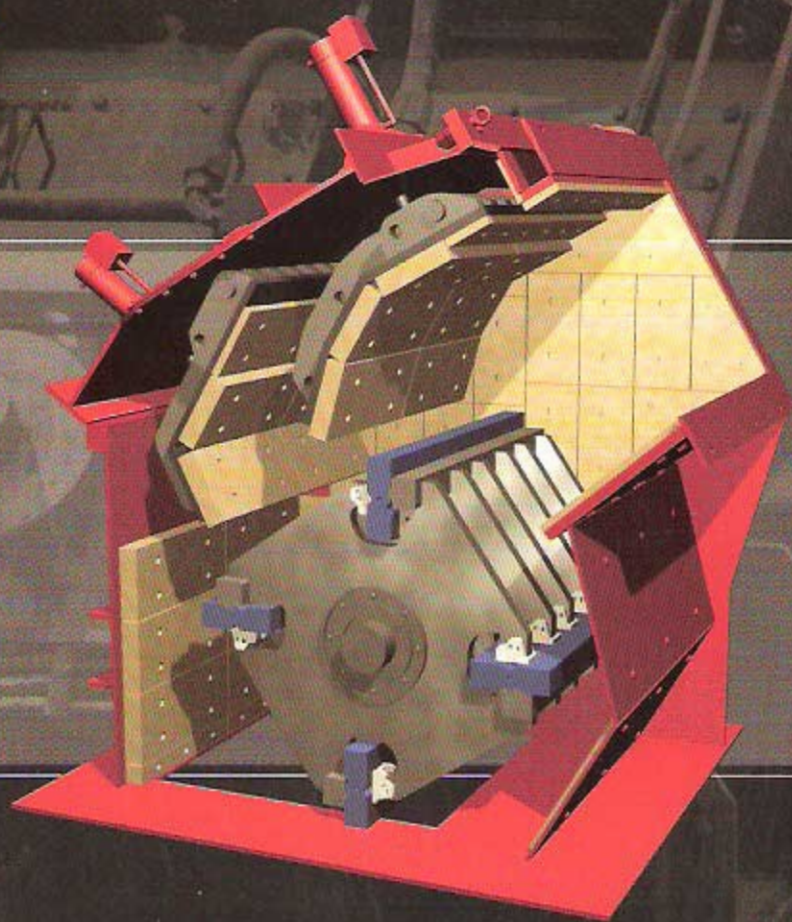


HAZEMAG



APS, APSM, APSH

SECONDARY IMPACTORS

HAZEMAG

APS, APSM, APSH - SECONDARY 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 APS, APSM & APSH 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 performance, efficiency, adjustability, product size control and safety. This commitment is easily realized throughout our line of APS, APSM and APSH Secondary Impactors.

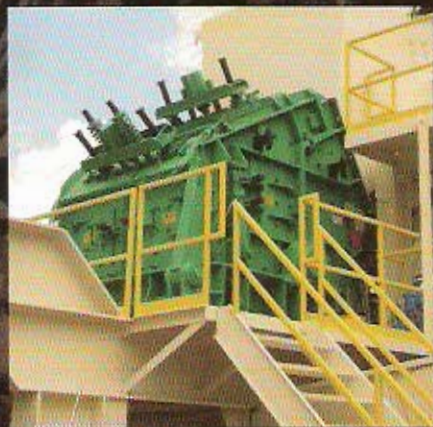
HAZEMAG APS, APSM & APSH Series Impactors are designed as secondary reduction units for materials of medium to low silica contents such as limestone, dolomitic limestone and gypsum.

HAZEMAG Secondary Impactors are available in a capacity range of 5 - 1200 short ton/hour, depending on the machine selection. Individual lumps of feed materials up to 14 inches in size can be processed.

The HAZEMAG APS - 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 (65% -1") in a single pass. This machine is normally offered within a 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 APSM - The HAZEMAG APSM - Series Secondary Impact Crusher (M = Third Crushing Path) is ideally suited to reduce medium-hard materials down to a highly cubical, well graded product size of 0 - 2 inch (85% -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 APSH (HAZtronic) - 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 APSH HAZtronic (HAZtronic = Hydraulic Apron Adjustment / Programmable Apron Settings) system is available on most APS & APSM 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.



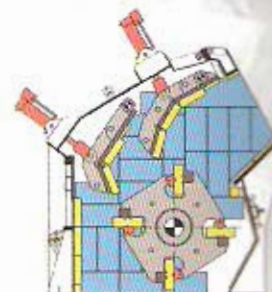
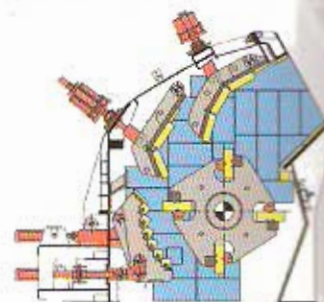
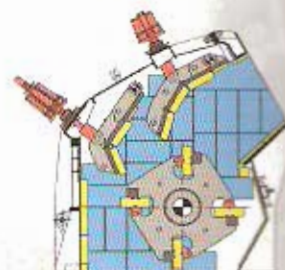
APS-1620



APSM-1320



APSH-1620

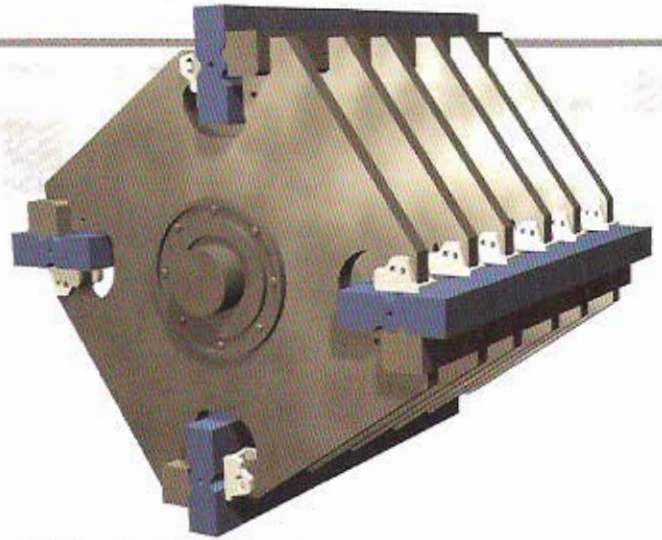


ROTOR SYSTEM

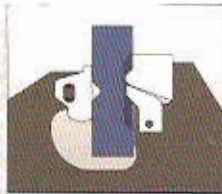
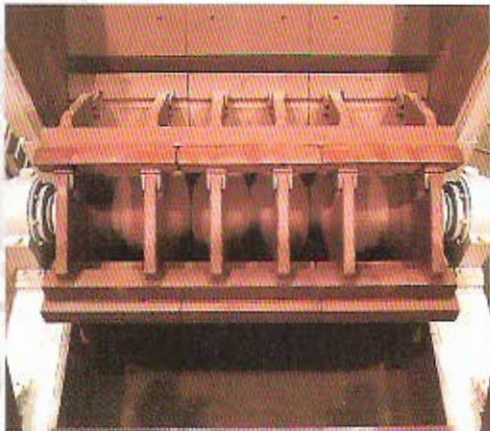
Rotors

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.



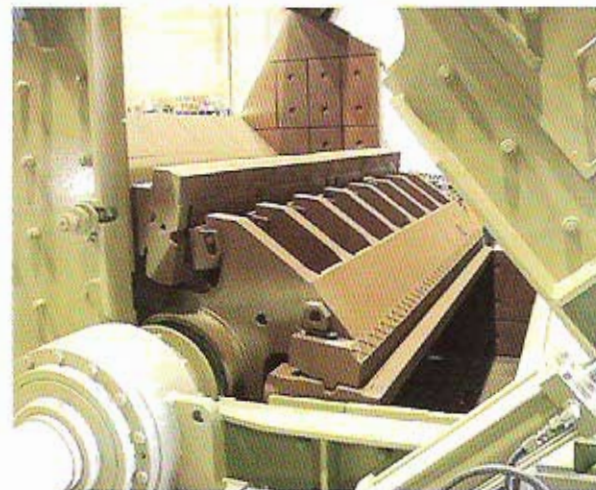
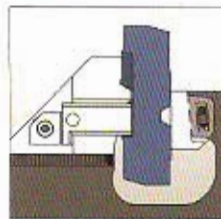
"K" Rotor



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

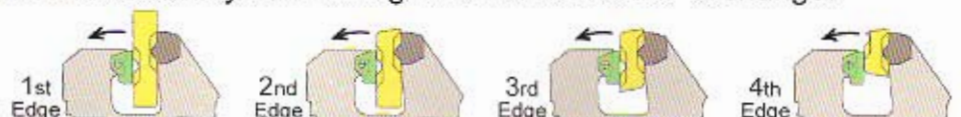
In this system, the blowbars are mechanically clamped into position by a single piece wedge spacer system. The design permits the removal of the blowbars (up to 4 per row) in either the top or side directions. Blowbar removal in the side direction does not require dismantling or removal of the wedge 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 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.

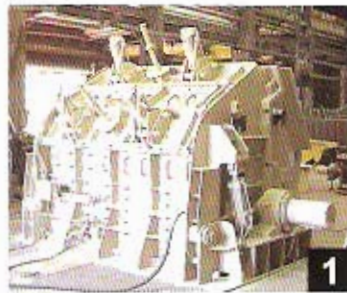


Figure 1:
APSH-1430/KH Secondary
crusher housing in
closed position.

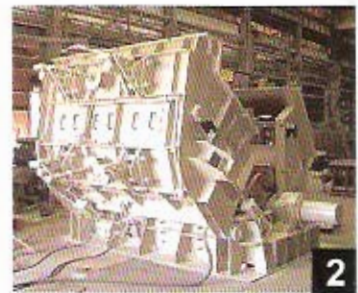


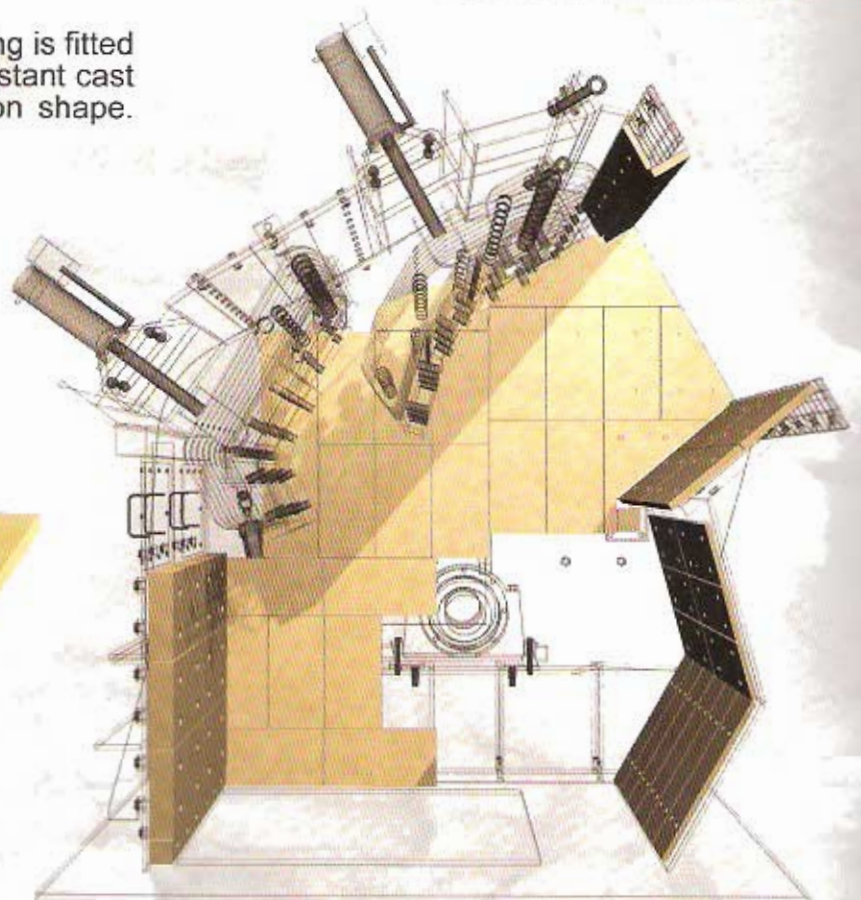
Figure 2:
APSH-1430/KH Secondary
crusher housing (rear section)
in open position.

Housing Liner System

With simplicity and function in mind, the housing is fitted with 1¼ inch thick, interchangeable, wear resistant cast 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.



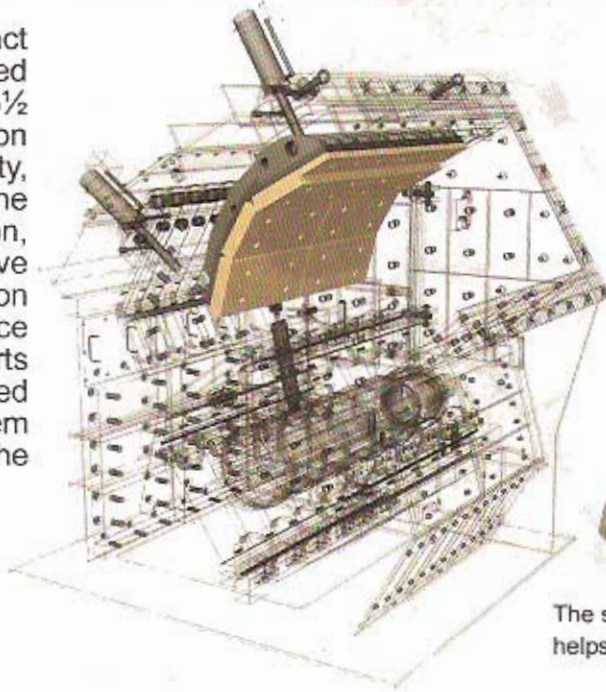
1¼" Thick
Interchangeable
Wear Liner



APRON SYSTEM

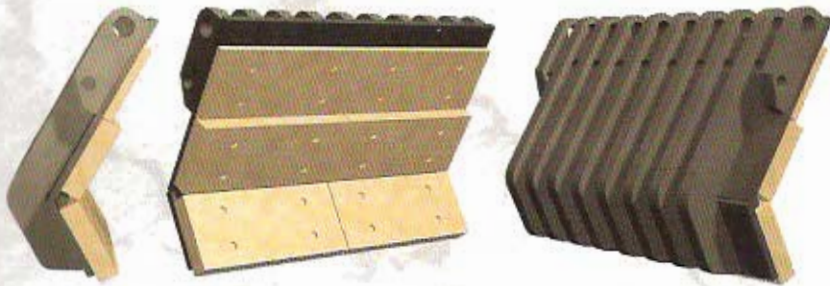
Front Apron

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 cast alloy. The impact wear liners (front apron, 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.



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

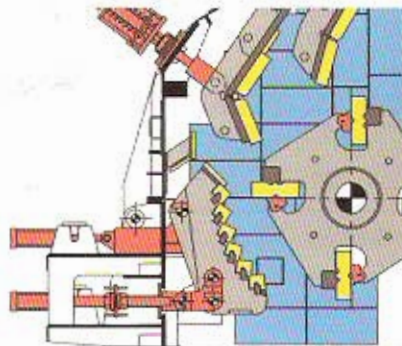
Rear Apron



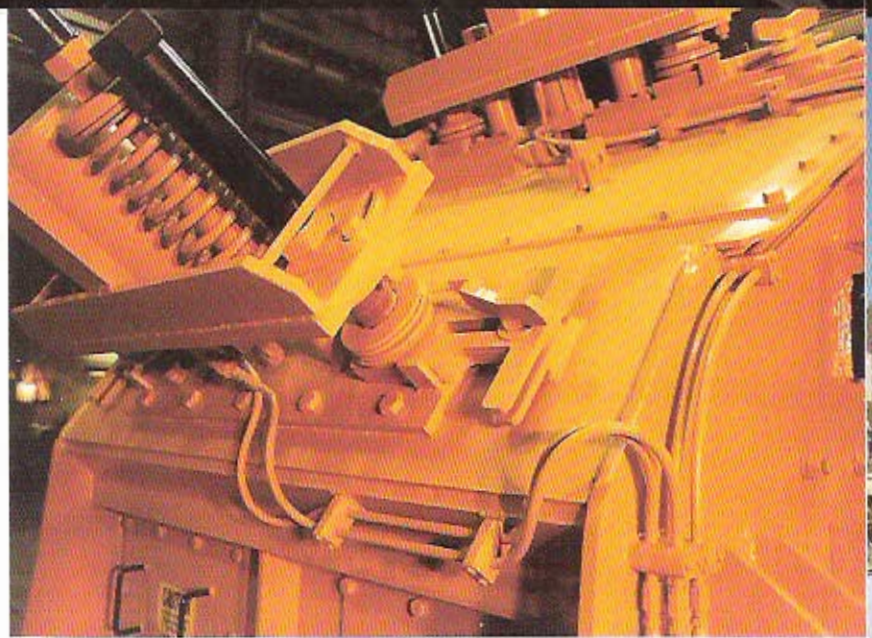
The rear apron (secondary impact zone) is a heavy-duty fabricated component equipped with 3½ inch thick, replaceable bolt-on impact plates of high quality, wear-resistant cast alloy. The impact wear liners (front apron, rear apron & rear wall) have been standardized to a common shape yielding extended service life and reduced spare parts stocking. This standardized design of the apron liner system helps to further reduce the impactor cost of operation.

Third Crushing Path

The third crushing path (grinding path) is found in our APSM and APSMH 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"

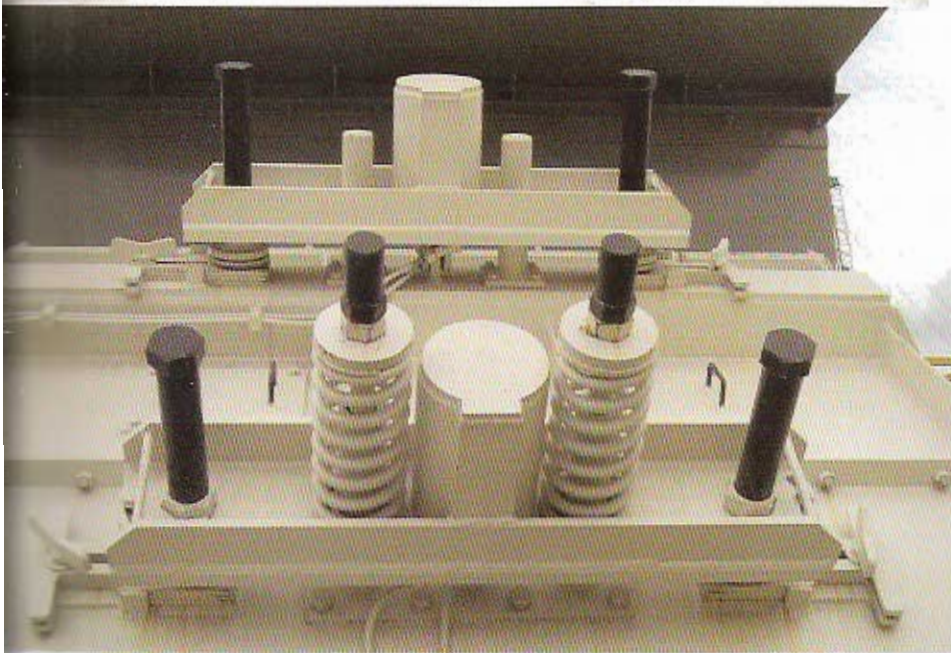


APS & APSM Impactor - "Apron Adjustment System"

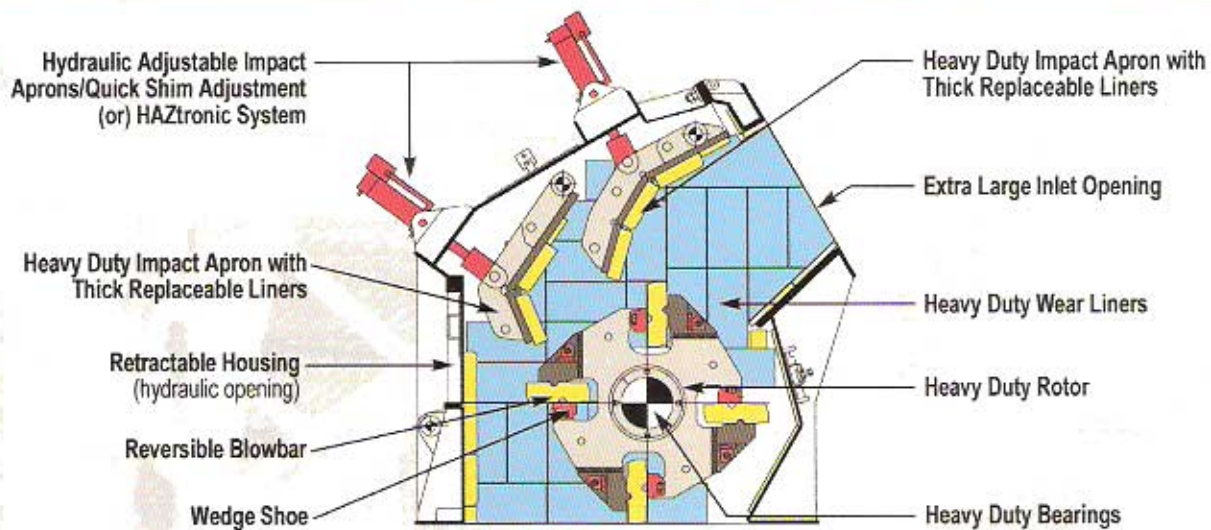
With function and simplicity in mind, the APS Impactor is fitted with a standard impact apron adjustment system that utilizes a hydraulic assist / quick shim adjustment system. Once the desired gap position has been established, future apron adjustments compensating for normal blowbar wear are quickly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



APS / APSH - SECONDARY IMPACTOR

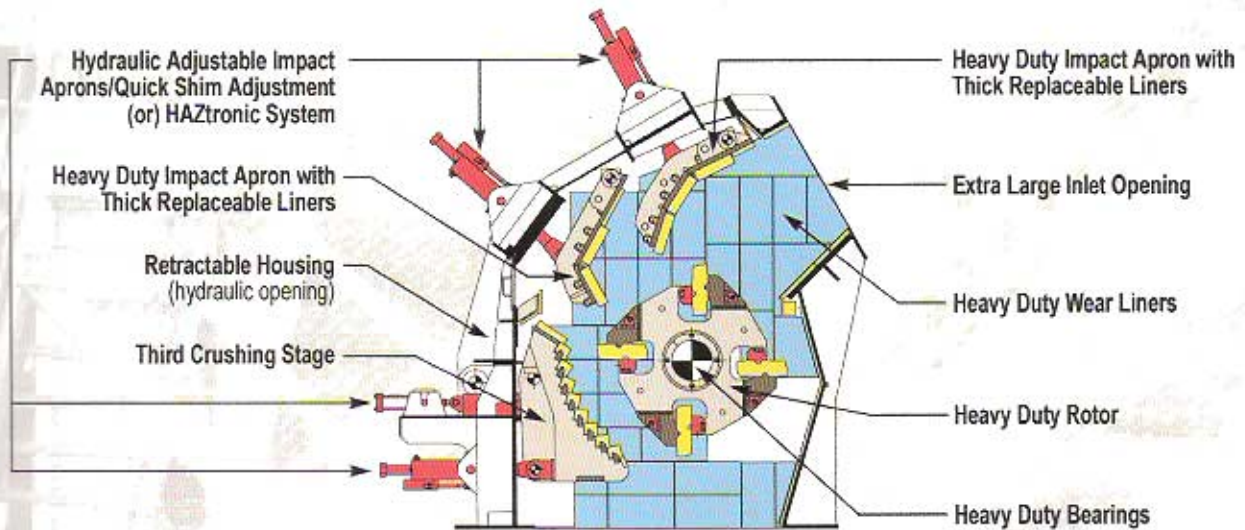


Crusher Specifications

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)
APS-0403	5 (4)	10 (7.5)	12 x 14 (305 x 360)	4 (100)	16 x 13 (406 x 330)	2,625 (1,190)
APS-0406	10 (9)	15 (12)	12 x 27 (305 x 690)	4 (100)	16 x 26 (406 x 660)	3,730 (1,695)
APS-0604	15 (13)	15 (12)	15 x 18 (380 x 470)	5 (125)	24 x 16 (620 x 406)	4,160 (1,890)
APS-0806	30 (27)	40 (30)	15 x 27 (390 x 690)	6 (150)	30 x 26 (780 x 670)	9,200 (4,180)
APS-0810	75 (68)	100 (75)	15 x 40 (390 x 1020)	6 (150)	31 x 40 (800 x 1000)	10,700 (4,860)
APS-0813	100 (90)	150 (112)	15 x 54 (390 x 1360)	6 (150)	31 x 52 (800 x 1340)	14,900 (6,775)
APS-1006	50 (45)	75 (56)	22 x 27 (570 x 690)	8 (200)	40 x 26 (1000 x 670)	11,280 (5,125)
APS-1010	80 (81)	150 (112)	22 x 40 (570 x 1020)	8 (200)	40 x 40 (1000 x 1000)	15,800 (7,180)
APS-1013	150 (136)	200 (150)	22 x 54 (570 x 1360)	8 (200)	40 x 52 (1000 x 1340)	19,100 (8,690)
APS-1015	200 (181)	250 (188)	22 x 60 (570 x 1520)	8 (200)	40 x 59 (1000 x 1500)	21,100 (9,590)
APS-1020	250 (226)	350 (262)	22 x 80 (570 x 2030)	8 (200)	40 x 79 (1000 x 2000)	24,700 (11,230)
APS-1310	125 (113)	200 (150)	34 x 40 (865 x 1020)	10 (250)	52 x 40 (1340 x 1000)	30,100 (13,680)
APS-1313	250 (226)	300 (225)	34 x 54 (865 x 1360)	10 (250)	52 x 52 (1340 x 1340)	37,700 (17,140)
APS-1315	300 (272)	400 (300)	34 x 60 (865 x 1520)	10 (250)	52 x 59 (1340 x 1500)	40,640 (18,475)
APS-1320	400 (362)	500 (375)	34 x 80 (865 x 2030)	10 (250)	52 x 79 (1340 x 2000)	52,700 (23,950)
APS-1430	900 (816)	1000 (750)	38 x 119 (970 x 3020)	10 (250)	57 x 118 (1450 x 3000)	86,800 (39,450)
APS-1513	300 (272)	400 (300)	37 x 54 (950 x 1360)	12 (300)	59 x 52 (1500 x 1340)	40,735 (18,515)
APS-1515	375 (340)	500 (375)	37 x 60 (950 x 1520)	12 (300)	59 x 59 (1500 x 1500)	43,825 (19,920)
APS-1520	450 (408)	500 (375)	37 x 80 (950 x 2030)	12 (300)	59 x 79 (1500 x 2000)	55,600 (25,270)
APS-1615	400 (362)	500 (375)	35 x 60 (890 x 1520)	14 (350)	64 x 59 (1600 x 1500)	51,600 (23,450)
APS-1620	500 (453)	600 (450)	35 x 80 (890 x 2030)	14 (350)	64 x 79 (1600 x 2000)	63,100 (28,680)
APS-1622	650 (590)	700 (525)	35 x 89 (890 x 2270)	14 (350)	64 x 88 (1600 x 2010)	67,500 (30,680)
APS-1630	1100 (1086)	1200 (900)	35 x 119 (890 x 3020)	14 (350)	64 x 118 (1600 x 3000)	91,550 (41,615)

NOTE: Performance details relate to medium-hard limestone. Weights are shown utilizing the "KH" rotor system (APS-1310 and larger).

APSM / APSMH - 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)
APSM-0806	30 (27)	60 (45)	16 x 27 (390 x 690)	6 (150)	30 x 26 (780 x 670)	9,900 (4,500)
APSM-0810	75 (68)	125 (90)	15 x 40 (390 x 1020)	8 (150)	31 x 40 (800 x 1000)	11,600 (5,270)
APSM-0813	100 (90)	200 (150)	15 x 54 (390 x 1380)	8 (150)	31 x 52 (800 x 1340)	13,800 (6,270)
APSM-1006	50 (45)	100 (75)	22 x 27 (570 x 690)	8 (200)	40 x 26 (1000 x 670)	12,100 (5,500)
APSM-1010	90 (81)	200 (150)	22 x 40 (570 x 1020)	8 (200)	40 x 40 (1000 x 1000)	16,500 (7,455)
APSM-1013	150 (136)	250 (190)	22 x 54 (570 x 1380)	8 (200)	40 x 52 (1000 x 1340)	20,100 (9,140)
APSM-1015	200 (181)	300 (250)	22 x 60 (570 x 1520)	8 (200)	40 x 59 (1000 x 1500)	22,300 (10,140)
APSM-1020	250 (226)	400 (300)	22 x 80 (570 x 2030)	8 (200)	40 x 79 (1000 x 2000)	27,300 (12,400)
APSM-1310	125 (113)	250 (190)	34 x 40 (865 x 1020)	10 (250)	52 x 40 (1340 x 1000)	34,300 (15,590)
APSM-1313	250 (226)	400 (300)	34 x 54 (865 x 1380)	10 (250)	52 x 52 (1340 x 1340)	42,375 (19,290)
APSM-1315	300 (272)	500 (375)	34 x 80 (865 x 1520)	10 (250)	52 x 59 (1340 x 1500)	45,400 (20,640)
APSM-1320	400 (362)	600 (450)	34 x 80 (865 x 2030)	10 (250)	52 x 79 (1340 x 2000)	59,150 (26,885)
APSM-1430	900 (816)	1200 (900)	38 x 119 (970 x 3020)	10 (250)	57 x 118 (1450 x 3000)	102,500 (46,590)
APSM-1513	300 (272)	500 (375)	37 x 54 (950 x 1380)	12 (300)	59 x 52 (1500 x 1340)	42,200 (19,190)
APSM-1515	375 (340)	600 (450)	37 x 80 (950 x 1520)	12 (300)	59 x 59 (1500 x 1500)	45,400 (20,640)
APSM-1520	450 (408)	700 (525)	37 x 80 (950 x 2030)	12 (300)	59 x 79 (1500 x 2000)	57,600 (26,190)
APSM-1615	400 (362)	600 (450)	35 x 60 (890 x 1520)	14 (350)	64 x 59 (1600 x 1500)	64,765 (29,440)
APSM-1620	500 (453)	800 (600)	35 x 80 (890 x 2030)	14 (350)	64 x 79 (1600 x 2000)	79,200 (36,000)
APSM-1622	650 (590)	1000 (750)	35 x 89 (890 x 2270)	14 (350)	64 x 88 (1600 x 2010)	83,740 (38,065)
APSM-1630	1100 (1088)	1600 (1200)	35 x 119 (890 x 3020)	14 (350)	64 x 118 (1600 x 3000)	113,500 (51,590)

NOTE: Performance details relate to medium-hard limestone. Weights are shown utilizing the "KH" rotor system (APS-1310 and larger).



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.

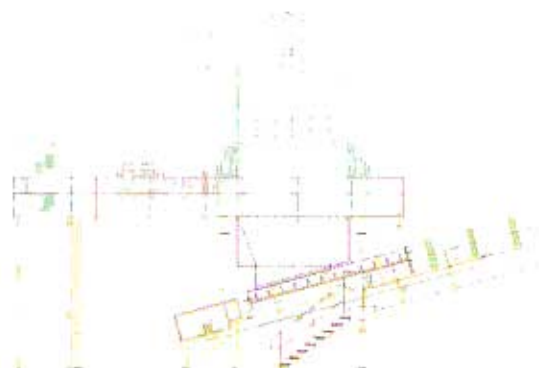
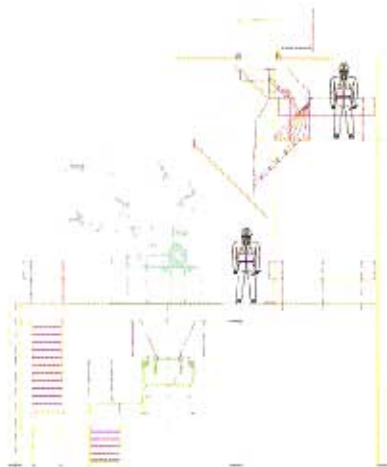
SALES: We are here to serve your needs with application assistance, machine selection, quotations and sales presentations. We are supported by a network of knowledgeable and experienced factory-trained representatives.

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. They 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!



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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 60 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.