



SANDVIK CS660 CONE CRUSHER

TECHNICAL SPECIFICATION

Sandvik CS660 cone crusher has a hydraulically supported main shaft that is supported at both ends. It also has a robust crusher design, adjustable eccentric throw, and a constant intake opening. This crusher is suitable for a high-capacity secondary crushing application.

Sandvik CS660 cone crusher has a large intake capability and a high capacity in relation to its size. The Automatic Setting Regulation control system (ASRi™) enables real-time performance management, giving you a machine that consistently runs at optimum levels, ensuring it consistently produces excellent quality output.

It's a durable, reliable and productive machine which is designed to be easily serviced, so you can benefit from optimum levels of uptime.

Two standard crushing chambers are available for each model. The crushers can easily be matched to changes in production by selection of crushing chamber and eccentric throw.

The chambers are.
C = Coarse
EC = Extra coarse



KEY FEATURES

ASRi™	Automatically adapts crusher to feed conditions
Hydroset™ system	Provides safety and setting adjustment functions
Mainframe is built as a unibody without moving parts	For optimal strength and less components requiring maintenance
Top serviceability	Lifting from above minimizes risks, and allows for quicker and safer maintenance
Adjustable eccentric throw	To exactly balance capacity to the process thus harmonizing the crushing stages
Constant liner profile	Maintains the feed opening and performance during the entire service life of the liners
Wide range of crushing chambers suited for all types of applications	Choose from extra coarse crushing chambers with the largest intake to extremely fine crushing chambers
Hydraulic dump valve for tramp iron protection	Reduces pressure peaks and mechanical stress on the crusher, greatly improving reliability

GENERAL INFORMATION

GENERAL DESIGN CRITERIA

Crusher type	Cone crusher, hydraulically adjusted
Application	Construction, aggregate
Crushing stage	Secondary
Max. feed size	556-622 mm
CSS range	29-83 mm
Nominal capacity*	314-908 mtph
Ambient temperature	-20°C to +40°C (Contact Sandvik if outside range)
Altitude of site	≤ 1,000 m (Contact Sandvik if outside range)

* Capacity is dependent on the crushing chamber, the eccentric throw, the crusher's setting and the feed material's bulk density, crushability, size analysis, moisture content, etc.

GENERAL CRUSHER DATA

Weight	40,255 kg
Main frame	Three-part unibody structure without moving parts. Cast steel.
Top shell	Two-arm design
Bottom shell	Five-arm design Two inspection hatches
Feed hopper	Two inspection hatches
Feed level sensor	Vegapuls 67 available as option
Main shaft	Supported at both ends Top spider bearing and bottom eccentric bearing
Eccentric bushings (Throws – mm)	20, 25, 30, 35, 40
Eccentric speed	258 rpm
Max. motor power	315 kW
Drive	V-Belt
Safety coupling	N/A
Pinion shaft speed	1,061 rpm (50 Hz) 1,068 rpm (60 Hz)
Maintenance tool box	Extractor for eccentric bushing Extractor for bottom shell bushing Extractor for step bearing Additional lifting and maintenance tools included

CRUSHING CHAMBERS

Mantle alternatives	A, B
Concave alternatives	EC, C
Alloys for mantles and concaves	M1, M2, M9
Mantle and concave backing material	Epoxy
Lifting tools for mantles and concaves	Available as option for mantles only

CRUSHER DRIVE SYSTEM

MOTOR CHARACTERISTICS

Manufacturer	WEG
Model	W21/W22/HGF
Type	Three-phase, squirrel cage
Weight	1,750-2,880 Kg
Rated power	315 kW
Frequency	50/60 Hz
Poles	4
Vibration resistance	Motor is supplied with special winding that is reinforced in order to support the vibration levels
Insulation class	F
Protection class	IP55

CRUSHER DUST EXCLUSION

SYSTEM CHARACTERISTICS

Type	Over-pressure air system
Air input	Blower
Air quality	Filtered
Air flow	200 l/min
Air pressure	10kPa max
Weight (blower, hoses)	42 kg
Motor power	0.75 kW @50 Hz / @60 Hz
Motor speed	2,825 rpm (50Hz) 3,440 rpm (60Hz)
Phases	3
Insulation class	H
Protection class	IP55

CRUSHER WEAR PROTECTION

FEED HOPPER

No. of liners	14
Max. weight	85 kg
Material	Wear-resistant hardened steel
Fastening method	Welded

TOP SHELL LINER

No. of liners	12
Max. weight	63 kg
Material	Manganese steel
Fastening method	Hanging and/or bolted

TOP SHELL SPIDER CAP

Max. weight	716 kg
Material	Carbon steel/Manganese steel
Fastening method	Bolted seal with O-ring

TOP SHELL ARM SHIELDS

No. of shields	2 (1 per spider arm)
Max. weight	560 kg
Material	Manganese steel
Fastening method	Hanging

BOTTOM SHELL BODY LINERS

No. of liners	5/10
Max. weight	59 kg
Material	Rubber/Wear-resistant hardened steel
Fastening method	Bolted

BOTTOM SHELL ARM LINERS

No. of liners	5
Max. weight	110 kg
Material	Manganese steel
Fastening method	Welded

*No main frame welding

MANUALS

Operator's manual	Any language
Installation manual	Any language
Installation manual appendix	Any language
Maintenance manual	Any language
Spare parts catalogue	English only

TANK UNIT

GENERAL DATA

Purpose	Supplies oil to the crusher, lubrication system and Hydroset system
No. of doors	2
No. of inspection hatches	2 located on top of unit
Cabinet material	Metal
Tank unit dimensions (L x W x H)	1,680 x 1,050 x 1,996 mm
Dry weight	825 kg

HYDROSET SYSTEM

System design	Single reversible pump
Oil tank reservoir capacity	85 liters
Pump design	Gear pump
Pump capacity	10.4 l/min @50 Hz 12.6 l/min @60 Hz

Oil filter

Filter type	Spin-on
Filtration grade	10 µm
Filter material	Glass fiber
No. of filters	1

Pump motor

Type	Three-phase, squirrel cage
Power	3.0 kW @50 Hz 3.6 kW @60 Hz
Speed	1,450 rpm @50 Hz 1,740 rpm @60 Hz
Poles	4
Insulation class	F
Protection class	IP55

MAIN CRUSHER LUBRICATION SYSTEM

System design	Closed circuit, single pump, gravity return
Oil tank reservoir capacity	400 liters
Pump design	Gear pump
Standby pump	N/A
Pump capacity	112 l/min @50 Hz 135 l/min @60 Hz

Oil filters

Filter type	Spin-on
Filtration grade	25 µm
Filter material	Glass fiber
No. of filters	1

Pump motor

Type	Three-phase, squirrel cage
Power	4.0 kW @50 Hz 4.8 kW @60 Hz
Speed	1,450 rpm @50 Hz 1,740 rpm @60 Hz
Insulation class	F
Protection class	IP55

Oil heaters

No. of heaters	2 (Optional 3)
Type	Immersion heater
Rating	1.65 kW
Installation type	Immersion heater tube
Phases	3

PINIONSHAFT LUBRICATION SYSTEM

System design	Closed circuit, bleed off line from main lubrication, gravity return
Oil tank reservoir capacity	N/A
Pump design	N/A
Pump capacity	N/A

Oil filter

Filter type	Spin-on
Filtration grade	10 µm
Filter material	Glass fiber
No. of filters	1

Pump motor

Type	N/A
Power	N/A
Speed	N/A
Pump capacity	N/A
Insulation class	N/A
Protection class	N/A

TANK OVER-PRESSURE AIR SYSTEM

Type	N/A
Air input	N/A
Air quality	N/A
Air flow	N/A
Air pressure	N/A
Weight (blower, hoses)	N/A

Tank air blower motor

Power	N/A
Speed	N/A
Insulation class	N/A
Protection class	N/A
Phases	N/A

CRUSHER TRAMP IRON PROTECTION

ACCUMULATOR

System description	Protection against uncrushable objects by redirecting Hydroset-oil into a pressurized accumulator
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MECHANICAL DUMP VALVE

System description	N/A
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ELECTRIC DUMP VALVE

System description	N/A
Pressure transmitter and an electric pilot valve connected to a dedicated, rapid sampling PLC system	
Hydraulic pressure sampling rate	N/A
Heating elements	N/A

PLC CABINET

Manufacturer	N/A
Dimensions (L x W x H)	N/A
Weight	N/A
Supply voltage	N/A
Phases	N/A
Frequency	N/A
Power	N/A
Protection class	N/A
Control voltage	N/A
Communication interface	N/A
Customer feedback signals	N/A

OIL COOLING SYSTEMS (FOR MAIN CRUSHER LUBRICATION)

STANDARD AIR/OIL COOLERS

No. of units	1
Dry weight (incl. stand)	130 kg
Material	Aluminum
Oil volume	12.9 liters
Max. air flow	2,8 kg/s @50 Hz 3,4 kg/s @60 Hz

AIR COOLER FAN MOTOR

Type	Three-phase, squirrel cage
Power	2.2 kW @50 Hz 3.6 kW @60 Hz
Speed	1,450 rpm @50 Hz 1,740 rpm @60 Hz

WATER/OIL COOLER (OPTION)

No. of units	N/A
Dry weight (incl. stand)	N/A
Heat exchanger material	N/A
Oil volume	N/A
Bypass pressure	N/A
Oil flow rate	N/A
Waterflow rate	N/A
Inlet water temperature	N/A
Max. water feed pressure	N/A
Max. cooling capacity	N/A

OFFLINE FILTER UNIT FOR MAIN LUBRICATION

Purpose	Removes particles and water from the main lubrication system in a continuous slow offline filtration process
Model	27/54
Oil capacity	20 liters
Dimensions (L x W x H)	650 x 450 x 1,055mm
Weight	100 kg
Pump design	Gear wheel

OIL FILTER

Filter type	Filter Insert
Filtration grade	3 µm
Filter material	Cellulose
Filter housing material	Cast iron
No. of filters	2

PUMP MOTOR

Type	Three-phase, squirrel cage
Capacity	200 l/h @50 Hz 240 l/h @60 Hz
Speed	915 rpm @50 Hz 1,120 rpm @60 Hz
Protection class	IP55

AUTOMATIC SETTING REGULATION - INTELLIGENT (ASRi)

ASRi is Sandvik's control system used in crushing and screening applications.

The ASRi keeps the setting as close as permitted by the machine without risk of damaging it. Thus, the ASRi helps the user achieve higher production, a higher degree of reduction, and improved product distribution. In addition, a better product shape can be obtained. A further benefit is that the cone crusher's wearing liners can be utilized better.

The ASRi monitors the cone crusher's performance and ensures that the measured values lie within the permitted limits that have been set in the system. If these limits are exceeded, the ASRi will adjust the setting until the desired values are attained.

MONITORING FUNCTIONS (AVAILABLE WITH METRIC AND IMPERIAL UNITS)

Power consumption
Hydroset hydraulic pressure
Main shaft position
Calculated CSS (based on main shaft position)
Liner wear
Historical data log
Automatic liner wear compensation

REGULATING FUNCTIONS AND CRUSHING PROGRAMS

Auto-CSS	Keep CSS constant
Auto-Load	Keep load constant (automatic compensation for liner wear)
Multi-CSS	Alternate between two CSS settings
20 customized programs can be stored	

SAFETY FUNCTIONS

Protects the crusher from overload by automatically regulating the crusher based on preset operational values and the real-time input from the crusher

Alarm severity levels: Direct Stop of Feeder and Regulating, Feeder Stop, Warning

Signal permitting operation of the crusher drive motor

Alarm log

HARDWARE COMPONENTS

CONTROL UNIT / OPERATOR'S PANEL

Dimensions (wall mount) (H x W x D)	358 x 290 x 70 mm
Dimensions (panel mount) (H x W x D)	350 x 290 x 88 mm
Weight (wall mount)	6.5 kg
Weight (panel mount)	5.6 kg
Operational temperature	-20°C to +50°C
Protection class	IP65
Protection class (panel mount)	IP65 (front), IP30 (rear)
Power supply	18 - 32 VDC
Communication	Ethernet, RS232, COMLI, XNL

POWER SUPPLY UNIT

Dimensions (H x W x D)	217 x 120 x 72 mm
Weight	2.7 kg
Operational temperature	-25°C to +70°C
Protection class	IP67
Power supply	100 - 240 VAC

POWER MEASUREMENT UNIT

Dimensions (H x W x D)	130 x 70 x 135 mm
Weight	0.6 kg
Operational temperature	-25°C to +60°C
Protection class	IP20
Power supply	85 - 250 VAC

HYDROSET DRIVE UNIT

Dimensions (H x W x D)	320 x 320 x 160 mm
Weight	9.5 kg
Operational temperature	0°C to +50°C
Protection class	IP65, IP20
Power supply	100 - 240 VAC

TANK MEASUREMENT UNIT

Dimensions (H x W x D)	211 x 30 x 26,5 mm
Weight	0.266 kg
Operational temperature	0°C to +55°C
Protection class	IP67
Power supply	24 VDC via ASRi bus

ASRi BUS

ASRi bus speed	38,400 Bd
Update frequency CBT	50 - 60 Hz
Update frequency U1N	25 - 30 Hz
Update frequency L3	5 - 6 Hz

SOFTWARE PACKAGE (OPTIONAL)

Operating system compatibility: Windows 10, Windows 8, Windows 7, Windows Vista, Windows XP, Windows 2000	
WINi	Simultaneously control up to 9 different crushers with ASRi / ACS from a PC via Ethernet network. Control the ASRi remotely using the same graphical user interface.
OPC Server	Make it possible to transfer variable values between one or more ASRi system(s) and one or more client application(s).
ASRi Reporter	Export data from the ASRi to a PC for analysis and storage.

PERFORMANCE

CH660 – NOMINAL CAPACITY* (MTPH)

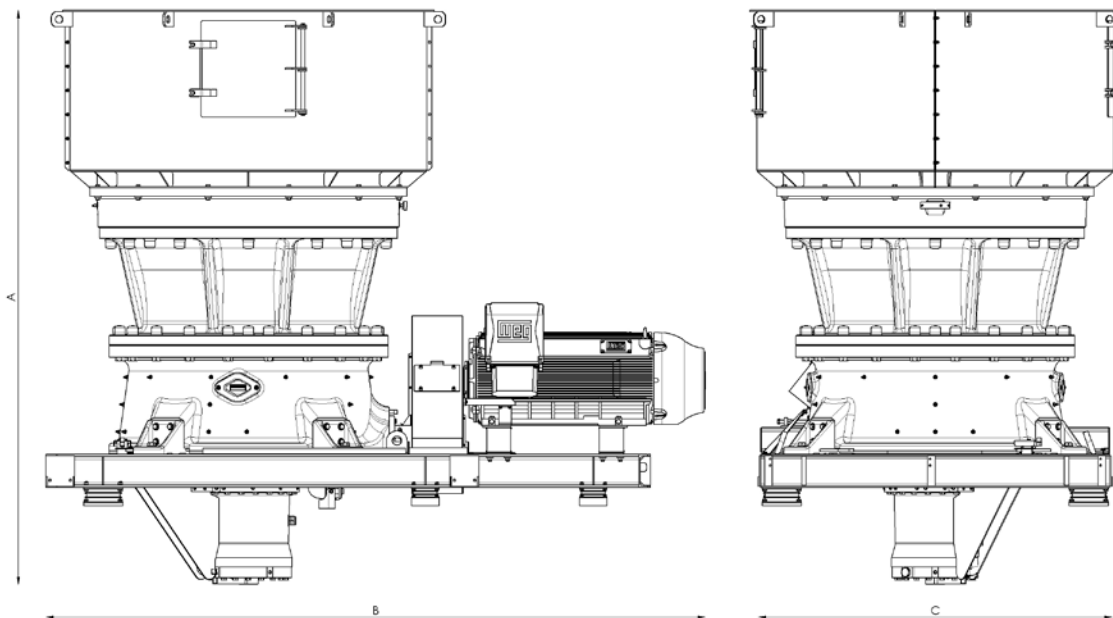
	Concave	EC	C
Max. feed size (mm)	F90	413	369
	F100	622	556
Max. motor power (kW)		315	315
Eccentric throw (mm)		20-40	20-40
CSS (mm)	29	-	314
	32	321	331-480
	35	338-438	349-557
	38	355-566	366-585
	41	371-593	384-613
	44	388-620	401-641
	48	411-656	425-678
	51	428-683	442-706
	54	445-710	459-734
	57	461-737	477-762
	60	478-764	494-789
	64	501-800	518-827
	70	535-908	552-717
	76	568-823	-
	83	608	-
Mantle		A/B	A/B

* based on material with bulk density of 1,600 kg/m³

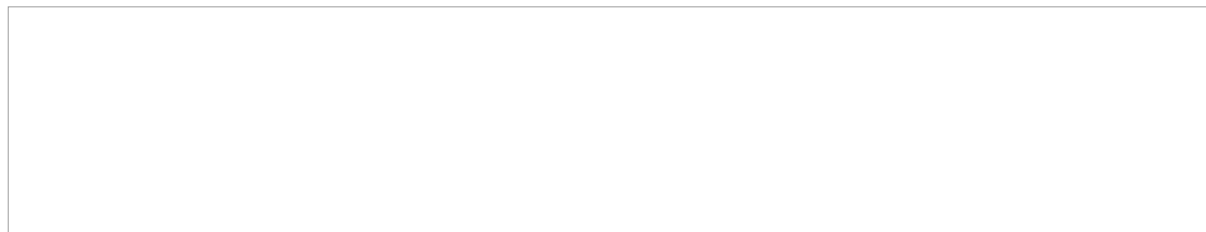
WEIGHT (KG)

	Kg	Lb
Top shell assembly	10,018	22,087
Bottom shell assembly	8,442	18,512
Main shaft assembly	8,317	18,336
Pinion shaft housing assembly	361	795
Hydroset cylinder assembly	1,555	3,428
Feed hopper assembly	2,138	4,713
Eccentric assembly	1,280	2,821
Dust collar assembly	322	710
Hoses and protection assembly	78	172
Crusher weight	40,254	88,743
Subframe	2,829	6,237
Electric motor (max.)	2,880	6,349
Total weight (incl. subframe and drive)	45,963	101,329

DIMENSIONS



A	3,684 mm
B	5,204 mm
C	2,794 mm



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