

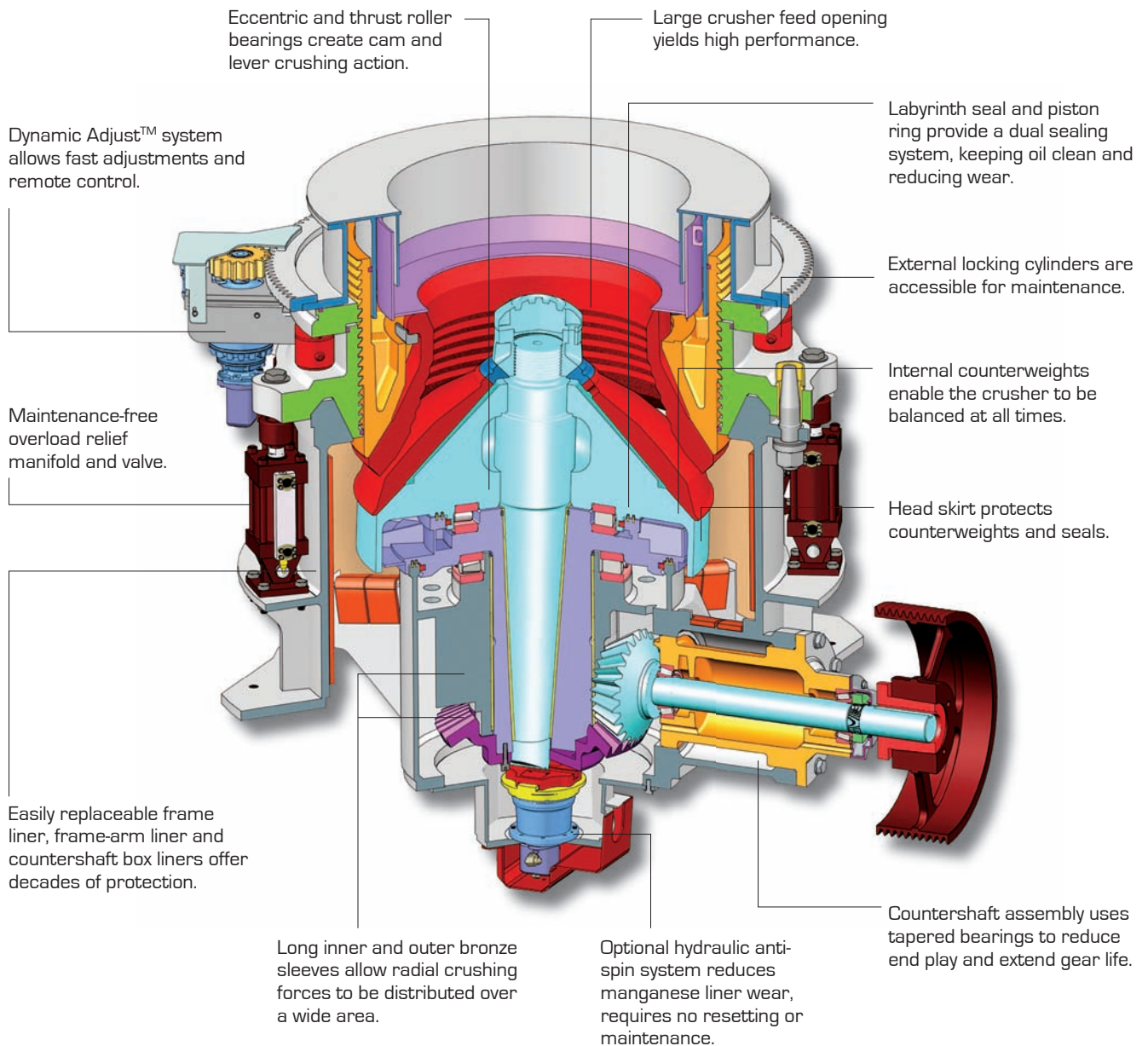


ASTEC™



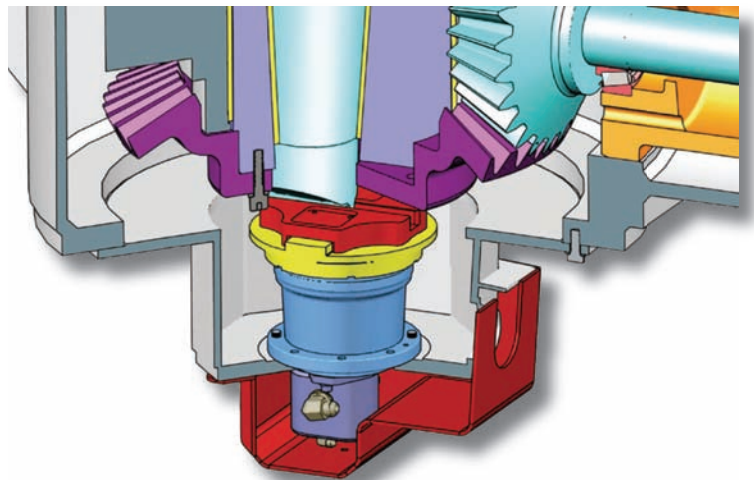
Cone Crushers

Crusher Features & Benefits

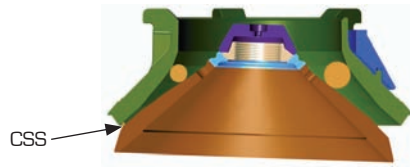


Zero Maintenance Anti-Spin System:

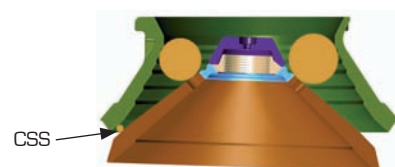
In most installations an anti-spin system will provide longer manganese life and promote a more cubical product. In the Osborn Telsmith design, a small hydraulic motor is attached to the shaft preventing the head from spinning when running with intermittent feed. No adjustments, resetting or regular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



Crushing Chamber



Typical "F" Arrangement



Typical "C" Arrangement

NOTE: All information shown in the tables in this brochure is based on crushing dry limestone with a bulk density of 1.6T/M³

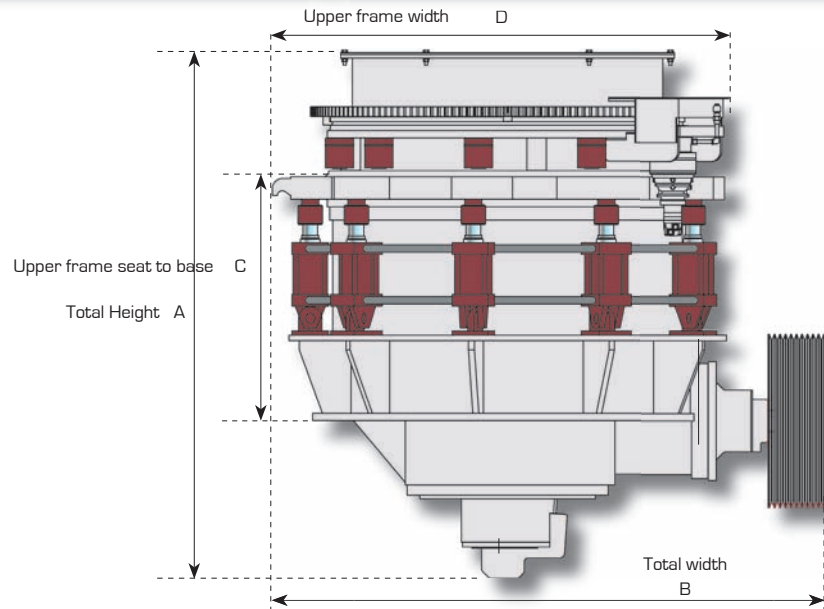
Model	Bowl	Recommended Minimum CSS	Feed Opening at Minimum Closed Side Setting	
			Open (A)	Closed (B)
24 'C'	5S-Extra Coarse	12	117	105
	S-Coarse	10	88	75
	S-Medium	6	63	47
	FC-Medium	5	44	28
36 'D'	7S-XX Coarse	19	196	165
	S-Extra Coarse	19	180	158
	S-Coarse	12	133	117
	S-Medium	10	114	95
	FC-Medium	6	50	28
27 SBS	S-Extra Coarse	19	140	110
	S-Coarse	13	120	90
	S-Medium	10	100	70
	FM-Fine Medium	10	80	50
	FF-Fine Fine	8	60	30
38 SBS	C-X Coarse	25	175	146
	C-Coarse	16	133	98
	C-Medium	16	121	86
	F-Coarse	16	108	73
	F-Medium	13	95	57
	F-Fine	10	83	44
44 SBS	C-X Coarse	25	203	165
	C-Coarse	19	149	108
	C-Medium	16	124	89
	F-Coarse	16	108	67
	F-Medium	13	95	57
	F-Fine	10	89	44
52 SBS	C-X Coarse	25	260	235
	C-Coarse	19	187	146
	C-Medium	16	140	95
	F-Coarse	16	127	89
	F-Medium	13	114	73
	F=Fine	10	92	48
57 SBS	C-X Coarse	32	273	235
	C-Coarse	25	229	216
	C-Medium	19	219	184
	F-Coarse	19	152	111
	F-Medium	13	117	73
	F=Fine	10	89	45
68 SBS	C-X Coarse	41	292	260
	C-Coarse	29	264	222
	C-Medium	19	225	178
	F-Coarse	19	168	127
	F-Medium	16	124	79
	F=Fine	13	86	41

Additional chamber selection options are available for unique applications. Consult Osborn for recommendations. The minimum 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. Minimum settings are controlled by feed size.

Osborn Telsmith Gyrasphere Crusher

SBS Dimensional Data

DIMENSIONS (mm)	24 "C"	36 "D"	27SBS	38SBS	44SBS	52SBS	57SBS	68SBS
A	1688	2060	1836	2500	2448	2751	2951	3356
B	1908	2527	1835	2491	2625	2844	3219	3705
C	570	921	905	1034	1101	1231	1341	1478
D	1283	1892	1804	2207	2340	2516	3018	3416



Specifications - Cone Crushers

MODEL	24 "C"	36 "D"	27SBS	38SBS	44SBS	52SBS	57SBS	68SBS
Power Required Kw	30	75	55-75	132	150-225	200	250	300-450
Flywheel RPM	725	588	750-850	775-805	665-705	585-630	685-715	545-565
Crusher Mass Kg	*4280	*11020	*6000	*12500	*14000	*21750	*29950	*49500
Shipping Mass Kg	4350	11300	7600	13790	16330	24270	34475	51075
Mass-Crated (est) Kg	4500	11600	7800	14060	16650	24725	35155	51990
Cubic Contents (est) [Crated] m ³	10	20	15	21	23	31	44	66

NOTES: (1) All machine masses and volumes are indicative only and should only be used as a guide.
 (2) * denotes machine mass only and excludes Hydraulic Pack & Lubrication Pack masses.

Osborn Telsmith Gyrasphere Crusher - Screen Analysis (one pass) Models 24 & 36 Typical

Product Size	Closed side setting of crusher											
	6	8	10	12	16	19	22	25	32	38	45	50
-90												100
-75											100	90
-60										100	90	79
-50									100	85	81	59
-45								100	94	72	60	48
-38						100	100	95	75	59	48	38
-32					100	98	88	75	54	44	36	29
-25				100	94	79	65	53	38	30	26	21
-22				96	82	67	54	43	33	26	22	19
-19			100	84	69	55	44	36	28	22	19	16
-16			94	70	56	43	36	31	25	19	16	14
-14		100	89	63	49	39	33	28	22	17	15	13
-12	100	97	87	55	43	35	30	26	20	15	13	10
-11	99	90	79	47	38	32	27	24	18	14	11	9
-9	93	83	70	40	33	28	24	21	16	12	9	7
-8	85	73	58	34	29	24	21	18	14	10	8	6
-6	74	60	43	28	24	20	17	15	12	8	6	5
-4	60	44	32	23	19	16	14	12	9	6	5	3
-2	34	22	17	13	11	9	8	7	5	3	2	1
-1	16	12	9	7	6	5	4	3	2	1	1	0

For smaller settings, please contact Osborn

Open Circuit Crushing Capacities - One Pass - Cone Crushers

Crusher	Total throughput at discharge setting (CSS) shown									
Model	6mm	10mm	13mm	16mm	19mm	25mm	32mm	38mm	45mm	50mm
24 "C"	14-18	19-23	24-28	28-33	33-38	42-48	48-55			
36 "D"		31-37	37-42	50-57	66-72	78-85	85-90	98-107	95-120	
27 SBS		60-68	68-78	78-85	80-95	90-115	100-130	120-140		
38 SBS		81-104	104-131	126-153	140-171	171-207	198-243	212-261		
44 SBS		111-144	135-180	162-212	180-234	221-288	257-333	288-374	324-410	
52 SBS			158-203	185-239	207-270	252-329	288-378	329-428	369-477	410-527
57 SBS				270-344	302-392	360-473	392-504	437-563	509-657	572-738
68 SBS					423-549	482-626	531-689	572-743	635-825	702-905

Closed Circuit Crushing Capacities - Cone Crushers

Crusher	Total throughput at discharge setting (CSS) shown								
Model	6mm	10mm	13mm	16mm	19mm	25mm	32mm	38mm	
24 "C"	16-20	21-25	26-30	31-36	35-40				
36 "D"	26-30	34-40	40-45	55-60	70-75	75-80			
27 SBS		64-72	75-80	85-90	95-98	98-120	110-135	123-145	
38 SBS		104-126	117-144	140-171	153-189	185-230	216-270		
44 SBS		135-176	153-198	180-234	198-257	243-315	275-351		
52 SBS		158-203	180-234	203-261	230-297	279-360	320-405	342-437	
57 SBS			270-347	297-387	333-432	396-518	428-540	455-512	
68 SBS			410-527	437-503	468-603	527-684	585-756	617-774	

Model SBS Typical product gradations (one pass)

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

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 conditions.

Liner Selection

There are a number of different criteria to consider when selecting the right chamber for your crushing needs. There is one, however, that must always be considered. That you have well-graded feed to the chamber. A well-graded feed is generally thought to be 90-100% passing the closed-side feed opening, 40-60% passing the midpoint and 0-10% passing the closed-side setting. (Fig.1)

Feed Problems

A feed that is not well graded will invariably cause one or more problems with the crushing operation. If the feed is too coarse or too fine, the following problems could develop.

- Reduced TPH through the crusher.
- Feed too coarse = low horsepower consumption, too fine = high horsepower consumption
- Coarse feed will not produce as cubical a product as it should be.
- Feed too coarse will cause the upper part of the crushing chamber to wear out
- Feed too fine can cause upper frame movement
- Oil temperature will rise if feed is too fine
- Most importantly is the difference in capacity from a new liner to a worn out liner as the reduction in capacity is caused by the lower portion wearing faster than the upper portion which causes the feed operation to close off.

Choke Feeding Is A Proven Aid

In order to maintain the maximum levels of capacity, gradation and cubical product, a crusher must be choke fed at all times. The best way to keep a choke feed to the crusher is with a surge bin (or hopper) and feeder that are located prior to the crusher. Choke feeding is almost impossible to achieve without a hopper and feeder.

When the crusher feed is reduced, the product tends to become coarse, with slivers and flats occurring.

Liner Replacement

When should you replace a liner in your crusher?

If the liner is wearing evenly throughout the chamber, you should consider changing out the manganese when it has worn down to about 25mm thick at the bottom. At about 19mm to 16mm thick, the manganese will crack, causing the backing material to begin to disintegrate. This in turn will cause the liners to break loose. If this happens, continued operation could destroy the seat on the support bowl or the head of the crusher.

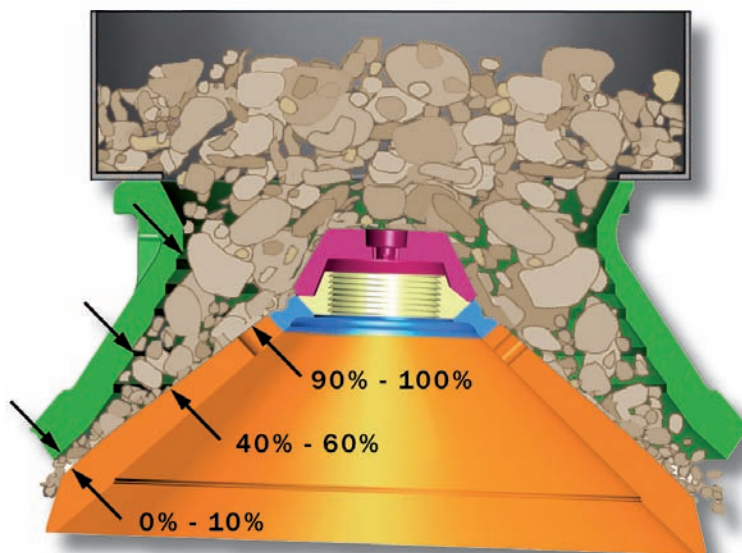


Fig 1. A well graded feed

Application Data Sheet - Osborn Cone Crushers

Customer			Contact Person		
Phone No.			Phone No.		
Fax.No			Date		Enquiry. No

CRUSHER TYPE	<input type="checkbox"/>	Hydraulic	<input type="checkbox"/>	Controlled Feed	<input type="checkbox"/>	
	<input type="checkbox"/>	Spring		Uncontrolled Feed	<input type="checkbox"/>	Anti-Spin req'd (Hydraulic Machine only)

TYPE OF INSTALLATION	<input type="checkbox"/>	Mobile	<input type="checkbox"/>	Semi-Mobile	<input type="checkbox"/>	Fixed
----------------------	--------------------------	--------	--------------------------	-------------	--------------------------	-------

SITE CONDITIONS		Location	
		Altitude	Metres
		Ambient Temp	°C Max <input type="text"/> °C Min <input type="text"/>

MATERIAL		Type	
		Loose Bulk Density	Kg/m ³
		Compressive Strength	Mpa
		Abrasiveness	High <input type="checkbox"/> Medium <input type="checkbox"/> Low <input type="checkbox"/>
		Flowability	Free <input type="checkbox"/> Average <input type="checkbox"/> Sticky <input type="checkbox"/>
		Moisture Content	% Max <input type="text"/> % Min <input type="text"/>
		Shape of Material	<input type="text"/>

DUTY		Capacity	mtph
		Max.Feed Lump Size	mm
		Min. Feed Lump Size	mm
		Feed Analysis	Size % Passing
			<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
			<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
		Product Size Req'd	mm
		Req'd CSS	mm
		Preferred Oil Cooling	Air cooled <input type="checkbox"/> Water cooled <input type="checkbox"/>

ACCESSORIES		Base Frame	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
		Vee Drive	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
		Guards	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
		Electric Motor	Kw <input type="text"/>	Voltage <input type="text"/>	Phase <input type="text"/> RPM <input type="text"/>
		Other (Please Specify)	<input type="text"/>		

SPECIAL CONDITIONS	<input type="text"/>
--------------------	----------------------

NOTES	COMPILED BY
	DATE :

- All the parameters referred to above must still take into consideration the actual capacity of the crusher at required settings as the cavity has a volumetric constraint. So correct sizing of a crusher is also influenced by the actual capacity required.
- In many cases an oversized crusher needs to be selected to handle the capacity whilst the lump consideration is less important
- This is more common in ConeCrushers
- The industry standard of rating various size crushers is based on crushing dry limestone with a loose bulk density of 1,6t/m³.
- Factors affecting these capacities are excessive moisture, clay content, feeding method, feed gradation, bulk density and crushability



Astec Africa Middle East Office
57 Jansen Road, Elandsfontein

PO Box 8182
Elandsfontein, 1406
Johannesburg
South Africa

Tel: +27 11 820 7600
Fax: +27 11 388 1136

All rights reserved. Unless otherwise indicated, all materials on these pages are copyrighted by OSBORN. No part of these pages, either text or image may be used for any purpose other than personal use. Therefore, reproduction, modification, storage in a retrieval system or retransmission, in any form or by any means, electronic, mechanical or otherwise, for reasons other than personal use, is strictly prohibited without prior written permission.

Companies of the Astec Aggregate and Mining Group



www.osborn.co.za



www.telsmith.com



www.rockbreaker.com



www.astromobilescreens.com



www.kpijci.com