

Step drills

Combination step drills/HSS

for metric PG rough thread-through-hole and core-hole-drillings, 6 drilling diameters for core-hole with 5 mm step for sheet metal up to max. 6 mm.
Through-hole: 8,5 - 12,5 - 16,5 - 20,5 - 25,5 - 32,5 - 40,5 mm
core-hole: 10,5 (M12) - 14,5 (M16) - 18,5 (M20) - 23,5 (M25) - 30,5 (M32) - 38,5 (M40)



Art. no.	shankt/Ø	min./Ø	max./Ø	kg	PU
231319	12	8,5	40,5	0,269	1

Step drills /HSS

Special type for electric assembly, for sheet metal up to max. 4 mm gauge, for metric thread through-hole drilling, 8,5 - 12,5 - 16,5 - 20,5 - 25,5 - 32,5 - 40,5 mm



Art. no.	shankt/Ø	min./Ø	max./Ø	kg	PU
231324	12	8,5	40,5	0,199	1

Step drills /HSS

thickness up to max. 6 mm, for metric core-hole-drilling, 8,5 - 10,5 - 14,5 - 18,5 - 23,5 - 30,5 mm



Art. no.	shankt/Ø	min./Ø	max./Ø	kg	PU
231326	12	8,5	30,5	0,208	1



Step drills /HSS

special type for electric assembly, for sheet steel up to 4 mm thickness, for amoured conduit thread sizes



Art. no.	shankt/Ø	min./Ø	max./Ø	kg	PU
231320	12	7	40	0,237	1
231322	10	7	21	0,151	1

Step drills /HSS

for mechanical engineering and tinsmith working, with 2 cutters, metric



Art. no.	shankt/Ø	min./Ø	max./Ø	kg	PU
231336	6	4	12	0,027	1
231338	9	12	20	0,079	1
231340	12	20	30	0,203	1
231342	12	30	40	0,371	1
231350	6	4	12	0,027	1
231352	8	4	20	0,059	1
231354	10	6	30	0,162	1

Step drills assortment/HSS

3 pieces, for mechanical engineering and tinsmith working, with 2 cutters.

Contents:

Ø 4 - 12 mm, Ø 12 - 20 mm, Ø 20 - 30 mm



Art. no.	Ø	set	kg	PU
231327	4 - 30	3-pieces	0,597	1

Rotary guide value for step drills/cone drills

Material	unleg. Baustahl < 700 N/mm ² Mild steel < 700 N/mm ²	unleg. Baustahl > 700 N/mm ² Mild steel > 700 N/mm ²	leg. Stahl < 1000 N/mm ² Alloy steel < 1000 N/mm ²	Gußeisen < 250 N/mm ² Cast iron < 250 N/mm ²	Gußeisen > 250 N/mm ² Cast iron > 250 N/mm ²	Edelstahl rostfrei Stainless steel	CuZn Leg. spröde CuZn alloy brittle	CuZn Leg. zäh CuZn alloy tough	AL Leg. < 11% Si Alloy steel < 11% Si	Thermo- plaste Thermo plastic	Duro- plaste Duro plastic	Holz Wood
Materialstärke	6,0 mm	6,0 mm	6,0 mm	6,0 mm	6,0 mm	3,0 mm	6,0 mm	6,0 mm	6,0 mm	6,0 mm	6,0 mm	25,0 mm
Kühlung	Bohrpaste	Bohrpaste	Bohrpaste	Luft	Luft	Bohrpaste	Luft	Luft	Bohrpaste	H ₂ O	Luft	Luft
Lubricant	Drilling paste	Drilling paste	Drilling paste	Air	Air	Drilling paste	Air	Air	Drilling paste	H ₂ O	Air	Air
Vc = m / min	25	20 - 25	20	15	10	5	60	35	30	20	15	> 40
Ø mm	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m
4,0 - 12,0	1900 - 600	1700 - 580	1550 - 520	1190 - 400	800 - 250	400 - 130	4700 - 1550	2750 - 920	2350 - 790	1550 - 520	1190 - 400	3000 - 1000
4,0 - 20,0	1900 - 400	1700 - 350	1550 - 300	1190 - 240	800 - 160	400 - 80	4700 - 950	2750 - 550	2350 - 470	1550 - 300	1190 - 240	3000 - 650
12,0 - 20,0	600 - 400	600 - 350	520 - 300	400 - 240	250 - 160	130 - 80	1550 - 950	920 - 550	790 - 470	520 - 300	400 - 240	1000 - 650
4,0 - 24,0	1900 - 300	1700 - 280	1550 - 250	1190 - 200	800 - 130	400 - 65	4700 - 790	2750 - 460	2350 - 400	1550 - 250	1190 - 200	3000 - 550
6,0 - 30,0	1300 - 250	1200 - 230	1000 - 200	780 - 150	530 - 100	250 - 50	3150 - 630	1850 - 370	1590 - 310	1000 - 200	780 - 150	2100 - 420
20,0 - 30,0	400 - 250	350 - 230	300 - 200	230 - 150	160 - 100	80 - 50	950 - 630	550 - 370	470 - 310	300 - 200	230 - 150	650 - 420
6,0 - 36,0	1300 - 220	1200 - 200	1000 - 170	780 - 130	530 - 90	250 - 45	3150 - 530	1850 - 300	1590 - 260	1000 - 170	780 - 130	2100 - 350
30,0 - 40,0	250 - 200	230 - 180	200 - 150	150 - 120	100 - 80	50 - 40	630 - 470	370 - 280	310 - 240	200 - 150	150 - 120	420 - 310
40,0 - 50,0	200 - 160	180 - 140	150 - 125	120 - 90	80 - 65	40 - 30	470 - 380	280 - 220	240 - 190	150 - 125	120 - 90	310 - 250
50,0 - 60,0	160 - 130	140 - 110	125 - 100	90 - 80	65 - 50	30 - 25	380 - 310	220 - 185	190 - 150	125 - 100	90 - 80	250 - 210

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Cone drills

Cone drills/Aerial drills/HSS

for edgefree drilling of thin material



Art. no.	shankt/Ø	min./Ø	max./Ø	kg	PU
231300	6	3	14	0,027	1
231301	8	6	20	0,055	1
231330	8	6	22,5	0,085	1
231302	10	16	30	0,139	1
231304	12	26	40	0,265	1
231305	10	6	30	0,166	1
231306	12	36	50	0,350	1
231307	13	46	60	0,551	1

Set of cone drills/HSS

3 pieces, in metal box.

1 piece each No. 1, 2, 3 (Ø 3 - 30 mm), suitable for NE material, soft steel sheet, similar to ST 14 - 37, Nirosta steel sheet A 2, for duro or thermo plastic



Art. no.	Ø	set	kg	PU
231312	3 - 30	3-pieces	0,510	1

Screw punches

Screw punches

matching for cable connection acc. the new Euro-Norm EN 50262, with 3 cutting edges for iron sheet up to 2 mm, steel sheet up to 1,5 mm, stainless-steel sheet up to 1,5 mm thickness



Art. no.			screws	kg	PU
180513	metric	ISO 16	180530	0,101	1
180515	metric	ISO 20	180530	0,115	1
180517	metric	ISO 25	180530	0,154	1
180519	metric	ISO 32	180532	0,320	1
180521	metric	ISO 40	180532	0,950	1
180523	metric	ISO 50	180534	0,636	1
180525	metric	ISO 63	180534	0,974	1
180500	PG	PG9	180530	0,097	1
180502	PG	PG11	180530	0,106	1
180504	PG	PG13,5	180530	0,115	1
180506	PG	PG16	180530	0,100	1
180508	PG	PG21	180530	0,176	1
180510	PG	PG29	180532	0,400	1
180512	PG	30,5	180534	0,202	1
180514	PG	PG36	180534	0,590	1
180516	PG	PG42	180534	1,250	1
180518	PG	PG48	180534	0,319	1
180520	PG	1 1/8"	180530	0,250	1

Spare screws

Spare screws for screw punches



Art. no.	size	kg	PU
180530	10 x 1,0	0,048	1
180532	12 x 1,5	0,070	1
180534	16 x 1,5	0,139	1



Rotary guide value for step drills/cone drills

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Materialstärke Material gauge	6,0 mm	6,0 mm	6,0 mm	6,0 mm	6,0 mm	3,0 mm	6,0 mm	6,0 mm	6,0 mm	6,0 mm	6,0 mm	25,0 mm
Kühlung Lubricant	Bohrpaste Drilling paste	Bohrpaste Drilling paste	Bohrpaste Drilling paste	Luft Air	Luft Air	Bohrpaste Drilling paste	Luft Air	Luft Air	Bohrpaste Drilling paste	H ⁰ H ⁰	Luft Air	Luft Air
Vc = m / min	25	20 - 25	20	15	10	5	60	35	30	20	15	> 40
Ø mm	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m
4,0 - 12,0	1900 - 600	1700 - 580	1550 - 520	1190 - 400	800 - 250	400 - 130	4700 - 1550	2750 - 920	2350 - 790	1550 - 520	1190 - 400	3000 - 1000
4,0 - 20,0	1900 - 400	1700 - 350	1550 - 300	1190 - 240	800 - 160	400 - 80	4700 - 950	2750 - 550	2350 - 470	1550 - 300	1190 - 240	3000 - 650
12,0 - 20,0	600 - 400	600 - 350	520 - 300	400 - 240	250 - 160	130 - 80	1550 - 950	920 - 550	790 - 470	520 - 300	400 - 240	1000 - 650
4,0 - 24,0	1900 - 300	1700 - 280	1550 - 250	1190 - 200	800 - 130	400 - 65	4700 - 790	2750 - 460	2350 - 400	1550 - 250	1190 - 200	3000 - 550
6,0 - 30,0	1300 - 250	1200 - 230	1000 - 200	780 - 150	530 - 100	250 - 50	3150 - 630	1850 - 370	1590 - 310	1000 - 200	780 - 150	2100 - 420
20,0 - 30,0	400 - 250	350 - 230	300 - 200	230 - 150	160 - 100	80 - 50	950 - 630	550 - 370	470 - 310	300 - 200	230 - 150	650 - 420
6,0 - 36,0	1300 - 220	1200 - 200	1000 - 170	780 - 130	530 - 90	250 - 45	3150 - 530	1850 - 300	1590 - 260	1000 - 170	780 - 130	2100 - 350
30,0 - 40,0	250 - 200	230 - 180	200 - 150	150 - 120	100 - 80	50 - 40	630 - 470	370 - 280	310 - 240	200 - 150	150 - 120	420 - 310
40,0 - 50,0	200 - 160	180 - 140	150 - 125	120 - 90	80 - 65	40 - 30	470 - 380	280 - 220	240 - 190	150 - 125	120 - 90	310 - 250
50,0 - 60,0	160 - 130	140 - 110	125 - 100	90 - 80	65 - 50	30 - 25	380 - 310	220 - 185	190 - 150	125 - 100	90 - 80	250 - 210