

STa 6000 ***Data analyzer***

Better and faster quality checks,
power and flexibility in your hand.



Atlas Copco



QUALITY FOR YOUR TOOLS AND PROCESSES

Improve everyday tasks for Quality supervisors and operators. Reduced weight and compact design makes the STa 6000 easy to carry along the line. Checking tools in the Tool Crib and on the line and checking tightened joints means quality guaranteed.



STa 6000 DATA ANALYZER



Features

- A Intuitive color screen.** STa 6000 color screen features intuitive icon menus.
- B Clear feedback.** Feedback is clearly displayed, with the possibility to add a gauge indicator and fully customize information.
- C No PC required.** Everything is set and analyzed right on the device – no need for a PC!
- D Easy checking.** With the STa 6000 mounted on the wall and connected to an SRTT-L, operators can quickly test their tools prior to production. If the line is being rebalanced, only the SRTT-L transducer has to be changed, and not the entire system.
- E Notes – preconfigured or new.** STa 6000 makes adding test notes easy. Notes can be prepared in advance for quick selection on the STa 6000. New notes can always be added on the go.
- F Rubber protection and stand.** STa 6000 can be complemented with a rubber protection that also improves operator grip. The STa 6000 stand can be used with or without the rubber protection. Secured but still portable.



Weight	0.5 Kg
Screen size	3.2" 320x240
Battery duration	8 hours in normal usage 6 hours in continuous operation (1 test every 30 sec.)
Transducers	SRTT, SRTT-L, IRTT, MRTT, QRTT
Transducers	mV/V and V transducers
Memory	16 GB - 1000 Pset & Tools - 50000 results & traces
Modules	IRC-B, IRC-W, Barcode





Start with an assessment

Every tightening tool needs to be assessed in your tool crib to make sure that its performance fits the application assigned to it. Both tools that have been recently acquired, and tools that have been serviced.

With the quick programming feature, the STa 6000 gives operators the possibility to quickly start a test. Simply connect a transducer and select the type of tool to be tested. STa 6000 will program itself utilizing the information from the transducer.



Error-proofed tool testing and calibration

Quality of production is highly dependent on the performance of the tools used on the production line.

For this reason it is vital to have tools consistently checked on the line. With the STa 6000 quality operators can walk down the line testing the tools – without interfering with the production process.

And better yet; no PC is needed to program the device. Any Pset or configuration can be changed directly on the device.

Calibration and fine-tuning of tightening tools need no longer to be contracted to an external company. STa 6000 allows quality departments to complete calibrations in-house. Simply connect the STa 6000 to an Atlas Copco controller with either a Ethernet cable or with the small USB to serial adapter. All other operations are done by the STa 6000 as the Pset is automatically read from the controller. The readings are also acquired and the new calibration value is stored in the controller. Calibration made easy, fast and completely error-proofed.



SOFTWARE

Tools talk BLM

TTBLM is the basic software for programming the STa 6000. Quality managers can set up the tool and Pset databases on the STa 6000 from their own desktop, and retrieve all test results and traces as well. By connecting STa 6000 to the plant network with IRC-W modules, the operator can wirelessly retrieve any data from STa 6000 and the export it in Excel, PDF or image format.

TIP: Manage all the test results with Smart Excel. Use it to collect all the data from different STa 6000 devices and store.

Torque Supervisor

Torque Supervisor is the data management software that programs and integrates test results. Providing test scheduling, test reporting and analysis graphs, it keeps track of the history of all tool and joint tests.

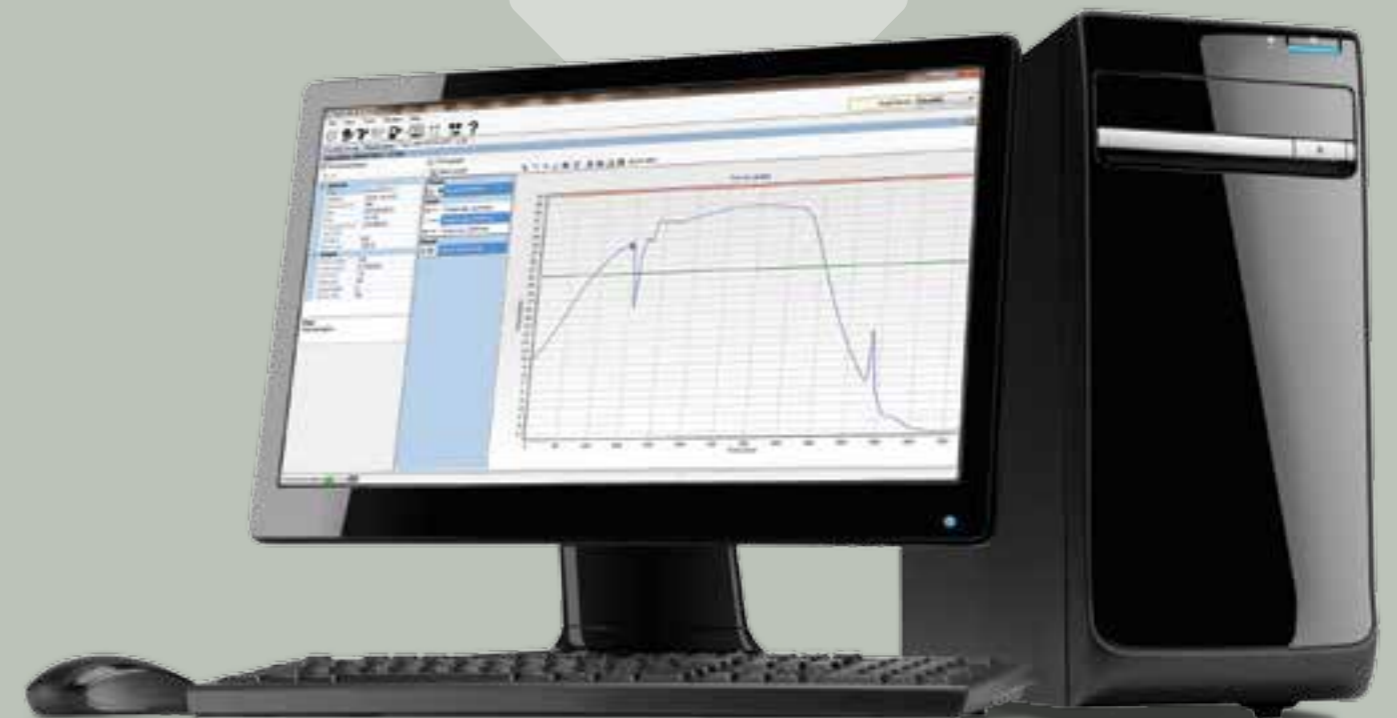
TIP: Transfer the information to the STa 6000 by creating tool check or residual test routes for the operators. Program it to make a work list for the operators by transferring only tools that have to be tested that day.

Model	Full	Light	Tool Crib	Residual	Advanced
JSB bench	•	•			
Tool Check route	•		•		•
Joint Check route	•			•	•

Effective and correct

Testing the tools is the first step to prevent quality issues but, by performing residual torque testing on production joints, quality departments are able to verify that the tightening process is effective and the joints are correctly tightened. The STa 6000 implements a specially developed algorithm to test residual torque on joints. Used in conjunction with

the MRTT-C, it will analyze the joint behavior as the operator performs the test. By analyzing torque vs angle behavior of the joint, operator influence during the test is eliminated. Clear feedback is provided through LEDs and vibration from the handle of the MRTT-C. This will increase operator responsiveness preventing any over-torquing.



TRANSDUCERS



SRTT-L

The SRTT-L is a transducer range designed for lower torque assembly tools. With exchangeable transducers and test joints, it can be used with any STa 6000. The modular design allows the user to scale his system as his needs to evolve.

QRTT

Fast and easy set-up with highest system accuracy, the QRTT transducers are used to test QST, QMX and ETX nutrunners as well as fixtured Tensor tool calibration. No special test adaptation device between the spindle and the product is needed!



IRTT-B

Incorporating significant improvements in durability and accuracy the IRTT-B is the new generation of Atlas Copco torque and torque/angle in-line rotary transducers. The all new angle reading system gives better resolution and longer life. The IRTT-Bs memory chip is read by the STa 6000, which automatically sets up the transducer characteristics, avoiding any possible errors.



SRTT-B

The SRTT-B is the new generation of Atlas Copco stationary reaction torque transducers with improved durability. The new patented system of fixing the joint simulator on top, avoids any mechanical play. A complete range of accessories and a mechanical joint simulator enables you to test shut-off tools or wrenches.

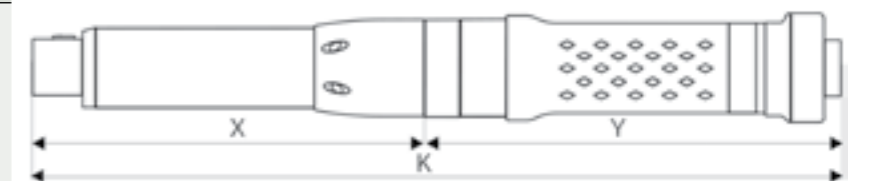


MRTT-C

Using the advanced Torque/Angle algorithm – same as the ST Wrench) – the MRTT-C can be used to detect the residual torque. Torque or Torque/ Angle reading depending to the smart-HEAD. It is equipped with LED like STwrench, vibrating handle, a buzzer, TAG recognition and a light in front.



MRTT-C Model	Length mm			Weight	
	X	Y	K	Kg	lb
30 Nm	159	166	325	0.62	1.36
80 Nm	159	166	325	0.64	1.41
150 Nm	262	166	428	0.97	2.13
250 Nm	408	166	574	1.20	2.64
400 Nm	575	166	741	1.35	2.97
600 Nm	1040	166	1206	2.12	4.67



RBU

BASIC is the perfect solution for simple and quick tests.

QC RBU for operators requiring a complete testing solution.

AA RBU is the recommended solution for Advanced Analysis.

Hardware capability	BASIC	QC RBU	AA RBU
Number of Channels	1	1	1
Torque	yes	yes	yes
Angle (Encoder or Gyroscope)	yes	yes	yes
MRTT-C connection for joint checks	yes	yes	yes
Size in mm	110x200x45	110x200x45	110x200x45
Weight	> 500 g	> 500 g	> 500 g
Color Display	yes	yes	yes
Keyboard	yes	yes	yes
Results Storage	50000	50000	50000
Traces storage	50000	50000	50000
RBU - Rapid Backup Unit	no	yes	yes
Direct Power Supply (slow charger 6H)	yes	yes	yes
RJ45 (Ethernet)	yes	yes	yes
USB	yes	yes	yes
Non Atlas Copco analog transducer connection	yes	yes	yes
Software capability - onBoard			
Languages	yes	yes	yes
Multi-units	yes	yes	yes
Pset	1 (not saved)	1000	1000
Batch Count	yes	yes	yes
CW/CCW	yes	yes	yes
Database - Tool	no	1000	1000
Quick Programming	yes	yes	yes
Power Focus and Power Macs calibration	no	yes	yes
Traces on display	no	yes	yes
Advanced analysis graphs on display	no	no	yes
Custom measurement screen	no	yes	yes
Wi-Fi print	yes (IRC-W mod.)	yes (IRC-W mod.)	yes (IRC-W mod.)
Ethernet print	yes	yes	yes
Software Functionalities - onBoard			
- Tool Check			
Wrench testing	yes	yes	yes
Power tool testing	yes	yes	yes
Pulse Tool testing	yes	yes	yes
Min, Max, Med, Sigma statistics	yes	yes	yes
Cm/Cmk	no	yes	yes
SPC	no	yes	yes
Joint Check			
Yield point	yes	yes	yes
Residual Torque/Time	yes	yes	yes
Residual Torque/Angle	yes	yes	yes
Residual Torque/Peak	yes	yes	yes
Loose and Tight	yes	yes	yes
Software capability - connectivity			
ToolsTalk BLM to view/export results and traces via Wi-Fi (with IRC-W), USB/RJ45	yes	yes	yes
ToolsTalk BLM to program test strategies via Wi-Fi (with IRC-W), USB/RJ45	no	yes	yes
Torque Supervisor via Wi-Fi (with IRC-W), USB/RJ45	no	yes	yes
API via Wi-Fi (with IRC-W), USB/RJ45	no	yes (API RBU)	yes (API RBU)

MAKING TOOLS PERFORM AT THEIR BEST



STa 6000

Model	Ordering No.
STa 6000 Basic	8059 0956 60
STa 6000 RBU QC	8059 0956 62
STa 6000 RBU AA	8059 0956 63
STa 6000 RBU QC API	8059 0956 68
STa 6000 RBU AA API	8059 0956 69
STa 6000 rubber protection	8059 0956 76
STa 6000 stand	8059 0956 73
STa 6000 USB/Serial Adapter	8059 0956 74
Battery pack	8059 0955 61
Battery adapter	8059 0955 75
Battery charger	8059 0930 88
STa power supply*	4612 0300 21
IRC-B Module	8059 0920 10
IRC-W Module	8059 0920 15
BarCode Module	8059 0920 12
ACTA RS232 cable 3 m	4222 0546 03
ACTA RS232 cable 5 m	4222 0546 05

*The STa is provided with the power supply (Ordering No. 4612 0300 21) in the box. Battery has to be ordered separately.



Cables

Length	Ordering No.
1 m	4145 0982 01
3 m	4145 0982 03
5 m	4145 0982 05
3 m curled cable	4145 0971 03

If non Atlas Copco transducers are used one of the following cables are required.

Industrial style - model	Ordering No.
Transducer cable 3m 19-4	4145 0965 03
Transducer cable 3m 19-6	4145 0968 03
Transducer cable 3m 19-10	4145 0967 03

Adapters

Adapters	Drive		Ordering No.
	Hex mm	Sq. in	
1/2" to 1/4"	x	1/2	8059 0978 63
1/2" to 3/8"	x	1/2	8059 0978 64
3/8" to 3/6	36	x	8059 0978 65
1/2" to 3/6	36		8059 0978 66
1/2" to 5/0	50		8059 0978 67
3/4" to 5/0	50		8059 0978 68
1" to 5/0	50		8059 0978 69
1/4" - 1/4"			8059 0977 64
3/8" - 3/8"			8059 0977 65
1/2" - 1/2"			8059 0977 66
3/8" - 3/8"			8059 0977 67
1" - 1"			8059 0978 52
1/4" - 3/8"			8059 0977 68
3/8" - 1/2"			8059 0977 69
1/2" - 3/4"			8059 0977 70
3/4" - 1"			8059 0978 53



Transducer – MRTT-C

Model	Capacity		Drive mm	Weight		Length mm	Ordering No.
	Nm	ft lb		Kg	lb		
MRTT-C							8059 0930 10
smartHEAD only Torque							
smartHEAD 30	30	23	9x12	0.20	0.44	1675	8059 0920 30
smartHEAD 80	80	59	9x12	0.22	0.48	1675	8059 0920 42
smartHEAD 150	150	111	14x18	0.55	1.21	271.0	8059 0920 48
smartHEAD 250	250	185	14x18	0.78	1.72	417.0	8059 0920 54
smartHEAD 400	400	295	14x18	0.93	2.05	584.0	8059 0920 60
smartHEAD 600	600	443	21x26	1.70	3.75	1048.5	8059 0920 66
smartHEAD A Torque							
smartHEAD A15	15	11	9x12	0.19	0.42	1475	8059 0930 24
smartHEAD A30	30	23	9x12	0.19	0.42	1475	8059 0930 31
smartHEAD A80	80	59	9x12	0.20	0.44	1475	8059 0930 43
smartHEAD A150	150	111	14x18	0.55	1.21	271.0	8059 0930 48
smartHEAD A250	250	185	14x18	0.78	1.72	417.0	8059 0930 54
smartHEAD A400	400	295	14x18	0.93	2.05	584.0	8059 0930 60
smartHEAD A600	600	443	21x26	1.70	3.75	1048.5	8059 0930 66
smartHEAD A Torque + Angle sq							
smartHEAD Asq15	15	11	9x12	0.19	0.42	1475	8059 0930 28
smartHEAD Asq30	30	23	9x12	0.19	0.42	1475	8059 0930 32
smartHEAD Asq80	80	59	9x12	0.20	0.44	1475	8059 0930 44
smartHEAD Asq150	150	111	14x18	0.55	1.21	271.0	8059 0930 50
smartHEAD Asq250	250	185	14x18	0.78	1.72	417.0	8059 0930 56
smartHEAD Asq400	400	295	14x18	0.93	2.05	584.0	8059 0930 62

Transducer – SRTT-B

Model	Drive		Rated capacity		Ordering No.
	Hex mm	Sq. mm	Nm	ft lb	
SRTT-B 0.5-13		1/2	0.5	0.37	8059 0946 03
SRTT-B 2-13		1/2	2	1.47	8059 0946 09
SRTT-B 5-13		1/2	5	3.69	8059 0946 15
SRTT-B 25-36	36		25	18.40	8059 0946 28
SRTT-B 50-36	36		50	36.88	8059 0946 36
SRTT-B 100-36	36		100	73.76	8059 0946 45
SRTT-B 250-36	36		250	184.40	8059 0946 54
SRTT-B 500-50	50		500	368.78	8059 0946 63
SRTT-B 1000-50	50		1000	737.60	8059 0946 75
SRTT-B 2000-50	50		2000	1475.00	8059 0946 84

SRTT-B – Test Joint	Tool interface		SRTT-B interface		Ordering No.
	Hex mm	Sq. in	Hex mm	Sq. in	
TJ SRTT-B S – 0.5	1/4		1/2		8059 0940 01
TJ SRTT-B H – 0.5	1/4		1/2		8059 0940 02
TJ SRTT-B S – 2	1/4		1/2		8059 0940 03
TJ SRTT-B H – 2	1/4		1/2		8059 0940 04
TJ SRTT-B S – 5	1/4		1/2		8059 0940 05
TJ SRTT-B H – 5	1/4		1/2		8059 0940 06
TJ SRTT-B S – 10	1/4		1/2		8059 0940 20
TJ SRTT-B H – 10	1/4		1/2		8059 0940 21
TJ SRTT-B S – 25		3/8	36		8059 0940 07
TJ SRTT-B H – 25		3/8	36		8059 0940 08
TJ SRTT-B S – 50		1/2	36		8059 0940 09
TJ SRTT-B H – 50		1/2	36		8059 0940 10
TJ SRTT-B S – 100		1/2	36		8059 0940 11
TJ SRTT-B H – 100		1/2	36		8059 0940 12
TJ SRTT-B S – 250		1/2	36		8059 0940 13
TJ SRTT-B H – 250		1/2	36		8059 0940 14
TJ SRTT-B S – 500		3/4	50		8059 0940 15
TJ SRTT-B H – 500		3/4	50		8059 0940 16
TJ SRTT-B S – 1000		1	50		8059 0940 17
TJ SRTT-B S – 2000		1	50		8059 0940 18

Transducer – IRTT-B

Torque/Angle	Drive		Rated Capacity		Ordering No.
	Hex in	Sq. in	Nm	ft lb	
IRT-T-B 5-106	1/4		5	4	8059 0942 05
IRT-T-B 5-06		1/4	5	4	8059 0942 07
IRT-T-B 20-106	1/4		20	15	8059 0942 10
IRT-T-B 20-06		1/4	20	15	8059 0942 15
IRT-T-B 25-10		3/8	25	18	8059 0942 20
IRT-T-B 75-10		3/8	75	55	8059 0942 25
IRT-T-B 180-13		1/2	180	133	8059 0942 30
IRT-T-B 500-20		3/4	500	369	8059 0942 35
IRT-T-B 750-25		1	750	553	8059 0942 40
IRT-T-B 1400-25		1	1400	1033	8059 0942 45
IRT-T-B 3000-38		1-1/2	3000	2200	8059 0942 52
IRT-T-B 5000-38		1-1/2	5000	3685	8059 0942 56
IRT-T-B 1A-106	1/4		1	0.8	8059 0943 96
IRT-T-B 2A-106	1/4		2	1.5	8059 0943 01
IRT-T-B 5A-106	1/4		5	4	8059 0943 06
IRT-T-B 5A-06		1/4	5	4	8059 0943 08
IRT-T-B 20A-106	1/4		20	15	8059 0943 11
IRT-T-B 20A-06		1/4	20	15	8059 0943 16
IRT-T-B 25A-10		3/8	25	18	8059 0943 21
IRT-T-B 75A-10		3/8	75	55	8059 0943 26
IRT-T-B 180A-13		1/2	180	133	8059 0943 31
IRT-T-B 500A-20		3/4	500	369	8059 0943 36
IRT-T-B 750A-25		1	750	553	8059 0943 41
IRT-T-B 1400A-25		1	1400	1033	8059 0943 46
IRT-T-B 3000A-38		1-1/2	3000	2200	8059 0943 52
IRT-T-B 5000A-38		1-1/2	5000	3685	8059 0943 56
IRT-T-B 10000A-38		1-1/2	10000	7370	8059 0943 60

Transducer – SRTT-L

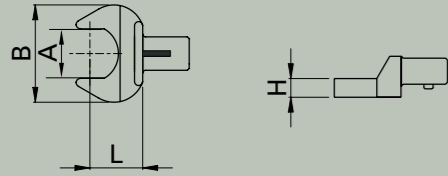
Type	Ordering No.
SRTT-L main plate	8059 0955 85

Type	Rated Capacity		Ordering No.
	Nm	ft lb	
SRTT-L 1 Nm	1	0.73	8059 0955 86
SRTT-L 4 Nm	4	2.95	8059 0955 87
SRTT-L 12 Nm	12	8.85	8059 0955 88
SRTT-L 30 Nm	30	22.12	8059 0955 89

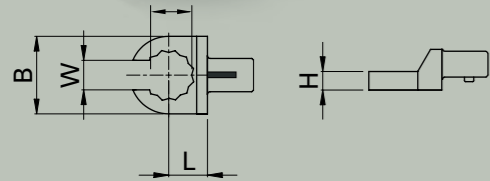
Type	Screw size	Rated Capacity		Ordering No.
		Nm	ft lb	
TJ SRTT-L M4 S -1	M4	1	0.73	4145 0984 80
TJ SRTT-L M4 H -1	M4	1	0.73	4145 0984 83
TJ SRTT-L M6 S -4	M6	4	2.95	4145 0984 82
TJ SRTT-L M6 H -4	M6	4	2.95	4145 0984 85
TJ SRTT-L M6 S -12	M6	12	8.85	4145 0985 80
TJ SRTT-L M6 H -12	M6	12	8.85	4145 0985 82
TJ SRTT-L M8 S -12	M8	12	8.85	4145 0985 81
TJ SRTT-L M8 H -12	M8	12	8.85	4145 0985 83
TJ SRTT-L M8 S -30	M8	30	22.12	4145 0986 80
TJ SRTT-L M8 H -30	M8	30	22.12	4145 0986 82
TJ SRTT-L M10 S -30	M10	30	22.12	4145 0986 81
TJ SRTT-L M10 H -30	M10	30	22.12	4145 0986 83

Test Joint for IRTT-B	Nominal Capacity		Tight angle at rated capacity	Ordering No.
	Nm	ft lb		
M4	1,5	1,1	45°	4145 0958 80
M4	2	1,5	90°	4145 0959 80
M4	3	2,2	45°	4145 0958 81
M6	4	3	90°	4145 0959 81
M6	6	4,4	45°	4145 0958 82
M6	7	5,1	90°	4145 0959 82
M6	9	6,6	45°	4145 0958 83
M6	10	7,3	90°	4145 0959 83
M8	15	11	30°	4080 0788 90
M8	15	11	54°	4080 0788 91
M8	20	14,8	180°	4080 0788 92
M8	25	18,4	60°	414 50958 84
M8	25	18,4	60°	4145 0959 84
M10	30	22	30°	4080 0789 90
M10	30	22	54°	4080 0789 91
M12	50	36,9	180°	4080 0790 92
M12	60	44	30°	4080 0790 90
M12	60	44	54°	4080 0790 91
M14	90	66	30°	4080 0791 90
M14	90	66	54°	4080 0791 91
M14	100	73,8	180°	4080 0791 92
M16	135	99,6	180°	4080 0837 92
M16	200	148	60°	4080 0865 90
M16	200	148	360°	4080 0866 90
M20	400	295	60°	4080 0867 90
M20	400	295	360°	4080 0868 90
M30	800	590	60°	4080 0876 95
M30	800	590	360°	

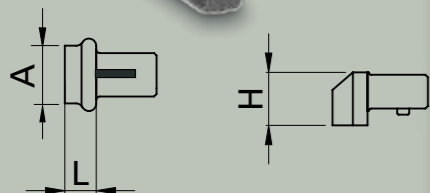
Standard end fitting tools with TAG



Type	A	B	H	L	g	Ordering No.	
	mm	mm	mm	mm			
Open end 9 x 12	7	22	5	17.5	40	4620 0001 00	
	8	22	5	17.5	39	4620 0002 00	
	9	26	5.5	17.5	38	4620 0003 00	
	10	26	5.5	17.5	42	4620 0004 00	
	11	26	5.5	17.5	41	4620 0005 00	
	12	30	7	17.5	43	4620 0006 00	
	13	30	7	17.5	48	4620 0007 00	
	14	35	8	17.5	52	4620 0008 00	
	15	35	8	17.5	51	4620 0009 00	
	16	38	8.5	17.5	58	4620 0010 00	
	17	38	8.5	17.5	60	4620 0011 00	
	18	42	9	20	71	4620 0012 00	
	19	42	9	20	74	4620 0013 00	
	Open end 4 x 18	13	30	7	25	128	4620 0049 00
		14	35	8	25	129	4620 0050 00
		15	35	8	25	132	4620 0051 00
		16	38	9	25	140	4620 0052 00
		17	38	9	25	136	4620 0053 00
		18	42	10	25	147	4620 0054 00
19		42	10	25	147	4620 0055 00	
21		50	11	25	171	4620 0056 00	
22		50	11	25	165	4620 0057 00	
24		53	12	25	167	4620 0058 00	
27		60	13	30	219	4620 0059 00	
30		66	14	30	245	4620 0060 00	
32	66	14	32.5	246	4620 0061 00		
34	66	14	32.5	239	4620 0062 00		



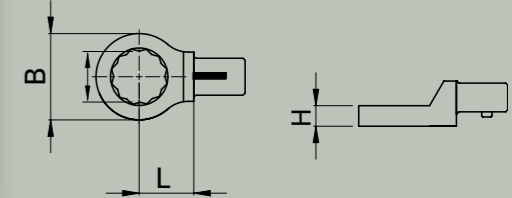
Type	Hex	B	H	W	L	g	Ordering No.
	mm	mm	mm	mm	mm		
Flared end 9 x 12	10	22	12	7.1	17.5	57	4620 0028 00
	11	22.5	12	8.6	17.5	55	4620 0029 00
	12	23.5	12	9	17.5	59	4620 0030 00
	13	25.2	12	10	17.5	55	4620 0031 00
	14	27	13	11	17.5	60	4620 0032 00
	16	30	13	13	17.5	65	4620 0033 00
	17	31.5	13	14	17.5	65	4620 0034 00
	18	33	15	14.8	17.5	74	4620 0035 00
	19	34.5	15	15.8	19	80	4620 0036 00
	21	37.5	15	16.2	19	88	4620 0037 00
	22	39	15	17	19	92	4620 0038 00
	24	42	15	18	19	75	4620 0039 00



Type	A	H	L	g	Ordering No.
	mm	mm	mm	mm	
Blank end 9 x12 for making up specials	8 x 14	14.5	8	30	4620 0048 00
Blank end 14 x18	11 x 25	21.5	21	98	4620 0084 00
Blank end 21 x26	13 x 30	30	13	220	4620 0085 00

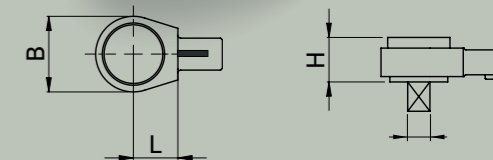
Standard end fitting tools with TAG

Type	Hex	B	H	L	g	Ordering No.	
	mm	mm	mm	mm			
Ring end 9 x 12	7	13	8	17.5	37	4620 0014 00	
	8	14.2	8	17.5	40	4620 0015 00	
	10	17.2	9	17.5	44	4620 0016 00	
	11	18.5	9	17.5	41	4620 0017 00	
	12	20	12	17.5	49	4620 0018 00	
	13	21.5	12	17.5	56	4620 0019 00	
	14	23	12	17.5	52	4620 0020 00	
	15	24.2	12	17.5	52	4620 0021 00	
	16	25.7	13	17.5	54	4620 0022 00	
	17	27.2	13	17.5	59	4620 0023 00	
	18	28.5	13	17.5	56	4620 0024 00	
	19	30.3	13	17.5	65	4620 0025 00	
	21	33	15	17.5	71	4620 0026 00	
	22	34.5	15	17.5	74	4620 0027 00	
	Ring end 14 x 18	13	21.5	11	25	127	4620 0063 00
		14	23	11	25	123	4620 0064 00
		15	24.2	11	25	128	4620 0065 00
		16	25.7	12	25	133	4620 0066 00
		17	27.2	12	25	135	4620 0067 00
		18	28.5	12	25	134	4620 0068 00
		19	30.5	12	25	138	4620 0069 00
		21	33	15	25	144	4620 0070 00
22		34.5	15	25	145	4620 0071 00	
24		37.5	15	25	153	4620 0072 00	
27		41.5	17	25	162	4620 0073 00	
30		45	19	25	182	4620 0074 00	
32		47.5	19	25	181	4620 0075 00	
34		50.5	19	28	210	4620 0076 00	
36		53	19	28	203	4620 0077 00	
41		59	20	30	240	4620 0078 00	

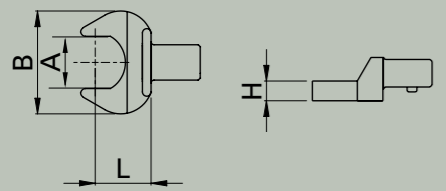


Type	Hex	B	H	L	g	Ordering No.
	in	mm	mm	mm		
Reversible ratchet 9 x 12	1/4	22	14.5	17.5	62	4620 0043 00
	3/8	33	24	17.5	136	4620 0044 00
	1/2	33	28.3	17.5	147	4620 0045 00
Reversible ratchet 14 x 18	1/2	43	26.2	25	302	4620 0081 00
	3/4	50	30.7	25	467	4620 0082 00
Reversible ratchet 21 x 26	3/4	69	30	62.5	1350	4620 0086 00

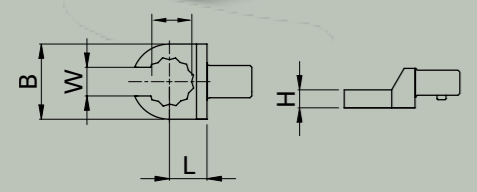
The TAG placed on the ratchet defines the Pset. **NOTE:** Since several sockets could be used, it is recommended to hold the socket in such a way that it is not possible to remove it (e.g. using a pin).



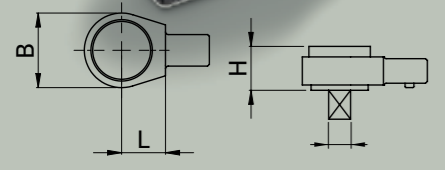
Standard end fitting tools without TAG



Type	A	B	H	L	g	Ordering No.
	mm	mm	mm	mm		
Open end 9 x 12	7	22	5	17.5	40	8059 0975 00
	8	22	5	17.5	39	8059 0975 01
	9	26	5.5	17.5	38	8059 0975 02
	10	26	5.5	17.5	42	8059 0975 03
	11	26	5.5	17.5	41	8059 0975 04
	12	30	7	17.5	43	8059 0975 05
	13	30	7	17.5	48	8059 0975 06
	14	35	8	17.5	52	8059 0975 07
	15	35	8	17.5	51	8059 0975 08
	16	38	8.5	17.5	58	8059 0975 09
Open end 14 x 18	17	38	8.5	17.5	60	8059 0975 10
	18	42	9	20	71	8059 0975 11
	19	42	9	20	74	8059 0975 12
	13	30	7	25	128	8059 0976 00
	14	35	8	25	129	8059 0976 01
	15	35	8	25	132	8059 0976 02
	16	38	9	25	140	8059 0976 03
	17	38	9	25	136	8059 0976 04
	18	42	10	25	147	8059 0976 05
	19	42	10	25	147	8059 0976 06
	21	50	11	25	171	8059 0976 07
	22	50	11	25	165	8059 0976 08
	24	53	12	25	167	8059 0976 09
	27	60	13	30	219	8059 0976 10
	30	66	14	30	245	8059 0976 11
	32	66	14	32.5	246	8059 0976 12
	34	66	14	32.5	239	8059 0976 13



Type	Hex	B	H	W	L	g	Ordering No.
	mm	mm	mm	mm	mm		
Flared end 9 x 12	10	22	12	7.1	17.5	57	8059 0975 27
	11	22.5	12	8.6	17.5	55	8059 0975 28
	12	23.5	12	9	17.5	59	8059 0975 29
	13	25.2	12	10	17.5	55	8059 0975 30
	14	27	13	11	17.5	60	8059 0975 31
	16	30	13	13	17.5	65	8059 0975 32
	17	31.5	13	14	17.5	65	8059 0975 33
	18	33	15	14.8	17.5	74	8059 0975 34
	19	34.5	15	15.8	19	80	8059 0975 35
	21	37.5	15	16.2	19	88	8059 0975 36
	22	39	15	17	19	92	8059 0975 37
	24	42	15	18	19	75	8059 0975 38



Type	Hex	B	H	L	g	Ordering No.
	in	mm	mm	mm		
Reversible ratchet 9 x 12	1/4	22	14.5	17.5	62	8059 0975 42
	3/8	33	24	17.5	136	8059 0975 43
	1/2	33	28.3	17.5	147	8059 0975 44
Reversible ratchet 14 x 18	1/2	43	26.2	25	302	8059 0976 32
	3/4	50	30.7	25	467	8059 0976 33
Reversible ratchet 21 x 26	3/4	69	30	62.5	1350	8059 0976 38

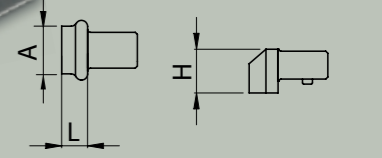
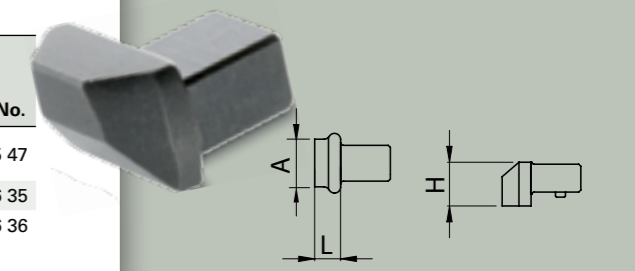
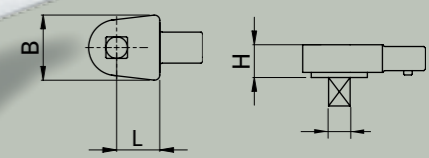
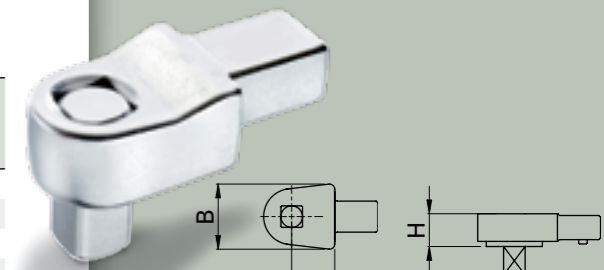
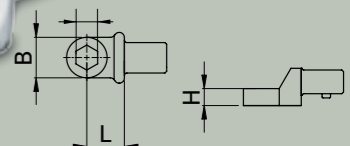
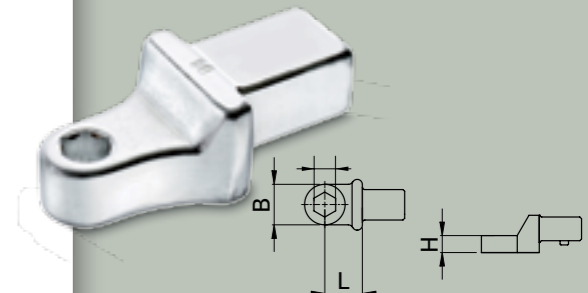
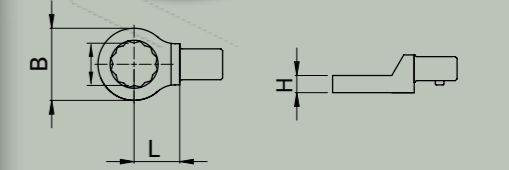
Standard end fitting tools without TAG

Type	Hex	B	H	L	g	Ordering No.	
	mm	mm	mm	mm			
Ring end 9 x 12	7	13	8	17.5	37	8059 0975 13	
	8	14.2	8	17.5	40	8059 0975 14	
	10	17.2	9	17.5	44	8059 0975 15	
	11	18.5	9	17.5	41	8059 0975 16	
	12	20	12	17.5	49	8059 0975 17	
	13	21.5	12	17.5	56	8059 0975 18	
	14	23	12	17.5	52	8059 0975 19	
	15	24.2	12	17.5	52	8059 0975 20	
	16	25.7	13	17.5	54	8059 0975 21	
	17	27.2	13	17.5	59	8059 0975 22	
	18	28.5	13	17.5	56	8059 0975 23	
	19	30.3	13	17.5	65	8059 0975 24	
	21	33	15	17.5	71	8059 0975 25	
	22	34.5	15	17.5	74	8059 0975 26	
	Ring end 14 x 18	13	21.5	11	25	127	8059 0976 14
		14	23	11	25	123	8059 0976 15
		15	24.2	11	25	128	8059 0976 16
		16	25.7	12	25	133	8059 0976 17
		17	27.2	12	25	135	8059 0976 18
		18	28.5	12	25	134	8059 0976 19
		19	30.5	12	25	138	8059 0976 20
		21	33	15	25	144	8059 0976 21
22		34.5	15	25	145	8059 0976 22	
24		37.5	15	25	153	8059 0976 23	
27		41.5	17	25	162	8059 0976 24	
30		45	19	25	182	8059 0976 25	
32		47.5	19	25	181	8059 0976 26	
34		50.5	19	28	210	8059 0976 27	
36		53	19	28	203	8059 0976 28	
41		59	20	30	240	8059 0976 29	

Type	Hex	B	H	L	g	Ordering No.
	in	mm	mm	mm		
Bits holder 9 x 12	1/4	14	10	17.5	50	8059 0975 45
Bits holder 14 x 18	5/16	16	12.5	17.5	47	8059 0975 46
Bits holder 14 x 18	5/16	16	12.5	25	112	8059 0976 34

Type	Hex	B	H	L	g	Ordering No.
	in	mm	mm	mm		
Fixed square 9 x 12	1/4	22	14	17.5	71	8059 0975 39
	3/8	22	14	17.5	76	8059 0975 40
	1/2	22	14	17.5	82	8059 0975 41
Fixed square 14 x 18	1/2	30	18	25	203	8059 0976 30
	3/4	40	25	25	396	8059 0976 31

Type	A	H	L	g	Ordering No.
	mm	mm	mm	mm	
Blank end 9 x 12 for making up specials	8 x 14	14.5	8	30	8059 0975 47
Blank end 14 x 18	11 x 25	21.5	21	98	8059 0976 35
Blank end 21 x 26	13 x 30	30	13	220	8059 0976 36



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