

MICROMAT / MINIMAT Screwdrivers

For nearly all industrial applications

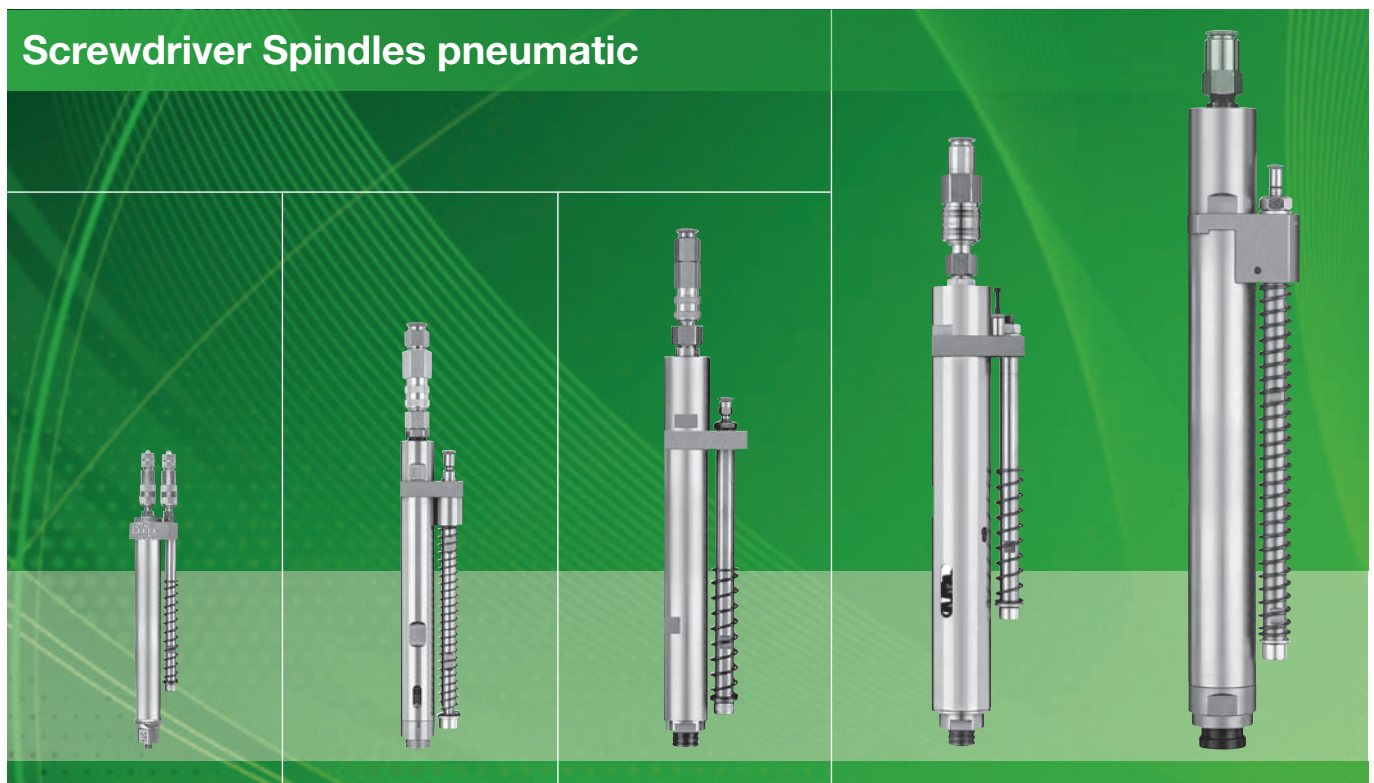
MICROMAT Screwdriver Spindles - straight design - torque from 2 Ncm to 70 Ncm

MINIMAT Screwdriver Spindles - straight design - torque from 0.2 Nm to 180 Nm

- simple integration
- smallest mounting dimensions
- extremely robust
- highly accurate shut-off clutch
- ATEX-compliant tool variations are available

DEPRAG pneumatic screwdrivers with shut-off clutch are renowned for their impressive reliability and precision due to their high processing qualities and sophisticated technology. There are 5 model series each with several gear levels, where the screwdrivers for torques of between 2 Ncm and 18 Nm are available in versions of right or left rotation or with reversal options. The screwdriver start can be triggered by push to start or by pneumatic valve de-pending on the application.

The high precision shut-off clutch guarantees a high screw assembly quality with low maintenance requirements over a cycle of a million screw assemblies.



OVERVIEW

The wide range of DEPRAG spindle screwdrivers enables technically sophisticated and efficient solutions in a multitude of application areas. The basis for these are the low-priced pneumatic screwdriving tools with highly accurate shut-off clutch.

NANOMAT Screwdriver Spindles (→ brochure D3125E) - for extremely small torque values from 8 Nmm - 300 Nmm

MICROMAT Screwdriver Spindles - for small torque values of 0.02 Nm - 0.7 Nm

MINIMAT Screwdriver Spindles - for torque values of 0.2 - 180 Nm

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ADVANTAGES

Highly accurate shut-off clutch

Because of the highly accurate shut-off clutch, a torque precision of $\leq 3\%$ standard deviation can be achieved; independent from the screw joint. In many cases and when operated within suitable environmental conditions, a clearly better precision is achieved and a machine capability index (Cmk) of ≥ 1.67 is reached, even when there is a lower deviation requirement. This means that the error proportion is under 0.6 per million screw assemblies. A further increase in processing reliability can be monitored additionally to the screw-in depth and shut-off of the screwdriver.

Robustness

The DEPRAG pneumatic screwdriver with mechanical shut-off clutch is made up of qualitatively high value low wear components and has a long running life requiring a low level of maintenance even under extreme conditions.

Simple integration

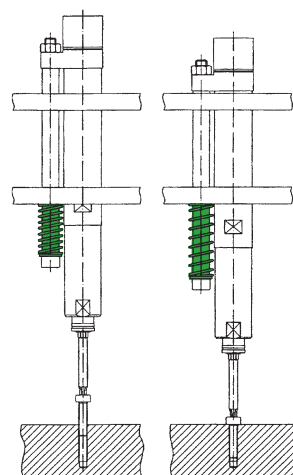
The tried and tested mounting principle of the screwdriver with torque support via a side guide bolt enables simple integration and uncomplicated installation and dismantling.

Variety

Varied model sizes and gear levels, different versions in consideration of torque and screwdriver start mode as well as a choice of operation with lubricated and unlubricated compressed air enables suitable solutions for the most varied of applications. The use of a reduction gear allows several screw assemblies to be carried out simultaneously in closely located screw positions.

Axial spring loaded suspension

Due to the axial movement of the entire screwdriver in the screwdriver fixture a spring loaded drive element is not required. Therefore low-priced standard inserting tools can be used.



After completion of the screw assembly our dual depth control verifies that the screw has reached the preset depth.

Function:

The depth control consists of two proximity switches and a spring-loaded probe.

As soon as the Screwdriver Spindle moves towards the screwdriver bracket, the probe that supports itself on the screwdriver bracket, offsets towards the screwdriver and the proximity switches.

The first proximity switch is activated at a preset distance and gives a signal to the controller, as soon as the screw reaches its required position = depth is O.K.

If the screw depth is not reached, the first proximity switch does not give a signal to the controller. The controller notices the absence of a signal and outputs an error message = depth is NOT O.K.

If the Screwdriver lowers itself further than the preset distance, the second proximity switch gives a signal to the controller assembly is NOT O.K. The controller outputs an error message.

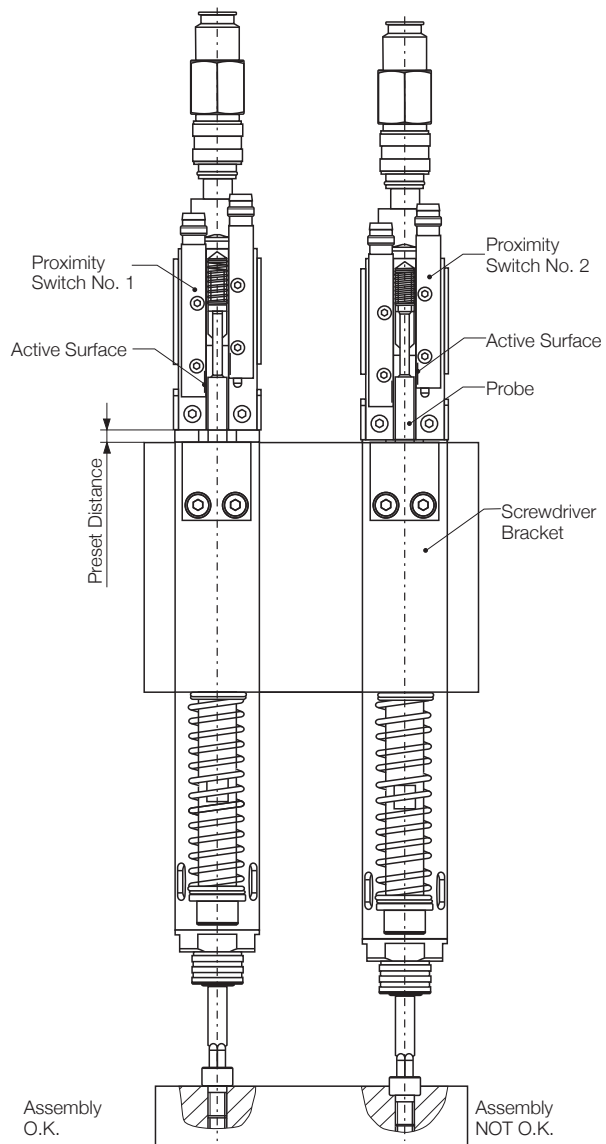
The first signal (O.K.) remains valid.

Reasons for exceeding the preset minimum depth:

- Product to be assembled is missing
- Components have large tolerances (height tolerances are too large)

An important parameter of the depth control is the dimensional accuracy of the parts involved in the assembly process. Such as:

- product to be assembled has to be within specified tolerances (accuracy of the height tolerances)
- screws or washers to be used have to be within specified tolerances.



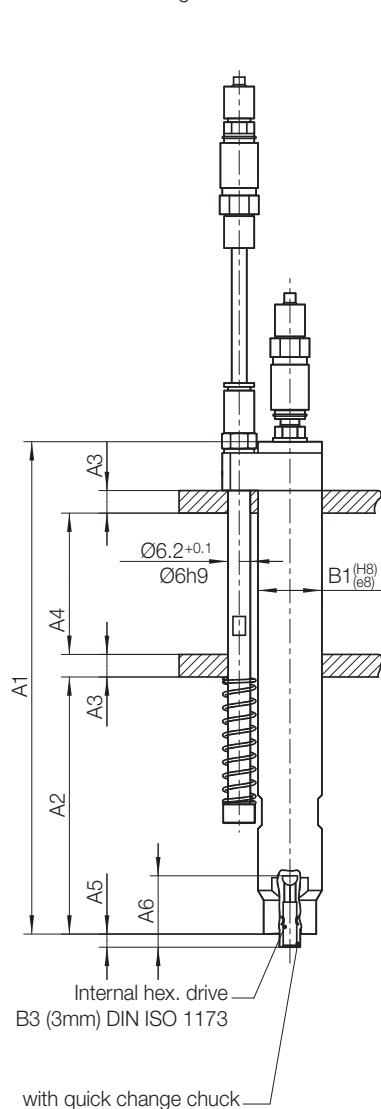
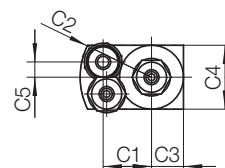
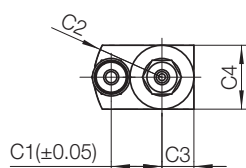
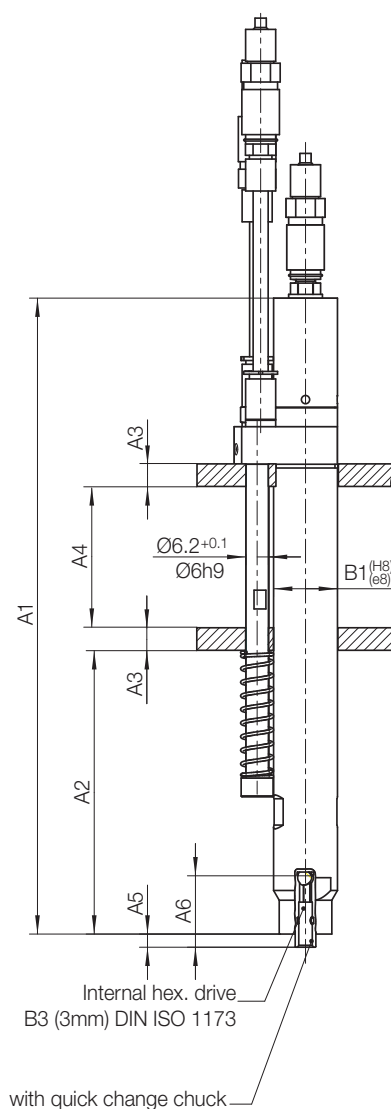
This product is suitable for use in an explosion hazardous assembly environment – please contact us for more details. The DEPRAG pneumatic Screwdriver Spindles can be supplied with an ATEX conformity certification.



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.

Screwdriver Style			Motor Size 0			
Spindle right rotation, right shut-off Push To Start	Type Part no.		345-308-31 339271A	345-408-31 345765A	345-708-31 385138A	345-508-31 339271B
Spindle left rotation, left shut-off Push To Start	Type Part no.		345-308-31L 341357A	345-408-31L 341357E	345-708-31L 385165A	345-508-31L 341357B
Spindle right rotation, right shut-off Remote Start	Type Part no.		345-300-31 339275A	345-400-31 339275G	345-700-31 385166A	345-500-31 339275B
Spindle left rotation, left shut-off Remote Start	Type Part no.		345-300-31L 346058A	345-400-31 L 346058C	345-700-31L 385167A	345-500-31L 346058B
Torque min.	Ncm / in.oz		2 / 3	2 / 3	2 / 3	2 / 3
Soft pull-up max.	Ncm / in.oz		50 / 70	55 / 78	70 / 97	70 / 97
Hard pull-up max.	Ncm / in.oz		60 / 83	55 / 78	70 / 97	70 / 97
Speed, idling	rpm		1600	1100	650	350
Air consumption	m³/min / cfm		0.1 / 3.5	0.1 / 3.5	0.1 / 3.5	0.1 / 3.5
Weight	kg / lbs		0.18 / 0.40	0.18 / 0.40	0.19 / 0.42	0.19 / 0.42
Push to start pressure	N / lbs		11 / 2.4	11 / 2.4	11 / 2.4	11 / 2.4
Pressure at max. screwdriver stroke	N / lbs		20 / 4.4	20 / 4.4	20 / 4.4	20 / 4.4
Hose I.D. for air supply	mm / in.		3 / 1/8	3 / 1/8	3 / 1/8	3 / 1/8
Hose I.D. for function control	mm / in.		3 / 1/8	3 / 1/8	3 / 1/8	3 / 1/8
Internal hex. drive DIN ISO 1173			B3 (3mm/.118")	B3 (3mm/.118")	B3 (3mm/.118")	B3 (3mm/.118")
Quick change chuck mounted			yes	yes	yes	yes
Suitable tool inserts and connecting components with a drive as per DIN ISO 1173			A3 (3mm/.118")	A3 (3mm/.118")	A3 (3mm/.118")	A3 (3mm/.118")
Spindle reversible, right shut-off Push To Start for right rotation Reverse by Remote Start	Type Part no.		345-308-31U 374098A	345-408-31U 374098B	345-708-31U 385168A	345-508-31U 374098C
Spindle reversible, left shut-off Push To Start for left rotation Reverse by Remote Start	Type Part no.		345-308-31UL 374100A	345-408-31UL 374100B	345-708-31UL 385169A	345-508-31UL 374100C
Spindle reversible, right shut-off Remote Start in drive direction and in reverse	Type Part no.		345-300-31U 374099A	345-400-31U 374099B	345-700-31U 385170A	345-500-31U 374099C
Spindle reversible, left shut-off Remote Start in drive direction and in reverse	Type Part no.		345-300-31UL 374101A	345-400-31UL 374101B	345-700-31UL 385171A	345-500-31UL 374101C
Torque min.	Ncm / in.oz		2 / 3	2 / 3	2 / 3	2 / 3
Soft pull-up max.	Ncm / in.oz		40 / 57	50 / 70	70 / 97	70 / 97
Hard pull-up max.	Ncm / in.oz		50 / 70	50 / 70	70 / 97	70 / 97
Speed, idling	rpm		1300	950	480	300
Air consumption	m³/min / cfm		0.1 / 3.5	0.1 / 3.5	0.1 / 3.5	0.1 / 3.5
Weight	kg / lbs		0.23 / 0.51	0.23 / 0.51	0.24 / 0.53	0.24 / 0.53
Push to start pressure	N / lbs		11 / 2.4	11 / 2.4	11 / 2.4	11 / 2.4
Pressure at max. screwdriver stroke	N / lbs		20 / 4.4	20 / 4.4	20 / 4.4	20 / 4.4
Hose I.D. for air supply	mm / in.		3 / 1/8	3 / 1/8	3 / 1/8	3 / 1/8
Hose I.D. for function control	mm / in.		3 / 1/8	3 / 1/8	3 / 1/8	3 / 1/8
Internal hex. drive DIN ISO 1173			B3 (3mm/.118")	B3 (3mm/.118")	B3 (3mm/.118")	B3 (3mm/.118")
Quick change chuck mounted			yes	yes	yes	yes
Suitable tool inserts and connecting components with a drive as per DIN ISO 1173			A3 (3mm/.118")	A3 (3mm/.118")	A3 (3mm/.118")	A3 (3mm/.118")

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

Spindle
right-/left rotationSpindle
reversible

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Motor Size 0

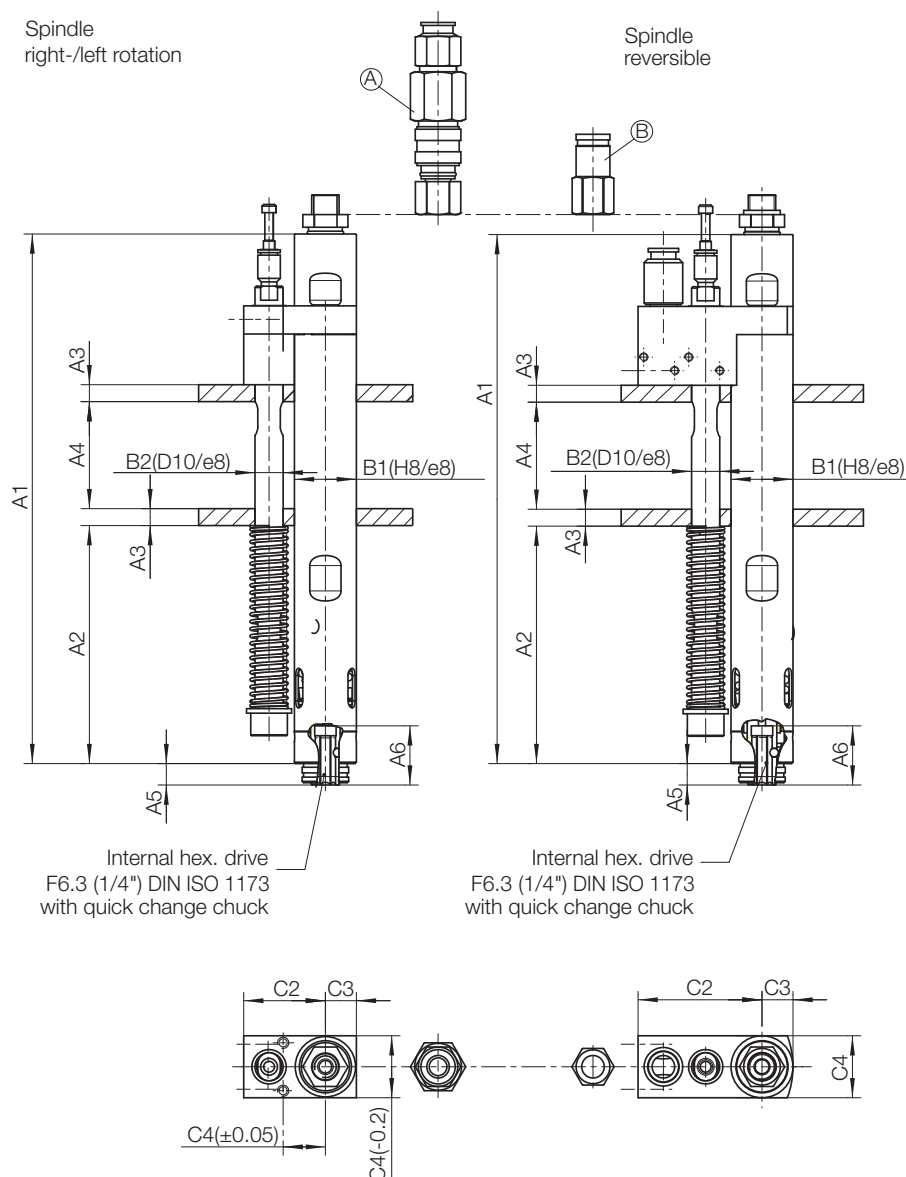
Type				Dimensions (mm)											
Spindle right-/left rotation				A1	A2	A3	A4	A5	A6	B1	C1	C2	C3	C4	C5
345-308-31	345-308-31L	345-300-31	345-300-31L	132	69	6	38	3.5 (0.8)	19	17	13.5	18	8.5	17	—
345-408-31	345-408-31L	345-400-31	345-400-31L												
345-508-31	345-508-31L	345-500-31	345-500-31L	138	75	6	38	3.5 (0.8)	19	17	13.5	18	8.5	17	—
345-708-31	345-708-31L	345-700-31	345-700-31L												
Spindle reversible															
345-308-31U	345-308-31UL	345-300-31U	345-300-31UL	163.5	69	6	38	3.5 (0.8)	19	17	12.9	19	8.5	17	4.1
345-408-31U	345-408-31UL	345-400-31U	345-400-31UL												
345-508-31U	345-508-31UL	345-500-31U	345-500-31UL	169.5	75	6	38	3.5 (0.8)	19	17	12.9	19	8.5	17	4.1
345-708-31U	345-708-31UL	345-700-31U	345-700-31UL												

Dimensions in brackets: For screwdrivers with remote start

Screwdriver Style		Motor Size 1			
Spindle right rotation, right shut-off Push To Start	Type Part no.	347-218-31 397066A	347-318-31 397066B	347-518-31 397066C	347-618-31 397066D
Spindle left rotation, left shut-off Push To Start	Type Part no.	347-218-31L 397074A	347-318-31L 397074B	347-518-31L 397074C	347-618-31L 397074D
Spindle right rotation, right shut-off Remote Start	Type Part no.	347-210-31 *) 397068A	347-310-31 *) 397068B	347-510-31 *) 397068C	347-610-31 *) 397068D
Spindle left rotation, left shut-off Remote Start	Type Part no.	347-210-31L 397078A	347-310-31L 397078B	347-510-31L 397078C	347-610-31L 397078D
Torque min.	Nm / in.lbs	0.3 / 3	0.3 / 3	0.2 / 2	0.2 / 2
Torque max.	Nm / in.lbs	1 / 9	1.4 / 12	2 / 18	2 / 18
Speed, idling	rpm	1900	1300	900	600
Air consumption	m³/min / cfm	0.23 / 8	0.23 / 8	0.23 / 8	0.23 / 8
Weight	kg / lbs	0.5 / 1.1	0.5 / 1.1	0.5 / 1.1	0.55 / 1.2
Push to start pressure	N / lbs	12 / 2.6	12 / 2.6	12 / 2.6	12 / 2.6
Pressure at max. screwdriver stroke	N / lbs	60 / 13	60 / 13	60 / 13	60 / 13
Hose I.D. for air supply	mm / in.	5.5 / ⁷ / ₃₂	5.5 / ⁷ / ₃₂	5.5 / ⁷ / ₃₂	5.5 / ⁷ / ₃₂
Hose I.D. for function control	mm / in.	4 / ⁵ / ₃₂	4 / ⁵ / ₃₂	4 / ⁵ / ₃₂	4 / ⁵ / ₃₂
Internal hex. drive DIN ISO 1173		F6.3 (1/4")	F6.3 (1/4")	F6.3 (1/4")	F6.3 (1/4")
Quick change chuck mounted		yes	yes	yes	yes
Suitable tool inserts and connecting components with a drive as per DIN ISO 1173		E6.3 (1/4")	E6.3 (1/4")	E6.3 (1/4")	E6.3 (1/4")
Spindle reversible, right shut-off Push To Start for right rotation Reverse by Remote Start	Type Part no.	347-218-31U 397067A	347-318-31U 397067B	347-518-31U 397067C	347-618-31U 397067D
Spindle reversible, left shut-off Push To Start for left rotation Reverse by Remote Start	Type Part no.	347-218-31UL 397075A	347-318-31UL 397075B	347-518-31UL 397075C	347-618-31UL 397075D
Spindle reversible, right shut-off Remote Start in drive direction and in reverse	Type Part no.	347-210-31U 397069A	347-310-31U 397069B	347-510-31U 397069C	347-610-31U 397069
Spindle reversible, left shut-off Remote Start in drive direction and in reverse	Type Part no.	347-210-31UL 397079A	347-310-31UL 397079B	347-510-31UL 397079C	347-610-31UL 397079D
Torque min.	Nm / in.lbs	0.3 / 3	0.3 / 3	0.2 / 2	0.2 / 2
Torque max.	Nm / in.lbs	1 / 9	1.4 / 12	2 / 18	2 / 18
Speed, idling	rpm	1900	1300	900	600
Air consumption	m³/min / cfm	0.23 / 8	0.23 / 8	0.23 / 8	0.23 / 8
Weight	kg / lbs	0.6 / 1.3	0.6 / 1.3	0.6 / 1.3	0.65 / 1.4
Push to start pressure	N / lbs	12 / 2.6	12 / 2.6	12 / 2.6	12 / 2.6
Pressure at max. screwdriver stroke	N / lbs	60 / 13	60 / 13	60 / 13	60 / 13
Hose I.D. for air supply	mm / in.	5.5 / ⁷ / ₃₂	5.5 / ⁷ / ₃₂	5.5 / ⁷ / ₃₂	5.5 / ⁷ / ₃₂
Hose I.D. for function control	mm / in.	4 / ⁵ / ₃₂	4 / ⁵ / ₃₂	4 / ⁵ / ₃₂	4 / ⁵ / ₃₂
Internal hex. drive DIN ISO 1173		F6.3 (1/4")	F6.3 (1/4")	F6.3 (1/4")	F6.3 (1/4")
Quick change chuck mounted		yes	yes	yes	yes
Suitable tool inserts and connecting components with a drive as per DIN ISO 1173		E6.3 (1/4")	E6.3 (1/4")	E6.3 (1/4")	E6.3 (1/4")

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

*) These screwdrivers are also available in explosion-proof design. Please contact us for more information!



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- Ⓐ Air supply connection for push to start
 Ⓑ Air supply connection for remote start

Motor Size 1

Type				Dimensions (mm)											
Spindle right-/left rotation				A1	A2	A3	A4	A5	A6	B1	B2	C1	C2	C3	C4
347-218-31	347-218-31L	347-210-31	347-210-31L	188	84.4	6	38	7.6 (5.9)	21	22	10	20	29	11	22
347-318-31	347-318-31L	347-310-31	347-310-31L												
347-518-31	347-518-31L	347-510-31	347-510-31L												
347-618-31	347-618-31L	347-610-31	347-610-31L												
Spindle reversible															
347-218-31U	347-218-31UL	347-210-31U	347-210-31UL	188	84.4	6	38	7.6 (5.9)	21	22	10	20	44	11	22
347-318-31U	347-318-31UL	347-310-31U	347-310-31UL												
347-518-31U	347-518-31UL	347-510-31U	347-510-31UL												
347-618-31U	347-618-31UL	347-610-31U	347-610-31UL												

Dimensions in brackets: For screwdrivers with remote start

Screwdriver Style			Motor Size 2		
Spindle right rotation, right shut-off Push To Start	Type Part no.		347-228-31 386369A	347-328-31 386369B	347-528-31 386369C
Spindle left rotation, left shut-off Push To Start	Type Part no.		347-228-31L 386370A	347-328-31L 386370B	347-528-31L 386370C
Spindle right rotation, right shut-off Remote Start	Type Part no.		347-220-31 386371A	347-320-31 386371B	347-520-31 386371C
Spindle left rotation, left shut-off Remote Start	Type Part no.		347-220-31L 386372A	347-320-31L 386372B	347-520-31L 386372C
Torque min.	Nm / in.lbs		0.5 / 5	0.4 / 4	0.3 / 3
Soft pull-up max.	Nm / in.lbs		1.6 / 14	3 / 27	5 / 44
Hard pull-up max.	Nm / in.lbs		2.2 / 19	3.5 / 31	5 / 44
Speed, idling	rpm		4000	1550	680
Air consumption	m³/min / cfm		0.3 / 11	0.3 / 11	0.3 / 11
Weight	kg / lbs		0.89 / 1.9	0.89 / 1.9	0.89 / 1.9
Push to start pressure	N / lbs		24 / 5.4	24 / 5.4	24 / 5.4
Pressure at max. screwdriver stroke	N / lbs		100 / 22	100 / 22	100 / 22
Hose for air supply (O.D. / I.D.)	mm (in.)		8 / 5.5 (.314 / 7/32)	8 / 5.5 (.314 / 7/32)	8 / 5.5 (.314 / 7/32)
Hose for function control (O.D. / I.D.)	mm (in.)		4 / 2.5 (.157 / 3/32)	4 / 2.5 (.157 / 3/32)	4 / 2.5 (.157 / 3/32)
(O.D. tolerances of connection hoses according to Cetop RP 54 P)					
Internal hex. drive DIN ISO 1173			F6.3 (1/4")	F6.3 (1/4")	F6.3 (1/4")
Quick change chuck mounted			yes	yes	yes
Suitable tool inserts and connecting components with a drive as per DIN ISO 1173			E6.3 (1/4")	E6.3 (1/4")	E6.3 (1/4")
Spindle reversible, right shut-off Push To Start for right rotation Reverse by Remote Start	Type Part no.		347-228-31U 386373A	347-328-31U 386373B	347-528-31U 386373C
Spindle reversible, left shut-off Push To Start for left rotation Reverse by Remote Start	Type Part no.		347-228-31UL 386374A	347-328-31UL 386374B	347-528-31UL 386374C
Spindle reversible, right shut-off Remote Start in drive direction and in reverse	Type Part no.		347-220-31U 386375A	347-320-31U 386375B	347-520-31U 386375C
Spindle reversible, left shut-off Remote Start in drive direction and in reverse	Type Part no.		347-220-31UL 386376A	347-320-31UL 386376B	347-520-31UL 386376C
Torque min.	Nm / in.lbs		0.5 / 5	0.4 / 4	0.3 / 3
Soft pull-up max.	Nm / in.lbs		1.3 / 11	2.6 / 23	4.5 / 40
Hard pull-up max.	Nm / in.lbs		2 / 18	3 / 26	4.5 / 40
Speed, idling	rpm		3100	1150	520
Air consumption	m³/min / cfm		0.3 / 11	0.3 / 11	0.3 / 11
Weight	kg / lbs		0.91 / 2	0.91 / 2	0.91 / 2
Push to start pressure	N / lbs		24 / 5.4	24 / 5.4	24 / 5.4
Pressure at max. screwdriver stroke	N / lbs		100 / 22	100 / 22	100 / 22
Hose for air supply (O.D. / I.D.)	mm (in.)		8 / 5.5 (.314 / 7/32)	8 / 5.5 (.314 / 7/32)	8 / 5.5 (.314 / 7/32)
Hose for function control (O.D. / I.D.)	mm (in.)		4 / 2.5 (.157 / 3/32)	4 / 2.5 (.157 / 3/32)	4 / 2.5 (.157 / 3/32)
(O.D. tolerances of connection hoses according to Cetop RP 54 P)					
Internal hex. drive DIN ISO 1173			F6.3 (1/4")	F6.3 (1/4")	F6.3 (1/4")
Quick change chuck mounted			yes	yes	yes
Suitable tool inserts and connecting components with a drive as per DIN ISO 1173			E6.3 (1/4")	E6.3 (1/4")	E6.3 (1/4")

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

Motor Size 2

Type				Dimensions (mm)												
Spindle right-/left rotation				A1	A2	A3	A4	A5	A6	B1	B2	C1	C2	C3	C4	C5
347-228-31	347-228-31L	347-220-31	347-220-31L	222	87	10	60	11	21	27	12	23	36	14	28	–
347-328-31	347-328-31L	347-320-31	347-320-31L													
347-528-31	347-528-31L	347-520-31	347-520-31L													
Spindle reversible																
347-228-31U	347-228-31UL	347-220-31U	347-220-31UL	222	87	10	60	11	21	27	12	23	36	32	28	25
347-328-31U	347-328-31UL	347-320-31U	347-320-31UL													
347-528-31U	347-528-31UL	347-520-31U	347-520-31UL													

Screwdriver Style			Motor Size 3			
Spindle right rotation, right shut-off Push To Start	Type Part no.		346-238-31 406109B	346-738-31 406109C	346-338-31 406109D	346-438-31 406109E
Spindle left rotation, left shut-off Push To Start	Type Part no.		346-238-31L 406446B	346-738-31L 406446C	346-338-31L 406446D	346-438-31L 406446E
Spindle right rotation, right shut-off Remote Start	Type Part no.		346-230-31 406482B	346-730-31 406482C	346-330-31 406482D	346-430-31 406482E
Spindle left rotation, left shut-off Remote Start	Type Part no.		346-230-31L 406484B	346-730-31L 406484C	346-330-31L 406484D	346-430-31L 406484E
Torque min.	Nm / in.lbs		2 / 18	2 / 18	2 / 18	2 / 18
Soft pull-up max.	Nm / in.lbs		5 / 44	8 / 71	14 / 123	20 / 177
Hard pull-up max.	Nm / in.lbs		6 / 53	9 / 80	14 / 123	20 / 177
Speed, idling	rpm		2500	1400	800	400
Air consumption	m³/min / cfm		0.45 / 16	0.45 / 16	0.45 / 16	0.45 / 16
Weight	kg / lbs		1.5 / 3.3	1.6 / 3.5	1.6 / 3.5	1.6 / 3.5
Push to start pressure	N / lbs		38 / 8.4	38 / 8.4	38 / 8.4	38 / 8.4
Pressure at max. screwdriver stroke	N / lbs		100 / 22	100 / 22	100 / 22	100 / 22
Hose for air supply (O.D. / I.D.)	mm (in.)		12 / 9 (.472 / ²³ / ₆₄)	12 / 9 (.472 / ²³ / ₆₄)	12 / 9 (.472 / ²³ / ₆₄)	12 / 9 (.472 / ²³ / ₆₄)
Hose for function control (O.D. / I.D.)	mm (in.)		4 / 2.5 (.157 / ³ / ₃₂)	4 / 2.5 (.157 / ³ / ₃₂)	4 / 2.5 (.157 / ³ / ₃₂)	4 / 2.5 (.157 / ³ / ₃₂)
(O.D. tolerances of connection hoses according to Cetop RP 54 P)						
Internal hex. drive DIN ISO 1173			F6.3 (1/4")	F6.3 (1/4")	F6.3 (1/4")	F6.3 (1/4")
Quick change chuck mounted			yes	yes	yes	yes
Suitable tool inserts and connecting components with a drive as per DIN ISO 1173			E6.3 (1/4")	E6.3 (1/4")	E6.3 (1/4")	E6.3 (1/4")
Spindle reversible, right shut-off Push To Start for right rotation Reverse by Remote Start	Type Part no.		346-238-31U 406223B	346-738-31U 406223C	346-338-31U 406223D	346-438-31U 406223E
Spindle reversible, left shut-off Push To Start for left rotation Reverse by Remote Start	Type Part no.		346-238-31UL 406469B	346-738-31UL 406469C	346-338-31UL 406469D	346-438-31UL 406469E
Spindle reversible, right shut-off Remote Start in drive direction and in reverse	Type Part no.		346-230-31U 406282B	346-730-31U 406282C	346-330-31U 406282D	346-430-31U 406282E
Spindle reversible, left shut-off Remote Start in drive direction and in reverse	Type Part no.		346-230-31UL 406475B	346-730-31UL 406475C	346-330-31UL 406475D	346-430-31UL 406475E
Torque min.	Nm / in.lbs		2 / 18	2 / 18	2 / 18	2 / 18
Soft pull-up max.	Nm / in.lbs		4.5 / 40	7 / 62	12 / 106	20 / 177
Hard pull-up max.	Nm / in.lbs		5.5 / 49	8 / 71	12 / 106	20 / 177
Speed, idling	rpm		2300	1200	650	320
Air consumption	m³/min / cfm		0.45 / 16	0.45 / 16	0.45 / 16	0.45 / 16
Weight	kg / lbs		1.7 / 3.7	1.8 / 4.0	1.8 / 4.0	1.8 / 4.0
Push to start pressure	N / lbs		38 / 8.4	38 / 8.4	38 / 8.4	38 / 8.4
Pressure at max. screwdriver stroke	N / lbs		100 / 22	100 / 22	100 / 22	100 / 22
Hose for air supply (O.D. / I.D.)	mm (in.)		12 / 9 (.472 / ²³ / ₆₄)	12 / 9 (.472 / ²³ / ₆₄)	12 / 9 (.472 / ²³ / ₆₄)	12 / 9 (.472 / ²³ / ₆₄)
Hose for function control (O.D. / I.D.)	mm (in.)		4 / 2.5 (.157 / ³ / ₃₂)	4 / 2.5 (.157 / ³ / ₃₂)	4 / 2.5 (.157 / ³ / ₃₂)	4 / 2.5 (.157 / ³ / ₃₂)
(O.D. tolerances of connection hoses according to Cetop RP 54 P)						
Internal hex. drive DIN ISO 1173			F6.3 (1/4")	F6.3 (1/4")	F6.3 (1/4")	F6.3 (1/4")
Quick change chuck mounted			yes	yes	yes	yes
Suitable tool inserts and connecting components with a drive as per DIN ISO 1173			E6.3 (1/4")	E6.3 (1/4")	E6.3 (1/4")	E6.3 (1/4")

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



⑤ Air supply connection for remote start

Motor Size 3

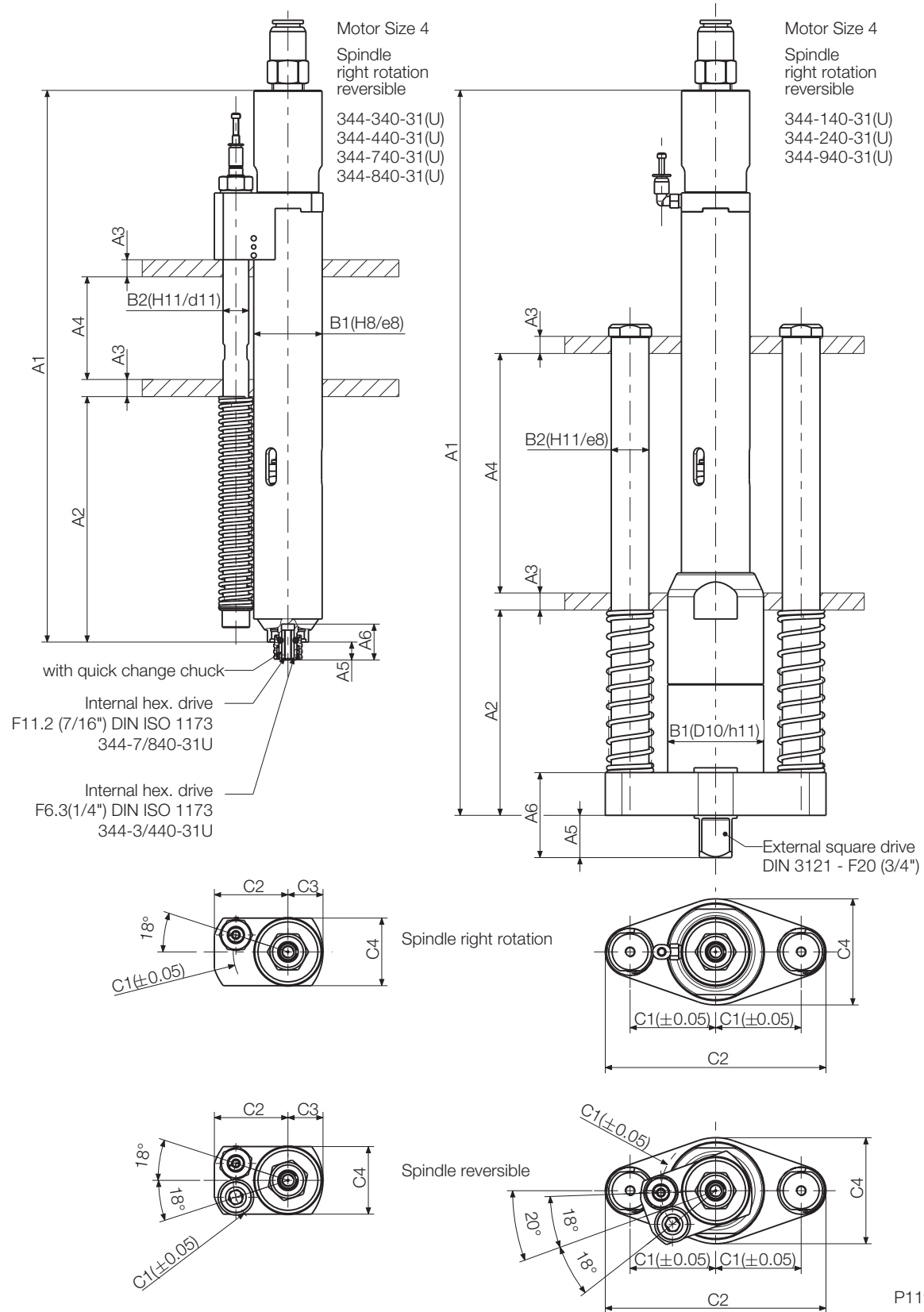
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Motor Size 3

Type				Dimensions (mm)											
Spindle right-/left rotation				A1	A2	A3	A4	A5	A6	B1	B2	C1	C2	C3	C4
346-338-31	346-338-31L	346-330-31	346-330-31L	249.5	128	10	60	20.5	21	36	12	28	37	18	36
346-438-31	346-438-31L	346-430-31	346-430-31L												
Spindle reversible															
346-338-31U	346-338-31UL	346-330-31U	346-330-31UL	250	128	10	60	20.5	21	36	12	28	37	36	36
346-438-31U	346-438-31UL	346-430-31U	346-430-31UL												

Screwdriver Style		Motor Size 4			
Spindle right rotation, right shut-off Remote Start	Type Part no.	344-340-31 389730A	344-440-31 389730B	344-740-31 389730C	344-840-31 389730D
Torque min.	Nm / in.lbs	4 / 35.4	4 / 35.4	16 / 142	16 / 142
Torque max.	Nm / in.lbs	8 / 71	10 / 88	34 / 300	45 / 398
Speed, idling	rpm	2800	2100	640	450
Air consumption	m³/min / cfm	1.1 / 39	1.1 / 39	1.1 / 39	1.1 / 39
Weight	kg / lbs	2.5 / 5.5	2.5 / 5.5	2.65 / 5.8	2.65 / 5.8
Pressure at max. screwdriver stroke	N / lbs	140 / 31.4	140 / 31.4	140 / 31.4	140 / 31.4
Max. admissible pressure	N / lbs	1000 / 224	1000 / 224	1000 / 224	1000 / 224
Hose for air supply (O.D. / I.D.)	mm (in.)	12 / 8 (.472 / 5/16)	12 / 8 (.472 / 5/16)	12 / 8 (.472 / 5/16)	12 / 8 (.472 / 5/16)
Hose for function control (O.D. / I.D.)	mm (in.)	4 / 2.5 (.157 / 3/32)	4 / 2.5 (.157 / 3/32)	4 / 2.5 (.157 / 3/32)	4 / 2.5 (.157 / 3/32)
(O.D. tolerances of connection hoses according to Cetop RP 54 P)					
Internal hex. drive DIN ISO 1173		F6.3 (1/4")	F6.3 (1/4")	F11.2 (7/16")	F11.2 (7/16")
Quick change chuck mounted		yes	yes	yes	yes
Suitable tool inserts and connecting components with a drive as per DIN ISO 1173		E6.3 (1/4")	E6.3 (1/4")	E11.2 (7/16")	E11.2 (7/16")
Spindle reversible, right shut-off Remote Start in drive direction and in reverse	Type Part no.	344-340-31U 384210A	344-440-31U 384210B	344-740-31U *) 384210C	344-840-31U *) 384210D
Torque min.	Nm / in.lbs	3.5 / 31	3.5 / 31	14 / 124	14 / 124
Torque max.	Nm / in.lbs	6.5 / 57.5	8 / 70.8	32 / 283	38 / 336
Speed, idling	rpm	2400	1700	500	360
Air consumption	m³/min / cfm	1.1 / 39	1.1 / 39	1.1 / 39	1.1 / 39
Weight	kg / lbs	2.5 / 5.5	2.5 / 5.5	2.65 / 5.8	2.65 / 5.8
Pressure at max. screwdriver stroke	N / lbs	140 / 31.4	140 / 31.4	140 / 31.4	140 / 31.4
Max. admissible pressure	N / lbs	1000 / 224	1000 / 224	1000 / 224	1000 / 224
Hose for air supply (O.D. / I.D.)	mm (in.)	12 / 8 (.472 / 5/16)	12 / 8 (.472 / 5/16)	12 / 8 (.472 / 5/16)	12 / 8 (.472 / 5/16)
Hose for function control (O.D. / I.D.)	mm (in.)	4 / 2.5 (.157 / 3/32)	4 / 2.5 (.157 / 3/32)	4 / 2.5 (.157 / 3/32)	4 / 2.5 (.157 / 3/32)
(O.D. tolerances of connection hoses according to Cetop RP 54 P)					
Internal hex. drive DIN ISO 1173		F6.3 (1/4")	F6.3 (1/4")	F11.2 (7/16")	F11.2 (7/16")
Quick change chuck mounted		yes	yes	yes	yes
Suitable tool inserts and connecting components with a drive as per DIN ISO 1173		E6.3 (1/4")	E6.3 (1/4")	E11.2 (7/16")	E11.2 (7/16")
Spindle right rotation, right shut-off Remote Start	Type Part no.		344-940-31 404623B	344-140-31 404623C	344-240-31 404623D
Torque min.	Nm / in.lbs		40 / 352	40 / 352	40 / 352
Torque max.	Nm / in.lbs		85 / 751	130 / 1151	180 / 1594
Speed, idling	rpm		250	160	115
Air consumption	m³/min / cfm		1.1 / 39	1.1 / 39	1.1 / 39
Weight	kg / lbs		6 / 13.2	6 / 13.2	6 / 13.2
Pressure at max. screwdriver stroke	N / lbs		480 / 108	480 / 108	480 / 108
Max. admissible pressure	N / lbs		1000 / 224	1000 / 224	1000 / 224
Hose for air supply (O.D. / I.D.)	mm (in.)		12 / 8 (.472 / 5/16)	12 / 8 (.472 / 5/16)	12 / 8 (.472 / 5/16)
Hose for function control (O.D. / I.D.)	mm (in.)		4 / 2.5 (.157 / 3/32)	4 / 2.5 (.157 / 3/32)	4 / 2.5 (.157 / 3/32)
(O.D. tolerances of connection hoses according to Cetop RP 54 P)					
External square drive DIN 3121			F20 (3/4")	F20 (3/4")	F20 (3/4")
Quick change chuck mounted			no	no	no
Suitable tool inserts and connecting components with a drive as per DIN 3121			H20 (3/4")	H20 (3/4")	H20 (3/4")
Spindle reversible, right shut-off Remote Start in drive direction and in reverse	Type Part no.		344-940-31U 202270B	344-140-31U 202270C	344-240-31U 202270D
Torque min.	Nm / in.lbs		35 / 310	35 / 310	35 / 310
Torque max.	Nm / in.lbs		70 / 620	105 / 929	150 / 1327
Speed, idling	rpm		190	125	90
Air consumption	m³/min / cfm		1.1 / 38.8	1.1 / 38.8	1.1 / 38.8
Weight	kg / lbs		6.4 / 14	6.4 / 14	6.4 / 14
Pressure at max. screwdriver stroke	N / lbs		480 / 108	480 / 108	480 / 108
Max. admissible pressure	N / lbs		1000 / 224	1000 / 224	1000 / 224
Hose for air supply (O.D. / I.D.)	mm (in.)		12 / 8 (.472 / 5/16)	12 / 8 (.472 / 5/16)	12 / 8 (.472 / 5/16)
Hose for function control (O.D. / I.D.)	mm (in.)		4 / 2.5 (.157 / 3/32)	4 / 2.5 (.157 / 3/32)	4 / 2.5 (.157 / 3/32)
(O.D. tolerances of connection hoses according to Cetop RP 54 P)					
External square drive DIN 3121			F20 (3/4")	F20 (3/4")	F20 (3/4")
Quick change chuck mounted			no	no	no
Suitable tool inserts and connecting components with a drive as per DIN 3121			H20 (3/4")	H20 (3/4")	H20 (3/4")

Performance data relate to an air pressure of 6.3 bar (90 PSI)
*) These screwdrivers are also available in explosion-proof design. Please contact us for more information!



P119496

Motor Size 4

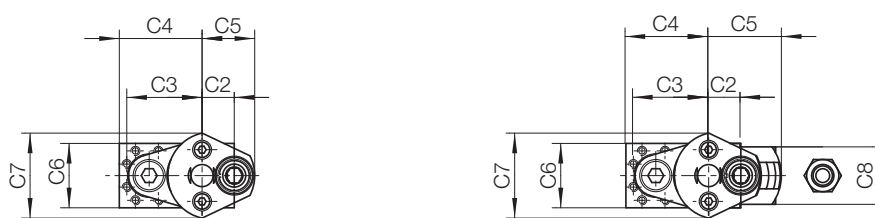
Type	Type	Dimensions (mm)											
		A1	A2	A3	A4	A5	A6	B1	B2	C1	C2	C3	C4
Spindle right rotation	Spindle reversible												
344-340/440-31	344-340/440-31U	322.5	143.5	10	60	10.5	21	40	15	32	43	20.5	39.5
344-740/840-31	344-740/840-31U	352	173	10	60	13.2	30	40	15	32	43	20.5	39.5
344-140/240/940-31	344-140/240/940-31U	423.9	120	10	140	24.7	49.7	56	22	50	129	-	62

Screwdriver Style		Motor Size 2 only in connection with off-set gear (to minimize the center distance)		
Spindle left rotation, left shut-off Spindle in connection with off-set gear right rotation, right shut-off Push To Start	Type Part no.	347-228-31LV 388645A	347-328-31LV 388645B	347-528-31LV 388645C
Spindle right rotation, right shut-off Spindle in connection with off-set gear left rotation, left shut-off Push To Start	Type Part no.	347-228-31V 388944A	347-328-31V 388944B	347-528-31V 388944C
Spindle left rotation, left shut-off Spindle in connection with off-set gear right rotation, right shut-off Remote Start	Type Part no.	347-220-31LV 388646A	347-320-31LV 388646B	347-520-31LV 388646C
Spindle right rotation, right shut-off Spindle in connection with off-set gear left rotation, left shut-off Remote Start	Type Part no.	347-220-31V 388945A	347-320-31V 388945B	347-520-31V 388945C
Off-Set Gear ¹⁾ ²⁾	Part no.	388649A	388649A	388649A
Gear ratio		i = 0.85	i = 0.85	i = 0.85
Torque min.	Nm / in.lbs	0.5 / 5	0.4 / 4	0.3 / 3
Soft pull-up max.	Nm / in.lbs	1.5 / 13	2.8 / 25	4.5 / 39.8
Hard pull-up max.	Nm / in.lbs	2 / 18	3.3 / 29	4.5 / 39.8
Speed, idling	rpm	4200	1700	750
Air consumption	m³/min / cfm	0.3 / 11	0.3 / 11	0.3 / 11
Weight	kg / lbs	1.34 / 2.9	1.34 / 2.9	1.34 / 2.9
Push to start pressure	N / lbs	46 / 10	46 / 10	46 / 10
Pressure at max. screwdriver stroke	N / lbs	150 / 33	150 / 33	150 / 33
Hose for air supply (O.D. / I.D.)	mm (in.)	8 / 5.5 (.314 / 7/32)	8 / 5.5 (.314 / 7/32)	8 / 5.5 (.314 / 7/32)
Hose for function control (O.D. / I.D.) (O.D. tolerances of connection hoses according to Cetop RP 54 P)	mm (in.)	4 / 2.5 (.157 / 3/32)	4 / 2.5 (.157 / 3/32)	4 / 2.5 (.157 / 3/32)
Internal hex. drive DIN ISO 1173		F6.3 (1/4")	F6.3 (1/4")	F6.3 (1/4")
Quick change chuck mounted		yes	yes	yes
Suitable tool inserts and connecting components with a drive as per DIN ISO 1173		E6.3 (1/4")	E6.3 (1/4")	E6.3 (1/4")
Spindle reversible, left shut-off Spindle in connection with off-set gear reversible, right shut-off Push To Start for right rotation Reverse by Remote Start	Type Part no.	347-228-31ULV 388946A	347-328-31ULV 388946B	347-528-31ULV 388946C
Spindle reversible, right shut-off Spindle in connection with off-set gear reversible, left shut-off Push To Start for left rotation Reverse by Remote Start	Type Part no.	347-228-31UV 388947A	347-328-31UV 388947B	347-528-31UV 388947C
Spindle reversible, left shut-off Spindle in connection with off-set gear reversible, right shut-off Remote Start in drive direction and in reverse	Type Part no.	347-220-31ULV 388948A	347-320-31ULV 388948B	347-520-31ULV 388948C
Spindle reversible, right shut-off Spindle in connection with off-set gear reversible, left shut-off Remote Start in drive direction and in reverse	Type Part no.	347-220-31UV 388949A	347-320-31UV 388949B	347-520-31UV 388949C
Off-Set Gear ¹⁾ ²⁾	Part no.	388649A	388649A	388649A
Gear ratio		i = 0.85	i = 0.85	i = 0.85
Torque min.	Nm / in.lbs	0.5 / 5	0.4 / 4	0.3 / 3
Soft pull-up max.	Nm / in.lbs	1.2 / 11	2.5 / 22	4.5 / 40
Hard pull-up max.	Nm / in.lbs	2 / 18	3 / 26	4.5 / 40
Speed, idling	rpm	3400	1280	580
Air consumption	m³/min / cfm	0.3 / 11	0.3 / 11	0.3 / 11
Weight	kg / lbs	1.36 / 3	1.36 / 3	1.36 / 3
Push to start pressure	N / lbs	46 / 10	46 / 10	46 / 10
Pressure at max. screwdriver stroke	N / lbs	150 / 33	150 / 33	150 / 33
Hose for air supply (O.D. / I.D.)	mm (in.)	8 / 5.5 (.314 / 7/32)	8 / 5.5 (.314 / 7/32)	8 / 5.5 (.314 / 7/32)
Hose for function control (O.D. / I.D.) (O.D. tolerances of connection hoses according to Cetop RP 54 P)	mm (in.)	4 / 2.5 (.157 / 3/32)	4 / 2.5 (.157 / 3/32)	4 / 2.5 (.157 / 3/32)
Internal hex. drive DIN ISO 1173		F6.3 (1/4")	F6.3 (1/4")	F6.3 (1/4")
Quick change chuck mounted		yes	yes	yes
Suitable tool inserts and connecting components with a drive as per DIN ISO 1173		E6.3 (1/4")	E6.3 (1/4")	E6.3 (1/4")

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

1) off-set gear as optional equipment

2) Screwdrivers with off-set gearing for restricted area (for sockets and bits without finders only)



3889764

Motor Size 2 with off-set gear 388649A

[illegible]

Screwdriver Style		Motor Size 3 only in connection with off-set gear (to minimize the center distance)		
Spindle left rotation, left shut-off Spindle in connection with off-set gear right rotation, right shut-off Push To Start	Type Part no.	346-738-31LV 401068C	346-338-31LV 401068D	346-438-31LV 401068E
Spindle right rotation, right shut-off Spindle in connection with off-set gear left rotation, left shut-off Push To Start	Type Part no.	346-738-31V 407279C	346-338-31V 407279D	346-438-31V 407279E
Spindle left rotation, left shut-off Spindle in connection with off-set gear right rotation, right shut-off Remote Start	Type Part no.	346-730-31LV 407280C	346-330-31LV 407280D	346-430-31LV 407280E
Spindle right rotation, right shut-off Spindle in connection with off-set gear left rotation, left shut-off Remote Start	Type Part no.	346-730-31V 407281C	346-330-31V 407281D	346-430-31V 407281E
Off-Set Gear ¹⁾ ²⁾	Part no.	401236B	401236B	401236B
Gear ratio		i = 1.3	i = 1.3	i = 1.3
Torque min.	Nm / in.lbs	2.6 / 23	2.6 / 23	2.6 / 23
Soft pull-up max.	Nm / in.lbs	9 / 80	15 / 132	24 / 212
Hard pull-up max.	Nm / in.lbs	9 / 80	15 / 132	24 / 212
Speed, idling	rpm	1050	600	300
Air consumption	m³/min / cfm	0.45 / 16	0.45 / 16	0.45 / 16
Weight	kg / lbs	3 / 6.6	3 / 6.6	3 / 6.6
Push to start pressure	N / lbs	64 / 14.3	64 / 14.3	64 / 14.3
Pressure at max. screwdriver stroke	N / lbs	130 / 29.1	130 / 29.1	130 / 29.1
Hose for air supply (O.D. / I.D.)	mm (in.)	12 / 9 (.472 / ²³ / ₆₄)	12 / 9 (.472 / ²³ / ₆₄)	12 / 9 (.472 / ²³ / ₆₄)
Hose for function control (O.D. / I.D.) (O.D. tolerances of connection hoses according to Cetop RP 54 P)	mm (in.)	4 / 2.5 (.157 / ³ / ₃₂)	4 / 2.5 (.157 / ³ / ₃₂)	4 / 2.5 (.157 / ³ / ₃₂)
Internal hex. drive DIN ISO 1173		F6.3 (1/4")	F6.3 (1/4")	F6.3 (1/4")
Quick change chuck mounted		yes	yes	yes
Suitable tool inserts and connecting components with a drive as per DIN ISO 1173		E6.3 (1/4")	E6.3 (1/4")	E6.3 (1/4")
Spindle reversible, left shut-off Spindle in connection with off-set gear reversible, right shut-off Push To Start for right rotation Reverse by Remote Start	Type Part no.	346-738-31ULV 407283C	346-338-31ULV 407283D	346-438-31ULV 407283E
Spindle reversible, right shut-off Spindle in connection with off-set gear reversible, left shut-off Push To Start for left rotation Reverse by Remote Start	Type Part no.	346-738-31UV 407284C	346-338-31UV 407284D	346-438-31UV 407284E
Spindle reversible, left shut-off Spindle in connection with off-set gear reversible, right shut-off Remote Start in drive direction and in reverse	Type Part no.	346-730-31ULV 407285C	346-330-31ULV 407285D	346-430-31ULV 407285E
Spindle reversible, right shut-off Spindle in connection with off-set gear reversible, left shut-off Remote Start in drive direction and in reverse	Type Part no.	346-730-31UV 407286C	346-330-31UV 407286D	346-430-31UV 407286E
Off-Set Gear ¹⁾ ²⁾	Part no.	401236B	401236B	401236B
Gear ratio		i = 1.3	i = 1.3	i = 1.3
Torque min.	Nm / in.lbs	2.6 / 23	2.6 / 23	2.6 / 23
Soft pull-up max.	Nm / in.lbs	8 / 71	13 / 115	22 / 195
Hard pull-up max.	Nm / in.lbs	8 / 71	13 / 115	22 / 195
Speed, idling	rpm	900	500	250
Air consumption	m³/min / cfm	0.45 / 16	0.45 / 16	0.45 / 16
Weight	kg / lbs	3.2 / 7	3.2 / 7	3.2 / 7
Push to start pressure	N / lbs	64 / 14.3	64 / 14.3	64 / 14.3
Pressure at max. screwdriver stroke	N / lbs	130 / 29.1	130 / 29.1	130 / 29.1
Hose for air supply (O.D. / I.D.)	mm (in.)	12 / 9 (.472 / ²³ / ₆₄)	12 / 9 (.472 / ²³ / ₆₄)	12 / 9 (.472 / ²³ / ₆₄)
Hose for function control (O.D. / I.D.) (O.D. tolerances of connection hoses according to Cetop RP 54 P)	mm (in.)	4 / 2.5 (.157 / ³ / ₃₂)	4 / 2.5 (.157 / ³ / ₃₂)	4 / 2.5 (.157 / ³ / ₃₂)
Internal hex. drive DIN ISO 1173		F6.3 (1/4")	F6.3 (1/4")	F6.3 (1/4")
Quick change chuck mounted		yes	yes	yes
Suitable tool inserts and connecting components with a drive as per DIN ISO 1173		E6.3 (1/4")	E6.3 (1/4")	E6.3 (1/4")

Performance data relate to an air pressure of 6.3 bar (90 PSI) 1) off-set gear as optional equipment 2) Screwdrivers with off-set gearing for restricted area (for sockets and bits without finders only)

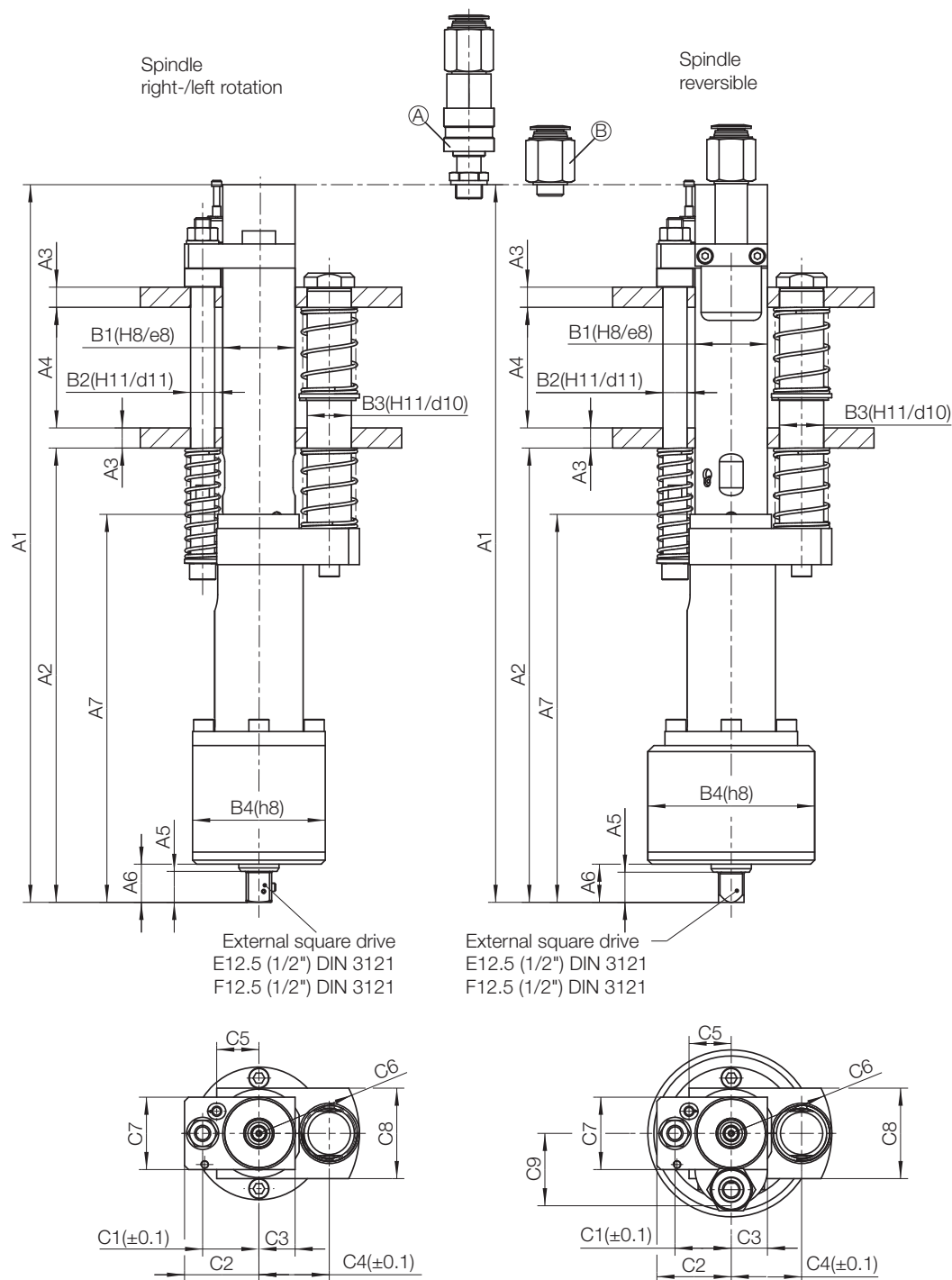
Screwdriver Style		Motor Size 3 for reduction gear (to increase torque value)	
Spindle right rotation, right shut-off Push To Start	Type Part no.	346-338-31 406109D	346-438-31 406109E
Spindle left rotation, left shut-off Push To Start	Type Part no.	346-338-31L 406446D	346-438-31L 406446E
Spindle right rotation, right shut-off Remote Start	Type Part no.	346-330-31 406482D	346-430-31 406482E
Spindle left rotation, left shut-off Remote Start	Type Part no.	346-330-31L 406484D	346-430-31L 406484E
Reduction Gear¹⁾	Part no.	407204A	407204A
Gear ratio		i = 4	i = 4
Torque min.	Nm / in.lbs	4 / 35	4 / 35
Torque max.	Nm / in.lbs	42 / 370	72 / 637
Speed, idling	rpm	200	100
Air consumption	m³/min / cfm	0.45 / 16	0.45 / 16
Weight	kg / lbs	3.2 / 7	3.2 / 7
Push to start pressure	N / lbs	45 / 9.9	45 / 9.9
Pressure at max. screwdriver stroke	N / lbs	120 / 26	120 / 26
Hose for air supply (O.D. / I.D.)	mm (in.)	12 / 9 (.472 / ²³ / ₆₄)	12 / 9 (.472 / ²³ / ₆₄)
Hose for function control (O.D. / I.D.) (O.D. tolerances of connection hoses according to Cetop RP 54 P)	mm (in.)	4 / 2.5 (.157 / ³ / ₃₂)	4 / 2.5 (.157 / ³ / ₃₂)
External square drive DIN 3121		F10 (3/8")	F10 (3/8")
Quick change chuck mounted		no	no
Suitable tool inserts and connecting components with a drive as per DIN 3121		H10 (3/8")	H10 (3/8")
Spindle reversible, right shut-off Push To Start for right rotation Reverse by Remote Start	Type Part no.	346-338-31U 406223D	346-438-31U 406223E
Spindle reversible, left shut-off Push To Start for left rotation Reverse by Remote Start	Type Part no.	346-338-31UL 406469D	346-438-31UL 406469E
Spindle reversible, right shut-off Remote Start in drive direction and in reverse	Type Part no.	346-330-31U 406282D	346-430-31U 406282E
Spindle reversible, left shut-off Remote Start in drive direction and in reverse	Type Part no.	346-330-31UL 406475D	346-430-31UL 406475E
Reduction Gear¹⁾	Part no.	407204A	407204A
Gear ratio		i = 4	i = 4
Torque min.	Nm / in.lbs	4 / 35	4 / 35
Torque max.	Nm / in.lbs	35 / 310	58 / 513
Speed, idling	rpm	160	80
Air consumption	m³/min / cfm	0.45 / 16	0.45 / 16
Weight	kg / lbs	3.5 / 7.7	3.5 / 7.7
Push to start pressure	N / lbs	45 / 9.9	45 / 9.9
Pressure at max. screwdriver stroke	N / lbs	120 / 26	120 / 26
Hose for air supply (O.D. / I.D.)	mm (in.)	12 / 9 (.472 / ²³ / ₆₄)	12 / 9 (.472 / ²³ / ₆₄)
Hose for function control (O.D. / I.D.) (O.D. tolerances of connection hoses according to Cetop RP 54 P)	mm (in.)	4 / 2.5 (.157 / ³ / ₃₂)	4 / 2.5 (.157 / ³ / ₃₂)
External square drive DIN 3121		F10 (3/8")	F10 (3/8")
Quick change chuck mounted		no	no
Suitable tool inserts and connecting components with a drive as per DIN 3121		H10 (3/8")	H10 (3/8")

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

1) reduction gear as optional equipment

Screwdriver Style		Motor Size 3 for reduction gear (to increase torque value)		
Spindle right rotation, right shut-off Push To Start	Type Part no.	346-338-31 406109D	346-438-31 406109E	346-438-31 406109E
Spindle left rotation, left shut-off Push To Start	Type Part no.	346-338-31L 406446D	346-438-31L 406446E	346-438-31L 406446E
Spindle right rotation, right shut-off Remote Start	Type Part no.	346-330-31 406482D	346-430-31 406482E	346-430-31 406482E
Spindle left rotation, left shut-off Remote Start	Type Part no.	346-330-31L 406484D	346-430-31L 406484E	346-430-31L 406484E
Reduction Gear ¹⁾	Part no.	3331781A	3331781A	3431551A
Gear ratio		i = 6	i = 6	i = 7
Torque min.	Nm / in.lbs	6 / 53	6 / 53	7 / 62
Torque max.	Nm / in.lbs	62 / 548	105 / 930	140 / 1240
Speed, idling	rpm	130	60	50
Air consumption	m³/min / cfm	0.45 / 16	0.45 / 16	0.45 / 16
Weight	kg / lbs	4.1 / 9	4.1 / 9	4.4 / 10
Push to start pressure	N / lbs	45 / 9.9	45 / 9.9	45 / 9.9
Pressure at max. screwdriver stroke	N / lbs	160 / 35	160 / 35	160 / 35
Hose for air supply (O.D. / I.D.)	mm (in.)	12 / 9 (.472 / ²³ / ₆₄)	12 / 9 (.472 / ²³ / ₆₄)	12 / 9 (.472 / ²³ / ₆₄)
Hose for function control (O.D. / I.D.) (O.D. tolerances of connection hoses according to Cetop RP 54 P)	mm (in.)	4 / 2.5 (.157 / ³ / ₃₂)	4 / 2.5 (.157 / ³ / ₃₂)	4 / 2.5 (.157 / ³ / ₃₂)
External square drive DIN 3121		E12.5 (1/2")	E12.5 (1/2")	F12.5 (1/2")
Quick change chuck mounted		no	no	no
Suitable tool inserts and connecting components with a drive as per DIN 3121		G12.5 (1/2")	G12.5 (1/2")	H12.5 (1/2")
Spindle reversible, right shut-off Push To Start for right rotation Reverse by Remote Start	Type Part no.	346-338-31U 406223D	346-438-31U 406223E	346-438-31U 406223E
Spindle reversible, left shut-off Push To Start for left rotation Reverse by Remote Start	Type Part no.	346-338-31UL 406469D	346-438-31UL 406469E	346-438-31UL 406469E
Spindle reversible, right shut-off Remote Start in drive direction and in reverse	Type Part no.	346-330-31U 406282D	346-430-31U 406282E	346-430-31U 406282E
Spindle reversible, left shut-off Remote Start in drive direction and in reverse	Type Part no.	346-330-31UL 406475D	346-430-31UL 406475E	346-430-31UL 406475E
Reduction Gear ¹⁾	Part no.	3331781A	3331781A	3431551A
Gear ratio		i = 6	i = 6	i = 7
Torque min.	Nm / in.lbs	6 / 53	6 / 53	7 / 62
Torque max.	Nm / in.lbs	52 / 460	88 / 778	140 / 1240
Speed, idling	rpm	100	50	40
Air consumption	m³/min / cfm	0.45 / 16	0.45 / 16	0.45 / 16
Weight	kg / lbs	4.4 / 9.7	4.4 / 9.7	4.7 / 10.3
Push to start pressure	N / lbs	45 / 9.9	45 / 9.9	45 / 9.9
Pressure at max. screwdriver stroke	N / lbs	160 / 35	160 / 35	160 / 35
Hose for air supply (O.D. / I.D.)	mm (in.)	12 / 9 (.472 / ²³ / ₆₄)	12 / 9 (.472 / ²³ / ₆₄)	12 / 9 (.472 / ²³ / ₆₄)
Hose for function control (O.D. / I.D.) (O.D. tolerances of connection hoses according to Cetop RP 54 P)	mm (in.)	4 / 2.5 (.157 / ³ / ₃₂)	4 / 2.5 (.157 / ³ / ₃₂)	4 / 2.5 (.157 / ³ / ₃₂)
External square drive DIN 3121		E12.5 (1/2")	E12.5 (1/2")	F12.5 (1/2")
Quick change chuck mounted		no	no	no
Suitable tool inserts and connecting components with a drive as per DIN 3121		G12.5 (1/2")	G12.5 (1/2")	H12.5 (1/2")

Performance data relate to an air pressure of 6.3 bar (90 PSI) ¹⁾ reduction gear as optional equipment



- Ⓐ Air supply connection for push to start
Ⓑ Air supply connection for remote start

Motor Size 3 with reduction gear 3331781A

Type				Dimensions (mm)																			
Spindle right-/left rotation				A1	A2	A3	A4	A5	A6	A7	B1	B2	B3	B4	C1	C2	C3	C4	C5	C6	C7	C8	C9
346-338-31	346-338-31L	346-330-31	346-330-31L	357	226	10	60	15	19	193	36	12	22	66	28	37	18	35	21	50	36	45	–
346-438-31	346-438-31L	346-430-31	346-430-31L																				
Spindle reversible																							
346-338-31U	346-338-31UL	346-330-31U	346-330-31UL	357	226	10	60	15	19	193	36	12	22	66	28	37	18	35	21	50	36	45	36
346-438-31U	346-438-31UL	346-430-31U	346-430-31UL																				

Motor Size 3 with reduction gear 3431551A

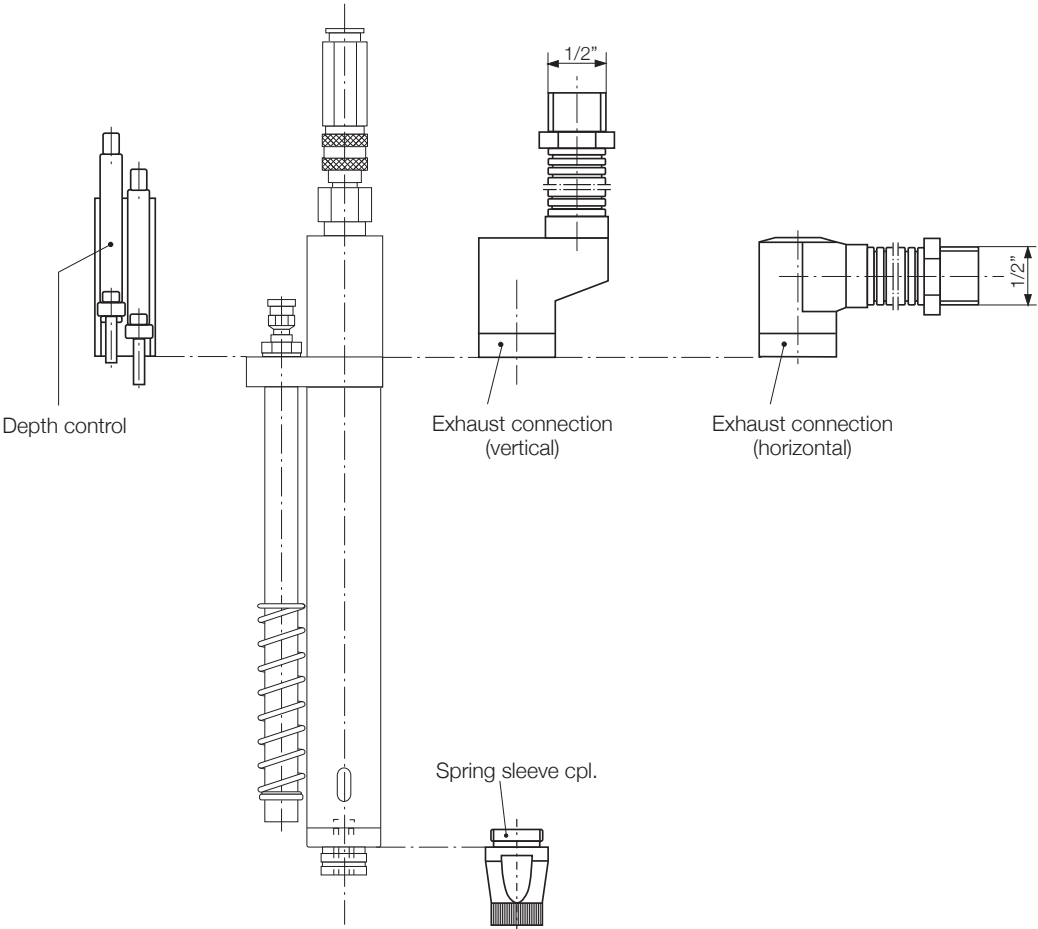
Type				Dimensions (mm)																			
Spindle right-/left rotation				A1	A2	A3	A4	A5	A6	A7	B1	B2	B3	B4	C1	C2	C3	C4	C5	C6	C7	C8	C9
346-438-31	346-438-31L	346-430-31	346-430-31L	357	226	10	60	15	19	193	36	12	22	83	28	37	18	35	21	50	36	45	-
Spindle reversible																							
346-438-31U	346-438-31UL	346-430-31U	346-430-31UL	357	226	10	60	15	19	193	36	12	22	83	28	37	18	35	21	50	36	45	36

Included in delivery:	Set of couplers · Set of torque and adjustment tools · Set of clutch springs
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Optional Equipment:

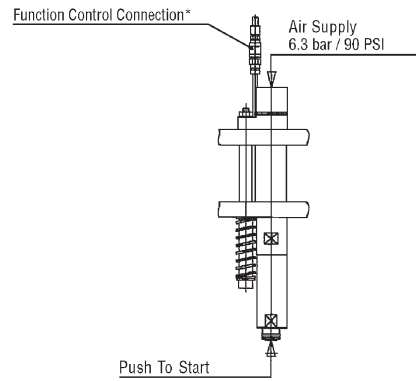
		Motor Size 0	Motor Size 1	Motor Size 2	Motor Size 3	Motor Size 4
Exhaust connection (vertical) ¹⁾ (connection piece with 2 m / 6.6 ft. hose)	Part no.	334615C	386924G	386924A	386924C	351820R
Exhaust connection (horizontal) ¹⁾ (connection piece with 2 m / 6.6 ft. hose)	Part no.	–	386924H	386924B	386924D	351820U
Depth control (double) incl. 2 cables (with straight plug) 5 m / 16.4 ft.	Part no.	on request	on request	on request	on request	on request
Spring sleeve cpl.	Part no.	364670A	364671A	364672A	364672A	–
Spring sleeve cpl., with vacuum connection (in connection with finder, see leaflet: Inserting tools D3320E)	Part no.	364670C	364671D	364672C	364672C	–

¹⁾ for corresponding exhaust filter/silencer (see leaflet D3340E)



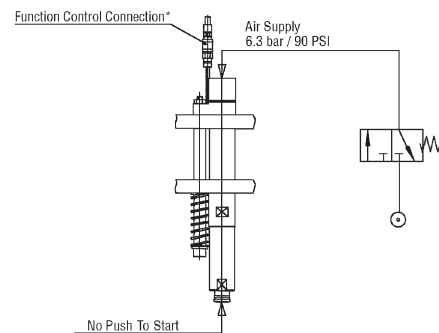
Push To Start

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



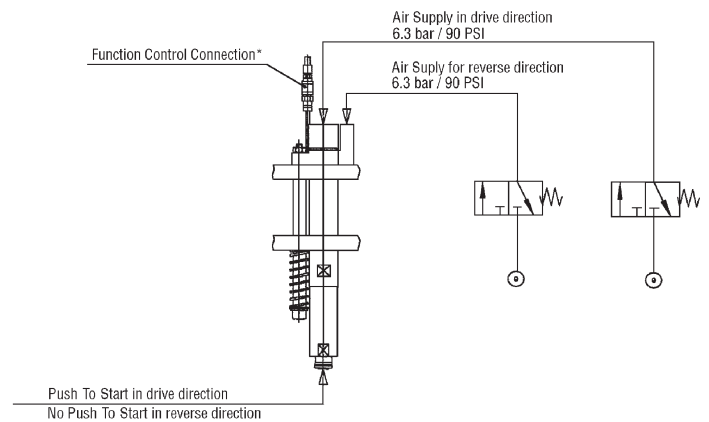
Remote Start (3/2-way valve)

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



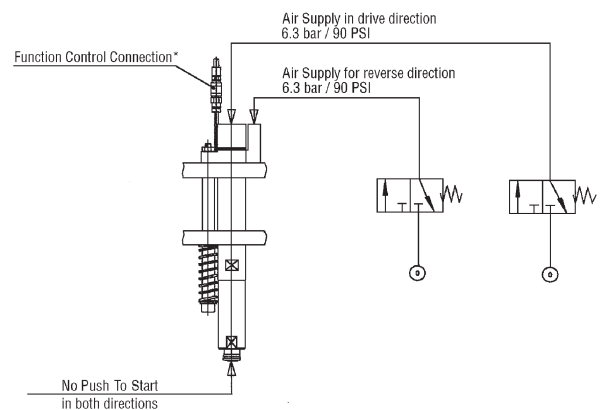
Push To Start in drive direction and reversible by remote port (3/2-way valve)

Driver reversible
Torque adjustable in drive direction
In reverse direction tool drives with
full power



Remote Start (3/2-way valve) in drive direction and in reverse

Driver reversible
Torque adjustable in drive direction
In reverse direction tool drives with
full power



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