

Atlas Copco Surface Drill Rigs

ROC[®] F7CR & ROC[®] F9CR



Two powerful COPROD[®] rigs for drilling straight holes fast

Hole range 90 mm - 107 mm (3½" - 5")

Atlas Copco

Incorporating **COPROD**[®]

**Atlas Copco's patented system for
drilling straight holes fast**

New standards of performance and productivity Atlas Copco's ROC series of crawler rigs have earned an enviable reputation for outstanding performance in the toughest conditions.

Following on this success, we are proud to present the ROC F7CR and ROC F9CR – drill rigs that are not only the most powerful in their class, but also incorporate our unique COPROD system for straight-hole drilling. The result sets new standards of performance and productivity for aggregate quarrying work.

COPROD brings you the best of both worlds

Take the benefits of top-hammer drilling, and forget the drawbacks. Then take the accuracy of down-the-hole drilling, and forget the drawbacks. Pool the benefits of the two methods and you have COPROD, the most exciting development in decades.

Ergonomics and safety

Add to all of the above a touch of specialist know-how in ergonomics and safety – most noticeable in the design of the operator's cabin – and you have a worthy contender for the title of "industry best of breed".

ROC F7CR & ROC F9CR

– **an investment that pays**

The ROC F7CR, ROC F9CR features:

- COPROD for high drilling productivity and superb hole quality. This, in combination with a double drill tube support

for better guidance when collaring, optimizes the drill pattern for low drilling and blasting costs

- Exceptionally durable COP 2150 and COP 2550 rock drills, which incorporate Atlas Copco's unique double dampening system, ensuring longer drill string life and higher penetration rates. These rock drills can also be fitted with TED, our innovative system for preventing the drill string from getting stuck

- A rugged Caterpillar diesel engine with more than enough power to drill straight holes fast in the toughest rock conditions

- An onboard Atlas Copco screw com-

pressor for air flushing, ensuring clean holes that are easier to charge with explosives

- Heavy duty tracks that give superb tramming, making it easy to reach the work site quickly and safely

Designed with service in mind

Like all our crawlers, the ROC F7CR and ROC F9CR have been designed for ease of maintenance with ready access to all service points. And it uses standard parts, which makes for reliable and fast delivery of spares worldwide. That's something we take for granted in Atlas Copco, but never pay lip service to.

Vertical and horizontal drilling to a depth of 30 meters (98 feet)

The new rig comes with single-section boom developed for quarries that place very high demands on productivity. Equipment for horizontal drilling is standard for extra flexibility. The ability to place the feed horizontally also makes it easier to service the feed and rock drill.



The Atlas Copco double drill tube support with hydraulic breakout table for straighter holes.





COP 2150CR and COP 2550CR series

High performance rock drills

Atlas Copco's well-known COP 1800-series is now supplemented with COP 2000-series of rock drills.

This includes also the high-performance COP-CR series. The COP 2150CR and COP 2550CR, which together with their respective COPROD drill strings provide a fast and reliable means of working in even the most demanding rock formations.

Stepped-up torque reduces risk of jamming...

COP CR-series of rock drills are equipped with hydraulic rotation motors with a stepped-up torque output well suited to their respective hole-diameter ranges. High rotational torque like this significantly reduces the risk of jamming and gives smooth rotary action that eases stress to the equipment.

... but you'll never get stuck with TED

These rock drills can be fitted with TED, Atlas Copco's unique air-powered tube extractor device. If the drill string sticks, the anti jamming will reverse the feeding and a duct opens in the TED unit and flushing air is directed into a mech-

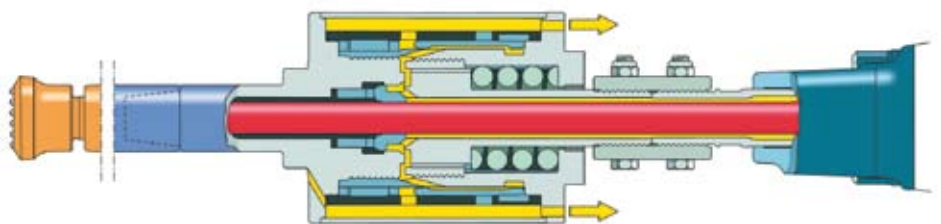
anism that generates reverse percussion. This is transmitted through the housing into the drill string and bit, knocking it free. Yet another Atlas Copco innovation that adds real value to your operation!

Additional drill-string sizes

Success of the original COPROD system has stimulated further development of rock drills and additional drill-string sizes. For the 90–105 mm (3½"–4¼") hole range, the COP 2150CR and COP 2550CR rock drills can be combined with COPROD 76 and for 105–127 mm (4¼"–5") with COPROD 89.

The benefits of COPROD with the COP CR-series

- High penetration rates
- Unique, self-regulating reflex damper in the rock drill for long service life
- Impact piston matched to the drill rod dimension for optimum energy transmission
- Adaptable impact power to suit different rock formations
- A pressure-lubrication system that keeps dirt out of the rock drill and prevents wear between hammer sections and contamination from the outside
- Impact rods without threads, giving long service life
- TED for the near elimination of jamming and hence higher productivity



TED, tube extraction device, is mounted directly on the drill string. This unit generates reverse percussion meaning that the drill string cannot get stuck.



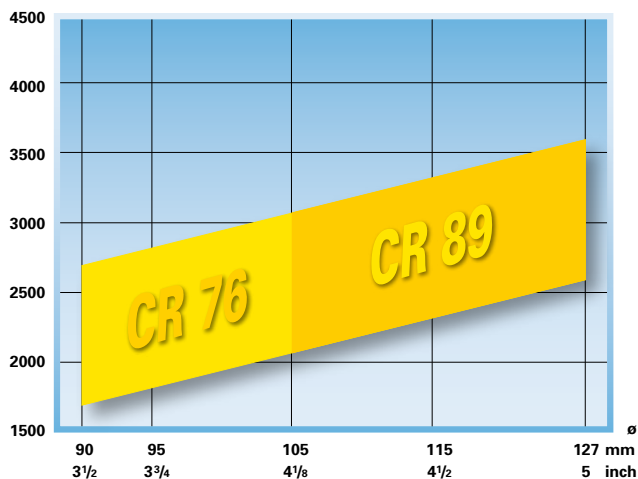
ROC F7CR

ROC F7CR + COPROD = Hole quality

- The COPROD drill string provides straight holes and sturdy hole walls for easier charging with explosives.
- The double drill tube guides also contribute to drilling straight holes and to an excellent hole quality.
- The COP 2150CR rock drill with double dampening system for smooth and reliable drilling, can also be fitted with TED, tube extracting device, for drilling in difficult conditions.

ROC F7CR is equipped with the COP 2150CR rock drill this combination give very straight holes also in demanding rock conditions.

Tonnes x 1000/year



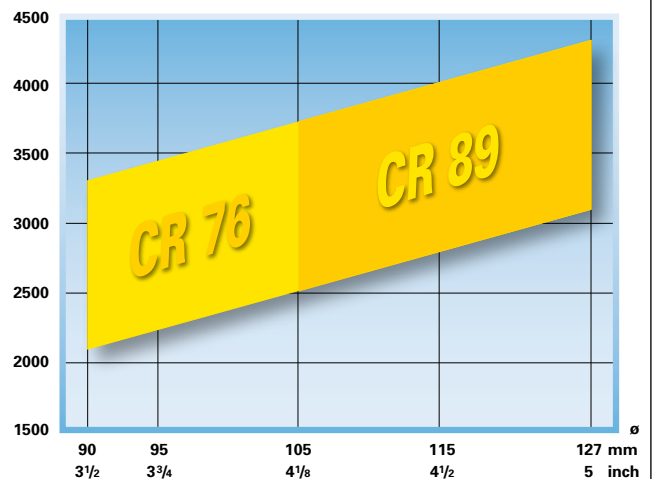
ROC F9CR

ROC F9CR + COPROD = High productivity

- COP 2550CR rock drill with double dampening system is increasing productivity and still providing very straight holes,
- The rock drill can also be fitted with TED, tube extracting device, for drilling in fissured and troublesome rock conditions.
- COPROD drill string providing straight holes fast and easy.
- The double drill tube guides also contribute to drilling straight and fast.

ROC F9CR has more power than the ROC F7CR. That means that both the rock drill COP 2550CR and the drill rig itself are more productive.

Tonnes x 1000/year





Welcome aboard!

The interplay between man and machine starts in the operator's cab. For this reason, we have expended great effort in the development of a well conceived, purpose-built cab. Even the smallest details have been considered. Welcome aboard a modern work station, not only in terms of mechanical function but also ergonomics, safety and environment.

Function

- Superb view of the drill hole from the operator's station facilitates accurate collaring.
- Atlas Copco screw compressor guarantees excellent flushing.
- Jumbo-sized windscreen wiper as well as wipers on the righthand, and roof windows gives good visibility even in bad weather.
- Spacious cab gives good moveability and comfort for the operator.

- Double drill tube guides gives straighter holes.
- Straighter holes and bigger burden and spacing save explosives.
- More efficient drilling saves fuel.
- CAT diesel engine with a great power reserve for trouble free operation and long service life.
- Easily accessed, lockable service hatches. (Lockability is a good security precaution at isolated worksites.)
- Easy-to-read instrumentation that is simple to learn and to use.
- 12-volt outlet for mobile telephone.
- Improved air ventilation effectively clears condensation mist from roof and side windows.
- Jumbo-sized rear-view mirror gives good visibility and safer rig moving.

Ergonomics

- Operator can monitor and control the entire drilling process without changing body position. Relieves neck, shoulders and back from strain.
- Vertically and laterally adjustable, ergonomically designed seat with collapsible arm rests.
- Control levers and control panel located in close proximity to the arm rests.
- Low noise level approx. 80 dB.
- Very efficient air conditioning system (cooling and heating).
- More surfaces now textile covered for greater comfort.
- Rubber-damped cab mounted directly on the chassis reduces vibration and gives greater comfort during tramming.
- Adjustable sun protection for cab windows.

Safety

- Cab complies with European and international safety demands: Roll-Over Protective Structure (ROPS) and Falling Object Protective Structure (FOPS).
- Operator's seat swivels for easy exit from and entry into the cab.
- Door fitted with safety stop that prevents crush injury to fingers etc.

Environment

- Exhaust emission values lower by good margin than those stipulated in international standards.
- Noise values well below those stipulated in international standards.
- CFC-free air conditioning.
- Efficient dust collection and coarse separation.
- Feed fitted with collectors for lubricating oil.
- Biologically degradable hydraulic oils available as options.



Monitoring



Tramming



Drilling

Technical data ROC F7CR & ROC F9CR

Recommended hole range

COPROD 76 mm	90–105 mm	3 1/2"–4 1/8"
COPROD 89 mm	105–127 mm	4 1/8"–5"
Hole Depth	30 m	98'

Compressor

Atlas Copco, screw type compressor

ROC F7CR

Working pressure, max.	10.5 bar	152 psi
FAD	148 l/s	314 cfm

ROC F9CR

Working pressure, max.	12 bar	175 psi
FAD	210 l/s	445 cfm

Engine

ROC F7CR

Caterpillar, diesel engine, CAT C7

Rating at 2000 rpm	186 kW	253 HP
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ROC F9CR

Caterpillar, diesel engine, CAT C9

Rating at 2000 rpm	224 kW	304 HP
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Fuel tank

Capacity	400 l	106 US gal.
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Feed

Feed length, total	8 100 mm	26'7"
Travel length	4 770 mm	15'8"
Feed extension	1 300 mm	4'3"
Feed rate, max.	0.92 m/s	180 ft/min
Feed force, max.	20 kN	4 500 lbf

Tramming

Tramming speed, max.	3,6 km/h	2.2 mph
Traction force	112 kN	25 200 lbf
Hill climbing ability	20°	
Track oscillation	±10°	
Ground clearance	405 mm	16"

Hydraulic rock drill

ROC F7CR

COP 2150CR

Impact power, max.	21 kW	28.1 HP
Hydraulic pressure, max.	210 bar	3 045 psi
Impact rate	36 Hz	
Torque, max.	3 960 Nm	2 920 lbf/ft
Weight, approx.	242 kg	533 lb

ROC F9CR

COP 2550CR

Impact power, max.	25 kW	33.5 HP
Hydraulic pressure, max.	230 bar	3 335 psi
Impact rate	44 Hz	
Torque, max.	3 960 Nm	2 920 lbf/ft
Weight, approx.	242 kg	533 lb

Transport dimensions

Weight, optional equipment excluded

ROC F7CR, approx.	15 800 kg	34 800 lb
ROC F9CR, approx.	17 300 kg	38 100 lb
Width	2 490 mm	8'2"
Length*	12 300 mm	40'4"
Height*	3 200 mm	10'6"

* Feed dumped

Standard equipment

Tube handling system with permutation capacity of 8 COPROD-sections
 Fuel saving device
 Two-speed traction
 Cabwindows tinted
 Engine pre-heater
 Dust collector and pre-separator
 Feed extension
 Operator's cabin, ROPS and FOPS approved
 Air conditioner, heater
 Electronic hole depth and hole inclination instrument
 Air flow control switch
 Anti jamming system
 Automatic impact stop
 Reduced impact and air pressure mechanism for collaring
 Break-out table
 Electric refuelling pump*
 Extractable suction hood
 Extractable drill tube support
 Heavy duty tracks
 Hydraulic support leg*
 Toe-hole drilling kit
 Water mist system excl. tank

* option on F9CR

Optional equipment

Central lubrication system
 TED extracting unit
 Track chains with triple grouser pads

Transport position

