

KOLVER




KOLVER[®]
USA

ELECTRIC SCREWDRIVERS









Founded in 1989, KOLVER has taken the leadership in the European market of precision electric screwdrivers for industry.

Thousands of state-of-the-art drivers are produced every year in Italy and then shipped to more than 30 countries worldwide. ISO 9001 certified since 1998, KOLVER has gained international recognition for building premier quality innovative products that meet or exceed the most rigorous customer requirements. More than 80% of the products you find in this catalogue have been introduced over the last 2 years: no other manufacturer of electric screwdrivers comes close to this record.

Screwdriver is the term commonly used for assembly tools in the screw size up to M8. This catalogue is designed to help you select the right screwdriver for your assembly application. The Kolver family of tools is one of the most complete in the electric power tool industry. The Kolver line of tools covers a wide range of torque at several speeds, suitable for an infinite number of applications. Whether your job is in the Electronics, PC assembly, Telecommunication or in the Motor vehicles or Household appliances industry, you'll find the optimum screwdriver for each application.



KOLVER SCREWDRIVER IS

-  **ERGONOMIC**
Advanced grip design, light in weight, low vibrations, for maximum operator comfort
-  **CLEAN**
No air exhaust + No lubrication = a cleaner environment
-  **SAFE**
Because of the transformer, only 30 V to the tool
-  **FLEXIBLE**
From the controller you can adjust the running speed and the slow start duration. PLC models also available for additional functions
-  **ACCURATE**
With the electronic shut off mechanism the accuracy is better than +/- 5% of the pre-set value
-  **FOR EVERY APPLICATION**
Range up to 132 in.lbs, straight, pistol, 90°, ESD, with vacuum, lever start or push to start...
-  **NOISELESS**
Noise within 55 dB(A)
-  **COST EFFECTIVE**
Low purchasing price + virtually no maintenance + no need of compressed air line + no need of spiral hoses & couplers & filters-regulators-lubricators = operating cost up to 200 times cheaper than pneumatic screwdrivers



FAB SERIES
(TORQUE UP TO 16 in.lbs)

FAB series electric screwdrivers are our “best sellers” for the electronic industry. Their advanced ergonomic design, ease of use, high accuracy and durability have made these drivers the standard by which all others are measured. They are lightweight, compact, powerful and come standard with ESD-safe housing certified to SP method 2472 (Ericsson approved). The FAB screwdrivers are available in an inline body style with either a lever start or push to start or in a pistol grip with a trigger start (also available with the cord coming out from the top - U option) and different speeds, for different assembly requirements.

The torque is set externally: an adjusting nut controls output torque by changing the clutch spring compression. A reference scale will indicate the torque setting. The low voltage 30 V DC rare earth motors combine high performances and long life. Replacing their carbon brushes once a year is all you need for maintenance.

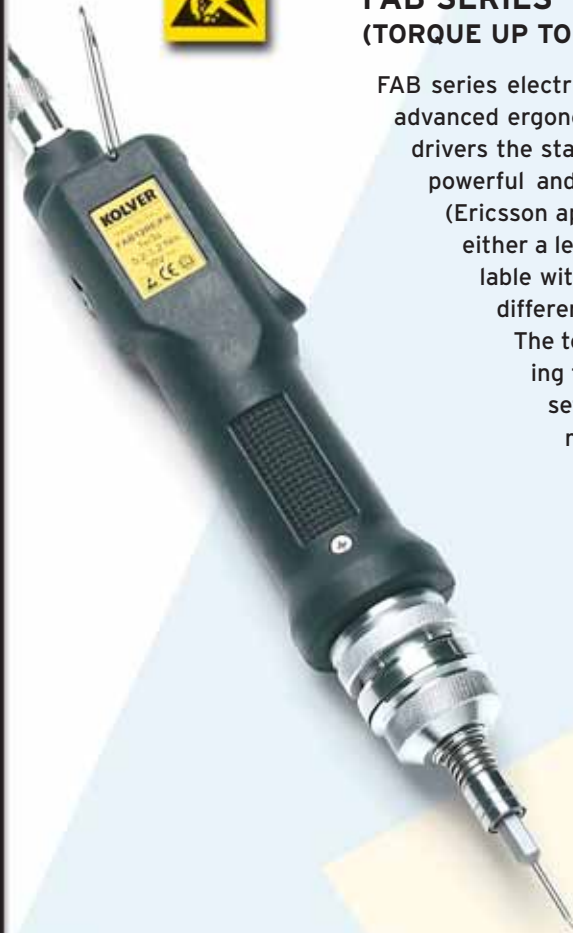
The motor works in combination with a control unit. The electronic control circuit cuts the power supply to the motor in response to the clutch action, as soon as the pre-set torque has been reached.

Standard features are the slow start (ramp from 0 to 2 seconds) and adjustable speed (from 60% to 100% of nominal speed).

In addition the controller can be supplied with torque reached signal, lever signal, remote start and reverse (see page of control units) or with PLC option.

All FAB drivers come standard with an ESD-safe body, 8 ft connection cable and suspension bail.

The new heavy duty cables and connectors, developed for robotic applications, are made of antistatic dissipative material for a safe use in ESD environment.



FAB SERIES



TORQUE SET UP



PISTOL MODEL



ANGLE HEAD
(ONLY FOR LEVER TYPE)



NEW CABLE WITH M12
CONNECTOR

Model	Torque in.lbs	Screw size	RPM	Start option	Weight lbs	L x Ø in	Voltage cc	Controller	Housing option
FAB03SS/FR	0.44÷4.4	M2.5	650	Lever	1	8.70x1.30	30 Vcc	EDUIFR	
FAB10RE/FR	0.44÷7.0	M2.5	1000	Lever	1.10	8.70x1.30	30 Vcc	EDUIFR	
FAB12RE/FR	1.8÷10.60	M3	1000	Lever	1.10	8.70x1.30	30 Vcc	EDUIFR	
FAB12PS/FR	1.8÷10.60	M3	1000	Push start	1.10	8.70x1.30	30 Vcc	EDUIFR	
FAB12PP/FR	1.8÷10.60	M3	1000	Trigger	1.20	7.90x6.70x1.80	30 Vcc	EDUIFR	Pistol grip
FAB12PP/FR/U	1.8÷10.60	M3	1000	Trigger	1.20	7.90x6.70x1.80	30 Vcc	EDUIFR	Pistol grip with top connector
FAB18RE/FR	2.60÷16.0	M4	650	Lever	1.10	8.70x1.30	30 Vcc	EDUIFR	
FAB18PS/FR	2.60÷16.0	M4	650	Push start	1.10	8.70x1.30	30 Vcc	EDUIFR	
FAB18PP/FR	2.60÷16.0	M4	650	Trigger	1.20	7.90x6.70x1.80	30 Vcc	EDUIFR	Pistol grip
FAB18PP/FR/U	2.60÷16.0	M4	650	Trigger	1.20	7.90x6.70x1.80	30 Vcc	EDUIFR	Pistol grip with top connector

RAF SERIES
(TORQUE UP TO 36.30 in.lbs)

RAF Series screwdrivers are designed to meet higher torque applications. The advanced ergonomic body design reduces Carpal Tunnel Syndrome. They are lightweight, compact, powerful and come standard with ESD-safe housing certified to SP method 2472 (Ericsson approved). The RAF series' wide torque range and tight torque accuracy combined with the adjustable RPMs and slow-start options, make it a versatile tool ideal for multiple applications. The RAF screwdrivers are available in an inline body style with either a lever start or push to start or in a pistol grip with a trigger start (also available with the cord coming out from the top - U option) and different speeds, for different assembly requirements.

The torque is set externally; an adjusting nut controls output torque by changing the clutch spring compression. A reference scale will indicate the torque setting. The low voltage 30 V DC rare earth motors combine high performances and long life. Replacing their carbon brushes once a year is all you need for maintenance.

The motor works in combination with a control unit. The electronic control circuit cuts the power supply to the motor in response to the clutch action, as soon as the pre-set torque has been reached. Standard features are the slow start (ramp from 0 to 2 seconds) and adjustable speed (from 60% to 100% of nominal speed).

In addition the controller can be supplied with torque reached signal, lever signal, remote start and reverse (see page of control units) or with PLC option.

All RAF drivers come standard with an ESD-safe body, 8 ft connection cable and suspension bail.

The new heavy duty cables and connectors, developed for robotic applications, are made of antistatic dissipative material for a safe use in ESD environment.



TORQUE SET UP



PISTOL MODEL



ANGLE HEAD
(ONLY FOR LEVER TYPE)



NEW CABLE WITH M12
CONNECTOR

RAF SERIES

Model	Torque in.lbs	Screw size	RPM	Start option	Weight lbs	L x Ø in	Voltage cc	Controller	Housing option
RAF32NS/FR	6.20÷28.30	M5	1000	Lever	1.45	8.85x1.53	30 Vcc	EDU1FR	
RAF32PS/FR	6.20÷28.30	M5	1000	Push start	1.45	8.85x1.53	30 Vcc	EDU1FR	
RAF32PP/FR	6.20÷28.30	M5	1000	Trigger	1.55	8.65x6.70x1.80	30 Vcc	EDU1FR	Pistol grip
RAF32PP/FR/U	6.20÷28.30	M5	1000	Trigger	1.55	8.65x6.70x1.80	30 Vcc	EDU1FR	Pistol grip with top connector
RAF38NS/FR	7.95÷33.60	M5	650	Lever	1.45	8.85x1.53	30 Vcc	EDU1FR	
RAF38PS/FR	7.95÷33.60	M5	650	Push start	1.45	8.85x1.53	30 Vcc	EDU1FR	
RAF38PP/FR	7.95÷33.60	M5	650	Trigger	1.55	8.65x6.70x1.80	30 Vcc	EDU1FR	Pistol grip
RAF38PP/FR/U	7.95÷33.60	M5	650	Trigger	1.55	8.65x6.70x1.80	30 Vcc	EDU1FR	Pistol grip with top connector

PLUTO SERIES

Kolver's ingenuity and experience have led to the development of Pluto (PLUs TORque) screwdrivers, the most advanced DC tools in the market, able to reach 132 in.lbs of torque (4 times more than any competitor's tool). They feature:



An innovative electric motor design with low inertia and friction provides for extreme efficiency and extended life. Planetary gearboxes with high quality composite materials. Pistol grip to fit operator's hand ergonomically.

A weight of 1.3 lbs to reduce operator's fatigue. Fully electronic (clutchless) torque control system, manually set by a dial on the controller, to shut the tool off automatically once the preset torque has been reached. The Pluto Series is ideal for high volume applications where millions of cycles at high torque are required.

The Pluto Series is available in a molded pistol grip with the cord set exiting from the top (U option) or bottom, or in a standard inline housing with lever start. ESD-safe housing is standard. This tool is the real alternative to the pneumatic screwdriver.

The controller is supplied with slow start and adjustable speed, soft or hard joint option, high speed rundown and slow speed tightening for improved accuracy, automatic reverse at cycle end, autostop on elapsed time, torque reached signal and lever signal, remote start and reverse contacts (see page of control units for details) or with PLC option for multiple functions. All Pluto series electric screwdrivers come standard with 8 ft connection cable and suspension bail. The new heavy duty cables and connectors, developed for robotic applications, are made of antistatic dissipative material for a safe use in ESD environment.



TORQUE SET UP ON THE CONTROLLER



U MODEL



INLINE MODEL WITH ADAPTER KPO5 FOR EASY CLAMPING ON REACTION ARM



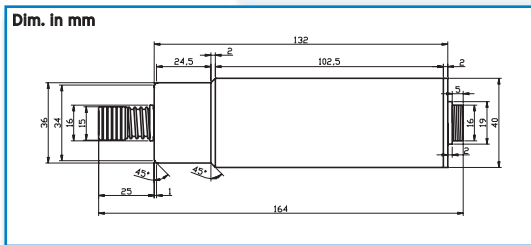
INLINE MODEL

Model	Torque in.lbs	Screw size	RPM	Start option	Weight lbs	L x Ø in	Voltage cc	Controller	Housing option
PLUTO03FR	2.65÷26.55	M5	800	Lever	1.32	8.85x1.53	30 Vcc	EDU1FR	
PLUTO03PP/FR	2.65÷26.55	M5	800	Trigger	1.44	7.90x6.70x1.80	30 Vcc	EDU1FR	Pistol grip
PLUTO10D/N	18÷88	M6	600-200	Lever	1.10	7.20x1.60	40 Vcc	EDU1AE	
PLUTO10P/N	18÷88	M6	600-200	Trigger	1.10	6.40x5.20x1.80	40 Vcc	EDU1AE	Pistol grip
PLUTO10P/U/N	18÷88	M6	600-200	Trigger	1.10	6.40x5.20x1.80	40 Vcc	EDU1AE	Pistol grip with top connector
PLUTO15D/N	18÷132	M8	320-100	Lever	1.10	7.20x1.60	40 Vcc	EDU1AE	
PLUTO15P/N	18÷132	M8	320-100	Trigger	1.10	6.40x5.20x1.80	40 Vcc	EDU1AE	Pistol grip
PLUTO15P/U/N	18÷132	M8	320-100	Trigger	1.10	6.80x5.20x1.80	40 Vcc	EDU1AE	Pistol grip with top connector

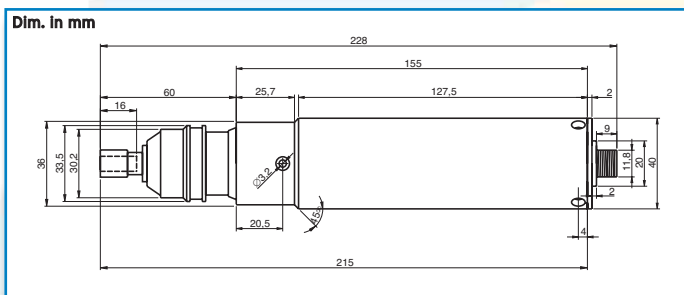
CA SERIES

The CA screwdrivers are designed for automated and fixtured applications. Special wiring and dedicated controllers are equipped with electric signals and contacts for immediate and easy interface.

The ideal alternative to pneumatic drivers, they feature a long life maintenance free electric motor with a unique electronic torque control system for high accuracy throughout a wide torque range; an aluminium body, for easy and quick clamp, supplied with 8 ft cable.



PLUTO CA



PLUTO CA/FR



CA SERIES

Model	Torque in.lbs	RPM	Start option	L x Ø in	Voltage cc	Controller
PLUTO03CA/FR	2.65÷26.55	800	Remote	9.12x1.60	30 Vcc	EDU1FR/SG
PLUTO10CA/N	18÷88	600-200	Remote	6.56x1.60	40 Vcc	EDU1AE
PLUTO15CA/N	18÷132	320-100	Remote	6.56x1.60	40 Vcc	EDU1AE

ACC SERIES

ACC screwdrivers are 110V direct plug-in tools with built-in PCB for automatic power cut-off and AC-to-DC rectifier.

Since they do not need a separate control unit, they are perfect for all those applications where the operator frequently needs to shift the tool from one working place to another. ACC drivers have the unique feature of selectable push to start or push & lever start at the flick of a switch to suit any operator's choice.

Equipment supplied with all models: 8 ft cable with connector for controller and a suspension bail.

NOTE: The ACC Series screwdriver body is not made of ESD-safe material. The body can be coated with a static dissipative material to make it ESD-safe, but the treatment will need to be replaced over time.



TORQUE SET-UP



3 POSITIONS REVERSE SWITCH



START MODE (PUSH TO START OR PUSH + LEVER)



TORQUE ADJUSTING NUT COVER

Model	Torque in.lbs	Screw size	RPM	Weight lbs	L x Ø in	Voltage cc
ACC2210	1.75÷8.85	M3	950	1.65	10.20x1.40	120 V
ACC2220	6.20÷17.70	M4	950	1.76	10.20x1.40	120 V
ACC2222	7.95÷17.70	M4	2400	1.87	10.60x1.52	120 V
ACC2230	8.85÷26.55	M5	950	1.87	10.60x1.52	120 V
ACC2245	8.85÷39.82	M5	450	1.87	10.60x1.52	120 V

CONTROL UNITS

All the FAB, RAF and Pluto series screwdrivers work in combination with a control unit acting as an AC to DC transformer and torque controller. The electronic control circuit cuts the power supply to the motor as soon as the pre-set torque has been reached.

The new EDU1FR control units for FAB and RAF screwdrivers feature a maintenance free state-of-the-art electronics with no wearing components with a circuit design suitable to both lever start and push start drivers with protection against current overload up to 10A. This design results in very low current to the driver's start switch and clutch switch to extend their life indefinitely.

Additional features:

- Suitable to universal supply from 90 to 260 V ac 50/60 hz.
 - Slow start (0-2 seconds) and RPM (60% to 100%).
 - Visual indicators (green-red) for power on/off and clutch action.
 - Reduced weight (1.33 lbs) and compact size for easy placement.
 - New M12 waterproof connector with silver and gold contacts for perfect conductivity.
- The new EDU1FR/SG controller features additional circuits wired to 2 connectors in the back panel: one connector sends out 24V signals for torque reached and lever (motor running), the second connector is designed to accept remote start and remote reverse signals. A double output connector (DOCK01) is also available for operators using two screwdrivers on the same working area. One end of this device is to be connected to the controller (cable included), the other end to the drivers. The screwdrivers are not to be used at the same time. For the Pluto series the new EDU1AE gives you all the advantages of precision torque controlled electric tools at a fraction of the price of transdurized tools. The microprocessor based unit cuts the power supply to the motor calculating the correct torque in response to 3 parameters; voltage, frequency, and current, according to the selected options.

Additional features:

- One controller only for a torque range from 18 to 132 in.lbs.
- User interface screens: walk through a few simple steps to input the parameters requested for your application and your fastening process can begin.
- Slow start and adjustable speed.
- Soft or hard joint option.
- High speed rundown and slow speed tightening for improved accuracy.
- Autostop on elapsed time, automatic reverse at cycle end with adjustable time stop.
- Torque reached signal and lever signal, remote start and reverse contacts.
- Serial port for data downloading available on request for all models.



VISUAL INDICATORS



SOFT START AND SPEED REGULATION



TORQUE ADJUSTMENT ON EDU1AE



DOUBLE OUTPUT DEVICE WITH CABLE

Model	Features	Dimensions in	Weight lbs	Screwdriver
EDU 1FR	In: 90-260Vca out: 18-30Vcc slow start and adjustable speed	5.50x4.75x2.70	1.33	All FAB and RAF
EDU1FR/SG	Input: start and reverse contacts Output: torque reached & lever signal	5.50x4.75x2.70	1.33	All FAB and RAF
EDU3AE/N	Torque range 35.40-88 in.lbs	7.40x5.00x3.80	9.35	PLUTO
EDU1AE	Programmable with user interface screens	7.40x5.00x3.80	9.35	PLUTO
EDU1AE/C	Features remote double torque selection	7.40x5.00x3.80	9.35	PLUTO
EDU1AE/RT	Features remote multiple torque selection	7.40x5.00x3.80	9.35	PLUTO

INSPECTOR CONTROL UNIT

The INSPECTOR is a PLC based process control system that monitors the fastening assembly process. It compares the actual triggered torque time to a pre-set tolerance, ignoring joints that fall out of the process window. It tracks, in real time, the completion of each screw joint in an assembly, then notifies the operator upon its completion. It keeps a summary of good and incomplete assemblies throughout the production day.

The INSPECTOR is easily programmed with user interface screens on the PLC. Walk through a few simple steps to input the parameters for total number of fasteners required in a completed assembly (1 to 99999) and minimum and maximum screw times and the fastening process can begin. A manual reset is requested from the user acknowledging completion of an assembly or when one of several recognizable process errors occur.

The INSPECTOR indicates an individual joint as complete when the torque achieved time falls within the minimum and maximum times set for a specified joint. An assembly is indicated as complete when all the required screws have been successfully completed. The torque signal received by the INSPECTOR indicates that the pre-set torque level on the driver has been met. In the case of the FAB or RAF series the signal is sent when the clutch on the driver engages. For the PLUTO driver, the signal is sent by the electronic torque control circuitry in the EDU1AE controller.

At the end of a job the INSPECTOR will indicate the number of completed assemblies, confirming all the work is done without error and its safe to move on to the next process step.

- Set up of number of screws for a complete cycle.
- Set up of minimum fastening time in 0,1 sec. steps (to avoid the counting of torque reached signals obtained re-fastening an already tied up screw or fastening screws that stop before reaching the right position).
- Set up of maximum fastening time (to avoid the counting of stripped screws).
- Remote starting and reversing (option).
- Output signals: torque reached, lever, cycle end and alarm (24 V 100mA).
- Display of completed assemblies, total acceptable and rejected assemblies.
- A special model PLC/TOP is available on request featuring up to 8 programs each one with different torque values, speed, ramp, screw counting, batch counting, RS232 port for printer and PC connection, torque chart with real time clock.



PLC'S DETAIL

Model	Power	Dimensions in	Weight lbs	Screwdriver
EDU 1FR/PLC	120 V	5.30x4.55x5.30	2.205	Series FAB and RAF
EDU 1AE/PLC	200 V	7.40x5.60x7.40	8.14	Series PLUTO

TORQUE TESTER

The K series are totally new classes of torque analyzers. They feature a built-in transducer and also have the unique ability to connect to an external transducer. Using a high performance circuitry they collect, store and eventually download torque measures for a complete analysis of the tool and/or the joint. Priced at an outstanding low level, this tester has soon become very popular among those companies wishing to improve their product quality through the precise control of torque.

- User friendly menu.
- Accuracy: +/- 0,5% of the displayed value +/-1 digit.
- Internal transducer for tests on a joint simulator (supplied with the unit).
- Connection for external transducer (transducer not included).
- 500 readings memory.
- Selection among Nm, Ncm, kg.cm, in.lbs.
- RS232C output (cable not included).
- Indication \Leftrightarrow of the preset values.
- Output signal at preset reached value.
- Clockwise and counter-clockwise measurement.
- 3 modes of operation: Peak + , Peak - , Track.
- Manual or automatic reset.
- 9 V rechargeable battery provide 4 hours continuous operation. Automatic switch off to reduce battery consumption.
- 125% transducer overload protection.
- English and Italian menu.

Supplied in a plastic carrying case, with one rechargeable battery, 1 joint simulator (semi-elastic), instruction manual and certificate of calibration.

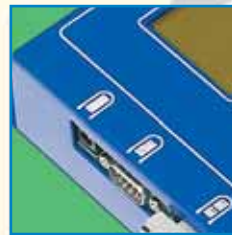
Additional joint simulators (rundown adapters) for hard joint or fully elastic joint available on request.



JOINT SIMULATOR



EXTERNAL ROTARY TRANSUCER



CONNECTING PORTS



KEYPAD

Model	Torque in.lbs	Dimensions in	Weight lbs
K1	0.44÷8.8	7.10x4.10x2.15	2.205
K5	2.65÷44	7.10x4.10x2.15	2.205
K20	4.40÷177	7.10x4.10x2.15	2.205

ROTARY TRANSUCER

All rotary transducers feature a 1/4" Hex male input drive and a 1/4" Hex female output driver

RTK01	5.0÷50
RTK02	10÷100
RTK03	20÷200

SCREW PRESENTERS AND AUTOMATIC SYSTEMS

The NJK series is a simple but effective device where screws are brought to pick up position one after another and stay there lining up. A magnetized bit or an "autocatcher" (see accessories) is required to chuck the screw.

The NJK705 is a universal feeder adjustable for any size of screw from 0.056" through 0.200".

With a special bit guide, it is also possible to work with pick & place devices. Each screw is separated and brought into place with very accurate positioning ready for automatic pick-up action.

Autofeed hand screwdrivers and fixed screwing units are easy-to-use and reliable systems where the screw or the nut is automatically fed into the driver collet head increasing assembly rate and productivity. Suitable to feed and tighten machine screws, self tapping screws, nuts, studs and any other threaded fasteners with or without washers.



FIXED SCREWING UNIT



AUTOFEED HAND SCREWDRIVER



AUTOFEED HAND SCREWDRIVER WITH AUTOMATIC DOWN STROKE



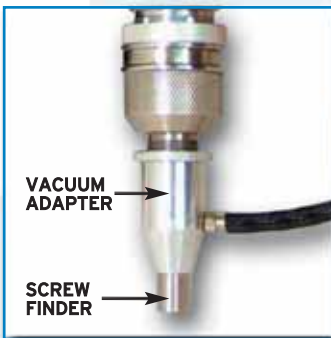
DESKTOP ROBOT

Model	∅ shank	Screw length min.	Screw length max
NJK 514	0.056"	0.072"	0.400"
NJK 517	0.068"	0.068"	0.400"
NJK 520	0.080"	0.100"	0.720"
NJK 523	0.092"	0.112"	0.720"
NJK 526	0.104"	0.140"	0.720"
NJK 530	0.120"	0.160"	0.720"
NJK 540	0.160"	0.200"	0.720"
NJK 550	0.200"	0.240"	0.720"
NJK 705	0.056"-0.200"	0.072"	0.720"



KSF-5000 AUTOMATIC SCREWFEEDER

Autofeed hand screwdrivers are simple and reliable systems where the screw or nut is automatically fed into the driver collet head. The automatic downstroke reduces operator fatigue, dramatically increasing assembly rate and productivity. You can feed and tighten machine and self-tapping screws, nuts, studs and any other threaded fasteners, with or without washers.



VACUUM ADAPTOR KIT

Model VA-205K-FAB vacuum pick-up system is designed to work with the Kolver FAB series Screwdrivers. The kit includes a vacuum adaptor, vacuum pump, hoses and fittings required.

Interchangeable screw finders are sold separately. Custom finders, are also available. Vacuum pick-up attachments are used with either Kolver NJK Screw Presenters, or with Shaker Trays.

Finder P/N	ID	ID	Pre-Bored Hole	Pre-Bored Hole
2-0270-0013	.119"	3.0mm	.067"	1.7mm
2-0270-0014	.139"	3.5mm	.087"	2.2mm
2-0270-0015	.158"	4.0mm	.107"	2.7mm
2-0270-0016	.174"	4.4mm	.123"	3.1mm
2-0270-0017	.310"	7.9mm	.210"	5.3mm



SHAKER TRAYS: 4"x4" square

Grid Width (mm)	Shaker Tray P/N
3.0	SGQ 30
3.5	SGQ 35
4.0	SGQ 40
4.5	SGQ 45
5.0	SGQ 50
5.5	SGQ 55

GRID WIDTH FOR SPECIFIC SCREW SIZES



PIVOTING ARM

ARMPV1 support arms consist of a vertical support on which a 180° pivoting arm is attached. It is equipped with an adjustable clamp for quick installation without drilling the table.



ANGLE HEAD PLUTO

ANGHD3 can be used with Pluto drivers when space is limited or for a more comfortable operation at high torque.



BALANCER

Tool balancers TECBA allow screwdrivers to be positioned over the work station for comfortable operation. Models with capacity up to 600 lbs available on request.



ANGLE HEAD FAB/RAF

When space is limited right angle head ANGHD can be easily attached to lever start FAB drivers and ANGHD2 to lever start RAF drivers. Both the connection nut and the torque adjusting nut are equipped with M3 threaded holes to lock the head in the desired position.



TORQUE REACTION ARM

Torque reaction arms PA2KOL have been designed to eliminate the reaction generated by screwdrivers when they stop at the pre-set torque up to 132 lbs. Options include table or wall mount and tool holders for inline or pistol screwdrivers.



AUTOCATCHER

For screws you cannot pick up with magnetic bits or difficult to handle the autocatcher is the perfect solution. You can automatically feed stainless steel or brass or aluminum screws with NJK705 or NJK..RS and then pick them up thru the adjustable plastic collets of autocatcher ATC023 for screws up to M3 and ATC035 for screws up to M5.

KVA-10

KVA-10 is our lighter duty torque arm (rated to 120 in. lbs of torque).

This arm has a working range of 8" to 28", and is shipped complete, ready to mount. The unit includes working arm, adjustable tool mount (accepts 1" - 2" dia. drivers) and bench-top mounting racket.



VACUUM PUMP

Model#3-0170-0006 is a self container vacuum pump, drawing 25" mercury. Optional dualportconnector is available for powering 2 vacuum units. Contact factory for details.





ONE YEAR LIMITED WARRANTY

KolverUSA, LLC. ("Kolver") warrants that each product sold by it shall be free from defects in material and workmanship under normal application, use and service for a period of one (1) year from the date of shipment by Kolver or its distributors to the initial purchaser. Kolver's sole obligation under this warranty is, in Kolver's sole discretion, to repair or replace free of charge during the warranty period, any part or parts found to be defective, provided that the product (i) is delivered, postage prepaid, to KolverUSA, LLC, Woodland Park, One Park Drive, Unit 9, Westford, MA 01886; (ii) has not been misused, subjected to unusual stress, modified or serviced in any manner. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, WRITTEN OR ORAL, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY AND OF FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL KOLVER BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL, SPECIAL OR OTHER DAMAGES IN EXCESS OF THE REPLACEMENT COST OF THE DEFECTIVE PART(S). KOLVER'S OBLIGATIONS HEREUNDER SHALL TERMINATE THREE (3) YEARS FROM THE DATE OF THE ORIGINAL SHIPMENT.



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