

Test report: Machinery capability investigation
from industry screwdriver



C. & E. FEIN GmbH
Schwäbisch Gmünd
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Maschine typ : Mid-mounted handle Date : 02.09.2025

Model variant : ASM 18-3 PC

Product number : 71127700940

Manufacturer : C.&E. Fein GmbH

Stage of development: Series

MCI - Typ : Homologation

Number of steps : 1-step

Test bench - ID : SCS FTY.0299

Screw connection class : 2

Fitting tolerance : 10,0%

1	2	3	4	5	6
5,0%	10,0%	12,0%	15,0%	20,0%	25,0%

Torque range : $M_{min} = 0,50$ Nm $M_{max} = 3,00$ Nm

Idle speed : $n = 600$ min⁻¹ Weight incl. Battery : $m = 1,50$ kg

Battery voltage : $U = 18,0$ V Sound pressure level : $L_{pA} = <81$ dB(A)

Battery capacity : $Q = 5200$ mAh Undervoltage detection : ☒

Torque range investigation : Testing machine : 3 Stück

$30\% \rightarrow M_{30\%} = M_{min} + 30\% \times (M_{max} - M_{min}) = 1,25$ Nm
 $80\% \rightarrow M_{80\%} = M_{min} + 80\% \times (M_{max} - M_{min}) = 2,50$ Nm
 $M_{max} = 100\% \rightarrow M_{100\%} = M_{min} + 100\% \times (M_{max} - M_{min}) = 3,00$ Nm

Information on all 3 test items

Load level		30%		80%		100%	
Test torque	$M_d =$	1,25		2,50		3,00	
Joints		hard	soft	hard	soft	hard	soft
		30°	360°	30°	360°	30°	360°
$c_{m \min} =$		2,32	2,10	2,73	2,77	2,13	3,26
$c_{mk \min} =$		2,14	1,82	2,58	2,48	1,82	3,19

Name :		Date :	
Carried out by	:	L. Feldnick	07.05.2025
Test report prepared by	:	D. Schimpf	02.09.2025

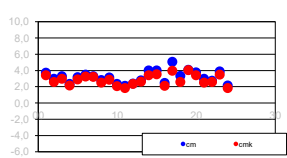
Testbench Measuring				MCS for FEIN-Project : 3		Homologation		Date: 02.09.2025			
ASM 18-3 PC				ScrewdriverType ASM		Accuracy-Class 10,0%		Class : 2			
Variant:				18-3 PC		M _{range} =		M _{min} up to M _{max}			
						n _{given} = 600 rpm		U = 18,00 V			
								cycles: 100			
MCSs	M _d [Nm]	Angle [°]	M _q [Nm]	ΔM _{q 1/2} [Nm]	s [Nm]	c _m [1]	c _{mk} [1]	n [min ⁻¹]	Remarks		
1	1,00	360°	1,008		0,009	3,70	3,39	585	71127700940 2025-02.0000001	20%	
1	1,00	30°	1,013	0,005	0,011	2,95	2,58	575			
1	1,25	360°	1,261		0,013	3,26	2,98	581		30%	
1	1,25	30°	1,260	0,001	0,018	2,32	2,14	570			
1	2,50	360°	2,520		0,026	3,16	2,90	575		80%	
1	2,50	30°	2,519	0,001	0,024	3,49	3,23	581			
1	3,00	360°	3,006		0,031	3,26	3,19	573		100%	
1	3,00	30°	3,035	0,029	0,036	2,81	2,49	566			
2	1,00	360°	1,008		0,011	3,11	2,85	577	71127700940 2025-02.0000002	20%	
2	1,00	30°	1,011	0,003	0,014	2,32	2,07	583			
2	1,25	360°	1,267		0,020	2,10	1,82	583		30%	
2	1,25	30°	1,249	0,018	0,018	2,37	2,35	573			
2	2,50	360°	2,514		0,030	2,77	2,61	579		80%	
2	2,50	30°	2,465	0,049	0,021	3,97	3,41	575			
2	3,00	360°	3,035		0,025	4,00	3,53	573		100%	
2	3,00	30°	3,043	0,008	0,041	2,46	2,11	568			
3	1,00	360°	1,022		0,007	5,03	3,94	575	71127700940 2025-02.0000003	20%	
3	1,00	30°	1,023	0,001	0,010	3,31	2,56	573			
3	1,25	360°	1,249		0,010	4,05	4,01	579		30%	
3	1,25	30°	1,262	0,013	0,011	3,74	3,39	575			
3	2,50	360°	2,542		0,028	2,98	2,48	577		80%	
3	2,50	30°	2,514	0,028	0,031	2,73	2,58	577			
3	3,00	360°	3,029		0,026	3,86	3,49	578		100%	
3	3,00	30°	3,044	0,015	0,047	2,13	1,82	585			

Start of measurement: 09:00

End of measurement: 16:00

Homologation: 3 Machines out of a series, each 20%, 30%, 80% and 100% the torque-ranges.
Waiting time between load changes see specification VDI 2647 February 2013 Homologation.
Series of measurement per machine, Nominal Torque and Screwinghardness each 100 Load changes (LW).
Measurement based on VDI 2647 February 2013

c _m min = 2,10	c _m q = 3,16	c _m max = 5,03	s _{cm} = 0,712
c _{mk} min = 1,82	c _{mk} q = 2,83	c _{mk} max = 4,01	n _{MFU} = 24
Name: D. Schimpf		Project: 3 : ASM 18-3 PC	
 C. & E. FEIN GmbH Schwäbisch Gmünd		Stage of Development : Series	



c _m min	c _m - Minimum Value
c _{mk} min	c _{mk} - Minimum Value
c _m q	c _m - Mid Value
c _{mk} q	c _{mk} - Mid Value
c _m max	c _m - Maximum Value
c _{mk} max	c _{mk} - Maximum Value
s _{cm}	c _m - Standard deviation
s _{cmk}	c _{mk} - Standard deviation
n _{MCS}	No. of Machine Capability Study (MCS)
ν	correction value