



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	type	345C-508-31	345C-708-31
Push-To-Start	order no	376088 A	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 ³ /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.

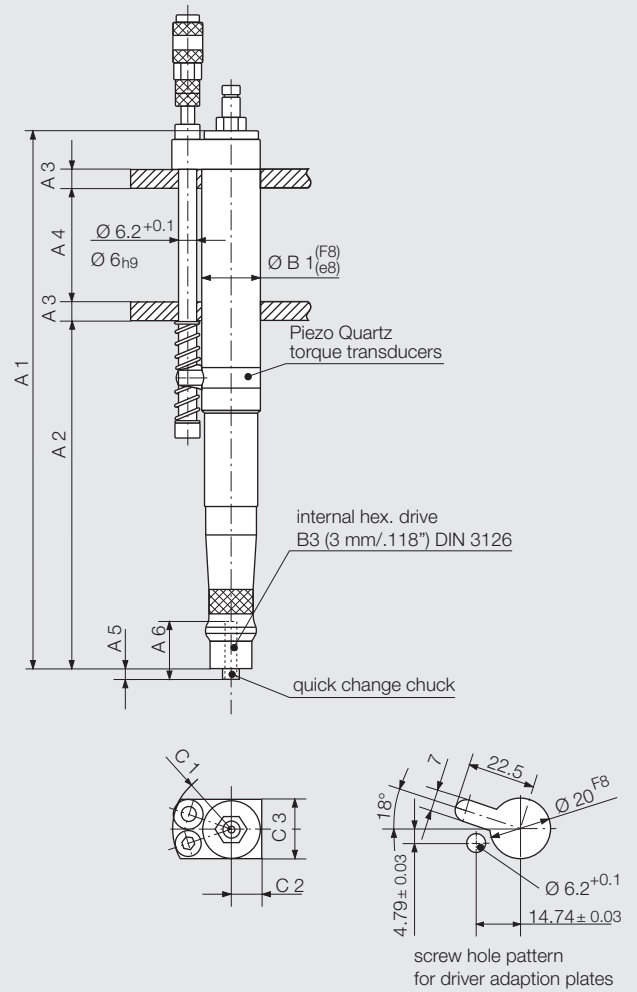
Current dimensional drawings of our screwdriver spindles are available in the Internet.

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										

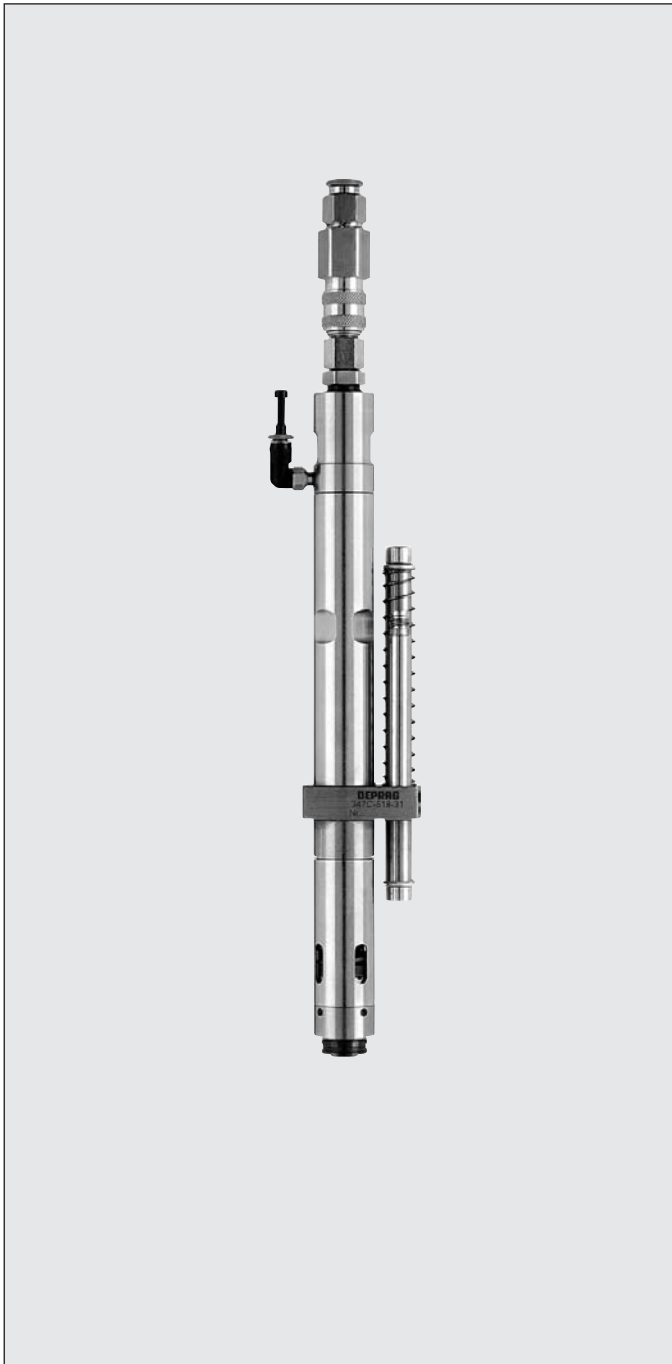
TECHNICAL DATA

Screwdriver Style		Motor Size 1	
Spindle, right rotation Push-To-Start	type order no.	347C-518-31 397070 C	347C-618-31 397070 D
Spindle, left rotation Push-To-Start	type order no.	347C-518-31 L 397072 C	347C-618-31 L 397072 D
Spindle, right rotation Remote-Start	type order no.	347C-510-31 397071 C	347C-610-31 397071 D
Spindle, left rotation Remote-Start	type order no.	347C-510-31 L 397073 C	347C-610-31 L 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 ³ /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")

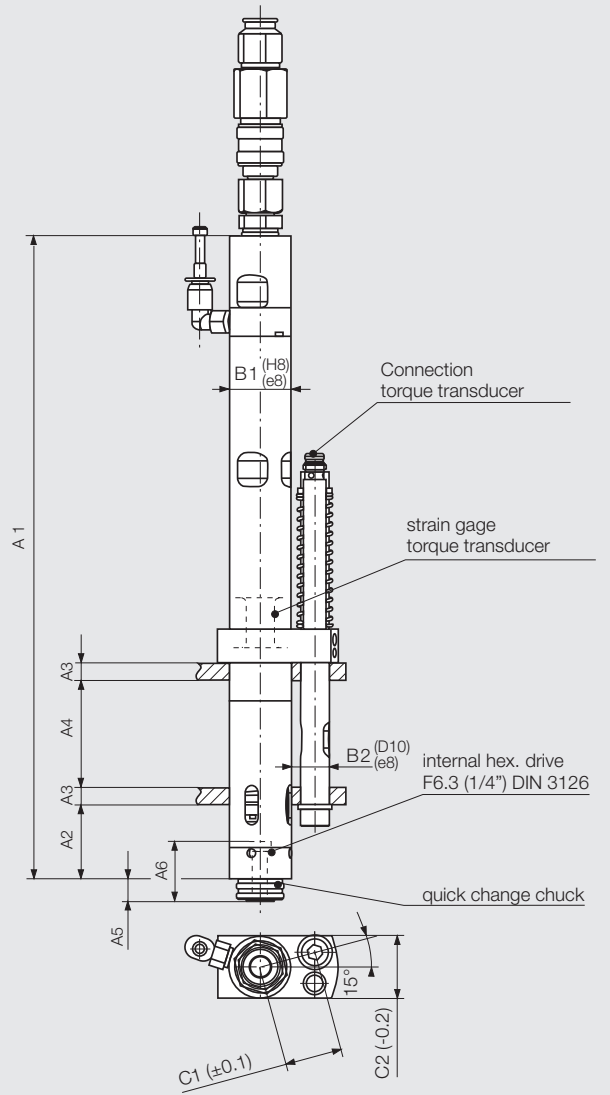
Performance data relate to an air pressure of 6.3 bar (90 PSI)

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

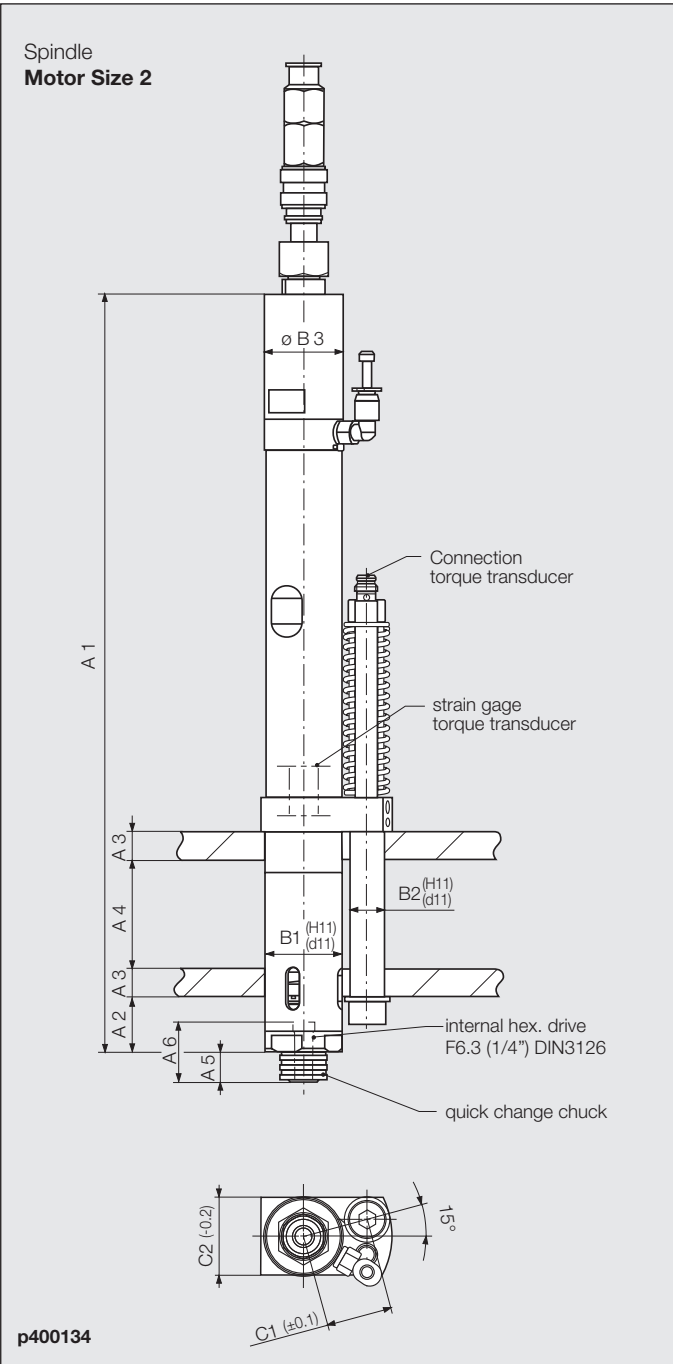
TECHNICAL DATA

Screwdriver Style			Motor Size 2	
Spindle, right rotation Push-To-Start	type order no.		348C-428-31 400090 D	348C-528-31 400090 C
Spindle, left rotation Push-To-Start	type order no.		348C-428-31 L 408970 D	348C-528-31 L 408970 C
Spindle, right rotation Remote-Start	type order no.		348C-420-31 412222 D	348C-520-31 412222 C
Spindle, left rotation Remote-Start	type order no.		348C-420-31 L 408971 D	348C-520-31 L 408971 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 ³ /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. (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			M 8x1 4 pins	M 8x1 4 pins
measuring method			strain gage (DMS)	strain gage (DMS)
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.



Motor Size 2				Dimensions (mm)										
				A1	A2	A3	A4	A5	A6	B1	B2	B3	C1	C2
348C-428-31	348C-428-31 L	348C-420-31	348C-420-31 L	266.1	19.1	10	38	11(9.3)	21	27	12	28	23	27
348C-528-31	348C-528-31 L	348C-520-31	348C-520-31 L											

Dimensions in brackets: For screwdrivers with remote start

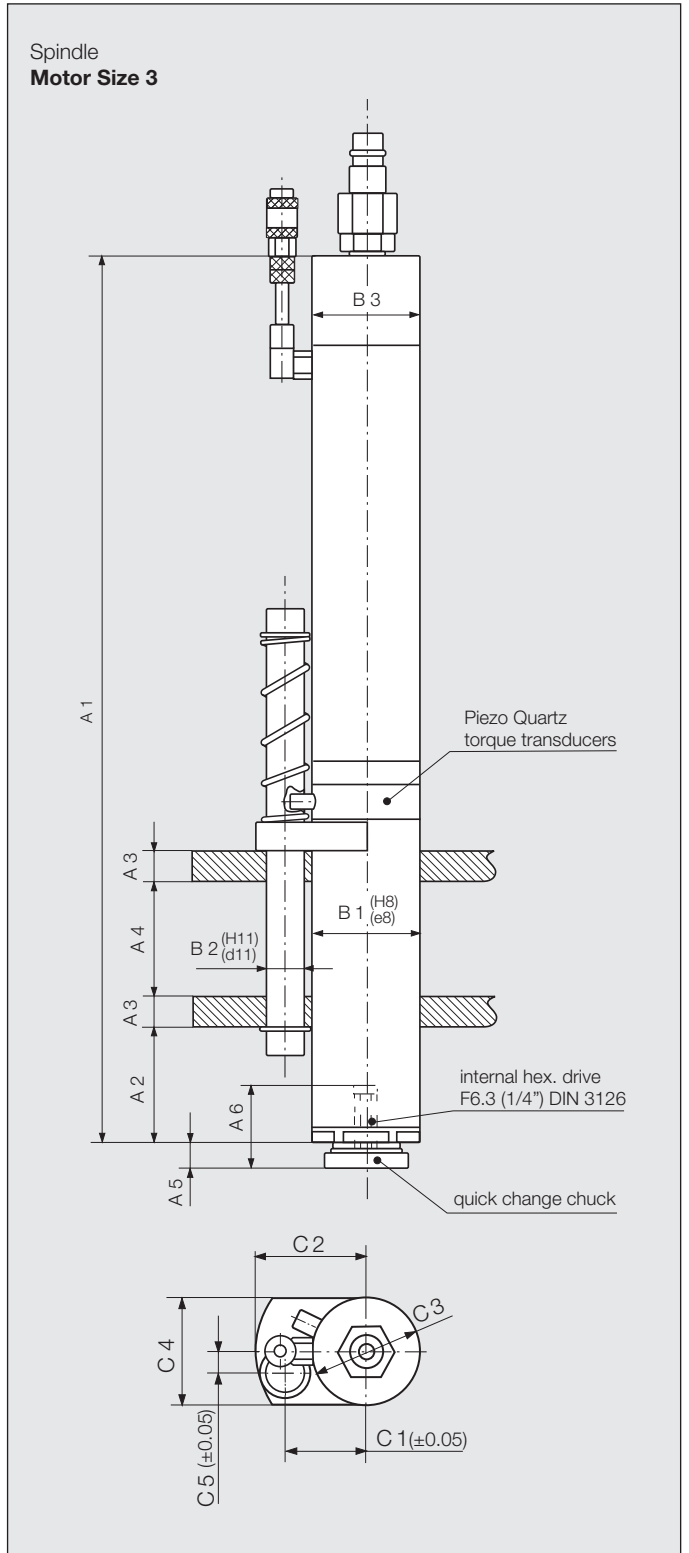
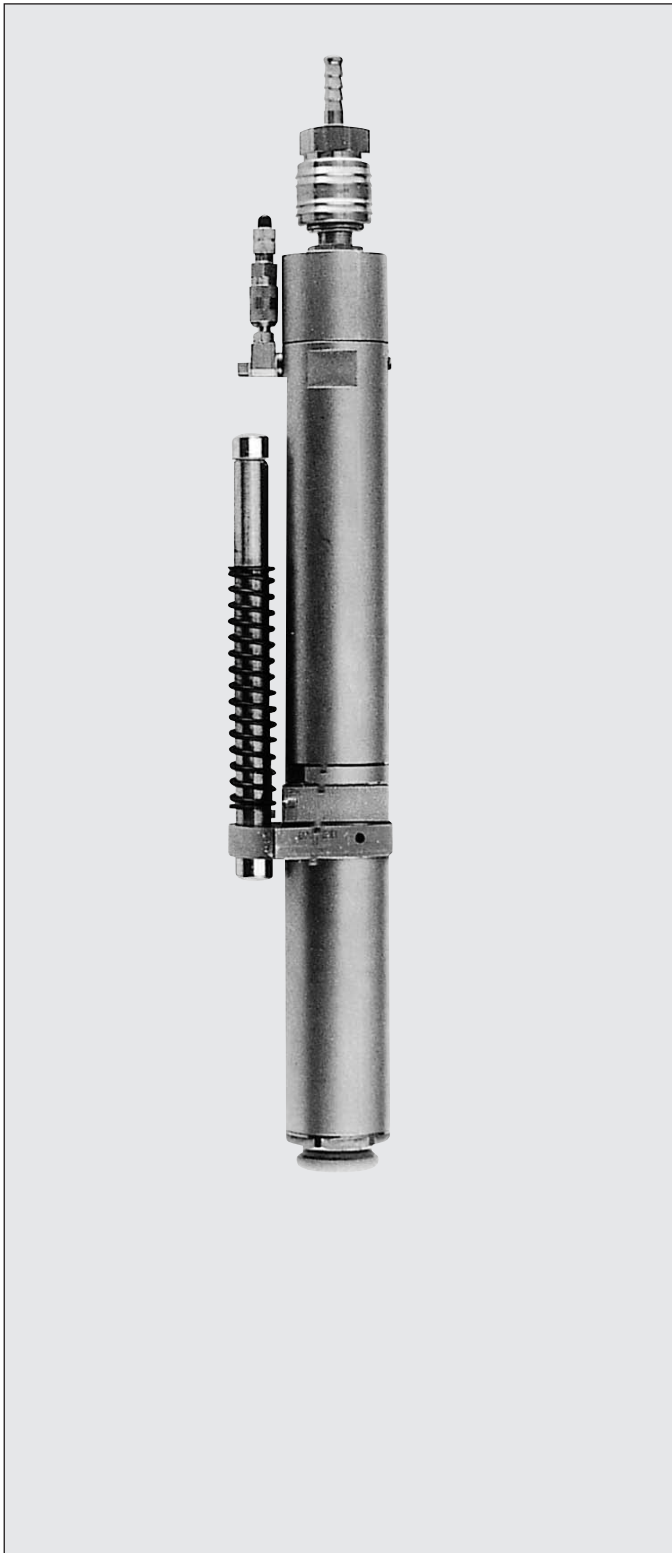
TECHNICAL DATA

Screwdriver Style			Motor Size 3	
Spindle, right rotation Push-To-Start	type order no.		345C-338-31 338382 C	345C-438-31 338382 D
Spindle, left rotation Push-To-Start	type order no.		345C-338-31 L 343801 C	345C-438-31 L 343801 D
Spindle, right rotation Remote-Start	type order no.		345C-330-31 372644 A	345C-430-31 372644 B
Spindle, left rotation Remote-Start	type order no.		345C-330-31 L 372647 A	345C-430-31 L 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 ³ /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.



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

¹⁾ Note: The combination of connecting cable 810629, extension cable 810675 and cable connector 810676 is absolutely necessary for the measuring set-up!

¹⁾ Alternatively you can also use our measuring electronics ME5000, ME5400 or ME5600 (see brochure D3022 E).

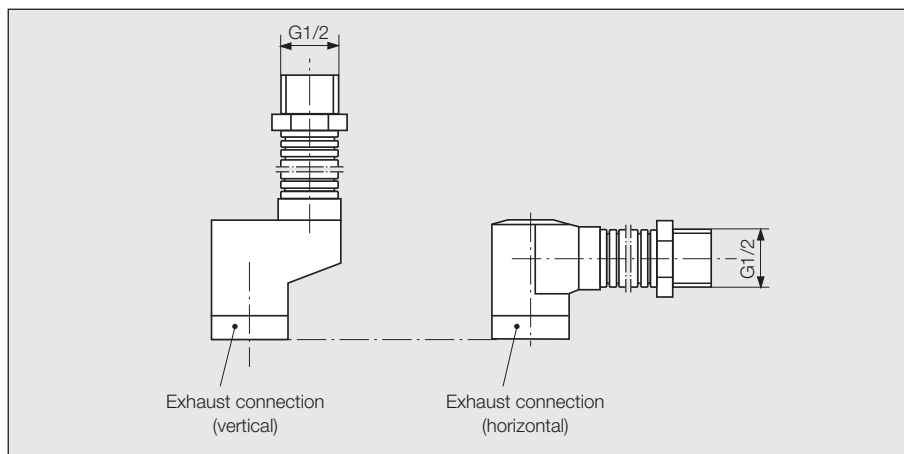
OPTIONAL EQUIPMENT

			Motor Size 0	Motor Size 1	Motor Size 2	Motor Size 3
Angle Encoder	order no.	-	395480 C	395480 B	395480 A	395480 A
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)	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

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

Exhaust-Connection*					
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	-

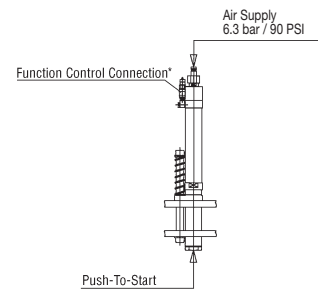
¹⁾ for corresponding exhaust filter/silencer – see leaflet D 3340 E



FUNCTION DESCRIPTION DRIVER-START

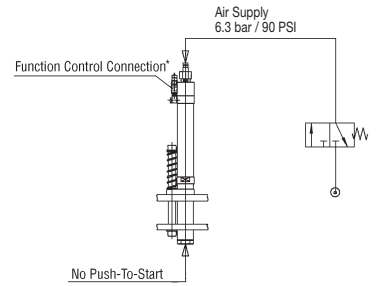
Push-To-Start

Driver with one way rotation,
right-rotation and right shut-off
or
left-rotation and left shut-off



Remote-Start (3/2-way valve)

Driver with one way rotation,
right-rotation and right shut-off
or
left-rotation and left shut-off



* During drive cycle the Function Control
Line is under pressure
(approx. 2 bar).

DEPRAG

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CERTIFIED AS PER DIN EN ISO 9001
