Oprema Ravne

RELIABLE & COST EFFECTIVE

EXCELLENT QUALITY AND CUSTOMER SERVICES

400 years of experience in production, processing and finishing of steels.

OPREMA RAVNE today.
65 years of rock drills and pneumatic breakers production.

Modern day facilities.

WE MANUFACTURE QUALITY THAT YOU CAN AFFORD

Production is done on state of the art modern machines.

Mass production of:
pick hammers, paving breakers, exchangeable tools for pick hammers and breakers, rock drills, air legs for rock drills and down the hole hammers.

LOW COST DRILLING

ADVANTAGES

Individual Model and Configuration choice (based on **"LEGO"** principe for minimization of spares).

Best performance and weight to balance ratio.

Perfect quality and customer service.

Low noise and vibration level.

Highest safety levels (ATEX, CE certification).

Excellent durability and short pay-off period.

100 % parts interchangeabilities.

All parts always on stock with short delivery times.

Designed for use in mining, civil construction quarries and tunneling.

Made according to precise engineering and quality standards.

LIGHT AND EFFECTIVE

Company organization is based on **ISO 9001:2008**. This is the ultimate level for optimal engineering standards within our company and of consistent product quality.

Acquired certificates for **CE, ATEX, GOST**. Confirmation of strict technical standards in connection with health and safety regulations have been approved.

MFD 90 ROCK DRILL FAMILY CONFIGURATION IN THREE MODELS:

MFD 90 with stroke 45 mm: more rotation for softer ground conditions.
MFD 90 MAX with stroke 60 mm: higher impact energy, less rotation for medium ground conditions.
MFD 90 MAX PLUS with stroke 60 mm: heavier piston for hard rock ground conditions.

TECHNICAL DATA FOR **MFD 90 Piston stroke 45 mm**

Conf.	Order No.	Piston Diameter	Impact rate	Free speed	Air consum. at 5 bar	Operating pressure	Net weight	Air connection	Length max.	Shank hex.	Vibration level according to ISO 8662 m/s^2	Sound presure level according to ISO 11201 ** 105 dBA
DI	9 307 01L	90 mm	3100 min^{-1}	320 rpm	4,5 m^3/min	5-7 bar	26 kg	BSP 1"	680 mm	S 22	23	
C	9 307 02L	90 mm	3100 min^{-1}	320 rpm	4,5 m^3/min	5-7 bar	26 kg	BSPT 3/4"	680 mm	S 22	23	
CL	9 307 04L	90 mm	3100 min^{-1}	320 rpm	4,5 m^3/min	5-7 bar	26 kg	BSPT 3/4"	685 mm	S 22	23	

TECHNICAL DATA FOR **MFD 90 MAX Piston stroke 60 mm**

Conf.	Order No.	Piston Diameter	Impact rate	Free speed	Air consum. at 5 bar	Operating pressure	Net weight	Air connection	Length max.	Shank hex.	Vibration level according to ISO 8662 m/s^2	Sound presure level according to ISO 11201 ** 105 dBA
DI	9 307 05L	90 mm	2750 min^{-1}	300 rpm	4,5 m^3/min	5-7 bar	26,30 kg	BSP 1"	695 mm	S 22	23	
C	9 307 08L	90 mm	2750 min^{-1}	300 rpm	4,5 m^3/min	5-7 bar	26,30 kg	BSPT 3/4"	695 mm	S 22	23	
CL	9 307 09L	90 mm	2750 min^{-1}	300 rpm	4,5 m^3/min	5-7 bar	26,30 kg	BSPT 3/4"	700 mm	S 22	23	
DIQ	9 307 05 017L	90 mm	2750 min^{-1}	300 rpm	4,5 m^3/min	5-7 bar	26,10 kg	BSP 1"	600 mm	S 22	23	
QA	9 307 25L	90 mm	2750 min^{-1}	300 rpm	4,5 m^3/min	5-7 bar	24,50 kg	BSP 1"	600 mm	S 22	23	
Q	9 307 28L	90 mm	2750 min^{-1}	300 rpm	4,5 m^3/min	5-7 bar	24,50 kg	BSP 1"	620 mm	S 22	23	
ST	9 307 32L	90 mm	2750 min^{-1}	300 rpm	4,5 m^3/min	5-7 bar	25,8+12 kg	BSPT 3/4"	620 mm	S 22	23	
SI	9 307 35L	90 mm	2750 min^{-1}	300 rpm	4,5 m^3/min	5-7 bar	26,30 kg	BSPT 3/4"	665 mm	S 22	7	
SIP	9 307 44L	90 mm	2750 min^{-1}	300 rpm	4,5 m^3/min	5-7 bar	27,30 kg	BSPT 3/4"	720 mm	S 25	3,9	

TECHNICAL DATA FOR **MFD 90 MAX PLUS Piston stroke heavy 60 mm**

Conf.	Order No.	Piston Diameter	Impact rate	Free speed	Air consum. at 5 bar	Operating pressure	Net weight	Air connection	Length max.	Shank hex.	Vibration level according to ISO 8662 m/s^2	Sound presure level according to ISO 11201 ** 105 dBA
DI	9 307 13L	90 mm	2650 min^{-1}	290 rpm	4,5 m^3/min	5-7 bar	26,50 kg	BSP 1"	695 mm	S 22	23	
C	9 307 14L	90 mm	2650 min^{-1}	290 rpm	4,5 m^3/min	5-7 bar	26,50 kg	BSPT 3/4"	695 mm	S 22	23	
CL	9 307 15L	90 mm	2650 min^{-1}	290 rpm	4,5 m^3/min	5-7 bar	26,50 kg	BSPT 3/4"	700 mm	S 22	23	
SI	9 307 06L	90 mm	2650 min^{-1}	290 rpm	4,5 m^3/min	5-7 bar	26,50 kg	BSPT 3/4"	665 mm	S 22	7	
ST	9 307 07L	90 mm	2650 min^{-1}	290 rpm	4,5 m^3/min	5-7 bar	26+12 kg	BSPT 3/4"	620 mm	S 22	23	

** FOR POLYMER SILENCED (PS) CYLINDER HOUSING; FOR RELATIVE PRESSURE OF MEASUREMENT 4,5 BAR.
CERTIFICATION ACCORDING TO 94/9/EC DIRECTIVE (ATEX) MEETS: CE, DIN, GOST-R STANDARDS.
ADDITIONAL PARTS AVAILABLE FOR MODIFICATION TO ALL MODELS & VERSIONS.
FOR COAL MINES REQUEST ATEX ONLY!

MFD 90 ROCK DRILL FAMILY CONFIGURATION

Every model is available in various configurations: C, CL, DI, DIQ, ST, SI, SIP, QA, Q.
A PS (polymer silenced) modification (MAX, MAX PLUS model) is used in coal mines (ATEX certified) or as supreme double silenced variant. For standard drilling we offer common left hand rotation and for rock bolting right hand rotation. Flushing is by water entering through water inlet port. In case of air flushing compressed, air can be connected on water inlet, or we can supply a special air valve in (QA, SIA) configuration.
Standard shanks available are: S22 X 108 and S25 X 108.
For best efficiency and operators comfort choice, contact our technical sales department.

MFD 90 ROCK DRILL FAMILY CONFIGURATION

C CONFIGURATION

- Central operation of Air Leg from handle
- Right hand operating lever
- With mounting mechanism for DTC or PN 67/1000C,1300C Air Legs
- Simple fixation of Air Leg

CL CONFIGURATION

- Central operation of Air Leg from handle
- Left hand operating lever With mounting mechanism
- For DTC or PN 67/1000C,1300C Air Leg

DI CONFIGURATION

- D - handle
- I - independent Air Leg control
- Integrated mounting attachment for DT or PN67/1000,1300 Air Leg
- Right hand operating lever (can be modified to left hand)

DIQ CONFIGURATION

- Support plate for fixation
- Air can be connected to water inlet port
- Drilling on drill mast
- Side positioned water & air inlet ports

SI CONFIGURATION

- Ergonomic handle (7,5 m/s2)
- Detachable counter weights available
- with air flushing option (SIA) or;
- water flushing option (SI)

SIP CONFIGURATION

- Ergonomic handle (7,5 m/s2)
- Push / Pull vibration absorbing
- with air flushing option (SIA) or;
- water flushing option (SI)

MFD 90 ROCK DRILL FAMILY CONFIGURATION

STOPER CONFIGURATION

- Left hand back head
- Flange for Stoper Leg
- Control mechanism fixed in central cover

CPSW CONFIGURATION

- Central operating of Air Leg from handle
- Special Air Leg attachment
- Right hand operating lever
- With mounting mechanism for DTC or PN67/1000C,1300C Air Leg

STINGER CONFIGURATION

- STOPER set up
- Retractable Air Leg
- Drilling downwards
  Mine shaft drilling with support or stage

QPS CONFIGURATION

- To be mounted on to slide frame
- Top air & water inlet port
- Integrated and polymer silencer
- Adaptable to other models

QPSW CONFIGURATION

- Complete drill mast frame
- Top water & air inlet port
- Double silenced
- Adaptable to other models

VK 23 ROCK DRILLS

VK 23DI

- With air or water valve
- Right hand operating lever
- With airleg mounting attachment
- Rifle bar rotation mechanism
- Cost saving and efficient

VK 23SIA

- With air (SIA) or water flushing option (SI)
- Right hand operating lever
- Antivibration sinker handle
- Push absorbing handle
- Push and pull absorbing handle (SIP)

VK 23T

- Firm handle Sinker Drill
- Low maintenance requirement
- Without Air Leg adapter
- Simple and light weight

VK 23 Rock Drills have rifle bar rotation system. Available with standard S22 X 108 or S25 x 108 tool shank (available on request).

TECHNICAL DATA FOR **VK ROCK DRILLS**

Conf.	Order No.	Piston Diameter	Impact rate	Free speed	Air consum. at 5 bar	Operating pressure	Net weight	Connection Air	Connection Water	Length max.	Shank	Vibration level according to ISO 8662 m/s^2	Sound presure level according to ISO 11201 113 dBA
DI	9 302 14	65 mm	2100 min^{-1}	220 rpm	2,5 m^3/min	5-7 bar	23 kg	R 3/4"	1/2"	650 mm	S 22	18	
SIA	9 302 15	65 mm	2100 min^{-1}	220 rpm	2,5 m^3/min	5-7 bar	24 kg	R 3/4"	-	650mm	S 22	5	
SI	9 302 16	65 mm	2100 min^{-1}	220 rpm	2,5 m^3/min	5-7 bar	24 kg	R 3/4"	1/2"	650 mm	S 22	5	
T	9 302 20	65 mm	2100 min^{-1}	220 rpm	2,5 m^3/min	5-7 bar	21 kg	R 3/4"	1/2"	650 mm	S 22	18	

PN SINGLE STAGE & **DT** DOUBLE TELESCOPIC AIR LEG

TECHNICAL DATA FOR **PN, DT**

Air Leg Models		Part. Number	Rock Drill (handle) Type	Length retracted	Stroke	Length extendet	Piston diameter	Automatic retraction	Weight
PN 67/800 ST	SINGLE STAGE	9 338 10 001	MFD90ST,STO,ST-SI	1067 mm	800 mm	1867 mm	67 mm	no	11,30 kg
PN 67/1300 DI		9 338 11	MDF90DI	1880 mm	1282 mm	3162 mm	67 mm	yes	17,50 kg
PN 67/1300 DIM *		9 338 17	MFD90DI-PS	1880 mm	1282 mm	3162 mm	67 mm	yes	19,30 kg
PN 67/1000 DI		9 338 12	MFD90DI	1597 mm	1000 mm	2597 mm	67 mm	yes	15,80 kg
PN 67/1000 DIM *		9 338 18	MFD90DI-PS	1597 mm	1000 mm	2597 mm	67 mm	yes	17,20 kg
PN 67/1300 C		9 338 13	MFD90C,CL	1651 mm	1282 mm	2933 mm	67 mm	yes	15,00 kg
PN 67/1300 CM *		9 338 15	MFD90C-PS,CL-PS	1651 mm	1282 mm	2933 mm	67 mm	yes	16,90 kg
PN 67/1000 C		9 338 14	MFD90C,CL	1369 mm	1000 mm	2369 mm	67 mm	yes	13,50 kg
PN 67/1000 CM *		9 338 16	MFD90C-PS,CL-PS	1369 mm	1000 mm	2369 mm	67 mm	yes	14,80 kg
PN 53/1000		9 373 300	VK23DI	1445 mm	1020 mm	2465 mm	53 mm	no	11,50 kg
PN 53/1000 M *		9 373 301	VK23DI	1445 mm	1020 mm	2465 mm	53 mm	no	14,75 kg
PN 53/1300		9 372 300	VK23DI	1745 mm	1320 mm	3065 mm	53 mm	no	13,00 kg
PN 53/1300 M*		9 372 301	VK23DI	1745 mm	1320 mm	3065 mm	53 mm	no	16,48 kg
DTC 50	DOUBLE TELESCOPIC	64-979-005-C	MFD90C,CL	740 mm	545 mm	1285 mm	78/65 mm	no/yes	10,50 kg
DTC 100		64-979-010-C	MFD90C,CL	965 mm	1040 mm	2005 mm	78/65 mm	no/yes	12,00 kg
DTC 140		64-979-014-C	MFD90C,CL	1170 mm	1440 mm	2610 mm	78/65 mm	no/yes	14,50 kg
DTC 180		64-979-018-C	MFD90C,CL	1370 mm	1840 mm	3210 mm	78/65 mm	no/yes	16,00 kg
DTC 200		64-979-020-C	MFD90C,CL	1510 mm	2100 mm	3610 mm	78/65 mm	no/yes	17,00 kg
DT 50		64-979-005-DM	MFD90DI	890 mm	545 mm	1435 mm	78/65 mm	no/yes	12,00 kg
DT 100		64-979-010-DM	MFD90DI	1115 mm	1040 mm	2155mm	78/65 mm	no/yes	13,50 kg
DT 140		64-979-014-DM	MFD90DI	1320 mm	1440 mm	2760 mm	78/65 mm	no/yes	15,00 kg
DT 180		64-979-018-DM	MFD90DI	1520 mm	1840 mm	3360 mm	78/65 mm	no/yes	17,00 kg
DT 200		64-979-020-DM	MFD90DI	1660 mm	2100 mm	3760 mm	78/65 mm	no/yes	18,50 kg

* STEEL METAL COVERED CYLINDER WITH **ATEX** CERTIFICATION

DOUBLE TELESCOPIC AIR LEGS

- DTC and DT (Double Telescopic) Air Legs are light weight and robust
- All have long stroke and retractable second stage
- DTC model for MFD 90C and CL.
- DT model for MFD 90DI and VK 23DI.
- DTS double telescopic STOPER on request

SINGLE STAGE AIR LEGS

- PN 67/1000, 1300 DI, DIM fully retractable, extension from top
- PN 67/1000, 1300 C, CM fully retractable, extension from bottom
- PN 53/1000, 1300; PN 53/1000, 1300 M extension from top
- M - steel/metal covered - ATEX
- STINGER Air Leg for vertical downward drilling on request

SPARE AND WEARING PARTS MADE FROM HIGH RESISTENT MATERIALS

100% PARTS INTERCHANGEABILITY - ALL PARTS AVAILABLE IN STOCK - SHORT DELIVERY TERMS

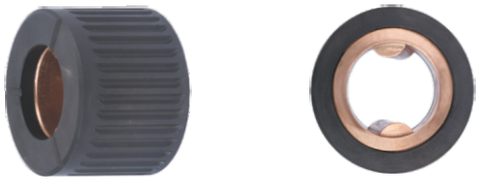
WEARING PARTS IN ONE WEEK, WHERE EVER YOU ARE!

HWR PISTON STROKE 45, 60, 60 HEAVY

- Excellent wear, heat and corrosion resistance
- Striking end can be refaced by grinding (max 1 mm)
- Left or right rotation

TWO PIECE RATCHET RING

- Threaded design for cost saving
- Forged materials used for reliability



POLYMER CYLINDER HOUSING WITH DISPERSED EXHAUST CYLINDER LINER

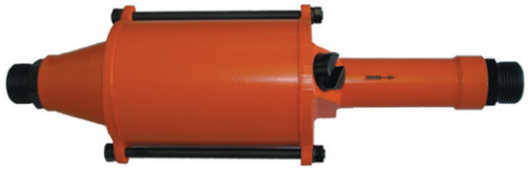
- New benchmark in noise reduction
- For 60 mm piston stroke
  MAX and MAX PLUS models available
- Certified according to 94/9/EC directive (ATEX)
- Meets CE,DIN,GOST Standards

INTEGRALS, REAMERS, TAPER RODS

- Drilling of natural stones and concrete
- Hexagonal shank 22 x 108 or 25 x 108
- Diameters and lengths according to ISO or (as agreed)

IN LINE LUBRICATORS MAZ 10(M), 20(M), 30(M), 40(M)

- If oil runs out, the compressed air supply automatically closes
- Reliable operation is guarranted
- Safety off function if air disconnects
- M - steel/metal covered with ATEX certificate for coal mines



Lubricator Order No.	MAZ 10 (M) 9 336 01 (05)	MAZ 20 (M) 9 336 02 (06)	MAZ 30 (M) 9 336 03 (07)	MAZ 40 (M) 9 336 04 (08)
Lenght (mm)	404	404	404	404
Width (mm)	128	128	128	128
Weight (kg)	4,8	4,8	4,8	4,8
Oil quantity in tank (l)	0,5	0,5	0,5	0,5
Working pressure (bar)	4-7	4-7	4-7	4-7
Air flow (min^{-3})	0,5-1	1-2,5	2,5-4,8	4,8-7
Connection thread (external)	R3/4"	R3/4"	R1"	R1"

OPREMA RECOMMENDATION:

MAZ 10 (M) use with: NP100, NP180, CK30
MAZ 20 (M) use with: LRK7, LRK8, SRK12, SRK17
ECO17, ECO20, ECO23,
TRK30
MAZ 30 (M) use with: VK23
MAZ 40 (M) to be use with: MFD90, MFD90 MAX,
MFD90 MAX PLUS,
LPB, LTV

ADVANTAGES

Robust construction

High operating efficiency

Reliable work

Simple maintenance

Ergonomic design of hammer elements

APPLICATIONS

Working pressure 5 - 7 bar

For manual works such as digging, breaking and demolition in building industry, road construction, civil engineering mining, tunneling

PNEUMATIC PICK HAMMERS

EQUIPMENT FOR PNEUMATIC PICK HAMMERS

Rubber muffle (P designation) reduces
noise to EU permitted levels

An ergonomic vibration - absorbing handle
(E designation) reduces vibration on handle to a minimum

Assorted moil points, chisels and spades are available
in stock
Requires in-line lubricator MAZ as mandatory
on compressed air line.

PICK HAMMERS

TECHNICAL DATA FOR **PNEUMATIC PICK HAMMERS**

Typ	Part No.	Weight	Length	Piston diameter	Impact rate	Air consumption at 5 bar		Air connection	Level of vibration according to ISO 8662 *** m/s^2	Shank
S23	9 353 03	2,6 kg	270 mm	21 mm	2200 min^{-1}	0,3 m^3/min	5,0 l/s	R3/8"		14,3/12,5 mm hex.
SK5	9 353 40	6,0 kg	417 mm	28 mm	2250 min^{-1}	0,4 m^3/min	5,8 l/s	R3/4"	7	s15 cone 1:12
KOK9E	9 308 02	8,3 kg	370 mm	28 mm	1500 min^{-1}	0,6 m^3/min	10,8 l/s	R3/4"		19 x 50 mm hex.
LRK7	9 359 01	7,9 kg								
LRK7PE	9 359 30	8,3 kg	454 mm	34 mm	1650 min^{-1}	1,0 m^3/min	16,7 l/s	R3/4"	13	⌀25 x 75mm round
LRK8	9 359 02	9,5 kg								
LRK8PE	9 359 31	9,9 kg	455 mm	34 mm	1650 min^{-1}	1,0 m^3/min	16,7 l/s	R3/4"	13	22 x 82,5 mm hex.
SRK12	9 359 33	12,5 kg								
SRK12PE	9 359 32	12,9 kg	625 mm	36 mm	800 min^{-1}	1,2m^3/min	20 l/s	R3/4"	13	⌀25 x 75 mm round
SRK17	9 359 04	19,0 kg								
SRK17PE	9 359 41	20,5 kg	611 mm	46 mm	1400 min^{-1}	1,5m^3/min	25 l/s	R3/4"	11	22 x 82,5 mm hex.
TRK30N	9 359 57	27,5 kg	668 mm	52 mm	1100 min^{-1}	1,6 m^3/min	25 l/s	R3/4"		32 x 152 mm hex.

*** The value of vibration level can show a 50% deviation as a result of the method of measuring and deviations in the design of pick hammers.
P rubber muffle E ergonomic vibration absorbing handle

SK5, S23

- Chipping hammer
- Front head is designed for a hexagonal shank
- Applicable for cutting, cleaning of castings, forgins, welds. Also punching, excavation and cleaning of brick or concrete walls, for stone working

KOK9E

- Chipping hammer
- Using rouging head, chisel or moil point, it is excelent tool for concrete roughening or stone splitting

LRK7, LRK7PE

- Light weight pick hammer
- Front head is designed for a round shank
- Applicable for demolition of brick and concrete

LRK8, LRK8PE

- Light weight pick hammer
- Front head is designed for a hexagonal shank moil point, chisel, spade use
- Applicable for demolition of brick and concrete walls, cutting of asphalt and for excavations

PICK HAMMERS

SRK12, SRK12PE

- Most efficient pick hammer
- Front head is designed for a round shank
- Applicable for digging of channels and shafts, excavating and breaking of rocks
- Low frequency - high impact energy

SRK17, SRK17PE

- Light paving breaker
- Front head is designed for a hexagonal shank and it allows use of chisels and spades
- Suitable for all kinds of digging and construction works, breaking of concrete foundation, rocks, cutting of asphalt and similar mediums
- With vibration absorbing or standard T handle

TRK30N

- Heavy - duty paving breaker
- Front head is designed for a hexagonal shank and it allows use of spade, chisel
- Applicable for all digging works, breaking of rocks and foundations

ECO LINE PAVING BREAKERS

TECHNICAL DATA FOR **PAVING BREAKERS ECO**

Type	Part No.	Piston Diameter	Impact rate	Air consumption at 5 bar		Net weight	Air connection	Length max.	Shank hex.	Vibration level according to ISO 8662 *** m/s^2
ECO17	9 359 45	46 mm	1370 min^{-1}	1,4 m^3/min	23,3 l/s	17,4 kg	R 3/4"	567 mm	22X82,5	15
ECO20	9 359 46	42 mm	1080 min^{-1}	1,4 m^3/min	23,3 l/s	20,2kg	R 3/4"	660mm	25X108	15
ECO23	9 359 47	50 mm	930 min^{-1}	1,4 m^3/min	23,3 l/s	22,8 kg	R 3/4"	673 mm	25X108	16

*** The value of vibration level can show a 50% deviation as a result of the method of measuring and deviations in the design of paving breakers.

ECO17

- Light weight paving breaker
- Firm T handle with excellent vibration absorption
- Easy to assemble / disasemble

ECO20

- High impact energy paving breaker
- Low frequency - long stroke
- Very good silencing
- Nice compact design

ECO23

- Robust and effective paving breaker
- Big volumetric exhaust chamber
- Low weight to performance ratio

ADVANTAGES

ECO Paving Breaker design are based on modular concept

Avoids excess spare parts requirements and assures diverse customer selections

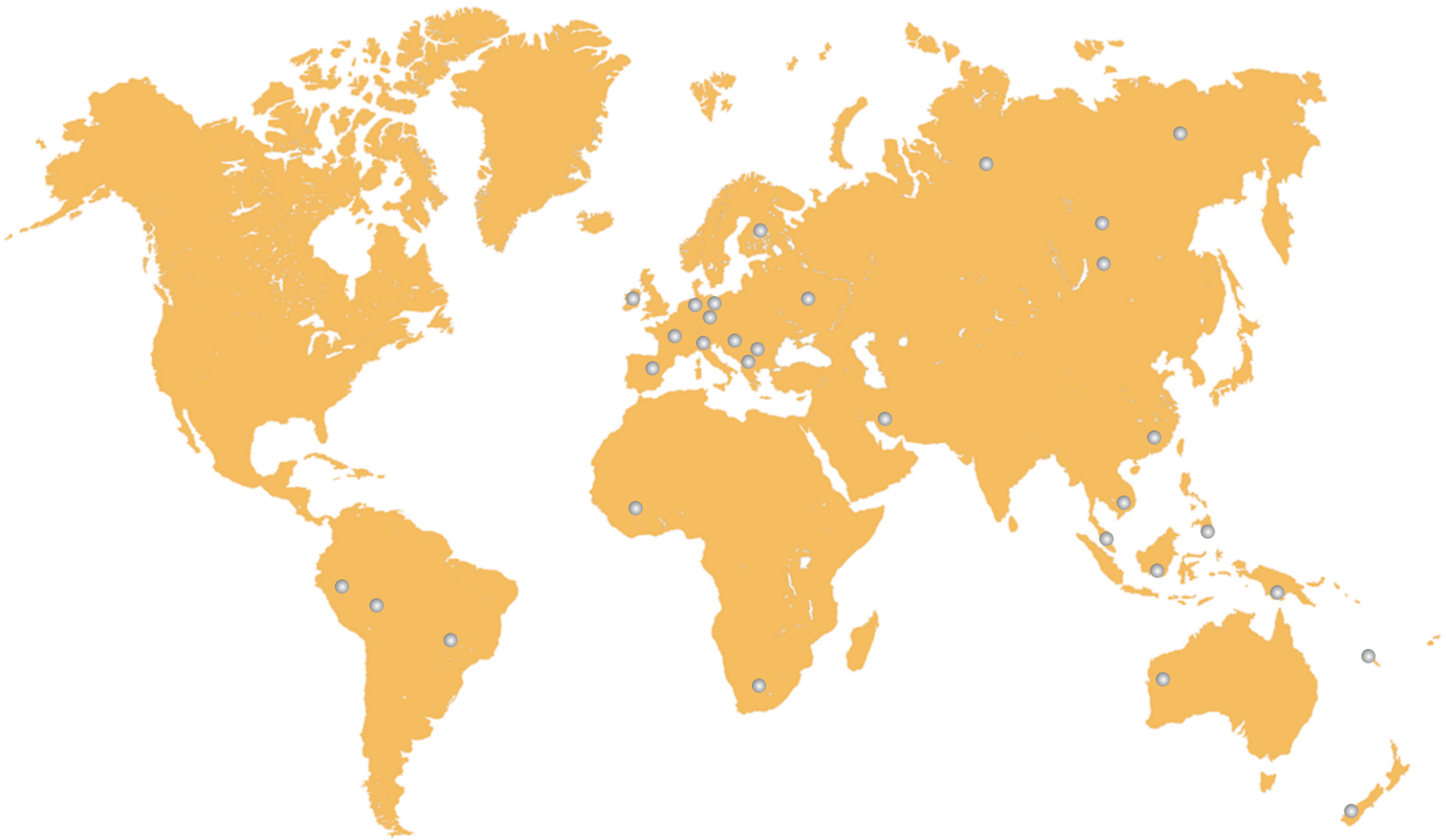
Are robust and effective paving breakers withT handle, featuring excellent vibration absorption

Very good silencing characteristics

Oprema Ravne

EXCHANGEABLE TOOLS FOR PNEUMATIC PICK HAMMERS

Tool Type	Order No.	Pick Hammer	Net weight	Length useful	Shank
1 MOIL POINT	408 00 019, 408 00 060	S23	0,28; 0,4 kg	150, 300 mm	14,3X12,5 hex.
	408 00 072	SK5	0,80 kg	260 mm	19X50 hex.
	408 00 028, 408 00 029	LRK7, SRK12	1,8; 2,2 kg	350, 450 mm	⌀25X75 round
	408 00 030	LRK8, SRK17	2,25 kg	450 mm	22X82,5 hex.
	408 00 036	TRK30	4,35 kg	450 mm	32X152 hex.
2 CHISEL	407 00 062, 407 00 105	S23	0,28; 0,4 kg	150, 300 mm	14,3X12,5 hex.
	407 00 125		0,8 kg	260 mm	
	407 00 123	SK5	0,8 kg	260 mm	19X50 hex.
	407 00 124		0,8 kg	250 mm	
	407 00 082	LRK8,SRK17	1,4 kg	350 mm	22X 82,5 hex.
	407 00 084	TRK30	4,25 kg	300 mm	32X152 hex.
3 SPADE	409 00 019	LRK8, SRK17	3,3 kg	425 mm	22X82,5 hex.
	409 00 013	TRK30	3,25 kg	350 mm	32X152 hex.



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Print: Tiskarna Petrič, Photo: Tomo Jeseničnik, Design: Jana Ačko 2013