

Atlas Copco Exploration Products

Christensen CS14 Surface core drilling rigs



Technical specification

Flexible rig size

The CS14, CS14C and CT14 represent the most flexible rig size in the Christensen range of surface core drilling rigs. The rigs differ only in their mode of transport, the CS14 being trailer mounted, the CS14C crawler mounted and the CT14 truck mounted.

Suitable for many applications

Medium-sized, the Christensen 14 range is ideal for a variety of drilling applications – suitable for most depths or types of terrain. All models have a drill capacity of 1 200 meters (NO), and are equipped with a powerful feed system, main winch and Stage 3A/Tier3 and Stage 3B/Tier 4 ready engines which reduce emission levels. Stage 3B/Tier 4 is a higher standard which emits less CO2 emissions and complies with today's environmental standards.

Loaded with features

The rigs come loaded with features that are often optional on other rigs, including water flow meter, Trido water pump and tacho meter. So wherever you are drilling, and whatever you are drilling for, there is a Christensen CS14 to fit the bill.

These rigs are CE marked and meet the requirements of safety standard EN791.

Specifications

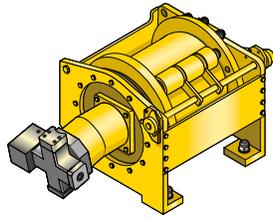
Drill depth capacity

	Standard	Thin Wall
B wireline	1 550 m (5 085 ft)	1 824 m (5 984 ft)
N wireline	1 200 m (3 937 ft)	1 412 m (4 633 ft)
H wireline	800 m (2 625 ft)	941 m (3 087 ft)
P wireline	500 m (1 640 ft)	588 m (1 929 ft)

Depths are based on vertical water-filled hole (13% more than dry hole), and based on main winch lifting capacity.

Main winch

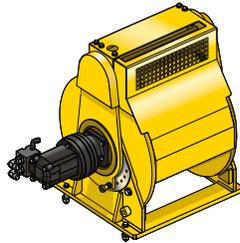
The powerful main winch, equipped with a dual brake system, ensures a well controlled operation. The dual brake system offers both dynamic and static breaking. When the lifting operation is stopped, firm self-locking is applied.



Single line capacity:	80 kN (18 000 lb)
Line speed:	44 m/min (148 ft/min)
Cable size:	27 m (89 ft) x 16 mm (10/16 in)

Wireline winch

The wireline winch includes a level wind device, which organizes the wire along the drum to avoid clutter and extends life of wireline and drum.



Capacity:	2 000 m (6 561 ft) of 4,76 mm (3/16 in)
Line pull:	bare drum: 13 kN (2,922 lb) full drum: 4 kN (899 lb)
Line speed:	bare drum 130 m/min (427 ft/min) full drum 420 m/min (1 378 ft/min)

Mast and feed system

The mast and feed system has a robust and durable design facilitating the drilling depths intended for this model. Additionally it has a rod kicker for rod positioning, and ability to fold the mast for easier transportation.

Feed travel:	3.5 m (11.5 ft)
Feed speeds:	fast and slow with variable control
Thrust:	59.6 kN (13 390 lb)
Pull:	138 kN (31 020 lb)
Rod pull length:	6.09 m (20 ft)

Engine

The Cummins engine is well recognized for its durable life, efficiency and capability to minimize fuel consumption in the toughest off drilling operations. Even up to 5 000 meters altitude*. The engine is offered in Tier 3/Stage 3A and Tier 4/Stage 3B versions.

Power unit

Manufacture:	Cummins
Model:	QSB 6.7
Volume:	6.7 liter, 6 cyl
Power:	Tier 3: 153 kW (208 hp) / Tier 4: 160 kW (217 hp)
RPM:	1 900
Engine type:	Diesel turbocharged/after cooled
Cooling:	Water
Electrical system:	24V (Alternator 24 V, 95 Amp)
Sound level:	Tier 3: 116 dB(A) / Tier 4: 121 dB(A)

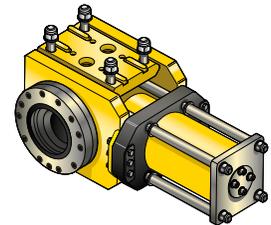
* Above 3 000 m, High Altitude kit needed.

Hydraulic system

Primary pump:	28 MPa – 242 l/min (4 061 psi – 64 gal/min)
Secondary pump:	20 MPa – 122 l/min (2 901 psi – 32,2 gal/min)
Auxiliary pump:	21,5 MPa – 47 l/min (3 118 psi – 12,4 gal/min)
Hydraulic oil cooling:	Air

Rod holder

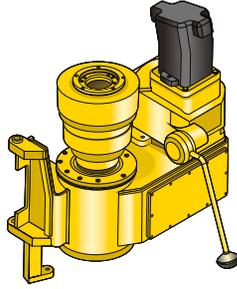
The rod holder is hydraulically opened and closed by gas pressure. In case of loss of hydraulic pressure, the rod holder closes instantly.



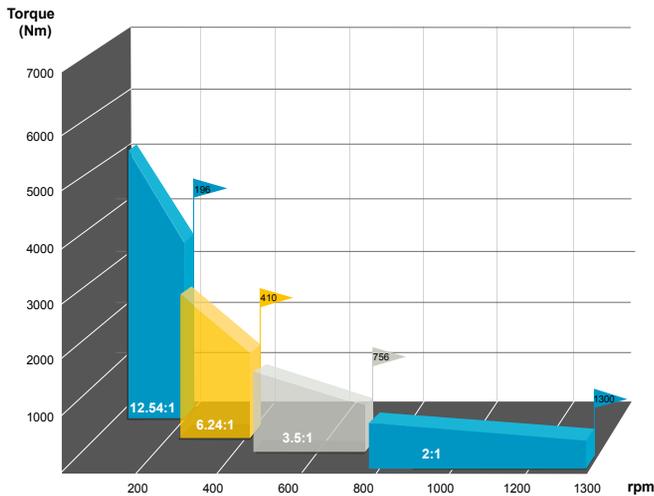
Type:	hydraulic open, gas spring closed
Maximum clamping diameter:	114,7 mm (4.5 in)
Maximum opening diameter:	123 mm (4.8 in)
Holding capacity:	130 kN (29 922 lb)

Rotation head

The rotation unit can handle BO-PO rods and BW-HW casings. It consists of a hydraulic motor, a sealed gearbox, a hollow spindle and an Atlas Copco patented hydraulic chuck and quick change chuck jaws. The rotation speed is adjustable from the control panel.



Power:	hydraulic motor – variable speed/reversible
Final drive:	4 in chain driven in oil bath – 2,5 ratio
Spindle (inner diameter):	117 mm (4 5/8 in)



Spindle Speeds

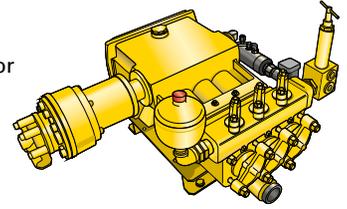
Ratio	Speeds, rpm	Torque, Nm	Torque, ftlb
1st 6.63:1	117-196	5 113-3051	3 771-2 250
2nd 3.17:1	245-410	2 445-1459	1 803-1 076
3rd 1.72:1	451-756	1 326-792	978-584
4th 1.00:1	776-1 300	771-460	569-340

Chuck assembly

Type:	hydraulic open, spring closed
Maximum clamping diameter:	114,7 mm (4.5 in)
Holding capacity:	178 kN (40 000 lb)

Trido mud pump

Trido flush pumps are designed for both mud and water flushing. Equipped with flow meter and pressure transmitter as standard, readable from the control panel.



Model:	TRIDO 140H
Flow:	140 l/min (37 gal/min)
Pressure:	64 bar (928 psi)

Standard equipment

- Hydraulic mast dump	- Hydraulic P-size rod holder
- Mast in two sections	- 4 hydraulic levelling jacks
- Large crown sheave wheel	- Towing package
- Wear lines on lower mast	- Fuel tank 200 l (53 gal)
- Safety guards	- Fuel filter & water separator
- Hydraulic oil reservoir fill pump	- Hydraulic mast raise
- Electric water flow meter	- Hydraulic mud mixer
- RPM meter	

Optional equipment

- Mud mixer
- High altitude kit, to achieve Power Unit max capacity when drilling above 3000 m.

Drill base support

	CS14/CS14C	CT14
Support:	4 hydraulic jacks	
Pad dimensions:	∅ 230 mm (9 in)	210x210 mm (8,3x8,3 in)
Travel length:	550 mm (21,7 in)	600 mm (23,6 in)

Crawler data

Remote control tramping speed (max):	3 km/h
Crawler band width:	300 mm (12 in)
Crawler ground pressure:	11 psi / 74,5 kPa

Measurements & weights

Working dimensions

Dimensions	CS14		CS14C		CT14	
	mm	in	mm	in	mm	in
A	7 220	284	7 370	290	7 169	282
B	10 080	397	10 080	397	9 971	393
C	7 490	295	7 520	296	7 524	296
D	1 040	41	-	-	1 300	51
E	550	22	550	22	600	24
F	2 600	102	2 800	110	2 280	90

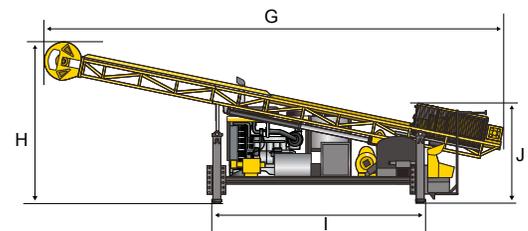
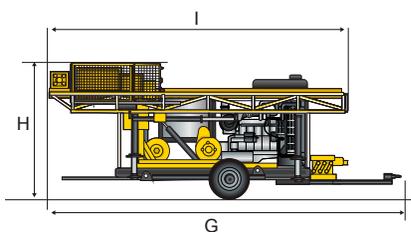
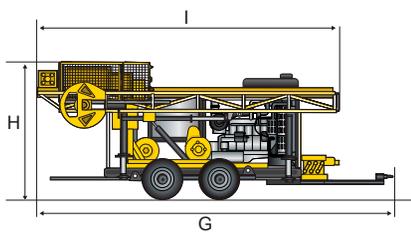
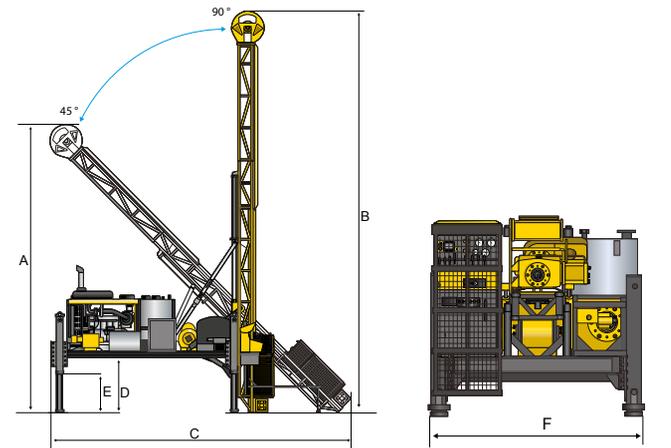
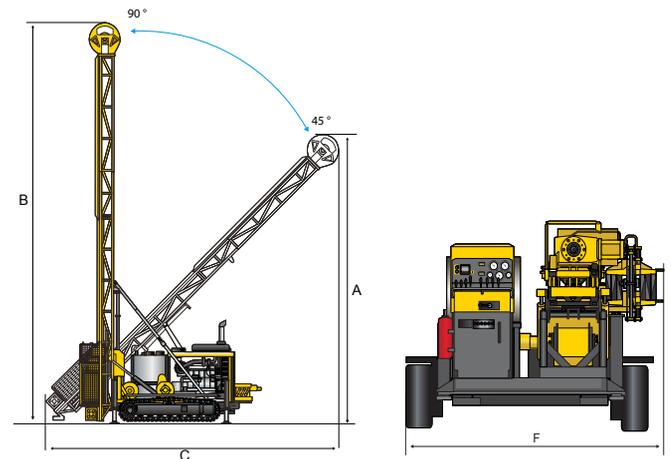
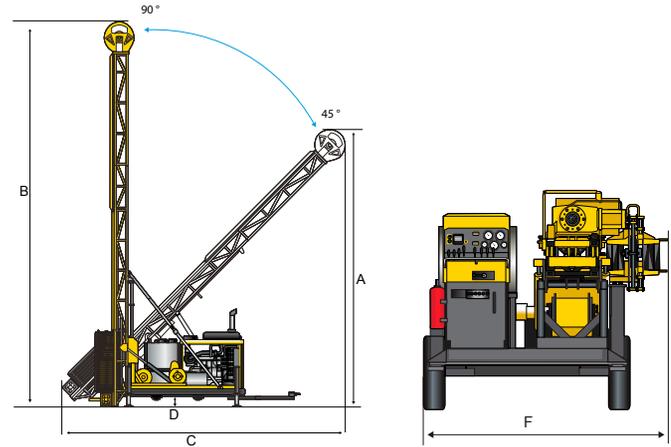
Transport dimensions

Dimensions	CS14		CS14C		CT14	
	mm	in	mm	in	mm	in
G	6 560	258	6 560	258	9 816	387
H	2 320	91	2 140	84	3 719	146
I	5 150	203	5 300	209	4 575	180
J	-	-	-	-	2 417	95

The CS14C dimensions are with the transportation wheels

Weight

CS14:	7 000 kg (15 430 lb)
CS14C (crawler mounted):	9 000 kg (19 800 lb)
CT14:	9 000 kg (19 800 lb)



All specifications and equipment subject to change without notice.



Atlas Copco Geotechnical Drilling and Exploration
www.atlascopco.com/christensen

© Copyright 2012, Atlas Copco Craellius AB, Märsta, Sweden. All product names in this publication are trademarks of Atlas Copco. Any unauthorised use or copying of the contents or any part thereof is prohibited. This applies in particular to trademarks, model denominations, part numbers and drawings. Illustrations and photos in this brochure may show equipment with optional extras. Specifications and equipment subject to change without notice. Consult your Atlas Copco Customer Center for specific information.

Märsta, Sweden, November 2013
 6991 1768 01