of the growing market for recycled concrete and asphalt materials. These Universal impactors feature an extra-wide feed opening to accommodate large slabby material more efficiently. Commonly used in single-crusher systems, the massive primary impact chamber allows optimum expansion of the material in process and superior flow consistency. The primary curtain is available with interchangeable liners made in a variety of alloys, or with a solid cast manganese MonoBlock. The secondary curtain has interchangeable liners, also available in a variety of alloys, field-proven for their extended wear life

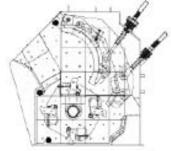
when processing heavily reinforced concrete.

The heart of the RCP Impactor is the heavy duty large diameter rotor. This massive one-piece weldment consists of discs that are made from high yield strength steel, and precision-cut back up bars with replaceable face plates. This field-proven rotor incorporates a keyless shaft and is designed to handle rebar and wire mesh cleanly and efficiently. This impactor is available with a 4-bar rotor to allow for maximum range of rotor tip speed, or a 3-bar rotor which is particularly well suited for a variety of recycle applications.

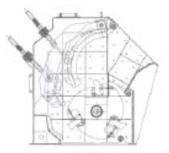




VersaCap Recycle Cast MonoBlock Curtain with HD 3-Bar Rotor and Third Curtain Option



RCP Cast MonoBlock Curtain with HD 4-Bar Rotor



RCP Cast MonoBlock Curtain with HD 3-Bar Rotor

# UNIVERSAL H SERIES JAW CRUSHER



H-Series Jaw Crushers - These crushers offer "Adjust-On-The-Fly" capability with an integral system of hydraulic cylinders. This system provides for hydraulic relief and automatic reset as the uncrushable passes the discharge point. The H-Series jaw offers finger-tip control over adjustment of the discharge setting while under load.

Base Frame - Rigid one-piece fabricated base frame reinforced for unmatched durability and strength.

Massive Steel Pitman - Heavily reinforced to provide the ability to absorb massive shock loads and superior compressive force over the entire crushing chamber.

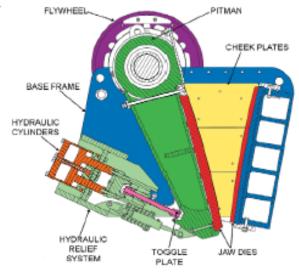
Large Balanced Flywheels - Supply continuous driving force to the crushing action.

Reversible Manganese Jaw Plates - Provide for a severe duty wear surface that work hardens and allows for maximum wear life. The Model 3264 Recycle Jaw, as shown here, includes replaceable toes to support both the stationary and movable jaw plates. On the 3264 the jaw plates are identical and interchangeable.

Replaceable Cheek Plates - Prevent wear on the sides of the crusher base. The three-piece design as shown here is typical of the Model 3264 Recycle Jaw. Helps minimize replacement cost and downtime for maintenance.

Toggle Plate - Allows for continous movement between the hydraulic assembly and the pitman. The location of the toggle plate at the lowest point on the pitman provides more crushing action at the toe and more "pull through". Steep toggle angle and large eccentric offset provide more crushing throughout the chamber.

Hydraulic Cylinders - Provide the force necessary to hold and maintain the jaw set-



ting and allow hydraulic clearing. Each cylinder is individually plumbed for ease of maintenance. The auto reset function is activated by a limit switch and assures immediate return to the hydraulic setting automatically following any tramp iron event.

Adjust-On-The-Fly Hydraulic System - Features a bank of industry-standard cylinders and provides for hydraulic relief with auto-reset, hydraulic clearing, and adjustments of the discharge setting at the touch of a finger while under full load. Provides safety relief for uncrushable material and a means to optimize production for greater profit.

### UNIVERSAL JAW CRUSHERS



Traditional Jaw Crushers - Universal patented the overhead eccentric jaw crusher in 1906. The superior performance of the Universal Jaw is a credit to its highly efficient design and robust construction

Base Frame - Rigid one-piece fabricated base frame reinforced for unmatched durability and strength.

Perfectly Balanced Flywheels - Balancing the flywheels gives the machine a smoother action, transmitting less vibration to the structure. The large diameter of the flywheels provide continuous driving force (inertia).

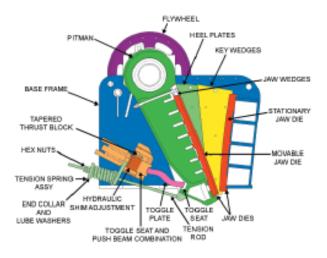
Heel Plates & Key Wedges - Protect the base of the jaw crusher preventing any wear to occur on the base and secure the stationary jaw.

Reversible Manganese Jaw Plates - The reversible and heat-treated wear resistant manganese jaw plates actually get tougher as they work. Jaw openings are measured from

inside the wear plates providing a true measurement of the crushing chamber.

Massive Steel Pitman - Universal Engineering uses heavy duty pitman castings and fabricated pitmans with unmatched strength and durability. Each pitman is carefully machined to provide accurate fit of bearings and jaw plates.

Rugged Eccentric Shaft - Our eccentric shafts are hammer forged from quenched, tempered and stress-relieved alloys. There is enough eccentric throw to give clean impact-like crushing and yet avoid harsh rubbing motion which robs horsepower and creates jaw wear.



Hydraulic Shim Jaw Adjustment - The lower jaw adjustment easily changes the discharge gap setting for fast change of product size. The shim adjustment is made quickly and easily with use of the hydraulic ram.

Safety Toggle Plate - The dual purpose toggle plate is designed to break when uncrushable material enters the crusher chamber. The toggle plate is also responsible for controlling the stroke at the bottom of the crushing chamber.

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#### SINGLE-CRUSHER RECYCLING SYSTEMS

A typical single-crusher recycling system starts with a portable VersaCap Impact plant equipped with a vibrating grizzly feeder. The feeder receives material and allows the fine particulate to bypass the impactor. Typically the last three feet of grizzly bars are declined to better direct the slabby material into the VersaCap impactor. VersaCap Recycle Impactors feature chrome alloy steel wear parts, a heavy duty large diameter rotor, and two adjustable curtains designed to withstand large primary feed and provide maximum product control.

# OPEN CIRCUT PLANT PERROUS METALS COLLECTION

# TYPICAL SINGLE-CRUSHER SYSTEM CONFIGURATIONS

The typical single-crusher system will incorporate a self-cleaning magnetic separator for extraction of the ferrous metals, and a vibrating screen with two or three decks to ensure product sizing into specific classifications. A compliment of conveyors provide for material flow through the closed-circuit system and into the respective stock piles.





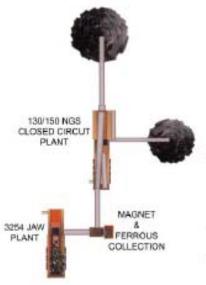
Custom-Built Universal Recycling Trains are ideal for the larger highway projects.



#### DUAL-CRUSHER RECYCLING SYSTEMS

A dual-crusher recycling system includes separate crushers for primary and secondary stage reduction, and is used when higher production and greater flexibility are desired. Two-stage crushing allows for greater productivity and is ideal for multifunctional operations in processing a wide variety of materials including natural aggregate.





## TYPICAL DUAL- CRUSHER SYSTEM CONFIGURATIONS

A typical dual-crusher recycling system utilizes the combined forces of both a Primary and Secondary Crusher. The dual-crusher system is the oldest, most trusted system for reliable performance and low-cost operations. Popular systems include either a Jaw Crusher or an Andreas-type Impactor as a primary crusher. The most common secondary crusher is the Horizontal Shaft Impactor combined with a two or three-deck screen providing a closed-circuit operation.

The portability of the dual-crusher system depends on the selection of the individual components. Generally speaking, all dual-crusher systems provide for greater flexibility and are highly effective processing a variety of material including reinforced concrete rubble, ripped and milled asphalt pavement, quarried stone, and various friable materials. Sharing the load between the primary and secondary crushers provides for greater sustained system capacity with less downtime and unmatched return on investment over the life of the equipment.



