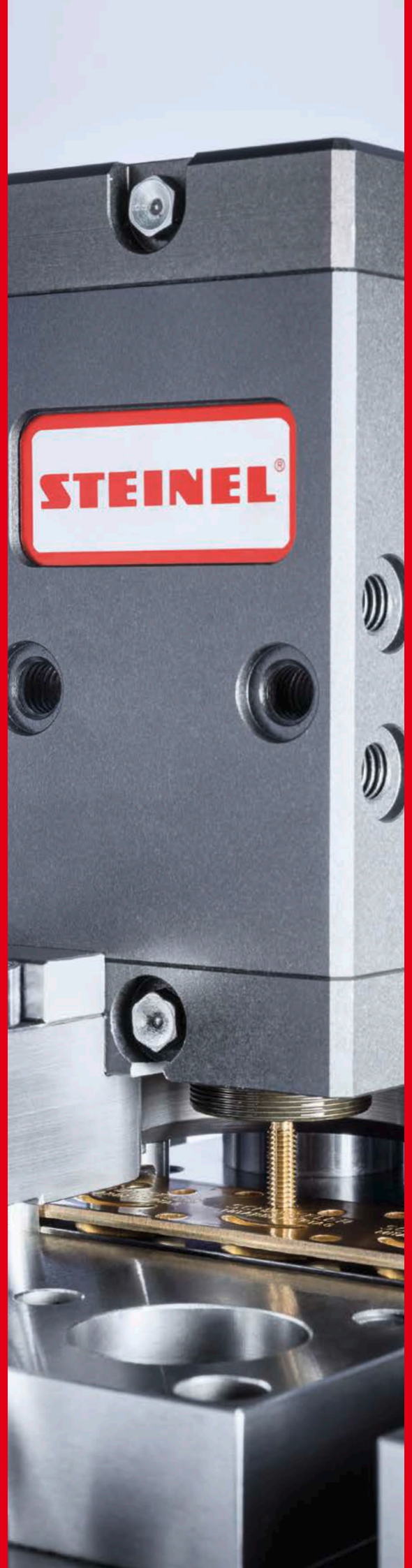


Tapping units

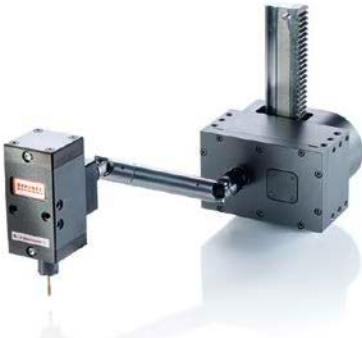
- S-Former Z
- S-Former E



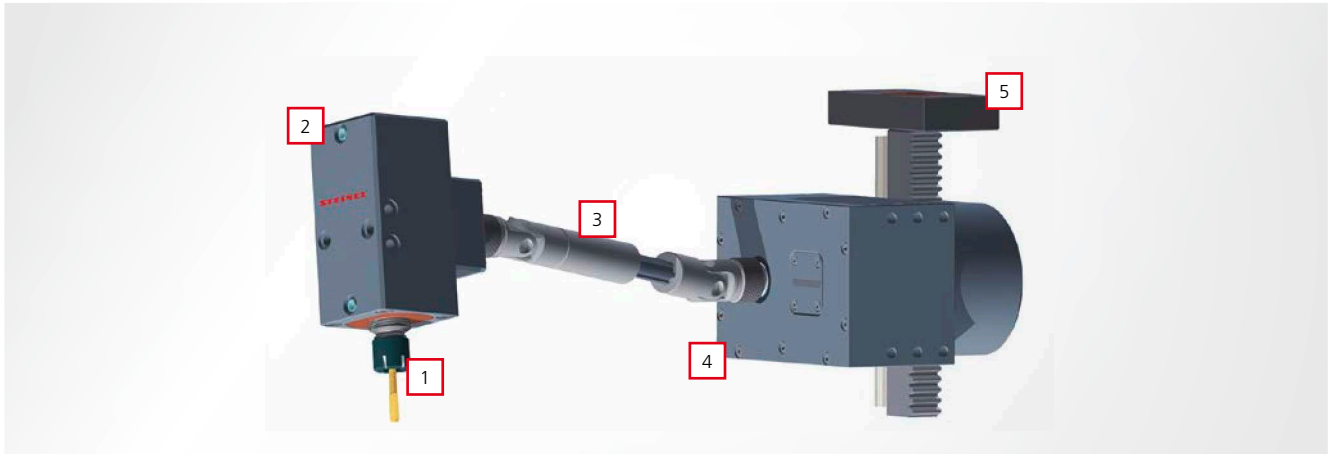
 SZ8881.01-0007 6.7	 SZ8881.01-0001 6.7	 SZ8881.01-0002 6.8	 SZ8881.01-0003 6.8	 SZ8881.01-0004 6.9	 SZ8871 6.10
 SZ8871.00 6.11	 SZ8871.01 6.12	 SZ8871.02 6.13	 SZ8871.03 6.14	 K300-001-19x... 6.15	 K300-001-1xx... 6.16
 SE 180xx Red... 6.17	 K300-001-19x... 6.18	 SZ8871.02 Re... 6.19	 K300-001-19x... 6.20	 SZ8871.03 Re... 6.21	 SZ9400 6.22

S-Former Z, S-Former E

With the specially designed tapping units S-Former Z (mechanical) and S-Former E (electronic) for punching and bending tools, STEINEL has made two systems available. The decision on the best system variant to use is made according to the specific requirements. We will be happy to help you with the selection, as well as the integration in your tool.

Application fields/features	S-Former Z	S-Former E
 		
Drive	mechanical via press stroke	electrical via AC Servodrive
Activation	via tool stroke	via external control unit
max. press speed depending on the process parameters (strokes/min)	150	E0 = 160 E1 = 80 E2 = 70 E3 = 50
Use in progressive stamping tools	✓	✓
Use as autonomous unit, e.g. for rotary indexing tables (assembly station), in production lines	–	✓
Use in presses, punching machines	✓	✓
Tapping at any angle	✓	✓
Process monitoring	–	✓
Use of carbide taps	✓	✓
installable on blank holders	✓	✓
installable on movable mounting	✓	✓
installable on lower plate	✓	✓
Use in various tools	–	✓
various thread sizes with a unit	–	✓

S-Former Z



The S-Former Z is a purely mechanical solution for process-integrated tapping. The linear stroke movement of the press is converted into a rotation movement via a gear rod-sprocket pairing. This is translated in the gear to the required rotation speed and transmitted via a Cardan shaft to the tapping unit head. There, a lead screw rotates equally with the roll tap (equal pitch) and drives it into the part.

For the design of the S-Former, information about the process is required. For inquiries, a corresponding form is available. It can be found at **www.steinel.com » downloads » S-Former » S-Former registration form.pdf**

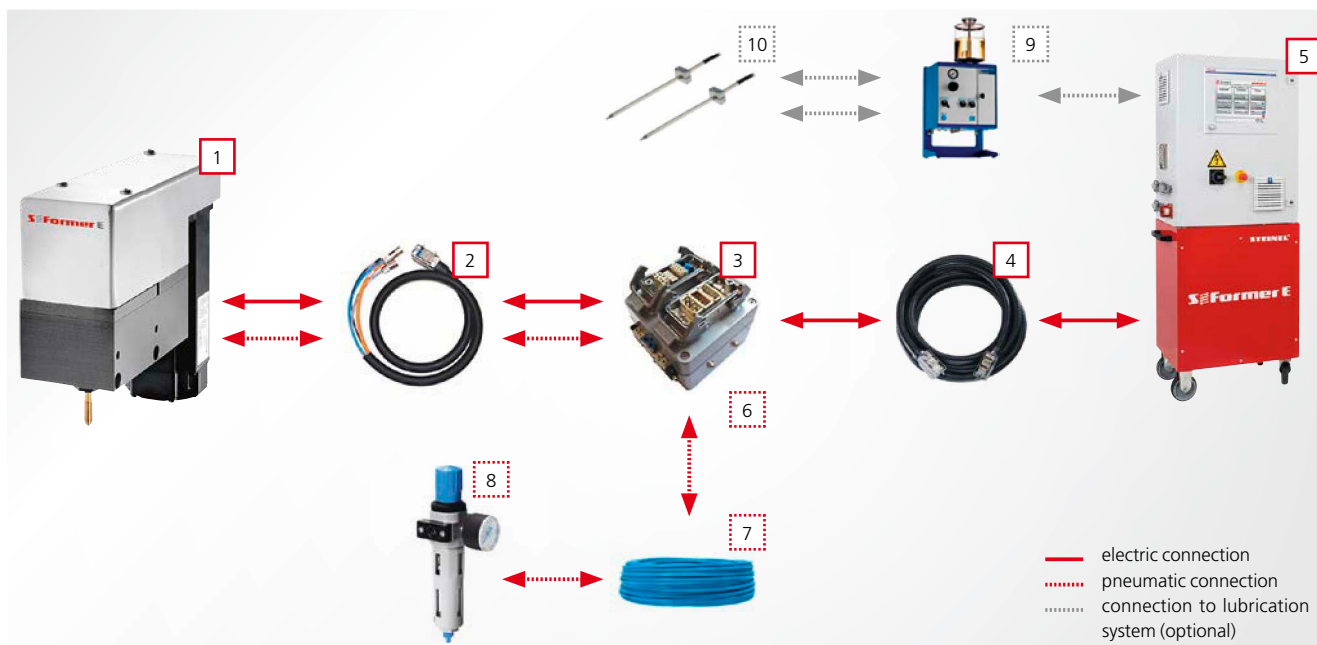


The S-Former Z consists of

- 1** Guide cartridge
- 2** Tapping unit head
- 3** Cardan shaft
- 4** Gear
- 5** Gear rod with mounting plate

Technical features

- Thread dimensions up to M12 possible
- Thread possible at almost any angle
- Collet for roll tap
- Threaded bush suspension as collision protection
- Lead screw rotates equally with the roll tap (equal pitch)
- Cardan shaft for balancing tapping unit head stroke movements
- Gear rod runner block guide
- Gear with oil lubrication/tapping unit head with grease lubrication
- compact design of the tapping unit head (60 x 60 x 143 mm)
- compact design of the gear (150 x 150 x 96 mm)



The S-Former E is an electronic system for process-integrated tapping. The PLC-driven AC Servodrive integrated within the tapping unit head drives the roll tap. The movement of the roll tap to the part is done pneumatically and the tap moves into the material itself as a result of its pitch.

For the design of the S-Former, information about the process is required. For inquiries, a corresponding form is available. It can be found at **www.steinell.com » downloads » S-Former » S-Former registration form.pdf**



Technical features

- permanent process monitoring and quality checks
- Logging, archiving and processing of the monitoring results
- The S-Former E can be integrated within any production lines.
- Tapping at any angle possible
- parallel work with different tapping unit head sizes/ thread sizes
- automatic recognition of the connected tapping unit head types to avoid errors during setup
- individual programming of the individual tapping unit heads
- Teach in support during programming
- 50 freely configurable programs
- 12" touch display
- German/English menu instructions as standard, additional languages optional
- detailed help and information texts stored in the control unit
- optional remote maintenance module
- user administration for the approval of individual functions

The S-Former E consists of

- 1** up to 4 tapping unit heads (E0 to E3) in parallel operation, in variable compositions
- 2** cable set per tapping unit head (electric and pneumatic, cable length approx. 2 m)
- 3** connection box per tapping unit head (electric and pneumatic)
- 4** connection cable per tapping unit head (electric and pneumatic, cable length approx. 5 m)
- 5** control cabinet, control unit for up to 4 tapping unit heads
- 6** pneumatic valve per tapping unit head
- 7** pneumatic supply per tapping unit head
- 8** compressed air maintenance unit per tapping unit head with pressure reducer
- 9** minimal quantity lubrication system/other lubrication system (optional)
- 10** spray nozzles (optional)

Technical note

Incomplete machine in accordance with Machinery Directive 2006/42/EC with emergency stop function

S-Former E

Four tapping unit head sizes cover the thread area from 1 mm to 26 mm diameter. The tapping units are powered by powerful AC Servodrives providing up to 2.25 kW (400 V).

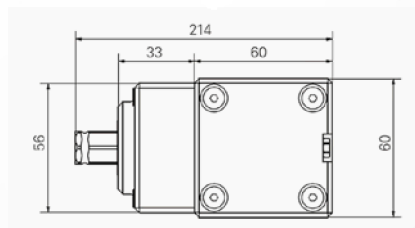
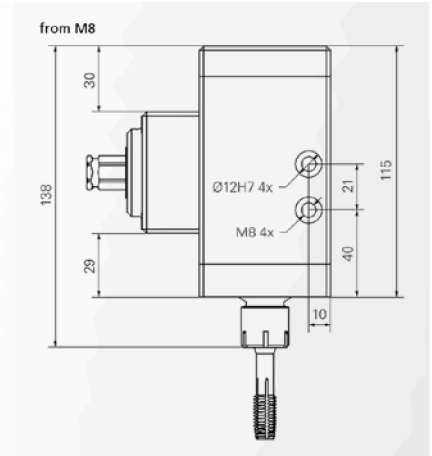
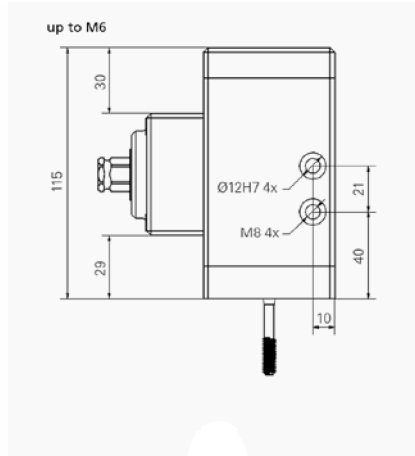
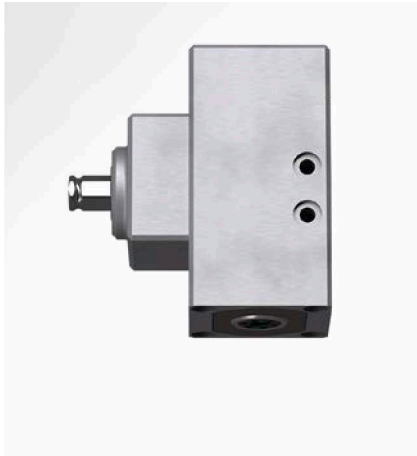
S-Former E	E0	E1	E2	E3
				
Ø thread [mm]	1-4	4-8	8-16	8-26
Ø tap shaft [mm]	1-4	4-8	8-12	8-16
max. tap path [mm]	20	30	40	50
Number of strokes [stroke/min]*	Up to 160	Up to 80	Up to 70	Up to 50
max. torque M_F [Nm]**	2	10	20	40
Rotation speed n_F [t/min]**	Up to 5000	Up to 2500	Up to 2500	Up to 1000

* at 120° feeder and fixing angle, 4 pitches, steel < 600 N/mm²

** at roll tap (tool)

SZ8881.01-0007 Tapping unit

S-Former Z



Note

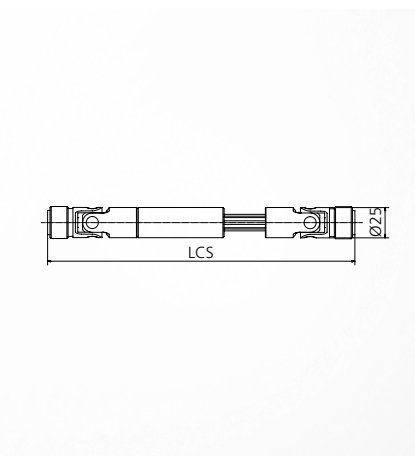
Guide cartridge (SZ8881.01-0004) must also be specified for the tapping unit

Item number

SZ8881.07-0007

SZ8881.01-0001 Cardan shaft

S-Former Z



Note

LCS = length of the Cardan shaft

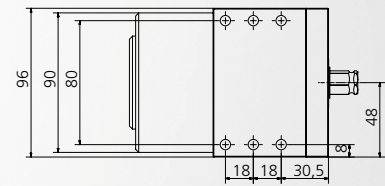
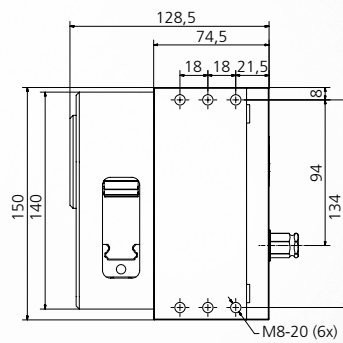
Item number

SZ8881.01-0001

SZ8881.01-0002 Gear

STEINEL®

S-Former Z

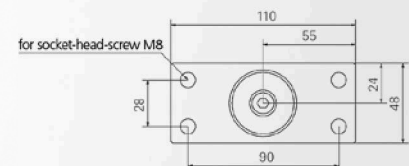
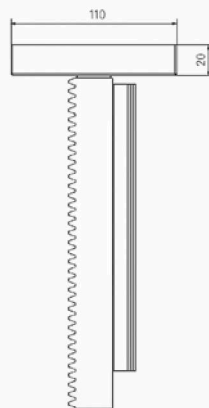


Item number

SZ8881.01-0002

SZ8881.01-0003 Gear rod

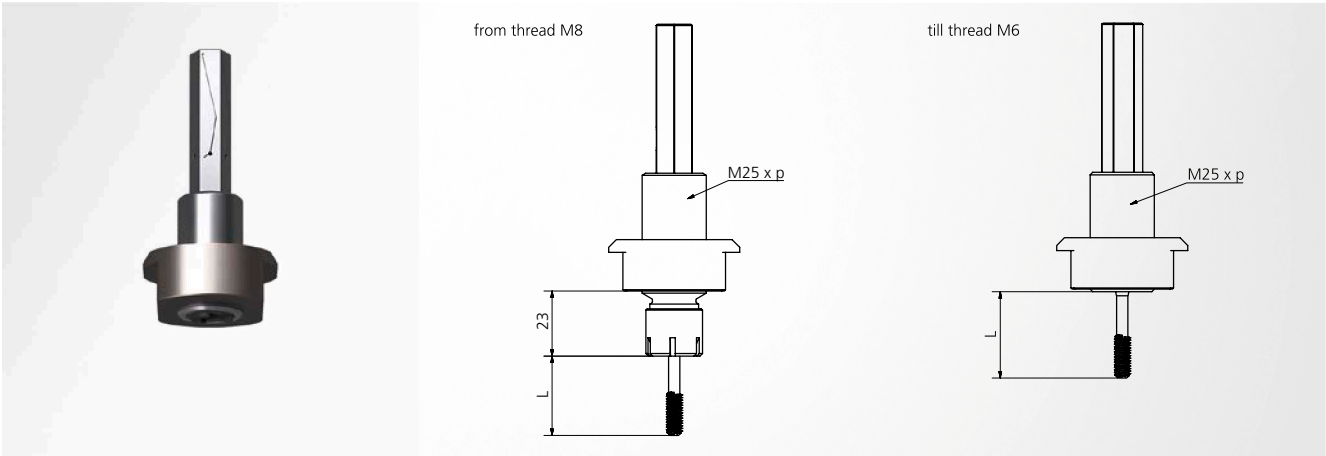
S-Former Z



Item number

SZ8881.01-0003

S-Former Z



Note

P = roll tap pitch

Thread	Guide cartridge	P	L
M4	M25 x	0.70	22
M5	M25 x	0.80	25
M6	M25 x	1.00	30
M8	M25 x	1.25	35
M10	M25 x	1.50	40
M12	M25 x	1.75	36



Control cabinet with a Bosch Rexroth control unit featuring a colourful 12" touch screen display and a two-channel emergency stop input/output for a safe drive shutdown procedure. Up to 4 drives may be controlled.

Size (W x H x D)

600 x 760 x 350 mm

Size incl. control cabinet (W x H x D)

600 x 1530 x 350 mm

Weight

15-30 kg

Weight incl. control cabinet

35-50 kg

Power supply

3 x 400 V AC / 50 Hz / 16 A

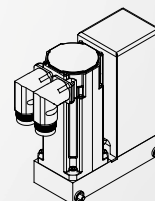
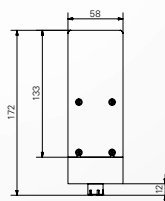
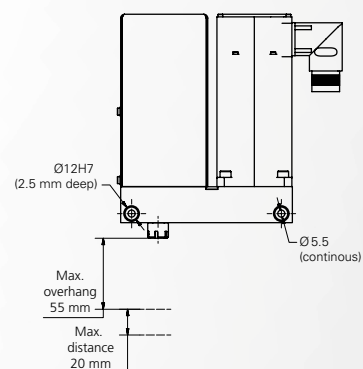
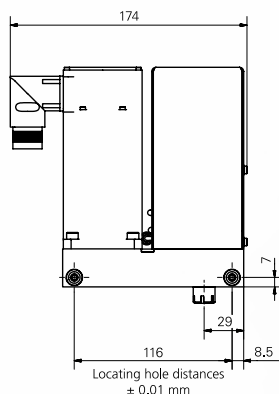
Connection S-Former E	Item number
singel	SZ8871 -1P.02
double	SZ8871 -2P.02

Connection S-Former E	Item number
triple	SZ8871 -3P.02
fourfold	SZ8871 -4P.02

SZ8871.00 Tapping unit E0

STEINEL®

Thread M1-M4, max. thread form distance 20 mm



Rotational speed up to

5000 1/min

Number of strokes

up to max. 160 H/min depending on the application

Max. torque

2 Nm

Max. tap way

20 mm

Ø Thread

1-4 mm

Note

Each roll tap can be used in accordance with DIN 2174

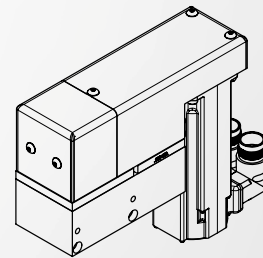
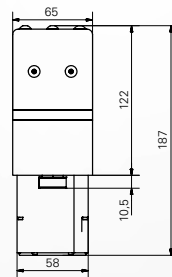
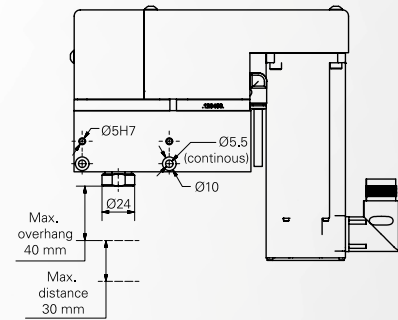
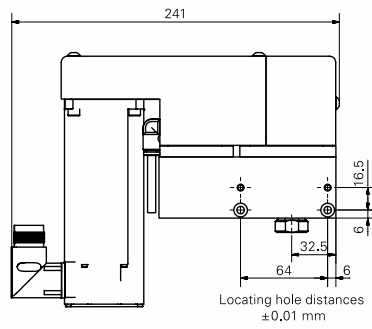
Optional accessories

SZ9400

SZ8871.01 Tapping unit E1

STEINEL®

Thread M4-M8, max. thread form distance 30mm



Rotational speed up to

2500 1/min

Number of strokes

up to max. 70 H/min depending on the application

Max. torque

10 Nm

Max. tap way

30 mm

Ø Thread

4-8 mm

Note

Each roll tap can be used in accordance with DIN 2174

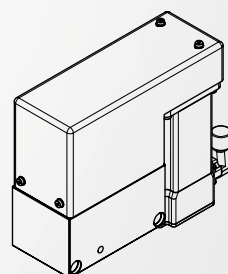
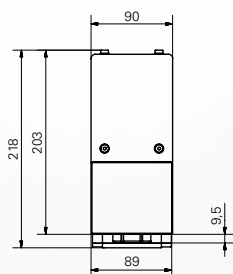
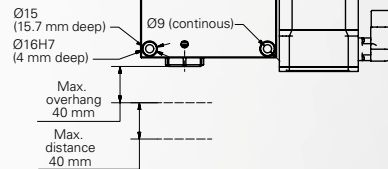
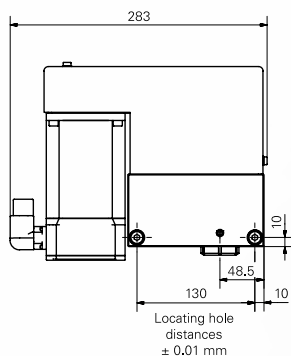
Optional accessories

SZ9400

SZ8871.02 Tapping unit E2

STEINEL®

Thread M8-M16, max. thread form distance 40mm



Rotational speed up to

2500 1/min

Ø Thread

8-16 mm

Number of strokes

up to max. 60 H/min depending on the application

Note

Each roll tap can be used in accordance with DIN 2174

Max. torque

20 Nm

Optional accessories

SZ9400

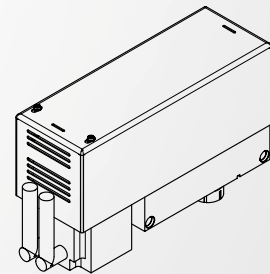
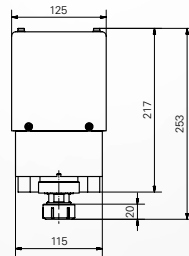
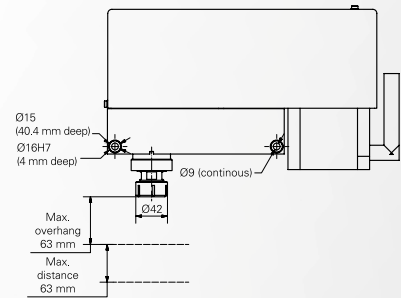
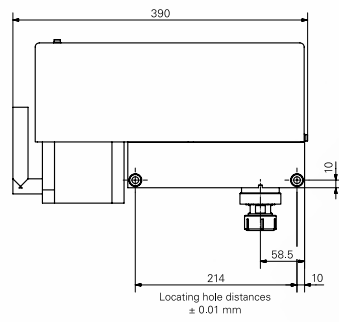
Max. tap way

40 mm

SZ8871.03 Tapping unit E3

STEINEL®

Thread M8-M26, max. thread form distance 50mm



Rotational speed up to

1000 1/min

Ø Thread

8-26 mm

Number of strokes

up to max. 35 H/min depending on the application

Note

Each roll tap can be used in accordance with DIN 2174

Max. torque

40 Nm

Optional accessories

SZ9400

Max. tap way

50 mm



Clamping range

2.5-4.5 mm

Note

Collet with integrated square; no reducer required; each roll tap can be used in accordance with DIN 2174

Shaft diameter	Item number
2.5 x 2.1	K300 - 001-1923
2.8 x 2.1	K300 - 001-1924
3.5 x 2.7	K300 - 001-1925

Shaft diameter	Item number
4.0 x 3.0	K300 - 001-1926
4.5 x 3.4	K300 - 001-1927



Clamping range

4.5-8 mm

Shaft diameter	Item number
4.5	K300 - 001-1410
6	K300 - 001-1450

Note

Each roll tap can be used in accordance with DIN 2174

Shaft diameter	Item number
8	K300 - 001-1520



Note

Adapter and square dimension adjustment for consistent tap protrusion

Reducer	Item number
M4	SE 18099-01-08
M5	SE 18095-01-07

Reducer	Item number
M6	SE 18089-01-07



Clamping range

6-20 mm

Shaft diameter	Item number
6	K300 -001-1959
7	K300 -001-1960
8	K300 -001-1908
9	K300 -001-1909
10	K300 -001-1910
11	K300 -001-1911

Note

Each roll tap can be used in accordance with DIN 2174

Shaft diameter	Item number
12	K300 -001-1912
14	K300 -001-1914
16	K300 -001-1916
18	K300 -001-1918
20	K300 -001-1920



Note

Adapter and square dimension adjustment for consistent tap protrusion

Reducer	Item number
M9	SZ8871 .02-1699
M8, M11 fine, UNF 7/16	SZ8871 .02-1698
M7, M10 fine	SZ8871 .02-1697
M6 fine, M8 fine	SZ8871 .02-1696
M14 fine, M16 fine	SZ8871 .02-1704

Reducer	Item number
M14, M16	SZ8871 .02-1705
M12 fine	SZ8871 .02-1702
M12	SZ8871 .02-1703
M11	SZ8871 .02-1701
M10	SZ8871 .02-1700



Clamping range

6-20 mm

Shaft diameter	Item number
6	K300 -001-1959
7	K300 -001-1960
8	K300 -001-1908
9	K300 -001-1909
10	K300 -001-1910
11	K300 -001-1911

Note

Each roll tap can be used in accordance with DIN 2174

Shaft diameter	Item number
12	K300 -001-1912
14	K300 -001-1914
16	K300 -001-1916
18	K300 -001-1918
20	K300 -001-1920



Note
Adapter and square dimension adjustment for consistent tap protrusion

Reducer	Item number
M10	SZ8871 .03-1222
M11	SZ8871 .03-1221
M12	SZ8871 .03-1219
M12 fine	SZ8871 .03-1218
M14, M16	SZ8871 .03-1216
M14 fine, M16 fine	SZ8871 .03-1217
M18	SZ8871 .03-1215

Reducer	Item number
M18 fine	SZ8871 .03-1213
M20 fine	SZ8871 .03-1212
M22 fine	SZ8871 .03-1211
M24 fine	SZ8871 .03-1210
M8, M11 fine	SZ8871 .03-1220
M9	SZ8871 .03-1223



DIN 2174

Note

Carbide tap deliverable upon request

Coating

TIN – Tensile strengths up to 1000 N/mm², good sliding characteristics and wear-resistant; **TICN** – Tensile strengths > 800 N/mm², high hardness and wear resistance when toughness properties are good

Thread	Core hole	Tolerance	Coating	Item number
M3 x 0.5	2.80	HX	TIN	SZ9400 03 x 0.5B2
			TICN	SZ9400 03 x 0.5C2
M4 x 0.7	3.70	HX	TIN	SZ9400 04 x 0.7B2
			TICN	SZ9400 04 x 0.7C2
M5 x 0.8	4.65	HX	TIN	SZ9400 05 x 0.8B2
			TICN	SZ9400 05 x 0.8C2
M6 x 0.5	5.80	HX	TIN	SZ9400 06 x 0.5B2
			TICN	SZ9400 06 x 0.5C2
M6 x 1	5.55	HX	TIN	SZ9400 06 x 1.0B2
			TICN	SZ9400 06 x 1.0C2
M8 x 1	7.55	HX	TIN	SZ9400 08 x 1.0B2
			TICN	SZ9400 08 x 1.0C2
M8 x 1.25	7.45	HX	TIN	SZ9400 08 x 1.25B2
			TICN	SZ9400 08 x 1.25C2
M10 x 1	9.55	HX	TIN	SZ9400 10 x 1.0B2
			TICN	SZ9400 10 x 1.0C2
M10 x 1.5	9.35	HX	TIN	SZ9400 10 x 1.5B2
			TICN	SZ9400 10 x 1.5C2
M12 x 1	11.55	HX	TIN	SZ9400 12 x 1.0B2
			TICN	SZ9400 12 x 1.0C2
M12 x 1.25	11.45	HX	TIN	SZ9400 12 x 1.25B2
M12 x 1.5	11.35	HX	TIN	SZ9400 12 x 1.5B2
			TICN	SZ9400 12 x 1.5C2
M12 x 1.75	11.20	HX	TIN	SZ9400 12 x 1.75B2
			TICN	SZ9400 12 x 1.75C2
UNF 7/16"-20	9.90	2B	TIN	SZ9400 7/16"-20