ROCK BREAKER SYSTEMS

ASTEC


TTX SERIES

SIZING THE ROCK BREAKER

A great foundation begins with proper sizing. Select the right rock breaker system by considering variables such as reach, application, coverage, mountain location, and maintenance. All of these play an important role in the overall success of this installation.

1. Breaker Size

The size of the hydraulic breaker depends on the material hardness, size, and amount of material to be broken. Consider your rock breaker's current and future requirements. A helpful chart is included in this brochure to help decide the right size of hydraulic breaker for your application.

2. Boom Model

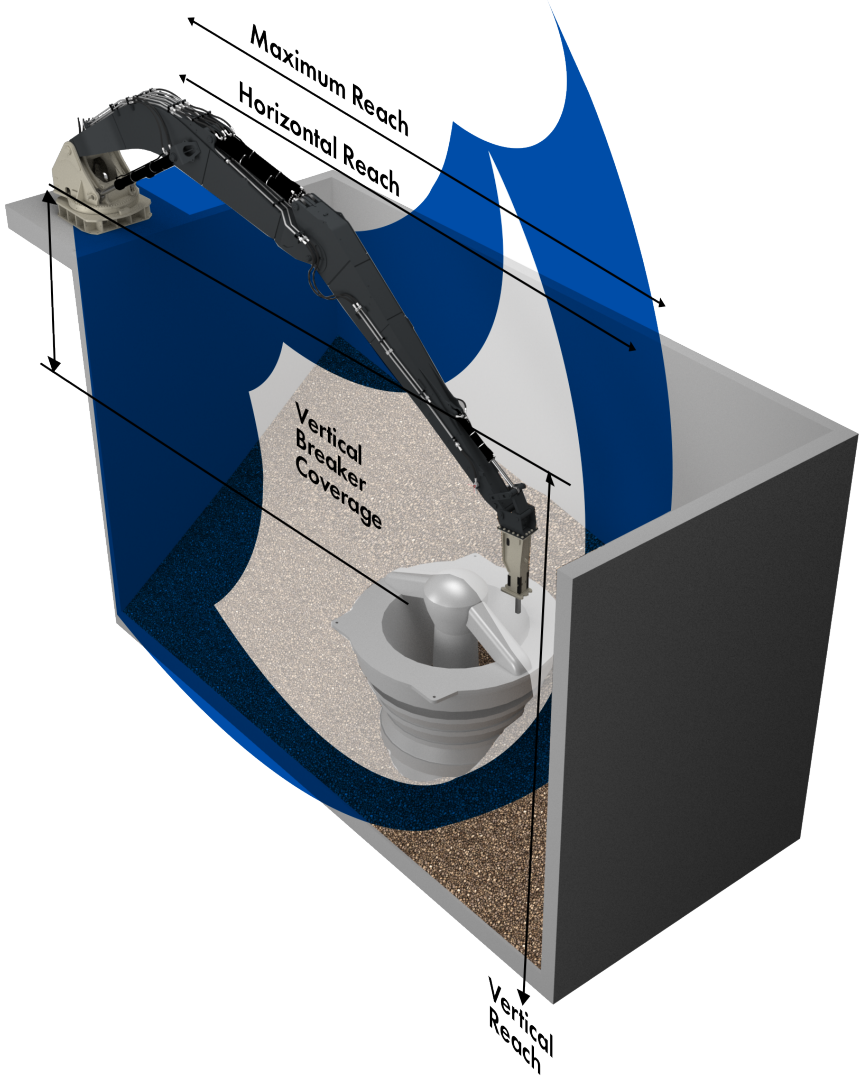
To select the right boom model, consider reach and coverage requirements, swing rotation, duty cycle, and severity of the application. The area where the rock breaker will be operating, must be inside the coverage area.

3. Power Packs

The Hydraulic Power Pack (HPU) is selected based on the flow requirement of the Hydraulic Breaker and the boom system. Often in high-duty cycles, a larger HPU, will be supplied to increase boom speed which provides an increase in production.

4. Controls

Select the type of controls and optional equipment to meet the needs of your operation. A full list of controls and optional equipment is included in this brochure. It is important to ask questions to understand how these options can have a positive impact on your bottom-line.



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BREAKERS

Astec hydraulic breakers are designed for optimal performance in a variety of applications; from concrete and soft rock breaking to full demolition projects. With three size ranges and a variety of attachable tools, we have hydraulic breakers for any producer. Our breakers feature reduced noise levels, low operating costs, internal component protection and many more features to make any operation successful.

BX SERIES

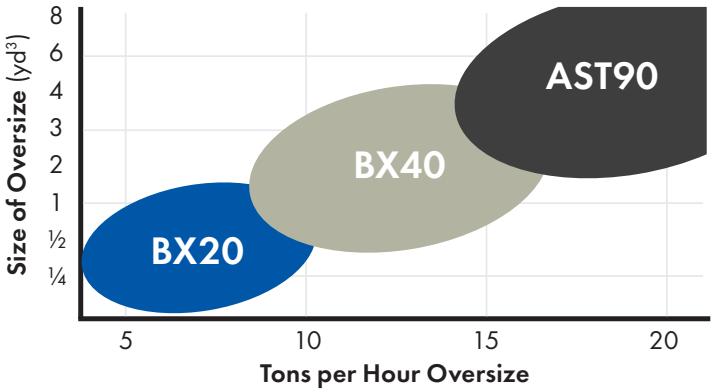
Model	Energy		Operating Weight		Oil Flow Required		Operating pressure		Tool Diameter	
	ft-lb	joule	lb	kg	gpm	lpm	psi	bar	in	mm
BX10	1000	1350	948	430	21	180	2000	140	3.1	78
BX15	1500	2000	1355	615	27	100	2000	140	3.3	85
BX20	2000	2700	2050	930	29	110	2300	160	4.1	105
BX30	300	4100	2670	1210	37	140	2300	160	47	120
BX40	4000	5400	3830	1740	42	160	2450	170	5.3	135

AST SERIES

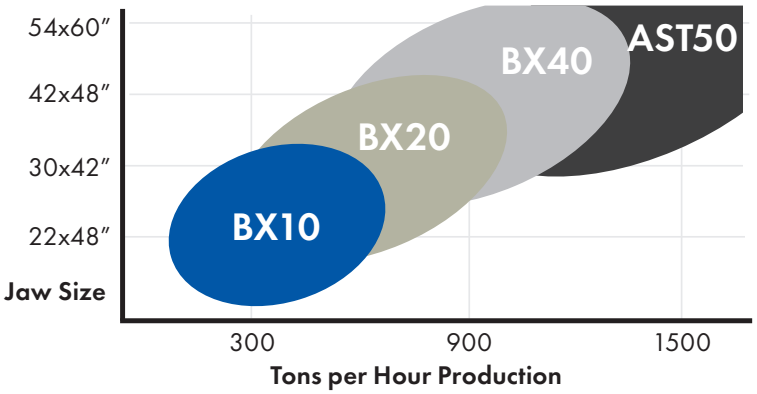
Model	Energy		Operating Weight		Oil Flow Required		Operating pressure		Tool Diameter	
	ft-lb	joule	lb	kg	gpm	lpm	psi	bar	in	mm
AST50	5000	6780	3925	1780	34-45	130-170	1885-2610	130-180	5.5	140
AST70	7000	8492	6170	2800	45-63	170-540	2175-2610	150-180	5.9	150
AST90	9000	12204	6855	3110	51-69	190-260	2175-2610	150-180	6.3	160
AST110	11000	14916	8310	3770	58-74	220-260	2175-2610	150-180	6.7	170
AST130	13000	17628	9920	4500	66-87	250-330	2175-2610	150-180	7.1	180
AST160	16000	21696	13755	6240	79-106	300-400	2175-2610	150-180	7.9	200

SIZING THE BREAKERS

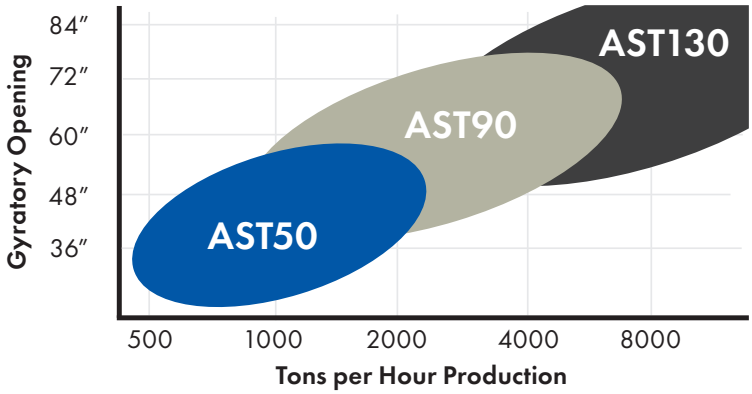
GRIZZLY SIZING CHART



JAW CRUSHER SIZING CHART



GYRATORY SIZING CHART

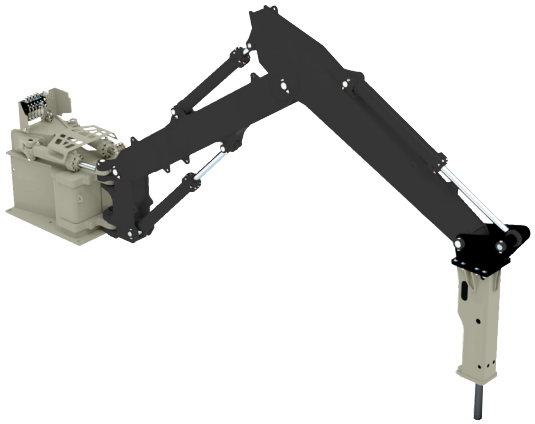


Avg. Size of Rock (m^3)	Compressive Strength		Description of Rock	Recommended Breaker Model	Breaker Energy	
	PSI	Mpa			ft-lb	Joules
< 1	5,000-10,000	34-69	Cement Grade, Soft Limestone	BX10, BX15	1000 - 1500	1350 - 2000
1	10,000-20,000	69-138	Aggregate Grae Limestone/Dolomite	BX20	2,000	2700
2	20,000-30,000	138-207	Hard Rock to Soft Granite	BX30, BX40	3,000 - 4,000	4100 - 5400
3	30,000 - 40,000	207 - 276	Very hard rock, Granite	AST50	5,000	6780
4	30,000 - 50,000	207 - 345	Very hard rock, granite, trap rock	AST70, AST90	7,000 - 9,000	9492 - 12204
6	30,000 - 60,000	207 - 410	Very hard rock, granite, trap rock, iron ore	AST 110	11,000	14916
8	30,000 - 70,000	207 - 480	Very hard rock, granite, trap rock, iron ore	AST 130, AST 160	13,000 - 16,000	17628-21696
10	30,000 - 90,000	207 - 620	Very hard rock, granite, trap rock, iron ore	AST 130, AST 160	13,000 - 16,000	17628-21696

MBS SERIES

Model	Operating Weight Range*		Vertical Breaker Reach Forward**		Vertical Breaker Reach Down**		Maximum Reach Forward**		Recommended Breaker Range
	lb	kg	ft	m	ft	m	ft	m	
MBS12S	2,896 - 3,855	1,313 - 1,748	11.25	3.4	7.91	2.4	16.33	4.9	CX6 - BX15
MBS12H	6,110 - 6,728	2,771 - 3,051	11.66	3.5	9.5	2.8	17.75	5.4	BX15 - BX30
MBS13H	6,428 - 8,346	2,915 - 3,785	13.16	4	6.66	2	19.33	5.9	
MBS14S	3,703 - 4,807	1,680 - 2,181	13.33	4	9	2.7	18.5	5.6	CX6 - BX10
MBS16H	5,467 - 7,739	2,480 - 3,511	16.25	4.9	11.66	6.8	22.41	6.8	BX15 - BX20

NTE SERIES



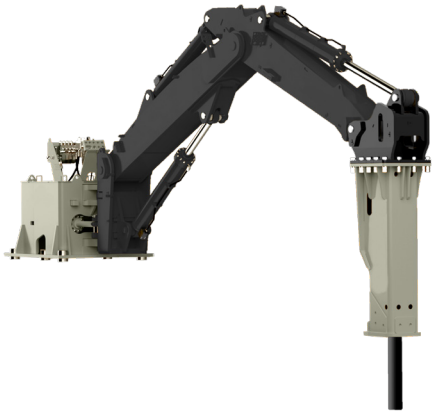
Model	Operating Weight Range*		Vertical Breaker Reach Forward**		Vertical Breaker Reach Down**		Maximum Reach Forward**		Recommended Breaker Range
	lb	kg	ft	m	ft	m	ft	m	
NTE12	9,148 - 12,030	4,150 - 5,460	12.75	3.9	10.25	3.1	18.75	5.8	BX10 to BX40
NTE16	9,548 - 12,430	4,330 - 5,640	15.66	4.8	13.75	4.2	22.16	6.8	
NTE20	9,848 - 11,568	4,470 - 5,250	18.75	5.7	15.58	4.8	25.16	7.7	BX10 to BX30
NTE24	10,748 - 12,468	4,880 - 5,660	23.83	7.3	22.58	6.9	30.16	9.2	

All specifications are subject to change without notice. All results may vary.
** Operating weight is dependent on final breaker size, power pack configuration and optional equipment*
***Dimensions nominal (based on BX15 breaker) and subject to change based on final breaker selection for MBS12S & MBS14S*
***Dimensions nominal (based on BX20 breaker) and subject to change based on final breaker selection for MBS12H, MBS13H & MBS16H*

NTTE SERIES

Model	Operating Weight Range*		Vertical Breaker Reach Forward**		Vertical Breaker Reach Down**		Maximum Reach Forward**		Recommended Breaker Range
	lb	kg	ft	m	ft	m	ft	m	
NTTE12	12,510 - 14,110	5,674-6400	14	4.3	9′ 6″	2.9	19′ 7″	5.9	BX10 to BX 40
NTTE16	12,910 -14,510	6,860-6580	15′ 8″	4.8	12′	3.6	22′	6.7	
NTTE20	12,910 -14,510	5,860-6,580	18′ 7″	5.6	14′	4.3	25′	7.6	BX10 to BX30
NTTE24	14,110 -15,710	6,400-7,130	23′ 8″	7.2	20′	6.4	30′	9.1	

MRH SERIES



Model	Operating Weight Range*		Vertical Breaker Reach Forward**		Vertical Breaker Reach Down**		Maximum Reach Forward**		Recommended Breaker Range
	lb	kg	ft	m	ft	m	ft	m	
MRH16	16,230 - 20,680	7,362 - 9,380	16.5	5	13.91	4.2	23	7	BX20 to AST90
MRH20	18,280 - 21,080	8,285 - 9,555	20.5	6.2	18	5.4	27.58	8.4	BX20 to AST70
MRH20/25	18,550 - 21,380	8,414 - 9,684	22.5	6.9	22	6.7	30.66	9.3	BX20 to AST50
MRH25	19,150 - 21,300	8,694 - 9,669	25.08	7.6	21.41	6.5	32.08	9.8	
MRH28	16,821 - 18,601	7,630 - 8,438	25.75	7.8	22.41	6.8	33.16	10.01	BX20 to BX40
MRH31	18,364 - 18,982	8,330 - 8,610	31.33	9.5	38	11.5	38	11.5	BX20 to BX30

MRHT SERIES

Model	Operating Weight Range*		Vertical Breaker Reach Forward**		Vertical Breaker Reach Down**		Maximum Reach Forward**		Recommended Breaker Range
	lb	kg	ft	m	ft	m	ft	m	
MRHT16	16,350 - 20,800	7,416 - 9,434	16	4.8	13.08	4.2	24	7.3	BX20 to AST90
MRHT20	16,818 - 19,648	7,629 - 8,899	20.16	6.1	16.33	4.9	27	8.3	BX20 to AST70
MRHT20/25	17,138 - 19,968	7,774 - 9,044	21.75	6.6	18.75	5.7	28.83	8.7	BX20 to AST50
MRHT25	17,658 - 19,808	8,010 - 8,985	24.58	7.5	19.75	6	31	9.5	
MRHT28	17,482 - 19,262	7,930 - 8,737	27	8.2	21.58	6.5	33.75	10.2	BX20 to BX40
MRHT31	19,246 - 19,864	8,730 - 9,011	31.08	9.4	24.33	7.4	37.5	11.4	BX20 to BX30

MRHT-LP SERIES

Model	Operating Weight Range*		Vertical Breaker Reach Forward**		Vertical Breaker Reach Down**		Maximum Reach Forward**		Recommended Breaker Range
	lb	kg	ft	m	ft	m	ft	m	
MRHT21LP	20,100 - 22,910	9,117-10,392	22′	6.7	10′	3	24′	7.3	BX20 to AST70
MRHT24LP	21,100 - 23,910	9.570 - 10,840	24′	7.3	16′	4.9	31′ 8″	9.7	

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***Dimensions nominal (based on BX15 breaker) and subject to change based on final breaker selection for MBS12S & MBS14S*
***Dimensions nominal (based on BX20 breaker) and subject to change based on final breaker selection for MBS12H, MBS13H & MBS16H*

MRST/E SERIES

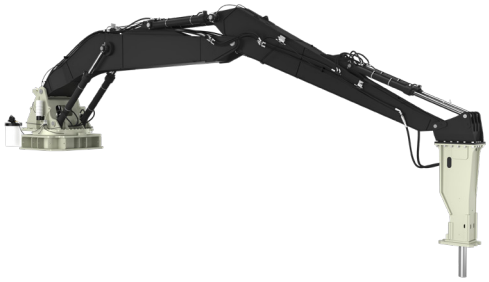
Model	Operating Weight Range*		Vertical Breaker Reach Forward**		Vertical Breaker Reach Down**		Maximum Reach Forward**		Recommended Breaker Range
	lb	kg	ft	m	ft	m	ft	m	
MRST25	28,830 - 31,500	13,080 - 14,288	24.75	7.5	15.75	4.8	34	10.3	BX40 to AST90
MRST30	29,330 - 32,000	13,307 - 14,515	29.66	9	18.91	5.7	38.5	11.7	
MRST35	29,830 - 30,880	13,533 - 13,993	34.83	10.6	21.41	6.5	43.25	13.1	BX40 to AST70
MRSTE25	12,510 - 14,110	5,674 - 6,400	24.33	7.4	20.1	6.7	34.5	10.5	
MRSTE30	12,910 - 14,510	5,856 - 6,582	29.58	9	25.75	7.8	38.58	11.6	
MRSTE35	13,210 - 14,810	5,992 - 6,718	34.75	10.5	29.58	9	43.33	13.2	

TTX SERIES

Model	Operating Weight Range*		Vertical Breaker Reach Forward**		Vertical Breaker Reach Down**		Maximum Reach Forward**		Recommended Breaker Range
	lb	kg	ft	m	ft	m	ft	m	
TTX30	44,570 - 49,420	20,215 - 22,410	30.83	9.1	26	7.9	40.58	12.3	AST50 to AST130
TTX36	48,450 - 53,300	21,975 - 24,170	35.33	10.8	33.33	10.1	45	12.3	AST50 to AST110
TTX40	49,700 - 53,300	22,543 - 24,188	38.75	14.2	35.25	10.7	46.75	14.2	
TTX45	52,145 - 54,445	23,653 - 24,696	43.91	14.4	42.5	12.68	53.75	16.3	AST50 to AST90
TTX48	53,700 - 56,000	24,358 - 25,401	47	14.3	44	13.3	54.83	16.7	

All specifications are subject to change without notice. All results may vary.
** Operating weight is dependent on final breaker size, power pack configuration and optional equipment*
***Dimensions based referenced from center of swing rotation.*
***Dimensions nominal (based on BX20 breaker) and subject to change based on final breaker selection.*

TTX-HD SERIES



Model	Operating Weight Range*		Vertical Breaker Reach Forward**		Vertical Breaker Reach Down**		Maximum Reach Forward**		Recommended Breaker Range
	lb	kg	ft	m	ft	m	ft	m	
TTXHD48	68,880 - 73,050	31,250 - 33,130	49	14.8	41	12.5	59	17.8	AST70 to AST130
TTXHD52	69,350 - 72,270	31,450 - 32,780	52	15.8	44	13.5	61	18.5	AST70 to AST110
TTXHD54	69,760 - 71,380	61,640 - 32,370	54	16.5	45	13.8	62	19	AST70 to AST90
TTXHD57	70,230 - 71,850	31,850 - 32,590	56	17	48	14.8	65	20	

TRX SERIES

Model	Operating Weight Range*		Vertical Breaker Reach Forward**		Vertical Breaker Reach Down**		Maximum Reach Forward**		Recommended Breaker Range
	lb	kg	ft	m	ft	m	ft	m	
TRX46	90,000 - 94,000	40,823 - 42,637	31.58	9.6	27.08	8.3	41.1	12.8	AST90 to AST160
TRX52	94,000 - 98,000	42,637 - 44,452	36.3	11.1	33.5	10.2	46	14	
TRX58	99,000 - 103,500	44,905 - 46,947	39	11.8	36.3	11.1	47.5	14.5	

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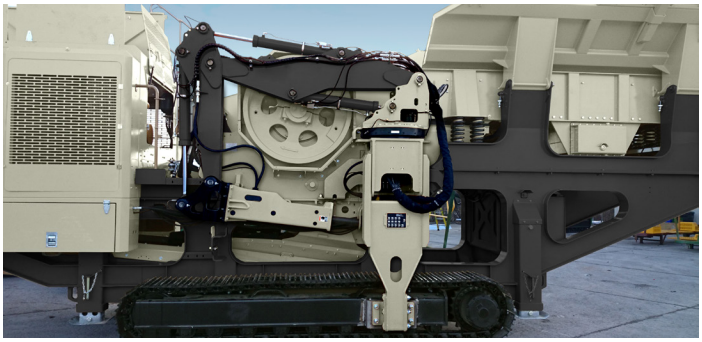
** Operating weight is dependent on final breaker size, power pack configuration and optional equipment*
***Dimensions based referenced from center of swing rotation.*
***Dimensions nominal (based on BX20 breaker) and subject to change based on final breaker selection.*

HYDRAULIC POWER PACKS

Model	Boom Match Up	Breaker Match Up	Reservoir Volume		Power Requirements	
			Gallons	Liters	HP	kW
PP 60 - 30	MBS, PB, NT	CX8, BX10	60	227	30	22
PP 60 - 40	MBS, PB, NT	BX15, BX20	60	227	40	30
PP 60 - 50	MBS, PB, NT	BX20, BX30	60	227	50	37
PP 60 - 60	MBS, PB, NT	BX30	60	227	60	45
PP 100 - 50	MRH/MRHT	BX20, BX30	100	380	50	37
PP 100 - 60	MRH/MRHT	BX30, BX40	100	380	60	45
PP 100 - 75	MRH/MRHT	BX40	100	380	75	55
PP 100 - 100	MRH/MRHT, MRXT	BX40, AST50	100	380	100	74
PP 100 - 125	MRH/MRHT, MRXT	AST70, AST90	100	380	125	92
PP 100 - 150	MRXT	AST90	100	380	150	111
PP 100 - 150	MRXT-HVC	BX40 - AST90	100	380	150	111
PP 200 - 100	TTX	AST50	200	760	100	74
PP 200 - 125	TTX	AST70	200	760	125	92
PP 200 - 150	TTX	AST90	200	760	150	111
PP 200 - 200	TTX	AST110, AST130	200	760	200	148
PP 200 - 200	TTX-HVC	AST50 - AST130	200	760	200	148
PP 300 - 300	TTX-HVC	AST90 - AST160	300	1140	300	221

APPLICATIONS

Astec rock breaker systems were designed with flexibility and performance in mind. With a large range of boom sizes, two different pedestal designs, and a variety of breaker attachments, we have a system that will fit any need.



Mobile
Mobile crushers are, designed to be moved from site to site. A properly sized breaker system will mount on the crusher securely so the crusher can be moved without first dismantling the breaker assembly while still being large enough to handle both raking and breaking.

Stationary
Jaw crushers and impact crushers are most often fed from a rock box using a vibratory feeder. A rock breaker should be positioned to assist with raking rocks into the crusher, reduce oversize, and to be able to reach into the crusher to assist with processing and clearing jams.

Grizzly
Grizzly applications are extremely harsh by nature. The boom is subject to high degrees of in-line and side raking, combined with various sizes and amounts of oversize. Astec's grizzly booms are designed with wide boom cross sections, extra large pins, and reinforced high tensile steel plates. All designed to handle complex loading to the boom.

Gyratory
Big jobs need big booms and breakers. Astec's wide range of gyratory booms allow full breaker coverage within the rock box and mouth of the crusher. Our complete line of large hammers are designed specifically for gyratories to quickly eliminate any bridging or clogging to restore consistent material flow to the crusher.

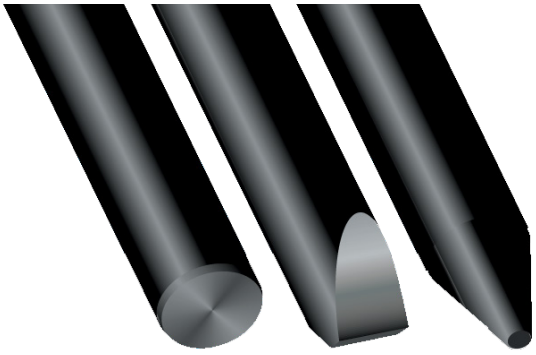
OPTIONS

Standard Equipment
- Swash plate piston pumps with load sense/constant horsepower control
- Extra heavy-duty all welded construction suitable from high vibration applications
- Pressurized fill cap with air filtration
- Suction strainers (provided on larger models)
- Full flow pressure filter with visual indicator
- Full flow return filter with visual indicator
- Flooded pump inlet
- Clean out/inspection cover
- Fluid level indication
- Fluid temperature indication

Optional Equipment
- Immersion heater
- Drip tray
- Hand pump fill kit
- Electrical filter indication
- Extreme cold weather power pack
- Extreme duty cycle and high temperature cooling
- Motor starter panel & power pack control center
- High/low temperature interlock
- High altitude hydraulic charging kit
- High altitude electric motor compensation
- Premium efficiency electric motor
- Explosion proofing
- Fire suppression systems
- Fire restraint fluid compatibility
- High horsepower/high flow pump motor
- Complete power pack enclosure
- All hose boom (no steel piping)
- Load drop counterbalance valves
- Breaker anti lunge interlock
- Automatic greasing systems (3 options)
- Expander pins
- Embedded weldment (concrete mounting)
- Cold weather package
- Bucket and grapple attachments

BREAKER OPTIONS

Optional Equipment
- Extension brackets
- Mechanical or hydraulic quick couplers
- Side plate housing construction
- Severe-duty, anti-abrasion wear kits
- Side mounted breakers
- Automatic greasing systems
- Choice of tools: blunt, chisel, or moil
- Extended tool lengths
- Concave removal tools
- Energy regeneration systems (BXR series)
- Anti-blank fire interlock
- Two speed control



CONTROLS

Astec Rock Breaker systems come standard with joystick controls starting with the simplified BreakerLITE control system. BreakerPLUS is designed to step into a programmable system suitable for long distant operations. Astec offers BreakerINTEL for highly customized systems with robotic movements and automation.

- Portable electric joystick controls
- Radio remote (wireless) controls
- IQAN programmable control system
- Long distance controls (single and multi-boom)
- Game style control
- Ergonomic chair with joysticks
- Operator's cab with air conditioning, heating, filtering of pressurized air supply. Standard and deluxe cabins.
- Power pack enclosure

BREAKERLITE BY ASTEC | BTI

Dependable performance with simplified control system

- Analogue controls
- Line of sight control
- Control Options (choose up to 2):
  - Hardwired Proportional Joysticks
  - Wireless Radio Remote

BREAKERPLUS BY ASTEC | BTI

Single boom, long-distance control with expanded operational features

SAFETY

- Single boom tele-remote option keeps your operators out of harm's way

FLEXIBILITY

- Control Options (choose up to 2):
  - Hardwired Proportional Joystick
  - Wireless Radio Remote
  - Gamestyle Controller

INTEGRATION

- Bluetooth enabled diagnostics for fast, wireless troubleshooting
- SCADA/DCS integration for seamless site connectivity
- Upgrade compatible with any existing rock breaker

BREAKERINTEL

BY ASTEC | BTI

Maximum performance, safety and insight designed for automated operations

- Control Options (choose up to 3):
  - Hardwired Proportional Joystick
  - Wireless Radio Remote
  - Gamestyle Controller
  - Single Boom Tele-remote
  - Multi Boom Long-Distance Control
- Operate up to six booms from a single station, reducing labor and operating costs
- Customizable control of auxiliary components
- Bluetooth enabled diagnostics for fast, wireless troubleshooting
- Full SCADA/DCS integration for centralized monitoring
- Automated Park & Deploy movements to improve cycle efficiency
- Collision avoidance customization to extend equipment life
- Available to upgrade existing ASTEC rockbreakers
- Upgrade compatible with any existing rockbreaker

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