Pneum. EC System Impulse Wrench – AT series w Angle Control

Img.: AT-111

LED status indication (green = OK, red = NOK), visible all around – from above, below, left, right, front, back.

The CONTROL Pro+ can also be used with Yokota system wrenches TKa and YEX.

ICE
Impulse-Converting-Electronics

- Error
- V1
- V2
- V3
- Air on
- Airpressure target
- Connect

ZEMO
www.zemo-tools.de

Clear

The electronics check each parameter for plausibility before, during and after bolting and simultaneously monitor the system stability. In case of irregularities, the control unit displays this in plain text and goes into „malfunction" mode if necessary.

The torque value determined directly via strain gauges as well as the number of pulses and the angle of rotation are shown on the large multifunction display. It is also possible to display a tightening curve. The result of the OK/NOK judgement is also visualised on the screen. The LED fields „Torque" and „Angle" of the limit value monitoring show the status of the determined torque and angle of rotation clearly visible.

Variable

Varying air pressures can be specified via our digital proportional valve. A tightening process in several stages is thus realised.
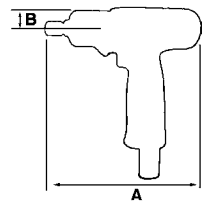
- Short screw-in times.
- Single-handed operation, without counterholder.
- Best pretensioning force within the connection.
- High repeatability.
- Quick change of position of the pistol.

Options

▸ Signal light stack for OK/NOK.

▸ Programme selector switch.

▸ XML-capable variant according to VW Group standard available.

▸ I/O extension box.

▸ ControlPro+ software for programming/parameterisation, administration, backup, process analysis, statistics and data export.

▸ ControlPro+ Database for traceable documentation of production data.

▸ Ethernet interface (TCP/IP).

Digital proportional valve

Series AT (Angle/Torque)

Type		Model	Item No.	Bolt Capacity	RPM	Torque Range*	Air Cons.	Dimensions A B		Weight	Pipe Thread	Hose ID	Vibration	Noise Level
SqD	Hex			Ø	min⁻¹	N·m	l/s	mm		kg	Zoll	mm	m/s²	dB(A)
–	1/4	AT-60 A	D100100	M6	6 000	11 - 16	4.5	209	22	1.4	1/4	6.35	2.1	71
–	1/4	AT-70 A	D100200	M6-M8	7 000	20 - 27	5.3	211	22	1.4	1/4	6.35	2.1	75
–	1/4	AT-80 A	D100300	M8	7 000	24 - 33	5.3	231	22	1.5	1/4	6.35	2.1	73
3/8	–	AT-60	D100150	M6	6 000	14 - 20	4.5	209	22	1.4	1/4	6.35	2.1	71
3/8	–	AT-70	D100250	M6-M8	7 000	20 - 35	5.3	211	22	1.4	1/4	6.35	2.1	75
3/8	–	AT-80	D100350	M8	7 000	32 - 46	5.3	231	22	1.5	1/4	6.35	2.1	73
3/8	–	AT-90	D100400	M8 -M10	6 500	47 - 70	6.8	234	24	1.7	1/4	9.5	2.1	78
1/2	–	AT-111	D100450	M10-M12	6 000	65 - 105	8.8	242	26	2.1	1/4	9.5	2.2	80
1/2	–	AT-120	D100500	M12	5 900	85 - 130	10	266	28	2.6	1/4	9.5	2.2	82
1/2	–	AT-140	D100550	M14	5 200	100 - 160	13	278	30	3.1	1/4	9.5	2.2	84
1/2	–	AT-150	D100600	M14-M16	4 200	150 - 220	13.2	285	32	3.7	1/4	9.5	2.4	84

(Type column left label: Pistol)

Further information available 24 / 7 on our website.

* Torque specification is for guidance only, based on manufacturer's tightening tests at 0.6 MPa. Due to different influencing factors, values may deviate in practice.

EC Tightening System with Angle Control – CONTROL Pro+
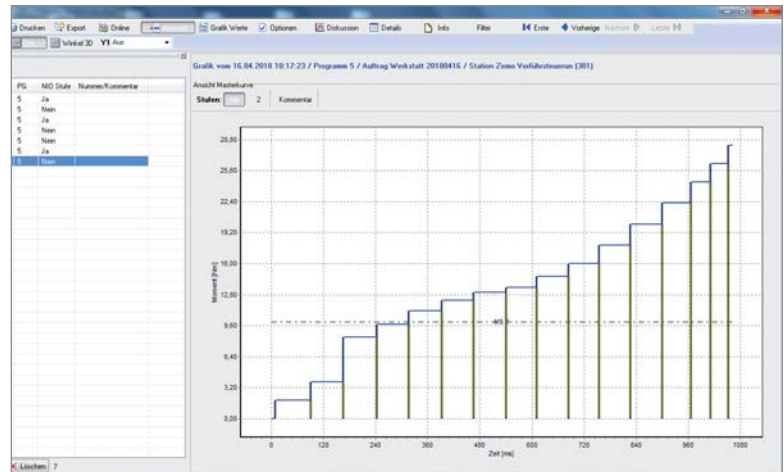
Smart & hybrid – made in Germany

The CONTROL Pro+ provides you with a high-end EC system impulse wrench control for the direct measurement of **torque**, **angle** of rotation and number of **impulses**. The EC impulse wrench is controlled, monitored and switched off reproducibly via individual screw-in procedures that are parameterised according to customer specifications. Even in complex screwdriving applications with the highest precision requirements, the reliable system electronics work with the highest repeat accuracy.

The CONTROL Pro+ is specially designed for controlling and shutting off EC impulse wrenches. For direct measurement of the torque and the angle of rotation, the AT system wrench co-developed by ZEMO is equipped with **strain gauges** and an **angle sensor** system. Standard EC impulse wrenches from Yokota's TKa series can also be connected by means of the **Impulse Converter Electronics** (ICE) specially developed for the CONTROL Pro+.

- Rotation angle, torque and pulse number controlled **AT impulse wrenches**; incl. automatic wrench recognition and control parameterisation for safety-relevant bolted joints according to VDI/VDE guideline 2862, category A.
- Torque and pulse number controlled Yokota system wrenches for safety-relevant bolted joints according to VDI/VDE guideline 2862, category A.

Logical

The customer-specific criteria for a bolting operation or a torque test can be converted into an individual bolting sequence programme. Programming and modification can be carried out directly on the controller by means of plain-text menu guidance that can be switched between two languages - or via the convenient MultiPro software. Up to 3000 instructions can be stored in 256 programmes.

The desired programme is called up via a direct start signal and the fastening process is started with the programmed instructions. With the tool start the bolting process begins and the bolting is carried out in several steps according to the entered parameters (tolerance limits).

During the tightening process, the system continuously takes measurements. An OK/NOK evaluation is carried out for each bolting stage and after the last bolting stage has been completed, the result is displayed on the LC screen – optionally in graphic mode.

The production data can be stored in the unit and recorded in the statistics memory. The data can be output as required for documentation purposes.

Functional

- ▶ Measurement according to VDI/VDE 2862.
- ▶ Large LCD with graphic display of readings value.
- ▶ Three-colour LED status displays for torque, angle of rotation and number of pulses.
- ▶ Freely programmable tightening sequences.
- ▶ Single-step operation (test of the programme sequence).
- ▶ Clear text programming and parameterisation on the unit or via supplied PC software.
- ▶ 4 status outputs for OK, NOK, READY and PG ready.
- ▶ 4 inputs for the programme selection.
- ▶ Output of measured values via printer interface, PC port or Profi-Bus, and/or storage on CF card.
- ▶ Optional Ethernet interface (TCP/IP).
- ▶ XML-capable, according to Volkswagen Group specifications.
- ▶ Convenient integrated statistics function.
- ▶ Automatic self-test.
- ▶ Access control, access journal, user administration.
- ▶ Released in the VW Group.
- ▶ Full parameterisation via supplied MulitControl PC software.

Further information available 24 / 7 on our website.