

An aerial, top-down view of the cockpit of a white aircraft, showing the four main windows and the instrument panels. The aircraft is on a grey tarmac with yellow ground markings.

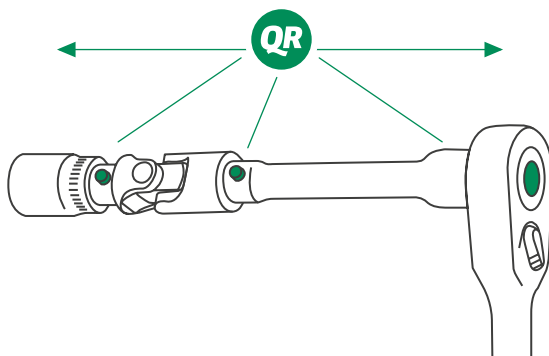
HIGH AEROSPACE LIGHTS

QUICKRELEASE

SECURELY ATTACHED. QUICKLY RELEASED.

In many fields of work, foreign object damage (FOD) can be a real safety hazard - like in aviation. One highly effective method for combating FOD goes by the name of QuickRelease. This locking system, developed and patented by STAHLWILLE, prevents the loss of sockets even in awkward bolting points or in long tapped holes. While other locking systems available on the market only lock the first insert tool to the ratchet, QuickRelease secures every single component in the tool chain - from the ratchet and

extension through to the socket - without forfeiting valuable space. QuickRelease will not relinquish its grip on the tools connected until the user presses the corresponding button on the ratchet, extension or universal joint. The easily accessible, ergonomically optimised mechanism contributes, at the same time, to increased efficiency - thanks to this system, tool changes are not only safer but also faster. In conjunction with torque wrenches, QuickRelease also secures the insert tools while enabling rapid tool changes.










SAFE

The system will not relinquish its grip on the tools connected until the user presses the QuickRelease button on the individual tool.

THE KEY ADVANTAGES

- Greater safety in bolted joints where FOD is a serious risk, such as in aerospace.
- The only system that features a uniform locking mechanism for all the tool components through to the bolting point.
- Simple, intuitive handling and reliable operation.
- Insert tools engage firmly and cannot be removed until the release button is pressed.
- Fast, efficient tool changes become a simple matter - without compromising safety in FOD-sensitive areas.

QuickRelease tools

Code	No	Size	Description		
11 11 10 20	415QR N	1/4"	QuickRelease fine-tooth ratchet , 80 teeth	F&D	
11 11 00 20	415QR	1/4"	QuickRelease ratchet , 22 teeth		
11 11 10 30	415SG-QR N	1/4"	QuickRelease fine-tooth ratchet , steel handle, 80 teeth	F&D	
11 11 00 30	415SG-QR	1/4"	QuickRelease ratchet , steel handle, 22 teeth		
11 11 10 40	415QRL N	1/4"	QuickRelease fine-tooth ratchet , long, 80 teeth	F&D	
11 11 01 53	415QRL	1/4"	QuickRelease ratchet , long, 22 teeth		
11 05 10 10	400QR	1/4"	QuickRelease Drive Handle		
11 07 10 00	404QR	1/4"	QuickRelease Sliding T-Handle		
11 01 10 01	405QR	1/4"	QuickRelease extension , 54 mm		
11 01 10 06			QuickRelease extension , 102 mm		
11 01 10 02			QuickRelease extension , 150 mm		
11 01 10 13			QuickRelease extension , 330 mm		
11 01 10 05			QuickRelease extension , 356 mm		
11 02 10 00	407QR	1/4"	QuickRelease universal joint		
12 11 10 20	435QR N	3/8"	QuickRelease fine-tooth ratchet , 80 teeth	F&D	
12 11 00 20	435QR	3/8"	QuickRelease ratchet , 30 teeth		
12 11 10 30	435SG-QR N	3/8"	QuickRelease fine-tooth ratchet , steel handle, 80 teeth	F&D	
12 11 00 30	435SG-QR	3/8"	QuickRelease ratchet , steel handle, 30 teeth		
12 07 10 00	425QR	3/8"	QuickRelease Sliding T-Handle		
12 01 10 01	427QR	3/8"	QuickRelease extension , 76 mm		
12 01 10 02			QuickRelease extension , 160 mm		
12 01 10 03			QuickRelease extension , 240 mm		
12 02 10 00	428QR	3/8"	QuickRelease universal joint		
13 11 11 20	512QR N	1/2"	QuickRelease fine-tooth ratchet , 80 teeth	F&D	
13 11 00 30	512SG-QR	1/2"	QuickRelease ratchet , steel handle, 36 teeth		
13 11 10 30	512SG-QR N	1/2"	QuickRelease fine-tooth ratchet , steel handle, 80 teeth	F&D	
13 07 10 00	506QR	1/2"	QuickRelease Sliding T-Handle		
13 01 10 01	509QR	1/2"	QuickRelease extension , 52 mm		
13 01 10 04			QuickRelease extension , 75 mm		
13 01 10 02			QuickRelease extension , 130 mm		
13 01 10 03			QuickRelease extension , 255 mm		
13 02 10 00	510QR	1/2"	QuickRelease universal joint		

SPLINE DRIVE TOOLS

RESILIENT, EVEN WITH HIGH TORQUES.

In aviation environments, fasteners with spline profiles and high tensile strengths are often used, and these need tightening to high torques. If they then have to be loosened, during maintenance, repair and overhaul, for example, the torques required may be even higher – due to seizing or corrosion in operation.

Spline-drive tools by STAHLWILLE are specifically designed to withstand such high torques, transmit the force applied to where it is required and minimise the risk of injury to the user and damage to the screwhead and tool. Thanks to their twelve spline teeth and the 60° angle, they offer a greater area of contact with the tool. The pressure is spread evenly across the surface and cam-out forces that cause the tool to slip off the fastener head are made controllable.

Spline-drive tools by STAHLWILLE conform to aviation standards MS-33787 and MIL-W-8982. A particular quality feature of these tools is the extremely tight manufacturing tolerances in STAHLWILLE's precision forging processes. This is backed up by long service lives because STAHLWILLE uses special HPQ® (High Performance Quality) alloys in production. The result is tools with outstanding fit, improved force transmission and greater efficiency and safety when working on aircraft components. This is the ideal protection against wear & tear, damage to costly fasteners and expensive rework.














Spline-drive spanners and sockets



THE KEY ADVANTAGES

- STAHLWILLE HPQ® spline-drive tools guarantee long service lives, even when used in conjunction with the highest forces for tightening and loosening fasteners.
- Extremely good force transmission due to closest machining tolerances and low surface pressure – thanks to the spline-drive profile, in conformity with aviation standards MS-33787 and MIL-W-8982.
- Reduced risk of the hand slipping off the handle so reduced risk of injury and damage to expensive fasteners.

Spline drive tools

Code	No	Size	Spline size	Size	Description	
40 58 16 16	130aSP		8	1/4"	Spline drive combination spanners	
40 58 20 20			10	5/16"		
40 58 24 24			12	3/8"		
40 58 28 28			14	7/16"		
40 58 32 32			16	1/2"		
40 58 34 34			18	9/16"		
41 16 07 09	220aSP		7 x 9	7/32 x 9/32"	Spline drive double-ended ring spanners	
41 16 08 10			8 x 10	1/4 x 5/16"		
41 16 12 14			12 x 14	3/8 x 7/16"		
41 16 16 18			16 x 18	1/2 x 9/16"		
41 16 18 20			18 x 20	9/16 x 5/8"		
41 16 22 24			22 x 24	11/16 x 3/4"		
41 16 26 30			26 x 30	13/16 x 15/16"		
41 16 28 32			28 x 32	7/8 x 1"		
41 57 08 10	25aSP		8 x 10	1/4 x 5/16"	Spline drive ratchet ring spanners	
41 57 12 14			12 x 14	3/8 x 7/16"		
41 57 16 18			16 x 18	1/2 x 9/16"		
41 57 20 22			20 x 22	5/8 x 11/16"		
41 57 24 28			24 x 28	3/4 x 7/8"		
01 01 10 07	40aSP	1/4"	7	7/32"	Spline drive sockets	
01 01 10 08			8	1/4"		
01 01 10 09			9	9/32"		
01 01 10 10			10	5/16"		
01 01 10 12			12	3/8"		
01 01 10 14			14	7/16"		
01 02 10 07	40aLSP	1/4"	7	7/32"	Spline drive sockets	
01 02 10 08			8	1/4"		
01 02 10 10			10	5/16"		
01 54 20 16	402aSP	1/4"	8	1/4"	UNIFLEX spline drive sockets	
01 54 20 20			10	5/16"		
02 01 10 12	45aSP	3/8"	12	3/8"	Spline drive sockets	
02 01 10 14			14	7/16"		
02 01 10 16			16	1/2"		
22 41 00 28	45aPSP	3/8"	14	7/16"	Spline drive socket, gunmetal finish	
02 02 10 12	46aSP	3/8"	12	3/8"	Spline drive sockets	
02 02 10 14			14	7/16"		
02 48 00 14	447aSP	3/8"	7	7/32"	Spline drive adapter, gunmetal finish	
02 48 00 16			8	1/4"		
02 48 00 18			9	9/32"		
02 48 00 20			10	5/16"		
02 48 00 24			12	3/8"		
02 48 00 28			14	7/16"		
02 48 00 32			16	1/2"		
02 48 00 34			18	9/16"		
02 48 00 36			20	5/8"		
03 01 20 24			50aPSP	1/2"		
03 01 20 28	14	7/16"				
03 01 20 34	18	9/16"				
03 01 30 28	50aPLSP	1/2"	14	7/16"	Spline drive socket, gunmetal finish	

SMARTCHECK

THE TORQUE TESTER FOR ALL SITUATIONS.

Whether checking a torque wrench immediately before an assembly operation to ensure it is within the tolerances or subjecting the tool to a detailed inspection as part of an audit, STAHLWILLE's new SmartCheck torque tester provides a compact assistant that will fit on any workbench or wall. It can be fitted both horizontally and vertically, and can even be run on batteries if there is no power outlet available.

The display with its resilient, splash-proof foil keypad is rotatable and can be set to the user's angle of sight in seconds. In addition, since no additional transducers are required, it is possible to use the precision tester as soon as it has been set up. Operating the tester using the integrated display is an intuitive process.



PRIZE-WINNING TECHNOLOGY

The SmartCheck was awarded the coveted iF Design Award in 2017 in the industrial products category for outstanding ergonomic design and its functional product design.



THE KEY ADVANTAGES

- Flexible positioning, fast commissioning and intuitive operation.
- Housing made of impact-resistant plastic to protect the accurate, durable measuring mechanism. Display deviation of only $\pm 1\%$.
- Three operating modes: track, first peak and peak hold. Target torque and tolerances can be individually set.
- Available for four torque ranges: 1-10 N·m (also for torque screwdrivers), 10-100 N·m, 40-400 N·m, 80-800 N·m.



Experience the outstanding features of the SmartCheck torque tester in a video here:
www.stahlwille.de/videos/smartcheck

SmartCheck

Code	No	N·m	ft·lb	in·lb	Ø "	Description
96 52 12 01*	SmartCheck 10S	1-10	0.74-7.4	8.9-88.5	1/4	Torque Tester
96 52 12 02	SmartCheck 10	1-10	0.74-7.4	8.9-88.5	1/4	Torque Tester
96 52 12 03	SmartCheck 100	10-100	7-74	89-885	3/8	Torque Tester
96 52 12 04	SmartCheck 400	40-400	30-295	354-3540	3/4	Torque Tester
96 52 12 05	SmartCheck 800	80-800	59-590	708-7081	3/4	Torque Tester



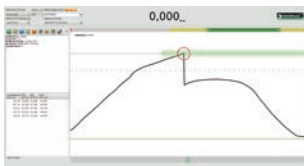
* For testing torque screwdrivers

7707 W TORQUE TESTER

FLEXIBILITY AND ACCURACY ROLLED INTO ONE.

The SENSOTORK® 7707 W electronic tester enables absolutely accurate, extremely efficient testing of torque wrenches. At the same time, it is so well-thought through and compact that it can be used virtually anywhere and really comes into its own where space is at a premium.

It can be mounted horizontally or vertically, comes with a display module that can be mounted on a tripod, which allows the user far greater freedom of movement – like when testing long torque wrenches.



PC CAPABLE

In conjunction with the STAHLWILLE TORKMASTER software, readings can be transmitted to the PC for logging.



VARIABLE

Interchangeable transducers with the QuickRelease mechanism allow adaptation to the torque range needed – in less time than it takes to say "STAHLWILLE".



THE KEY ADVANTAGES

- **Space-saving.** Compact dimensions, a display unit with a spiral cable, tripod and 1.5 metre connector cable ensure maximum flexibility when selecting the best fixing point.
- **Versatile.** Thanks to clockwise and anticlockwise measurements across a very broad measuring range from 2 to 100 per cent of the rated value, interchangeable square drive adapters conveniently stored in the mounting block and a display showing N·m, ft·lb, in·lb units of measure.
- **Accurate.** Patent, low-profile transducers guarantee minimum lateral forces and this translates into optimum readings – including display of the torque actually applied when using click type torque wrenches.

7707 W Torque Tester

Code	No	N·m	ft·lb	in·lb	Ø "	Description
96 52 10 86	7707-1-3W ¹⁾	0.2-10	0.15-7.4	1.8-88.5	1/4	The SENSOTORK® electronic tester , a compact tester that can quickly be adapted with easily interchangeable transducers
96 52 10 85	7707-1-2W	0.2-10	0.15-7.4	1.8-88.5	1/4	
96 52 10 80	7707-1W	0.4-20	0.3-15	3.5-177	1/4	
96 52 10 72	7707-2W ²⁾	2-100	1.5-74	18-885	3/8	
96 52 10 83	7707-2-1W ³⁾	4-200	3-148	35-1770	1/2	
96 52 10 84	7707-2-2W ⁴⁾	8-400	6-295	71-3540	3/4	
96 52 10 82	7707-3W ⁴⁾	25-1100	18-812	221-9736	3/4	



¹⁾ For testing torque screwdrivers

²⁾ With square drive adapter No 409M (1/4" Ø x 3/8" ■)

³⁾ With square drive adapters No 7789-4 (1/4" Ø x 1/2" ■), No 7789-5 (3/8" Ø x 1/2" ■)

⁴⁾ With square drive adapters No 7787 (1/4" Ø x 3/4" ■), No 7788 (3/8" Ø x 3/4" ■), No 7789 (1/2" Ø x 3/4" ■)

WIRE-TWISTING PLIERS

DESIGNED TO TWIST. AGAIN & AGAIN.

In the aerospace industry in particular, safety relevant bolted joints are frequently secured using additional twisted safety wires to preclude unintended loosening resulting from powerful vibrations. STAHLWILLE has reinvented wire-twisting pliers specially for reliable, safe wire twisting. Where conventional products cause problems in use, STAHLWILLE wire-twisting pliers – the only ones on the market not manufactured in the Far East – stand out because of their accuracy, efficiency in operation and excellent ergonomic design. Above all, they offer longer lifetimes and effectively prevent foreign object damage. STAHLWILLE wire-twisting pliers are equipped with a thicker, more rigid shank than competing products. The handles are arrested by a durable leaf spring rather than a highly susceptible coil spring. The precision-made cutting edges reliably cut through the

wire and the wire ends are automatically crimped. To make wire-twisting pliers even safer, STAHLWILLE makes them exclusively out of metal. There is no silicone or extruded plastic liable to breakage on the jaws. In addition, to maximise durability and service lifetimes, STAHLWILLE wire-twisting pliers are fitted with individually induction-hardened cutters. As a result, if the pliers fall to the floor inadvertently, the cutting edges cannot break.

STAHLWILLE wire-twisting pliers grip the wire reliably without damaging it and with no loss of crimp strength. The twist function can be switched over and even locked. The head has a special wire gripping pattern that prevents the wire being bent and thus simplifies threading.



THE KEY ADVANTAGES

- Made exclusively of metal – no plastics, silicone or similar materials.
- More efficient working thanks to automatic crimping of the wire ends.
- Durable leaf spring instead of a conventional coil spring – for long service lives.
- With induction-hardened cutters, ensures resistance to fracture even under the toughest loads.



Wire-twisting pliers

Code	No	Length	Description
65 75 12 20	66751220	230 mm	Wire-twisting pliers
65 75 12 80	66751280	280 mm	Wire-twisting pliers



FINE-TOOTH RATCHETS

MEETING DEMANDING STANDARDS IN TIGHT SPACES.

When working in confined spaces is essential, as with maintenance on turbines, high-quality fine-tooth ratchets really come into their own. Fine-tooth ratchets made by STAHLWILLE have proved themselves to be the ace up the user's sleeve. Thanks to their 80 teeth, they make a ratchet angle of only 4.5° possible. Not only that, the finely constructed mechanism works as reliably as a Swiss watch and ensures unrivalled smooth action, even when transmitting high torques. A cover plate of high-performance plastic protects the mechanism even in heavy use and keeps

dust and dirt away from the interior. Heavy-duty Spirolox® rings absorb the axial forces from the rotary drive. With sizes of 1/4", 3/8" and 1/2", the three most popular drives are immediately available - and, as one would expect, with STAHLWILLE's patented QuickRelease system. This is the only end-to-end locking system available on the market that reliably protects the entire chain of tools, from the ratchet and extensions through to the socket, against inadvertent release and loss, without adding to the dimensions of the tools.



FOD



FOD SAFE

In addition to the version with the plastic handle, this is also available with a steel handle. This is FOD safe and provides even more freedom of movement in extremely confined working spaces.

EFFICIENT

Eighty teeth provide a tight ratchet angle of only 4.5° - facilitating precision working in confined spaces. Eight teeth engage at once, which ensures good load-bearing capacity and smoothness of operation.

80

4,5°

QR

FOD

THE KEY ADVANTAGES










- **FOD compliant.** The screwless design prevents the loss of small items.
- **Low maintenance.** Durable, resilient mechanism - repairable if needs be.
- **Close-fitting.** Closest possible tolerances on both the square drive of the ratchet and the sockets and adaptors - ensuring reliable combinations.



Details of the mechanical systems, manner of operation and maintenance tips are available as a video here:

www.stahlwille.de/en/videos/fine-tooth-ratchets

Fine-tooth ratchets

Code	No	Size	Length	Description	
11 11 10 20	415QR N	1/4"	117 mm	Fine-tooth ratchet	
11 11 10 30	415SG-QR N	1/4"	117 mm	Fine-tooth ratchet , steel handle	
11 11 10 40	415QRL N	1/4"	153 mm	Fine-tooth ratchet , long	
11 13 20 20	415SGB N	1/4"	117 mm	Fine-tooth ratchet , steel handle, internal hex drive, for bits	
11 11 00 10	415SGH N	1/4"	117 mm	Fine-tooth ratchet , steel handle, HI-LOK	
12 11 10 20	435QR N	3/8"	193 mm	Fine-tooth ratchet	
12 11 10 30	435SG-QR N	3/8"	193 mm	Fine-tooth ratchet , steel handle	
13 11 11 20	512QR N	1/2"	265.5 mm	Fine-tooth ratchet	
13 11 10 30	512SG-QR N	1/2"	265.5 mm	Fine-tooth ratchet , steel handle	

POWERGRIP PLIERS WRENCH

A MULTIFACETED TOOL.

The patented PowerGRIP pliers wrench should be a firm feature in every set of tools. Thanks to its parallel jaws, it can be used as an adjustable hexagonal spanner – for holding the counter nut when fitting pipes, for example.

The box-type slip-joint and infinitely variable quick adjuster button with the workpiece in place are evidence of the advanced ergonomic design and contribute to fast working without damaging the workpiece.

This makes it a versatile aid that is ideally suited to applications such as aeroplane manufacture and MRO, where the weight and the need for a careful selection of tools in the kit play a key role.

Last but not least, the slim construction allows access even to awkward working spaces.



PRACTICAL

The patented pushbutton and slip-joint enable the tool to be adapted to the workpiece easily.



THE KEY ADVANTAGES

- Compact dimensions for use in awkward working spaces.
- Induction-hardened jaw profile, extremely hard and durable.
- Anti-pinch mechanism prevents injuries.
- Available in 3 sizes: 180 mm (10-way adjuster), 240 mm (12-way adjuster) and 300 mm (15-way adjuster).

PowerGRIP pliers wrenches

Code	No	Length	Description
65 73 51 80	65735180	192 mm	PowerGRIP pliers wrench
65 73 52 50	65735250	253 mm	PowerGRIP pliers wrench
65 73 53 00	65735300	300 mm	PowerGRIP pliers wrench



ELECTROMECHANICAL TORQUE WRENCHES

THE BEST OF BOTH WORLDS.

Greater process dependability and accuracy, comprehensive logging and programming options: electronic torque wrenches provide considerable advantages, especially in connection with applications in aerospace, where every operation has to be minutely logged. So that end users do not have to dispense with their accustomed tactile signals as the mechanism triggers, noticeable even through gloves, STAHLWILLE developed the electromechanical torque wrench.

This patented system is a unique solution in the market and makes use of an almost wear-free trigger mechanism involving a triggering cam. As soon as the preset tightening torque is reached, the wrench triggers with tactile and audible signals. At the same time, comprehensive programming options are possible - from a single fastener through to complex work sequences. The tool also enables all fastener-related details to be logged.



Electric measurement

Mechanical triggering

730D



714



THE KEY ADVANTAGES

- The only click type torque wrenches that measure the torque actually applied and log it - for torque ranges up to 1000 N·m.
- Extremely low display deviation (730D: $\pm 2\%$, 714: $\pm 2\%$ for torque, $\pm 1\%$ for tightening angle), several measuring methods, data storage, logging function, audible and visual evaluation of the joint.
- Not necessary to reset to »0« to release tension in the spring.
- Intuitive operation, the housing is made of impact-resistant plastic and the display and keypad are splash-proof.



Find out more about the electromechanical function in the video here:

www.stahlwille.de/en/videos/em-click-trigger

Electromechanical torque wrenches

Code	No	Size	N·m	ft·lb	in·lb	mm	"	Description
96 50 17 10	730D	10	10-100	7.4-75	90-900	9x12		Service/Series MANOSKOP® torque wrenches with mount for insert tools
96 50 17 20		20	20-200	15-150	180-1800	14x18		
96 50 17 40		40	40-400	30-300	360-3600	14x18		
96 50 17 65		65*	65-650	48-480	580-5800	14x18		
96 50 19 65		II/65	65-650	48-480	580-5800	22x28		
96 50 20 80		80	80-800	60-600	720-7200	22x28		
96 50 21 00		100	100-1000	74-750	900-9000	22x28		
96 50 18 10	730DR	10	10-100	7.4-75	90-900	9x12	1/2	Service/Series MANOSKOP® torque wrenches with reversible ratchet insert tool
96 50 18 20		20	20-200	15-150	180-1800	14x18	1/2	
96 50 18 40		40	40-400	30-300	360-3600	14x18	3/4	
96 50 18 65		65	65-650	48-480	580-5800	14x18	3/4	
96 50 20 65		II/65	65-650	48-480	580-5800	22x28	3/4	
96 50 18 80		80	80-800	60-600	720-7200	22x28	3/4	
96 50 18 00		100	100-1000	74-750	900-9000	22x28	3/4	
96 50 09 01	714	1	1-10	0.7-7.5	9-90	9x12		MANOSKOP® tightening angle torque wrenches with mount for insert tools
96 50 09 02		2	2-20	1.5-15	18-180	9x12		
96 50 09 04		4	4-40	3-30	36-360	9x12		
96 50 09 06		6	6-60	4.5-45	54-540	9x12		
96 50 09 10		10	10-100	7.4-75	90-900	9x12		
96 50 09 20		20	20-200	15-150	180-1800	14x18		
96 50 09 40		40	40-400	30-300	360-3600	14x18		
96 50 09 65		65	65-650	48-480	580-5800	22x28		
96 50 09 80		80	80-800	60-600	720-7200	22x28		
96 50 01 00		100	100-1000	74-750	900-9000	22x28		
96 50 10 01	714R	1	1-10	0.7-7.5	9-90	9x12	1/4	MANOSKOP® tightening angle torque wrenches with reversible ratchet insert tool
96 50 10 02		2	2-20	1.5-15	18-180	9x12	1/4	
96 50 10 04		4	4-40	3-30	36-360	9x12	1/4	
96 50 10 06		6	6-60	4.5-45	54-540	9x12	3/8	
96 50 10 10		10	10-100	7.4-75	90-900	9x12	1/2	
96 50 10 20		20	20-200	15-150	180-1800	14x18	1/2	
96 50 10 40		40	40-400	30-300	360-3600	14x18	3/4	
96 50 10 65		65	65-650	48-480	580-5800	22x28	3/4	
96 50 10 80		80	80-800	60-600	720-7200	22x28	3/4	
96 50 11 00		100	100-1000	73-735	885-8850	22x28	3/4	



* Recommended ratchet insert tool No 735/40HD

HPQ® TOOLS

HIGH PERFORMANCE QUALITY FOR THE HIGHEST TORQUES IN CONFINED SPACES.

In jobs involving maintenance work on turbines, high torques are often essential to release existing, possibly caked, bolted connections. In addition, there is often only limited space around the fastener head. Spanners and sockets for such applications have to fulfil two key characteristics: their wall thickness has to be extremely thin, and yet they have to withstand extreme torques without giving or breaking. STAHLWILLE HPQ® tools have been developed specifically

for these requirements. They not only withstand the highest forces applied, they are also constructed to extremely high standards of accuracy. This effectively prevents the cam-out effect and much reduces the risk of damage to the fastener and injury to service personnel. In addition to these advantages, HPQ® tools considerably reduce the weight of a tool kit, which is a boon where every gram makes a difference.

CRAFTSMANSHIP

STAHLWILLE's particularly close machining tolerances in production guarantee optimum force transmission and safety.

STRENGTH

HPQ® spanners and sockets are manufactured from selected tough steel alloys in precision forging shops.



THE KEY ADVANTAGES

- High Performance Quality (HPQ®) high-grade steel – for the highest torques in confined spaces. Ideal for working on turbines, amongst other assemblies.
- With AS Drive profile: for optimum force transmission and to guard against slipping off and damaging the screwhead.
- Cadmium-free: no risk of rust developing when working on titanium alloy parts and titanium fasteners.
- Comply with aerospace standards E DIN EN 3709, E DIN EN 3710, SAE AS 954-E, S.B.A.C. AS, 40605/40606, MS-33787 and MIL-W-8982.
- Broad range of spanners and sockets.



HPQ® spanners

Code	No	Size	Spline size	Description	
40 57 16 16	130a	1/4"		Combination spanners	
40 57 18 18		9/32"			
40 57 20 20		5/16"			
40 57 22 22		11/32"			
40 57 24 24		3/8"			
40 57 28 28		7/16"			
40 57 32 32		1/2"			
40 57 34 34		9/16"			
40 58 16 16	130aSP	1/4"	8	Spline drive combination spanners	
40 58 20 20		5/16"	10		
40 58 24 24		3/8"	12		
40 58 28 28		7/16"	14		
40 58 32 32		1/2"	16		
40 58 34 34		9/16"	18		
41 60 16 20	180a	1/4 x 5/16"		Double-ended ring spanners, short, small offset	
41 60 24 28		3/8 x 7/16"			
41 60 32 34		1/2 x 9/16"			
41 60 34 36		9/16 x 5/8"			
41 61 16 20	230a	1/4 x 5/16"		Double-ended ring spanners, small offset	
41 61 20 22		5/16 x 11/32"			
41 61 20 24		5/16 x 3/8"			
41 61 24 28		3/8 x 7/16"			
41 61 28 32		7/16 x 1/2"			
41 61 32 34		1/2 x 9/16"			
41 61 34 36		9/16 x 5/8"			
41 61 36 40		5/8 x 3/4"			
41 61 38 40		11/16 x 3/4"			
41 61 42 44		13/16 x 7/8"			
41 61 46 48		15/16 x 1"			
41 61 48 50		1 x 1 1/16"			
41 61 52 56		1 1/8 x 1 1/4"			
41 03 55 07		220			
41 03 06 08	6 x 8 mm				
41 03 09 11	9 x 11 mm				
41 03 10 11	10 x 11 mm				
41 03 12 14	12 x 14 mm				
41 03 13 14	13 x 14 mm				
41 03 17 19	17 x 19 mm				
41 03 18 19	18 x 19 mm				
41 03 19 22	19 x 22 mm				
41 03 20 22	20 x 22 mm				
41 43 14 16	220a	7/32 x 1/4"		Double-ended ring spanners, extra-long, 15° offset	
41 43 16 20		1/4 x 5/16"			
41 43 24 28		3/8 x 7/16"			
41 43 32 34		1/2 x 9/16"			
41 43 36 40		5/8 x 3/4"			
41 43 38 40		11/16 x 3/4"			
41 16 07 09	220aSP	7/32 x 9/32"	7 x 9	Spline drive double-ended ring spanners, extra-long	
41 16 08 10		1/4 x 5/16"	8 x 10		
41 16 12 14		3/8 x 7/16"	12 x 14		
41 16 16 18		1/2 x 9/16"	16 x 18		
41 16 18 20		9/16 x 5/8"	18 x 20		
41 16 22 24		11/16 x 3/4"	22 x 24		
41 16 26 30		13/16 x 15/16"	26 x 30		
41 16 28 32		7/8 x 1"	28 x 32		

Premium as standard: the complete range of **1/4", 3/8" and 1/2"** sockets is made of **HPQ® high-performance steel**.

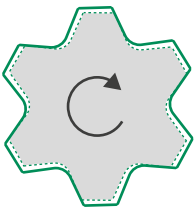


TORSION BITS

FORCE TO BE RECKONED WITH.

Where fasteners are tightened with power tools and power screwdrivers or battery-powered impact screwdrivers are used, special bits will be needed. The power drives exert extreme peak loads and normal bits cannot withstand such work loads for long. Frequent tool changes become standard procedure due to excessive wear & tear – accompanied by corresponding negative effects on process efficiency and tooling costs.

The increased risk of damage to the fastener profile is equally problematic. Once a screwhead has been damaged – whether this is caused by worn or broken bits or due to excessive force applied to the profile – the rework will usually be considerable. However, that situation can be avoided. STAHLWILLE torsion bits are the answer: they reduce wear and protect the fastener.

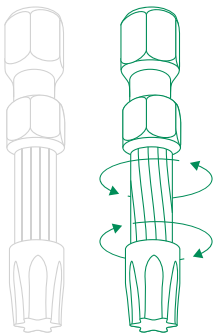


ELASTICITY

A special hardening process makes the bits more elastic. The spring steel created in this way guarantees optimum retention in the screw-head.



Thanks to the optimised geometry, the bit engages deep inside the head of the fastener. Cam-out forces are minimised and forces are transmitted more effectively. This enables even seized-up screws to be loosened with much reduced wear & tear on the bits.



TORSION ZONE


Thanks to the special torsion zone, torsion bits absorb a large amount of the energy applied by battery-powered impact screwdrivers that can reach 70 N·m. As a result, the service lifetime of these profiles is far longer than that of conventional bits.



THE KEY ADVANTAGES

- Precision-manufactured profiles for internal TORX® fasteners with extremely close tolerances.
- Developed specifically for use with professional battery-powered impact screwdrivers.
- Compact construction facilitates optimum handling of battery-powered impact screwdrivers.
- Long service lives due to the torsion shape, elastic steel and special hardening process.

Torsion bits

Code	No	Size	Outer 	"
08 16 11 15	1441 TN 15	T 15	E 6.3	1/4
08 16 11 20	1442 TN 20	T 20	E 6.3	1/4
08 16 11 25	1443 TN 25	T 25	E 6.3	1/4
08 16 11 30	1445 TN 30	T 30	E 6.3	1/4
08 16 11 40	1446 TN 40	T 40	E 6.3	1/4



HI-LOK TOOLS

A PATENTED BOOST TO SAFETY.

HI-LOK pins have become extremely popular in aerospace construction - they make it possible to achieve reliable structural joints even in safety-critical, restricted work environments. This is precisely where STAHLWILLE's compact, patented HI-LOK ratchet comes in. A key advantage for our customers is that, in contrast to HI-LOK ratchets from other manufacturers, this one offers the best possible prevention of foreign object damage.

Conventional HI-LOK ratchets are merely conventional ratchets with a drilled tool mount for insertion of a hexagon key. The problem is that there is no locking mechanism for the tool using a ball or pin. This means the ratchet is no longer FOD safe. With the patented STAHLWILLE HI-LOK ratchet, this is different: the hexagon key simply pushes the ball retention system to one side. As soon as the hexagon key is removed, the ball moves back into its usual place.

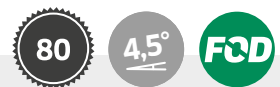


FOD SAFE

The STAHLWILLE HI-LOK ratchet takes a hexagon key and the conventional 1/4" insert with a ball groove or hole but still guarantees loss-free working with sockets.

TINY TOOLS








HI-LOK joints are very small and require correspondingly small tools. This also raises the bar in terms of the demands on FOD safety.



THE KEY ADVANTAGES

- Eighty teeth provide a tight ratchet angle of only 4.5° - facilitating precision working in confined spaces.
- Special offset keys (imperial and metric) and extensions, three different lengths, available.
- Prevents FOD and is a low-maintenance construction due to the screwless design.
- Ideal for safety relevant industries such as aviation.

HI-LOK tools

Code	No	Size		Description	
11 11 00 10	415SGH N	1/4"		HI-LOK fine-tooth ratchet , steel handle	
11 11 00 02	415SGH	1/4"		HI-LOK ratchet , steel handle	
11 24 00 11	414H	2		HI-LOK extensions	
11 24 00 12		4			
11 24 00 13		6			
43 06 20 02	10759	1	2 mm	Offset screwdrivers	
43 06 40 02		2	2 mm		
43 56 00 04	10759a	1	1/16"	Offset screwdrivers	
43 56 40 04		2	1/16"		
43 56 00 05		1	5/64"		
43 56 40 05		2	5/64"		
43 56 00 06		1	3/32"		
43 56 40 06		2	3/32"		
96 01 63 03	40aD/8/1H			HI-LOK set of socket spanners 5 sockets with double hex No 40aD: sizes 7/32"; 1/4"; 5/16"; 11/32"; 3/8" 3 offset screwdrivers: No 10759a: 1/16"; 5/64"; 3/32" 1 ratchet No 415SGH	

TOOL TROLLEYS

AS INDIVIDUAL AS YOUR WORKPLACE.

STAHlwILLE Tool Trolleys 95VA and 98VA make the workplace in the hangar or workshop a mobile one. Thanks to the generous storage volume, they are used to manoeuvre even very comprehensive tool kits quickly to the place they are needed. The three-stage safety logic with central locking by means of a side-mounted cylinder lock, individual locking to prevent inadvertent opening during travel and a topple-proof mechanism that prevents more than one drawer being opened at any one time all add up to a very high standard

of user safety. Both models are available with six, seven or eight drawers mounted in full extension rails with bearing cage guidance, are equipped with wrap-around bumpers, a wear-resistant, scratch-repellent worktop and a ribbed protective base strip made of stainless steel. The castors are acid and oil resistant and two of them have parking brakes. In addition, the 95VA model is also available as an FOD-compliant variant.



HARD-WEARING

The scratch-repellent stainless steel worktop provides a tidy working space – with a long service lifetime.



100% EXTENDIBLE

Fully extendible drawers guarantee clear overview of the tools and easy removal of each tool.









THE KEY ADVANTAGES

- **Safety concept.** Central locking, individual locking and topple-proof mechanism ensure that relocating the tools is not only a quick but also a safe manoeuvre.
- **FOD compliant.** Available on request as a roller-mounted option instead of being in ball-bearing mounted pull-out rails (95VA).
- **Drawer labelling.** Various drawer stickers are provided to aid fast localisation of the right tool.
- **Spacious.** Generous storage space thanks to large drawers. The drawers in the TTS 95VA provide an area of 530 x 350 mm, the TTS 98VA doubles that with its 700 x 530 mm.



Details of the Tool Trolleys can be found here:
www.stahlwille.de/en/videos/tool-trolleys

Tool Trolleys 95VA and 98VA

Code	No	Colour	Description	
81 20 00 55	95VA/6G	green	Tool Trolleys , 6 easily removable fully extendible drawers with bearing cage guidance, three-stage safety concept, drawers can be identified with several stickers per drawer	
81 20 00 56	95VA/6R	red, RAL 3020		
81 20 00 57	95VA/6B	blue, RAL 2703035		
81 20 00 58	95VA/6A	anthracite grey, RAL 7016		
81 20 00 59	95VA/6W	white, RAL 9010		
81 20 00 60	95VA/7G	green	Tool Trolleys , 7 easily removable fully extendible drawers with bearing cage guidance, three-stage safety concept, drawers can be identified with several stickers per drawer	
81 20 00 61	95VA/7R	red, RAL 3020		
81 20 00 62	95VA/7B	blue, RAL 2703035		
81 20 00 63	95VA/7A	anthracite grey, RAL 7016		
81 20 00 64	95VA/7W	white, RAL 9010		
81 20 00 65	95VA/8G	green	Tool Trolleys , 8 easily removable fully extendible drawers with bearing cage guidance, three-stage safety concept, drawers can be identified with several stickers per drawer	
81 20 00 66	95VA/8R	red, RAL 3020		
81 20 00 67	95VA/8B	blue, RAL 2703035		
81 20 00 68	95VA/8A	anthracite grey, RAL 7016		
81 20 00 69	95VA/8W	white, RAL 9010		
81 20 00 99	98VA/6G	green	Tool Trolleys , 100% more drawer volume in comparison with 95VA, 6 easily removable fully extendible drawers with bearing cage guidance, three-stage safety concept, drawers can be identified with several stickers per drawer	
81 20 01 00	98VA/6R	red, RAL 3020		
81 20 01 01	98VA/6B	blue, RAL 2703035		
81 20 01 02	98VA/6A	anthracite grey, RAL 7016		
81 20 01 03	98VA/6W	white, RAL 9010		
81 20 01 04	98VA/7G	green	Tool Trolleys , 100% more drawer volume in comparison with 95VA, 7 easily removable fully extendible drawers with bearing cage guidance, three-stage safety concept, drawers can be identified with several stickers per drawer	
81 20 01 05	98VA/7R	red, RAL 3020		
81 20 01 06	98VA/7B	blue, RAL 2703035		
81 20 01 07	98VA/7A	anthracite grey, RAL 7016		
81 20 01 08	98VA/7W	white, RAL 9010		
81 20 01 09	98VA/8G	green	Tool Trolleys , 100% more drawer volume in comparison with 95VA, 8 easily removable fully extendible drawers with bearing cage guidance, three-stage safety concept, drawers can be identified with several stickers per drawer	
81 20 01 10	98VA/8R	red, RAL 3020		
81 20 01 11	98VA/8B	blue, RAL 2703035		
81 20 01 12	98VA/8A	anthracite grey, RAL 7016		
81 20 01 13	98VA/8W	white, RAL 9010		

TOOL TROLLEY 13217

QUICK TO DEPLOY.

When maintenance work is to be carried out on an aeroplane or a malfunction has to be remedied, it is essential to get to the workplace quickly with the right tools, even if it is a long way and the toolbox well stocked. No problem: STAHLWILLE's Tool Trolley 13217 is one of the most manoeuvrable, well-thought-out and safest solutions on the market – and approved for use on-board.

Even very well equipped toolkits can be transported quickly from A to B using the Tool Trolley 13217, thanks to a pair of load-resilient castors, extendible handle and compact

outer dimensions. The trolley is available in a choice of three colours and, as an option, can be fitted with four slewing castors, two with parking brakes, as an IP67 version and with a high-visibility, all-round reflective film wrap – for maximum visibility even in poor lighting conditions or nocturnal jobs on the taxiway. The sturdy plastic housing has room for up to eight individually removable tool drawers. Besides the universal set of tools consisting of 104 items, there are three sets of tools compiled specifically for the aerospace industry.



EXTREMELY ROBUST

The plastic housing without sharp edges, approved for on-board use, keeps weight down – and is nevertheless not afraid of knocks and jolts.



PROTECTED

Also available as ingress protection IP67 variant. Additional closures and seals protect against water and dust. Pressure relief is provided by a special valve.







TCS

THE KEY ADVANTAGES

- **Sophisticated.** Every removable drawer has its own handle. By applying the transparent lid, each drawer becomes a carrying case.
- **Flexible.** The endstops for the extendible rails hold each drawer in its defined position. Drawers can be inserted in any order.
- **Mobile.** The rugged castors guarantee maximum conceivable mobility. The version fitted with four castors also allows the trolley to be braked.
- **Variable.** Available in a choice of three colours and with a high-visibility reflecting surface.

Tool Trolleys 13217

Code	No	Colour	Description	
81 09 13 01	13217 LGE	luminous yellow	Tool Trolley , extremely rugged, resilient Tool Trolley made of polypropylene for professional use, five easily removed drawers that are lockable with transparent covers, with endstops for the extendible rails, 3 different drawer heights	
81 09 13 04	13217 LR	luminous red	Tool Trolley , extremely rugged, resilient Tool Trolley made of polypropylene for professional use, five easily removed drawers that are lockable with transparent covers, with endstops for the extendible rails, 3 different drawer heights	
81 09 13 06	13217 TS	jet black	Tool Trolley , extremely rugged, resilient Tool Trolley made of polypropylene for professional use, five easily removed drawers that are lockable with transparent covers, with endstops for the extendible rails, 3 different drawer heights	
81 09 13 22	13217 TS IP67	jet black	Tool Trolley , protection against water and dust in accordance with IP67 requirements, extremely rugged, resilient Tool Trolley made of polypropylene for professional use, six easily removed drawers that are lockable with transparent covers, with endstops for the extendible rails, 2 different drawer heights	
96 89 48 09	13217 TS RF	jet black with reflecting film wrap	Tool Trolley , with high-visibility, all-round reflective film wrap, extremely rugged, resilient Tool Trolley made of polypropylene for professional use, five easily removed drawers that are lockable with transparent covers, with endstops for the extendible rails, 3 different drawer heights	