



Screwdriving technology

Automation

Air motors

Air tools

**DEPRAG**

**MINIMAT**  
**MICROMAT**  
 the smallest  
 Piezo-Spindle in the world

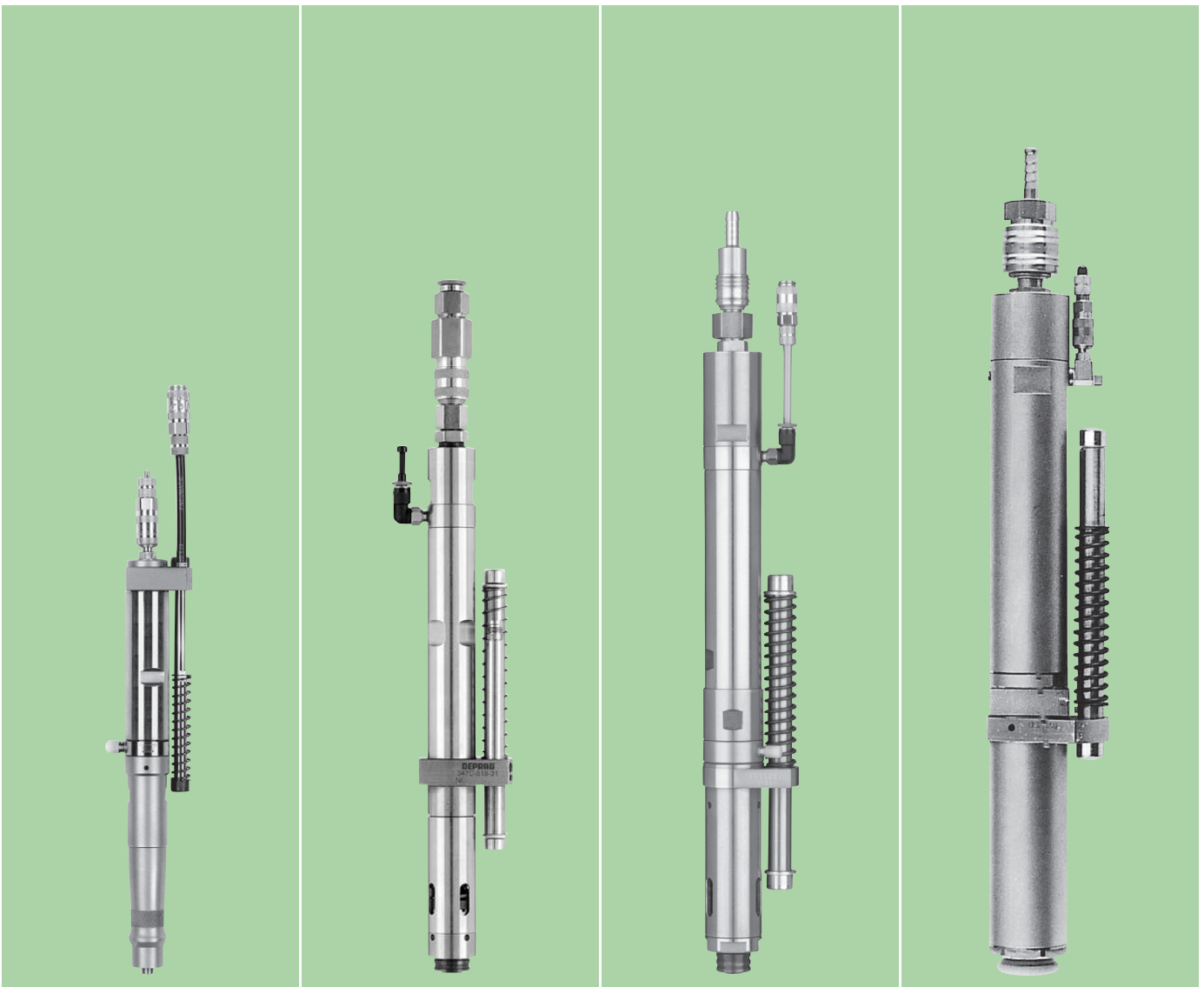
## Stationary Screwdriver Spindles with Inline Torque Sensor

**Screwdriver Spindles with Function Control and Inline Torque Sensor  
 from 0.05 to 24 Nm / 7 in.oz. to 212 in. lbs**

The DEPRAG Piezo Screwdrivers combine all advantages of the DEPRAG-MICROMAT and MINIMAT Screwdriver Spindles with the possibility of measuring the torque value of each screw joint by a piezo electric resp. strain-gage torque measuring system. This type of redundant measuring system guarantees the best possible process security. The integrated measuring cells are wear-resistant and insensitive to external influences.

No or zero-adjustment is needed. Therefore, these screwdrivers are safe and simple to integrate.

To measure torque and angle, we mount additionally our Angle Encoder with integrated Quick Change Chuck.



## Technical Data

Screwdriver Style		Motor Size 0	
Spindle, right rotation Push-To-Start	<b>type</b> order no	<b>345C-508-31</b> 376088 A	<b>345C-708-31</b> 376088 C
torque min.	Ncm/in.oz.	5 / 7.1	12 / 17
torque max.	Ncm/in.oz.	70 / 99.4	70 / 99.4
speed, idling	rpm	350	650
air consumption	m <sup>3</sup> /min/cfm	0.1 / 3.5	0.1 / 3.5
weight	kg/lbs	0.34 / 0.75	0.34 / 0.75
push-to-start pressure	N/lbs	11 / 2.4	11 / 2.4
pressure at max. screwdriver stroke	N/lbs	20 / 4.4	20 / 4.4
air hose dia.	mm/in.	3 / 1/8	3 / 1/8
hose dia. for function control	mm/in.	3 / 1/8	3 / 1/8
measuring cell connector plug at piezo ring		10-32 NEG	10-32 NEG
measuring method		piezo-electric	piezo-electric
internal hex. drive	DIN 3126	B3 (3 mm/.118")	B3 (3 mm/.118")
suitable tool inserts and connecting components with a drive as per DIN 3126		A3 (3 mm/.118")	A3 (3 mm/.118")

Performance data relate to an air pressure of 6.3 bar (90 PSI)

**Standard Equipment:** Set of coupler and connector plug · Set of torque adjustment tools · Set of clutch springs

Please also find suitable tool inserts in our brochure D 3320 E.

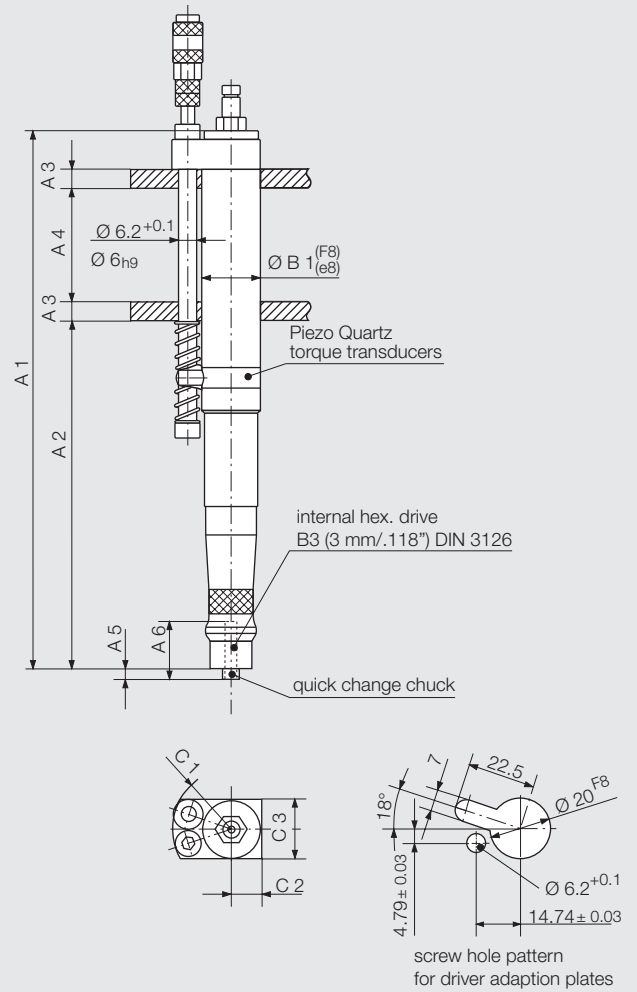
Current dimensional drawings of our screwdriver spindles are available in the Internet.

Our address: **www.deprag.com**

The drawings are also available as dxf-files for processing with your CAD-system.



Spindle  
**Motor Size 0**



Motor Size 0	Dimensions (mm)									
	A1	A2	A3	A4	A5	A6	B1	C1	C2	C3
type										
345C-508-31	178.5	115.5	6	38	3.5	19	20	20	9.75	19.5
345C-708-31										

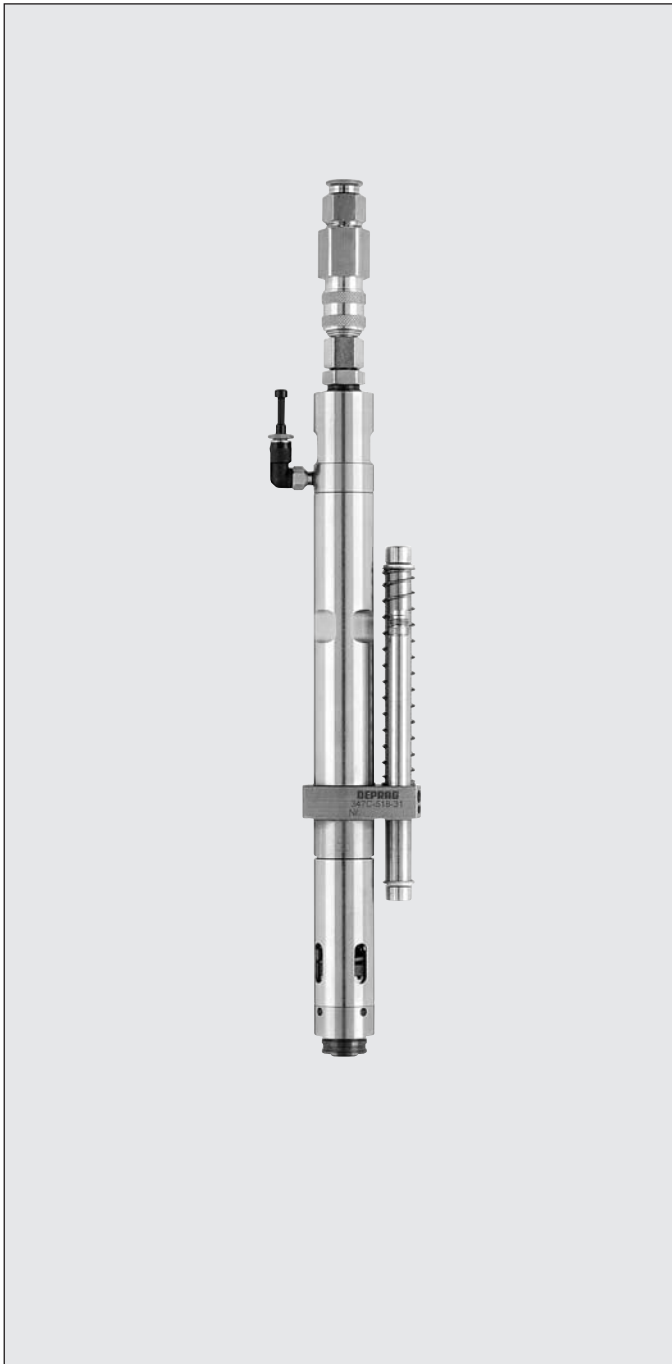
## Technical Data

Screwdriver Style		Motor Size 1	
Spindle, right rotation Push-To-Start	<b>type</b> order no.	<b>347C-518-31</b> 397070 C	<b>347C-618-31</b> 397070 D
Spindle, left rotation Push-To-Start	<b>type</b> order no.	<b>347C-518-31 L</b> 397072 C	<b>347C-618-31 L</b> 397072 D
Spindle, right rotation Remote-Start	<b>type</b> order no.	<b>347C-510-31</b> 397071 C	<b>347C-610-31</b> 397071 D
Spindle, left rotation Remote-Start	<b>type</b> order no.	<b>347C-510-31 L</b> 397073 C	<b>347C-610-31 L</b> 397073 D
torque min.	Nm/in. lbs	0.4 / 3.5	0.4 / 3.5
torque max.	Nm/in. lbs	2 / 17.7	2 / 17.7
speed, idling	rpm	900	600
air consumption	m <sup>3</sup> /min/cfm	0.23 / 8	0.23 / 8
weight	kg/lbs	0.6 / 1.3	0.6 / 1.3
push-to-start pressure	N/lbs	20 / 4.5	20 / 4.5
pressure at max. screwdriver stroke	N/lbs	25 / 5.6	25 / 5.6
air hose dia. (external/internal-Ø)	mm/in.	8/5.5 / 0.3/0.2	8/5.5 / 0.3/0.2
hose dia. for function control (external/internal-Ø)	mm/in.	4/2.5 / 0.15/0.09	4/2.5 / 0.15/0.09
connection plug torque sensor		M8x1 4 pins	M8x1 4 pins
measuring method		strain gage (DMS)	strain gage (DMS)
internal hex. drive	DIN 3126	F6.3 (1/4")	F 6.3 (1/4")
suitable tool inserts and connecting components with a drive as per DIN 3126		E6.3 (1/4")	E6.3 (1/4")

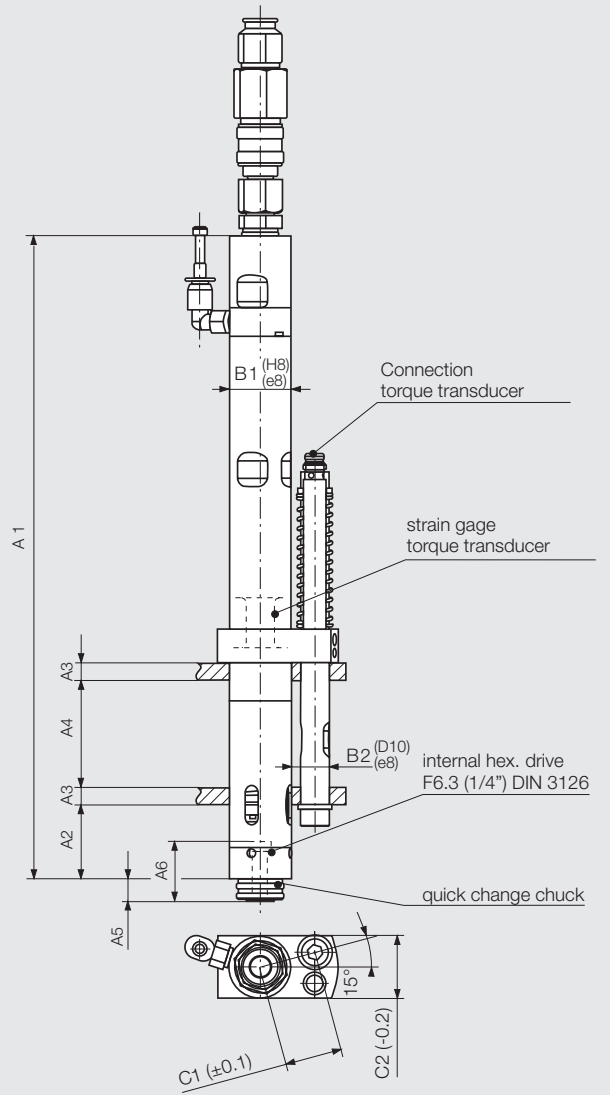
Performance data relate to an air pressure of 6.3 bar (90 PSI)

**Standard Equipment:** Set of coupler and connector plug · Set of torque adjustment tools · Set of clutch springs

Please also find suitable tool inserts in our brochure D 3320 E.



Spindle  
**Motor Size 1**



3988624

Motor Size 1				Dimensions (mm)									
				A1	A2	A3	A4	A5	A6	B1	B2	C1	C2
347C-518-31	347C-518-31L	347C-510-31	347C-510-31L	227.4	26.4	6	38	7.6 (5.6)	21	22	10	20	22
347C-618-31	347C-618-31L	347C-610-31	347C-610-31L										

Dimensions in brackets: For screwdrivers with remote start

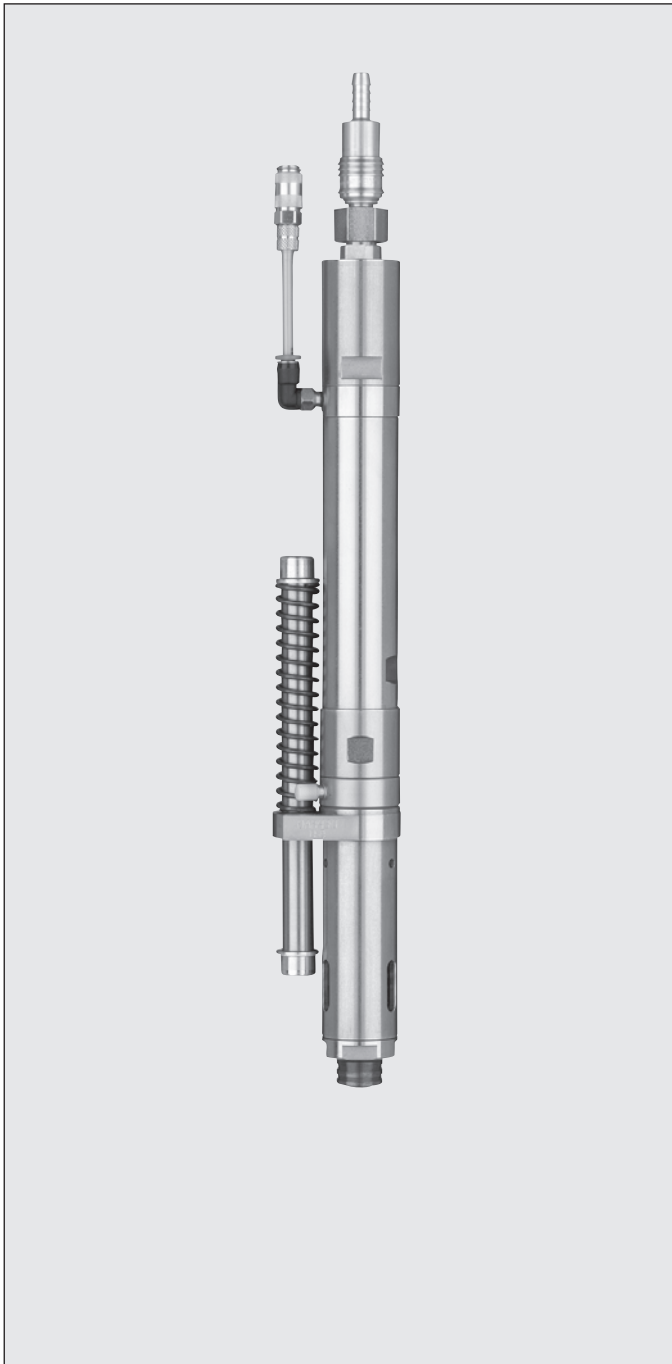
## Technical Data

Screwdriver Style		Motor Size 2	
Spindle, right rotation Push-To-Start	<b>type</b> order no.	<b>347C-428-31</b> 392534 D	<b>347C-528-31</b> 392534 C
Spindle, left rotation Push-To-Start	<b>type</b> order no.	<b>347C-428-31 L</b> 392536 D	<b>347C-528-31 L</b> 392536 C
Spindle, right rotation Remote-Start	<b>type</b> order no.	<b>347C-420-31</b> 392535 D	<b>347C-520-31</b> 392535 C
Spindle, left rotation Remote-Start	<b>type</b> order no.	<b>347C-420-31 L</b> 392537 D	<b>347C-520-31 L</b> 392537 C
torque min.	Nm/in. lbs	1 / 8.85	0.8 / 7.1
soft pull-up max.	Nm/in. lbs	4 / 35.4	5 / 44.3
hard pull-up max.	Nm/in. lbs	4.5 / 39.8	5 / 44.3
speed, idling	rpm	1000	680
air consumption	m <sup>3</sup> /min/cfm	0.3 / 11	0.3 / 11
weight	kg/lbs	1.1 / 2.4	1.1 / 2.4
push-to-start pressure	N/lbs	24 / 5.3	24 / 5.3
pressure at max. screwdriver stroke	N/lbs	100 / 22	100 / 22
air hose dia.	mm/in.	6 / 1/4	6 / 1/4
hose dia. for function control	mm/in.	3 / 1/8	3 / 1/8
measuring cell connector plug at piezo ring		10-32 NEG	10-32 NEG
measuring method		piezo-electric	piezo-electric
internal hex. drive	DIN 3126	F6.3 (1/4")	F6.3 (1/4")
suitable tool inserts and connecting components with a drive as per DIN 3126		E6.3 (1/4")	E6.3 (1/4")

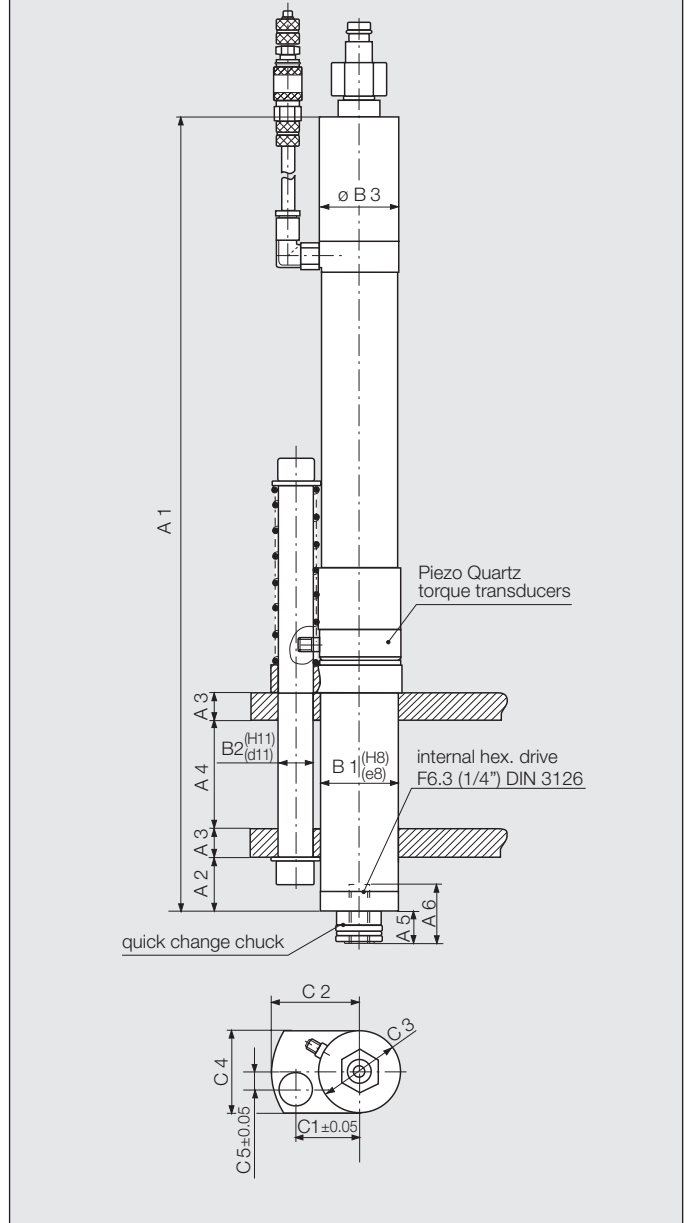
Performance data relate to an air pressure of 6.3 bar (90 PSI)

**Standard Equipment:** Set of coupler and connector plug · Set of torque adjustment tools · Set of clutch springs

Please also find suitable tool inserts in our brochure D 3320 E.



Spindle  
**Motor Size 2**



Motor Size 2				Dimensions (mm)													
				A1	A2	A3	A4	A5	A6	B1	B2	B3	C1	C2	C3	C4	C5
347C-428-31	347C-428-31 L	347C-420-31	347C-420-31 L	278.5	19	10	38	11(9.3)	21	27	12	28	22.22	31	29	29	5.95
347C-528-31	347C-528-31 L	347C-520-31	347C-520-31 L														

Dimensions in brackets: For screwdrivers with remote start

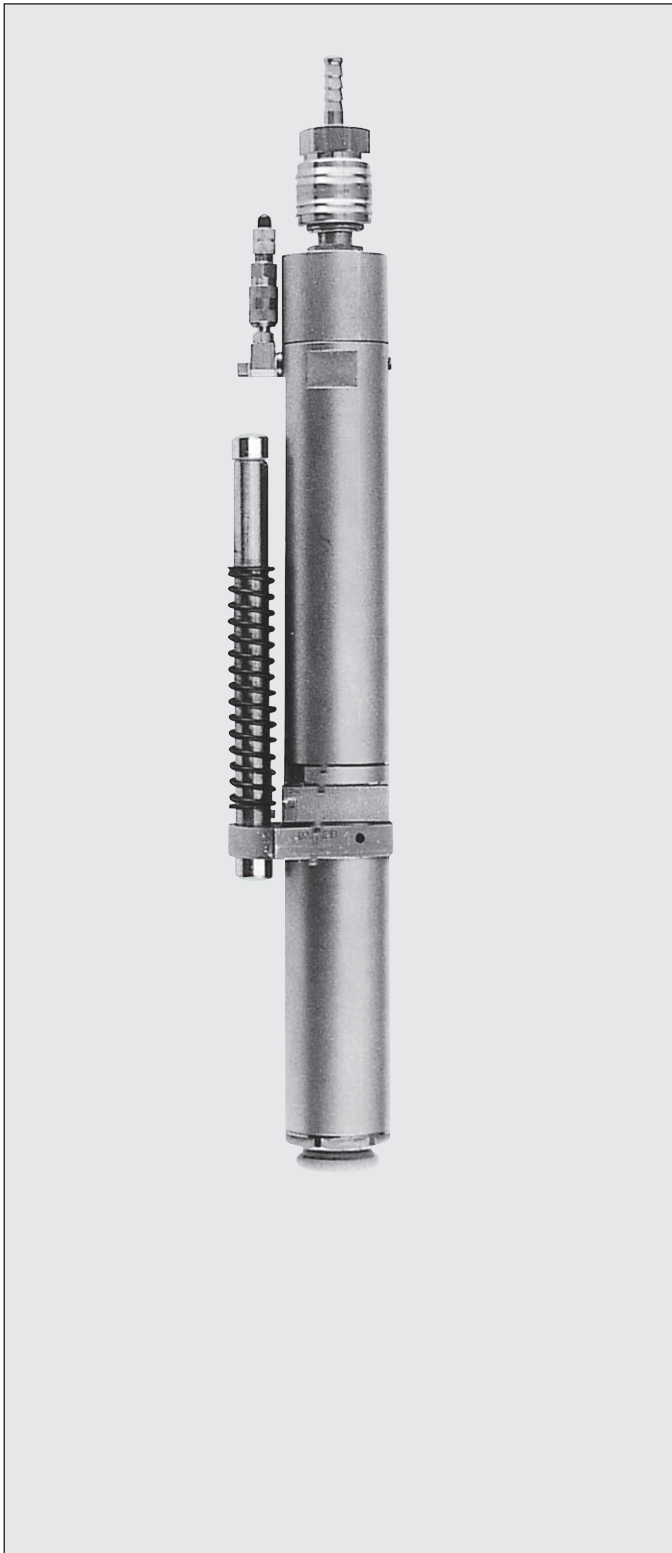
## Technical Data

Screwdriver Style		Motor Size 3	
Spindle, right rotation Push-To-Start	<b>type</b> order no.	<b>345C-338-31</b> 338382 C	<b>345C-438-31</b> 338382 D
Spindle, left rotation Push-To-Start	<b>type</b> order no.	<b>345C-338-31 L</b> 343801 C	<b>345C-438-31 L</b> 343801 D
Spindle, right rotation Remote-Start	<b>type</b> order no.	<b>345C-330-31</b> 372644 A	<b>345C-430-31</b> 372644 B
Spindle, left rotation Remote-Start	<b>type</b> order no.	<b>345C-330-31 L</b> 372647 A	<b>345C-430-31 L</b> 372647 B
torque min.	Nm/in. lbs	2 / 17.7	2 / 17.7
torque max.	Nm/in. lbs	14 / 123.9	24 / 212.4
speed, idling	rpm	800	400
air consumption	m <sup>3</sup> /min/cfm	0.45 / 16	0.45 / 16
weight	kg/lbs	1.8 / 4	1.8 / 4
push-to-start pressure	N/lbs	38 / 8.4	38 / 8.4
pressure at max. screwdriver stroke	N/lbs	100 / 22	100 / 22
air hose dia.	mm/in.	10 / 3/8	10 / 3/8
hose dia. for function control	mm/in.	3 / 1/8	3 / 1/8
measuring cell connector plug at piezo ring		10-32 NEG	10-32 NEG
measuring method		piezo-electric	piezo-electric
internal hex. drive	DIN 3126	F6.3 (1/4")	F6.3 (1/4")
suitable tool inserts and connecting components with a drive as per DIN 3126		E6.3 (1/4")	E6.3 (1/4")

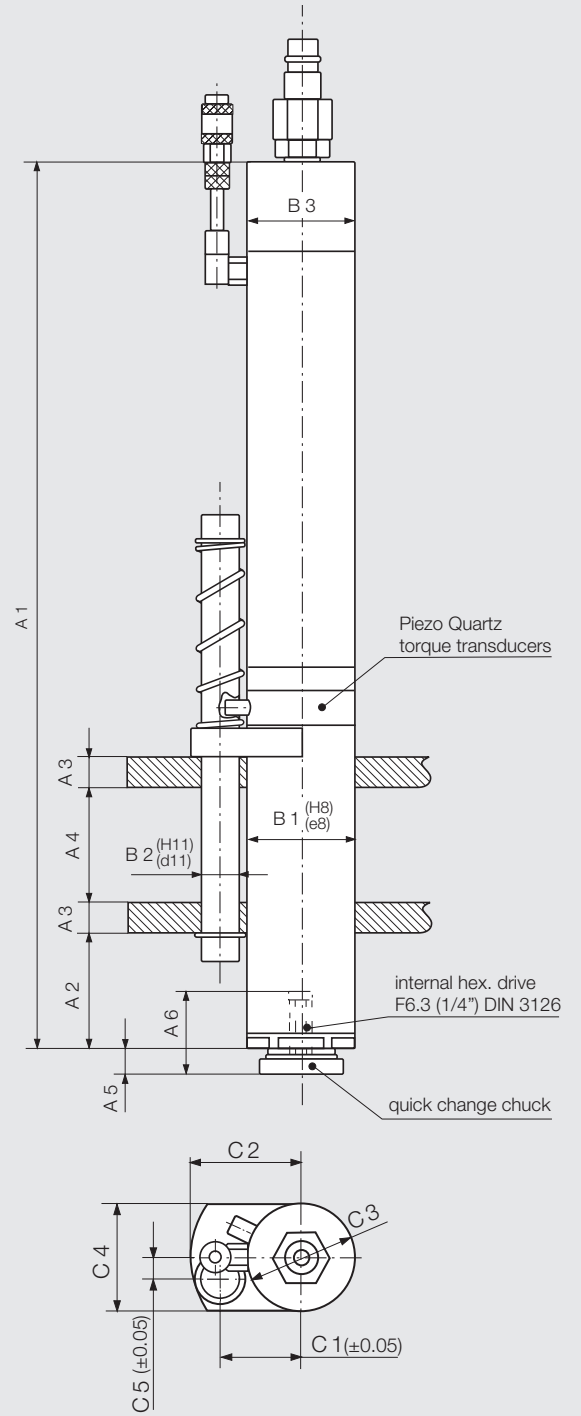
Performance data relate to an air pressure of 6.3 bar (90 PSI)

**Standard Equipment:** Set of coupler and connector plug · Set of torque adjustment tools · Set of clutch springs

Please also find suitable tool inserts in our brochure D 3320 E.



Spindle  
Motor Size 3



Motor Size 3				Dimensions (mm)													
				A1	A2	A3	A4	A5	A6	B1	B2	B3	C1	C2	C3	C4	C5
345C-338-31	345C-338-31 L	345C-330-31	345C-330-31 L	296	38.5	10	38	8.4 (6.1)	27.4	36	12	36	27.05	37	36	36	7.25
345C-438-31	345C-438-31 L	345C-430-31	345C-430-31 L														

Dimensions in brackets: For screwdrivers with remote start

## Required Accessories

	Motor Size 0*	Motor Size 1	Motor Size 2*	Motor Size 3*
<b>Measuring Electronic</b>	ME1000PE	ME1000DMS technical data see leaflet D 3024 E	ME1000PE	ME1000PE
piezo cable 1 m / 3.3 ft. (for connection of Transducer to Measurement Instrument / Measuring-PC) order no.	810629	–	810629	810629
extension cable 5 m / 16.4 ft. order no.	810675	–	810675	810675
connection coupler (to attach piezo cable with extension cable) order no.	810676	–	810676	810676
connecting cable (2/4/5 m long) (for connection of Measuring Electronic to Measuring Screwdriver) order no.	–	385445 A/B/C	–	–

\*) Note: The combination of connecting cable 810629, extension cable 810675 and cable connector 810676 is absolutely necessary for the measuring set-up!

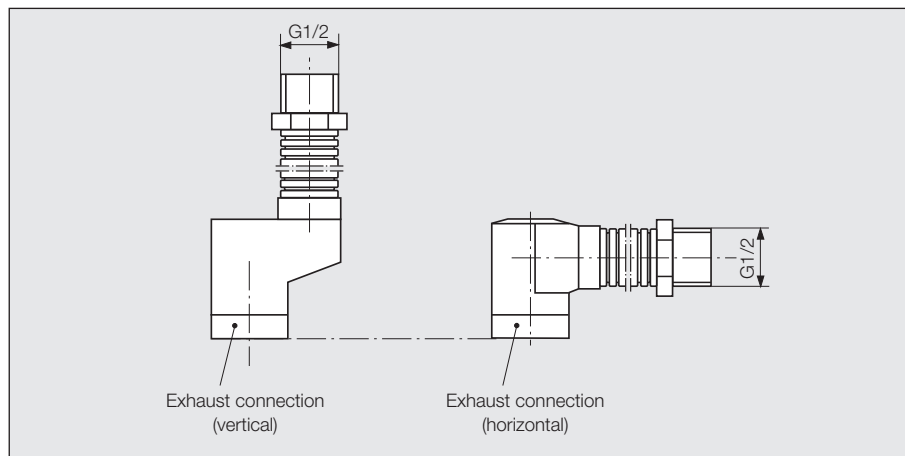
## Optional Equipment

			Motor Size 0	Motor Size 1	Motor Size 2	Motor Size 3
<b>Angle Encoder</b>	order no.	–	<b>395480 C</b>	<b>395480 B</b>	<b>395480 A</b>	<b>395480 A</b>
technical data:						
resolution	Degree	–	1	1	1	1
torque max.	Nm/in.lbs	–	10 / 88	10 / 88	24 / 212	24 / 212
diameter	mm/in.	–	38 / 1 1/2	38 / 1 1/2	38 / 1 1/2	38 / 1 1/2
length	mm/in.	–	93 / 1 11/16	93 / 1 11/16	93 / 1 11/16	93 / 1 11/16
weight	kg/lbs	–	0.54 / 1.2	0.54 / 1.2	0.54 / 1.2	0.54 / 1.2
drive hex. female		–	1/4"	1/4"	1/4"	1/4"
quick change chuck, mounted		–	yes	yes	yes	yes
Connection Cable (for Torque- Angle Unit to Measuring-PC)		–	349930 A	349930 A	349930 A	349930 A
	2 m / 6.6 ft. order no.	–	349930 A	349930 A	349930 A	349930 A
	6 m / 19.7 ft. order no.	–	349930 C	349930 C	349930 C	349930 C

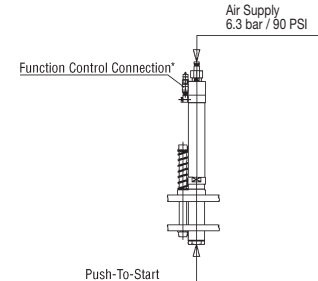
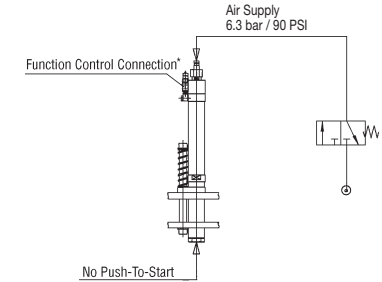
<b>Spring-Sleeve</b> cpl. order no.	364670 A	364671 A	364672 A	364673 A
<b>Spring-Sleeve</b> cpl., with vacuum connection (in connection with finder, see leaflet: Inserting Tools D 3320 E) order no.	–	364671 D	364672 C	364673 C

<b>Exhaust-Connection*</b>				
vertical (with 2 m / 6.6 ft. hose) order no.	334615 C	386924 G	386924 A	334615 F
horizontal (with 2 m / 6.6 ft. hose) order no.	–	386924 H	386924 B	–

\*) for corresponding exhaust filter/silencer – see leaflet D 3340 E



# Function Description Driver-Start

<p>Push-To-Start</p> <p>Driver with one way rotation, right-rotation and right shut-off or left-rotation and left shut-off</p>	
<p>Remote-Start (3/2-way valve)</p> <p>Driver with one way rotation, right-rotation and right shut-off or left-rotation and left shut-off</p> <p>* During drive cycle the Function Control Line is under pressure (approx. 2 bar).</p>	

# DEPRAG

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