



SQUAREWORX®

For every eventuality: Square shoulder, slotting and chamfering milling with only one insert



pokolm
PREMIUMTOOLS. WE KNOW HOW.

ONE FOR TWO: SQUARE SHOULDER, SLOTING AND CHAMFERING MILLING OPERATIONS WITH ONLY ONE INSERT AND TWO CUTTER BODIES

SQUAREWORX® is the name of the new, multifunctional milling system for precise machining with both 90° and 45° kappa angles and only a single insert. One insert is thus enough to perform square shoulder, slotting, face and chamfering milling operations.

Each insert has four useable cutting edges with a corner radius of 0.8 mm. Cutting tool materials in five different qualities cover the machining of all standard materials, ranging from roughing to finishing.

All of the available shell-type, threaded shank and plain shank cutters possess the maximum possible number of teeth. In combination with the mandatory internal coolant supply, this feature allows high feedrates.

The square shoulder and slotting cutters (90° kappa angle) are available from stock in diameters between 25 and 66 mm and have an embedded insert seat.

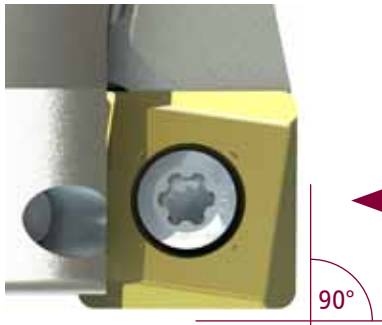
With the Ø 16 - 63 mm 45° kappa angle chamfering milling cutters, in addition to deburring, both forward and reverse chamfering operations up to a cutting depth ap of 5 mm are possible thanks to their special geometry.

Ease of cutting is always guaranteed thanks to the high-positive geometry, even with machines featuring less sophisticated geometry.

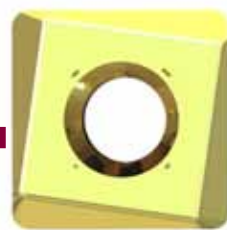
Furthermore, the costs are extremely low thanks to the four useable cutting edges in combination with high removal rates.

With these features and such outstanding application flexibility, **SQUAREWORX®** is the latest milling system from POKOLM to lay claim to the attribute of maximum efficiency for itself.

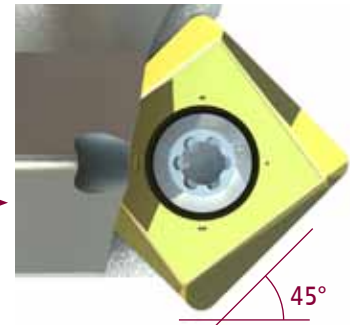
Square shoulder and slotting cutters SQ09 90



One insert for two cutter bodies



Chamfering milling cutters SQ09 45



Connection types

SQUAREWORX®- cutter bodies are available with

- ☉ shell-type connection,
- ☉ threaded shank and with
- ☉ plain shank

All tools feature an internal coolant supply for maximum process safety and reliable chip extraction.



Shell-type



Threaded shank



Plain shank

SQUAREWORX® M IN DETAIL

SQUAREWORX® Features at a glance

- ⊕ 90° kappa angle tool: Precise square shoulder, slotting and face milling, embedded inserts
- ⊕ 45° kappa angle tool: Both forward and reverse chamfering and deburring up to a cutting depth ap of 5 mm
- ⊕ Low storage costs thanks to the use of only one insert for two tool geometries
- ⊕ 4 useable cutting edges per insert, low costs per cutting edge
- ⊕ Clearance angle 15°, corner radius 0.8 mm
- ⊕ High feedrates thanks to a large number of teeth
- ⊕ Ease of cutting, also suitable for machines which feature less sophisticated geometry
- ⊕ Tool diameter 16 ... 66 mm
- ⊕ High removal rates, maximum efficiency
- ⊕ For rough, medium and fine cutting
- ⊕ Inserts for nearly all materials: Extremely sharp inserts machined by peripheral grinding tailored for use with non-ferrous metal; sintered inserts for all other materials

Breakdown of order number for MILLING CUTTER BODIES

Example: **SQ09-025-Z25-03-50-90**

- ⊕ System key
SQ - SQUAREWORX®
- ⊕ Insert size
mm [l]
- ⊕ Nominal diameter
Ø mm [d₁]
- ⊕ Connection types
E - Threaded shank
A - Shell type
Z - Plain shank
- ⊕ Connection size
Ø mm [d₂]
- ⊕ Number of teeth
- ⊕ Usable length
mm [l₃]
- ⊕ Kappa angle °

Breakdown of order number for INSERTS

Example: **SQ09-8042-R08-MP**

- ⊕ System key
SQ - SQUAREWORX®
- ⊕ Insert size
mm [l]
- ⊕ Grade specification
- ⊕ Corner radius
- ⊕ Chip breaker
- ⊕ ISO Material group

L	for light cutting
M	for medium cutting
R	for heavy cutting

P	Steel
M	Stainless steel
K	Cast iron
N	Non-ferrous materials
S	High-temperature alloys
H	Hardened steel



Practical video
SQUAREWORX®
in 1.2358



SQUAREWORX

Size M | Shoulder face and slotting milling cutters

SQUAREWORX® stands out through its high application flexibility when used as shoulder face and slotting milling cutters:

- Four efficiently useable cutting edges with a real corner radius of 0.8 mm
- Lower power consumption; is also the ideal choice for use on machines featuring less sophisticated geometry
- Efficient: Fast feedrates and high removal rates thanks to a large number of teeth
- Optimum swarf conveyance thanks to internal coolant supply

Milling cutter bodies	Catalogue no.	d ₁	l/d	r	l ₃	l ₂	l ₁	d ₂	d ₃	z	Accessories	Features
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Plain shank end mill bodies

	SQ09-025-Z25-03-50-90	25	9	0.8	50	1	-	diam. 25	24	3	A, B, C, D, E	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> NEW

Threaded shank end mill bodies

	SQ09-025-E12-03-90	25	9	0.8	35	1	-	M 12	21	3	A, B, C, D, E	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> NEW
	SQ09-032-E16-04-90	32	9	0.8	40	1	-	M 16	29	4	A, B, C, D, E	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> NEW
	SQ09-035-E16-04-90	35	9	0.8	40	1	-	M 16	29	4	A, B, C, D, E	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> NEW
	SQ09-040-E16-05-90	40	9	0.8	40	1	-	M 16	29	5	A, B, C, D, E	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> NEW
	SQ09-042-E16-05-90	42	9	0.8	40	1	-	M 16	29	5	A, B, C, D, E	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> NEW

Shell type milling cutter bodies

	SQ09-040-A16-05-90	40	9	0.8	40	1	-	diam. 16	35	5	A, B, C, D, E	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> NEW
	SQ09-042-A16-05-90	42	9	0.8	40	1	-	diam. 16	35	5	A, B, C, D, E	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> NEW
	SQ09-050-A22-06-90	50	9	0.8	40	1	-	diam. 22	40	6	A, B, C, D, E	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> NEW
	SQ09-052-A22-06-90	52	9	0.8	40	1	-	diam. 22	40	6	A, B, C, D, E	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> NEW
	SQ09-063-A27-07-90	63	9	0.8	50	1	-	diam. 27	48	7	A, B, C, D, E	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> NEW
	SQ09-066-A27-07-90	66	9	0.8	50	1	-	diam. 27	48	7	A, B, C, D, E	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> NEW

Accessories

 30 505 P Torx screw A > Page 7	 08 500 P Torx-screwdriver (Torx-Plus) B > Page 7	 TV 08-2 Screwdriver torque Vario®-S with window scale, C > Page 7	 T8 500 P Torx interchangeable bit for Torque Vario® D > Page 7	 T8 502 P Torx MagicSpring compatible bit f. Torque Vario® E > Page 7	
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SQUAREWORX

Size M | Chamfering milling cutter



SQUAREWORX® stands out through its application flexibility when used as a chamfering milling cutter:

- Forward and reverse chamfering
- Four efficiently useable cutting edges
- Efficient: Fast feedrates thanks to a large number of teeth
- Optimum swarf conveyance thanks to internal coolant supply

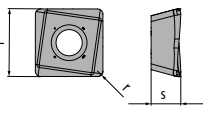
Milling cutter bodies	Catalogue no.	d_1	l/d	r	l_3	l_2	l_1	d_2	d_3	z	Accessories	Features
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Plain shank end mill bodies												
	SQ09-016-Z16-03-32-45	16	9	0.8	32	1.2	-	diam. 16	13.8	3	A, B, C, D, E	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> NEW
	SQ09-020-Z20-03-40-45	20	9	0.8	40	1.2	-	diam. 20	18	3	A, B, C, D, E	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> NEW
	SQ09-025-Z25-04-50-45	25	9	0.8	50	1.2	-	diam. 25	21	4	A, B, C, D, E	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> NEW

Threaded shank end mill bodies												
	SQ09-016-E10-03-45	16	9	0.8	25	1.2	-	M 10	18	3	A, B, C, D, E	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> NEW
	SQ09-020-E12-03-45	20	9	0.8	30	1.2	-	M 12	21	3	A, B, C, D, E	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> NEW
	SQ09-025-E12-04-45	25	9	0.8	30	1.2	-	M 12	21	4	A, B, C, D, E	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> NEW
	SQ09-035-E16-05-45	35	9	0.8	40	1.2	-	M 16	29	5	A, B, C, D, E	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> NEW

Shell type milling cutter bodies												
	SQ09-040-A16-06-45	40	9	0.8	40	1.2	-	diam. 16	35	6	A, B, C, D, E	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> NEW
	SQ09-050-A22-07-45	50	9	0.8	40	1.2	-	diam. 22	40	7	A, B, C, D, E	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> NEW
	SQ09-063-A27-08-45	63	9	0.8	50	1.2	-	diam. 27	48	8	A, B, C, D, E	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> NEW

Accessories					
<p>30 505 P Torx screw A > Page 7</p>	<p>POKOLM 08 500 P Torx-screwdriver (Torx-Plus) B > Page 7</p>	<p>TV 08-2 Screwdriver torque Vario®-S with window scale, C > Page 7</p>	<p>T8 500 P Torx interchangeable bit for Torque Vario® D > Page 7</p>	<p>T8 502 P Torx MagicSpring compatible bit f. Torque Vario® E > Page 7</p>	

Indexable inserts	Catalogue no.	DIN Specification	Carbide Grade	Coating	Material			
					l	s	r	M
	SQ09-8048-R08-MP	SDKT 09T308 SR	P40	PPGO	9	3.97	0.8	M 3.0
	SQ09-8062-R08-MK	SDKT 09T308 SR	K10	PCSR	9	3.97	0.8	M 3.0
	SQ09-8099-R08-MS	SDKT 09T308 SR	M35	PCTC	9	3.97	0.8	M 3.0
	SQ09-8096-R08-MM	SDKT 09T308 SR	M40	PPST	9	3.97	0.8	M 3.0
	SQ09-8020-R08-MN	SDHT 09T308 FR	K10	polished	9	3.97	0.8	M 3.0

Feed per tooth (fz) | d.o.c. (ap)

Material		steel	stainless steel	cast iron	non-ferrous materials	high-temperature alloys	hardened steel
P40 PPGO	f _z (mm)	0,05-0,3	0,05-0,17	0,05-0,2	-	0,04-0,13	-
	a _p (mm)	0,1-5	0,1-5	0,1-5	-	0,1-4	-
K10 PCSR	f _z (mm)	0,05-0,2	-	0,05-0,2	-	-	-
	a _p (mm)	0,1-2,5	-	0,1-5	-	-	-
M35 PCTC	f _z (mm)	-	0,05-0,25	-	-	0,05-0,25	-
	a _p (mm)	-	0,1-5	-	-	0,1-5	-
M40 PPST	f _z (mm)	0,05-0,25	0,04-0,25	-	-	0,04-0,15	-
	a _p (mm)	0,1-5	0,1-5	-	-	0,1-5	-
K10 polished	f _z (mm)	-	-	-	0,05-0,35	-	-
	a _p (mm)	-	-	-	0,1-5	-	-

Cutting speed (Vc in m/min)

Material		steel	stainless steel	cast iron	non-ferrous materials	high-temperature alloys	hardened steel
P40 PPGO	roughing	▽ 100 150 200	▽ 90 110 130	▽ 110 130 150	-	▽ 60 80 100	-
	pre finishing	▽ 100 150 200	▽ 90 110 130	▽ 110 130 150	-	▽ 60 80 100	-
K10 PCSR	roughing	-	-	▽ 140 180 220	-	-	-
	pre finishing	▽ 100 180 260	-	▽ 160 190 220	-	-	-
M35 PCTC	roughing	-	▽ 110 155 200	-	-	▽ 30 65 100	-
	pre finishing	-	▽ 120 175 230	-	-	▽ 40 75 110	-
	finishing	-	▽ 160 220 280	-	-	▽ 60 100 140	-
M40 PPST	roughing	▽ 80 140 200	▽ 80 130 180	-	-	▽ 30 55 80	-
	pre finishing	▽ 100 150 200	▽ 100 155 210	-	-	▽ 40 65 90	-
	finishing	-	▽ 120 185 250	-	-	▽ 60 90 120	-
K10 polished	roughing	-	-	-	▽ 100 450 800	-	-
	pre finishing	-	-	-	▽ 100 450 800	-	-
	finishing	-	-	-	▽ 100 450 800	-	-

Extended operation data

Plunging	
Cutter diam. d1	X _{max}
25 - 32	0.5
35	0.4
40 - 63	0.3

Ramping		
Cutter diam. d1	α°	y
25	<2.00	12.2
32	<1.50	19.2
35	<1.00	22.2
40	<0.60	27.2
42	<0.55	29.2
50	<0.45	37.2
52	<0.40	39.2
63	<0.30	50.2
66	<0.30	53.2

Helix		
Cutter diam. d1	D _{min}	D _{max}
25	37.2	48
32	51.2	62
35	57.2	68
40	67.2	78
42	71.2	82
50	87.2	98
52	91.2	102
63	113.2	124
66	119.2	130

Accessories	Catalogue no.	Description
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Torx®screws Torx®screws						
	30 505 P	Torx screw M 3.0 L 7.0 T 8 Plus 1.5 Nm	M 3.0	L 7.0	T 8 Plus	1.5 Nm

Spanners / screwdrivers Torx-screwdriver						
	08 500 P	Torx-screwdriver (Torx-Plus) T 8 Plus	T 8 Plus			

Torque screwdrivers and accessories Torque screwdrivers						
	TV 08-2	Screwdriver torque Vario®-S with window scale from Nm 0.8 up to 2,0 Nm with scale, inc setter	from Nm 0.8	up to 2,0 Nm		

Torque screwdrivers and accessories Torx bits, standard						
	T8 500 P	Torx interchangeable bit for Torque Vario® T 8 IP L 175 max. 2.0 Nm	T 8 IP	L 175	max. 2.0 Nm	

Torque screwdrivers and accessories Torx bits with retaining spring						
	T8 502 P	Torx MagicSpring compatible bit f. Torque Vario® T 8 IP L 175 max. 2.0 Nm	T 8 IP	L 175	max. 2.0 Nm	



Pokolm
Frästechnik GmbH & Co. KG

Adam-Opel-Straße 5
33428 Harsewinkel
Germany

Fon: +49 5247 9361-0
Fax: +49 5247 9361-99

info@pokolm.com
www.pokolm.com



www.pokolm.com