



**COPROD drill strings**  
for SmartROC C50 and SmartROC CL





# COPROD drill strings

## – the best of both worlds

COPROD is a unique, patented rock drilling system from Epiroc. It combines the high penetration rate and low diesel consumption of tophammer equipment with the hole straightness and hole quality of DTH drilling.

### **A dual drill string**

COPROD combines a threaded drill tube with an unthreaded drill rod. The drill tube transmits rotation, while the impact rod, fit in floating suspension inside the tube, transmits impact energy and feed force. The flushing air passes between the tube and the rod, through the bit rod, to the front of the drill bit. This is an ingenious solution with plenty of benefits for you.

### **Making full use of the impact energy**

When the COPROD sections are joined, the impact rods stand on top of each other inside the drill

tube. This means that the impact energy is directly transmitted to the rock without passing a single thread. The result? Superior energy transmission, reduced diesel consumption and minimised wear on the drill string.

### **Outstanding hole quality**

COPROD is particularly well suited for demanding drilling operations in broken rock. It offers excellent hole straightness. But, most importantly, it is possible to regulate air flow so that you don't flush out more rock than necessary. The hole remains intact which means that the amount of explosives can be kept according to plan.

### **Even wear**

The SmartROC drill rigs built for COPROD, offer a unique feature. A special Rod Handling System (RHS), allows the drill string to be re-sorted for each hole. This means that the different sections of the drill string will be worn evenly over time.

### **Lowest total cost**

For almost 40 years, COPROD has proved itself in the tough surface mining and quarrying industries. It has offered great productivity, and when it comes to the cost per ton of rock drilled, COPROD is second-to-none.

# COPROD – the product range

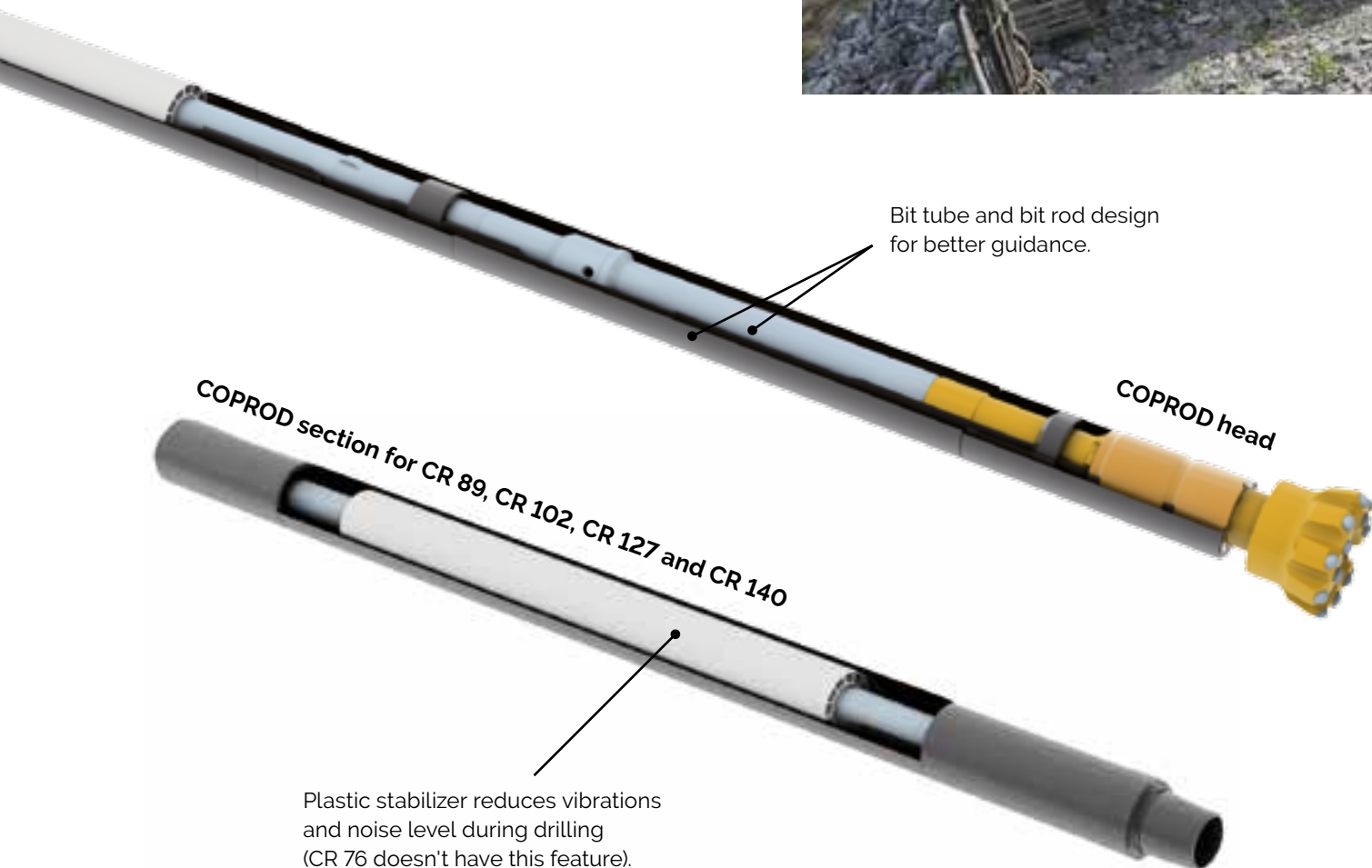
The COPROD product range consists of two surface drill rigs, and five different drill strings.

## SmartROC C50

SmartROC C50 is the smaller of the two drill rigs. For this drill rig, three drill strings are available: COPROD 76 mm, 89 mm and 102 mm giving blast holes ranging between 90 - 140 mm in diameter.

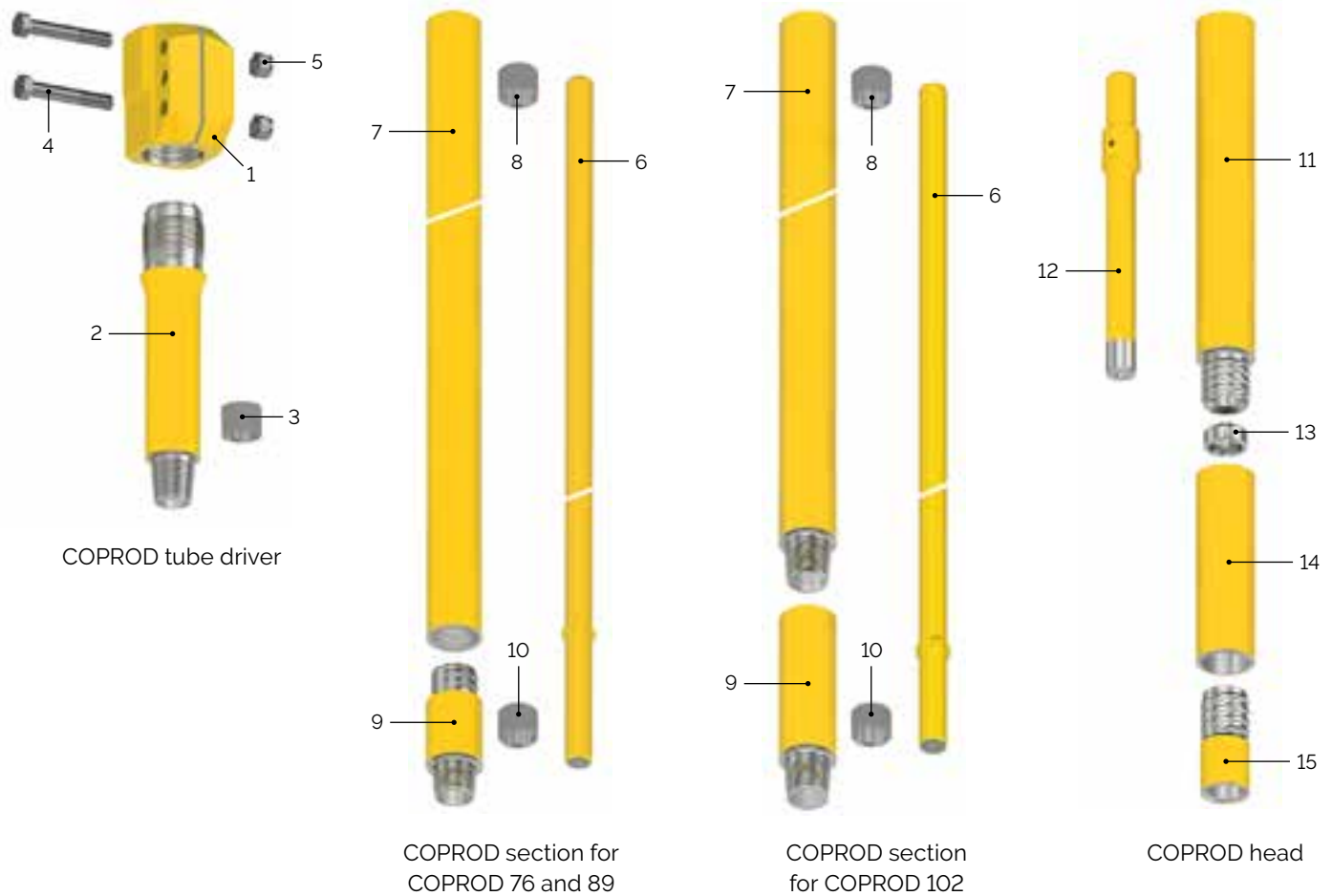
## SmartROC CL

The larger drill rig, SmartROC CL can be equipped with COPROD 102 mm, 127 mm or 140 mm drill strings. This means SmartROC CL can drill 115 mm to 216 mm blast holes.



# COPROD 76, 89 and 102 mm drill strings

## for SmartROC C50 equipped with COP 3060CR rock drill



COPROD drill strings for SmartROC C50 with COP 3060CR									
Part description	COPROD 76			COPROD 89			COPROD 102		
	Product No.	Product code	Weight*	Product No.	Product code	Weight*	Product No.	Product code	Weight*
<b>COPROD tube driver</b>									
1. Coupling	90029136	7970-0226-80	18,8	90029136	7970-0226-80	18,8	90029136	7970-0226-80	18,8
2. Tube adapter	90029442	7970-7627-80	12,3	90029133	7970-8927-80	13,8	90029132	7970-0227-80	17,7
3. Rod guide	94800215	7970-8912-00	0,1	94800121	7970-8902-00	0,1	94800087	7970-0202-00	0,1
4. Bolt (2 pcs) M24 x 150**	-	-		-	-		-	-	
5. Nut (2 pcs) M24**	-	-		-	-		-	-	
<b>COPROD section 4,5 m (15')</b>	90029470	7970-7615-80	123	90029381	7970-8915-81	145	90029385	7970-0215-81	153
6. Rod 4500 mm (15')	90029471	7970-7616-00	55	90029384	7970-8916-00	56	90029386	7970-0216-00	70
7. Tube 4500 mm (15')	90029472	7970-7617-80	64	90029383	7970-8917-81	83	90029387	7970-0217-81	71
8. Rod guide	94800215	7970-8912-00	0,1	94800121	7970-8902-00	0,1	94800087	7970-0202-00	0,1
9. End piece	94800316	7970-7693-80	4,1	94800329	7970-8993-80	6,1	94800086	7970-0253-80	11,7
10. Rod guide	94800215	7970-8912-00	0,1	94800121	7970-8902-00	0,1	94800087	7970-0202-00	0,1
<b>COPROD head</b>	94800317	7970-7682-80	22	94800310	7970-8982-80	32	94800324	7970-0282-80	47
11. Bit tube	94800318	7970-7681-00	12,3	94800311	7970-8981-00	18,2	94800323	7970-0281-00	26,1
12. Bit rod	94800365	7970-7685-00	4,4	94800366	7970-8985-00	5,6	94800367	7970-0285-00	10,4
13. Stop ring	94800235	7970-7604-00	0,2	94800128	7970-8904-00	0,4	94800096	7970-0204-00	0,5
14. Bit chuck	94800320	7970-7683-00	3,8	94800298	7970-8983-00	5,8	94800325	7970-0273-00	7,5
15. Bit driver	94800227	7970-7684-00	1,8	94800272	7970-8984-00	2,8	94800082	7970-0274-00	2,9

\* Weight approx. kg  
 \*\* Included in coupling.

# Drill bits for COPROD 76, 89 and 102 mm for SmartROC C50 equipped with COP 3060CR rock drill



Flat front



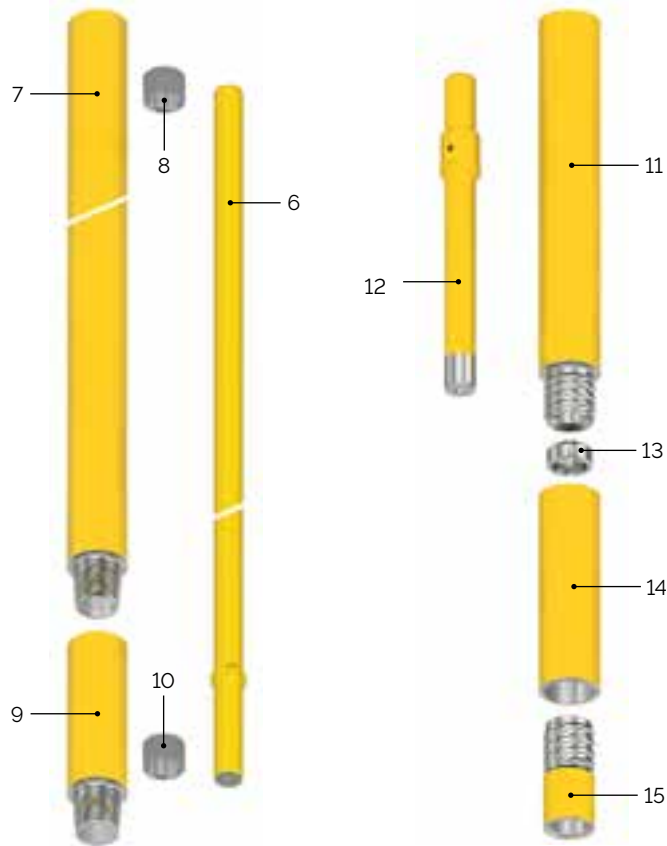
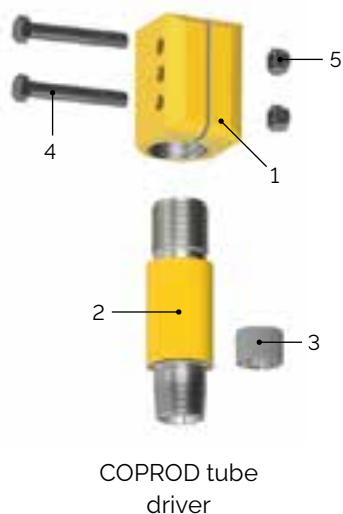
Convex front



Drop center

COPROD drill bits											
COPROD system	Diameter		Product No.	Product code	Buttons * button diameter (mm)			Gauge buttons angle		Flushing holes	Weight approx. kg
	mm	inch			Gauge outer	Gauge inner	Center	Outer	Inner	No. * size (mm)	
COPROD 76	<b>Flat front, HD, spherical buttons</b>										
	90	3 <sup>3</sup> / <sub>16</sub>	94800332	7976-1090-40,10-20	9x11	-	7x11	35°	-	3x8	5,8
	95	3 <sup>3</sup> / <sub>4</sub>	94800333	7976-1095-40,10-20	9x12,7	-	7x11	35°	-	3x8	6,0
	105	4 <sup>1</sup> / <sub>8</sub>	94800334	7976-1105-40,10-20	9x12,7	-	7x12,7	35°	-	3x10	6,4
	<b>Convex front, ballistic buttons</b>										
	90	3 <sup>3</sup> / <sub>16</sub>	94800335	7976-2090-66,10-20	7x12,7	4x12,7	2x12,7	40°	20°	2x10	5,6
	95	3 <sup>3</sup> / <sub>4</sub>	94800336	7976-2095-66,10-20	7x12,7	3x12,7	2x12,7	45°	30°	3x8	5,6
	105	4 <sup>1</sup> / <sub>8</sub>	94800337	7976-2105-66,10-20	9x12,7	3x12,7	4x12,7	45°	30°	3x10	6,2
	<b>Drop center front, spherical buttons</b>										
	105	4 <sup>1</sup> / <sub>8</sub>	94800340	7976-3105-40,10-20	8x12,7	4x12,7	2x11	35°	-	4x10	6,2
COPROD 89	<b>Flat front, HD, spherical buttons</b>										
	105	4 <sup>1</sup> / <sub>8</sub>	94800341	7989-1105-40,10-20	9x12,7	-	7x12,7	35°	-	3x13	9,1
	110	4 <sup>3</sup> / <sub>16</sub>	94800342	7989-1110-40,10-20	9x14,5	-	6x14,5	35°	-	3x13	9,5
	115	4 <sup>1</sup> / <sub>2</sub>	94800343	7989-1115-40,10-20	9x14,5	-	6x14,5	35°	-	3x13	9,7
	127	5	94800344	7989-1127-40,10-20	9x14,5	-	7x14,5	35°	-	3x13	10,6
	<b>Convex front, ballistic buttons</b>										
	105	4 <sup>1</sup> / <sub>8</sub>	94800345	7989-2105-66,10-20	9x12,7	3x12,7	4x12,7	45°	30°	3x13	8,8
	110	4 <sup>3</sup> / <sub>16</sub>	94800346	7989-2110-66,10-20	9x12,7	6x12,7	4x12,7	45°	30°	3x13	9,2
	115	4 <sup>1</sup> / <sub>2</sub>	94800347	7989-2115-66,10-20	7x14,5	4x14,5	3x14,5	45°	30°	3x13	9,2
	127	5	94800348	7989-2127-66,10-20	9x14,5	6x14,5	4x14,5	45°	30°	3x13	10,1
	140	5 <sup>1</sup> / <sub>2</sub>	90003707	7989-2140-66,10-20	9x14,5	6x14,5	5x14,5	45°	30°	3x13	10,7
	<b>Drop center front, spherical buttons</b>										
	105	4 <sup>1</sup> / <sub>8</sub>	94800349	7989-3105-40,10-20	8x12,7	4x12,7	2x11	35°	-	4x13	8,9
	115	4 <sup>1</sup> / <sub>2</sub>	94800351	7989-3115-40,10-20	8x14,5	4x14,5	2x11	35°	-	4x13	9,5
127	5	94800352	7989-3127-40,10-20	8x14,5	4x14,5	4x11	35°	-	4x13	10,3	
<b>Drop center front, ballistic buttons</b>											
105	4 <sup>1</sup> / <sub>8</sub>	94800443	7989-3105-66,10-20	8x12,7	4x12,7	2x11	40°	-	4x13	8,8	
COPROD 102	<b>Flat front, HD, spherical buttons</b>										
	115	4 <sup>1</sup> / <sub>2</sub>	94800353	7902-1115-40,10-20	9x14,5	-	6x14,5	35°	-	3x13	12,6
	127	5	94800354	7902-1127-40,10-20	9x14,5	-	7x14,5	35°	-	3x13	13,2
	140	5 <sup>1</sup> / <sub>2</sub>	94800355	7902-1140-40,10-20	9x15,8	-	9x15,8	35°	-	3x13	14,5
	<b>Convex front, ballistic buttons</b>										
	115	4 <sup>1</sup> / <sub>2</sub>	94800356	7902-2115-66,10-20	7x14,5	4x14,5	3x14,5	45°	30°	3x13	12,2
	127	5	94800357	7902-2127-66,10-20	9x14,5	6x14,5	4x14,5	45°	30°	3x13	12,8
	140	5 <sup>1</sup> / <sub>2</sub>	94800358	7902-2140-66,10-20	9x14,5	6x14,5	5x14,5	45°	30°	3x13	13,8
	<b>Drop center front, spherical buttons</b>										
	115	4 <sup>1</sup> / <sub>2</sub>	94800359	7902-3115-40,10-20	8x14,5	4x14,5	2x11	35°	-	4x13	12,4
	140	5 <sup>1</sup> / <sub>2</sub>	94800361	7902-3140-40,10-20	9x15,8	6x15,8	4x12,7	35°	-	3x13	14,5
<b>Drop center front, ballistic buttons</b>											
127	5	90029832	7902-3127-66,10-20	8x14,5	4x14,5	4x11	40°	-	4x13	12,9	

# COPROD 102, 127 and 140 mm drill strings for SmartROC CL equipped with COP 5060CR rock drill



COPROD section

COPROD head

## COPROD drill strings for SmartROC CL with COP 5060CR

Part description	COPROD 102			COPROD 127			COPROD 140		
	Product No.	Product code	Weight*	Product No.	Product code	Weight*	Product No.	Product code	Weight*
<b>COPROD tube driver</b>									
1. Coupling	90003587	7970-2732-80	17,9	90003587	7970-2732-80	17,9	90003587	7970-2732-80	17,9
2. Tube adapter, L = 253 mm (10")	94800243	7970-0235-80	9,5	94800245	7970-2735-80	16,9	94800245	7970-2735-80	16,9
2. Tube adapter, L = 714 mm (2'4½")	94800244	7970-0233-80	30,4	94800246	7970-2733-80	54,2	94800246	7970-2733-80	54,2
3. Rod guide	94800087	7970-0202-00	0,1	94800087	7970-0202-00	0,1	94800087	7970-0202-00	0,1
4. Bolt (2 pcs) M24 x 160**	-	-	-	-	-	-	-	-	-
5. Nut (2 pcs) M24**	-	-	-	-	-	-	-	-	-
<b>COPROD section 6,1 m (20')</b>	94800453	7970-0250-81	199	94800455	7970-2750-81	241	90029475	7970-4050-81	300
6. Rod 6100 mm (20')	94800084	7970-0251-00	94	94800295	7970-2751-00	94	94800295	7970-2751-00	94
7. Tube 6100 mm (20')	94800452	7970-0252-81	93	94800454	7970-2752-81	130	90029476	7970-4052-81	184
8. Rod guide	94800087	7970-0202-00	0,1	94800087	7970-0202-00	0,1	94800184	7970-2702-00	0,1
9. End piece	94800086	7970-0253-80	11,7	94800134	7970-2753-80	15,0	94800377	7970-4053-80	21,7
10. Rod guide	94800087	7970-0202-00	0,1	94800087	7970-0202-00	0,1	94800087	7970-0202-00	0,1
<b>COPROD head</b>	94800324	7970-0282-80	47	94800362	7970-2782-80	78	94800369	7970-4082-80	98
11. Bit tube	94800323	7970-0281-00	26,1	94800363	7970-2781-00	45	94800370	7970-4081-00	58
12. Bit rod	94800367	7970-0285-00	10,4	94800364	7970-2785-00	16,5	94800373	7970-4085-00	19,6
13. Stop ring	94800096	7970-0204-00	0,5	94800139	7970-2704-00	0,8	94800374	7970-4004-00	0,9
14. Bit chuck	94800325	7970-0273-00	7,5	94800331	7970-2773-00	11,2	94800371	7970-4083-00	14,4
15. Bit driver	94800082	7970-0274-00	2,9	94800141	7970-2774-00	5,0	94800372	7970-4084-00	5,5

\* Weight approx. kg

\*\* Included in coupling.

# Drill bits for COPROD 102, 127 and 140 mm for SmartROC CL equipped with COP 5060CR rock drill



Flat front



Convex front



Drop center

COPROD drill bits											
COPROD system	Diameter		Product No.	Product code	Buttons × button diameter (mm)			Gauge buttons angle		Flushing holes	Weight approx. kg
	mm	inch			Gauge outer	Gauge inner	Center	Outer	Inner	No. × size (mm)	
COPROD 102	<b>Flat front, HD, spherical buttons</b>										
	115	4½	94800353	7902-1115-40,10-20	9×14,5	-	6×14,5	35°	-	3×13	12,6
	127	5	94800354	7902-1127-40,10-20	9×14,5	-	7×14,5	35°	-	3×13	13,2
	140	5½	94800355	7902-1140-40,10-20	9×15,8	-	9×15,8	35°	-	3×13	14,5
	<b>Convex front, ballistic buttons</b>										
	115	4½	94800356	7902-2115-66,10-20	7×14,5	4×14,5	3×14,5	45°	30°	3×13	12,2
	127	5	94800357	7902-2127-66,10-20	9×14,5	6×14,5	4×14,5	45°	30°	3×13	12,8
	140	5½	94800358	7902-2140-66,10-20	9×14,5	6×14,5	5×14,5	45°	30°	3×13	13,8
	<b>Drop center front, spherical buttons</b>										
	115	4½	94800359	7902-3115-40,10-20	8×14,5	4×14,5	2×11	35°	-	4×13	12,4
	140	5½	94800361	7902-3140-40,10-20	9×15,8	6×15,8	4×12,7	35°	-	3×13	14,5
	<b>Drop center front, ballistic buttons</b>										
127	5	90029832	7902-3127-66,10-20	8×14,5	4×14,5	4×11	40°	-	4×13	12,9	
COPROD 127	<b>Flat front, HD, spherical buttons</b>										
	140	5½	94800383	7927-1140-40,10-20	9×15,8	-	9×15,8	35°	-	3×15	22,2
	152	6	94800417	7927-1152-40,10-20	9×15,8	-	9×15,8	35°	-	3×16	22,9
	165	6½	94800384	7927-1165-40,10-20	10×15,8	-	10×15,8	35°	-	3×15	23,9
	<b>Convex front, ballistic buttons</b>										
	152	6	94800418	7927-2152-66,10-20	9×15,8	6×15,8	4×15,8	45°	30°	3×16	22,3
	165	6½	94800385	7927-2165-66,10-20	9×15,8	6×15,8	6×15,8	45°	30°	3×15	23,1
	<b>Drop center front, spherical buttons</b>										
	165	6½	94800378	7927-3165-40,10-20	10×15,8	6×15,8	5×15,8	35°	-	2×18	23,8
	<b>Drop center front, ballistic buttons</b>										
140	5½	94800368	7927-3140-66,10-20	9×15,8	6×15,8	4×12,7	35°	-	3×16	20,2	
COPROD 140	<b>Convex front, ballistic buttons</b>										
	165	6½	94800379	7940-2165-66,08-20	9×15,8	6×15,8	7×15,8	45°	25°	3×16	30,1
	180	7¼	94800381	7940-2180-66,08-20	9×15,8	6×15,8	7×15,8	45°	25°	3×16	31,2
	<b>Convex front, Trubbnos buttons</b>										
	203	8	90029721	7940-2203-70,08-23	10×15,8	7×15,8	16×15,8	35°	15°	3×16	34,8
	210	8¼	90029722	7940-2210-70,08-23	10×15,8	7×15,8	16×15,8	35°	15°	3×16	35,5
216	8½	90029723	7940-2216-70,08-23	10×15,8	7×15,8	16×15,8	35°	15°	3×16	36,0	

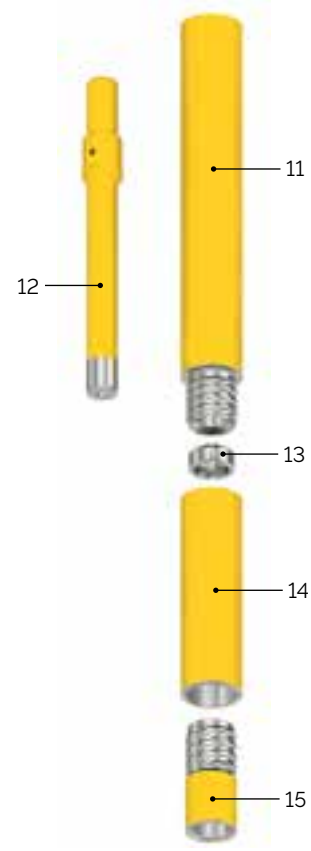
# Conversion kits



COPROD section for COPROD 76 and 89



COPROD section for COPROD 102, 127



COPROD head

## Conversion kits

The COPROD product range includes five tube diameters, each of which accommodates up to five bit diameters. If you would like to drill a larger hole than the original drill string design, there is a conversion kit option. A special adapter can replace the end-piece of the first section of the drill string, allowing the next dimension COPROD bit assortment to be used. This will give you greater flexibility, allowing more hole sizes to be drilled with the same drill string. Larger bits, with their larger flushing holes also give less pressure drop, and lower diesel consumption per hour of operation.

### COPROD conversion kits

Part description	Product No.	Product code
<b>Conversion kit for COPROD 76 to COPROD 89</b>		
9. End piece	94800425	7970-7693-89-80
10. Rod guide	94800215	7970-8912-00
COPROD head	Use standard COPROD 89	
<b>Conversion kit for COPROD 89 to COPROD 102</b>		
9. End piece	94800423	7970-8993-02-80
10. Rod guide	94800121	7970-8902-00
COPROD head	Use standard COPROD 102 except for bitrod	
12. Bitrod	94800424	7970-0285-89-00
<b>Conversion kit for COPROD 102 to COPROD 127</b>		
9. End piece	94800426	7970-0253-27-80
10. Rod guide	94800087	7970-0202-00
COPROD head	Use standard COPROD 127	
<b>Conversion kit for COPROD 127 to COPROD 140*</b>		
COPROD head	Use standard COPROD 140	

\* COPROD 127 and COPROD 140 use the same thread connection.





# Staying on the cutting edge

Regular grinding is a must to get the most out of your COPROD equipment. Buttons worn flat to more than one third of their diameter give drastically increased wear and decreased penetration rates. The remedy? Grind in time.

## Grind Matic RH3



A fully hydraulic powered grinding machine, designed to be attached to, and fit a wide range of drill rigs.

## Grind Matic BQ3-DTH/CR



This sturdy and effective grinding machine is perfect for grinding shops at large scale drilling sites.

## Grind Matic Manual B-DTH/CR



This is a portable, air powered, grinding machine designed for manual grinding of COPROD bits.

## Grinding for productivity

For COPROD bits, we offer effective grinding machines for fixed installations or portable use. All grinders are equipped with our patented, profiled grinding wheels. A unique shape and ingenious grinder design combine to ensure that the wheel is always perfectly centered on each button. This results in efficient grinding and perfect button shape. And with perfectly ground buttons you ensure longer bit life and great penetration rates.



Grind Matic RH3.

# Grinding machines and accessories

Grind Matic RH3	
Grinding machine	Product No.
Grind Matic RH3	87005200

Grind Matic BQ3-DTH/CR	
Grinding machine	Product No.
<b>Grind Matic BQ3-DTH/CR</b>	
400 V 3-phase 50 Hz	87004900
230 V 3-phase 50 Hz	87004901
400 V 3-phase 60 Hz	87004903
230 V 3-phase 60 Hz	87004905
440 V 3-phase 50 Hz	87004906

Grind Matic Manual B-DTH/CR	
Grinding machine	Product No.
Grind Matic Manual B-DTH/CR	87002300

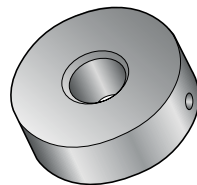
## Bit holders for button bits



### Multi grip

for Grind Matic RH3.

Description	Product No.
Multi grip (can be used for Tophammer-, DTH- and COPROD-bits)	87004360



### Type B

for Grind Matic BQ3-DTH/CR and Grind Matic Manual B-DTH/CR.

Type	Threaded bits	Product No.
<b>B</b>	COPROD 76	87004414
	COPROD 89	87003155
	COPROD 102	87004415
	COPROD 127	87002396
	COPROD 140	87004518

## Diamond grinding wheels for Grind Matic RH3



Grinding wheel for spherical buttons.

Diameter, mm	Product No.
<b>GRINDING WHEELS – Spherical buttons</b>	
11	87004851
12.7	87004852
14.5	87004853
15.8	87004854



Grinding wheel for Trubbnos buttons.

Diameter, mm	Product No.
<b>GRINDING WHEELS – Trubbnos buttons</b>	
15.8	87004815



Grinding wheel for ballistic buttons.

Diameter, mm	Product No.
<b>GRINDING WHEELS – Ballistic buttons</b>	
11	87004855
12.7	87004856
14.5	87004857
15.8	87004858

**NOTE!** These grinding wheels have an inner diameter of 10 mm.

## Diamond grinding wheels for Grind Matic BQ3-DTH/CR and Grind Matic Manual B-DTH/CR



Grinding wheel for spherical buttons.

Diameter, mm	Product No.
<b>GRINDING WHEELS – Spherical buttons</b>	
11	87003971
13	87003973
14	87001025
16	87001027



Grinding wheel for Trubbnos buttons.

Diameter, mm	Product No.
<b>GRINDING WHEELS – Trubbnos buttons</b>	
15,8	87004595



Grinding wheel for ballistic buttons.

Diameter, mm	Product No.
<b>GRINDING WHEELS – Ballistic buttons</b>	
11	87003976
13	87003413
14	87003414
16	87003416

**NOTE!** These grinding wheels have an inner diameter of 12 mm.

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