

## MODEL A FAMILY DRIVER



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## INTRODUCTION - MODEL A FAMILY DRIVER

The MODEL A FAMILY DRIVER is the standard model torque driver unit, primarily designed for robotic use. Connected with the Technart controller, it provides precise control of screw tightening torque and tightening process, making it suitable for assembly of high precision electric and electronics devices and equipments.

It is designed to minimize particle emission, static charge and noise interference. The vacuum suction enables firm chucking and engagement with the bit, of even small-sized miniature screw. It also sucks particles emitted during screw tightening, thus suitable for use in Clean Room environments.

The optional mechanism (suffix F) of bit cushion absorbs and minimises impact and shock to delicate work-piece caused by thrust movement of Y-axis on which the driver is mounted.

The best selection for most critical ESD sensitive environments is, a sister model AG, equipped with continuous bit grounding mechanism. In model AG, the bit is completely grounded even during its rotation.

For tightening of small size screws of M1 to M3, model A driver with one-touch quick change chuck for OD 4 mm D-cut shank bit is prepared (suffix D).

For tightening of larger size screws of M4 to M5, model A driver with one-touch quick change chuck for 6.35 mm (1/4 inch) HEX shank bit is prepared (suffix H).

## MAIN FEATURES

- 1) **RELIABLE REPEATABILITY OF TIGHTENING TORQUE**  
The tightening torque set on the Technart controller is precisely conveyed to the driver unit, controlled and maintained, regardless of joint characteristics and frictional differences.
- 2) **MINIMUM G-SHOCK**  
Shock and impact to the work-piece is minimum, thanks to the unique driver mechanism and tightening process control.
- 3) **SUITABLE FOR USE IN CLEAN ROOM ENVIRONMENTS**  
It is designed to minimize particle emission, static charge and noise interference, making it suitable for use in Clean Room environments.
- 4) **TORQUE FAMILY LINEUPS COVERING WIDE RANGE OF TORQUE**  
A wide range of torque family models is available in standard, covering 0.03 to 2 Nm..
- 5) **SIMPLE AND COMPACT DESIGN FOR EASY INSTALLATION**  
Its simple and compact design makes it convenient and easy to install on robot etc..
- 6) **SIMPLE MAINTENANCE**  
Replacement of bit, sleeve etc. and also cleaning is simple and easy to access.
- 7) **RELIABLE VACUUM PICKUP OF ANY SIZE / TYPE SCREW**  
Vacuum pickup of screw is effective for any type, size or material of screw.
- 8) **ONE-TOUCH QUICK CHANGE CHUCK FOR INTERNATIONAL INDUSTRY STANDARD BIT SHANK**  
International industry standard shank bit can be fitted directly.
- 9) **RELIABLE CONNECTOR AND FLEXIBLE CABLE**  
For connection between controller and driver, flexible cable for robotic use fitted with self-lock connector is used.

### 10) ERROR DETECTION

Alarm is output by controller when screw tightening has not been completed successfully.

### 11) OPTIONAL BIT CUSHION

Optional bit cushion mechanism absorbs and minimises impact and shock to delicate work-piece.

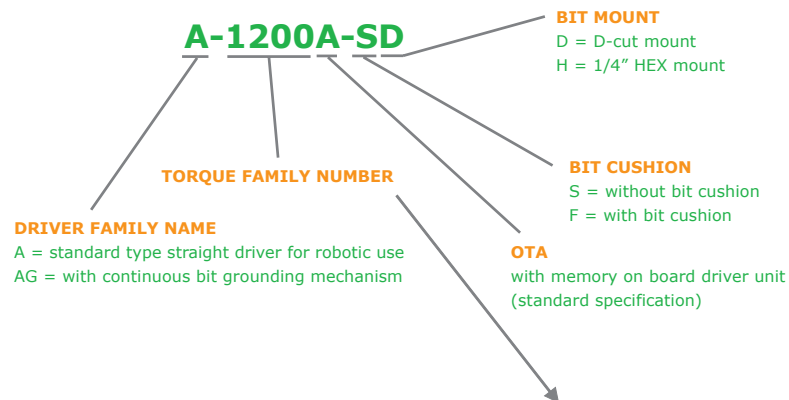
### 12) OPTIONAL BIT GROUNDING MECHANISM

A sister model AG is equipped with continuous bit grounding mechanism. It achieves complete grounding even during the bit rotation and is ideal for use in most critical ESD sensitive environments.

## SPECIFICATION OUTLINE

- DRIVER MOTOR : DC coreless servo motor
- ENCODER : optical encoder (located at top of motor)
- ONBOARD MEMORY : for storage of ID code, model, serial number and OTA parameter
- BIT RPM : see chapter RPM SPEED OF DRIVER BIT
- TOOL DRIVE TYPE : one-touch quick change chuck
- BIT TYPE : OD 4 mm D-cut shank bit or 6.35 mm (1/4 inch) HEX shank bit (see table below for availability)
- SLEEVE : see chapter ACCESSORIES
- VACUUM INLET : OD 4.8 mm nipple joint
- VACUUM REQUIRED : vacuum suction -60 kPa 10 litre/min or around
- CONNECTOR : HIROSE RP13A-12R-13SC (cable side RP13A-12PK-13PC)
- CONNECTING CABLE : ref. DC33 driver connecting cable (3 meter length flexible cable with connectors)
- AMBIENT TEMPERATURE & HUMIDITY (NO CONDENSATION) : 10 - 40 deg. C & 30 - 80 %RH for operation  
-20 - 70 deg. C & 10 - 90 %RH for storage
- WARRANTY : 6 (six) months after delivery

## MODEL NUMBER CONFIGURATION



TORQUE FAMILY NUMBER TABLE							
TORQUE FAMILY NUMBER	1200	2200	3600	8500	12K	15K	20K
TORQUE RANGE (kgf.cm)	0.3 - 1.2	0.6 - 2.2	1.0 - 3.6	2.0 - 8.5	3.0 - 12.0	4.0 - 15.0	5.0 - 20.0
typical screw size	M1.2 - M1.8	M1.6 - M2.2	M1.8 - M2.6	M2.2 - M3.0	M2.5 - M3.5	M3.0 - M4.0	M3.0 - M4.5
OD 4 mm D-cut Shank Chuck	O	O	O	O	O	X	X
1/4 inch HEX Shank Chuck	X	X	X	O	O	O	O

## ACCURACY & REPEATABILITY

Accuracy and repeatability of model A family driver's output torque is as shown in the table below :

TORQUE FAMILY	ACCURACY	REPEATABILITY	
		AT MAX . TORQUE	AT . M IN . TORQUE
1200	2 %	2.0 %	3.6 %
2200		7.5 %	7.5 %
3600		5.0 %	7.8 %
8500		7.5 %	9.0 %
12K		5.0 %	6.0 %
15K		8.0 %	10.0 %
20K		12.0 %	12.0 %

Definition of accuracy and repeatability adopted in the shipping test is as follows :

In the **ACCURACY** test, the controller is set to middle value of the setting torque range of the driver being tested. In case of the 8500 family driver, the setting torque value used for the test is 5.0 kgf.cm. The ACCURACY (unit : %) is then obtained from dividing average torque value of 50 times readings by setting torque value. It has to be within +/- 2 (two) percent to pass the test.

In the **REPEATABILITY** test, torque measurement is repeated 50 times for each setting torque of maximum, middle and minimum of the torque range of the driver being tested. In case of the 8500 family driver, tested torque settings are 8.5 kgf.cm, 5.0 kgf.cm and 2.0 kgf.cm.

The REPEATABILITY is then obtained from 3 x SIGMA (three sigma) divided by average torque value of 50 times readings (sigma : standard deviation).

When the repeatability turns out to be 10 percent, it means that the output torque goes within +/- 10 percent at the probability of more than 99.7 percent.

The **Technart method torque measurement** is used in the shipping test of ACCURACY and REPEATABILITY, as described below :

- 1) A square block (work-piece) with screw hole, made from stainless steel, is placed onto the socket of the torque meter.
- 2) A thin plastic sheet is placed between the square block and the socket of torque meter to eliminate any movement of the square block during measurement and also for the purpose of easy removal of the square block after usage.
- 3) The size of screw used in measurement is :  
 M2 x 8 (Torx T6) for 0.5 to 2.4 kgf.cm  
 M2.5 x 8 (Torx T8) for 2.5 to 3.9 kgf.cm  
 M3 x 8 (Torx T10) for 4.0 to 10.9 kgf.cm  
 M4 x 10 (Torx T20) for 11.0 to 20.9 kgf.cm
- 4) Ambient temperature for shipping test is 20 to 25 deg C.
- 5) Controller is turned on more than 30 minutes before measurement.
- 6) The same screw is used for 10 times measurements only. After 10 times measurements, it is exchanged with a new screw. It means that the 50 times measurements need 5 virgin screws.
- 7) A flat washer is used (simulation of hard joint).
- 8) After each measurement (each tightening), the tightened screw is reversed for next measurement.  
 Also after each measurement (each tightening), the driver bit is taken out from screw and rotated by hand or by controller every time. The purpose of this manipulation is to change mechanical position of gear etc. inside the driver.

## RPM SPEED OF DRIVER BIT

Technart controller's multiple feedback technology monitors and controls motor current, motor voltage and motor rpm, in real-time, to control screw tightening process and torque, as outlined below :

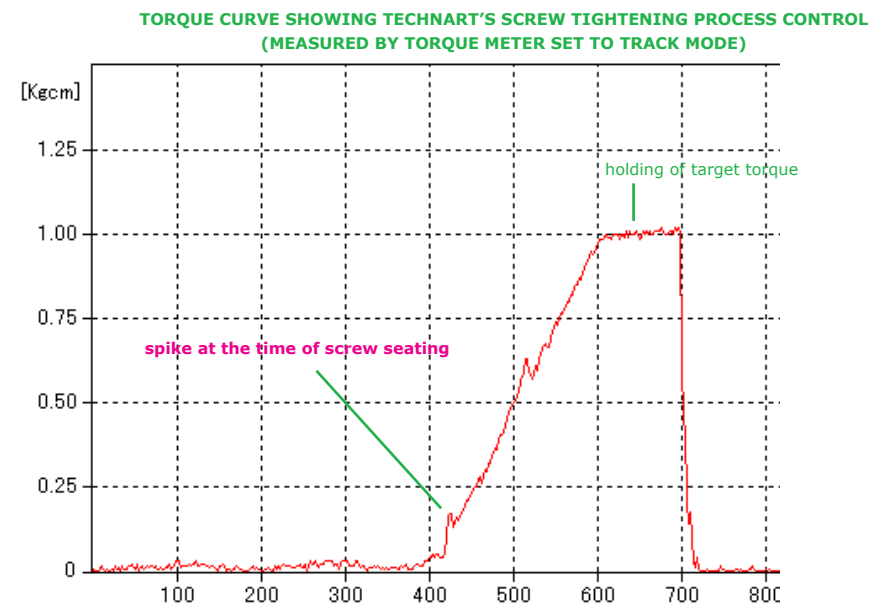
- 1) Start signal is sent to the controller.
- 2) Voltage is applied to driver motor, and the motor starts rotating.
- 3) The motor rpm is monitored by encoder. If rpm is slow, higher voltage is applied. If rpm is fast, lower voltage is applied.
- 4) Screw seating is detected by monitoring of motor current.
- 5) After detection of screw seating, motor current is increased more and more, up to target current (=target torque).
- 6) After reaching target current (=target torque), the target current is held for 0.1 second (default) for stabilization of the torque.

During the whole process of screw tightening as above, the motor current to the driver motor is completely monitored and controlled. The motor current is equal to torque, and it can be said that the output torque is completely controlled, during the whole process of screw tightening, but except for one moment. That is the moment (instance) of screw seating, that is, the moment when the head of the screw being driven down hits the surface of work-piece and becomes seated.

When the head of the screw being driven down hits the surface of work-piece and becomes seated, the motor rotation, suddenly halted, causes impulsive force (= spike). How large the spike will be is determined by 1) total size of the mass comprised of motor, gear, shaft and bit, 2) rotation speed of motor and 3) joint characteristics.

The factor 1) and 2) are known and are incorporated into control parameters, but the factor 3) is unknown as it is different in application by application.

In general, the harder the joint is, the larger the spike is.  
The softer the joint is, the smaller the spike is.  
The faster the rpm is, the larger the spike is.  
The slower the rpm is, the smaller the spike is.



In the measurement of driver's output torque, by use of torque meter set to peak mode, the reading takes the height of the spike if it is higher than the holding torque (= target torque). The spike itself is, impulsive force of an instant, and it has little energy to rotate screw further after its seating, but the reading of the torque meter shows its peak height if it is higher than the holding torque.

The rpm speed of driver bit is one of parameters that can be customized (via Customizer software) within the range of the upper limit and the lower limit.

The upper limit represents the rpm speed any faster rpm than which may cause the spike higher than the target torque in peak height reading by the torque meter set to peak mode, when the joint characteristics is of the hardest conditions, as simulated by a flat washer only existing between screw head and stainless steel block placed into the socket of the torque meter.

In 12K, 15K and 20K family driver, part of the upper limit is determined by the output capacity limit of its motor and gear.

The upper limit and lower limit rpm set for each of torque family drivers is as shown in the graph below. In the graph, the x-axis shows setting torque, while the y-axis shows the rpm of the driver bit.

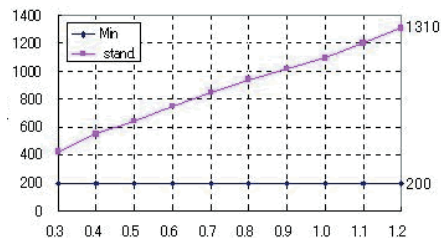
In the graph, HSO stands for High Speed, which is available when the driver is connected and used with PEDIII-h or FEDIII-h controller equipped with high speed control board (standard for export).

The High Speed control is effective for 3600 family or larger torque family driver only. It won't work for 1200 and 2200 family drivers.

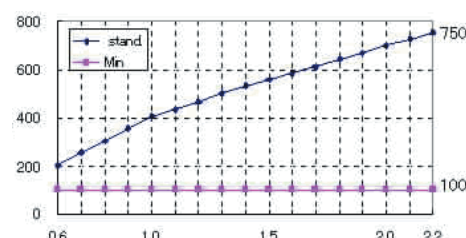
In the High Speed operation, detecting of screw seating is adjusted more sensitive and the brake is put on the motor upon detection of screw seating, to eliminate the risk of over-tightening by the spike caused by inertia.

It has to be remembered that the rpm speed is always under the torque-sensitive control. When any load is detected, the rpm speed is adjusted accordingly in real-time. Shown in the graph below is the rpm speed when the driver motor is free from any load caused by friction between screw and screw hole etc..

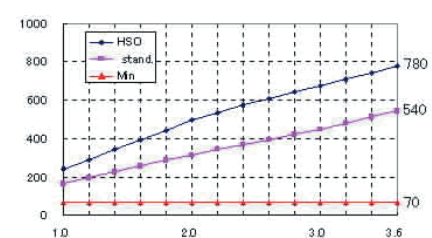
1200 family driver



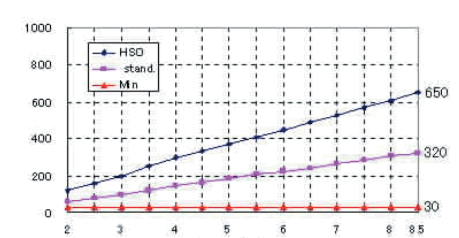
2200 family driver



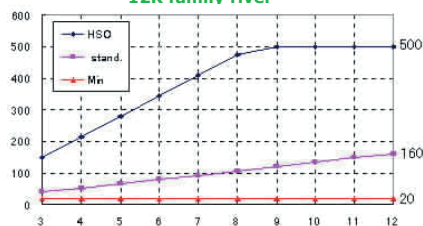
3600 family driver



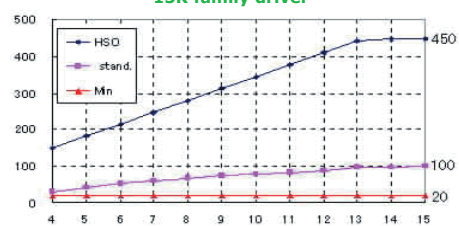
8500 family driver



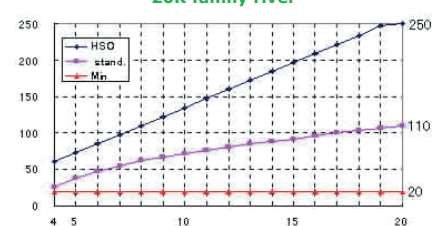
12K family driver



15K family driver

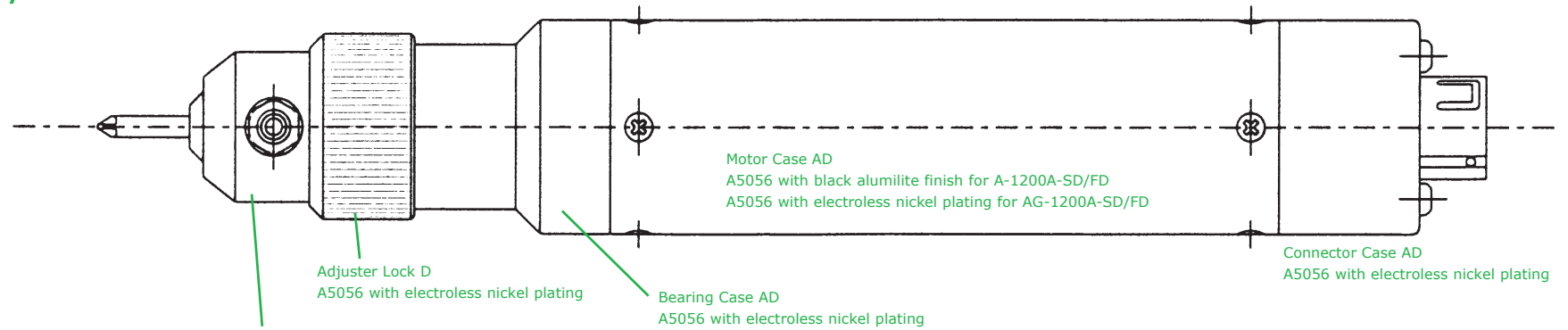


20K family driver

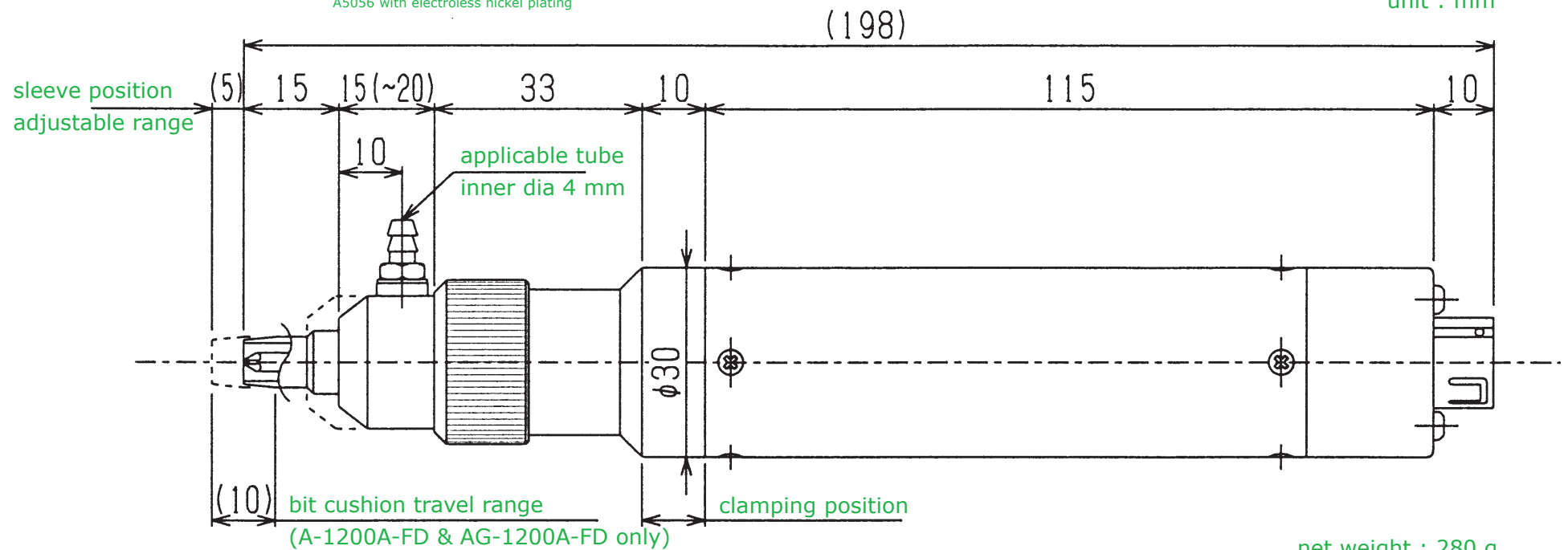


**OUTER DIMENSIONS, WEIGHT & MAIN PARTS MATERIAL**

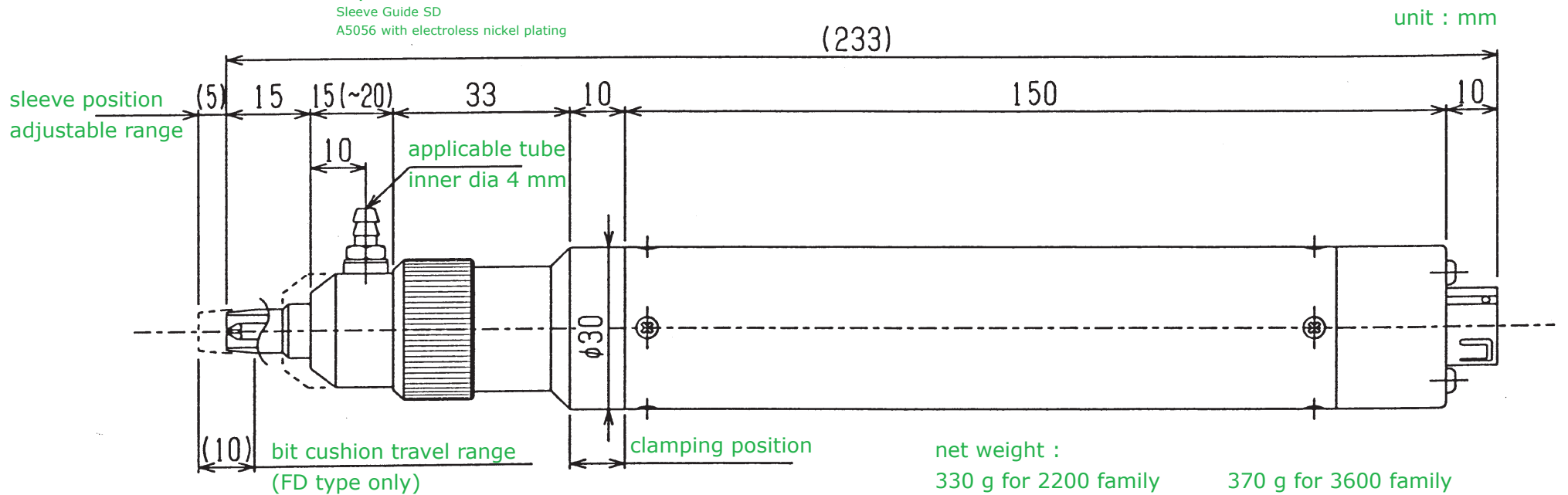
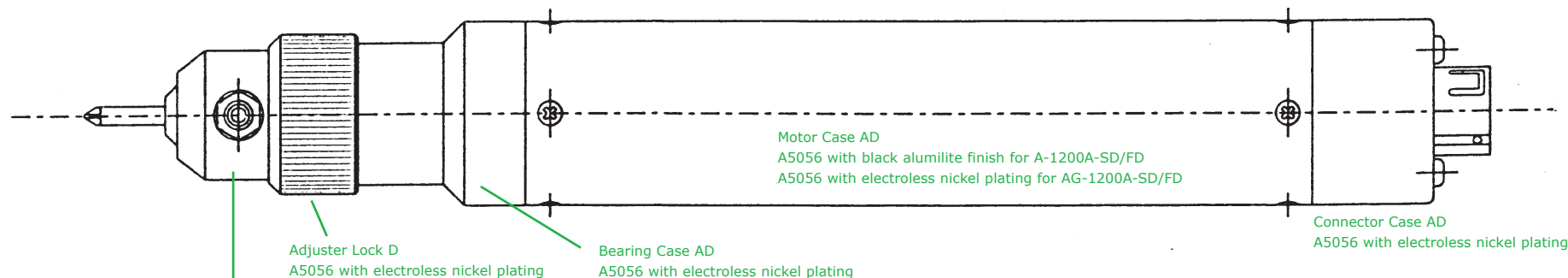
**A-1200A-SD/FD**  
**AG-1200A-SD/FD**



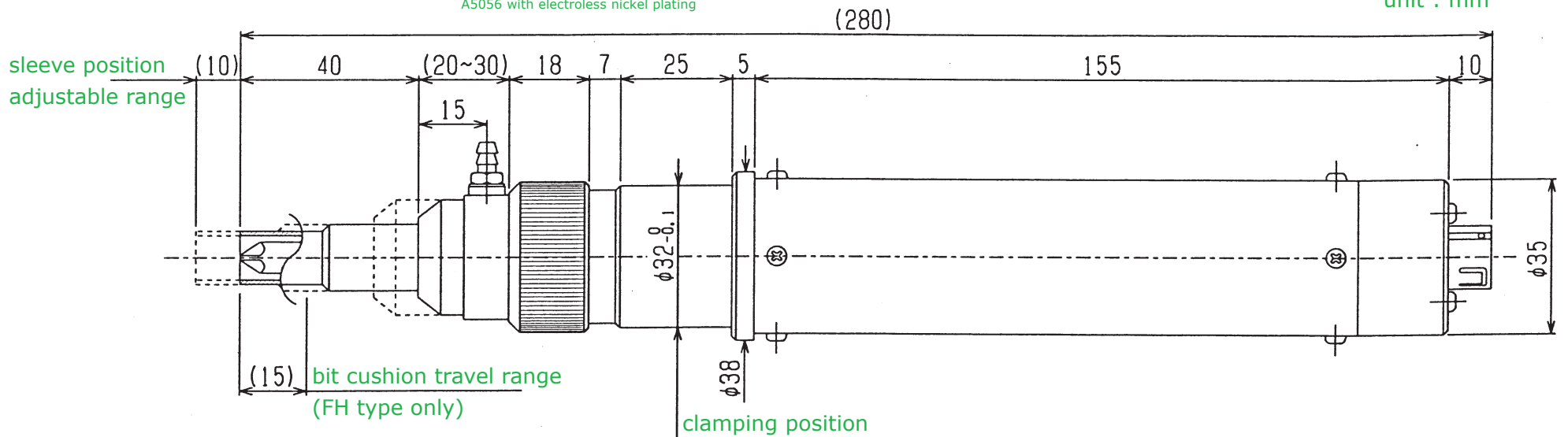
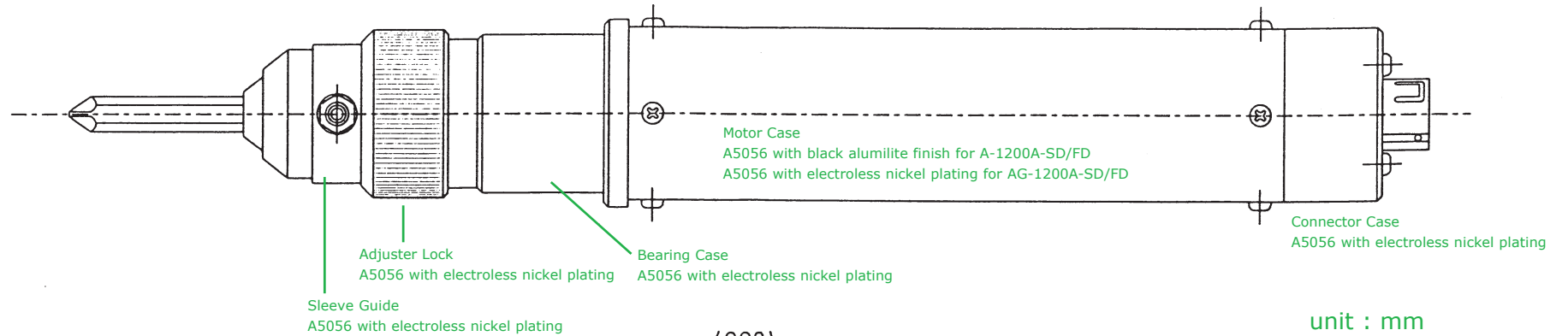
unit : mm



- A-2200A-SD/FD      AG-2200A-SD/FD
- A-3600A-SD/FD      AG-3600A-SD/FD
- A-8500A-SD/FD      AG-8500A-SD/FD
- A-12KA-SD/FD      AG-12KA-SD/FD



**A-8500A-SH/FH    AG-8500A-SH/FH**  
**A-12KA-SH/FH    AG-12KA-SH/FH**  
**A-15KA-SH/FH    AG-15KA-SH/FH**  
**A-20KA-SH/FH    AG-20KA-SH/FH**



net weight :  
 480 g for 8500 family      480 g for 12K family  
 550 g for 15K family      550 g for 20K family

## APPLICABLE CONTROLLER & OTA

Model A family driver is intended for control by and use with model PEDIII (PEDIII-h) or FEDIII (FEDIII-h) controller.

The controller shall be loaded with the corresponding torque family data. For instance, the controller shall contain 3600 family data when used with 3600 family driver.

Model A family driver can not be operated by any of previous version controller model PEDa, PEDb, FED or FEDII.

For connection between model A family driver and PEDIII (PEDIII-h) or FEDIII (FEDIII-h) controller, DC33 connecting cable shall be used.

Model A family driver carries a memory chip on board the driver. The memory chip contains the data of driver control ID code, model number information, serial number information and OTA parameter (see below).

When the controller is powered on, it reads those data from the memory chip on board the driver connected to it.

As each driver has its own individual mechanical characteristics, the same power supply from a controller to a driver won't result in the same output with another driver. Here arises the necessity of automatic compensation or adjustment in order to guarantee the same output with any driver.

The controller reads the OTA (Output Torque Adjust) parameter of the driver connected to it, to adjust the driver's output automatically.

The mechanical characteristics may change as the usage goes by.

The OTA parameter can be adjusted to reflect such change via Customizer software, within the range of plus/minus 6 (six) percent.

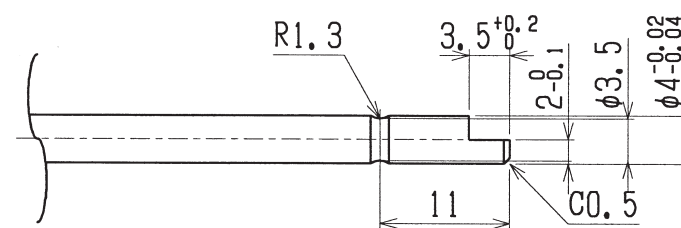
## ONE-TOUCH QUICK CHANGE CHUCK

For the tool drive, model A family driver is equipped with one-touch quick change chuck for OD 4 mm D-cut shank bit or for 6.35 mm (1/4 inch) HEX shank bit.

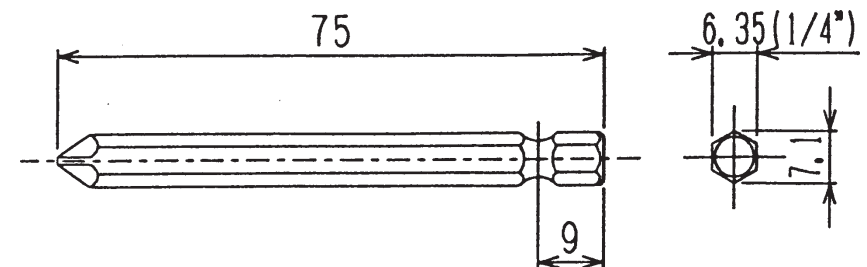
Bit exchange is easy and simple, taking little time, thanks to the reliable and durable one-touch quick change chuck.

Applicable bit shank dimensions for each type of chuck are as illustrated below :

MOUNTING SECTION OF OD 4 mm D-CUT SHANK BIT



6.35 mm (1/4 INCH) HEX SHANK BIT



## BIT CUSHION (OPTIONAL)

The Bit Cushion is effective when it is required to minimize any impact and shock to work-piece.

Model A family driver equipped with optional bit cushion (suffix F) absorbs impact and shock to work-piece, caused by thrust movement of Y-axis on which the driver is mounted.

The vertical travel range of bit cushion is 0 to 10 mm.

The strength of the bit cushion is determined by the specification of the bit spring inside Bit Cushion mechanism. See table below for full details :

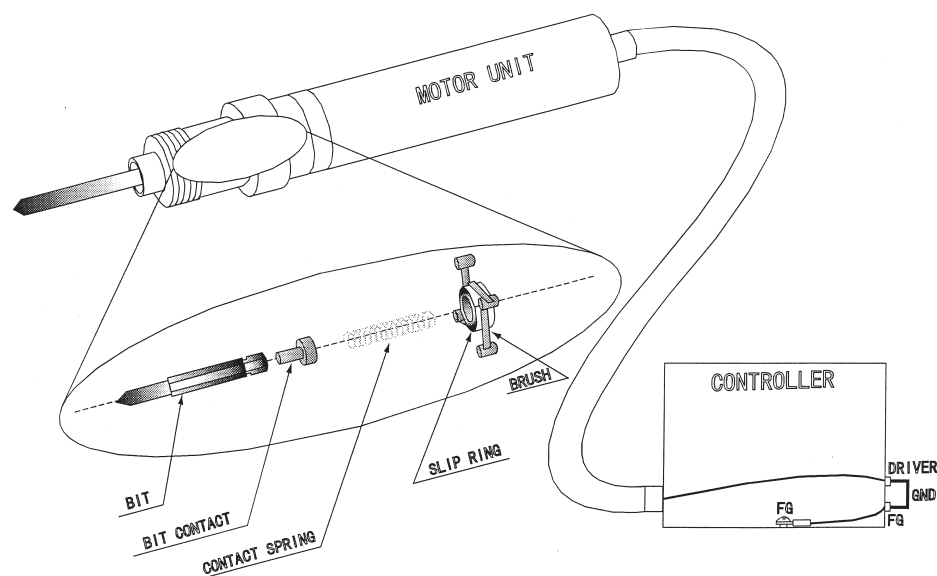
MODEL	BIT SPRING			CHUCK SPRING			CONTACT SPRING			TOTAL LOAD [gf]
	W I R E D I A . [m m ]	I N I T I A L L O A D [gf]	S P R I N G C O N S T A N T [g f . m m ]	W I R E D I A . [m m ]	I N I T I A L L O A D [gf]	S P R I N G C O N S T A N T [g f . m m ]	W I R E D I A . [m m ]	I N I T I A L L O A D [gf]	S P R I N G C O N S T A N T [g f . m m ]	
A-1200A-FD	0.8	240	20	0.4	153.5	14	-	-	-	393.5
A-2200A-FD					160.5					400.5
AG-1200A-FD				-	-	-				0.5
AG-2200A-FD								233.5		473.5
A-3600A-FD A-8500A-FD	1.0	550	50	0.4	166	14	-	-	-	716
AG-3600A-FD AG-8500A-FD				-	-	-	0.5	233.5	23.5	783.5
A-12KA-FD	1.2	1080	100	0.4	166	14	-	-	-	1246
AG-12KA-FD				-	-	-	0.5	233.5	23.5	1313.5

## CONTINUOUS BIT GROUNDING MECHANISM (OPTIONAL)

A sister model AG family driver is equipped with continuous bit grounding mechanism for the perfect ESD solution.

In the AG family driver, the bit is completely grounded always, even during it is rotating.

The sketch below illustrates the configuration of the grounding system:



Inside the grounding system comprised of controller and AG family driver, the driver bit grounding line and the controller frame grounding line are separated each other, as shown in above illustration.

## STANDARD SUPPLY SCOPE

When a driver unit is ordered, the standard supply scope is as listed below unless otherwise ordered. They are contained and delivered in a carton box of W 30 x D 20 x H 7 cm. :

- 1 pc of driver unit of ordered model
- 1 pc of sleeve spring for above  
(wire dia. 1.0 mm, 295 gf & 28.5 gf.mm)
- 1 pc of DC33 connecting cable of standard 3 meter length

Bit and sleeve are not included in the standard supply scope. Those shall be ordered separately.

Specification and operational instruction in English (this document) is not included in the shipment.

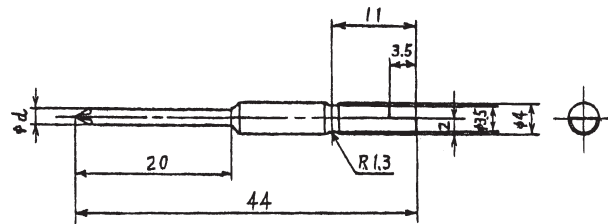
Request a copy of the latest edition document to the authorized distributor in your area you are purchasing Technart drivers from, and a PDF document or its printout copy will be provided upon request.

Should the connecting cable of different length be required, it shall be ordered separately. The maximum length available is 8 meter.

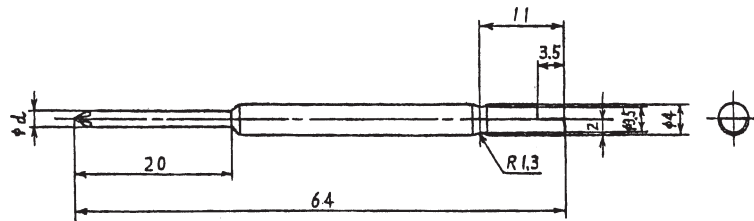
**OPTIONAL ACCESSORIES - BIT**

For 4 mm dia. D-cut shank bit, there are two different lengths of bits prepared in standard - overall length 44 mm and overall length 64 mm. Bit profiles available in standard are Philips #00, #0, #1 and #2, and Torx T4, T5, T6 and T8.

OVERALL LENGTH 44 mm BIT  
(with 4 mm dia. D-cut shank)



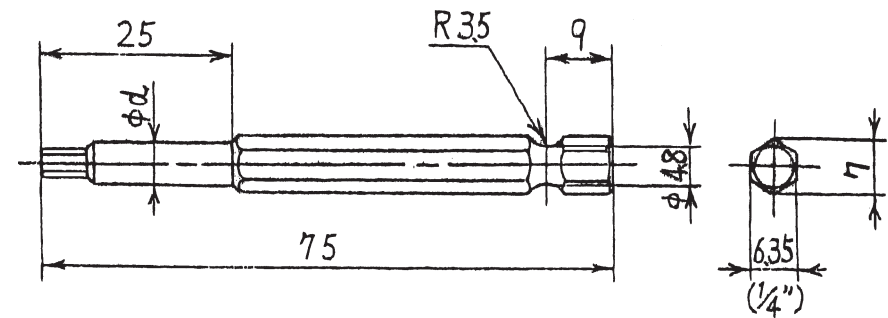
OVERALL LENGTH 64 mm BIT  
(with 4 mm dia. D-cut shank)



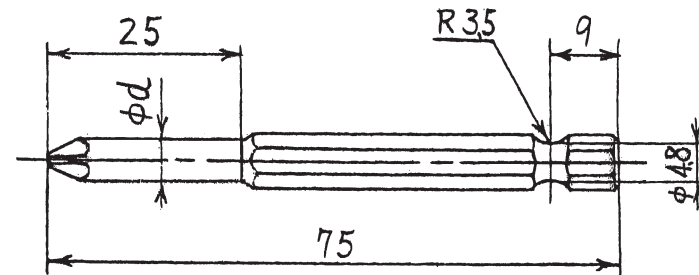
Reduced shank diameter "d" is different depending on the bit profile. For Philips profile bit, it is 2.0 mm for #00, 2.5 mm for #0, 3.0 mm for #1 and 4.0 mm for #2. For Torx profile bit, it is 2.0 mm for T4, T5 and T6 and 3.0 mm for T8.

For 6.35 mm (1/4 inch) HEX shank bit, prepared in standard is as illustrated below :

TORX BIT  
(with 1/4 inch HEX shank)



PHILIPS BIT  
(with 1/4 inch HEX shank)



Reduced shank diameter "d" is different depending on the bit profile. For Torx profile bit, it is 4.0 mm for T15, 5.0 mm for T20 and 6.0 mm for T25. For Philips profile bit, it is 4.0 mm for #1, 5.0 mm for #2 and 6.0 mm for #2.

## OPTIONAL ACCESSORIES - STATIC FREE BIT

The surface of the bit popular in the market is of high resistance and the static charge may be built up very rapidly, with very long decay. For most critical ESD sensitive environments, static free bit treated with conductive and durable surface finish is available on request. Fitted to the model AG family driver equipped with continuous bit grounding mechanism, the static free bit would provide the best ESD solution.

## OPTIONAL ACCESSORIES - SLEEVE

For vacuum chucking or pickup of screw, a sleeve ass'y shall be fitted to the driver. The sleeve ass'y is comprised of Sleeve, Bit Guide and Sleeve Stopper.

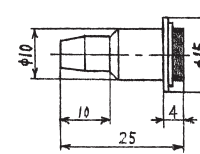
When ordering Sleeve Ass'y, specify the following :

- 1) inner diameter of sleeve
- 2) overall length of the bit used together
- 3) reduced shank diameter of the bit used together

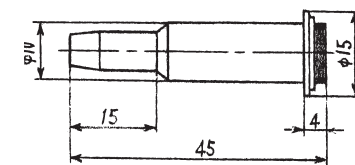
The guideline to determine the inner diameter of the sleeve is :

$$\text{inner diameter of sleeve} = \text{outer diameter of screw head} + 0.1 \text{ mm}$$

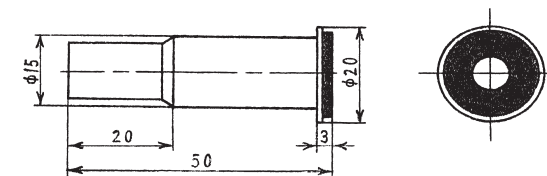
SLEEVE ASS'Y  
FOR D-CUT 44 mm LENGTH BIT



SLEEVE ASS'Y  
FOR D-CUT 64 mm LENGTH BIT



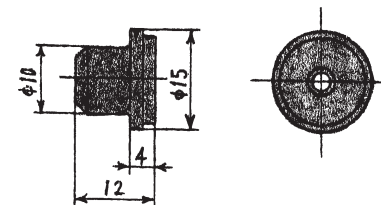
SLEEVE ASS'Y  
FOR HEX SHANK 75 mm LENGTH BIT



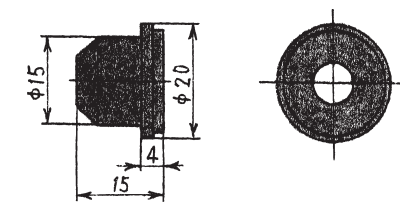
## OPTIONAL ACCESSORIES - BIT CENTER

If vacuum chucking or pickup of screw is not required and no sleeve is fitted to the driver, a Bit Center shall be fitted to the driver, for firm positioning and holding of the bit centering.

BIT CENTER  
FOR D-CUT MOUNT BIT & DRIVER



BIT CENTER  
FOR HEX MOUNT BIT & DRIVER



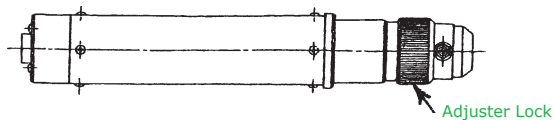
## MOUNTING OF DRIVER ON ROBOT ETC.

When mounting a model A family driver on robot etc., make sure to clamp the driver in the position indicated as “clamping position” in the drawing (ref. chapter OUTER DIMENSIONS & MAIN PARTS MATERIAL). Proper centering and vertical positioning of the driver may be difficult to obtain when clamped in any other part of the driver than “clamping position”.

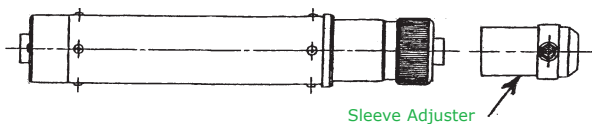
Never clamp the motor case of the driver as it may distort the motor case.

## BIT INSTALLATION

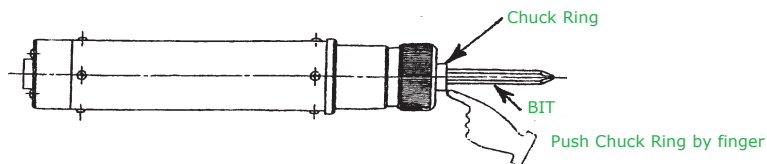
- 1) Loosen Adjuster Lock by rotating it counterclockwise.



- 2) Take off Sleeve Adjuster from the driver.



- 3) Push Chuck Ring by finger, and the bit lock is released off. Insert a bit and release Chuck Ring, to lock the bit.

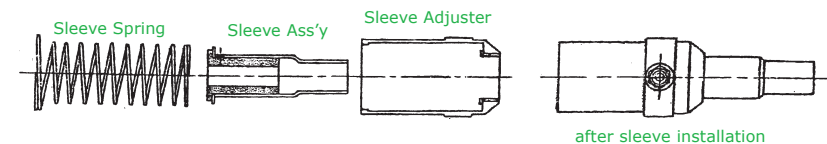


- 4) After bit installation, try to pull it out, to make sure that the bit is properly installed and locked in position.

- 5) Clean inside and out of Sleeve Adjuster and Adjuster Lock as well as bit chuck and its surrounding area, using occasions of bit exchange.

## SLEEVE INSTALLATION

- 1) Loosen Adjuster Lock and take off Sleeve Adjuster. (same as procedure 1) and 2) of BIT INSTALLATION on left)
- 2) Insert a Sleeve Ass’y into Sleeve Adjuster.

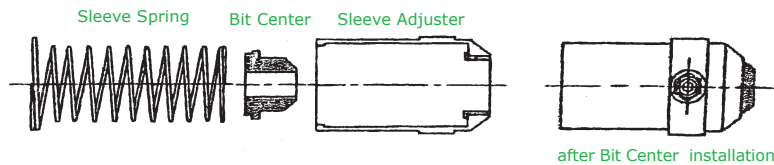


- 3) Insert a Sleeve Spring into Sleeve Adjuster, from smaller diameter side of Sleeve Spring. Insert it completely inside Sleeve Adjuster, so that the larger diameter side of Sleeve Spring is caught by the inner edge of Sleeve Adjuster and Sleeve Spring stays inside.
- 4) After installation of Sleeve Ass’y, push it by finger to see if the Sleeve Ass’y slides smoothly.
- 5) When taking Sleeve Spring out of inside Sleeve Adjuster, pull it out by using tweezers or pliers.
- 6) Clean inside and out of Sleeve Adjuster and Adjuster Lock as well as Sleeve Spring, using occasions of sleeve exchange.

## BIT CENTER INSTALLATION

When Sleeve Ass'y for vacuum pickup of screw is not fitted to the driver, Bit Center shall be fitted to the driver instead.

- 1) Loosen Adjuster Lock and take off Sleeve Adjuster, same as the procedure 1) and 2) of BIT INSTALLATION.
- 2) Insert a Bit Center into Sleeve Adjuster.

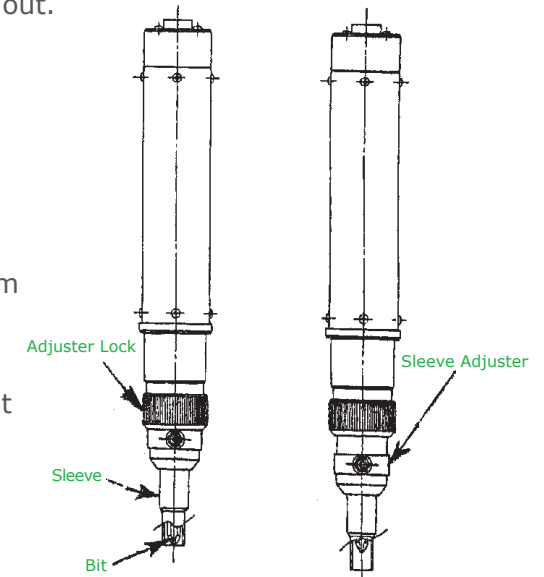


- 3) Insert a Sleeve Spring into Sleeve Adjuster, from smaller diameter side of Sleeve Spring. Insert it completely inside Sleeve Adjuster, so that the larger diameter side of Sleeve Spring is caught by the inner edge of Sleeve Adjuster and Sleeve Spring stays inside.
- 4) When taking Sleeve Spring out of inside Sleeve Adjuster, pull it out by using tweezers or pliers.
- 6) Clean inside and out of Sleeve Adjuster and Adjuster Lock as well as Sleeve Spring, using occasions of Bit Center exchange.

## ADJUSTMENT OF SLEEVE POSITION

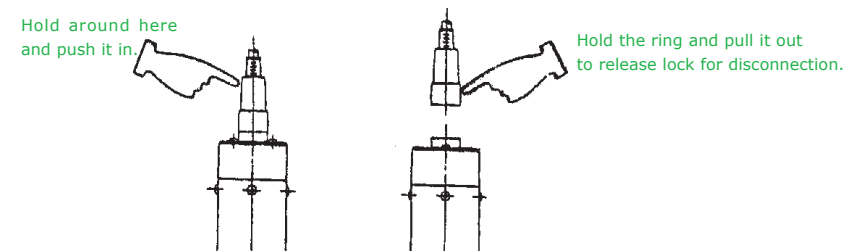
- 1) Loosen Adjuster Lock by quarter a turn or around, so that Sleeve Adjuster can be slid out.
- 2) Adjust the position of Sleeve Adjuster, so that screw head is all housed inside Sleeve when screw is engaged with bit each other.
- 3) Tighten Adjuster Lock firmly.
- 4) Adjustable range is max. 5 mm for SD/FD type, while 10 mm for SH/FH type.

If Sleeve Adjuster is pulled out more, it won't be stable and centering of sleeve or bit may be difficult to obtain.



## DRIVER CONNECTION CABLE CONNECTOR

- 1) For connection, line up positions of white dot marks on connectors of cable side and of driver side each other, and push the connector in.
- 2) For disconnection, hold the ring of the connector and pull it out. And connector lock is released for disconnection.



- 3) Make sure to line up positions of white dot marks each other when connecting, otherwise contact pins inside connector may be damaged.
- 4) After connection, lightly pull it out each other to see if connected firmly and locked.

### DAILY MAINTENANCE - CLEANING

Clean regularly inside of Sleeve Adjuster, Adjuster Lock and surrounding area of bit mount chuck.

Do cleaning and take off any particles and dust accumulated in such area, using every occasions of bit or sleeve exchange.

More frequent cleaning may be necessary when screw pickup by vacuum is used and many particles are sucked in during operation.

Also more frequent cleaning may be necessary when particles are accumulated within a short period of time, due to operational environments etc..

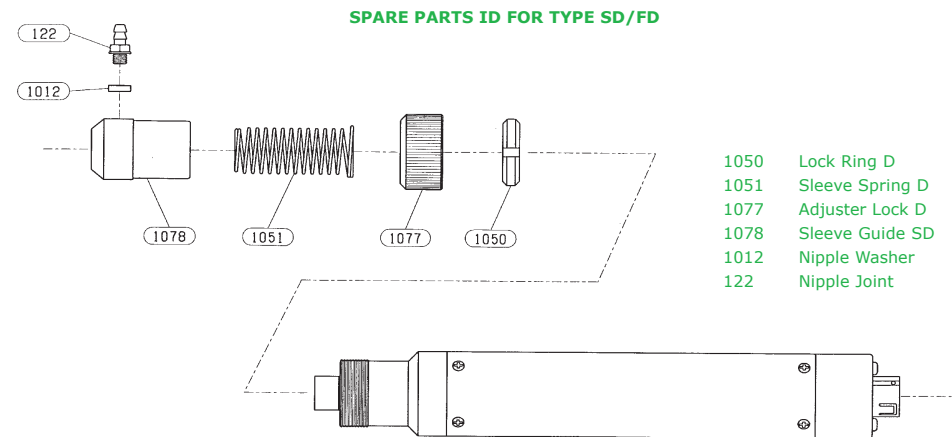
### DAILY MAINTENANCE - TORQUE CHECK

In Technart Electric Torque Driver System, the control of driver output torque is not by any mechanical hardware device which may wear, but by motor current supplied and controlled from the controller.

The repeatability of output torque is maintained, as long as the motor and gear of the driver are in good conditions.

Regular periodical check of output torque repeatability by calibrated torque meter is recommended, to make sure that the motor and gear of the driver is in good conditions.

### SPARE PARTS IDENTIFICATION



## GENERAL INSTRUCTIONS

- 1) Clamp and mount the driver firmly.  
The mounting fixture, clamping device and the axis carrying the driver shall be rigid enough to stand torque created by the driver.
- 2) The work-piece shall be held firmly enough to stand torque created by the driver during screw tightening or reversing.
- 3) Do not thrust the driver onto the work-piece too fast.  
Otherwise work-piece and driver may be damaged.
- 4) Avoid repeated screw tightening operations in too short interval.  
If screw tightening at maximum torque of the driver is repeated in short interval of less than 5 (five) seconds, the driver may be damaged due to the overheat of its motor.  
Stop operation when noticed the overheat of the driver motor.
- 5) Do not operate the driver outdoors, as it is neither waterproof or dustproof.
- 6) Forward the driver to the screw head vertically.  
Otherwise, screw head may be damaged or binding of screw with bit may occur.
- 7) Rotate the driver bit when thrusting it into work-piece.
- 8) Higher torque of the driver's torque range provides faster rpm and also better repeatability.  
Choose the best torque family driver accordingly, to obtain the best performance.
- 9) Fit to the driver correct size of bit and sleeve to best suit screws.
- 10) Fit to the driver Bit Center, when vacuum pickup of screw is not adopted and no sleeve is fitted to the driver.
- 11) Do not disassemble the driver by yourself.  
Contact the authorized distributor in your area when repair is required.

## ABOUT THIS DOCUMENT

This document is a part of ALL ABOUT TECHNART - the complete technical information in English on Technart Electric Torque Driver System. ALL ABOUT TECHNART is prepared by KYOSO CO., LTD. in Japan, for global export marketing and distribution of the products, on behalf of and with full support by the manufacturer, NIPPON TECHNART, INC. in Japan.

For any further information on the products, either technical or commercial, please contact the authorized distributor in your area, or contact us directly :

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