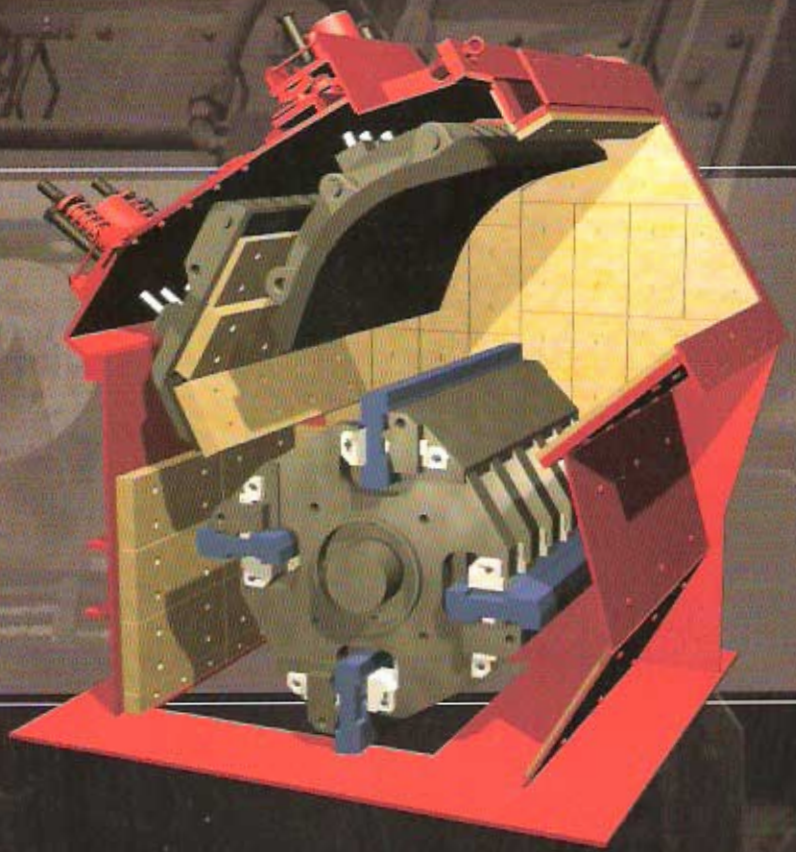
HAZEMAG



APSE, APSE(H)

PRIMARY IMPACTORS

PRIMARY IMPACTORS

APSE, APSE(H) - Primary Impactors

Since our modest beginning back in 1946, HAZEMAG has grown to become the world leader in impactor design and control technology. Having now sold over 75,000 machines for almost every possible application, the Andreas HAZEMAG APSE & APSE(H) Series Primary Impactors are widely accepted as the machine of choice for the North American Aggregate and Cement industries.

Today, HAZEMAG continues its commitment toward developing and introducing new, innovative ideas to improve the impactor's performance, efficiency, adjustability, product size control and safety. This commitment is easily realized throughout our line of APSE & APSE(H) Primary Impactors.

HAZEMAG APSE & APSE(H) Series Impactors are designed as primary reduction units for materials of medium to low silica contents such as limestone, dolomitic limestone and gypsum.

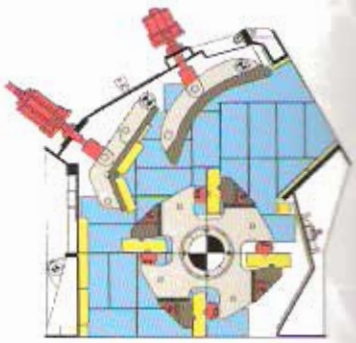
HAZEMAG Primary Impactors are available in a capacity range of 100 - 700 short ton/hour, depending on the machine selection. Individual lumps of feed materials weighing up to 1 ton and minus 36 inches in size can be processed.

APSE-1313

APSE-1620

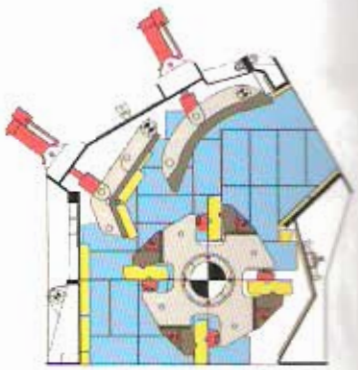
APSE-1013

The HAZEMAG APSE - Series Primary Impact Crusher is ideally suited to crush run of quarry, medium-hard materials down to a product size of 0 - 6 inch (75% passing 3") in a single pass. This machine is normally offered within a plant / system where secondary crushing is also present. However, due to its high reduction ratio, the need for multiple secondary units is normally eliminated.



For the recycling of concrete and asphalt, the APSE Series Primary is Impact Crusher is an ideal choice to process recycled materials down to a product size of 0 – 4 inch (80% passing 2") in a single pass. The design of the plant, utilizing a single APSE Impact Crusher, has proven to be an excellent processing solution for recycling / demolition companies throughout North America.

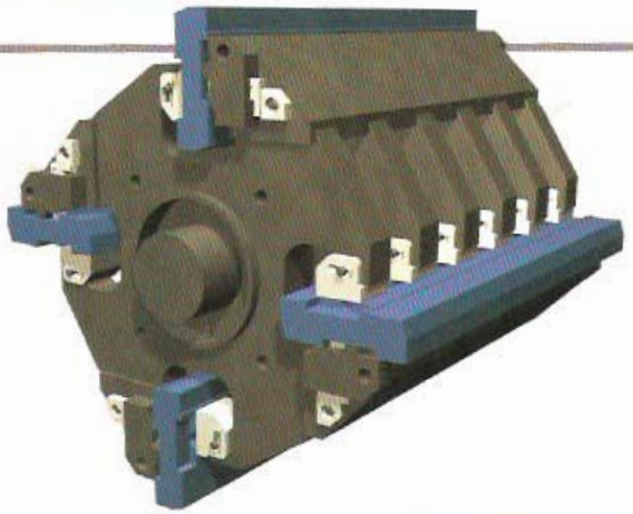
The HAZEMAG APSE(H) - Series Primary Impact Crusher offers a level of impactor performance and apron positioning / control technology that ensures the production of a high quality, consistent product gradation. The APSE(H) HAZtronic (HAZtronic = Hydraulic Apron Adjustment / Programmable Apron Settings) system is available on all APSE primary impactor models. The computer controlled, fully automated hydraulic apron positioning system puts you in control, helping you produce the products you sell the most! Additional details on this system are covered within this brochure – HAZtronic System.



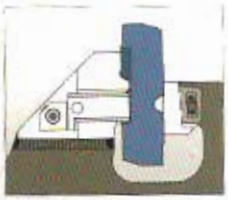
Rotor System

Rotors

The rotor is the "heart" and the most severely tested part of the impact crusher. During the course of HAZEMAG's +50 years of experience, particular emphasis has been placed on the rotor design, development and field of application. Primary crushing requires heavy duty rotors with rugged, stress free rotor bodies that provide a very high moment of inertia. The latest HAZEMAG rotors are designed and manufactured of high quality discs that are joined together along a center tube by a special, high quality welding process. The rotor body is stress relieved and dynamically balanced to increase its service life and provide workmanship of the highest quality.



"Q" Rotor



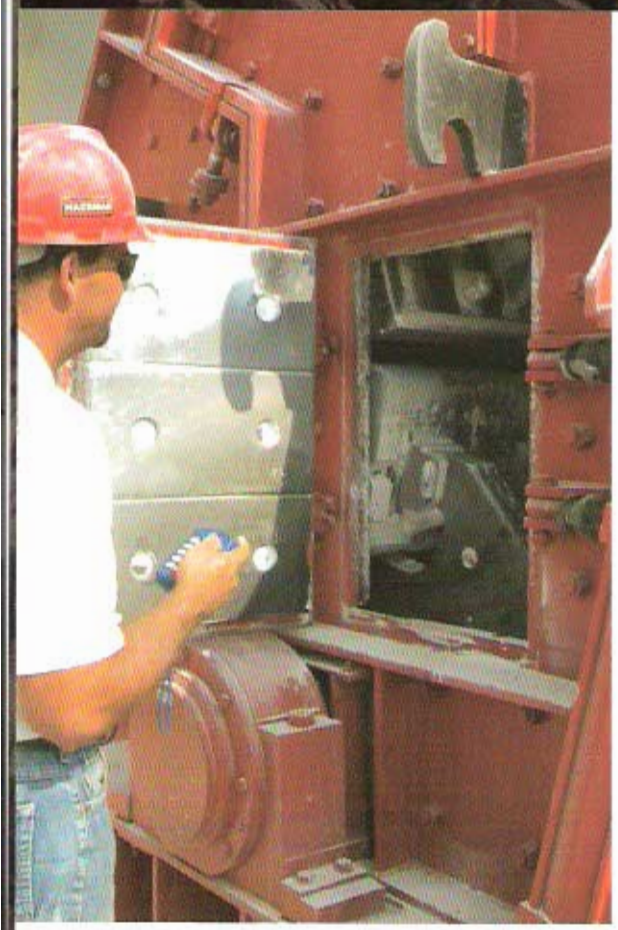
In this system, the blowbars are mechanically clamped into position by a single piece wedge spacer system. This design permits the removal of the blowbars in either the top or side directions. Blowbar removal in the side direction does not require dismantling or removal of the wedge spacers. The blowbars, which can be rotated 3 times, have a metal utilization rate of approximately 50%. Exchange time takes approximately 30 - 40 minutes per row. The extra rugged design and heavier construction of the "Q" rotor system is an ideal choice for primary crushing of quarry run limestones, dolomites, recycled asphalt and recycled concrete.

"GSK" Rotor

In this system, the blowbars are mechanically clamped into position by a wedge spacer system. This design permits the removal of the blowbars in either the top or side directions. Blowbar removal in the side direction does not require dismantling or removal of the wedge spacers. The blowbars have a metal utilization rate of approximately 45%. Exchange time for each blowbar takes approximately 45 minutes. Due to its design and rugged construction, the "GSK" rotor can cope with very difficult processing conditions. The GSK rotor is available on larger (1615/1620/1622) APSE models.

Blowbar Securing / Change-Out Device - "Q Rotor System"

During maintenance, the heavy weight of the blowbar is easily handled with the use of the blowbar securing / change-out device. This simple to use device will allow you to easily and safely move the blowbar in and out of the rotor system during times of rotation or exchange.



Housing System

The primary crusher housing is a rugged, fabricated steel plate construction, with external bracing (ribbing) for increased strength. Depending on the processing requirement, the housing system (APSE-1615/1620/1622) can be further strengthened from the normal 3/4 inch thick sidewalls up to 1-1/2 inch thick sidewalls. For quick and easy inspection of the internal wear parts, the housing is fitted with large doors which are secured / opened by a special dove-tail locking mechanism. The housing system is stress relieved to increase its service life and to provide workmanship of the highest quality. The rear housing section opens hydraulically, permitting complete access to the internal wear parts. With emphasis on safety, the weight of the housing (open position) is transferred over center preventing it from closing on its own.

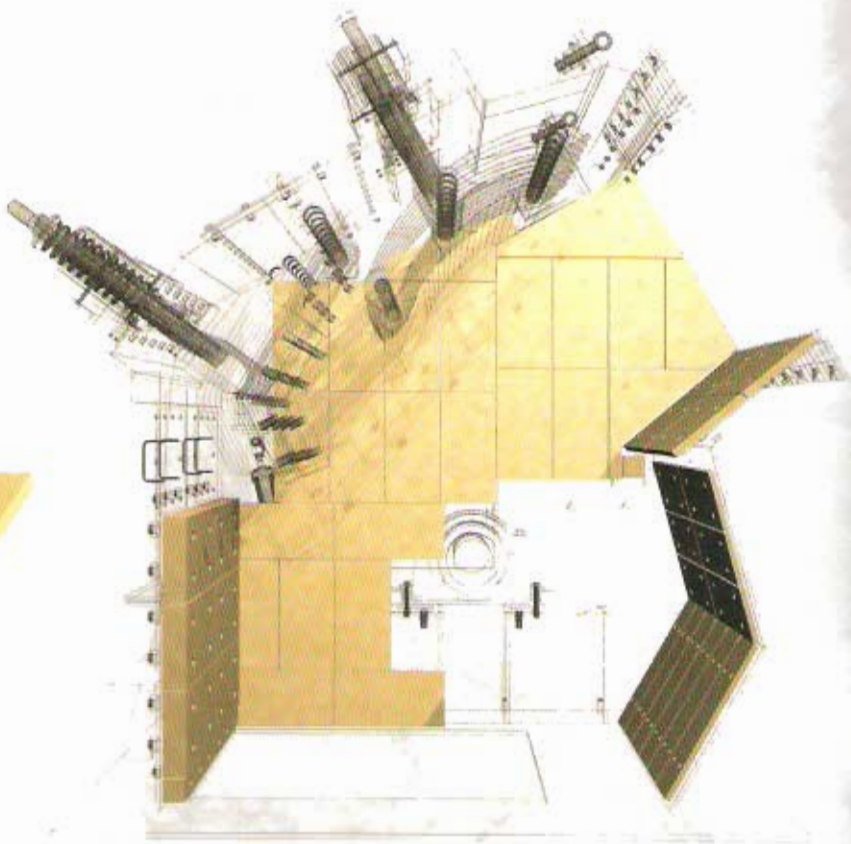
Figure 1:
APSE-1620/Q Primary crusher housing in closed position.

Figure 2:
APSE-1313/Q Primary crusher housing (rear section) in open position.

Housing Liner System

With simplicity and function in mind, the housing is fitted with 1-1/4 inch thick, interchangeable, wear resistant liners that have been designed as a common shape. The liners have an interchangeability level of approximately 95%. A further benefit with this liner design is realized in the form of increased wear metal utilization. A worn liner, for example, can be repositioned from a high wear zone (within the rotor circle), to a low wear zone (outside the rotor circle), thus extending its service life. The standardized design of the housing liner system helps to further reduce the impactor cost of operation.

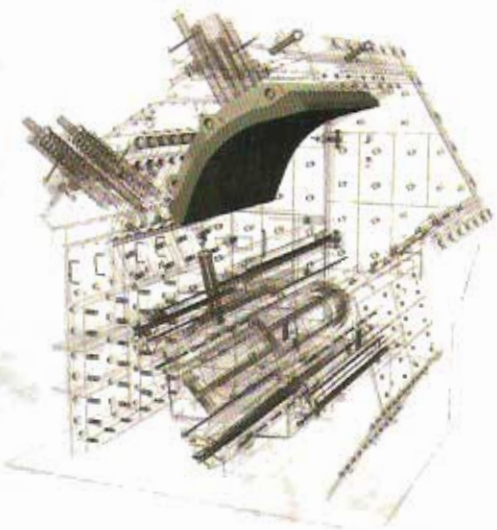
1-1/4" Thick
Interchangeable
Wear Liner



Apron System

Monoblock Apron

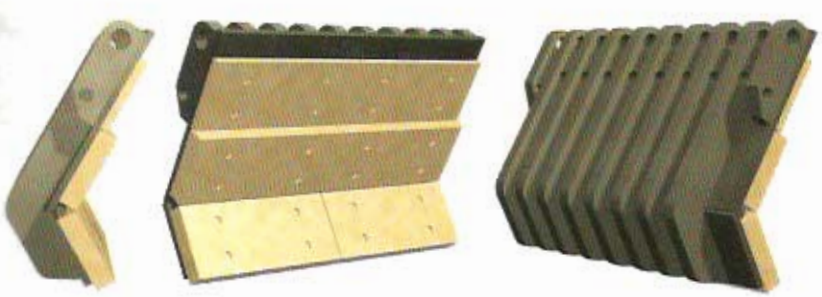
The front apron (primary impact zone) is designed and cast as a massive, single piece, reversible manganese component. Due to its massive weight and high impact / wearing zone, the design of the monoblock apron helps to provide a level of improved benefits such as: reduced stress to the housing system, increased service life, increased control over the product size, reduced downtime / maintenance and reduced operating costs. Depending on the application and characteristics of the raw feed material, such as concrete with steel, the design of the monoblock apron (without bolt-on liners that can fail) is a notable benefit.

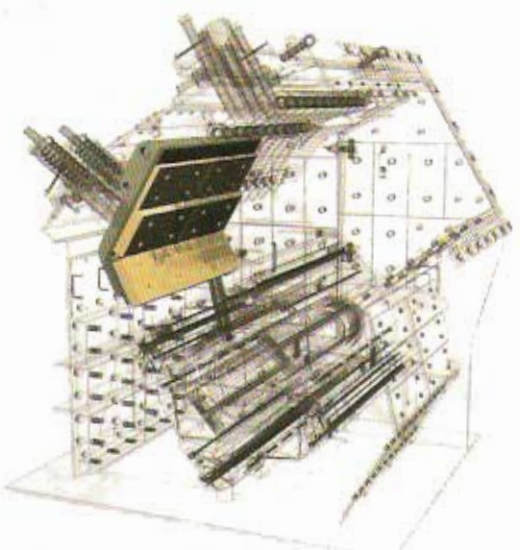


More Efficient Front Apron Design

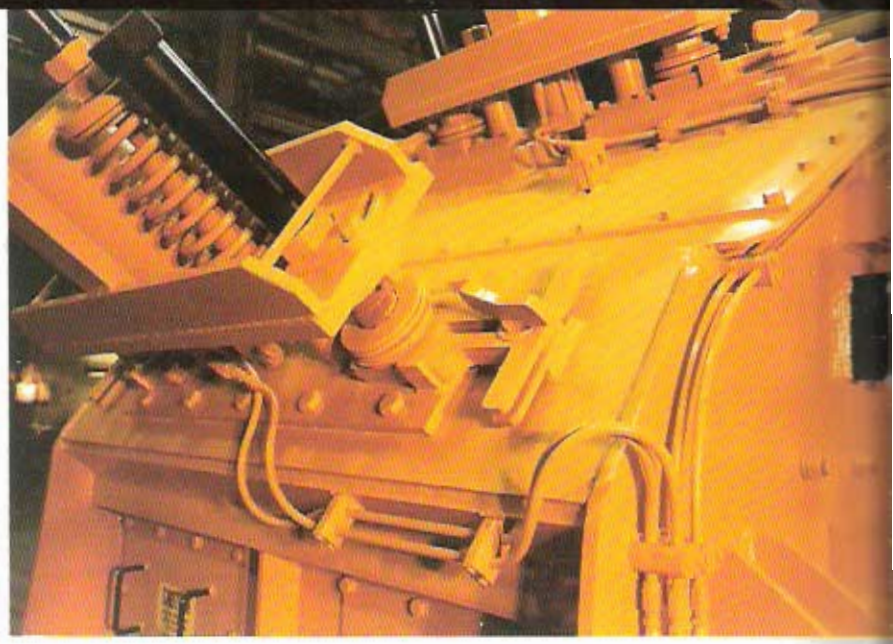
Rear Apron

The rear apron (secondary impact zone) is a heavy-duty fabricated component equipped with 3 - 1/2 thick, replaceable bolt-on impact plates of high quality, wear resistant material. The impact wear liners (rear apron & rear wall) have been standardized to a common shape yielding extended service life and reduced spare parts stocking. This standardized design of the apron liner system helps to further reduce the impactor cost of operation.





Apron Control / Positioning System: "Standard"

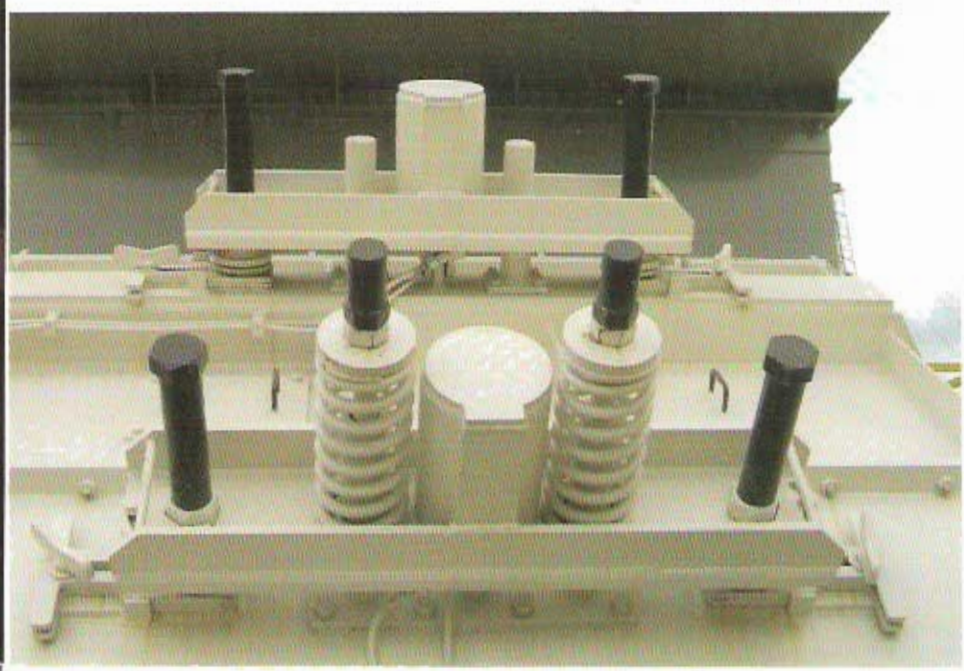


APSE Impactor - "Apron Adjustment System"

With function and simplicity in mind, the APSE Impactor is fitted with a standard impact apron adjustment system that utilizes a hydraulic assist / quick shim adjustment system. Once the desired gap position has been established, future apron adjustments compensating for normal blowbar wear are quickly and safely performed utilizing the quick shim system.

When apron adjustments are needed:

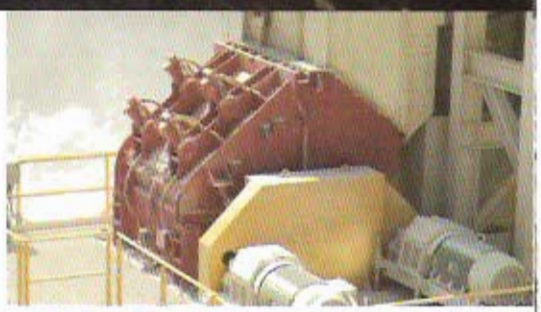
- Raise the apron using the hydraulic apron cylinder.
- Loosen the quick shim wing nut.
- Remove the appropriate number on shims equal to the amount of blowbar wear.
- Tighten the quick shim wing nut.
- Lower the apron using the hydraulic apron cylinder.



Apron Control / Positioning System "Optional"

APSE(H) Apron Control System and Advanced HAZtronic System

The exclusive and unique computer controlled hydraulic adjustment system for the impact aprons allows for quick gap adjustments, optimum control over the product size, smoother crusher operation, tramp iron protection, reduced downtime and reduced operating costs. The standard APSE(H) system allows for fully hydraulic apron adjustments in a timely (minutes), safe and very efficient manner. In our technically advanced HAZtronic system, the impactor performance can be optimized with recipes or pre-programmed apron settings which further enhance the quality and consistency of the product. The HAZtronic system also allows you to optimize the correct apron settings with the varying material characteristics within the quarry. When fitted with either system, the APSE(H) impactor achieves a level of performance and economical operation that remains second to none. You are in control - producing the products you sell the most!

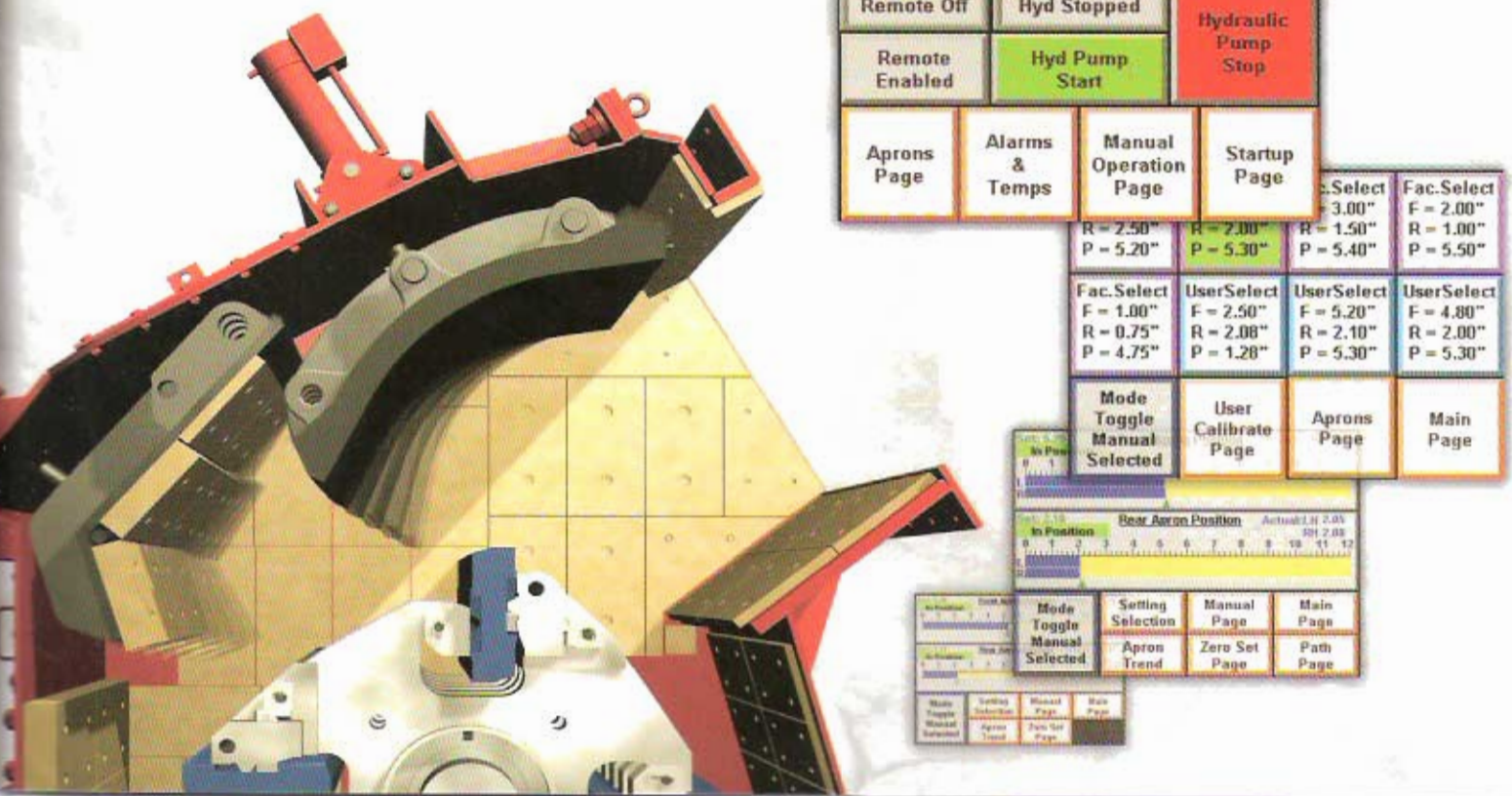


APSE(H) Impactor - "Operation, Adjustment and Control"

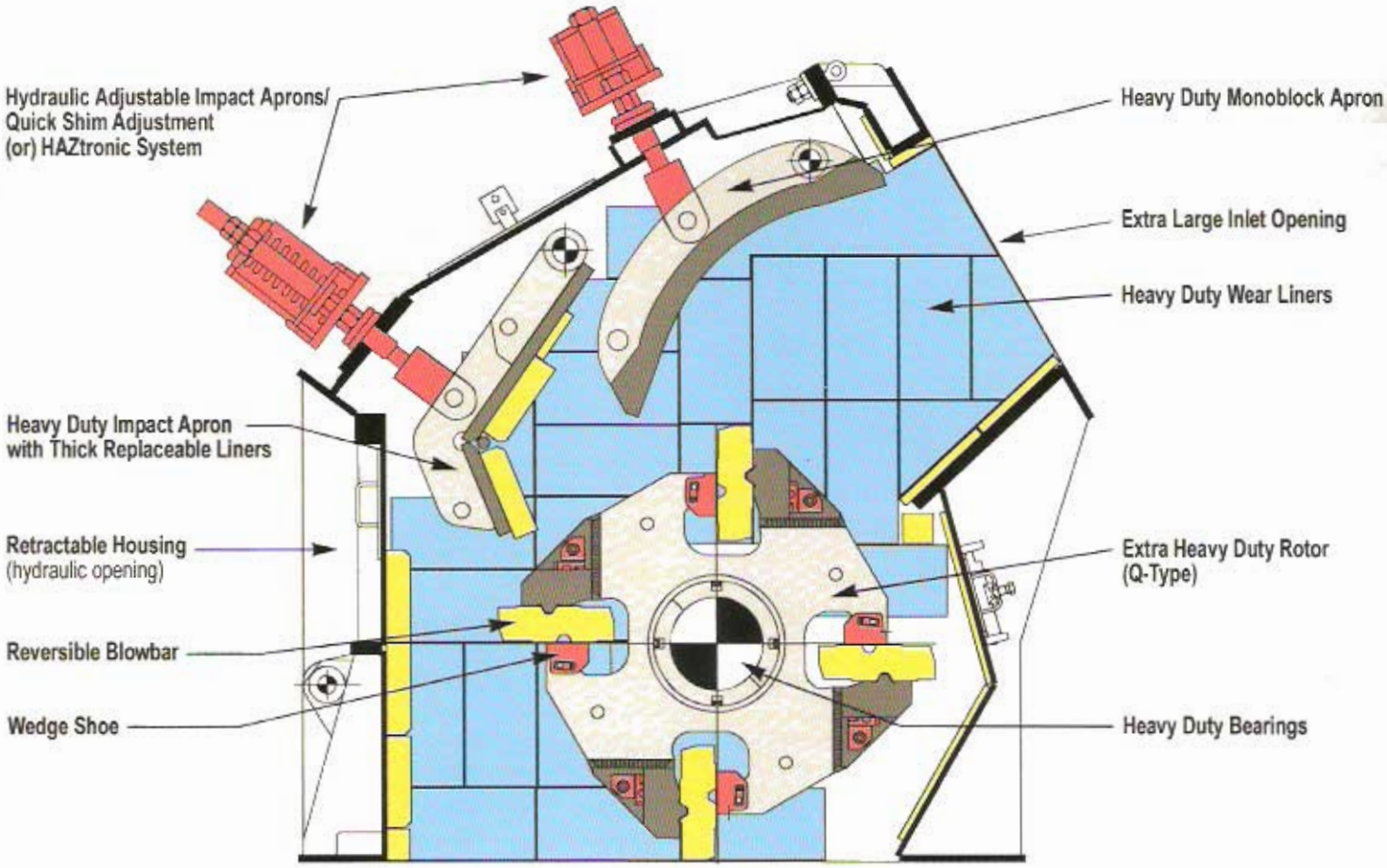
With simplicity and function in mind, optimizing the performance of the APSE(H) impact crusher is enhanced by a touch screen control panel. Opening the impactor housing and adjusting the impact aprons is performed at the touch of a button. This system also monitors and visually displays the apron positions, bearing temperatures, hydraulic fluid temperatures and hydraulic fluid levels.

HAZtronic

HAZEMAG Automated Control Technology



APSE / APSE(H) – Primary Impactor



Crusher Specifications

Model	Capacity Tons/Hr (Tonnes)	Power Requirements HP (kw)	Inlet Size In (mm) (H x W)	Maximum Feed Size In (mm)	Rotor Size In (mm) (D x W)	Weight Lb (Kg)
APSE-1010	100 (90)	100 (75)	25 x 41 (650 x 1020)	16 (400)	40 x 40 (1000 x 1000)	23,600 (10,725)
APSE-1013	150 (135)	200 (150)	25 x 54 (650 x 1360)	20 (500)	40 x 52 (1000 x 1320)	28,500 (12,950)
APSE-1310	125 (113)	150 (112)	34 x 40 (864 x 1020)	20 (500)	52 x 40 (1320 x 1000)	33,200 (15,090)
APSE-1313	250 (230)	250 (185)	34 x 54 (860 x 1360)	24 (600)	52 x 52 (1320 x 1320)	37,900 (17,225)
APSE-1315	300 (275)	350 (260)	34 x 60 (860 x 1520)	24 (600)	52 x 59 (1320 x 1500)	41,100 (18,680)
APSE-1320	400 (360)	500 (375)	34 x 80 (860 x 2030)	24 (600)	52 x 79 (1320 x 2010)	53,400 (24,275)
APSE-1515	400 (360)	500 (375)	36 x 60 (915 x 1525)	28 (700)	59 x 59 (1500 x 1500)	44,700 (20,320)
APSE-1615	450 (400)	500 (375)	36 x 60 (915 x 1525)	32 (812)	64 x 60 (1610 x 1500)	58,300 (26,500)
APSE-1620	500 (450)	600 (450)	36 x 80 (915 x 2030)	32 (812)	64 x 79 (1610 x 2010)	70,200 (31,900)
APSE-1622	600 (550)	700 (525)	50 x 119 (1270 x 3020)	36 (915)	64 x 118 (1610 x 3000)	77,200 (35,090)

NOTE: Performance details relate to medium-hard limestone. Weights are shown utilizing the "Q" rotor system (all machines) and the heavy housing system (1615/1620/1622).

APSE Impactor: The Next Generation!

Technology That Works For The Benefit Of Our Customers

Behind every HAZEMAG impactor is found a wealth of experience, a deep commitment to research and development, a drive for innovation and a strong focus on your success: the HAZEMAG customer! Technology that works for the benefit of our customers; the next generation APSE impactor is here!

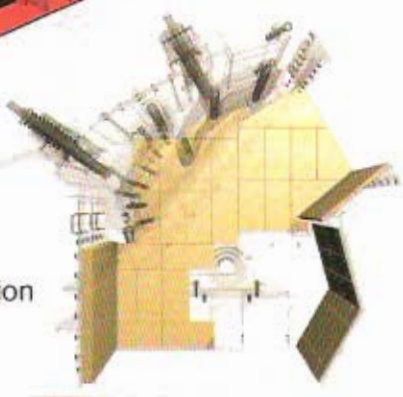
History & Experience – "Behind The APSE Impactor"

- Over a half a century of design and application experience.
- Over 75,000 HAZEMAG impactors working worldwide.
- Over 5,000 APSE Impactors working worldwide.
- Over 200 APSE Impactors working in the USA.
- Optional HAZtronic System Technology – We invented it!

New Technology / Design Features – "The APSE Impactor"

- New, improved housing system.
- Extra heavy duty housing system (1-1/2" thick sidewalls) on the APSE-1615, APSE-1620 & APSE-1622.
- New, improved wear liner protection.

New, Improved Housing System



New, Improved Wear Liner Protection

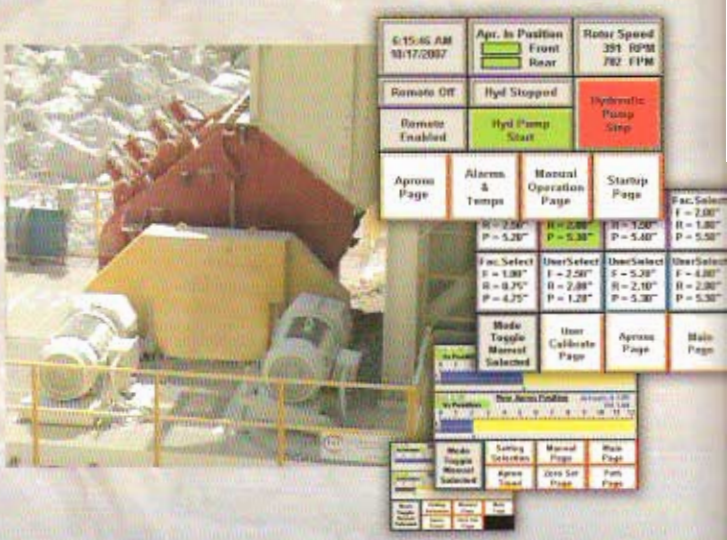
The Andreas Impactor - We invented it!

The APSE Impactor - We invented it!

Application & Design Experience – Second to none!

HAZtronic

HAZEMAG Automated Control Technology



The HAZtronic System (computer monitored / fully automatic hydraulic apron adjustment) delivers a level of impactor performance and technology that puts you in control - producing the products you need and sell the most. The HAZEMAG HAZtronic System has proven its worth and value in meeting the demands for:

- Consistent Product Size Control
- High Quality / Well Graded Produc Gradation
- Optimum Impactor Efficiency
- Reduced Impactor Maintenance
- Reduced Impactor Downtime
- Technology / Automation / User Friendly Control Functions
- Reliability / Performance

Partnership

What does it mean to you? At HAZEMAG we are committed to providing a level of partnership that is second to none. Everything we do from the initial presentation of our products, to the acceptance and processing of your order, to providing service and spare parts support after the sale, is done with a goal of exceeding your expectations.

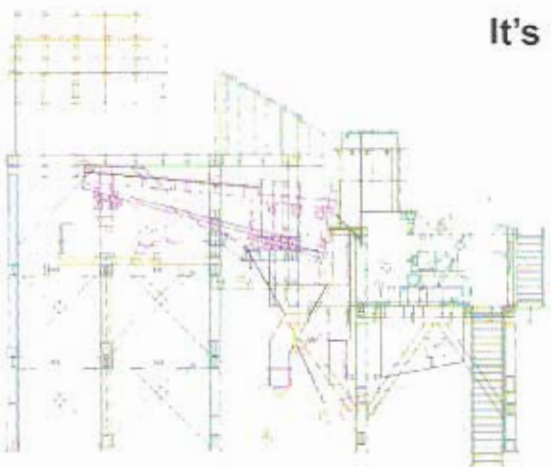
SALES: We are here to serve your needs with application assistance, machine selection, quotations and sales presentations. We are supported by a network of knowledgeable and experienced factory-trained representatives.

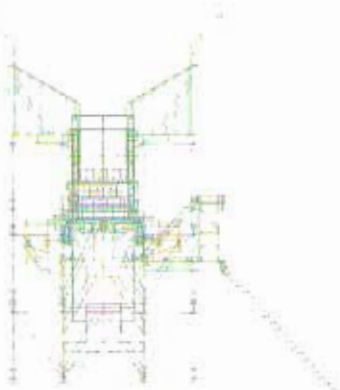
ENGINEERING: We are here to serve your needs with engineering support, design guidance, project planning and management. Our dedication to impactor design excellence is backed by leading-edge computer design technology and proven by thousands (+75) of successful crusher installations.

SPARE PARTS: We serve your needs with a knowledgeable staff backed by a multi-million dollar spare parts inventory. We will help you achieve the optimum level of machine performance and economical operation with the right part and the latest technology, in stock and shipped on time.

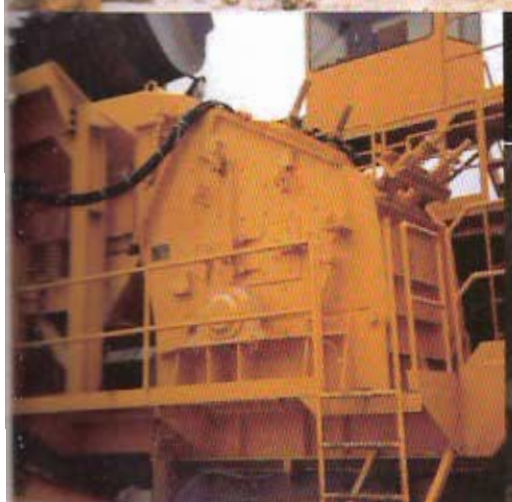
CUSTOMER SUPPORT: We are proud of our dedicated staff who take pride in providing a level of after the sale support and service that is second to none. We are here to assist you with machine optimization, training, inspections and repair. We call it "Partnership Unlimited – The HAZEMAG Way"

It's All About You! The HAZEMAG Customer.



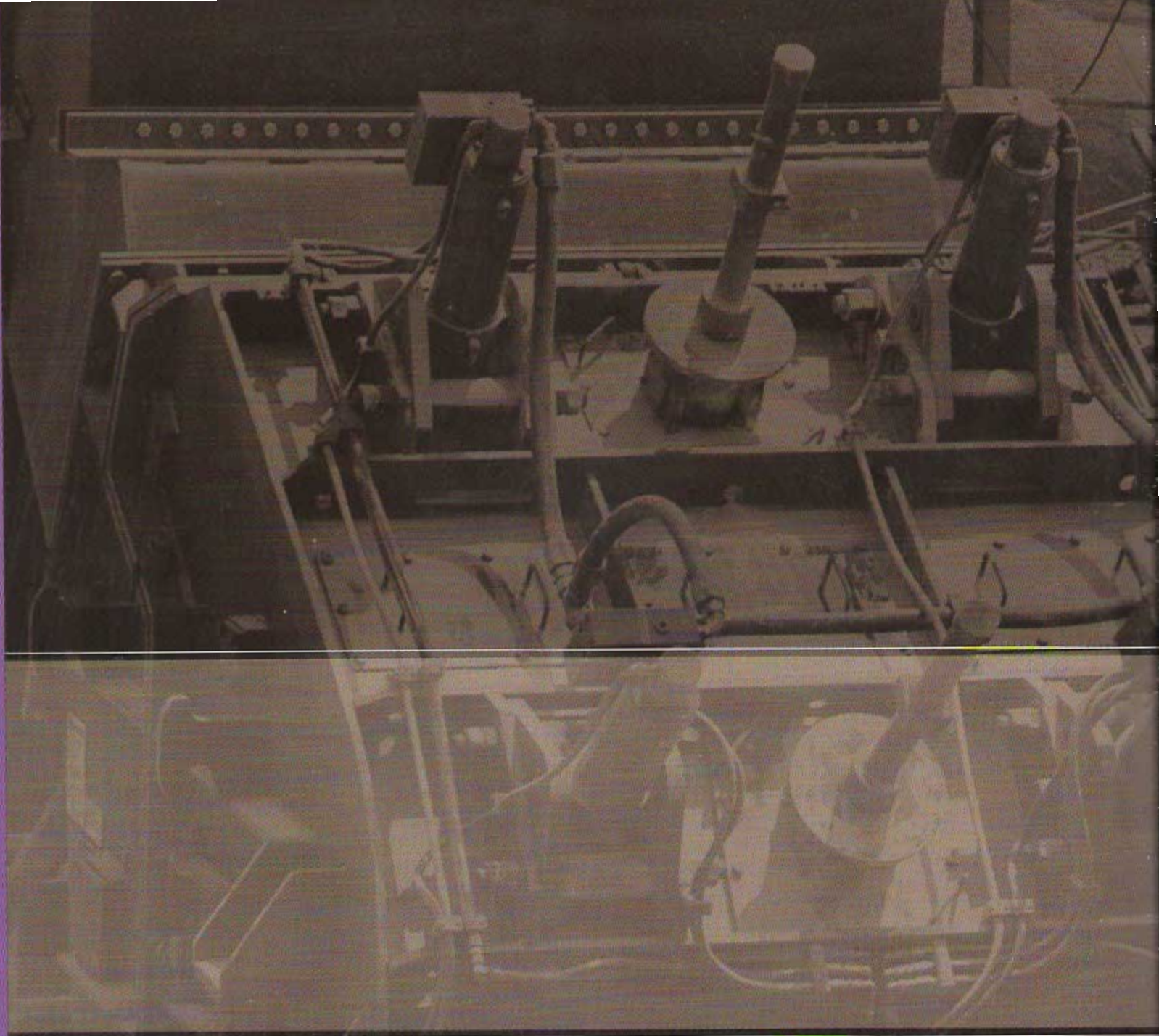


HAZEMAG & YOU!



Here are just a few of our satisfied customers:

Vulcan Materials Company
Canyon Rock Company
Recycled Materials Company
Martin Marietta Aggregates
Weber Sand & Gravel
Magruder Limestone Company
Ash Grove Cement
River-Stone Group, Inc.
Independence Excavating
Better Roads, Inc.
Lafarge North America
Metro Materials



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HAZEMAG is the leading international name in crushing equipment. We manufacture primary, secondary and tertiary impactors for all industries where crushing is a required step in production. All units are manufactured in Pennsylvania.

Over 75,000 impactors sold tell the HAZEMAG success story. Over 50 years experience, coupled with continuing research and development, assures you of a quality impactor when you specify HAZEMAG.

Note: Technical data and design subject to change without notice. Figures shown are approximations and are to be used only as a guide.