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## To whom it may concern in India

We certify that:

Inde Enterprises

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are our Indian partner both for sales and service of our Kolver Brand Electric Screwdrivers.

This certificate is re-issued on April 1st, 2018 and will be valid for next 3 years.

We solicit all our Indian customers' co-operation to inde Enterprises so as to perform the assigned responsibility.

KOLVER SRL

Via Marro Corpor, 10 38016 THIEME (VI) Tel. 0445 371 088 Fox 0443 371 088 Priva 021033300243



#### TORQUE TESTERS MINI K / S



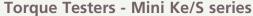


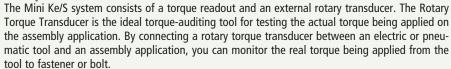
Controlling torque is vital for companies to ensure their product's quality. Fasteners that are insufficiently torqued can vibrate loose and excessive torque can strip threaded fasteners. Using a quality torque analyzer has become increasingly important for many companies to ensure that proper torque is being applied.

## **Torque Testers - Mini K/S Series**

MINI K/S Torque Testers feature a built-in transducer. The easy-to-use torque tester is ideal for checking all power tools up to 20 Nm. The small size and portability of the MINI K/S makes it ideal for checking torque tools on the production floor regularly to ensure the tools are always calibrated.

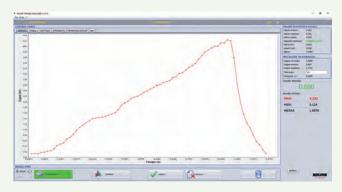
- Built-in transducer.
- Three models with 1 Nm, 5 Nm and 20 Nm max torque.
- Three units of torque measurement available; Nm, Kg.cm, in/lbs.
- Four digit display.
- Manual and auto reset functions to clear displayed values.
- Battery powered (9V) and AC adapter. 9V battery provides 30 hours of continuous operation.
- RS232C serial port with date and hour
- Automatic shut down to extend battery life.
- Torque Tester includes a spring washers joint simulator (miniK5/S and miniK20/S) or built in joint simulator (miniK1/S) and a case.

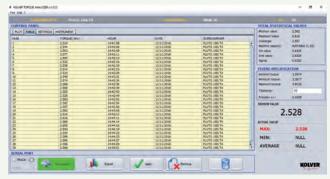




Correction factor (FATC): it is possible to connect different transducers to the same torque reader. The new Kolver Torque Analyser software for Mini K/S and Mini Ke/S Torque Testers features realtime tracking of each measurement and calculation of CM and CMK. A Real-time chart for each torque measurement is displayed on your PC screen (when "track mode" on the tester is enabled). The chart will show the trend of the single screwing operation or, in case of multiple screwing operations it will show the results according to the settings on the torque tester and software (for example if you're keeping track of multiple operations at max torque, the chart will show the trend of these max torques). You can also export an Excel file (max 30 measurements) with corresponding CM-CMK values: this is useful for testing the torque accuracy of the screwdriver.







Model	Code	Torque range Nm	Features	Dimensions mm	Rotary Transducer Dimensions mm	Weight kg
mini K1 / S	021402/S	0,05-1	With built-in joint simulator, serial port and 'Torque Analyzer' software for PC	150x70x45	-	0,80
mini K5 / S	021403/S	0,3-5	With joint simulator, serial port and 'Torque Analyzer' software for PC	150x70x45	-	0,80
mini K20 / S	021404/S	0,5-20	With joint simulator, serial port and 'Torque Analyzer' software for PC	150x70x45	-	0,80
mini KE 5 / S	021405/5/S	0,5-5	With external transducer, serial port and 'Torque Analyzer' software for PC	150x70x45	25x92	0,50 (without transducer)
mini KE 25 / S	021405/25/S	2-25	With external transducer, serial port and 'Torque Analyzer' software for PC	150x70x45	25x92	0,50 (without transducer)
mini Ke 50 / S	021405/50/S	Up to 50	With external transducer, serial port and 'Torque Analyzer' software for PC	150x70x45	90x52x64	0,50 (without transducer)

## **Transducerized intelligent Torque Programable Electric Screwdrivers**



Built-in compact transducer provides precise torque control with excellent repeatability

# **KOLVER K-DUCER 4.0 SOLUTION UPTO 15 Nm**

(shortly will be extended to 50 Nm)

- Fully compatible with Industry 4.0 concept
- Though most advance type yet fully affordable
- Cm (Capability machine) > 4.0\*
- \*At selected torque values





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## **Transducerized intelligent Torque Programable Electric Screwdrivers**



Built-in compact transducer provides precise torque control with excellent repeatability

#### THE K-DUCER 4.0 REVOLUTION

The K-Ducer is the new class A intelligent transducerized Electric Screwdrivers from Kolver Italy, the pioneer in this field since 1989. These consist of an advanced state-of-the-art Controller and a range of handheld and fixtured precisely torque controlled Electric Screwdrivers with torque range up to 15 Nm (shortly will be extended to 50 Nm).

#### **KDS SCREWDRIVERS**

KOLVER KDS transducerized Electric Screwdrivers cover assembly line requirements for accurate, high-quality torque and angle-controlled screws tightening. The built-in compact transducer provides torque control with excellent repeatability also.

KDS Screwdrivers feature unsurpassed ergonomics, soft touch design, status LED, temperature protection combined with full traceability and error-proofing capabilities. These are available in straight, pistol and fixture configurations.

Model	Code Number	Torque Nm/ Kgf-cm	Max RPM	Weight (Kg)	Length (mm)	Housing styles
KDS-PL6	135006			0.7	251	inline
KDS-PL6CA	135106	0.5~6.0/ 5 ~60	850	0.9	250	Fixture Mount
KDS-PL6P	135007			0.7	196	Pistol
KDS-PL10	135010			0.7	251	Inline
KDS-PL10CA	135110	0.8~10/ 8~100	600	0.9	250	Fixture Mount
KDS-PL10P	135011			0.7	196	Pistol
KDS-PL15	135015	0.5~15/	320	0.7	251	Inline
KDS-PL15CA	135115	5~150	320	0.9	250	Fixture Mount
KDS-PL15P	135016			0.7	196	Pistol



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## Transducerized intelligent Torque Programable Electric Screwdrivers



Built-in compact transducer provides precise torque control with excellent repeatability



## **KDU-1 POWER UNIT AND CONTROLLER**

The KDU-1 Series Controllers provide full control of screw fastening operation in an industry leading compact size.

With features like touch screen, colour display, multiple programs and sequences, intuitive programming interface, torque and angle control and graphs output, the KDU-1 Controllers provide unmatched performance and value. Set-up and operation are user friendly, very easy task. These Controllers come in two versions, depending on the functionality level required. KDU-1 basic Controller features total job options and includes serial and USB ports. In addition to these, KDU-1A advanced Controller has also full communication capability. Controllers may be programmed either through the touch screen or via PC software. KDU Controllers operate all KDS series screwdrivers.

FUNCTIONALITY	BASIC	ADVANCED
5" TOUCH SCREEN	<b>√</b>	✓
NUMBER OF PROGRAMS	64	64
NUMBER OF SEQUENCES	8	8
20 INPUT NPN	<b>√</b>	$\checkmark$
21 OUTPUTS	<b>√</b>	$\checkmark$
TORQUE GRAPH	✓	$\checkmark$
BAR CODE READING	<b>√</b>	✓
TORQUE AND ANGLE CONTROL	✓	✓
MULTIPLE PARAMETERS	✓	✓ ·
ETHERNET PORT	✓	✓
RS232 (2)	✓	✓
MINI USB	<b>√</b>	$\checkmark$
USB		$\checkmark$
PROFIBUS		✓
DEVICENET		✓
CC-LINK		✓
MODBUS TCP		✓
ETHERNET/IP		✓
PROFINET		✓
PROFINET FO		<b>√</b>
ETHERCAT		<b>√</b>
CC-LINK IE FIELD		<b>√</b>
POWERLINK		<b>√</b>
WIFI		✓

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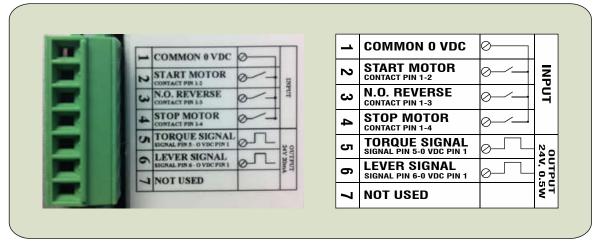
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## SPM use Hi-rel Kolver Italy Torque controlled Electric Screwdrivers

### Control Unit provides I/O Signals to interface with special purpose machines



Control Unit EDU1FR/SG provides Start/Reverse/Stop Motor signals & other signals to interface with user's PLC



EDU1FR/SG Control Unit provides I/O Signals to interface with user's PLC

EDU1FR/SG Control Unit use state-of-the-art electronic circuitry for Push-to-Start FAB & RAF Electric Screwdrivers. Unique design ensures very low current to Screwdriver start switch and clutch switch which results to extend the life indefinitely.

Worth mentioning features are:

- Slow start (0-2 seconds) and RPM (60% to 100%)
- Visual Indicators (Green-Red) for power on/off and clutch action.
- M12 water proof connector with silver and gold contacts for perfect conductivity



of 2 to 45 kgf-cm Torque operates on safe low DC voltage

in ESD safe housing certified to SP method 2472 (Ericsson approved) this FAB & RAF Series Screwdrivers use advanced ergonomic design for ease-of-use. Their high accuracy and long durability make these as industry benchmark standard by which other makes are compared. Low Voltage (30VDC) Rare Earth Motor used in this FAB & RAF Screwdrivers combine higher performance consistently and much longer durability, as experienced by customers world wide and in India.

### Range of FAB & RAF Series Torque Controlled Electric Screwdrivers

Model	Code	Torque (Nm)	Torque (Kgfcm)	RPM (Min~Max)	Weight (Kg)	Dimensions (mm)	Controller type
FAB12PS/FR	112012/FR	0.2~1.2	2.0~12.0	600-1000	0.48	249x33	EDU1FR/SG
FAB18PS/FR	112618/FR	0.3~1.8	3.0~18.0	450-650	0.48	249x33	EDU1FR/SG
RAF32PS/FR	122032/FR	0.7-3.2	7.0~32.0	600-1000	0.65	269x40	EDU1FR/SG
RAF50PS/FR	122650/FR	0.9-4.5	0.9~45.0	400-700	0.65	269x40	EDU1FR/SG

#### Control & Power Unit for FAB & RAF Series Electric Screwdrivers

Model	Code	Features	Dimensions (mm)	Weight (Kg)	Compaible with Screwdriver
EDU1FR/SG	010010/FR/SG	Input: start and reverse contacts Output: torque reached and lever signal	138x118x67	0.60	FAB & RAF Series

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## **Pluto Series Screwdrivers Current Control & Clutch Style**

Kolver's ingenuity and experience have led to the development of PLUTO (**PLUs TO**rque) Electric Screwdrivers, the most advanced types in world market, able to reach 50Nm. They feature an innovative coreless electric motor with low inertia and friction with absence of iron losses for extreme efficiency and extended life. Uses Planetary gearboxes with high quality composite materials. Pistol grip to fit operator's hand ergonomically. PLUTO Screwdrivers are available in pistol or in-line styles; lever, trigger, or push-to-start. All models are ESD safe. Select models (Pluto 3, 5, 7 FR)

Pluto CA/SR series Electric Screwdrivers are designed for higher torque range up to 50Nm. The CA/SR series features a sleek design with a robust aluminium body allowing for operator comfort and durability. Torque & Angle controlled models are available with TA options.



PUSH-TO-START DRIVER



**OPTIONAL RIGHT ANGLE HEADS** 



**TUBE NUT & CROWS FOOT** 



also available in clutch style torque adjustment.

PLUT020CA/SR

Model	Code	Torque Nm	RPM (Max)	Weight Kg	Dimensions (mm)	Torque Adjustment	Style
PLUT03D	130203	0.3-3.0	1200	0.55	216x40	Current	inline
PLUT03P	130204	0.3-3.0	1200	0.55	150x150x45	Current	Pistol
PLUT03P/U	130205	0.3-3.0	1200	0.55	150x150x45	Current	Pistol/Cord Up
PLUT03D/PS	130203/PS	0.3-3.0	1200	0.55	289x51	Current	inline/Push-start
PLUT03FR	131203	0.5-3.2	1300	0.55	273x40	Clutch	inline
PLUT05FR	131205	0.7-5.0	1000	0.55	273x40	Clutch	inline
PLUTO6D	130206	0.5-6.0	920	0.55	216x40	Current	inline
PLUT06P	130207	0.5-6.0	920	0.55	150x150x45	Current	Pistol
PLUT06P/U	130207/U	0.5-6.0	920	0.55	150x150x45	Current	Pistol/Cord Up
PLUTO6D/PS	130206/PS	0.5-6.0	920	0.55	289x51	Current	inline/Push-start
PLUT07FR	131207	1.0-7.0	600	0.55	273x40	Clutch	inline
PLUTO10D/N	130211/N	1.5-10.0	600	0.55	216x40	Current	inline
PLUT010P/N	130210/N	1.5-10.0	600	0.55	150x150x45	Current	Pistol
PLUT010P/U/N	130210/U/N	1.5-10.0	600	0.55	150x150x45	Current	Pistol/Cord Up
PLUT010D/PS	130211/PS	1.5-10.0	600	0.55	289x51	Current	inline/Push-start
PLUTO15D/N	130216/N	2.0-15.0	320	0.60	216x40	Current	inline
PLUT015P/N	130215/N	2.0-15.0	320	0.60	150x150x45	Current	Pistol
PLUTO15P/U/N	130215/U/N	2.0-15.0	320	0.60	150x150x45	Current	Pistol/Cord Up
PLUT015D/PS	130216/PS	2.0-15.0	320	0.60	289x51	Current	inline/Push-start
PLUT020CA/SR	133221/SR	2.0-20.0	210	1.10	232,10x47	Current	Aluminium body*
PLUT035CA/SR	133236/SR	2.0-35.0	140	1.50	246,60x57	Current	Aluminium body*
PLUT050CA/SR	133250/SR	5.0-50.0	90	1.50	246,60x57	Current	Aluminium body*

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## Pluto Series Screwdrivers with Torque & Angle Control

Industrial tightening may require different control strategies and solutions. The most common cases are: torque control with angle monitoring and angle control with torque monitoring. Kolver Multi-Torque Torque & Angle Controllers can manage all such strategies, with up to 8 individual P-sets.

## The Torque/Angle Control

The main parameters to be controlled are the tightening torque applied to the screw and the rotation angle of the screw, with priority to the torque value. If the torque and angle values found by the system are within the programmed settings, the motor stops automatically and the indication of OK cycle (green led turned on) is given, otherwise an error (red led) is generated.

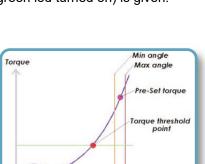


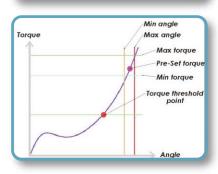
#### Features of the EDU2AE/TOP/TA:

The main parameters to be controlled is the rotation angle of the screw. The motor stops automatically when the pre-set angle value has been reached and an indication of OK cycle (green led turned on) is given.

#### **Main Features:**

- New Expanded software package for remote programming via PC.
- USB port on the front of the Controller for uploading and downloading programs.
- · Easy to program user interface screens
- Password protected
- Torque value in Nm, lbf.in and kgf.cm
- Angle value in degrees.
- 8 indipendent programs including the options:
- Min/Max torque value
- Min/Max angle value
- Rundown speed
- Slow start/Soft stop
- Hard/soft joint
- Min/Max rundown time
- Prevailing torque (threadcutting)
- Auto reverse if required
- 6 Torque & Angle strategies:
- Torque priority: angle count from torque threshold (T) or from remote input (T/I) or from lever input (T/L).
- Angle priority: driver stops when angle is reached from threshold torque (A) or from remote input (A/I) or from lever (A/L).





Model	Code	Torque Nm	RPM (Max)	Dimensions LxØ(mm)	Output	Control Unit
PLUTO3D/TA	130203/TA	0.3-3.0	1200	216x40	Hex.1/4"	EDU2AE/TOP/TA
PLUTO6D/TA	130206/TA	0.5-8.0	920	216x40	Hex.1/4"	EDU2AE/TOP/TA
PLUTO10D/TA	130211/TA	1.5-10.0	600	216x40	Hex.1/4"	EDU2AE/TOP/TA
PLUTO15D/TA	130216/TA	2.0-15.0	320	216x40	Hex.1/4"	EDU2AE/TOP/TA
PLUTO20CA/SR/TA	133221/SR/TA	2.0-20.0	210	232.10x47	Sq.3/8"	EDU2AE/TOP/TA
PLUT035CA/SR/TA	133236/SR/TA	2.0-35.0	140	246.60x57	Sq.3/8"	EDU2AE/TOP/TA
PLUTO50CA/SR/TA	133250/SR/TA	5.0-50.0	90	206.60x57	Sq.1/2"	EDU2AE/TOP/TA

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## **New PLUTO Control Units - with Expanded Software**

The EDU2AE/TOP/E & the improved version of EDU2AE/TOP/TA Controllers are now available with programming software. Each control unit is supplied standard with EDU EXPAND software and an 8GB USB flash drive. An external WiFi device is available on request.

#### **Main Features:**

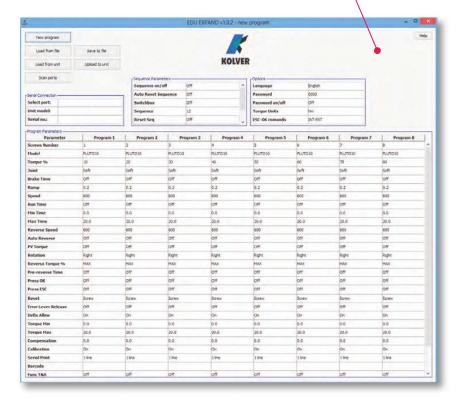
 PC programming (back panel): it is possible to set, change and save all parameters through the new "EDU EXPAND" software for PC. EDU EXPAND communicates with the Control Unit via miniUSB or RS232.

 Saving/programming on USB flash drive (front panel): you can now save the results of each screwing operation directly on USB pen drive!

It is also possible to upload via USB drive all parameters/programs previously set on "EDU EXPAND". Just connect your USB to the port and recall the desired programs on the menu. The programs set on Control Unit can be downloaded on USB and recalled on another unit and on EDU EXPAND too.









EDU2AE/TOP/E



EDU2AE/TOP/TA

Model	Code	Features	Dimensions mm	Weight kg	Screwdriver
EDU2AE/TOP/E	031000/TOP/E	EDU2AE/TOP Controller with Expanded Software for remote programming via USB port & PC	190x205x120	4.0	PLUTO Series
EDU2AE/TOP/TA	031000/TOP/TA	031000/TOP/TA 8 P-set Controller, Parts Counting, Torque Display, 15 I/O, USB port	190x205x120	4.0	PLUTO/TA Series

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## **Various EDU2AE Control Units Comparison Chart**

	EDU2AE	EDU2AE/FR	EDU2AE/HPro	EDU2AE/TOP	EDU2AE/TOP/E	EDU2AE/TOP/TA
Switching power supply	х	Х	х	Х	х	Х
Settable Torque per centage	х		х	Х	х	Х
Ramp and Speed settings	х	Х	x	Х	x	х
Speed 1 and Speed 2 settings	х		x	Х	x	Х
Min/max or infinite time settings	Х	Х	х	Х	X	Х
Auto reverse	X	Х	X	х	x	x
Pre Reverse			x	Х	x	X
Settable loosening speed	х		х	Х	х	Х
Settable loosening torque	x		Х	х	Х	х
Run time	х	х	х	Х	Х	Х
Prevailing torque			x	Х	х	Х
Clockwise/anticlock wise tightening			Х	Х	Х	Х
Password		Х	x	Х	Х	х
Calibration			x	Х	х	Х
Nm - Ib/in - Kgf.cm selection			X	Х	X	Х
Min/max torque			х	x	х	Х
Screw count and end cycle signal		х	Х	х	Х	Х
Screw reset				x	x	Х
Program reset		х	x	Х	Х	Х
Sequence reset				Х	Х	х
Multitorque				х	X	Х
Lever error				Х	х	Х
Enable/Disable loosening				Х	Х	Х
Barcode				Х	х	Х
Serial print		х	x	Х	x	Х
Error,motor on and correct screw signals	х	х	Х	х	Х	х
Optional screwdriver connector on back panel		Х	x			
Multilanguage	х	х	х	Х	x	Х
Use with DOCK04 double output connector				х	Х	х
Use with PRNTR1 serial printer		х	X	Х	X	X
Printing options for each program				х	Х	X
Use with TLS1	x	Х	x	Х	x	Х
>> w/automatic program switch				х	X	X
PC programming (EDU EXPAND software)					X	X
USB flash drive & port					X	x

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#### **Linear Reaction Arm**

Linear arm maneuvers smoothly as it absorbs the torque reactions from the Screwdrivers providing ergonomic support for the operator. The fluid movement increases precision and production for a variety of torque applications. It prevents cross threading and side load. It keeps tool perpendicular, reduces RMI (Repetitive Motion Injury) and CTS (Carpal Tunnel Syndrome) while boosting production. Adjustable arm length extends horizontally.

Model	Code	Max Torque Nm	Max Reach mm	Min Reach mm
LINAR1	010681	25	665	184



## **Telescopic Reaction Arms**

CAR series Torque Reaction Arms are designed to eliminate the reaction that Screwdrivers generate when they stop at the preset torque (up to 50 Nm). Their carbon structure makes them extremely lightweight and incredibly resistant at the same time. For such reasons, they resist degradation in high fatigue applications much better than conventional materials.

Model	Code	Min Reach mm	Max Reach mm	Weight kg	Max Torque Nm
CAR101	010661	549	906	0.25	10
CAR281	010663	490	950	0.60	25
CAR282	010664	730	1650	0.75	25
CAR501	010665	490	950	0.65	50
CAR502	010666	730	1650	0.80	50





The TLS1 Arm is an "intelligent" system that ensures that every screw is in correct location at the right torque. Assembly sequences and X-Y co-ordinates are easily programmed with user interface screens through the keypad from the intuitive menu. Torque programs are automatically selected and enabled from the Screwdriver Controller based on TLS1 Arm locations and current sequence step. No PC is required. Only requirement is a fixture that can hold the work at the same place every time.

TLS1 Arm consists of Torque Reaction Arm with an Encoder & a Linear Metering Resistor. The Encoder records angle and the Linear Resistor records the distance. TLS1 Control Box converts the angle counts of the encoder and the distance detected by the resistor to the precise X-Y position of the Screwdriver.



Power Supply Input/Output Connector Connectors

Serial Connector

Control Unit

- 8 available programs.
- Up to 35 screws per program
- Screw position (length/angle)
- Programmable tolerance
- Statistics
- Manual reset
- Password protected
- Units in (mm, inch)
- Language option
- Accuracy: Length ±1mm; Angle ±1°
- External Keyboard and Serial Port for easy programming & reporting

Model	Code	Min Reach mm	Max Reach mm	Max Torque Nm
TLS1/CAR281	010663/TLS1	550	1000	25
TLS1/CAR282	010664/TLS1	800	1720	25
TLS1/CAR501	010665/TLS1	550	1000	50
TLS1/CAR502	010666/TLS1	800	1720	50

shown trademarks are property of their respective owners.

Warranty is 12 months from the date of invoice, excludes bits, screwdriver gears and any other physically damaged part.

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