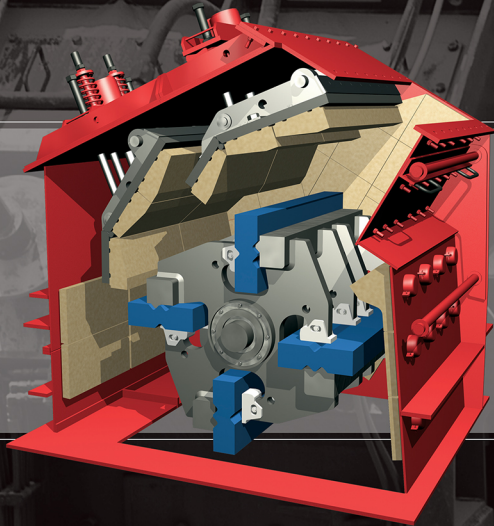


HAZEMAG



APK, APKM, APKH

SECONDARY IMPACTORS

HAZEMAG



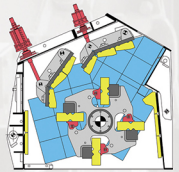
Since our modest beginning back in 1946, HAZEMAG has grown to become the world leader in impactor design and control technology. Having now sold over 75,000 machines for almost every possible application, the Andreas HAZEMAG APK, APKM & APKH Series Secondary Impactors are widely accepted as the machine 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 APK, APKM & APKH Secondary "Hard Rock" Impactors.

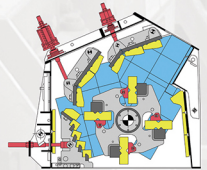
HAZEMAG APK, APKM & APKH Series Impactors are designed as secondary reduction units for materials of medium to high silica contents such as clinker, dolomite, gravel, silica sand, glass and trap rock.

HAZEMAG Secondary Impactors are available in a capacity range of 20 - 800 short ton/hour, depending on the machine selection. Individual lumps of feed materials up to 12 inches in size can be processed.

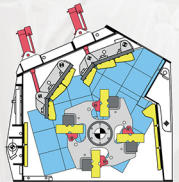
The HAZEMAG APK - Series Secondary Impact Crusher is ideally suited to crush medium-hard materials down to a highly cubical, well graded product size of 0 - 3 inch (60% passing 1") in a single pass. This machine is normally offered within an aggregate plant / system where tertiary crushing is also present. However, due to its high reduction ratio, the need for multiple secondary units is normally eliminated.



The HAZEMAG APKM - Series Secondary Impact Crusher (M = Third Crushing Path) is ideally suited to crush medium-hard materials down to a highly cubical, well graded product size of 0 - 2 inch (75% passing 1") in a single pass. Due to its very high reduction ratio and added control over the upper product size, this impactor can efficiently operate in closed circuit on smaller product size fractions. This machine is ideally suited for plants that require high levels of product size and shape control.



The HAZEMAG APKH - Series Secondary 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 APKH HAZtronic (HAZtronic = Hydraulic Apron Adjustment / Programmable Apron Settings) system is available on all APK and APKM secondary 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.



APK-1010



APKM-0806



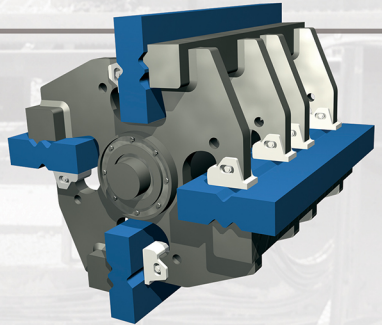
APKH-1010

ROTOR SYSTEM

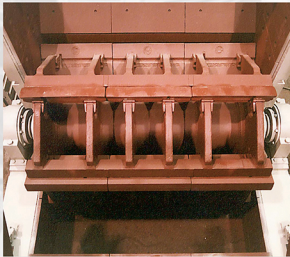
Rotors

The rotor is the "heart" and the most severely tested part of the impact crusher. During the course of HAZEMAG's +60 years of experience, particular emphasis has been placed on the rotor design, development and field of application.

Secondary 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.



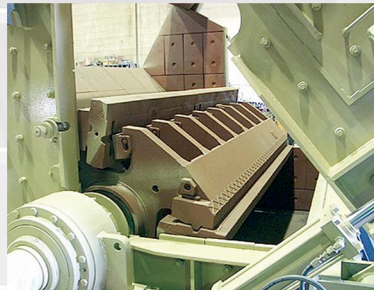
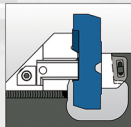
"K" Rotor



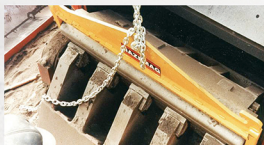
In this system, the blowbars are mechanically clamped into position by a single piece wedge spacer system. This design permits the removal of the blowbars (up to 4 per row) in either the top or side directions. Blowbar removal in the side direction does not require dismantling or removal of the wedge spacers. The blowbars, which can be rotated 3 times, have a metal utilization rate of approximately 50%. Exchange time, varying with the machine size, takes approximately 60 minutes per row. The rugged design of the "K" rotor system is an ideal choice when the secondary impactor is preceded by a primary impact crusher.

"KH" Rotor

In this system, the blowbars are mechanically clamped into position by a single piece wedge spacer system. The design permits the removal of the blowbars (up to 4 per row) 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, varying with the machine size, takes approximately 45 minutes per row. The extra rugged design and heavier construction of the "KH" rotor system is an ideal choice when the secondary impactor is preceded by a primary jaw crusher.



Blowbar Securing / Change-Out Device



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



Housing System

The secondary crusher housing is a rugged, fabricated steel plate construction with external bracing for increased strength. 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 (hydraulic on all models) and front housing section (hydraulic on model APK-1313 and larger) opens 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.



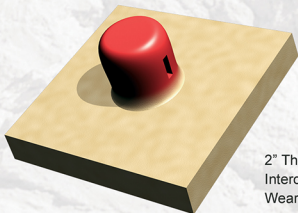
Figure 1:
APKMH-1320 Secondary crusher
housing in closed position.



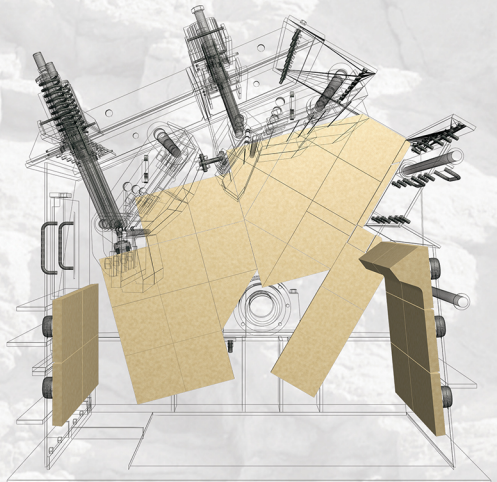
Figure 2:
APKMH-1320 Secondary crusher
housing in open position.

Housing Liner System

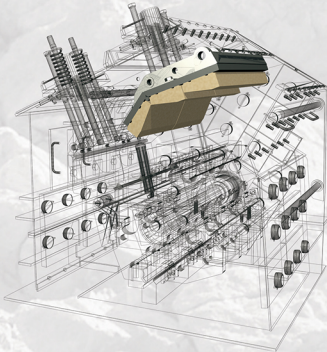
With simplicity and function in mind, the housing is fitted with 2 inch thick, interchangeable, wear resistant cast high chrome liners that have been designed as a common shape. The liners have an interchangeability level of approximately 95%. A further benefit with this liner design is realized in the 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.



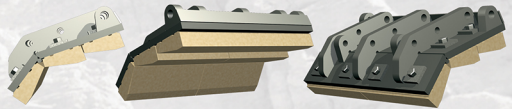
2" Thick
Interchangeable
Wear Liner



Front Apron



The front apron (primary impact zone) is a heavy-duty fabricated component equipped with 3½ inch thick, replaceable bolt-on impact plates of high quality, wear resistant high chrome cast alloy. The impact wear liners (front apron and rear apron) 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.



The standardized design of the apron liner system helps to reduce the cost of operation.

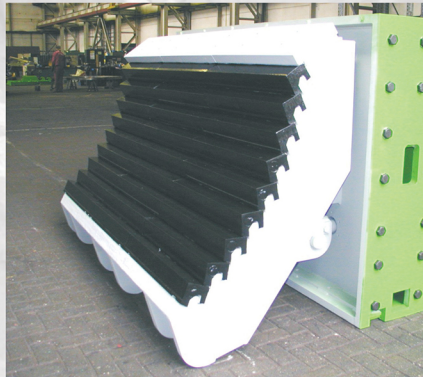
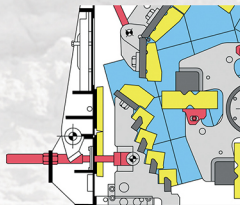
Rear Apron



The rear apron (secondary impact zone) is a heavy-duty fabricated component equipped with 3½ inch thick, replaceable bolt-on impact plates of high quality, wear resistant high chrome cast alloy. The impact wear liners (front apron and rear apron) 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.

Third Crushing Path

The third crushing path (grinding path) is found in our APKM and APKMH line of secondary impactors. The third crushing path is designed as a series of impact steps (or ledges) which provide an excellent level of control over the product grading, enhanced product soundness and very high cubical product shape. The third crushing path can be adjusted (top & bottom settings) through external hydraulic cylinders.



APRON CONTROL / POSITIONING SYSTEM: “STANDARD”

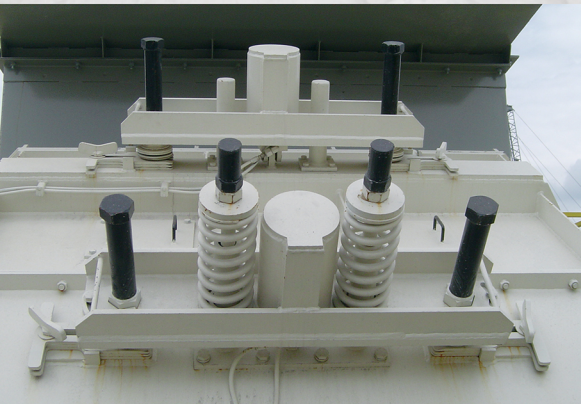


APK & APKM Impactor - “Apron Adjustment System”

With function and simplicity in mind, the APK impactor (model APK-1013 and larger) 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"

APKH & APKMH Apron Control System and Advanced HAZtronic System

The exclusive and unique computer controlled hydraulic adjustment system for the impact aprons (and third crushing path) 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 APKH 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 APKH 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!

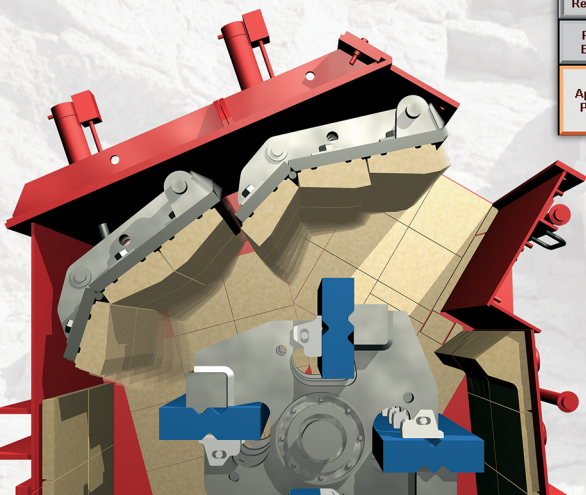
APKH & APKMH Impactor - "Operation, Adjustment and Control"

With simplicity and function in mind, optimizing the performance of the APKH 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.



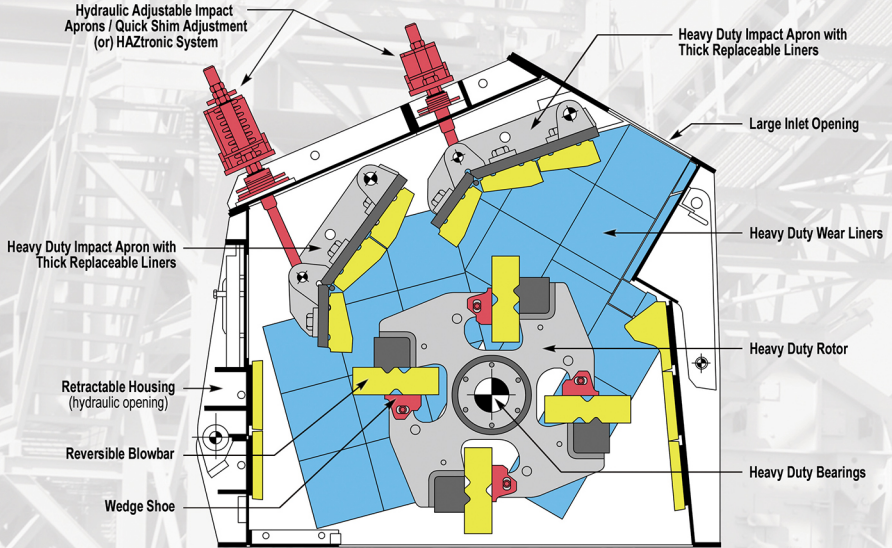
HAZtronic

HAZEMAG Automated Control Technology



6:15:46 AM 10/17/2007	Apr. In Position Front Rear	Rotor Speed 391 RPM 782 FPM			
Remote Off	Hyd Stopped	Hydraulic Pump Stop			
Remote Enabled	Hyd Pump Start				
Aprons Page	Alarms & Temps	Manual Operation Page	Startup Page		
		R = 2.50" P = 5.20"	R = 2.00" P = 5.30"	R = 1.50" P = 5.40"	Fac.Select F = 3.00" R = 2.00" P = 5.50"
		Fac.Select F = 1.00" R = 0.75" P = 4.75"	UserSelect F = 2.50" R = 2.08" P = 1.28"	UserSelect F = 5.20" R = 2.10" P = 5.30"	UserSelect F = 4.90" R = 2.00" P = 5.30"
		Mode Toggle Manual Selected	User Calibrate Page	Aprons Page	Main Page
		Mode Toggle Manual Selected	Setting Selection Apron Trend	Manual Page Zero Set Page	Main Page Path Page
		Mode Toggle Manual Selected	Setting Selection Apron Trend	Manual Page Zero Set Page	Main Page Path Page

APK / APKH - SECONDARY IMPACTOR

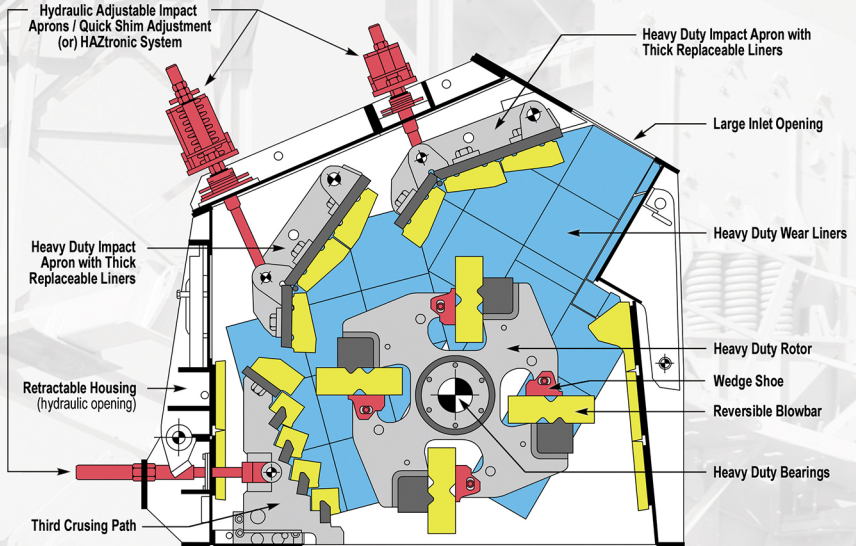


Crusher Specifications

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)
APK-0806	30 (27)	50 (37)	11 x 27 (280 x 690)	6 (150)	33 x 26 (850 x 670)	9,900 (4,500)
APK-1006	40 (36)	75 (56)	14 x 27 (350 x 690)	8 (150)	40 x 26 (1000 x 670)	11,900 (5,400)
APK-1010	80 (72)	125 (94)	14 x 40 (350 x 1020)	8 (150)	40 x 40 (1000 x 1000)	16,400 (7,455)
APK-1013	125 (114)	200 (150)	14 x 54 (350 x 1360)	8 (150)	40 x 52 (1000 x 1320)	19,800 (9,000)
APK-1015	200 (181)	300 (225)	14 x 60 (350 x 1520)	8 (150)	40 x 60 (1000 x 1500)	21,100 (9,600)
APK-1020	250 (227)	350 (262)	14 x 80 (350 x 2030)	8 (150)	40 x 79 (1000 x 2000)	26,300 (11,955)
APK-1313	200 (181)	300 (225)	20 x 54 (500 x 1360)	10 (250)	52 x 52 (1320 x 1320)	37,800 (17,180)
APK-1320	350 (318)	500 (375)	20 x 80 (500 x 2030)	10 (250)	52 x 79 (1320 x 2000)	58,800 (24,000)
APK-1615	350 (318)	500 (375)	20 x 60 (500 x 1520)	12 (300)	64 x 60 (1600 x 1500)	66,500 (30,230)
APK-1622	500 (455)	600 (450)	20 x 89 (500 x 2270)	12 (300)	64 x 88 (1600 x 2250)	95,500 (43,410)
APK-1630	700 (636)	800 (600)	30 x 120 (1270 x 3020)	12 (300)	64 x 118 (1600 x 3000)	139,000 (63,200)

NOTE: Performance details relate to medium-hard limestone.

APKM / APKMH - SECONDARY 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)
APKM-0806	50 (45)	75 (56)	11 x 27 (280 x 690)	6 (150)	33 x 26 (850 x 670)	10,400 (4,725)
APKM-1006	60 (55)	100 (75)	14 x 27 (350 x 690)	8 (150)	40 x 26 (1000 x 670)	12,700 (5,800)
APKM-1010	100 (90)	200 (150)	14 x 40 (350 x 1020)	8 (150)	40 x 40 (1000 x 1000)	17,200 (7,825)
APKM-1013	125 (114)	250 (187)	14 x 54 (350 x 1360)	8 (150)	40 x 52 (1000 x 1320)	20,800 (9,455)
APKM-1015	225 (200)	350 (262)	14 x 60 (350 x 1520)	8 (150)	40 x 60 (1000 x 1500)	21,100 (9,590)
APKM-1020	300 (272)	400 (300)	14 x 80 (350 x 2030)	8 (150)	40 x 79 (1000 x 2000)	28,000 (12,725)
APKM-1313	250 (227)	350 (262)	20 x 54 (500 x 1360)	10 (250)	52 x 52 (1320 x 1320)	40,700 (18,500)
APKM-1320	400 (363)	500 (375)	20 x 80 (500 x 2030)	10 (250)	52 x 79 (1320 x 2000)	62,600 (28,454)
APKM-1615	400 (363)	500 (375)	20 x 60 (500 x 1520)	12 (300)	64 x 60 (1600 x 1500)	78,300 (35,600)
APKM-1622	600 (545)	800 (600)	20 x 89 (500 x 2270)	12 (300)	64 x 88 (1600 x 2250)	105,600 (48,000)
APKM-1630	800 (727)	1000 (750)	30 x 120 (1270 x 3020)	12 (300)	64 x 118 (1600 x 3000)	150,800 (68,545)

NOTE: Performance details relate to medium-hard limestone.

HAZEMAG PARTNERSHIP



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.

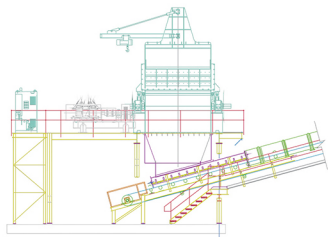
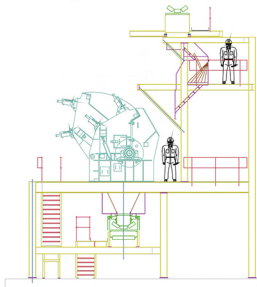
SALES: We are here to serve your needs with application assistance, machine selection, quotations and sales presentations. We are supported by a network of knowledgeable and experienced factory-trained representatives.

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:

**Parallel Products
Vulcan Materials Company
Lafarge North America
Rogers Group Inc.
Harbison Walker Refractories**

**Superior Marble
Kokosing Materials
Florida Rock Industries
Recycled America
Watson Sand & Gravel**

Contact HAZEMAG for further details.

Made in USA



HAZEMAG

MOVING FORWARD TOGETHER

visit our website www.hazemag.com

HAZEMAG USA INC.

P.O. BOX 1064
Uniontown, PA 15401
Phone: 724.439.3512
Fax: 724.439.3514
E-mail: info@hazemag.com

HAZEMAG CANADA INC.

1 Marconi Court, Unit #10
Bolton, ON
L7E 1E2
Phone: 905.857.9623
Fax: 905.857.3025
E-mail: info@hazemag.ca

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 60 years experience, coupled with continuing research and development, assures you of a quality impactor when you specify HAZEMAG.