

TELSMITH

an Astec company



THE TRUSTED SOLUTION

Mineral and aggregate processors worldwide recognize TelSmith as the leader in crushing technology. Providers of a broad line of cone crushers that ensure reliability and performance, TelSmith employs experts who partner with you to assess your crushing needs, and to recommend the cone crusher solution guaranteed to meet your production goals.

The TelSmith Difference is a commitment to innovative technology and service support unparalleled in the industry. It is a single-minded dedication to our customers and devotion to quality in every step of the process, from design and manufacturing to product support. Through this approach TelSmith has become a preferred supplier of processing equipment and fully integrated systems for leading companies worldwide.



BUILDING THE SBS

Consistent quality results from a start-to-finish application of technology and craftsmanship. Our efforts to build the SBS begin with first rate engineering, and continue through every step in the process until the best possible product is safely delivered to you — and performing.

Telsmith Provides:

- Engineering in 3-D
- Finite Element Analysis (FEA)
- Trained welding craftsmen

- Stress relieve all heavy weldments
- CNC machine shop produces consistent quality
- Operational testing prior to shipping
- Packaging to insure safe arrival
- Training
- Follow up consultations to insure optimum performance

Quality inspections throughout the process are a part of **The Telsmith Difference.**



PROVEN PERFORMANCE, PROVEN RELIABILITY

For more than a century, aggregate and mining professionals who require the highest productivity, best reliability and lowest cost per ton have turned to TelSmith cone crushers for consistent performance. The experience shows in today's comprehensive line of SBS cone crushers.

Engineered into each model is a common commitment to peak day-to-day performance and long-term durability ... a commitment backed by our 100-year reputation for design excellence, manufacturing craftsmanship and customer satisfaction.



Automated 1000 TPH crushing plant with 68SBS, 57SBS and 52SBS cone crushers



Heavy duty 52SBS portable plant



Relocateable modular structure with 52SBS



44SBS closed circuit portable crushing plant

INFORMATION TECHNOLOGY THAT PUTS YOU IN CONTROL

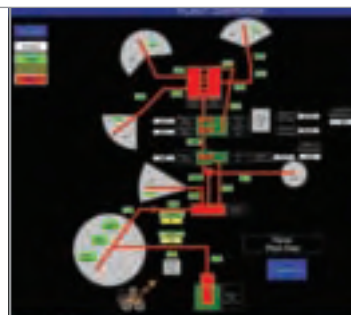
Telsmith SBS cone crushers are designed to be compatible with automated plants. Optional features allow you to monitor and control cone crusher operating parameters to yield maximum efficiency and consistent performance.

We offer solutions designed to fit your specific needs — and your budget — from options for fully-automated plants that incorporate automatic adjustment and auto choke feed features, to simpler “stand alone” remote control packages that include:

- Push-button adjustment
- Crusher setting display
- Push-button calibration for liner wear
- Display of approximate liner wear remaining
- Auto-protect mode
- Display of lubrication and hydraulic system conditions
- Tracking of alarm conditions and trending of operation data

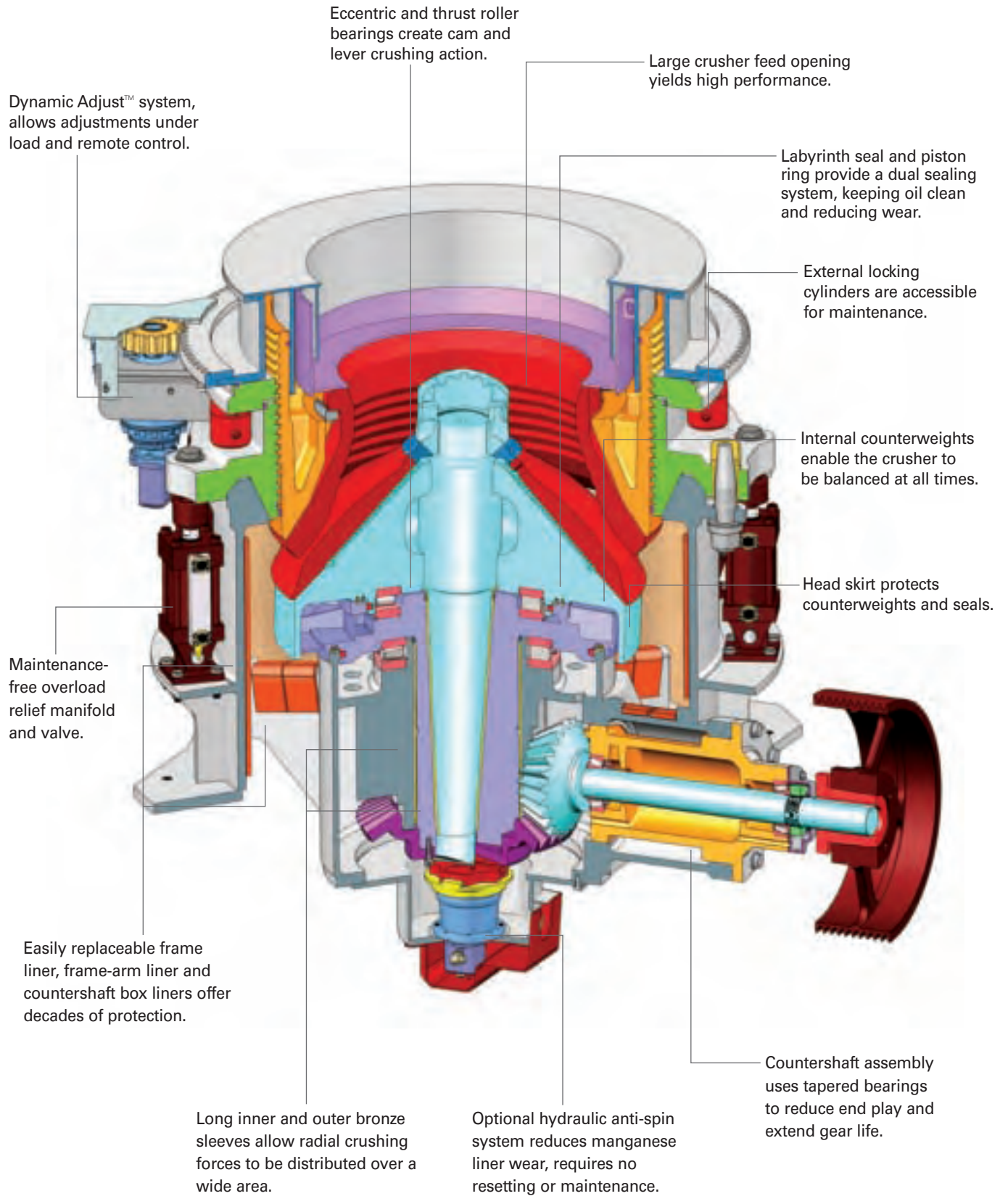


TRAC 10™ stand alone remote control package





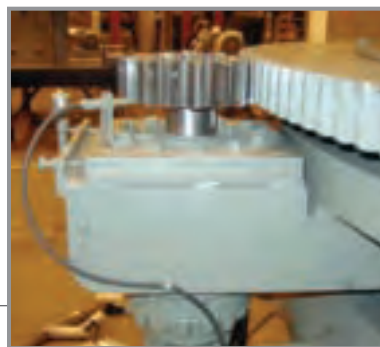
CRUSHER FEATURES & BENEFITS





Hydraulic Relief & Clearing

- Low maintenance design (no accumulator)
- Manifold and relief valve protects internal parts by limiting overload force (see pages 9-10)
- Safe chamber clearing with push button controls, approximately 6 inches of travel



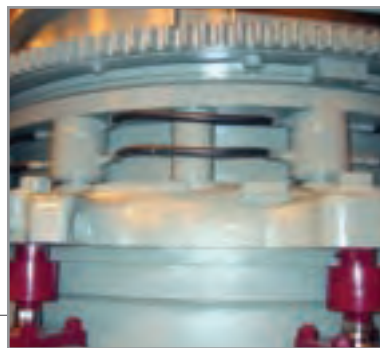
Dynamic Adjust™

- Adjust under load with push button controls
- Digital display shows crusher setting
- Two speed settings: normal adjustment and high speed extraction
- Easily connects to plant controls for remote control and automation



Anti-Spin (optional)

- Unique hydraulic system requires no resetting or maintenance
- Prevents head spin to extend manganese life
- More consistent product gradation in applications with intermittent feed



Hydraulic Lock

- External cylinders are accessible for maintenance without crusher disassembly
- Constant locking force holds setting
- Activates automatically at start-up
- Maintains minimum pressure during adjustment to prevent thread damage

HYDRAULIC AND LUBRICATION SYSTEMS

Reliable Hydraulic System Control

One simple power unit in a Telsmith SBS series cone crusher is used to power all its hydraulic systems:

- Hydraulic Overload Protection
- Dynamic Adjustment
- Hydraulic Lock
- Hydraulic Clearing
- Hydraulic Anti-Spin System

Powered by an electric motor, the system utilizes a pressure compensated variable displacement pump to provide the correct hydraulic flow and pressure at all times. No accumulators are used, which means a more consistent pressure and less maintenance and downtime. Adjustments and clearing are easily accomplished with the touch of a finger. Hydraulic systems on the SBS can integrate with your plant controls for remote operation and crusher automation.

Better Overload Protection

Telsmith's exclusive, patented design limits the amount of force a cone crusher needs to absorb when

it encounters overloads or tramp metal – providing the best protection for internal parts. A limited force is maintained as the crusher relieves, unlike spring or accumulator systems that experience increasing forces (see graph).

At the heart of the patented system is a manifold and relief valve. Whenever crushing pressure exceeds the relief valve's setting, the

valve opens and allows hydraulic fluid to pass through to the tank. Since the crushing pressure is limited by the relief valve setting, the internal parts are protected

from overload. Telsmith's design can save thousands of dollars in unexpected repair costs.

Dynamic Adjustment and High Speed Extract

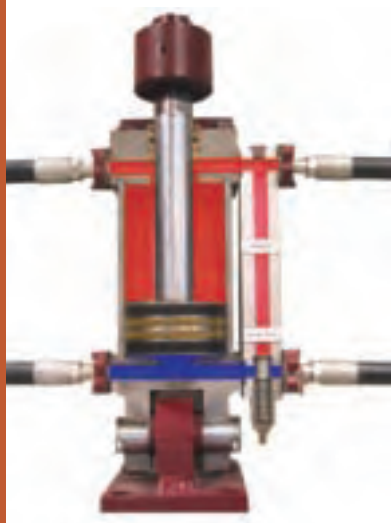
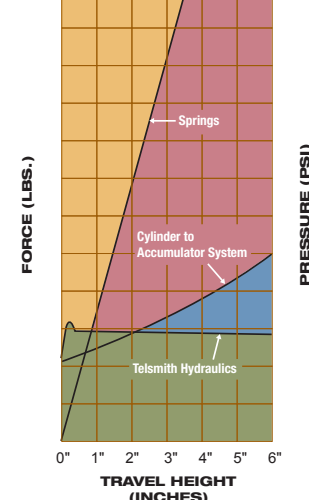
The SBS Dynamic Adjust™ system is designed to maximize plant efficiency. It enables adjustment under load, through local push buttons or remote computer automation. Adjusting the crusher is just as simple as pushing a button.

The SBS hydraulic console includes a digital display to show the current setting. As you adjust the crusher, the display continually changes to let you know exactly what the setting is.

The dynamic adjustment system also includes a high-speed extract mode (used when changing liners). The result – faster crusher disassembly and cost savings.

A Hydraulic Locking System

Telsmith's hydraulic lock system works with the crusher's dynamic adjustment feature to provide adjustment under load. A uniform locking pressure keeps the setting fixed during crushing operations. When it's time to adjust, the lock cylinder pressure drops to approximately 100 psi to allow for dynamic adjustment. This low pressure keeps



This table compares the forces exerted on the crusher using the most common system types (spring, accumulator and Telsmith relief valve). The spring system forces increase quickly as the spring compresses. The accumulator system forces also increase, although not as quickly as the spring system. The Telsmith manifold and relief valve system is a successful way to limit overload force, providing better protection, longer parts life and less crusher downtime.

the threads in gentle contact to prevent damage from chatter.

The lock cylinders are mounted on the outside of the crusher, easily accessible for repair without dismantling the crusher.

Quicker Chamber Clearing

Power failure or tramp metal in the crusher? An SBS crusher clears in minutes with the push of a button, avoiding hours of downtime. Simply flip the switch from the “crush” mode to the “clear” mode, and the upper frame is lifted vertically allowing material to fall easily and safely through the crusher. You’re back in production with minimal loss of time and profitability.”

Complete Lubrication Protection

Thanks to a packaged oil lubrication system, the SBS comes equipped with all the modern features

you need for the longest possible service life at the lowest cost.

Pre-assembled onto a skid module for ease of installation, the package includes:

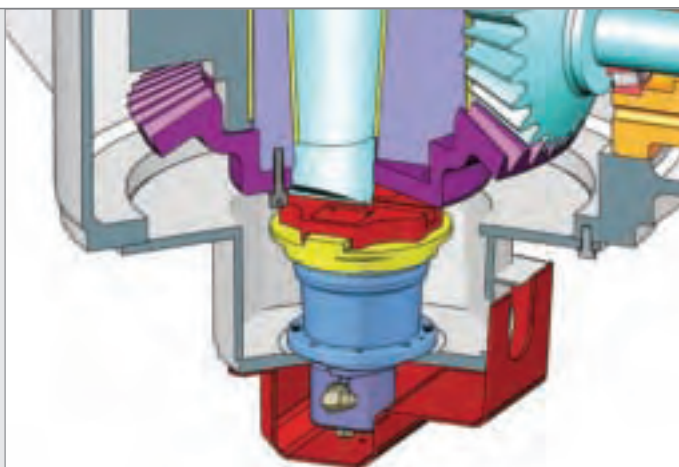
- Oil Tank
- Immersion heaters
- Electric motor-driven oil pump
- Oil cooler
- Multiple element filtration
- Alarm system with multiple layers of protection -
 - o High oil temp
 - o Low oil flow
 - o Low oil pressure

Options are available to provide 4 - 20mA signals for monitoring a crusher’s operating parameters from a remote location.



Zero Maintenance Anti-Spin System

In most installations an anti-spin system will provide longer manganese life and promote a more cubical product. In the Telsmith design, a small hydraulic motor is attached to the shaft preventing the head from spinning when running with intermittent feed. No adjustments, resetting or regular maintenance schedules are needed. Your crusher keeps right on performing.



CAPACITIES OF CRUSHERS (OPEN AND CLOSED CIRCUIT TABLES)

Open Circuit Crushing Capacities - SBS Series Cone Crusher										
Model		Total throughput at discharge setting (CSS) shown								
		3/8" 10 mm	1/2" 13 mm	5/8" 16 mm	3/4" 19 mm	1" 25 mm	1-1/4" 32 mm	1-1/2" 38 mm	1-3/4" 45 mm	2" 51 mm
38 SBS	stph	90-115	115-145	140-170	155-190	190-230	220-270	235-290		
	mtph	81-104	104-131	126-153	140-171	171-207	198-243	212-261		
44 SBS	stph	123-160	150-200	180-235	200-260	245-320	285-370	320-415	360-455	
	mtph	111-144	135-180	162-212	180-234	221-288	257-333	288-374	324-410	
52 SBS	stph		175-225	205-265	230-300	280-365	320-420	365-475	410-530	455-585
	mtph		158-203	185-239	207-270	252-329	288-378	329-428	369-477	410-527
57 SBS	stph			300-382	335-435	400-525	435-560	485-625	565-730	635-820
	mtph			270-344	302-392	360-473	392-504	437-563	509-657	572-738
68 SBS	stph				470-610	535-695	590-765	635-825	705-915	780-1005
	mtph				423-549	482-626	531-689	572-473	635-825	702-905

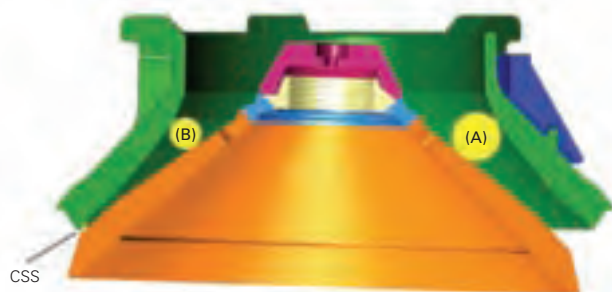
Closed Circuit Crushing Capacities - SBS Series Cone Crushers										
Model		Total throughput at discharge setting (CSS) shown								
		3/8" 10 mm	1/2" 13 mm	5/8" 16 mm	3/4" 19 mm	1" 25 mm	1-1/4" 32 mm	1-1/2" 38 mm	1-3/4" 45 mm	2" 51 mm
38 SBS	stph	115-140	130-160	155-190	170-210	205-255	240-300			
	mtph	104-126	117-144	140-171	153-189	185-230	216-270			
44 SBS	stph	150-195	170-220	200-260	220-285	270-350	305-390			
	mtph	135-176	153-198	180-234	198-257	243-315	275-351			
52 SBS	stph	175-225	200-260	225-290	255-330	310-400	355-450	380-485		
	mtph	158-203	180-234	203-261	230-297	279-360	320-405	342-437		
57 SBS	stph		300-385	330-430	370-480	440-575	475-600	505-640		
	mtph		270-347	297-387	333-432	396-518	428-540	455-512		
68 SBS	stph		450-585	485-625	520-670	585-760	650-840	685-860		
	mtph		410-527	437-563	468-603	527-684	585-756	617-774		

The minimum recommended CSS is determined by the crushing chamber selection and operating conditions (see SBS Crushing Chamber table and notes).

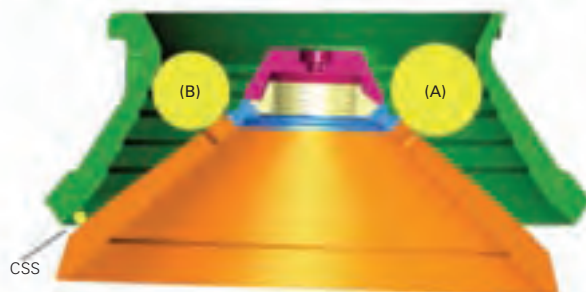
Capacities are approximate total throughput based on an average material having a bulk density of 100 lbs./ft³.

Throughput capacity will vary depending on the type of material, feed gradation, moisture content, chamber selection, feed method and other site specific operating conditions.

SBS CRUSHING CHAMBER



Typical "F" Arrangement



Typical "C" Arrangement

Model	Bowl	Recommended Minimum Closed Side Setting (CSS)		Feed Opening at Minimum Closed Side Setting			
				Open (A)		Closed (B)	
38 SBS	C- X-Coarse	1"	25 mm	6-7/8"	175 mm	5-3/4"	146 mm
	C- Coarse	5/8"	16 mm	5-1/4"	133 mm	3-7/8"	98 mm
	C- Medium	5/8"	16 mm	4-3/4"	121 mm	3-3/8"	86 mm
	F- Coarse	5/8"	16 mm	4-1/4"	108 mm	2-7/8"	73 mm
	F- Medium	1/2"	13 mm	3-3/4"	95 mm	2-1/4"	57 mm
	F- Fine	3/8"	10 mm	3-1/4"	83 mm	1-3/4"	44 mm
44 SBS	C- X-Coarse	1"	25 mm	8"	203 mm	6-1/2"	165 mm
	C- Coarse	3/4"	19 mm	5-7/8"	149 mm	4-1/4"	108 mm
	C- Medium	5/8"	16 mm	4-7/8"	124 mm	3-1/2"	89 mm
	F- Coarse	5/8"	16 mm	4-1/4"	108 mm	2-5/8"	67 mm
	F- Medium	1/2"	13 mm	3-3/4"	95 mm	2-1/4"	57 mm
	F- Fine	3/8"	10 mm	3-1/2"	89 mm	1-3/4"	44 mm
52 SBS	C- X-Coarse	1-1/4"	25 mm	10-1/4"	260 mm	9-1/4"	235 mm
	C- Coarse	3/4"	19 mm	7-3/8"	187 mm	5-3/4"	146 mm
	C- Medium	5/8"	16 mm	5-1/2"	140 mm	3-3/4"	95 mm
	F- Coarse	5/8"	16 mm	5"	127 mm	3-1/2"	89 mm
	F- Medium	1/2"	13 mm	4-1/2"	114 mm	2-7/8"	73 mm
	F- Fine	3/8"	10 mm	3-5/8"	92 mm	1-7/8"	48 mm
57 SBS	C- X-Coarse	1-1/4"	32 mm	10-3/4"	273 mm	9-1/4"	235 mm
	C- Coarse	1"	25 mm	9"	229 mm	8-1/2"	216 mm
	C- Medium	3/4"	19 mm	8-5/8"	219 mm	7-1/4"	184 mm
	F- Coarse	3/4"	19 mm	6"	152 mm	4-3/8"	111 mm
	F- Medium	1/2"	13 mm	4-5/8"	117 mm	2-7/8"	73 mm
	F- Fine	3/8"	10 mm	3-1/2"	89 mm	1-3/4"	45 mm
68 SBS	C- X-Coarse	1-5/8"	41 mm	11-1/2"	292 mm	10-1/4"	260 mm
	C- Coarse	1-1/8"	29 mm	10-3/8"	264 mm	8-3/4"	222 mm
	C- Medium	3/4"	19 mm	8-7/8"	225 mm	7"	178 mm
	F- Coarse	3/4"	19 mm	6-5/8"	168 mm	5"	127 mm
	F- Medium	5/8"	16 mm	4-7/8"	124 mm	3-1/8"	79 mm
	F- Fine	1/2"	13 mm	3-3/8"	86 mm	1-5/8"	41 mm

Additional chamber selection options are available for unique applications. Consult factory for recommendations.

The minimum operating CSS is affected by the feed gradation, type of material, fines content, moisture content, feed rate and other site specific operating conditions. The minimum recommended CSS shown in the above table may not be achieved in all applications.

SBS SPECIFICATIONS

Specifications - Model SBS Crushers					
MODEL	38 SBS	44 SBS	52 SBS	57 SBS	68 SBS
HP Required	150-200	200-300	300-400	400-500	500-600
Crusher Flywheel RPM	775-805	665-705	585-630	685-715	545-565
Shipping Weight *	30,400 lbs.	36,000 lbs.	53,500 lbs.	76,000 lbs.	112,600 lbs.
	13789 kg	16329 kg	24267 kg	34473 kg	51074 kg
Weight Boxed for Export *	31,000 lbs.	36,700 lbs.	54,500 lbs.	77,500 lbs.	114,600 lbs.
	14061 kg	16647 kg	24721 kg	35153 kg	51982 kg
Cubic Contents Export Boxed *	750 ft. ³	810 ft. ³	1,110 ft. ³	1,570 ft. ³	2,350 ft. ³
	21 m ³	23 m ³	31 m ³	44 m ³	66 m ³

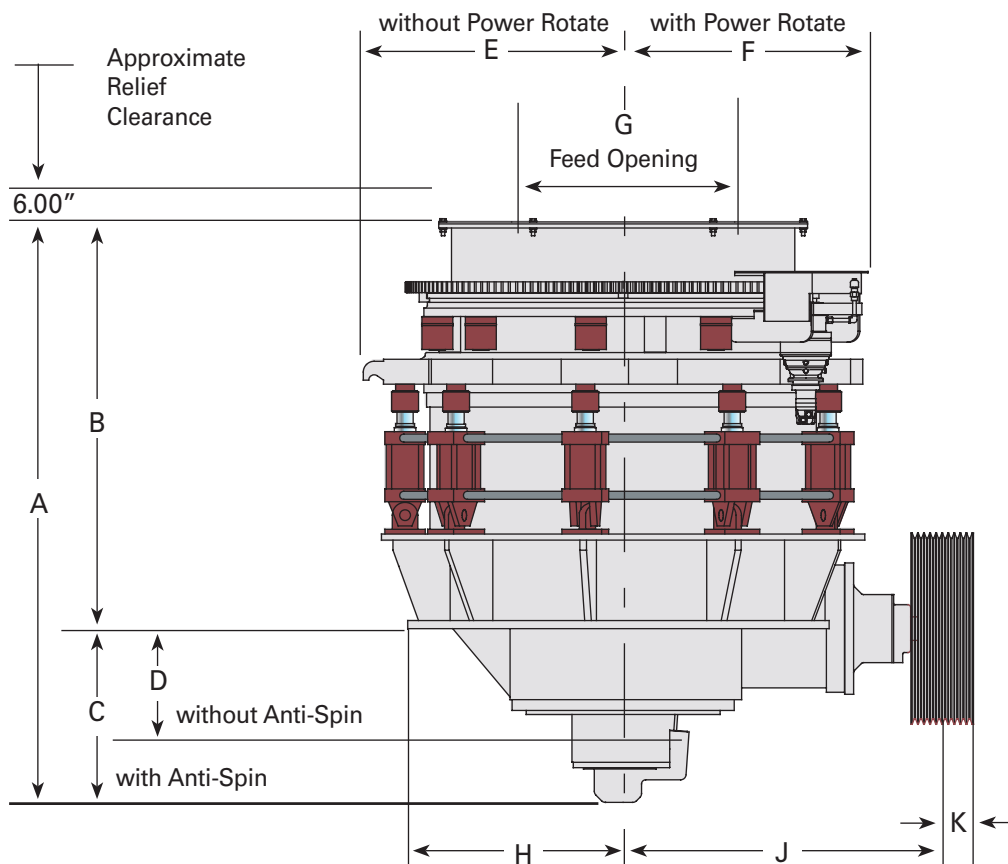
*Shipping weight includes Dynamic Adjust, anti-spin system, hydraulic control console and oil lubrication system with air to oil cooler.

TYPICAL SBS OUTPUT GRADATIONS

Model SBS Typical product gradations											
Sieve Size		% Passing closed side setting									
US	mm	3/8"	1/2"	5/8"	3/4"	7/8"	1"	1-1/4"	1-1/2"	1-3/4"	2"
		10 mm	13 mm	16 mm	19 mm	22 mm	25 mm	32 mm	38 mm	44 mm	51 mm
5"	125										100%
4"	100									100%	99%
3-1/2"	87.5								100%	99%	97%
3"	76								99%	97%	93%
2-1/2"	64							100%	97%	93%	83%
2"	51						100%	98%	91%	79%	66%
1-3/4"	44					100%	99%	95%	84%	69%	54%
1-1/2"	38				100%	99%	96%	88%	73%	58%	44%
1-1/4"	32			100%	99%	96%	89%	76%	61%	45%	35%
1"	25			99%	95%	87%	78%	63%	47%	35%	27%
7/8"	22		100%	95%	89%	79%	69%	54%	39%	30%	23%
3/4"	19	100%	98%	92%	81%	70%	60%	45%	33%	26%	20%
5/8"	16	98%	93%	83%	72%	58%	48%	35%	27%	22%	17%
1/2"	13	95%	84%	72%	59%	47%	38%	27%	22%	18%	14%
3/8"	9.5	86%	69%	56%	43%	35%	28%	21%	17%	14%	11%
1/4"	6.4	66%	49%	39%	31%	25%	19%	15%	12%	10%	8%
4m	4.7	52%	39%	31%	25%	20%	15%	12%	10%	8%	6%
8m	2.4	31%	23%	19%	15%	11%	8%	7%	6%	4%	3%
16m	1.2	22%	15%	12%	10%	7%	5%	4%	4%	3%	2%
30m	0.6	15%	10%	7%	7%	5%	4%	3%	2%	2%	2%
50m	0.30	10%	7%	5%	5%	4%	4%	3%	2%	2%	2%
100m	0.15	8%	5%	4%	4%	4%	3%	2%	1%	1%	1%
200m	0.07	6%	4%	4%	3%	3%	3%	2%	1%	1%	1%

The output gradations are approximate and will vary depending on the type of material, moisture content, feed gradation, chamber selection, feed rate and other site specific operating conditions.

SBS DIMENSIONAL DATA

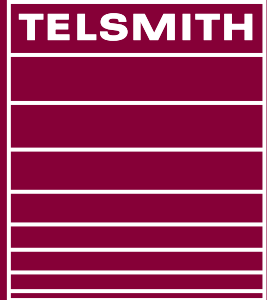


Dimensions - Model SBS Crushers

MODEL		A	B	C	D	E	F	G	H	J	K
38 SBS	US	95-1/2"	66-1/2"	29"	18-3/4"	40-1/8"	48"	34"	31"	53-1/2"	5-1/8"
	mm	2426	1689	737	476	1019	1219	864	787	1359	130
44 SBS	US	97-5/8"	68-5/8"	29"	18-3/4"	43-5/8"	49-3/4"	36"	34"	52-1/2"	5"
	mm	2480	1743	737	476	1108	1364	914	864	1334	125
52 SBS	US	107-3/4"	75-1/2"	32-1/4"	22"	48-1/4"	53-3/4"	44-7/8"	38"	58"	4-5/8"
	mm	2737	1918	819	559	1226	1365	1140	965	1473	117
57 SBS	US	120-3/8"	88-1/2"	31-7/8"	21-5/8"	54-1/2"	63-1/4"	52-1/4"	46"	66-1/2"	4-3/4"
	mm	3058	2248	810	549	1384	1607	1327	1168	1689	121
68 SBS	US	128-3/4"	92-3/8"	36-3/8"	27-3/4"	61"	67-1/4"	48-1/2"	56-3/4"	78"	4-5/8"
	mm	3270	2346	924	705	1549	1708	1232	1441	1981	117



Turn to TelSmith SBS Cone Crushers for consistent performance



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