

Screwdriver Spindles pneumatic



SENSOMAT - The Screwdriver with regulated clutch function

Seating torque from 0.3 – 5 Nm (3 – 44 in.lbs)

- Thread forming with maximum motor power
- Seating torque less than driving torque
- Thread forming instead of thread damaging
- Simple integration
- Smallest mounting dimensions

Our pneumatic screwdriver spindles SENSOMAT with mechanical clutch function are particularly suitable for applications such as:

- Sheet metal assemblies
- Wood assemblies
- Self-tapping through bolts

The SENSOMAT has been specially designed for screw joints where the screwdriving torque (forming torque) is close to or even higher than the shut-off torque due to high friction during assembly.

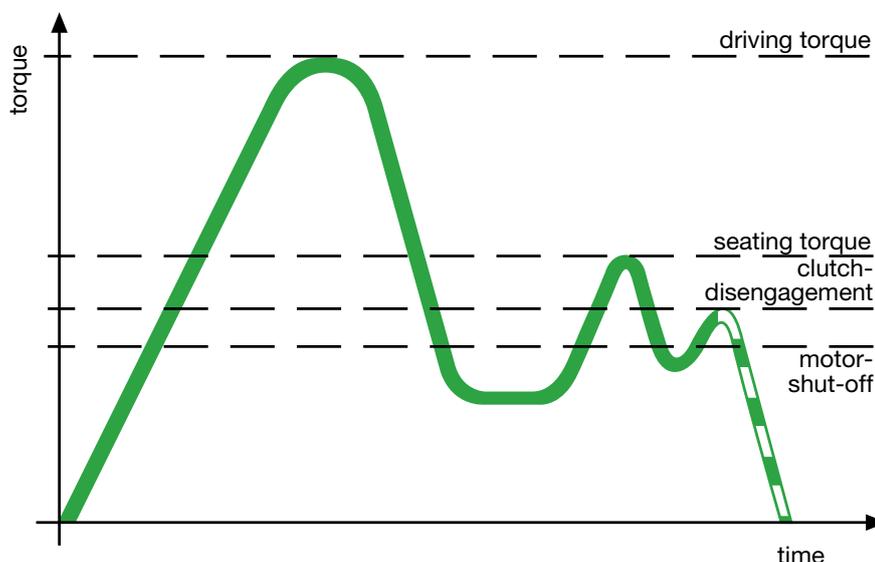
In this way for example thread forming or thread cutting screws can be reliably processed with this screwdriver which is equipped with a mechanical clutch lock – there is no chance of damaging the screw by over-tightening.



SENSOMAT – The Screwdriver with regulated clutch function

Sensomat

driving torque > seating torque (thread forming screw)



The SENSOMAT control screwdriver tightens the screw with full motor torque. Just before the base of the screw head is seated, the shut-off clutch is released and the screwdriver switches off exactly at the pre-set torque. The screw is completely screwed in without damaging the screw connection.

The SENSOMAT, a further development of the well-known MINIMAT screwdrivers achieves high torque accuracy and $\leq 3\%$ standard deviation with the help of the highly accurate shut-off clutch.

Torque accuracies of $< 3\%$ standard deviation and thus C_{mk} values of ≥ 1.67 with a tolerance of $\pm 15\%$ can be reached * with these screwdrivers. Statistically speaking, the error rate is less than 0.6 per one million screw assemblies.

*) under suitable process conditions

TECHNICAL DATA SENSOMAT Motor Size 2

Screwdriver style		Motor Size 2		
Spindle, right-rotation, right shut-off Push-To-Start	Type	347S-228-31	347S-328-31	347S-528-31
	Part no.	391488A	391488B	391488C
Spindle, right-rotation, right shut-off Remote-Start	Type	347S-220-31	347S-320-31	347S-520-31
	Part no.	391489A	391489B	391489C
Seating torque, minimum	Nm / in.lbs	0.5 / 4.4	0.4 / 3.5	0.3 / 3
Seating torque, maximum	Nm / in.lbs	1.6 / 14	3 / 26	5 / 44
Driving torque, maximum	Nm / in.lbs	2 / 17.6	3.3 / 29	5.5 / 49
Speed, idling	rpm	4000	1550	680
Air consumption	m ³ /min / cfm	0.3 / 11	0.3 / 11	0.3 / 11
Diameter max.	mm / in.	27 / 1 ¹ / ₁₆	27 / 1 ¹ / ₁₆	27 / 1 ¹ / ₁₆
Length	mm / in.	245 / 9 ⁴¹ / ₆₄	245 / 9 ⁴¹ / ₆₄	245 / 9 ⁴¹ / ₆₄
Weight	kg / lbs	0.9 / 2	0.9 / 2	0.9 / 2
Push-to-start pressure	N / lbs	24 / 5	24 / 5	24 / 5
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 PR54P)				
Internal hex. drive DIN ISO 1173		F6.3 (1/4")	F6.3 (1/4")	F6.3 (1/4")
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")
Quick change chuck, mounted		yes	yes	yes
Included in delivery:		Set of coupler and connector plug · Set of torque adjustment tools · Set of clutch springs		

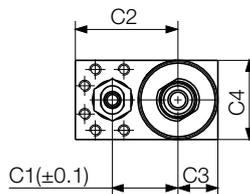
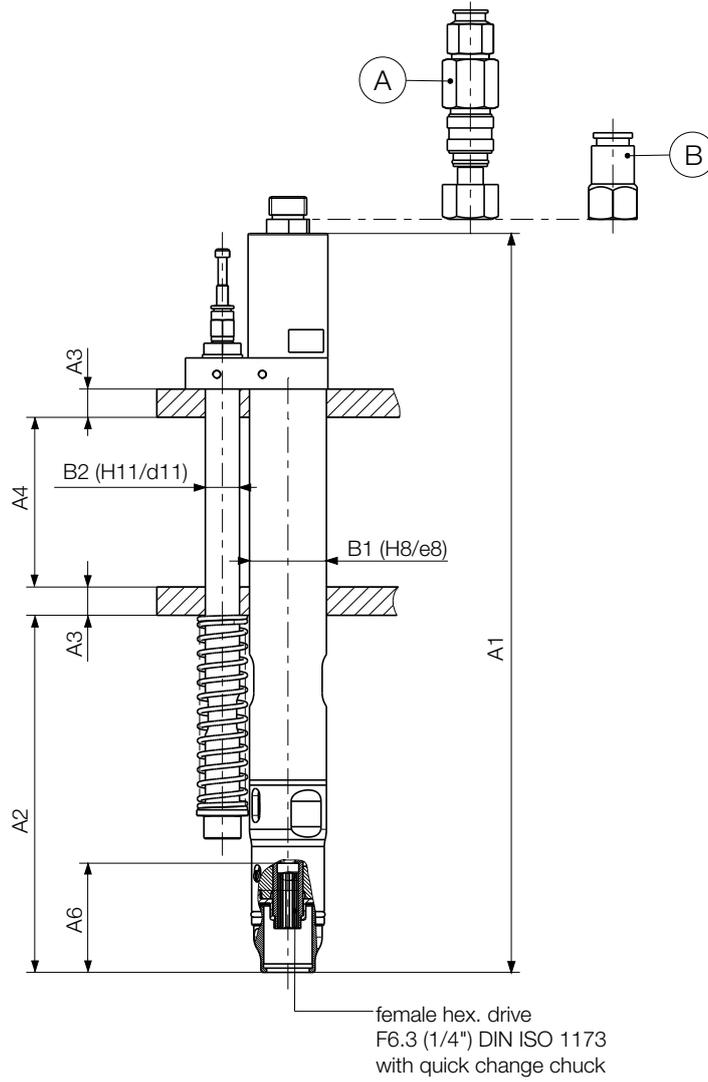
Performance data relate to an air pressure of 6.3 bar (90 PSI)



Suitable tool inserts → product catalog D3320E

DIMENSION SHEET

Motor Size 2
 Spindle
 right-rotation / right shut-off



A = air supply for push-to-start
 B = air supply for start by remote valve

398821

Motor Size 2			Dimensions (mm)											
Type			A1	A2	A3	A4	A5	A6	B1	B2	C1	C2	C3	C4
Spindle right rotation / right shut-off														
347S-228-31	347S-328-31	347S-528-31	261.25	126.25	10	60	-	38.6	27	12	23	36	14	28
347S-220-31	347S-320-31	347S-520-31	259	124.5	10	60	-	38.6	27	12	23	36	14	28

TECHNICAL DATA SENSOMAT Motor Size 3

Screwdriver style		Motor Size 3	
Spindle, right-rotation, right shut-off Push-To-Start	Type Part no.	346S-238-31 409280B	346S-738-31 409280C
Spindle, right-rotation, right shut-off Remote-Start	Type Part no.	346S-230-31 40929B	346S-730-31 409297C
Seating torque, minimum	Nm / in.lbs	0.5 / 4.4	0.5 / 4.4
Seating torque, maximum	Nm / in.lbs	4 / 35.4	5 / 44
Driving torque, maximum	Nm / in.lbs	4.5 / 40	7 / 62
Speed, idling	rpm	2500	1400
Air consumption	m ³ /min / cfm	0.45 / 16	0.45 / 16
Diameter max.	mm / in.	36 / 1 ¹³ / ₃₂	36 / 1 ¹³ / ₃₂
Length	mm / in.	264.5 / 10 ¹³ / ₃₂	264.5 / 10 ¹³ / ₃₂
Weight	kg / lbs	1.3 / 2.9	1.3 / 2.9
Push-to-start pressure	N / lbs	38 / 8	38 / 8
Pressure at max screwdriver stroke	N / lbs	116 / 26	116 / 26
Hose for air supply (O.D./I.D.)	mm / in.	10 / 7 (.422 / ¹⁷ / ₆₄)	10 / 7 (.422 / ¹⁷ / ₆₄)
Hose for function control (O.D./I.D.)	mm / in.	4 / 2.5 (.157 / ³ / ₃₂)	4 / 2.5 (.157 / ³ / ₃₂)
(O.D. tolerances of connection hoses according to Cetop PR54P)			
Internal hex. drive DIN ISO 1173		F6.3 (1/4")	F6.3 (1/4")
Suitable tool inserts and connecting components with a drive as per DIN ISO 1173		E6.3 (1/4")	E6.3 (1/4")
Quick change chuck, mounted		yes	yes
Included in delivery:	Set of coupler and connector plug · Set of torque adjustment tools · Set of clutch springs		

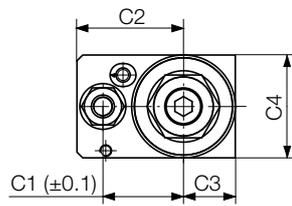
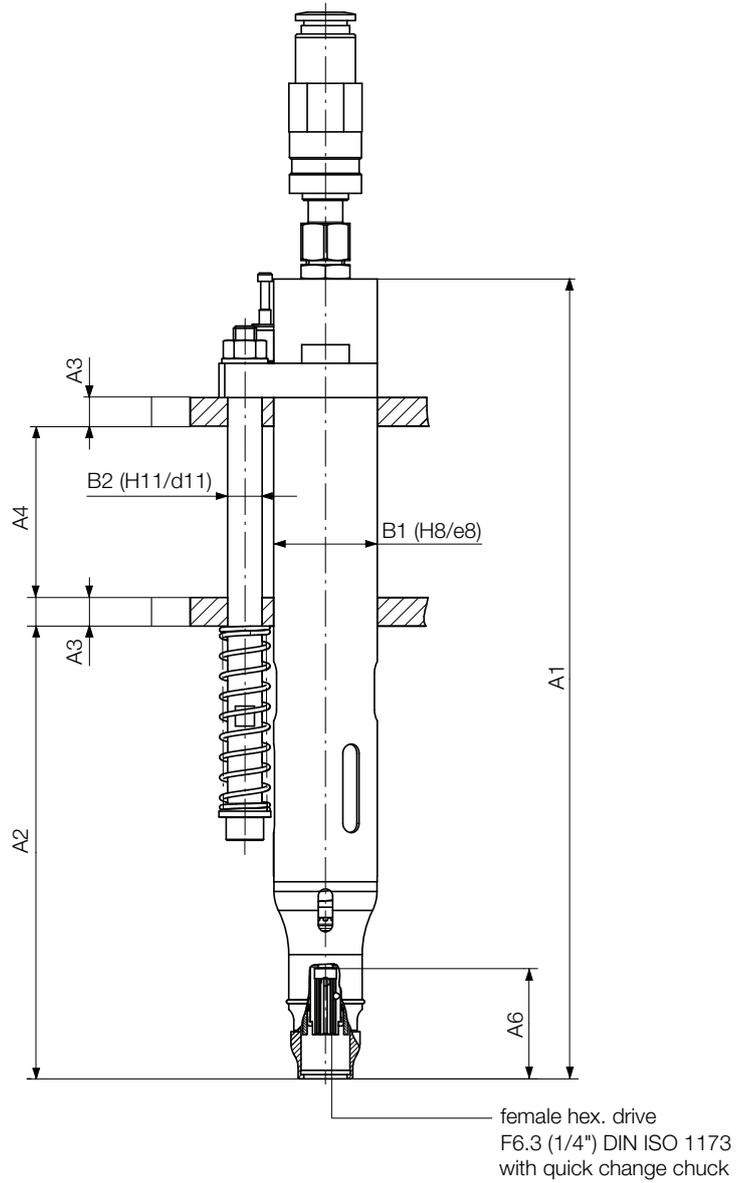
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Suitable tool inserts → product catalog D3320E

DIMENSION SHEET

Motor Size 3
 Spindle
 right-rotation / right shut-off

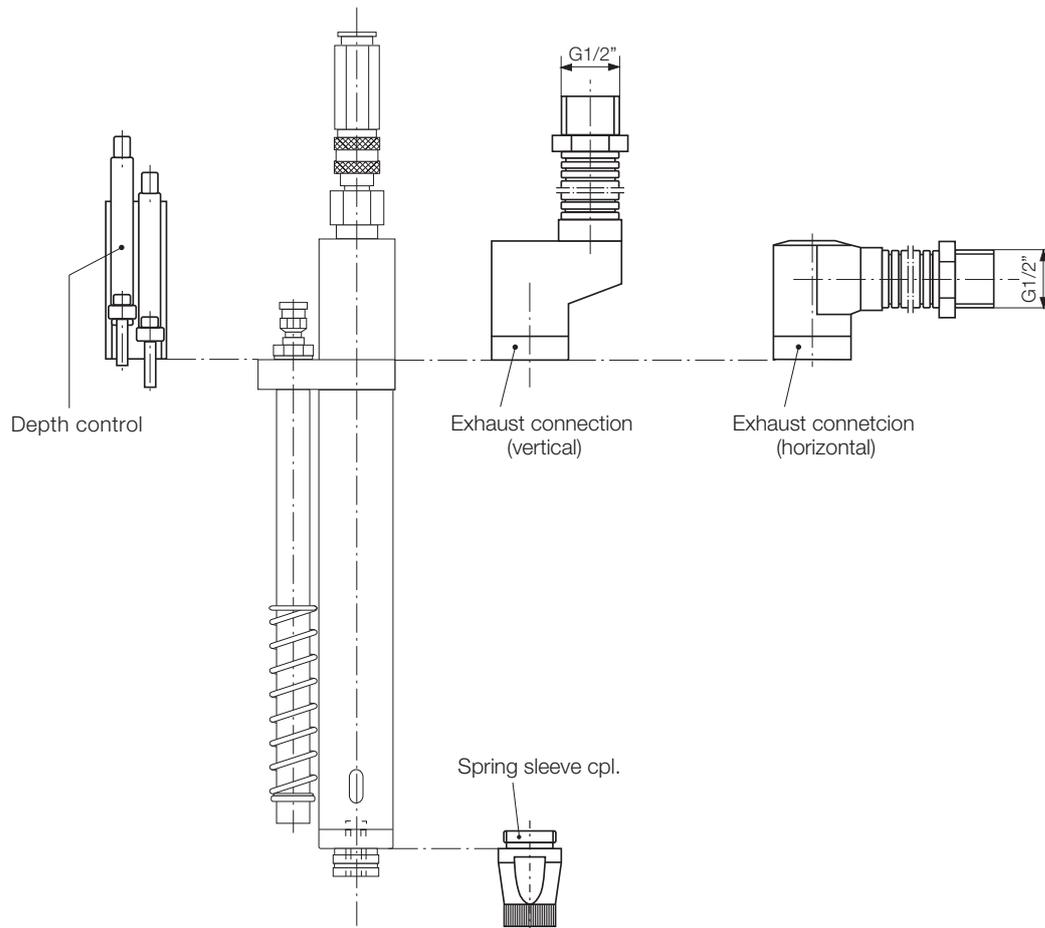


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Motor Size 3		Dimensions (mm)											
Type		A1	A2	A3	A4	A5	A6	B1	B2	C1	C2	C3	C4
Spindle right rotation / right shut-off													
346S-238-31	346S-738-31	280	158.5	10	60	-	38.6	36	12	28	37	18	36
346S-230-31	346S-730-31	278	156.5	10	60	-	38.6	36	12	28	37	18	36

OPTIONAL EQUIPMENT

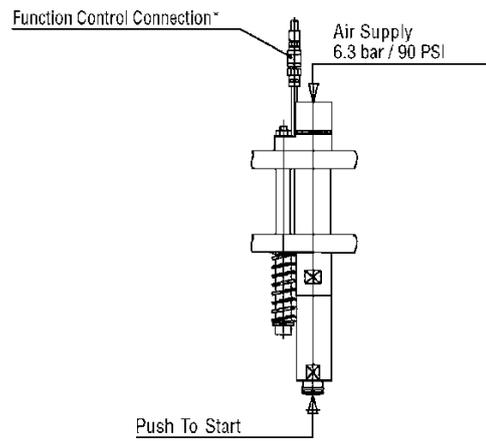
		Motor Size 2	Motor Size 3
Exhaust connection (vertical) (connection piece with 2 m / 6.6 ft. hose)	Part no.	386924A	386924C
Exhaust connection (horizontal) (connection piece with 2 m / 6.6 ft. hose)	Part no.	386924B	386924D
Screwdriver adapter	Part no.	9082434A	9082435A
Depth control digital	Part no.	941177I	941177I
Depth control analog 10 mm	Part no.	908838D plus amplifier 813712	908838D plus amplifier 813712
Sensor sleeve for screwdriver spindles with screwfeeding	Part no.	355311	355311
Sensor sleeve for screwdriver spindles without screwfeeding (see product catalogue: Accessories D3320E, page 14 and 15)			
PE converter 1/8"	Part no.	823090	
Adjustment bushing (for torque adjustment without sensor sleeve)	Part no.	461319	461319



FUNCTION DESCRIPTION DRIVER-START

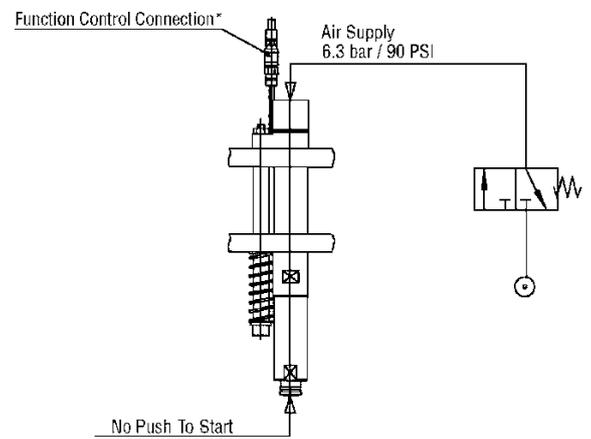
Push To Start

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



Remote Start (3/2-way valve)

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



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

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