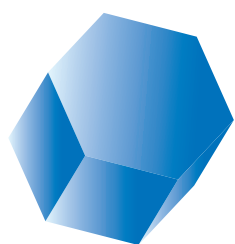ESTIC

With us, the Future

TRANSDUCERIZED ELECTRIC HANDHELD NUTRUNNER

Handy 2000 Lite

Advanced Technologies Combined to fasten Critical Areas throughout Worldwide Production

TRANSDUCERIZED ELECTRIC HANDHELD NUTRUNNER

Handy 2000 Lite

The next generation handheld nutrunner "Handy 2000 Lite" is designed based on the concepts of quality, environment, ergonomics and versatility.

Estic has supplied the most advanced nutrunner systems to automotive, aviation and other industries and received high evaluations. The electric handheld nutrunner "Handy 2000 Lite" is produced by Estic using the finest electronic control, machinery and program technology available. The "Handy 2000 Lite" nutrunner is created based on the concepts of high-quality, environmental friendliness, variety system and ergonomic design. It incorporates pulse technology to reduce the reaction during fastening as well as the working load to the operator. The nutrunner is designed to preserve the environment by RoHS compliance and energy saving through electrical operation. Its stable controlling performance achieves the same high quality and accurate fastening as that of larger fixture type nutrunner systems. The innovative handheld nutrunner available only by Estic continues to support production in the future.

INDEX

QUALITY
ISO5393

ENVIRONMENT
RoHS compliance
Energy saving

ERGONOMICS
Pulse fastening

VERSATILITY

USER ORIENTED SATISFACTION

【ISO5393】

The high level fastening quality required for critical areas is achieved with the advanced measuring capability and controlling performance of the Handy 2000 Lite manufactured based on ISO9001 to offer the highest quality
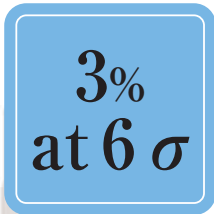
ISO 5393

Certificate of indicator

Performance inspection report

Traceability

The fastening performance of the nutrunner is evaluated with inspection equipment (indicator) that complies with the international standard ISO5393 and the inspection report is issued with each tool.

3% at 6σ

ISO 9001

A/D SERVO

Excellent fastening accuracy

The fastening performance of 3% at 6σ ($3\sigma/\bar{x} = \pm 3\%$) is guaranteed by the inspection equipment according to ISO5393.

High level quality control

Handy 2000 Lite is manufactured according to ISO9001 and supplied and is serviced with the international standard level.

High speed sampling and response

The torque and angle readings are monitored every 1/2000 second to control the target values.

【Energy saving】
【RoHS compliance】

Toward Earth and environment friendly products ---- Estic's electric handheld nutrunners support future production with the aim to harmonize with the environment

Power consumption Approx. 1/20

Clean and Quiet

Pb Lead free

Energy saving tool

Improvement in energy efficiency is a must to reduce CO_2 emissions which promote global warming. The electric handheld nutrunner "Handy 2000 Lite" consumes about 1/20 the energy in comparison with compressed air powered pneumatic nutrunners. It is an energy saving tool that allows operation while reducing negative impacts to the environment.

Clean and quiet working environment

Handy 2000 Lite does not generate such oil mist or noise as generated by pneumatic nutrunners, and thus constantly provides clean and quiet working environment.

RoHS compliance

Handy 2000 Lite conforms to RoHS directive of EU (European Union) stipulating abolition and alternatives of the hazardous materials such as lead with the consideration to environmental friendliness.

【What is RoHS Directive?】

RoHS is the acronym for Restriction of the use of certain Hazardous Substances in electrical and electronic equipment, and the restriction is applied by European Union (EU) to 6 substances of lead, mercury, cadmium, hexavalent chrome, PBB (polybrominated biphenyl), and PBDE (Polybrominated diphenyl ether) in electric and electronic equipment marketed in EU.

TRANSDUCERIZED ELECTRIC HANDHELD NUTRUNNER

【Pulse fastening】

Reaction during fastening has been significantly reduced while maintaining the high torque accuracy available only with electric tool

Estic's patented pulse technology reduces the reaction generated during fastening with an electric handheld tool. The required torque values are read at 1/2000 of a second to control the subsequent fastening force (electric current).
The Handy 2000 Lite allows highly accurate and safe fastening without the need of a reaction device.

Pulse fastening
Reaction : small

Conventional
electric handheld tool
Reaction : large

Patented in Japan, U.S.A and China
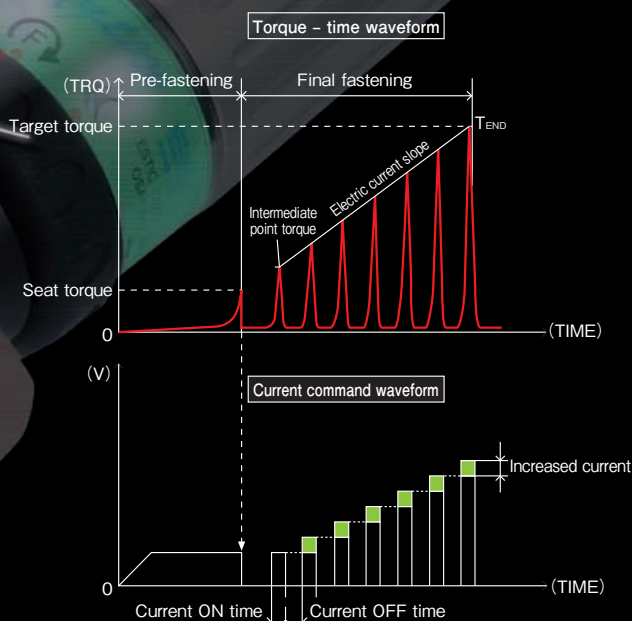
Letter of patent (Japan)

Letter of patent (U.S.A.)

Letter of patent (China)

Torque change according to the current command

Command flow chart

Torque – time waveform

(TRQ) | Pre-fastening | Final fastening

Target torque — T_END

Intermediate point torque / Electric current slope

Seat torque

0 — (TIME)

(V)

Current command waveform

Increased current

0 — (TIME)

Current ON time | Current OFF time

Current ON (Torque rising)

Current ON time lapse

Fastening torque input

Fastening torque ≧ target torque — YES → End of fastening

NO

Fastening torque > intermediate point torque — NO

YES

Increase of current command

ANGLE TOOL

STRAIGHT TOOL

Titanium alloy angle head

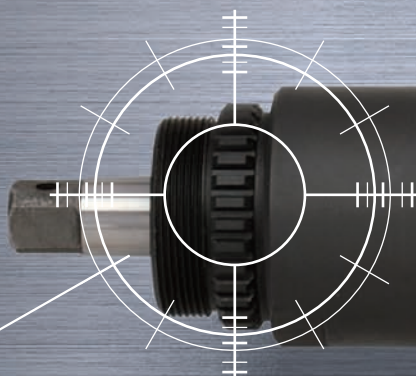The angle head made of titanium featuring light weight and high tensile reduces the operator's load during fastening and provides high durability.
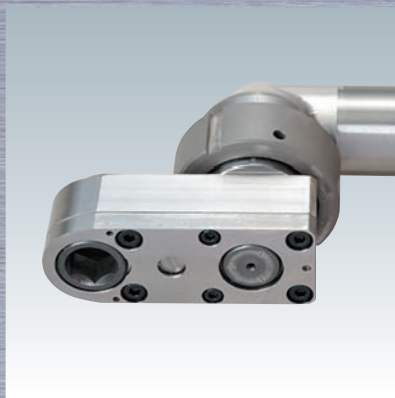
Involute spline

Allows various applications including multiple spindle configuration and mounting on an assisting arm.
The flanged spindle is provided with the high torque model.

Customization examples

Crow foot gear

Flush socket

Long switch lever

Short switch lever

EH2-R1020-A
※Full scale

Lightweight and high speed motor

The lightweight motor is used to reduce the burden to the operator from the tool weight during operation.
The high speed motor is used to improve the productivity.

EH2-R1016-S
※Full scale

Customization examples

Multi-spindles

Assisting arm

Socket tray

Ball plunger

PISTOL TOOL

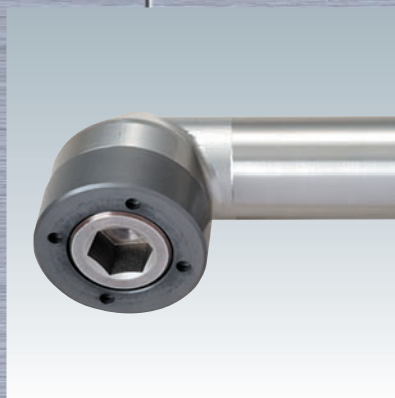## Optional involute spline

Allows various applications including multiple spindle configuration and mounting on an assisting arm.
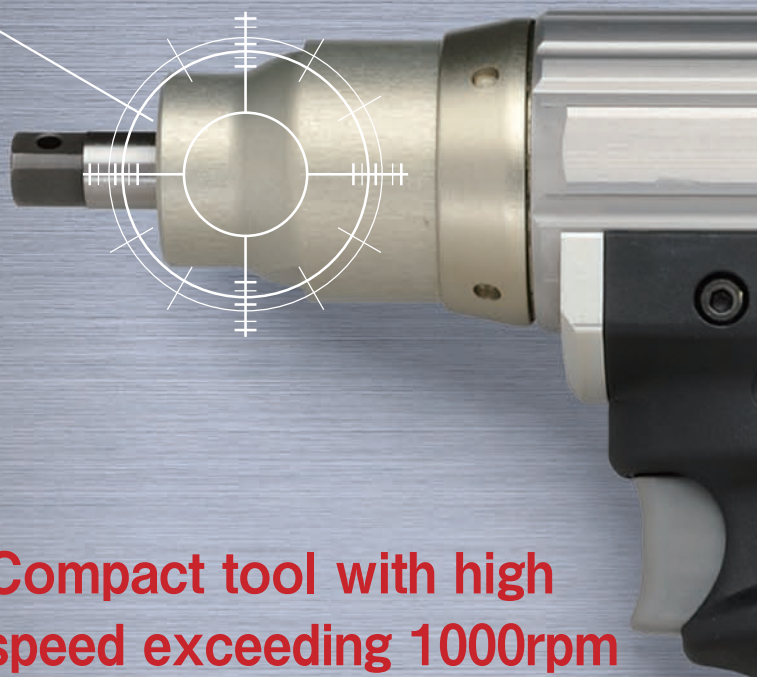
Compact tool with high speed exceeding 1000rpm

Though compact and lightweight, the high maximum speed of 1247 rpm (16Nm model) is achieved for ease of use and high productivity.

50Nm pulse special model (EH2-P1050-P)

Rail guide

A rail guide is used for various applications such as hanging fixture to mount easily and securely.

The tool with the hanging fixture (EH2-PH02) mounted

Indicator window

An omnidirectional confirmation window with excellent visibility is used to make the operating condition visible at any time.

EH2-R1016-P
※Full scale

Ergonomically suited grip

The pistol type grip is used for operators to easily grip and prevent fatigue during long period operation.

LOW TORQUE ADAPTATION TOOL

Lever Start Type

Push the lever to activate the tool, and release it to stop.

Push-to-Start Type

Push the bit onto the screw to activate the tool, and release it to stop.

Critical security parts require traceability, whether the torque is small or large. This tool helps you to achieve better quality with automobile industry products, including sensors, cables, and airbags, as well as products for the aircraft and home electronics industries.
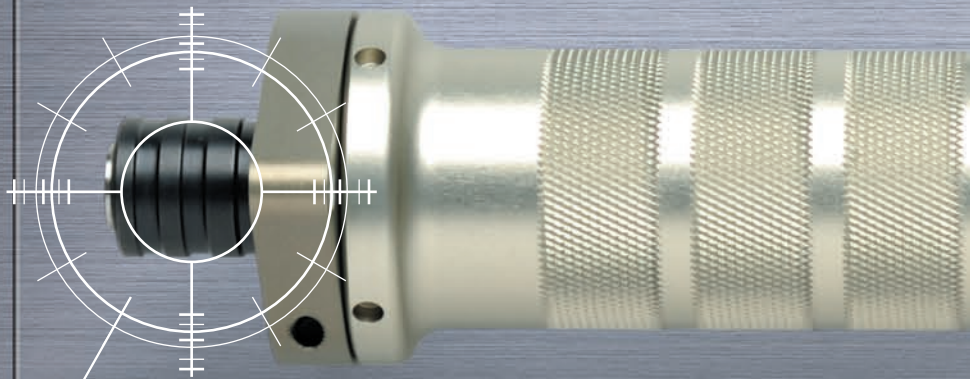
Bit Holder

Slide-and-latch – Easily fit and remove the bit holder.
Two options to activate the tool – Lever start and push-to-start.

Pistol tool（EH2-R0005-P）
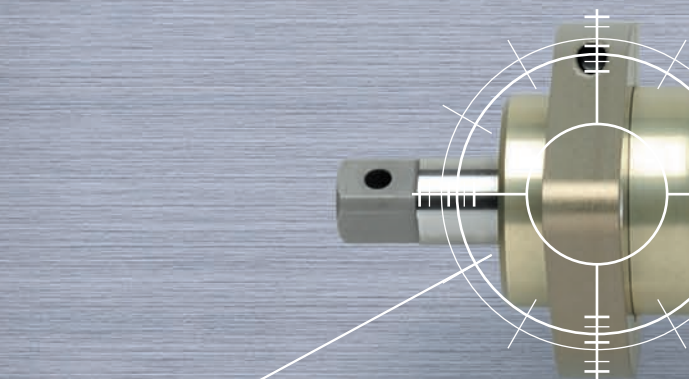
Removable Flange

Remove the flange when using a single spindle. Utilize this feature together with the rail guide for use in various applications.

EH2-R0005-SP（Push-to-start type）
※Full scale
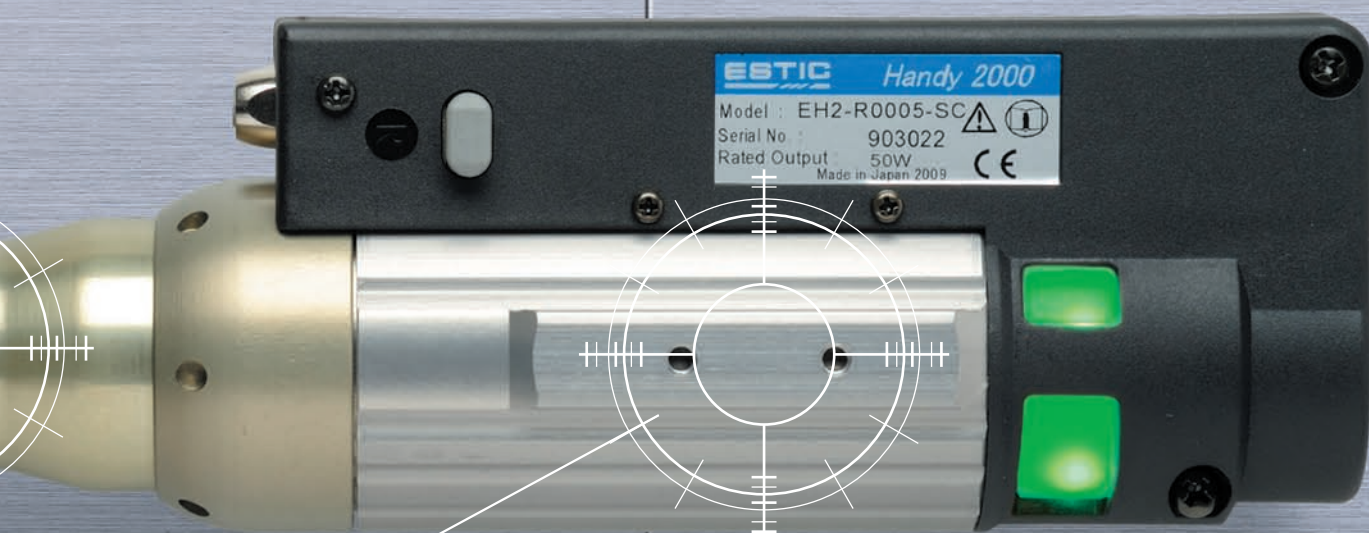
EH2-R0005-SC（Connector start type）
※Full scale

Rail Guide

Rail guide employed for a multiple-spindle unit configuration and assist arms.
Same horizontal type hanging hook can be used as pistol models.

ANGLE TOOL, STRAIGHT TOOL & PISTOL TOOL

Advanced functions support usability, accuracy and durability during fastening

High-intensity LED lamps

To inform the operator for the operating condition in 7 colors with the LED lamps such as for OK/NG of fastening results (OK: green & NG: red or yellow) and fastening direction (forward rotation: blue & reverse rotation: purple), etc. The lamps are visible at any angle regardless of the posture of the operator.

Start and forward reverse selection switch

The start trigger utilizes an IC contactless switch to offer high operability and reliability. The forward reverse selection switch provides reset function in addition to change the rotating direction. The push turn system that can be operated by a single hand is incorporated for the pistol tool.

Protection handle

The shock resistant handle is mounted to the aluminum alloy frame to minimize the impact if accidently dropped. The ergonomically designed grip allows easy operation and reduces operator burden during extended use.

Inner shell connector

The connector to connect the tool and the cable is installed in the frame of inside handle. It provides excellent durability against drop or impact.
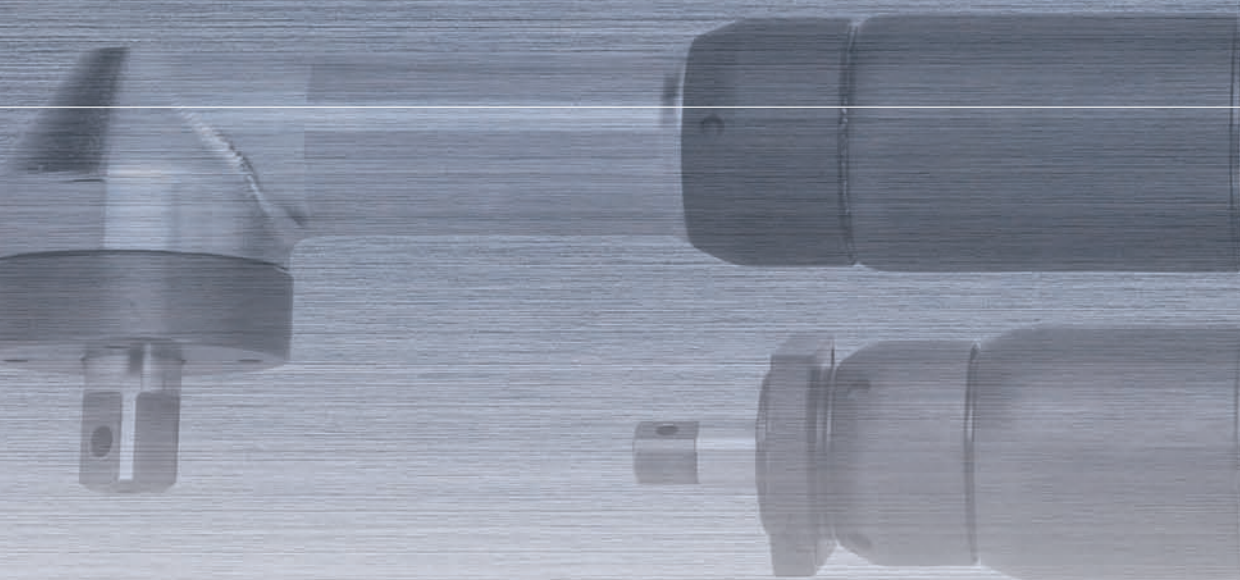
Angle/rotation speed sensor

The environmentally friendly high resolution resolver detects the angle used to control the servo-motor feed-back process. The resolution of 2048 or greater per rotation assures highly accurate speed control and fastening rotational angle.

Torque sensor

The strain gauge type torque transducer is built in to detect the torque. Gauges at 8 points and external disturbance self-cancellation function make the high accuracy torque detection possible.
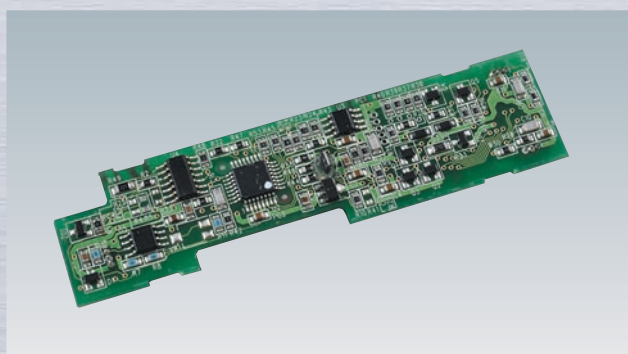
Intelligent ID

The controller can be quickly setup when a tool is connected. An ID memory chip storing torque calibration value, gear ratio, and tool model is embedded into the tool. The records for frequency of repair and fastening counts are helpful for maintenance control.

Reduction gear

The compact design of the high power planetary gear assures excellent durability.

Various field needs including visibility, operability, expandability and space saving are provided

Large LED featuring high visibility

Large size 7 segmented LEDs are used for the display panel.OK and NG are indicated in an understandable way with green and red respectively.

OK indication

NG indication

USB Flash drive

- Export Tightening result file
- Export/Import program file

Centralized wiring on the bottom face

I/O terminals are concentrated on the bottom face to help package the wiring and save the space.

Connector for the tool cable
The system is automatically recognized when the tool is connected.

Connector for the AC power supply
Connector for AC100V and AC200V power supply cables.

Network connector
Used to control the multi-spindles unit.

Earth leakage breaker for the main power supply
The earth leakage breaker conforming to various international standards.

RELAY/EXT IN
Relay (Output 2)
Non voltage contact (Input 4)

ETHERNET
RJ45 connector to connect with ETHERNET.
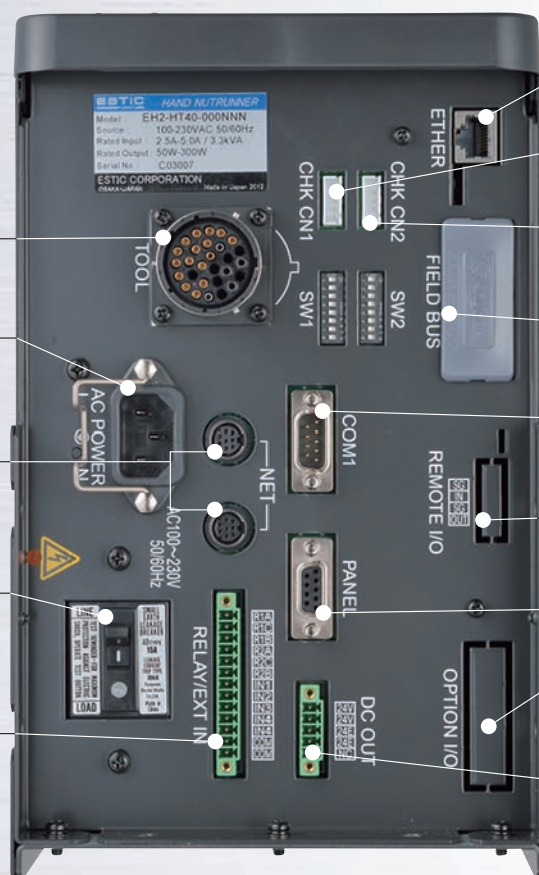
CHK CN1
Connector for monitor output.

CHK CN2
Connector for monitor output.

FIEDLBUS (Option)
EtherNet/IP, DeviceNet, Profinet, Profibus and CC-Link are available as the option.

RS-232C (COM1)
ESTIC Management Software, Barcode scanner, ASCII data out

REMOTE I/O (Option)
Remote I/O (Input 16/Output 16)
*Omron Remote I/O modules are required.

PANEL
RS-422 to communicate with HMI.

I/O (Option)
I/O (Input 16/Output 16)

DC OUT
24VDC 1A

Basic specifications for the controller

- **Fastening methods** : Torque method, torque with angle monitoring method, angle method, torque or angle method, torque and angle method and reverse motion angle control method

- **Fastening mode** : Selectable between Direct mode (Continuous fastening) and Pulse mode (Electrical pulse fastening).
  * Some models have Pulse mode only or Direct mode only. Please see the details on page 25, 26 and 27.

- **No. of the fastening channel setting** : Max. 99 channels

- **Fastening result record** : Max. 33,000 records (Numbers of the records which can be stored in the controller varies depending on the items selected for fastening history)

- **Torque curve history** : Max. 30 records (OK Fastening: 20 records, NG Fastening: 10 records)

- **Ethernet** : Various protocols such as ESTIC protocol (ESTIC Management Software, ESTIC Data Logger), Open Protocol, and others are available.

- **FieldBus** : DeviceNet, EtherNet/IP, Profinet, Profibus, CC-Link are available as an option.

- **Remote I/O & PIO** : As the option. According to user requirement, Adding these options for necessary environment.

- **Memory** : Program/system parameter, Allocation of I/O, fastening Results, Fastening Result History, System Error History(FLASH-ROM Back-up)
  Torque Curve History(Battery Back-up)
  Parameter in USB memory.

- **Batch counter function** : nx OK and nx NG output

CONTROLLER(FUNCTIONS)

Versatile functions are included to further enhance efficiency in fastening

Multi channels

Tightening, loosening and retightening are necessary to detect the fitting or cross-thread condition in the bolt fastening operation. You can avoid the troublesome channel change operation and simply carry out the fastening in continuity by continuously defining the necessary fastening channels as one multi channel system.

10Nm torque fastening — **Loosening by 180 degrees** + fastening with less than 0.1Nm torque after the loosening — **30Nm torque fastening** — **End of fastening**

CH1
Torque method fastening with 10Nm

CH2
Reverse rotation control
180 degrees loosening
Torque application end monitoring

CH3
Torque method Angle monitoring
30Nm torque fastening
Angle monitoring

Fastening result judgment

Multi channel No. designation

MC 1	
STAGE	CH(channels)
1	1
2	2
3	3

Fastening result OK

The maximum 99 channels including the multi channels and normal channels can be set. The set multi channels can perform as one CH in the job control function.

Job control function

A convenient function to permit the integrated control in the various torque fastening operation. The max. 99 jobs can be controlled with the function. All of the channels and fastening operations can be programmed with a maximum of 30 steps per job.

① ➡ ②

③
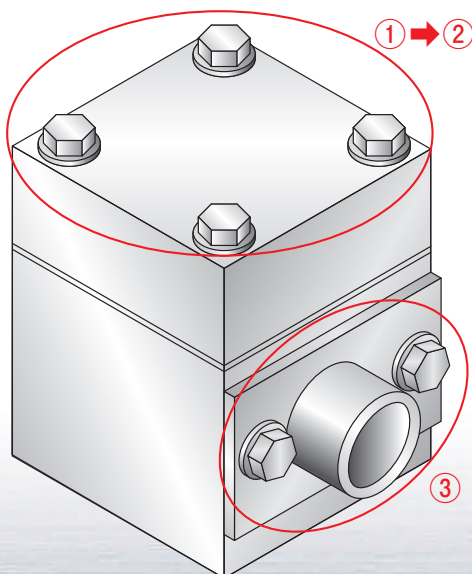
For instance, when 4 locations must be temporarily and then fully fastened with gaskets installed at the 4 locations, and then parts to be installed at two locations
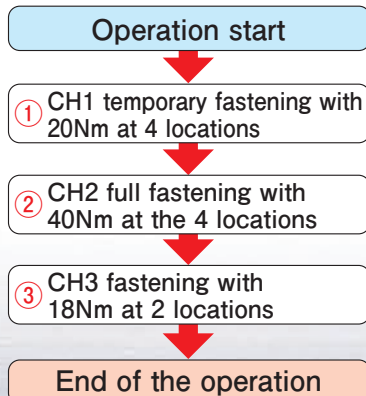
A series of steps is programmed as a JOB parameter in the job control function so that you may execute a job by designating the job number and the job end may be informed with the JOB OK output message.

■ **Operation flow**

Operation start

① CH1 temporary fastening with 20Nm at 4 locations

② CH2 full fastening with 40Nm at the 4 locations

③ CH3 fastening with 18Nm at 2 locations

End of the operation

■ **Job control function**

Designation of Job numbers

Job 1		
Steps	CH(channels)	No. of operations
1	CH1	4
2	CH2	4
3	CH3	2

Job OK

CONTROLLER(FUNCTIONS) / ELECTRIC HANDHELD NUTRUNNER

17

High speed seating function

When fastening a screw at high rotation speed with a low target torque, the servo motor cannot stop promptly. This creates excess torque (overshoot), causing the fastening torque to be uneven and the workpiece to be damaged. As a solution to this, Handy2000 Lite employs overshoot reduction software to make your fastening faster and more secure.

Simplified PLC functions

A simplified sequence control function with AND, OR, and timer control is equipped. Logic programs can be set to select the ON lamps or set off a buzzer for a certain length of time depending on the fastening result of OK or NG.
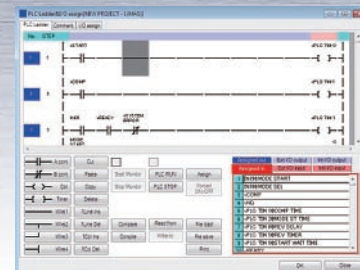
Screen showing the management program

Free allocation function

The fastening result data stored in the controller and outputted on the external unit after every fastening can be freely selected. The function to select only necessary items can make the data size smaller.
The control signals for the system control connectors (PIO), remote I/O, relay output, and no voltage contact input can also be freely allocated.

Multi-spindles function

A maximum of 10 spindles can be operated for synchronous fastening without the help of external controls.
The synchronous fastening allows for shorter operating times.

Compatible with bar code readers

A bar code reader can be directly connected with the controller. The loaded data can be reflected in the fastening result. The fastening channel and job can be changed based on the loaded data when the identifier function is in use.
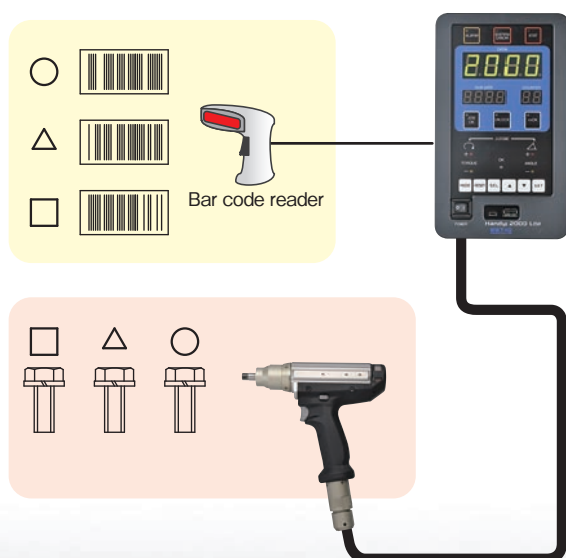
By reading bar codes
· Storage/transmission of vehicle number + fastening data
· Change of the model and operation to be carried out

Bar code reader

Controller (system block diagram)

Host PC

Management program data logger

Ethernet(LAN)

Open Protocol

Fieldbus
(Devicenet,PROFIBUS,CC-Link,EterNet/IP and Profinet)

I/O

Existing PLC

PC

RS-232C

PC-USB

Management software

RS-232C

Serial printer

Controller unit

ALARM   SYSTEM ERROR   STAT

DATA

SUB-DATA   COUNTER

JOB OK   UNLOCK   rxOK

JUDGE

+ · ■   + · ■
TORQUE   OK   ANGLE
− · ■   − · ■

MODE RESET SEL ▲ ▼ SET

POWER   Handy 2000 Lite
ESTIC

Free allocation I/O
Input 16 points & output 16 points

24VDC

Lamp & Buzzer

RS-422
24VDC

Touch type panel

Relay output 2 points
No voltage input 4 points

Interlocking, etc

RS-232C
5VDC

Remote I/O

Socket tray

Bar code reader

USB Flash Drive

Tool unit

Cable unit

Multi-spindles connection

Channels can be freely selected depending on the vehicle identification number.The fastening condition is set on the master controller and sent to the local controllers via NET cables for each fastening.

Lamp & Buzzer

Touch type panel

Vehicle identification number (serial number)

Bar code reader
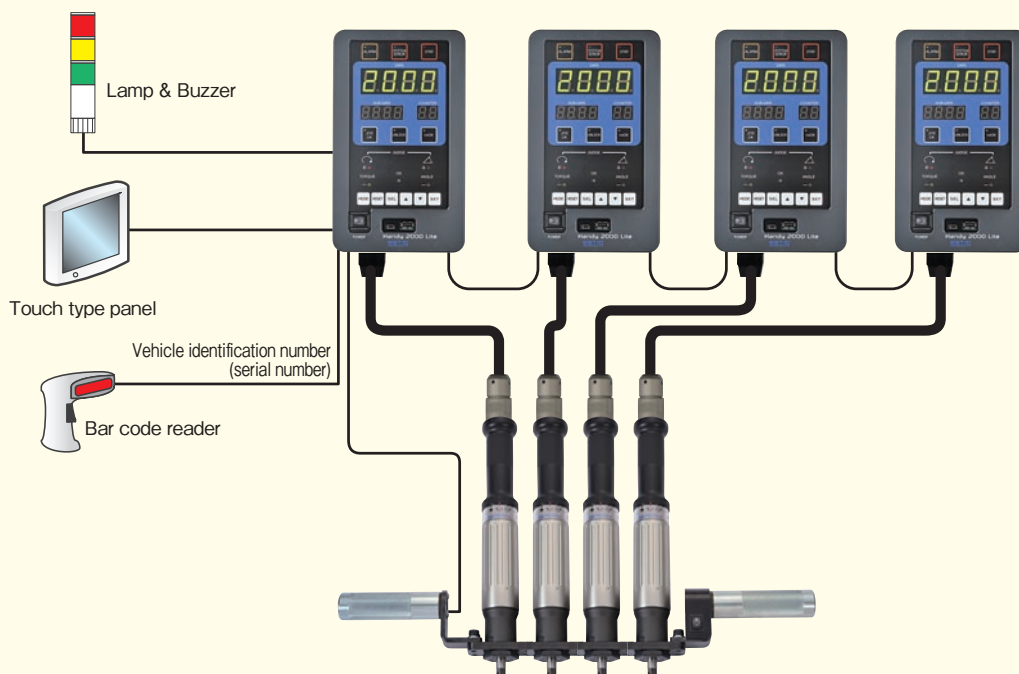
Expanding network connection

The fastening results for up to 50 units* can be compiled via the hub unit on ETHERNET. This wire saving connection can be used for the channel setting and interlocking from the outside with the use of FieldBus.

* Variable depending on the network structure.

Data logger

Host PC

Ethernet(LAN)

Open Protocol

Fieldbus(Devicenet,PROFIBUS,CC-Link,EterNet/IP and Profinet)

Existing PLC

PC

Lamp & Buzzer

Management program

Touch type panel

Touch type panel

Bar code reader

Socket tray
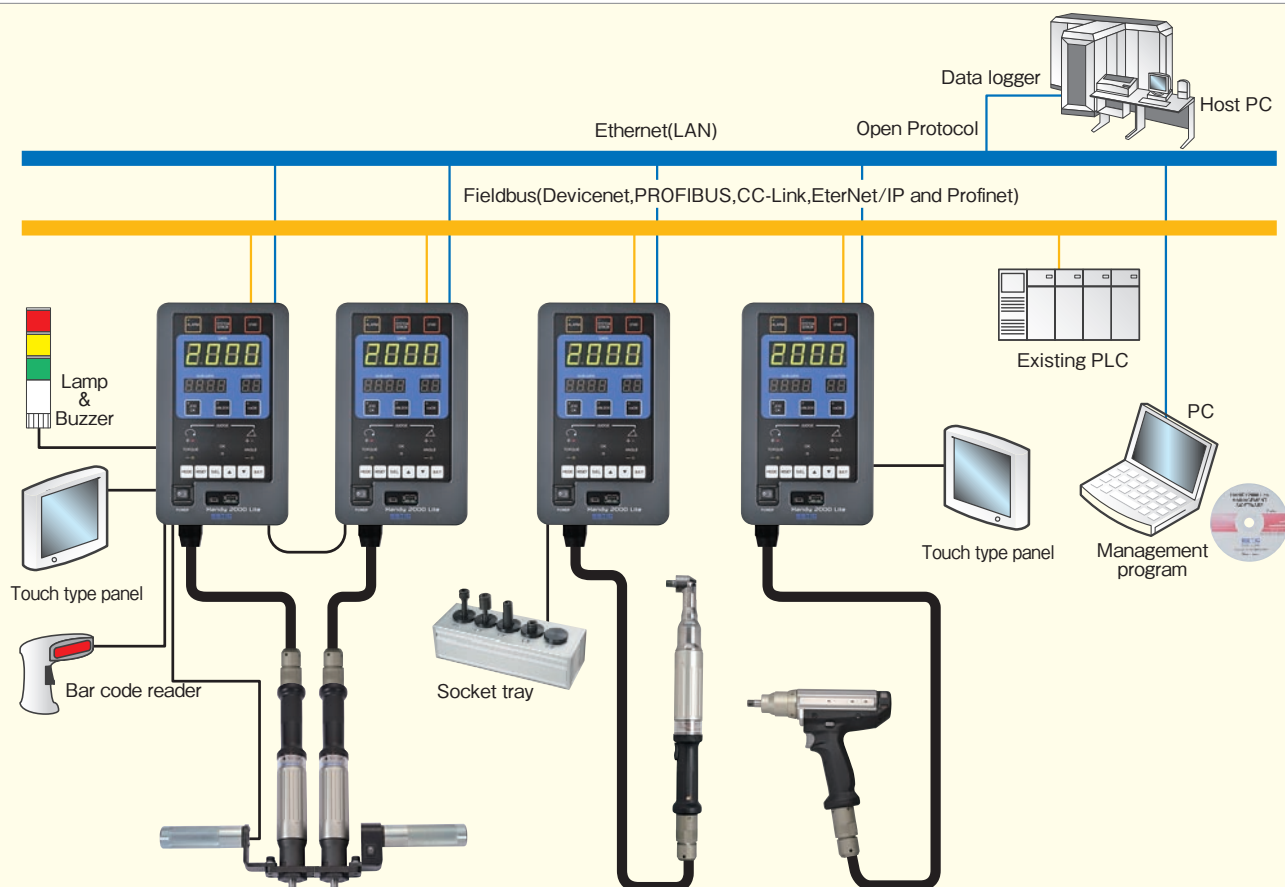
A COST REDUCTION EXAMPLE WITH THE NEW FUNCTIONS

Peripheral units required in the past are not necessary
Low cost and space saving system can be configured

Lamp & Buzzer control

Conventional model

The lamp and buzzer are controlled with OK and NG signals sent from the controller via programmed relay.

Lamp & Buzzer

I/O

C/V interlock

PLC unit   PLC control

DC power supply

Reset P.B.
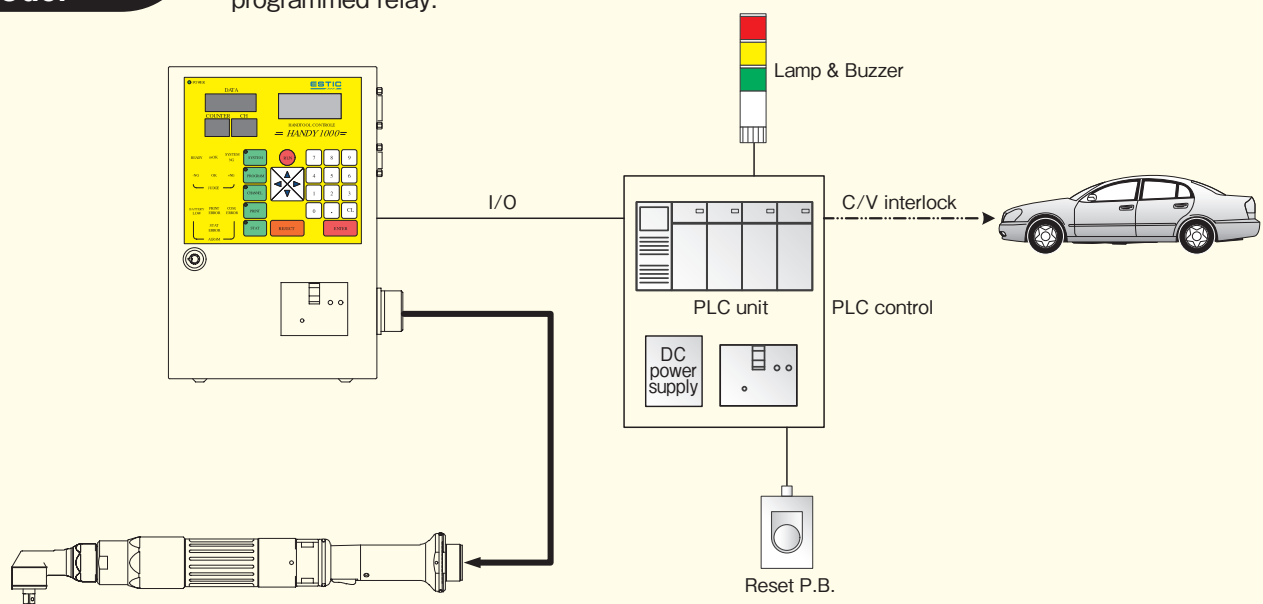
Handy 2000 Lite

The lamp and buzzer can be directly controlled with the simplified PLC and I/O free allocation functions. Additional power supply for the peripheral units is not required as 24VDC power supply is provided.

Lamp & Buzzer

I/O

C/V interlock

I/O

Reset P.B.

External PLC is not required.
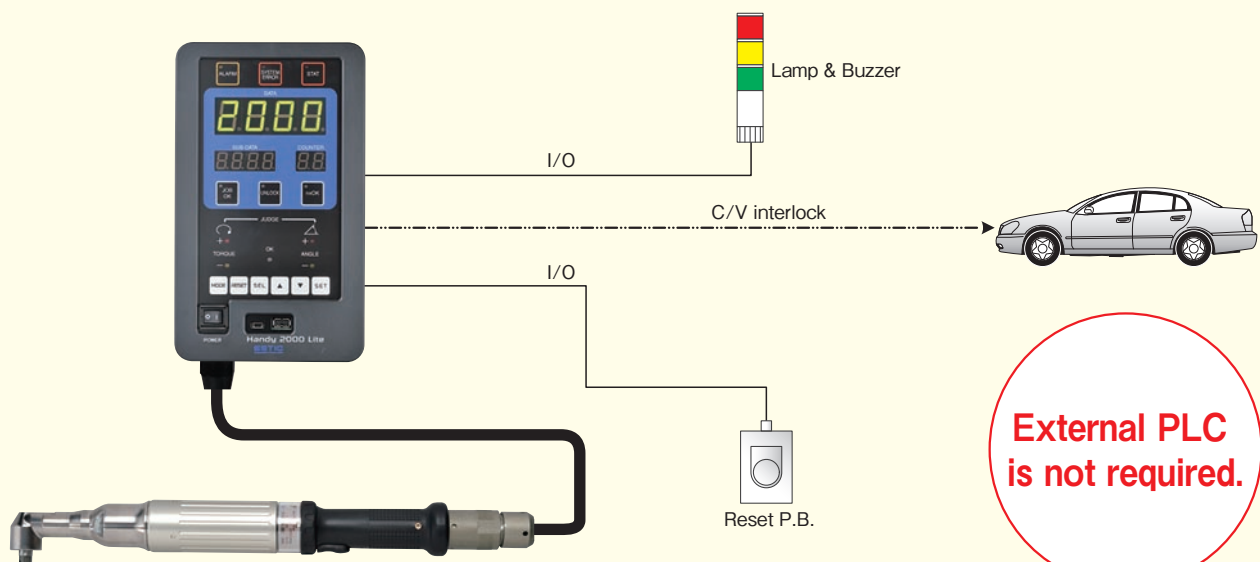
Data control + Interlock control

Conventional model

The channels are controlled with the external PC.

Ethernet(LAN)

To a server

RS-232C (serial communication)

Fastening data (torque, angle & time)

I/O

Monitoring display

Keyboard Mouse

I/O board

Personal computer

PC control panel

Vehicle identification number (serial numbers)

Bar code reader

- The I/O board is installed in the personal computer.
- Job control function is built in PC.
- Jobs are selectable with the vehicle identification number.
- The job control function controls the channel I/O.

Handy 2000 Lite

The fastening is controlled in the channels appropriate for the car model and parts with the job control function and job selecting function based on the vehicle identification number. 5VDC power supply for bar code readers is built in.

Ethernet(LAN)

To a server

Fastening data (torque, angle & time)

Lamp & Buzzer

I/O

Vehicle identification number (serial numbers)

Bar code reader

Touch type panel display/input

Handy 2000 Lite

PC control panel is not required.
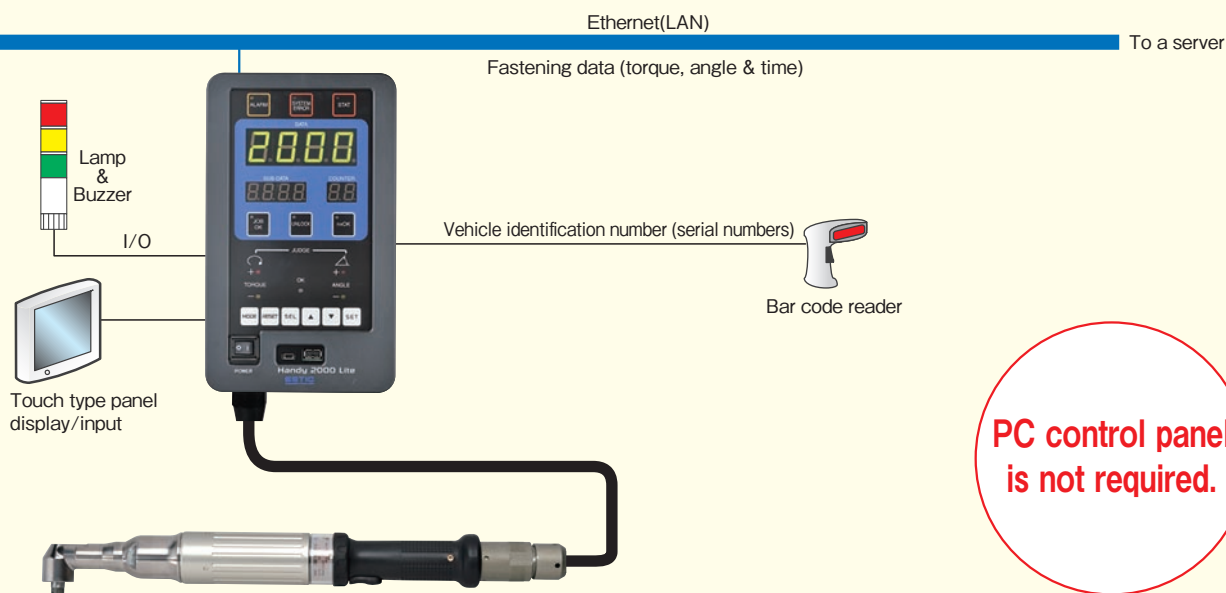
Handy 2000 Lite Management Software is a dedicated program used to take full advantage of all the Handy 2000 Lite functions

Functions to be set

Parameters can be loaded from the controller, written into the controller, stored and printed. The copy function is provided to help with quick start-ups.
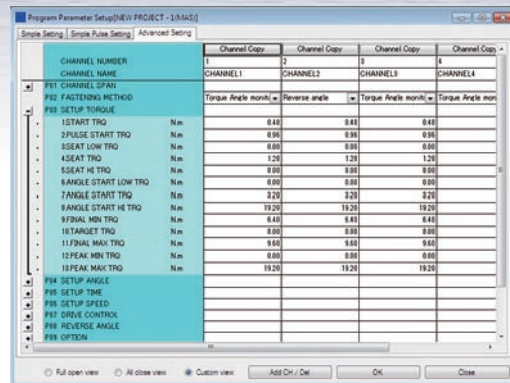
Program parameters
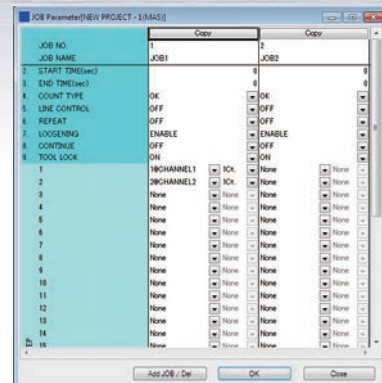
Fastening job setting
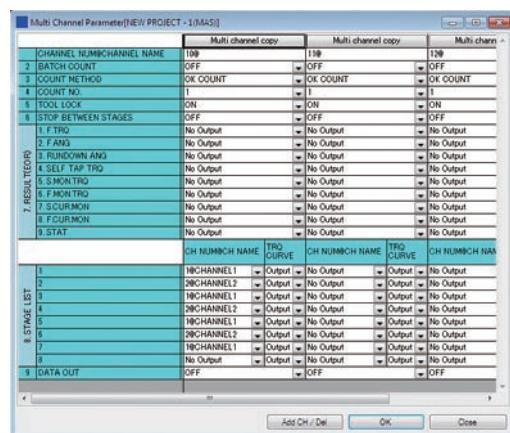
Multi channel parameter

The simplified PLC functions allow ladder logic creation, monitoring, and storage.
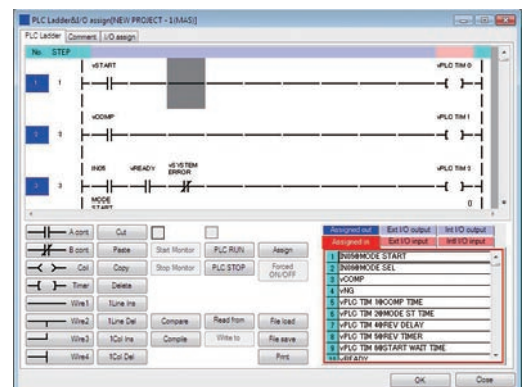
PLC ladder & I/O allocation

History function

Fastening results, torque curves and system error data recorded in the controller can be loaded, displayed and printed with the function. Data is stored in CSV file format and can easily be imported into spreadsheets.

Torque curve data

Monitoring function

The latest fastening results and torque curve data stored in the controller can be displayed and printed. The data can be automatically or manually stored in CSV file format.

Fastening results displayed on the monitor screen.

Allocation function

Allocation of virtual I/O items in PIO (IN), PIO (OUT), RELAY/EXTIN, remote I/O units, allocation of items added to the fastening result, and allocation of data including the related data in Fieldbus I/O unit are possible.

Allocation of fastening result items

Fieldbus I/O allocation

Two types of interface connections are available (RS-232C and ETHERNET)

A RS-232C port is available for quick and easy connection with a single system.
A ETHERNET port is available to connect to multiple systems locally or through a network.

Verifying function

The verify function is available to compare a saved program file with the program file currently running in the system. This allows for added file control and change tracking.

Maintenance functions

The maintenance function allows I/O monitoring, output signal forcing, torque and angle monitoring as well as displaying various tool data.

Access limitation function

To prevent the unauthorized use with the access control using password.

(Compatible OS)Windows7,SP1 with32bit/64bit
WindowsXP,SP3/Vista,SP1.2 with32bit

EH2-R3450-A, EH2-R3600-A

EH2-R3270-A, EH2-R3370-A

EH2-R2180-A

EH2-R2050-A

EH2-R1020-A

ANGLE TOOL

Model	Motor power	Drive Mode		Torque Range		Max Speed	Output Drive			Weight		Length
	(W)	Direct	Pulse	(Nm)	(ft lb)	(rpm)	Type	(mm)	(in)	(kg)	(lb)	(mm)
EH2-R1020-A	100	V	V	4~20	3.0~14.8	1027	Square	9.5	3/8	1.4	3.1	386
EH2-R1030-A	100	V	V	6~30	4.4~22.1	702	Square	9.5	3/8	1.5	3.3	393
EH2-R2050-A	200	V	V	10~50	7.4~36.9	779	Square	9.5	3/8	2.1	4.6	434
EH2-R2080-A	200	V	V	16~80	11.8~59.0	480	Square	12.7	1/2	2.5	5.5	466
EH2-R2120-A	200	V	V	24~120	17.7~88.6	269	Square	12.7	1/2	3	6.6	514
EH2-R2180-A	200	V	V	36~180	26.6~132.8	184	Square	19	3/4	3.2	7.1	538
EH2-R3270-A	300	V		54~270	39.9~199.3	265	Square	19	3/4	7.7	17	625
EH2-R3370-A	300	V		74~370	54.6~273.0	207	Square	19	3/4	7.7	17	625
EH2-R3450-A	300	V		90~450	66.4~332.1	172	Square	25.4	1	10.5	23.1	659
EH2-R3600-A	300	V		120~600	88.6~442.8	126	Square	25.4	1	10.5	23.1	659

How to read the model numbers

EH2 - R1 020 - A (PP)

Tool type
R: Please see the table below
P: Pulse Only tool

Tool type
A: Angle type
S: Straight type
SL: Straight type、lever start type
SP: Straight type、push-to-start type
SC: Straight type、connector start type
P: Pistol type
PH: Pistol type with involute spline

Anvil type
Blank: Through Hole
(PP): Pin Plunger
(BP): Ball Plunger
*Ball/Pin Plunger is available on
9.5mm(3/8") and 12.7mm(1/2") Anvil.

Max. rated torque
Torque in Nm (3 digits)

Motor power
0:50W
1:100W
2:200W
3:300W

EH2-R2120-PH

EH2-R2085-PH

EH2-P1050-P

Pulse Mode only

EH2-R1016-P

EH2-R0005-P

PISTOL TOOL

Model	Motor power	Drive Mode		Torque Range		Max Speed	Output Drive			Weight		Length
	(W)	Direct	Pulse	(Nm)	(ft lb)	(rpm)	Type	(mm)	(in)	(kg)	(lb)	(mm)
EH2-R0005-P	50	V	V	1～5	0.7～3.7	1694	Square	9.5	3/8	1.1	2.4	202
EH2-R0010-P	50	V	V	2～10	1.5～7.4	942	Square	9.5	3/8	1.1	2.4	202
EH2-R1016-P	100	V	V	3.2～16	2.4～11.8	1247	Square	9.5	3/8	1.4	3.1	220
EH2-R1016-PH	100	V	V	3.2～16	2.4～11.8	1247	Square	9.5	3/8	1.4	3.1	220
EH2-R1020-P	100	V	V	4～20	3.0～14.8	1053	Square	9.5	3/8	1.4	3.1	220
EH2-R1020-PH	100	V	V	4～20	3.0～14.8	1053	Square	9.5	3/8	1.4	3.1	220
EH2-P1050-P	100		V	10～50	7.4～36.9	1052	Square	12.7	1/2	1.7	3.7	248
EH2-R2085-PH	200	V	V	17～85	12.5～62.7	403	Square	12.7	1/2	2.7	6	335
EH2-R2120-PH	200	V	V	24～120	17.7～88.6	292	Square	12.7	1/2	2.8	6.2	335

EH2-R3320-S, EH2-R3420-S

EH2-R3200-S, EH2-R3260-S

EH2-R2035-S
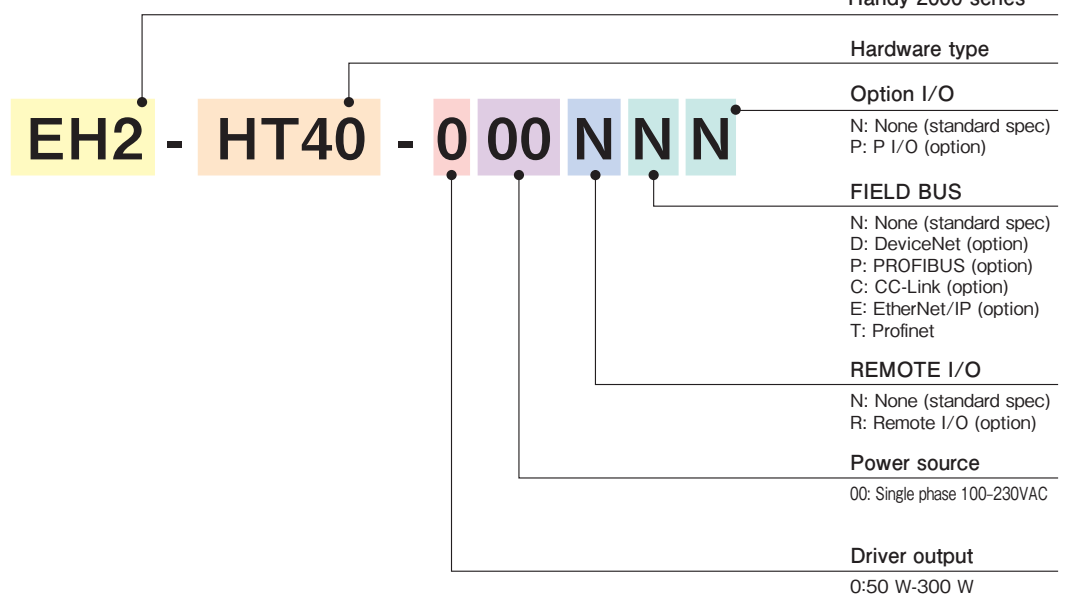
EH2-R1016-S

EH2-R0005-SL

EH2-R0005-SC

STRAIGHT TOOL

Model	Motor power	Drive Mode		Torque Range		Max Speed	Output Drive			Weight		Length
	(W)	Direct	Pulse	(Nm)	(ft lb)	(rpm)	Type	(mm)	(in)	(kg)	(lb)	(mm)
EH2-R0005-SL	50	V	V	1~5	0.7~3.7	1694	Square	9.5	3/8	1.2	2.6	296
EH2-R0005-SP	50	V	V	1~5	0.7~3.7	1694	Square	9.5	3/8	1.2	2.6	296
EH2-R0005-SC	50	V	V	1~5	0.7~3.7	1694	Hex	6.35	1/4	1.1	2.4	228
EH2-R0010-SL	50	V	V	2~10	1.5~7.4	942	Square	9.5	3/8	1.2	2.6	296
EH2-R0010-SP	50	V	V	2~10	1.5~7.4	942	Square	9.5	3/8	1.2	2.6	296
EH2-R0010-SC	50	V	V	2~10	1.5~7.4	942	Hex	6.35	1/4	1.1	2.4	228
EH2-R1016-S	100	V	V	3.2~16	2.4~11.8	1247	Square	9.5	3/8	1.3	2.9	344
EH2-R1020-S	100	V	V	4~20	3.0~14.8	1053	Square	9.5	3/8	1.3	2.9	344
EH2-R2035-S	200	V	V	7~35	5.2~25.8	1169	Square	9.5	3/8	2	4.4	406
EH2-R2055-S	200	V	V	11~55	8.1~40.6	720	Square	12.7	1/2	2.2	4.9	431
EH2-R2085-S	200	V	V	17~85	12.5~62.7	403	Square	12.7	1/2	2.4	5.3	448
EH2-R2120-S	200	V	V	24~120	17.7~88.6	292	Square	12.7	1/2	2.5	5.5	448
EH2-R3200-S	300	V		40~200	29.5~147.6	397	Square	19	3/4	6	13.2	547.5
EH2-R3260-S	300	V		52~260	38.4~191.9	311	Square	19	3/4	6	13.2	547.5
EH2-R3320-S	300	V		64~320	47.2~236.2	258	Square	19	3/4	6.5	14.3	547.5
EH2-R3420-S	300	V		84~420	62.0~310.0	189	Square	19	3/4	6.5	14.3	547.5

Download CAD data for detailed outline drawings. **https://www.estic2.com/caddata/**

List of available models

Model	Options							Power source (V)	Drive output (W)
	Remote I/O	DeviceNet	Profibus	CC-Link	EtherNet/IP	Profinet	P I/O		
EH2-HT40-000NNN								100V-230V	50-300W
EH2-HT40-000RNN	●								
EH2-HT40-000NNP							●		
EH2-HT40-000RNP	●						●		
EH2-HT40-000NDN		●							
EH2-HT40-000RDN	●	●							
EH2-HT40-000NDP		●					●		
EH2-HT40-000RDP	●	●					●		
EH2-HT40-000NPN			●						
EH2-HT40-000RPN	●		●						
EH2-HT40-000NPP			●				●		
EH2-HT40-000RPP	●		●				●		
EH2-HT40-000NCN				●					
EH2-HT40-000RCN	●			●					
EH2-HT40-000NCP				●			●		
EH2-HT40-000RCP	●			●			●		
EH2-HT40-000NEN					●				
EH2-HT40-000REN	●				●				
EH2-HT40-000NEP					●		●		
EH2-HT40-000REP	●				●		●		
EH2-HT40-000NTN						●			
EH2-HT40-000RTN	●					●			
EH2-HT40-000NTP						●	●		
EH2-HT40-000RTP	●					●	●		

CE

How to read the model numbers

EH2 - HT40 - 0 00 N N N

Handy 2000 series

Hardware type

Option I/O
N: None (standard spec)
P: P I/O (option)

FIELD BUS
N: None (standard spec)
D: DeviceNet (option)
P: PROFIBUS (option)
C: CC-Link (option)
E: EtherNet/IP (option)
T: Profinet

REMOTE I/O
N: None (standard spec)
R: Remote I/O (option)
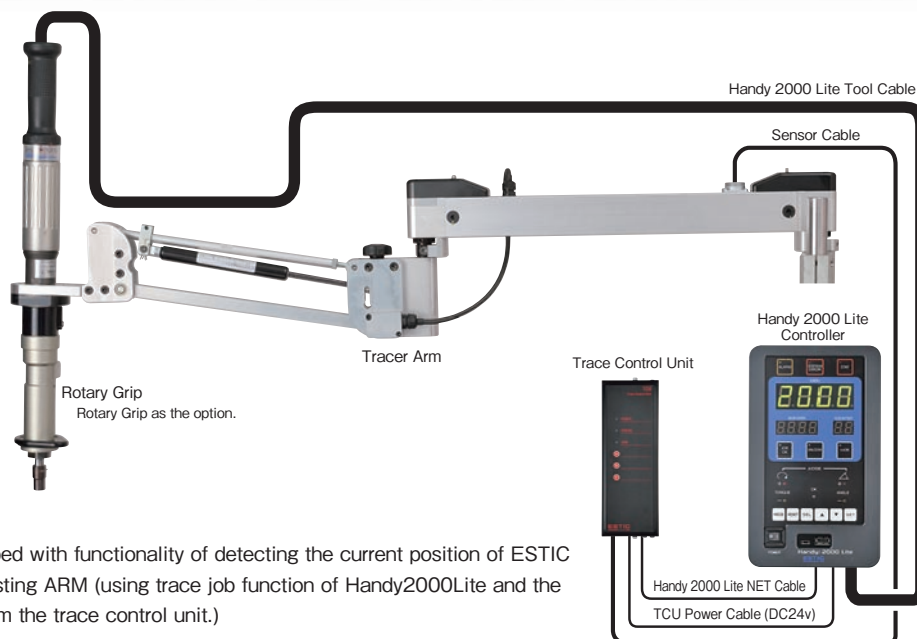
Power source
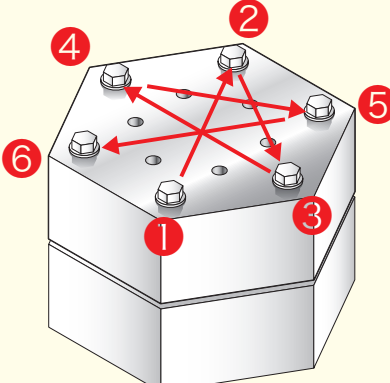00: Single phase 100–230VAC

Driver output
0: 50 W-300 W

TRACER ARM

One of new applications of Handy 2000Lite is "TRACER ARM". Assisting Arm with Position Detect Function for Handy 2000 Lite!

- **Eliminating operator errors!**
- **Eliminating reaction force!**
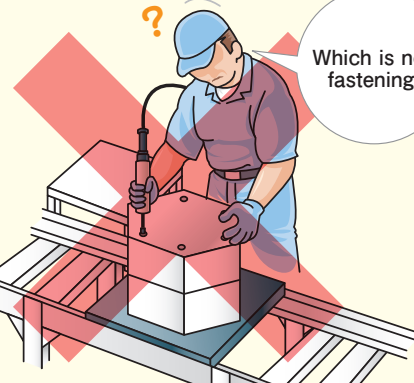- **Improving operating efficiency!**
- **Simple Configuration!**

Handy 2000 Lite Tool Cable

Sensor Cable

Rotary Grip
Rotary Grip as the option.

Tracer Arm

Trace Control Unit

Handy 2000 Lite
Controller

"TRACER ARM" is equipped with functionality of detecting the current position of ESTIC handheld tool on the assisting ARM (using trace job function of Handy2000Lite and the position data obtained from the trace control unit.)

Handy 2000 Lite NET Cable
TCU Power Cable (DC24v)

Step 1 CH1 Pretightening with
21N-m at 6 locations
*Fastening sequence:
Start ❶->❷->❸->❹->❺->❻ End

Step 2 CH2 Loosening with
38 degrees at 6 locations
*Fastening sequence:
Start ❶->❷->❸->❹->❺->❻ End

Step 3 CH3 Final tightening with
49N-m at 6 locations
*Fastening sequence:
Start ❶->❷->❸->❹->❺->❻ End

Which is next fastening?

Currently, operator errors such as incomplete fastening, wrong position fastening, and wrong fastening sequence. Additionally, sometimes fastening maneuverability is not easy for the operator.

Adopting this "TRACER ARM"with functionality of detecting the current position of ESTIC handheld tool on the assisting ARM interlocking fastening each positions, The operator could do eliminate current errors and also do easy handling when fastening.
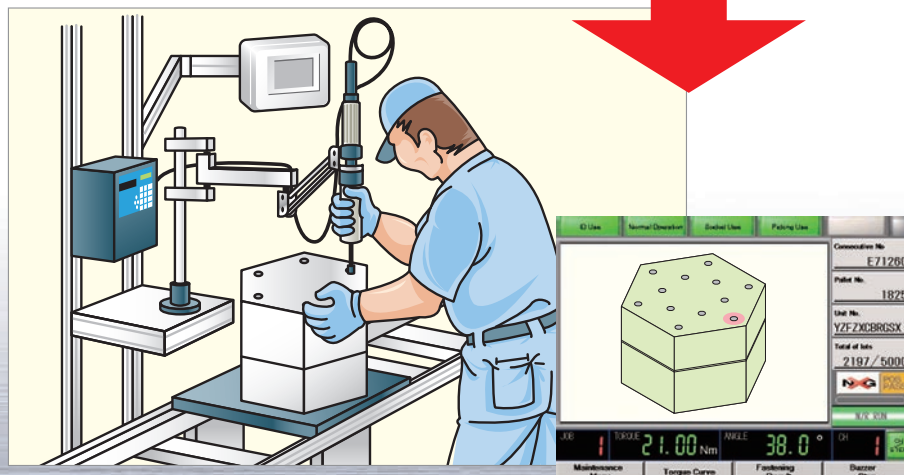
Work Flow Example

1 Read the bar code on the application, and fastening program is automatically selected.

2 Model information selected by the Bar code reader is sent to the Touch screen, and fastening position is displayed in a pink circle.
*The application image is pre registered in the Touch screen

3 Touch screen navigates Operator where to be fastened next.
By following the Touch screen, Operator can complete sequenced fastening.

4 Fastening Data (Fastening results) can be stored in the Controller.

5 Fastening Data (Fastening results) can be sent to the plant's server as well.
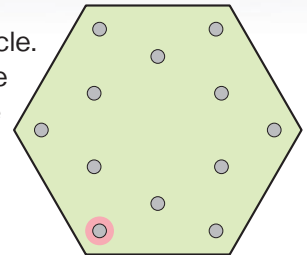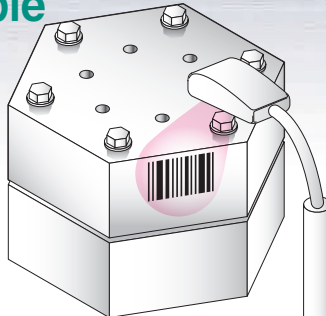
【Tracer Arm】

Model※	EH2-TA0505-*-AT1	EH2-TA0505-*-AT2	EH2-TA0505-*-AT3	EH2-TA0505-*-AT4
Tool Model Used	EH2-R0005-SL/SP/SC EH2-R0010-SL/SP/SC	EH2-R1016-S EH2-R1020-S	EH2-R2035-S	EH2-R2055-S
Applied Torque	1.0~55.0 Nm			
Arm Length	500 mm × 500 mm			
Weight of Arm Main Body	5.5 kg（12.1lb）			
Repetitive Position Detection Accuracy	±1 mm			
Recommended Work Area	1000 mm × 700 mm × 330 mm （Width×Depth×Height）			

＊Select Operation Type from R:Right Arm, L:Left Arm

【Trace Control Unit（TCU）】

Model	EH2-TCU-N	EH2-TCU-E
Power Supply	DC24V±10%	
Number of Assignable Work Pieces	99 types	
Number of Assignable Positions	63 positions per type	
Display / Operation	Switch : 3 pieces, Indicator Lamp : 3 pieces(Free Allocation)	
Standard I/O	PIO (IN/OUT) 6points each (Free Allocation)	
Extension I/O	——————————	EXTPIO (IN/OUT): 24 points each (Free Allocation)

【Resolver Cable】

Model	EH2-CVR3-010	EH2-CVR3-050
Cable Length	1.0 m	5.0 m

【Arm Mounting Bracket】

Model	EH2-SAFM500	EH2-SAWM200
Function	To install on a horizontal surface (floor / ceiling)	To install on a vertical surface (wall)

【TCU Mounting Bracket】

Model	EH2-TCU-BRKT2
Function	To install on Handy2000Lite Control unit／EH2-SAFM500

■ **Peripherals (Optional)**

● Touch Screen ● Rotary Grip ● Barcode Reader

CABLES

Highly durable molded connector with unique double shell construction

The cable is extremely durable and easy to handle with a high strength elastic aramid fiber core covered by a molded resin. The connector has a dual shell constructed from machined duralumin to assure a secure cable connection while maintaining flexibility.

**Double shell construction**

Molded connector

Spiral Cable

List of the models

Model	Length (m)	Outside diameter (mm)	Remarks
EH2-CVS05-SS	5		
EH2-CVS10-SS	10		
EH2-CVS15-SS	15		
EH2-CVS20-SS	20		
EH2-CVS25-SS	25	13.5	* Made to order
EH2-CVS30-SS	30		
EH2-CVC03-SS	1.5		Spiral Cable (Expanded length: 3m)
EH2-CVE05-SS	5		Relay Cable
EH2-CVE10-SS	10		Relay Cable
EH2-CVE15-SS	15		Relay Cable

Cable Adapter

EH2-CVAD-L
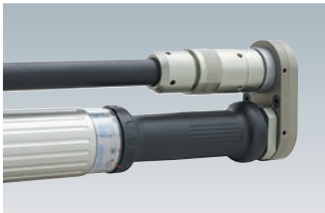
EH2-CVAD-U

Model	Product name	Remarks
EH2-CVAD-L	L Cable Adapter	Cable for bent 90 degrees
EH2-CVAD-U	U Cable Adapter	Cable for bent 180 degrees

Tool Accessories

Hanging fixture for the straight and angle type models

EH2-SB01

EH2-SH01

Hanging fixture for the pistol type models

EH2-PH01

EH2-PH02

EH2-PH03

Model	Product name	Remarks
EH2-SB01	Hanging fixture	For straight and angle tools (100 W type): Horizontal
ENRH-SB02		For straight and angle tools (200 W type): Horizontal
EH2-SH01		For straight and angle tools: Vertical
EH2-PH01		For pistol tool: Horizontal/upside down
EH2-PH02		For pistol tool: Horizontal, For straight tool (50 W type) : Horizontal
EH2-PH03		For pistol tool: Vertical

An example of the handle installation
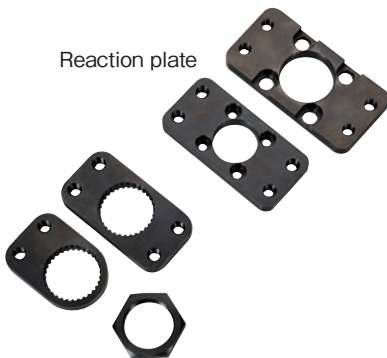
Reaction plate

Support handle

Switch handle

Reaction locking nut

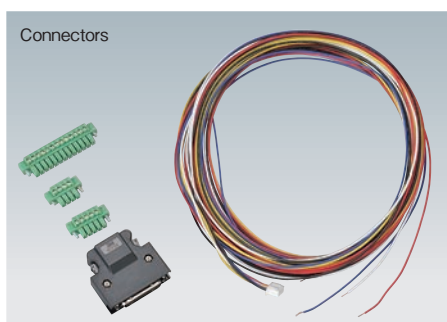| Model	Product name	Remarks
ENRH-RP20S	Reaction plate	For 16/20 Nm straight and pistol tools (single)
ENRH-RP20W		For 16/20 Nm straight and pistol tools
ENRH-RP35W		For 35Nm straight tool
ENRH-RP90W		For 55/85/120Nm straight tools
ENRH-LNM30	Reaction locking nut	For 16/20 Nm straight and pistol tools

Model	Product name	Remarks
ENRH-SH01	Support handle	
ENRH-SH02	Switch handle	With direction selector switch
EH2-LS01	Short switching lever	For straight and angle tools (100/200W type)
EH2-LS02	Long switching lever	For straight and angle tools (100/200W type)

ACCESSORIES

Protection cover for the pistol type tools

Protection cover for the angle type tools

* Made to order

Model	Product name	Remarks
EH2-PP01		For 50 Nm pistol tools
EH2-PP02		For 16/20 Nm pistol tools
EH2-PP03		For 5/10 Nm pistol tools
	Protection cover	For 20 Nm angle tools
		30/50 Nm angle tools
* Made to order		80 Nm angle tools
		120 Nm angle tools
		180 Nm angle tools

Controller Accessories

Connectors

Model	Product name	Remarks
EH2-FCN13-RL		For relay/exit-in connection
EH2-FCN04-RM		For the remote I/O connection
EH2-FCN05-DC	Connectors	For DC OUT connection
ENRZ-CN36-EX		For PIO
ENRZ-CVCK-030		For CHK CN Connector :3m

NET cable

Terminator

Model	Product name	Remarks
EH2-CVNK-005		For the multi spindle connection :0.5m
EH2-CVNK-010	NET cable	For the multi spindle connection :1m
EH2-CVNK-030		For the multi spindle connection :3m
EH2-CNST	Terminator	
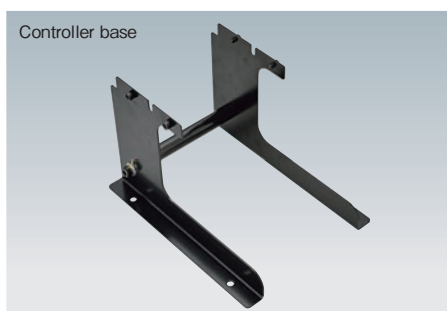
Controller base

Model	Product name	Remarks
EH2-CF02	Controller base	For vertically setting the controller

An example of the controller base installation

Model	Description
EH2-CP02-CE2	Power Cord 200V without plug
EH2-CP02-CN1	Power Cord 200V China plug
EH2-CP02-EU1	Power Cord 200V EU plug
EH2-CP02-UK1	Power Cord 200V UK plug
EH2-CP02-UL1	Power Cord 100V U.S.A (UL) plug
EH2-CP02-TH1	Power Cord 200V Thailand plug

For PCs

Model	Product name	Remarks
EH2-PC-J	Handy 2000	Japanese version
EH2-PC-E	Management software	English version
ENRZ-CVSR-015		1.5m
ENRZ-CVSR-050	Serial communication cable	5m
ENRZ-CVSR-100		10m

Handy2000 Series Management Software
64bit OS support
English
ESTIC
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