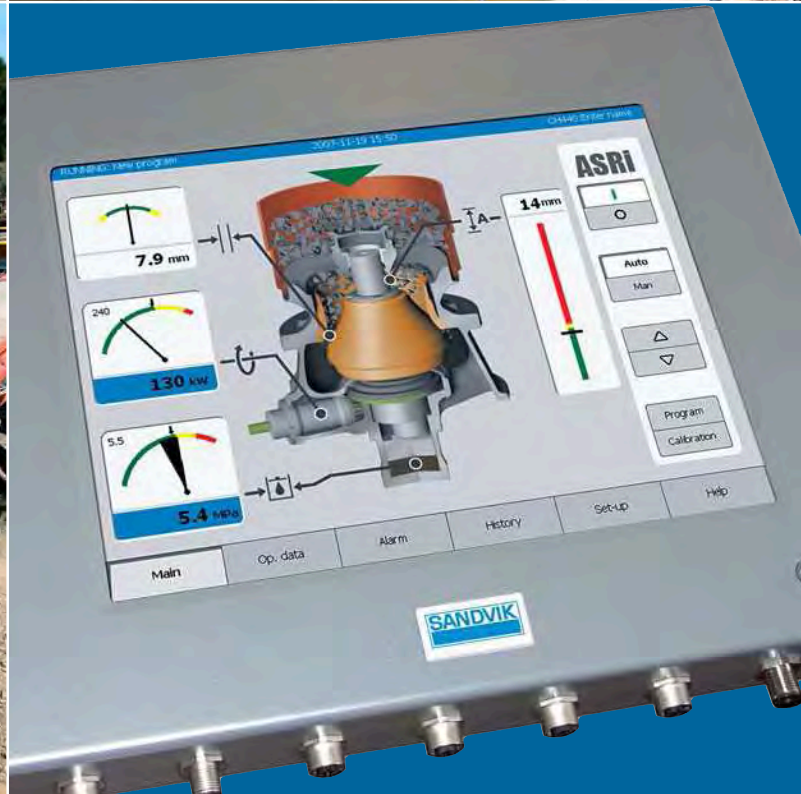


# Sandvik Cone Crushers



• High performance – lowest total cost • Excellent versatility • Full control of the process • Easy to handle and maintain • Reliable



• Produces material of excellent shape • Compact, robust design with wide feed opening • Several standard crushing chambers available • Hydraulic adjustment with the Hydroset system • Can be equipped with automatic setting regulation, ASRI • All maintenance and inspection from above – quick and easy

# Cone Crushers

Sandvik cone crushers are of advanced design with a small footprint and high capacity in relation to size. They have high reduction efficiency and give very good product shape. With hydraulically adjusted CSS, the option of automation, a choice of several different crushing chambers, and many other high-performance features, each model is versatile, user-friendly and highly productive.

The Sandvik CS- and CH-series of cone crushers have a wide field of use as they can easily be matched to changes in production through the proper selection of crushing chamber and eccentric throw. Our cone crushers are ideal for secondary and tertiary crushing and the compact and easy-to-service design makes them a perfect choice for mobile installations.

Our crushers provide automatic overload protection and can be equipped with our automatic setting system ASRi. This system optimizes cone crusher efficiency and automatically adapts the crusher to variations in feed conditions. By continuously measuring and compensating for crusher liner wear, ASRi allows you fully utilize crusher liners and schedule liner replacements to coincide with planned maintenance stops. ASRi also assists in keeping your crusher choke fed. This maximizes rock-on-rock crushing, which helps to optimize the quality of your final product.



# High Performance

## Lowest Total Cost

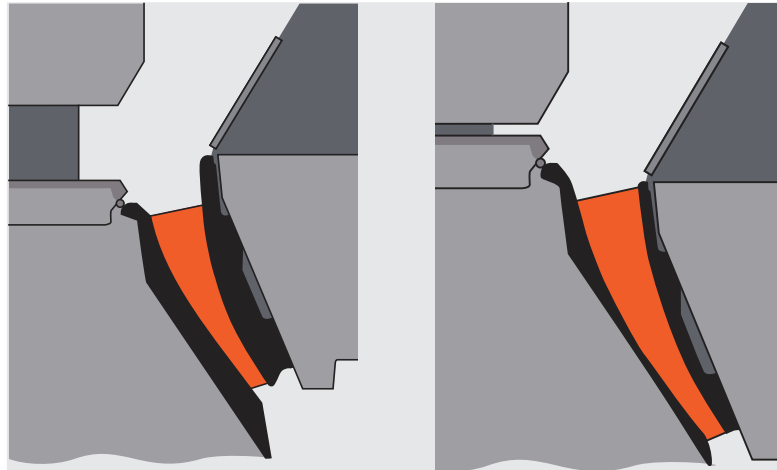
The hydraulically adjusted CS & CH cone crushers manufactured by Sandvik are characterized by robust design and high performance.

In combination with the CLP crushing chambers, high motor powers give these crushers capacities which are in most cases comparable with those of other, larger crushers.

The CLP advantages are:

- Constant feed acceptance capability
- Increased output
- High-quality products
- Increased liner life
- Lowest total cost

Sandvik cone crushers can be equipped with an automatic setting system, ASRi, which can improve performance even more and also provides integration with sophisticated plant control systems.



CLP crushing chamber. CLP stands for Constant Liner Performance. The almost vertical profile of the feed opening area means that the shape of the chamber remains virtually unchanged throughout the wearing life.



# Excellent Versatility

Our cone crushers have a wide field of use. Several standard crushing chambers are available for each model.

The crushers can easily be matched to changes in production through the proper selection of crushing chamber and eccentric throw.

Sandvik cone crushers are an excellent choice as secondary crushers in combination with a jaw or a primary gyratory crusher or in the third or fourth crushing stage. Thanks to their built-in versatility, these crushers will enable you to cope with most production requirements in a changing future.



Several standard crushing chambers are available. The crushers can easily be matched to changes in production by the proper selection of crushing chamber and eccentric throw.

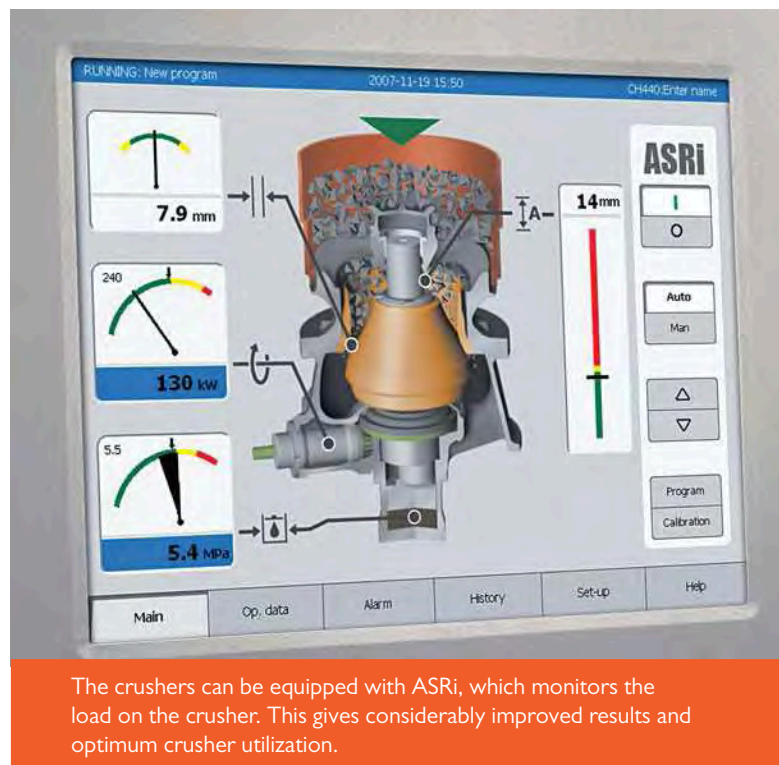


# Full Control of the Process

The Hydrosset system provides safety and setting adjustment functions, and incorporates a heavy-duty hydraulic cylinder which supports the mainshaft and adjusts its position.

The Hydrosset system provides automatic overload protection to permit the passage of tramp iron or other uncrushable material. The system then automatically returns the mainshaft smoothly to its original position.

When the cone crusher is equipped with our automatic setting system, ASRi, the actual crushing load inside the crusher is continuously monitored. This makes it possible to optimize crusher utilization allowing you to squeeze the ultimate performance from your machine at all times.





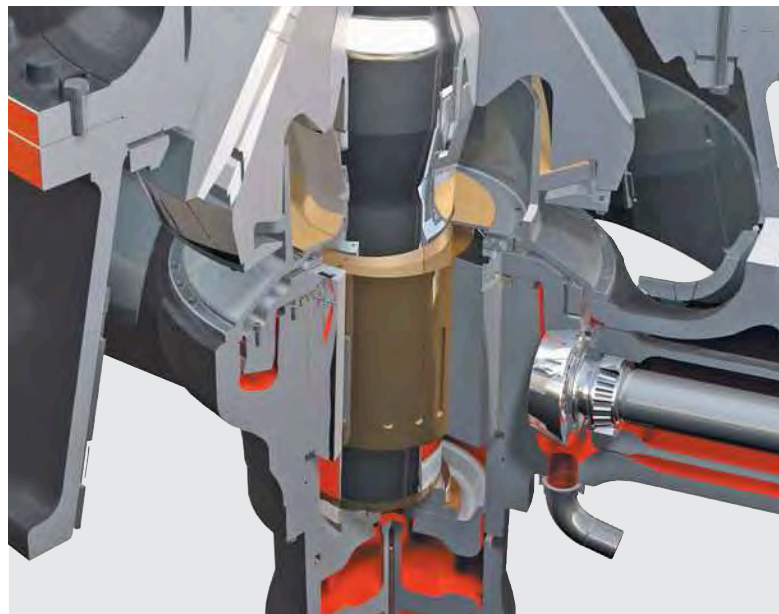
## Easy to Handle and Maintain

Much attention has been paid to making our crushers as easy to operate and maintain as possible. All service and inspection is carried out from above, which makes the work easier and the maintenance costs lower.

Robust sealing to the inner crusher mechanics provides more effective protection against dust and other unwanted particles – reducing maintenance and increasing the life of the crusher.

The automatic setting regulation system ASRi, not only optimizes production, it also keeps track of liner wear. This makes it easy to plan liner changes and minimize interruptions in production.

In addition to the high capacity, Sandvik CS & CH crushers are compact, which makes them very easy to move and to install.



Robust sealing to the inner crusher mechanics provides more effective protection against dust and other un-wanted particles – reducing maintenance and increasing the life of the crusher.



# Customer Satisfaction

Building strong customer relationships is highly prioritized in our daily work to help you keep your Sandvik crushing system in operation, to improve your uptime and productivity, lower your costs and provide you with the best, possible total economy.

- Sandvik has vast experience and teams spanning the globe in order to provide you with total support.

- Sandvik has a highly efficient, worldwide service and distribution network to make sure all essential parts and consumables are available to you according to your needs.

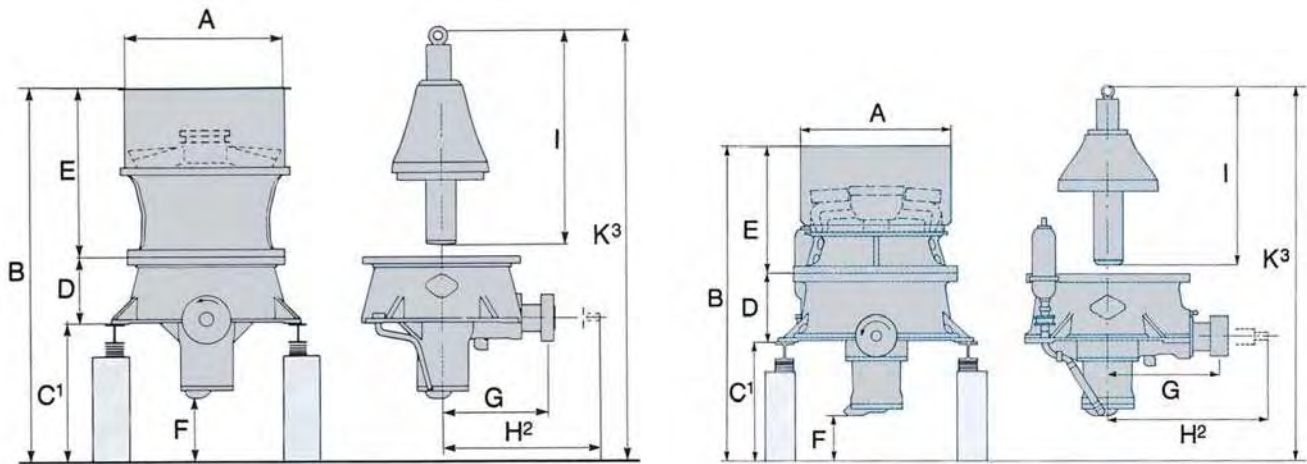
- Sandvik offers intensive training courses tailored to fit your needs in order to help achieve optimum equipment performance.

- Sandvik offers efficient, cost-effective repair and rebuilding services when it becomes necessary, more economical or environmentally beneficial to repair, overhaul or rebuild the equipment.

Whatever your needs are, wherever you are and whatever the time is, Sandvik is here to support you.



## Dimensions, mm



Note: Reference line (not floor level) giving minimal dimensions for removal of: 1. Hydroset cylinder, 2. Pinion shaft, 3. Main shaft

Dim.	CS420	CS430	CS440	CS660	CH420	CH430	CH440	CH660	CH870	CH880
A	Ø 1285	Ø 1635	Ø 2000	Ø 2800	Ø 1078	Ø 1360	Ø 1540	Ø 2104	Ø 2450	Ø 2660
B	2902	3485	4075	5100	2560	2992	3410	4215	5475	6456
C¹	1020	1125	1300	1600	1020	1125	1300	1600	2200	2870
D	540	655	745	860	540	655	745	860	1228	1186
E	1342	1705	2030	2640	1000	1212	1365	1755	2045	2400
F	400	422	452	631	400	422	452	631	998	1151
G	843	1061	1280	1497	843	1061	1280	1497	1824	2073
H²	1270	1705	1900	2156	1270	1705	1900	2156	2850	3100
I	1703	2050	2420	2895	1425	1688	1985	2344	3095	3545
K³	3600	4250	4930	5355	3000	3570	4000	4835	6600	7770

Dimensions are intended only as a guide for preliminary planning of the installation and should not be used for the construction of foundations, etc.

## Approximate Weights, kg

	CS420	CS430	CS440	CS660	CH420	CH430	CH440	CH660	CH870	CH880
Heaviest lift during maintenance	2300	5100	8100	16500*	1400**	2900**	4700**	7800**	13000**	22000**
Total weight	6800	12000	19300	35700	5300**	9200**	14300**	24200**	50000**	70000**

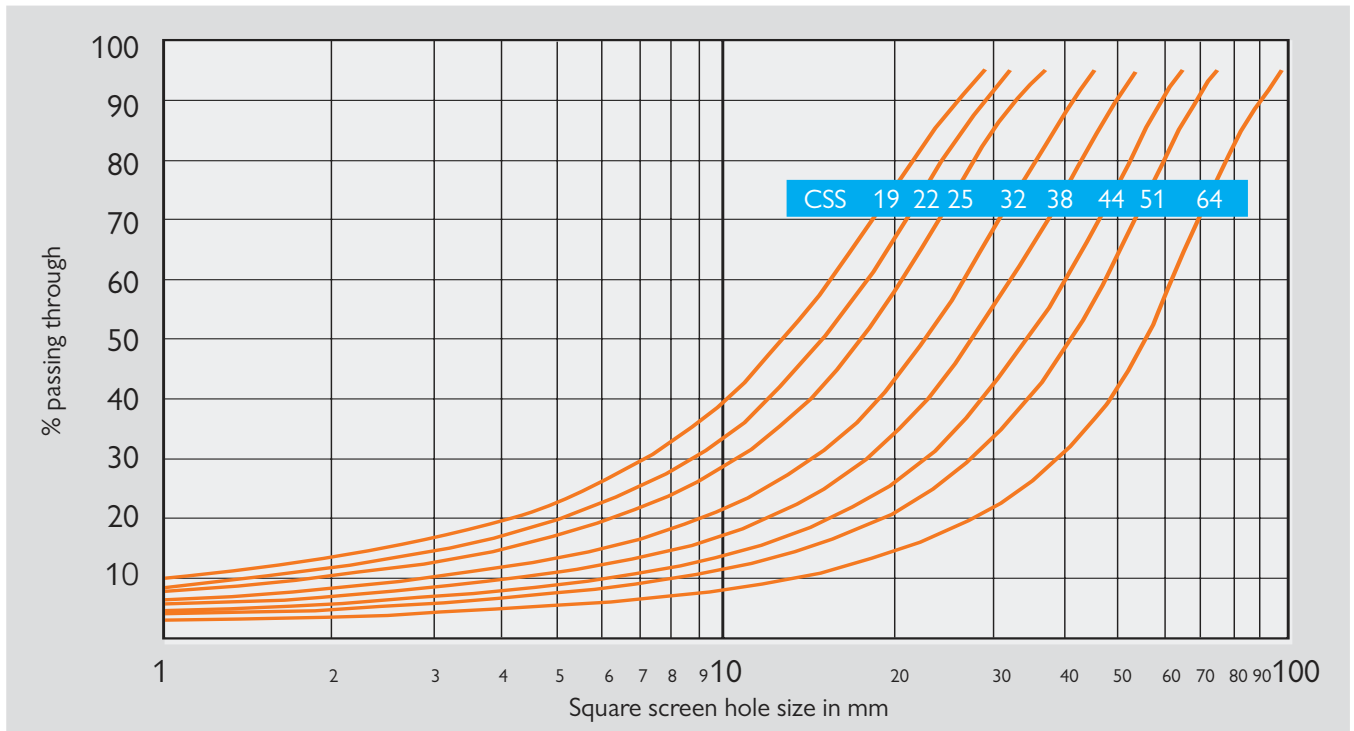
\* 16500 kg = topshell assembly + spider assembly. 9700 kg = topshell assembly only.

\*\* Applies to crusher with fine crushing chamber. With coarse crushing chamber, these weights are reduced by approximately 380 kg for the CH430, by 600 kg for the CH440, by 600 kg for the CH660, by 600 kg for the CH870 and by 3800 kg for the CH880 model.

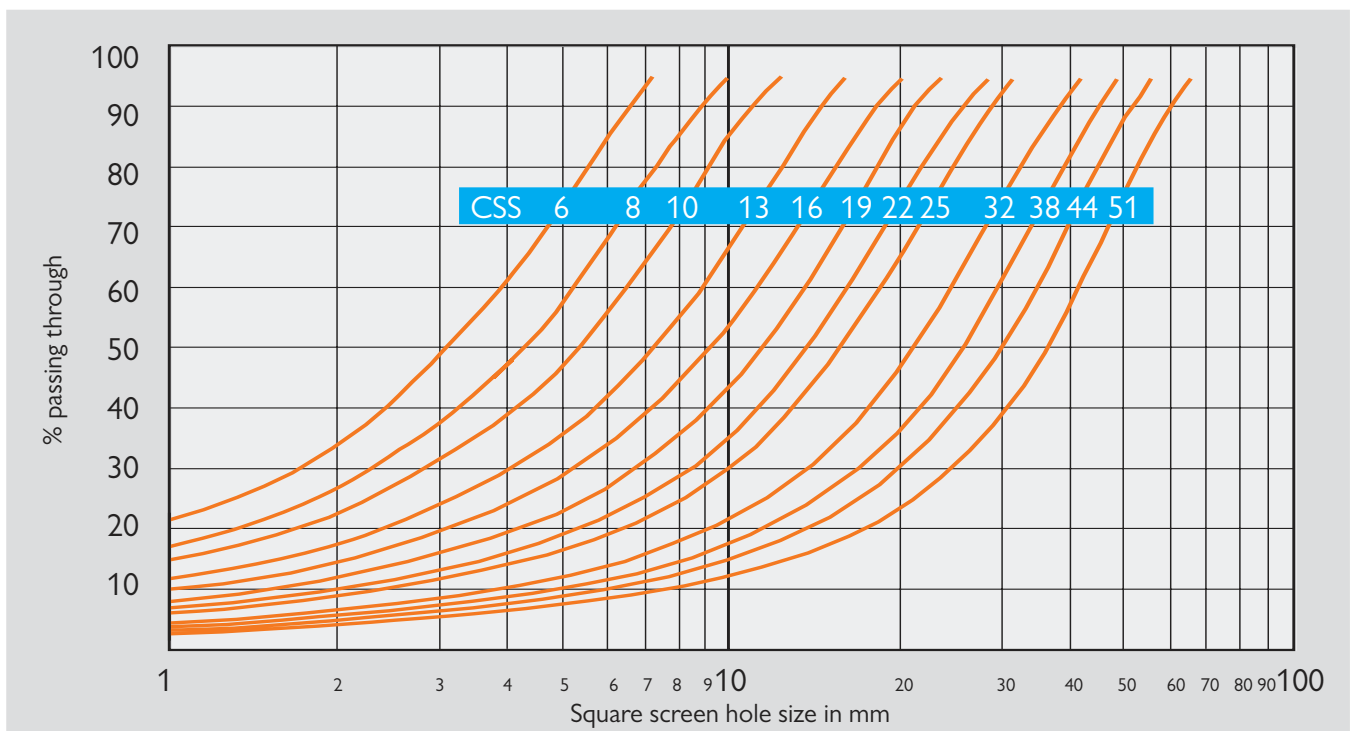
# Product Curves

The product curve and the percentage of the crusher product that is smaller than the closed side setting (square hole, mm) is dependant on the crushability ( $W_i$ ) of the material, the size distribution of the feed and other factors.

## CS-crushers



## CH-crushers



# Crushing Chambers

## CS-crushers

Three standard crushing chambers are available:

- MC = Medium Coarse
- C = Coarse
- EC = Extra coarse

## CH-crushers

Several standard crushing chambers are available:

- EEF = Extra Extra Fine
- EF = Extra Fine
- EFX = Extra Fine Xtra
- F = Fine
- MF = Medium Fine
- M = Medium
- MC = Medium Coarse
- C = Coarse
- CX = Coarse Xtra
- EC = Extra Coarse

# Capacity, MTPH

Performance figures are approximate and give an indication of what the crusher can produce.

They apply to open circuit crushing of dry material with a bulk density of 1600 kg/m<sup>3</sup>. It is assumed that material much finer than the crusher's closed side setting (CSS) is removed from the feed.

Consult us regarding the application of the crusher since the chosen eccentric throw, degree of reduction, the material's crushability ( $W_p$ ), the size analysis of the feed, the design of any recrushing circuit and the moisture content in the feed all affect performance of the crusher.

## CS-crushers

	Max motorsize kW		Max feed size mm	19	22	25
CS420	90	EC	240		85	92-115
		C	200	70	76-95	82-128
CS430	132	EC	360			126
		C	300		108	116-145
		MC	235	91	98-123	106-166
CS440	220	EC	450			
		C	400			
		MC	300			195
CS660	315	EC	560			
		C	500			

## CH-crushers

	Max motorsize kW		Max feed size mm	4	6	8
CH420	90	EC	135			
		C	90			
		M	65			36-44
		MF	50		36	38-67
		F	38	27-34	29-50	31-54
		EF	29			
CH430	132	EC	185			
		C	145			
		MC	115			
		M	90			
		MF	75			61
		F	50		48-78	51-83
		EF	35			
CH440	220	EC	215			
		C	175			
		MC	140			
		M	110			
		MF	85			
		F	70			90-135
		EF	38			
CH660	315	EC	275			
		CX	245			
		C	215			
		MC	175			
		M	135			
		MF	115			
		F	85			
		EF	65			
CH870	520	EC	300			
		C	240			
		MC	195			
		M	155			
		MF	100			
		F	90			
		EF	80			
CH880	600	EC	370			
		C	330			
		MC	260			
		M	195			
		MF	130			
		F	120			
		EFX	100			
		EF	85			
EEF	75			309-356		

Nominal capacity in t/h with crusher running at CSS mm													
29	32	35	38	41	44	48	51	54	60	64	70	76	83
101-158	107-168	114-143	121										
90-112	96												
138-173	147-230	156-293	165-310	174-327	183-344	196-306	205-256	214					
127-199	135-254	144-270	152-285	161-301	169-264	180							
116-218	124-232	131-246	139-261	147-275	154-241	165							
		267	282-353	298-446	313-563	334-601	349-524	365-456					
225	239-299	254-381	269-484	284-511	298-448	318-398	333						
214-267	228-342	242-435	256-461	270-486	284-426	303-378	317						
				349	368-460	392-588	410-718	428-856	465-929	489-978	525-1050	562-983	604
			318	336-420	353-618	376-753	394-788	411-823	446-892	469-822	504-631		

Nominal capacity in t/h with crusher running at CSS mm													
10	13	16	19	22	25	32	38	44	51	57	64	70	
46	50-85	54-92	58-99	62-105	66-112	76-128							
43-53	46-89	50-96	54-103	57-110	61-118	70							
38-74	41-80	45-76	48-59										
40-71	44-68	47-53											
32-57	35-48	38											
30-40 with 80 % finer than 4.5-5.5 mm													
	69-108	75-150	80-161	86-171	91-182	104-208	115-208						
	66-131	71-142	76-152	81-162	86-173	98-197	109-150						
57	62-140	67-151	72-162	77-173	82-184	93-145							
64-84	69-131	75-142	80-152	86-162	91-154	104							
65-106	70-115	76-124	81-126	87-114	92								
54-88	59-96	63-103	68-105	72-95	77								
70-90 with 80 % finer than 5-5.6 mm													
		114-200	122-276	131-294	139-313	159-357	175-395	192-384					
	101	109-218	117-292	125-312	133-332	151-378	167-335	183-229					
	97-122	105-262	113-282	120-301	128-320	146-328	161-242						
	117-187	126-278	136-298	145-318	154-339	176-281	194						
114	124-227	134-245	144-263	153-281	163-299	186-248							
96-176	104-191	112-206	120-221	129-236	137-251	156-208							
100-125 with 80 % finer than 6-7.5 mm													
		177	190-338	203-436	216-464	246-547	272-605	298-662	328-511				
		174-194	187-374	200-488	212-519	242-592	268-654	293-521	323-359				
		171-190	184-367	196-480	209-510	238-582	263-643	288-512	317-353				
		162-253	174-426	186-455	198-484	226-552	249-499	273-364					
		197-295	211-440	226-470	240-500	274-502	302-403						
	192	207-369	222-396	237-423	252-450	287-451	318-363						
	195-304	210-328	225-352	241-376	256-400	292-401	323						
	211-293	227-316	244-298	261-290									
				448-588	477-849	544-968	601-1070	658-1172	725-1291	782-1393	849-1512	906-1331	
			406	433-636	461-893	525-1018	581-1125	636-1232	700-1357	756-1464	820-1461	876-1286	
			380-440	406-723	432-837	492-954	544-1055	596-1155	657-1272	708-1373	769-1370	821-1206	
			400-563	428-786	455-836	519-953	573-1054	628-1154	692-1271	746-1372	810-1248	865-1098	
		379-424	407-716	434-765	462-814	527-928	582-942	638-789	702				
280-405	357-395	385-656	414-704	442-752	470-800	535-912	592-857	649-718					
	304-517	328-558	352-598	376-639	400-680	455-775	503-728	551-669					
					480-640	547-1277	605-1411	662-1546	730-1702	787-1837	854-1994	912-2128	
					540-772	616-1232	681-1362	746-1492	821-1643	886-1773	962-1924	1027-1613	
				541	576-864	657-1231	726-1361	795-1490	876-1642	945-1771	1025-1538	1094-1231	
				552-613	587-1043	669-1189	739-1314	810-1440	892-1586	962-1604	1045-1393	1115	
			514	549-933	584-993	666-1132	736-1251	806-1370	888-1420	958-1245			
		531	570-832	609-888	648-945	739-985	816-885						
364-420	401-502	433-631	465-678	496-724	528-770	602-803	665-721						
328-441	395-532	426-574	458-616	489-658	520-700	593-798	655-882	718-883	790				
	356-479	384-517	412-554	440-592	468-630	534-575							

# Features which make our cone crushers the best on the market

An easy-to-maintain crusher. Maintenance and inspection from above.

The crusher has a CLP crushing chamber as standard. *One* topshell is used for all crushing chambers.

The robust design provides the strength and stability necessary for the crushing of extra-hard materials. The design also results in low maintenance costs.

Inspection holes are provided in the bottomshell.

Prepared for the installation of ASRi, the Automatic Setting Regulation system.

1. Long life from liners of special alloy manganese steel.
2. An automatic overload protection system is standard. The CH880 has a pressure limiting valve. Other sizes have an accumulator.
3. The interior of the crusher is protected from dust by a self-lubricating seal ring.
4. The bottomshell arms have liners of special alloy steel.
5. Quiet operation and long life thanks to bevel gears with hardened, spiral-cut teeth.
6. Product curve and capacity can be optimized by adjusting the eccentric bushing supplied with the crusher.
7. Large feed opening. The two topshell arms are protected against wear by robust liners of special alloy steel.

8. Mainshaft protected by replaceable sleeve and inner headnut.
9. CLP crushing chamber design maintains feed opening throughout the entire life of the liners.
10. Easy adjustment of gear backlash.
11. Robust design of the pinionshaft assembly. The pinionshaft and its bearings are built as a single unit which can be removed without taking the crusher apart.
12. Oil tank unit
  - filtration
  - cooling and heating
  - circulation pump
  - monitors for temperature and flow rate
  - interlocks

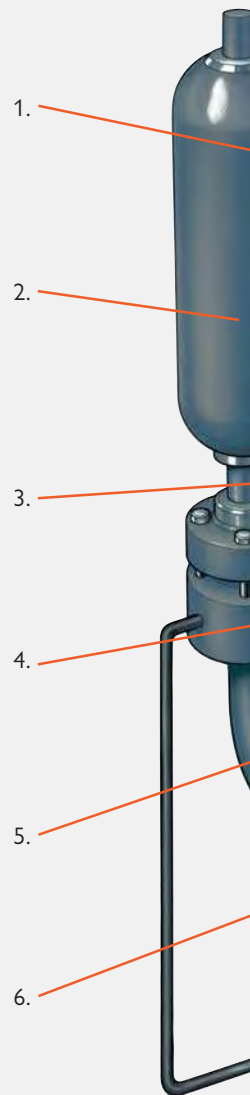
## Lubrication

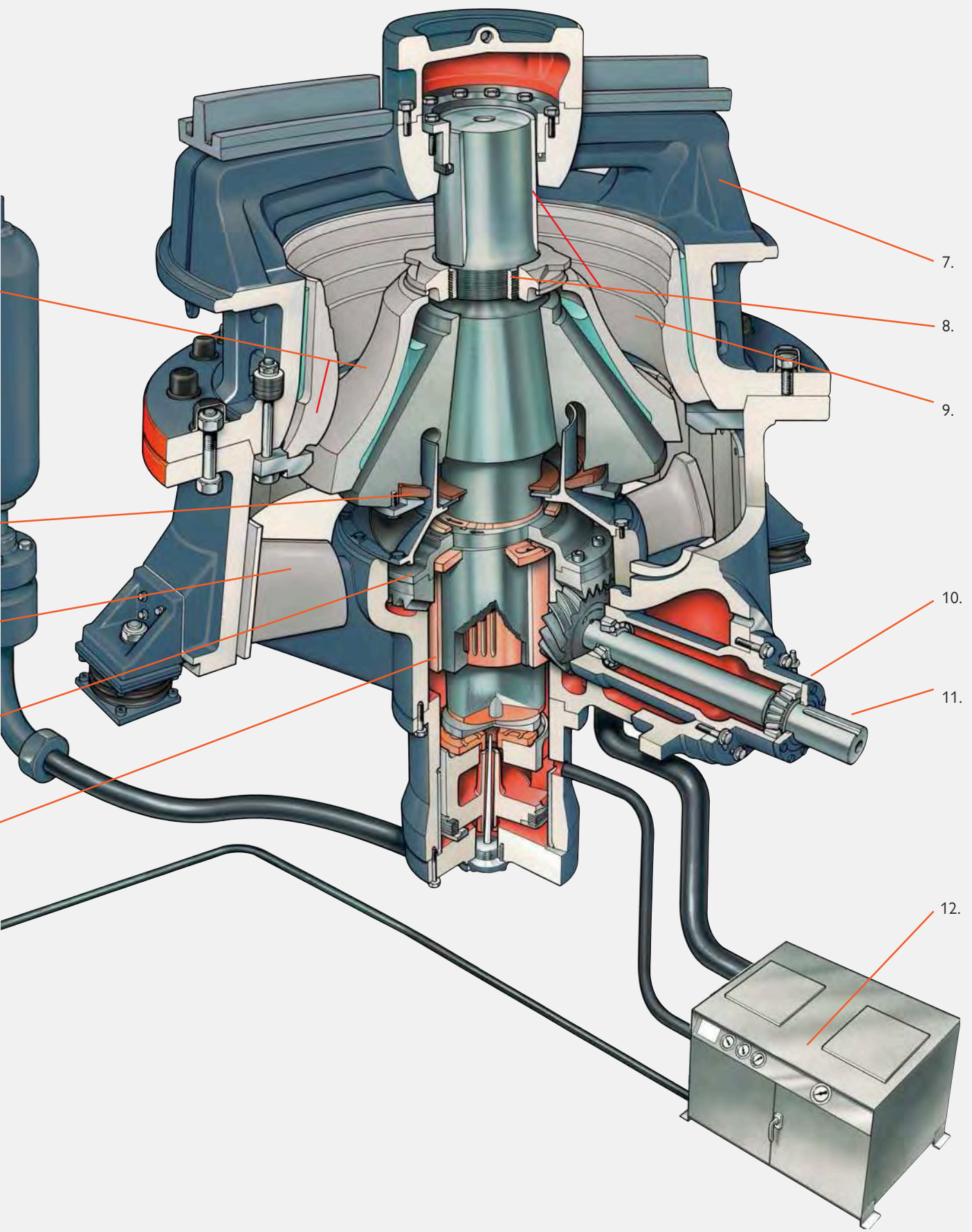
A. Separate lubrication for the spider bearing.

B. The oil tank unit automatically maintains oil flow to the various bearings. This system permits full lubrication even before the crusher itself is started since the pump is independent of the crusher. The oil is filtered and cooled automatically.

The oil tank for the lubrication and *Hydroset* systems is a self-contained unit incorporating filters, heating and cooling equipment, pumps, temperature and flow rate monitors and electrical interlocks.

C. The pinionshaft unit has separate lubrication.





Sandvik is a global industrial group with advanced products and world-leading positions in selected areas – tools for metal cutting, equipment and tools for the mining and construction industries, stainless materials, special alloys, metallic and ceramic resistance materials as well as process systems. In 2009 the Group had about 44,000 employees and representation in 130 countries, with annual sales of nearly SEK 72,000 M.

Sandvik Mining and Construction is a business area within the Sandvik Group and a leading global supplier of equipment, cemented-carbide tools, service and technical solutions for the excavation and sizing of rock and minerals in the mining and construction industries. Annual sales 2009 amounted to about SEK 32,600 M, with approximately 14,400 employees.

