

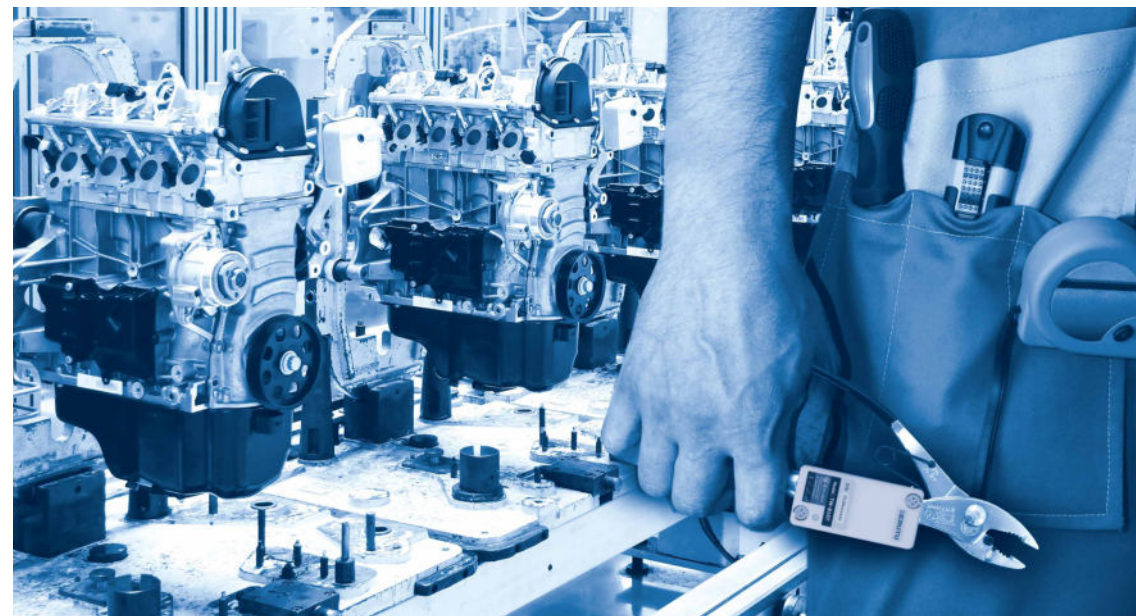
POKAYOKE TOOLS

POKAYOKE
ポカヨケ

TW-800 Series



TW-800
Series



QR code for the latest
Pokayoke-compatible tools on web page



QR code for Pokayoke-compatible
tools on YouTube



QR code for distributors in each country

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Please contact your nearest distributor.

HERUTU

POKAYOKE
ポカヨケ

Helping Operators "Mistake-Proofing" (Pokayoke)

The Pokayoke Tools (TW-800 Series) are a group of IoT tools designed to help operators "mistake-proofing" (pokayoke) in production processes that demand high quality, such as assembly and inspection processes.

Pokayoke-compatible Tools (equipped with Pokayoke transmitters)



Herutu Electronics Original Tools



Tools from Tool Manufacturers

Comm. Distance
Approx. 30-70 m
(98-230ft) Indoors
(may vary depending on usage conditions)

A tool (transmitter) and a receiver can be easily paired for use.

Pokayoke Receivers



We have an extensive lineup of receivers with various interfaces. You can choose according to your network environment.

- I/O relay output
- RS-232C serial output
- LAN connection
- CC-Link IE Field Basic support
- Count display



Pokayoke (Mistake-Proofing) Cases

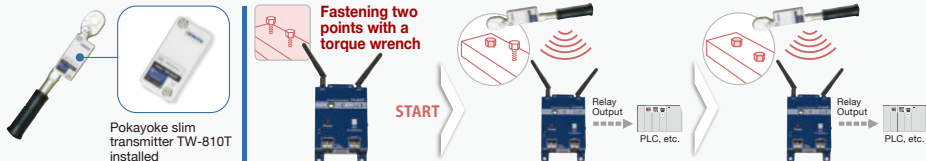
CASE 1 Pokayoke for marking tasks with the Check Pen S



CASE 2 Pokayoke for fastening work with a power tool



CASE 3 Pokayoke for fastening work with a torque wrench



Pokayoke-compatible Tools Lineup



QR code for the latest Pokayoke-compatible tools on web page

Pokayoke Tools (TW-800 Series) Lineup

Pokayoke Tools (TW-800 Series) Lineup

 Pokayoke Slim Transmitter TW-820T	 Pokayoke Slim Transmitter TW-810T	 Pokayoke Transmitter TW-800T	 Pokayoke Compact Transmitter TW-850T	 Pokayoke Wireless Unit HCP-2402T-MC	 Pokayoke Wireless Module HRF-2402
 Torque Wrenches	 Pliers Wrenches	 Connector Fitting Checkers	 Electric Screwdrivers	 Cable Tie Tools	 Air Tools
 Hand Pumps	 Makita Impact Wrenches, Impact Drivers, Screwdrivers, etc.1	 Check Pen S			

Pokayoke Receivers (without Counter Feature) Lineup

TW-800R Series					
 TW-800R	 TW-800R-EXP	 TW-800R-EXS	 TW-800R-EXL	 TW-800R-EXB	 TW-800R-SLNX
1 Support	4 Support	Serial RS-232C	LAN	CC-Link IE Field Basic	2 Support

Pokayoke Receivers (with Counter Feature) Lineup

TW-800R Series			
 Simple Pokayoke Counter TW-800R-SC	 Pokayoke Counter TW-800R-EXC	 Simple Pokayoke Counter TW-800R-SCL	 Mobile Pokayoke Counter TW-800R-MCL
1 Support	4 Support	1 Support	1 Support
I/O RS-232C	I/O RS-232C	I/O RS-232C	I/O RS-232C
Count Max 99	Count Max 99	Count Max 999	Count Max 999
		LAN	

*1: For purchasing Makita impact drivers / impact wrenches / screwdrivers, please contact the person in charge of special procurement at Makita Co., Ltd. Email: tokuju_mkt@m1.makita.co.jp

Communication Distance

Pokayoke Transmitters	Pokayoke Receivers (TW-800R Series)
TW-800T TW-850T Check Pen S HCP-2402T-MC	30 m (98 ft)
TW-810T	50 m (164 ft)
TW-820T	70 m (230 ft)

Check Pen S

Lineup

In combination with the Pokayoke Tools TW-800 series receiver, the Check Pen S prevents omission of marking work using a pen or self-inking stamp in the production process. It is compatible for use with a variety of commercially available pens and self-inking stamps.



Prevention of cracks in pipes:

adopted a material that rarely cracks due to ink adhesion.

Switch damage prevention:

adopted a mechanism that hardly damages the switch after 1 million uses (in-house study).

High sealing performance:

adopted a switch with high sealing performance (environment resistance) to prevent foreign matter such as dust and ink from entering the switch.

Strap attachment:

a strap can be attached to prevent dropping during work.



Built-in Wireless Module HRF-2402

Battery level notification:

an LED light notifies when the remaining battery level is less than 10%.

Using the production process support software for Pokayoke Tools "PO-KAYOKE plus", you can accurately know the time to replace the battery on the software screen.



Improved battery holder:

adopted a mechanism to firmly hold the coin battery (CR2032)

We offer the Inkless Pen DPEN-02S, which enables mistake-proofing (pokayoke) in marking tasks without ink adhering to the products. It can be used with the CP-02SX.



The Check Pen S is compatible with various commercially available pens and self-inking stamps.

Model	Type	Part Number	Manufactures	Country	Main Body Unit	Barrel	Pen Cap
CP-02SX	Pen	PX-20	Mitsubishi Pencil	Japan	CP-SX	CP-02S-PP	CP-S-CA
		MMP-20	Pentel				
		Inkless Pen DPEN-02S	Heruru Electronics				
CP-05SX	Pen	Camlin Paint Marker EK-400XF	Kokuyo Camlin	India	CP-SX	CP-05S-PP	Please use the originally supplied pen cap.
		PAINT MARKER No.CP Artline70	Shachihata	Indonesia			
CP-09SX	Pen	H-DM	Tombow	Japan	CP-SX	CP-09S-PP	-
CP-11SX	Pen	K-177N	Shachihata	Japan	CP-SX	CP-11S-PP	CP-S-CA
CP-26SX	Self-inking Stamp	X-BKL	Shachihata	Japan	CP-SX	CP-26S-PP	CP-S-CA
CP-70SX	Pen	Skill Writer III	Shinwa	Japan	CP-SLX	CP-70S-PP	Please use the originally supplied pen cap.
CP-71SX	Self-inking Stamp	TAT Stamper F11 XQT-11C	Shachihata	Japan	CP-SLX	CP-71S-PP	Please use the originally supplied self-inking stamp cap.
CP-72SX	Pen	Steel Paint NEO	Alton	Japan	CP-SLX	CP-72S-PP	Please use the originally supplied pen cap.
CP-81SX	Self-inking Stamp	Name Stamp XL-11	Shachihata	Japan	CP-SLX	CP-81S-PP	Please use the originally supplied self-inking stamp cap.

Note: The Check Pen S includes main body unit, barrel, and pen cap (applicable model only). Pens and self-inking stamps not on the list are also supported. Please feel free to contact us.

Specifications

Comm. Distance	30 m / 33 yd (depends on usage conditions)
Battery Life	300,000 Uses (depends on usage conditions)
Available Countries	Japan / Canada / USA / China / Korea / Thailand / Vietnam(CP-SX only) / Philippines / Indonesia (CP-SX only) / India
Input	1 Test Switch
Display	Communication Status and Time to Replace the Battery Notification LED (Green / Red)
Power Source	1 Coin Battery (CR2032)
Frequency Band	2,403 MHz-2,478 MHz (automatic free channel selection by a frequency hopping function)
Antenna	Chip Antenna
Accessory	1 Coin Battery (CR2032) Note: The Check Pen S includes main body unit, barrel, and pen cap (applicable model only). Pen and self-inking stamp are not included.
Options	The available options may differ depending on the model. Please refer to the "Options" section on the right and contact us for details.

Options



Inkless Pen [DPEN-02S] Main Body Unit [CP-SX] Main Body Unit [CP-SLX] Barrel [CP-##S-PP] Pen Cap [CP-S-CA] Strap [CP-SXT]

(with ## from the model number differs depending on the pen and self-inking stamp in use)

Pliers Wrenches

Lineup

A pliers wrench is a tool used to lock hose clamps by detaching or removing pins from the hose clamps used to lock radiator hoses, engine hoses, etc. It can be used for mistake-proofing (pokayoke) in combination with the Pokayoke Tools TW-800 series receiver.



Jaws

The jaws are brazed with a high hardness material.

Bumper

An adjustment screw prevents a false transmission.

Spring

Jaws open to a certain width.

Bumper

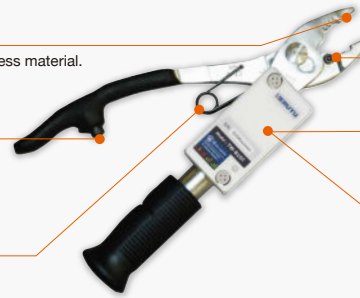
This prevents excessive jaw opening.

Pokayoke Transmitter

Either a Pokayoke slim transmitter TW-820T/TW-810T or a Pokayoke transmitter TW-800T is attached.

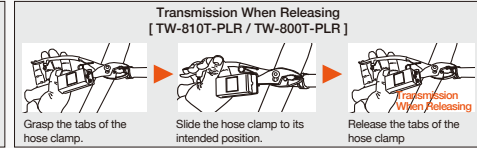
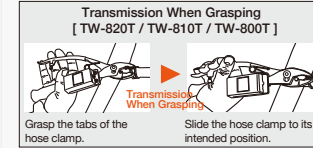
Switch

It is the same mechanism as a torque wrench with limit switch.



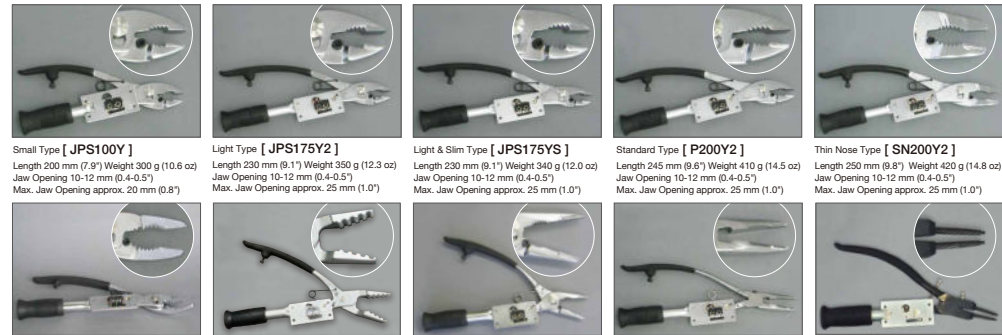
Transmission Timing

According to your desired transmission timing, "transmission when grasping the hose clamp with the pliers wrench (TW-810T / TW-800T)" and "transmission when releasing the hose clamp from the pliers wrench (TW-810T-PLR / TW-800T-PLR)" can be selected.



False Transmission Prevention Feature

Our pliers wrench has a false transmission prevention feature, so it only transmits when grasping above a certain thickness. The tool is shipped with a default setting to transmit when grasping an object whose thickness of 1 mm (0.04") and above. The thickness can be adjusted with the bumper (adjustment screw).



Small Type [JPS100Y]
Length 200 mm (7.9") Weight 350 g (12.3 oz)
Jaw Opening 10-12 mm (0.4-0.5")
Max. Jaw Opening approx. 20 mm (0.8")

Light Type [JPS175Y2]
Length 230 mm (9.1") Weight 350 g (12.3 oz)
Jaw Opening 10-12 mm (0.4-0.5")
Max. Jaw Opening approx. 25 mm (1.0")

Light & Slim Type [JPS175YS]
Length 230 mm (9.1") Weight 340 g (12.0 oz)
Jaw Opening 10-12 mm (0.4-0.5")
Max. Jaw Opening approx. 25 mm (1.0")

Standard Type [P200Y2]
Length 245 mm (9.6") Weight 410 g (14.5 oz)
Jaw Opening 10-12 mm (0.4-0.5")
Max. Jaw Opening approx. 25 mm (1.0")

Thin Nose Type [SN200Y2]
Length 250 mm (9.8") Weight 420 g (14.8 oz)
Jaw Opening 10-12 mm (0.4-0.5")
Max. Jaw Opening approx. 25 mm (1.0")

Bent Nose Upward Type [BN200YU2]
Length 245 mm (9.6") Weight 500 g (17.6 oz)
Jaw Opening 10-12 mm (0.4-0.5")
Max. Jaw Opening approx. 25 mm (1.0")

Spring Hose Clip Type [AE200]
Length 245 mm (9.6") Weight 350 g (12.3 oz)
Jaw Opening approx. 40 mm (1.5")
Max. Jaw Opening approx. 40 mm (1.5")

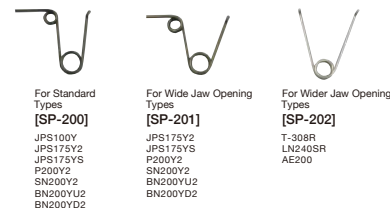
Super Wide Jaw Opening Type [LN240SR]
Length 240 mm (9.4") Weight 350 g (12.3 oz)
Jaw Opening 17-20 mm (0.7-0.8")
Max. Jaw Opening 30 mm (1.2")

Wider Jaw Opening Type [T-308R]
Length 255 mm (10.0") Weight 410 g (14.5 oz)
Jaw Opening approx. 17 mm (0.7")
Max. Jaw Opening approx. 17 mm (0.7")

Snap Ring (for Shaft) Type [FOS-185]
Length 205 mm (8.1") Weight 300 g (10.6 oz)
Jaw Opening approx. 6-8 mm (0.2-0.3")
Max. Jaw Opening approx. 21 mm (0.8")
Use Range of Snap Ring: 10-40 mm (0.4-1.6")
Note: There is no function for preventing a false transmission.
* Snap ring (for bore) type is also available.

Note: Bent nose downward type BN200YD2 is also available.

Replacement Springs



For Standard Types [SP-200]

JPS100Y
JPS175Y2
JPS175YS
P200Y2
SN200Y2
BN200YU2
BN200YD2

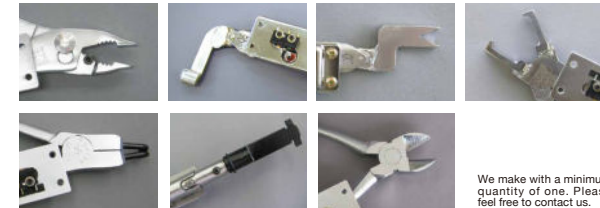
For Wide Jaw Opening Types [SP-201]

JPS175Y2
JPS175YS
P200Y2
SN200Y2
BN200YU2
BN200YD2

For Wider Jaw Opening Types [SP-202]

T-308R
LN240SR
AE200

Customized Products (Examples)

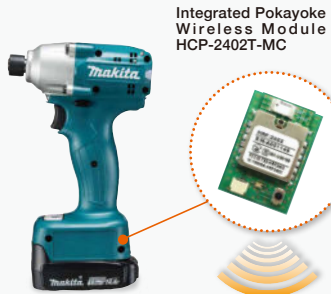


We make with a minimum quantity of one. Please feel free to contact us.

Pokayoke Wireless Unit

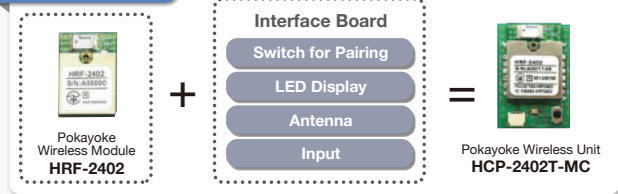
HCP-2402T-MC

HCP-2402T-MC is a wireless unit capable of communicating with Pokayoke receivers. An interface board is added to the "Pokayoke wireless module HRF-2402" installed in the Check Pen S, which has a proven track record in factories, and the unit is provided in a form that is easy to incorporate into a tool.



Integrated Pokayoke Wireless Module HCP-2402T-MC

Unit Configuration



Specifications

External Dimensions (W x H x D)	20.0 x 30.0 x 6.4 mm (0.79 x 1.18 x 0.25") (excluding protrusions)
Available Countries	Japan / Canada / USA / China / Korea / Taiwan / Thailand / Vietnam / Philippines / Indonesia / India
Input	1 Non-voltage Contact
Display	1 Communication LED: (Green / Red)
Power Supply	DC 2.2-6.0 V

Features

- The communication distance is about 30 m (98 ft) indoors (may vary depending on usage conditions).
- Equipped with a pairing switch, LED display, antenna and input, so it can be used as a built-in unit.
- Built-in proprietary communication protocol can greatly reduce the communication related development-hours.

Integratable by Retrofitting

Impact Driver
Impact Wrench
Screwdriver



Impact driver / impact wrench / screwdriver models that can integrate HCP-2402T-MC.
Japan
 Impact Driver: TDA040D/TDA070D/TDA100D/TDA140D
 Impact Wrench: TWA070D/TWA100D/TWA140D/TWA190D
 Screwdriver: FT024FD/FT106FD/FT1060TD/FT1120TD
 Angle Screwdriver: FL020FD/FL063FD
 *For screwdriver models other than those mentioned above (FT**/FD/FL**/FD), retrofitting with the Pokayoke transmitter TW-800T enables Pokayoke compatibility.*

Overseas
 Impact Driver: DTDA040D/DTDA070D/DTDA100D/DTDA140D
 Impact Wrench: DTWA070D/DTWA100D/DTWA140D/DTWA190D

Note: For purchasing Makita impact drivers / impact wrenches / screwdrivers, please contact the person in charge of special procurement at Makita Co., Ltd. Email: tokuju_mkt@m1.makita.co.jp

Air Tool Conversion Box

TFC-52-850

TFC-52-850 is a product that enables pokayoke (mistake-proofing) for fastening work with air tools by retrofitting the Pokayoke wireless compact transmitter TW-850T to shut-off type bolts and nuts tightening air tools.

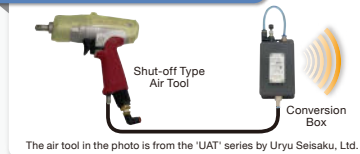


Features

The conversion box needs no power supply.

- The exhaust pressure detection level can be adjusted with the pressure controller.
- A pneumatic-electric relay is built-in.
- Battery replacement is easy due to the Pokayoke compact transmitter TW-850T being equipped. Additionally, communication status is indicated by an LED and a buzzer.
- The shut-off exhaust pressure tube (φ4 mm (0.16")) from the air tool can be connected.

Air Tool Connection Diagram



Specifications

External Dimensions (W x H x D)	70 x 127 x 35 mm (2.7 x 5.0 x 1.4") (excluding protrusions)
Weight	About 220 g (7.76 oz)
Input	The pressure suction port (connection tube diameter: 4 mm (0.16"))
Output	1 Non-voltage Contact Output (connected to TW-850T)

Note: The TFC-52-850 does not include the Pokayoke compact transmitter TW-850T.

Connector Half-fitting Prevention Checker

Connector Fitting Checker

Pokayoke (Mistake-Proofing) for Wire Harness Connector Fitting



In wire harness connector fitting work, the connector fitting checker detects that the connectors are locked together and wirelessly transmits the work result.

We customize the production to fit your specific connectors.

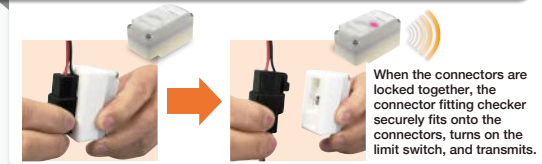


Pokayoke Compact Transmitter TW-850T
 We individually manufacture to match the shape when the connectors are locked together.

Specifications

External Dimensions (W x H x D)	28 x 55 x 32 mm (1.1 x 2.2 x 1.3")
Weight	About 45 g (1.6 oz)
Input	1 Non-voltage Contact (transmission by fitting the locked state connector)
Display	1 Communication LED: (Green / Red)
Power Supply	1 Coin Battery (CR2032)

Mechanism of the Connector Fitting Checker's Transmission



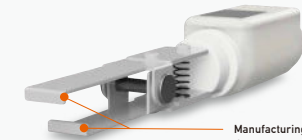
When the connectors are locked together, the connector fitting checker securely fits onto the connectors, turns on the limit switch, and transmits.

Pull-Force Checker

Pokayoke (Mistake-Proofing) for Connector Fitting onto Circuit Boards

In the process of fitting connectors onto circuit boards, the connectors are pulled with a certain force, and the detection of the connectors not coming loose is wirelessly transmitted the work result.

We customize the production to fit your specific connectors.



Manufacturing individually to match the shape of the connector

Specifications

External Dimensions (W x H x D)	16.8 x 12.5 x 12.5 mm (0.66 x 0.49 x 0.49")
Weight	About 135 g (4.8 oz)
Input	1 Non-voltage Contact (transmission by being pulled with a constant force) Note: Adjustable through internal spring modification
Display	1 Communication LED: (Green / Red)
Power Supply	1 Coin Battery (CR2032)

Mechanism of the Pull-force Checker Transmission



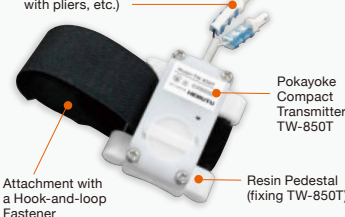
When the connector is locked onto the circuit board, pulling with a certain force using the pull-force checker turns on the limit switch and transmits.

Attachment for Pokayoke Compact Transmitter

TFC-39-850

TFC-39-850 is a product that enables pokayoke (mistake-proofing) for fastening work with an electric screwdriver by retrofitting the Pokayoke compact transmitter TW-850 to an electric screwdriver that outputs a 'fastening complete' signal.

Connectors that can be post-processed (crimpable with pliers, etc.)



Attachment Connection Diagram



Fixing the TFC-39-850 to the electric screwdriver with a hook-and-loop fastener.

Note: The electric screwdriver in the photo is the Delvo Series SP type. 'Delvo' is a registered trademark of Nitto Kohki Co., Ltd.

Note: The Pokayoke compact transmitter TW-850T is not included with the TFC-39-850.

Pokayoke Transmitters

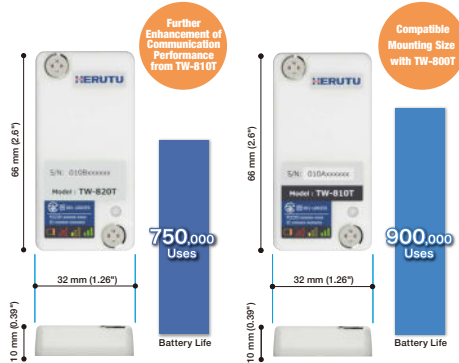
Extensive Lineup

Customers can choose from our extensive lineup based on the tools they want to make Pokayoke-compatible, as well as their desired communication distance, battery life, etc.

Pokayoke Slim Transmitter TW-820T

Pokayoke Slim Transmitter TW-810T

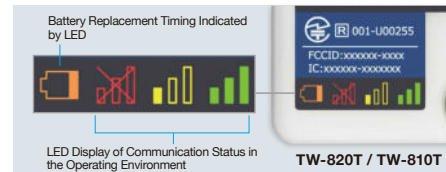
The Pokayoke slim transmitters TW-820T and TW-810T significantly enhance the workability of Pokayoke-compatible tools by achieving a slimmer design, extended battery life, and increased communication distance compared to the Pokayoke transmitter TW-800T.



Features

Battery Level Notification Function
When the remaining battery level falls below approximately 10%, an orange LED lights up, allowing you to accurately determine the timing for a battery replacement.

Communication Status Notification Function
The communication status is displayed in three stages (green/yellow/red LEDs light up).

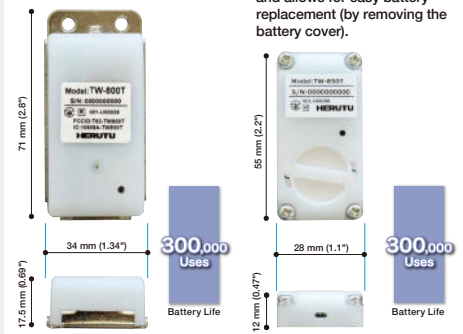


Pokayoke Transmitter TW-800T

Pokayoke Compact Transmitter TW-850T

The Pokayoke transmitter TW-800T is a transmitter that can be attached to tools such as torque wrenches, pliers wrenches, etc.

The Pokayoke compact transmitter TW-850T is a transmitter that maintains the communication performance of the Pokayoke transmitter TW-800T while reducing its size, and allows for easy battery replacement (by removing the battery cover).



Features

Battery Level Notification Function
The battery level decrease can be checked using the test switch. When the battery level is low, the red LED lights up for 1 second. Furthermore, when the battery level further decreases and requires replacement, the green LED blinking after transmission changes to orange LED blinking.

Communication Status Notification Function
In the case of OK communication, the green LED lights up. In the case of NG (No Good: failed) communication, the red LED lights up. Additionally, the Pokayoke compact transmitter TW-850T notifies of NG communication with a "sound".



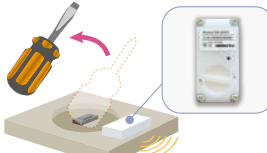
Cases of Wireless Implementation Utilizing Pokayoke Transmitters

Note: The Pokayoke transmitter is also utilized for wireless applications in production processes.

CASE 1 Wireless Conversion of Push Button Switches



CASE 2 Wireless Conversion of Sensor Signals



CASE 3 Wireless Conversion of OK Signals from Various Controllers



Pokayoke Transmitters Lineup

	Pokayoke Slim Transmitter TW-820T	Pokayoke Slim Transmitter TW-810T	Pokayoke Transmitter TW-800T	Pokayoke Compact Transmitter TW-850T	Pokayoke Wireless Unit HCP-2402T-MC
Supported Tools	Pliers wrenches, torque wrenches and more Note: For a pliers wrench, transmission occurs the moment the hose clamp is grasped.			Cable tie guns, hand pumps, self-inking stamps, electric screwdrivers and more	
External Dimensions (W x H x D)	32 x 66 x 10 mm (1.3 x 2.6 x 0.4") (excluding protrusions)		34 x 71 x 17.5 mm (1.3 x 2.8 x 0.7") (excluding protrusions)		20 x 30 x 6.4 mm (0.8 x 1.2 x 0.3")
Comm. Distance	70 m (76 yd) (depends on usage conditions)	50 m (55 yd) (depends on usage conditions)	30 m (33 yd) (depends on usage conditions)		
Battery Life	750,000 Uses (depends on usage conditions)	900,000 Uses (depends on usage conditions)	300,000 Uses (depends on usage conditions)		-
Available Countries	Japan / Canada / USA / China / Thailand / India	Japan / Canada / USA / China / Korea / Thailand / Vietnam / Indonesia / India	Japan / Canada / USA / China / Taiwan / Thailand / Malaysia / Philippines / Indonesia / India	Japan / Canada / USA / China / Korea / Thailand / Vietnam / Philippines / India	Japan / Canada / USA / China / Korea / Taiwan / Thailand / Vietnam / Philippines / Indonesia / India
Input	1 Non-voltage Contact Signal				
Display	Communication Status Notification LED (Green / Yellow / Red) Time to Replace the Battery Notification LED (Orange)		Communication Result and Time to Replace the Battery Notification LED (Green / Red)		LED for Monitoring Communication Results (green/red)
Power Source	1 Coin Battery (CR2032)			DC 2.2-6.0 V	
Weight	About 21g (0.74 oz)		About 40g (1.41 oz)	About 25g (0.88 oz)	About 2.5g (0.09 oz)
Frequency Band	2,403 MHz-2,478 MHz (automatic free channel selection by a frequency hopping function)				
Antenna	Inverted-F Metal Plate Antenna		PCB Antenna	Chip Antenna	
Accessories	1 Wire Harness Connector with Micro Limit Switch [TW810T-HCL] 1 Coin Battery (CR2032)		1 Wire Harness Connector with Micro Limit Switch [TW800T-HCL] 1 Coin Battery (CR2032)	1 Connector Cable for Connection [ZHR-2-200] 1 Coin Battery (CR2032)	-
Options	Wire Harness Connector with Micro Limit Switch [TW810T-HCL] Pokayoke Slim Transmitter Protective Cover [TW-810C]		Wire Harness Connector (w/o Micro Limit Switch) [TW800T-HC] Wire Harness Connector with Micro Limit Switch [TW800T-HCL] Pokayoke Transmitter Protective Cover [TW-510C-1] [TW-510C-2]	Connector Cable for Connection [ZHR-2-200]	-

*1: For purchasing Makita impact drivers / impact wrenches / screwdrivers, please contact the person in charge of special procurement at Makita Co., Ltd. Email: tokuju_mkt@m1.makita.co.jp
Please also refer to "Customers who request high-precision torque management" in the product information page of Makita Co., Ltd. <https://www.makita.co.jp/product/index.html>

"Transmitting when Releasing a Hose Clamp" TW-810T-PLR / TW-800T-PLR



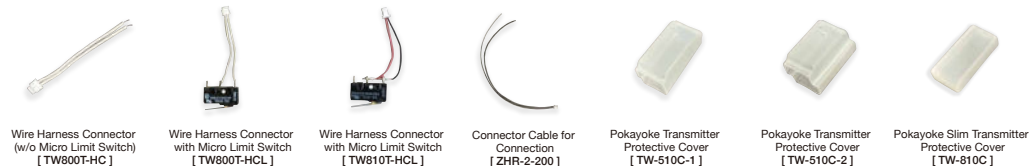
This transmitter can be used when "grasping a hose clamp with a pliers wrench, moving it to the specified position, and then transmitting when releasing". For details, please refer to "Transmission Timing" section of the "Pliers Wrench" page.

Pokayoke Wireless Module HRF-2402



HRF-2402 is a wireless module equipped with various interfaces. By installing an interface board equipped with the necessary input and output capabilities, the module can be attached to various tools. The module is built into many tools such as the Check Pen S, and many products from other tool manufacturers. With the cooperation of a variety of tool manufacturers, we will help you to realize the "IoT Conversion" of your tools in use.

Options





Pokayoke Receivers

Extensive Lineup

Customers can choose from our extensive lineup to suit their network environment, working conditions, counter feature needs, etc.

Various Interfaces

You can choose according to various network environments.



Supported Number of Transmitters

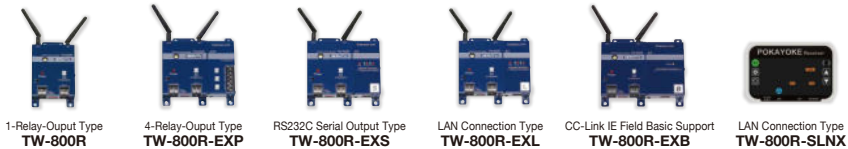
You can choose according to various working environments.



With/Without Counter Feature

Without Counter Feature

This is a lineup of Pokayoke receivers without counter feature that can be linked with customers' systems (such as MES and Pokayoke systems). Customers can choose based on interfaces with their systems, number of supported transmitters, communication distance, available countries, etc.



With Counter Feature

For customers who say, "I want to start pokayoke (mistake-proofing) of work using tools right away", this is a lineup of Pokayoke receivers with counter feature. The receiver performs PASS/FAIL output through the JUDGE function, also making it possible to link with customers' systems.

Simple Pokayoke Counter TW-800R-SC

Process A → Process B → Process C

Task Contents of a Work (Example): Specified Count Value: 2 Times, Tool Timer: (no timer feature), Work Timer: (no timer feature).

When the task is completed for the specified count, the remaining count becomes '0', and the work is judged as 'PASS'.

Simple Pokayoke Counter TW-800R-SCL **Mobile Pokayoke Counter TW-800R-MCL**

Process A → Process B → Process C

Task Contents of a Work (Example): Specified Count Value: 2 Times, Tool Timer: (no timer feature), Work Timer: 40 Seconds.

If only the required condition of 'specified count' is met, it is judged as 'PASS'. However, if the 'work timer' condition is added, both conditions must be met to be judged as 'PASS'.

Pokayoke Counter TW-800R-EXC

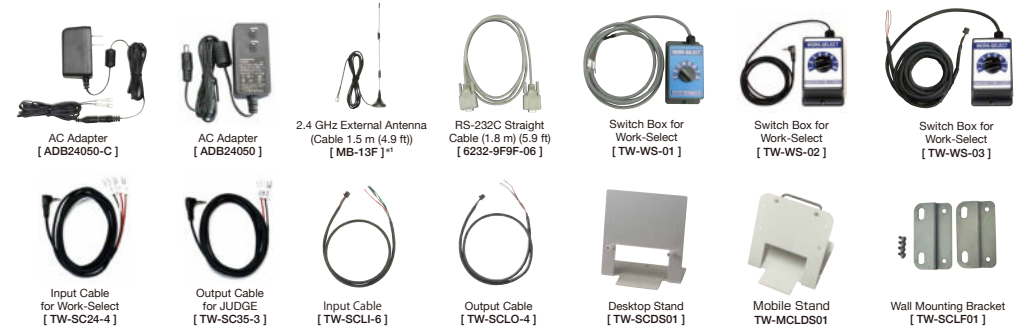
Process A → Process B → Process C

Task Contents of a Work (Example): Specified Count Value: 3 Times, 2 Times, 4 Times, 2 Times; Tool Timer: 10 Sec, 5 Sec, 15 Sec, 5 Sec; Work Timer: 40 Seconds.

If only the required condition of 'specified count' is met, it is judged as 'PASS'. However, if the 'tool timer' and 'work timer' conditions are added, all conditions must be met to be judged as 'PASS'.









Pokayoke Receivers		Lineup (without Counter Feature)				
	1-Relay-Output Type TW-800R	4-Relay-Output Type TW-800R-EXP	RS232C Serial Output Type TW-800R-EXS	LAN Connection Type TW-800R-EXL	CC-Link IE Field Basic Support TW-800R-EXB	LAN Connection Type TW-800R-SLNX
	1 Transmitter Support	Max. 4 Transmitters Support	UNLIMITED Transmitters Support	UNLIMITED Transmitters Support	UNLIMITED Transmitters Support	2 Transmitters Support
Output(s)	1 Relay Output (Terminal Block M3) Rated Load AC/DC 30 V / 0.5 A	4 Relay Outputs (Terminal Block M3) Rated Load AC/DC 30 V / 0.5 A	1 Relay Output (Terminal Block M3) Rated Load AC/DC 30 V / 0.5 A			2 Power Transistor Outputs Rated Load DC 24 V / 0.1 A Connector 2.5 mm (0.098") Pitch 4-Position 2-Row (1 Position Unused)
Interface	I/O	I/O	Serial RS-232C	LAN	CC-Link IE Field Basic	LAN I/O
Available Countries	Japan / Canada / USA / China / Korea / Taiwan / Thailand / Vietnam / Malaysia / Philippines / Indonesia / India		Japan / Canada / USA / China / Korea / Taiwan / Thailand / Vietnam / Malaysia / Philippines / Indonesia / India		Japan / Canada / USA / China / Korea / Taiwan / Thailand / Vietnam / Malaysia / Philippines / Indonesia / India	Japan / Canada / USA / China / Thailand
Display	1 RX LED (Green) (also as lighting switch for pairing) 1 Power LED (Red)	4 RX LEDs (Green) (also as lighting switch for pairing) 1 Power LED (Red)	1 RX LED (Green) (also as lighting switch for pairing) 1 Power LED (Red) 3 Comm. Monitor LEDs (Red) 2 Comm. Monitor LEDs (Green)	1 RX LED (Green) (also as lighting switch for pairing) 1 Power LED (Red) 1 Comm. Monitor LED (Orange)	1 RX LED (Green) (also as lighting switch for pairing) 1 Power LED (Red)	1 RX LED (Red / Blue / Green / Yellow) NW Status LED (Pale Blue) 2 Pairing LEDs (ID1&2) (Orange) 1 Power LED (Orange)
Switches	1 Power Switch 1 Switch (6-Position DIP) for Setting 1 Lighting Switch for Pairing		1 Power Switch 2 Switches (6-Position DIP each) for Setting 1 Lighting Switch for Pairing			4 Push Buttons: Setting (REG / UP / DOWN) / Reset
Buzzer	Piezo Buzzer 95 dB (at 1 m (3.3'))					Piezo Buzzer 90 dB (at 0.1 m (0.3'))
External Dimensions (W x H x D)	80 x 100 x 30 mm (3.1 x 3.9 x 1.2") (excluding protrusions)	130 x 100 x 30 mm (5.1 x 3.9 x 1.2") (excluding protrusions)			150 x 100 x 30 mm (5.9 x 3.9 x 1.2") (excluding protrusions)	150 x 100 x 30 mm (5.9 x 3.9 x 1.2") (excluding protrusions)
Power Source	DC 24 V ±20% (DC 19-28 V) (Terminal Block M3)					AC 100-240 V (using included AC adapter)
Current Consumption	60 mA or less	80 mA or less	90 mA or less	140 mA or less	150 mA or less	150 mA or less
Weight	Approx. 250 g (8.8 oz)	Approx. 430 g (15.2 oz)	Approx. 450 g (15.9 oz)		Approx. 500 g (17.6 oz)	Approx. 290 g (10.2 oz)
Operating Environment	Temperature: 0-50 °C (32-122 °F) Humidity: 80% or less (without condensation)					Temperature: 0-50 °C (32-122 °F) Humidity: 85% or less (without condensation)
Frequency Band	2,403 MHz-2,478 MHz (automatic free channel selection by a frequency hopping function)					-
Antenna	Dipole Antenna					Chip Antenna
Accessory						1 AC Adapter [ADB24050-C] 1 Output Cable [TW-SCL0-4]
Options	AC Adapter [ADB24050-C] 2.4 GHz External Antenna [MB-13F]	AC Adapter [ADB24050-C] 2.4 GHz External Antenna [MB-13F]	AC Adapter [ADB24050-C] RS-232C Straight Cable [6232-9F9F-06] 2.4 GHz External Antenna [MB-13F]	AC Adapter [ADB24050-C] 2.4 GHz External Antenna [MB-13F]	AC Adapter [ADB24050-C] 2.4 GHz External Antenna [MB-13F]	1 AC Adapter [ADB24050] 1 Output Cable [TW-SCL0-4] Wall Mounting Bracket [TW-SCLF01] Desktop Stand [TW-SCDS01] AC Adapter [ADB24050] Output Cable [TW-SCL0-4]

Options



*1 Not available in some countries.

Pokayoke Receivers Lineup (with Counter Feature)

				
	Simple Pokayoke Counter TW-800R-SC	Simple Pokayoke Counter TW-800R-SCL	Mobile Pokayoke Counter TW-800R-MCL	Pokayoke Counter TW-800R-EXC
				
Count Display	7-SEG LED 2-Digit (W x H) 27 x 50 mm (1.1 x 2.0")/digit)	7-SEG LED 3-Digit (W x H) 27 x 50 mm (1.1 x 2.0")/digit)	7-SEG LED 2-Digit (W x H) 15 x 27 mm (0.6 x 1.1")/digit)	7-SEG LED 2-Digit (W x H) 15 x 27 mm (0.6 x 1.1")/digit)
Output(s)	2 Power Transistor Outputs (1 PASS / 1 FAIL) Rated Load DC 24 V / 0.1 A 3-segment Small Single-head Plug; Diameter 3.5 mm (0.14")	2 Power Transistor Outputs (1 PASS / 1 FAIL) Rated Load DC 24 V / 0.1 A Connector 2.5 mm (0.098") Pitch 4-Position 2-Row (1 Position Unused)	(At TW-800R) 1 Relay Output (Terminal Block M3) Rated Load AC/DC 30 V / 0.5 A (At counter unit) 2 Relay Outputs (Terminal Block M3) (1 PASS / 1 FAIL) Rated Load AC/DC 30 V / 0.5 A	(At TW-800R) 1 Relay Output (Terminal Block M3) Rated Load AC/DC 30 V / 0.5 A (At counter unit) 2 Relay Outputs (Terminal Block M3) (1 PASS / 1 FAIL) Rated Load AC/DC 30 V / 0.5 A
Interface	–	RJ45 Ethernet 10BASE-T/100BASE-T, Full/Half Duplex *POKAYOKE plus* Compatible	–	–
Input(s)	3 Non-voltage Contact-inputs(for Work-Select) Very Small Single-head Plug; Diameter 2.5 mm (0.1")	5 Non-voltage Contact Inputs (1 JUDGE, 1 RESET, 3 Work-Select) Connector 2.5 mm (0.098") Pitch 6-Position 2-Row	6 Non-voltage Contact Inputs (1 SENSOR, 1 JUDGE, 1 RESET, 3 Work-Select)	6 Non-voltage Contact Inputs (1 SENSOR, 1 JUDGE, 1 RESET, 3 Work-Select)
Registrable Work Type Qty.	1 Type Note: Up to 8 work types can be registered by using the optional input cable for work-select.	1 Type Note: Up to 8 work types can be registered by using the optional input cable for work-select. The registrable number of work types is unlimited by linking with *POKAYOKE plus*.	8 Types	8 Types
Main Functions	JUDGE (Decremental Task Count) Reset Timer	Operation Mode (Stand-alone / App-interlock) Note: When using the TW-800R-SCL by itself, select "stand-alone mode." When using the TW-800R-SCL in combination with *POKAYOKE plus*, select "app-interlock mode." JUDGE (Incremental/Decremental Task Count) Note: Incremental count can be used in app-interlock mode. Reset Timer Sequence (manageable order of tool usage), Work Execution Reservation, History Management of Task Results for Each Work Note: Available in app-interlock mode.	JUDGE (Decremental Task Count / Tool Timer / Work Timer) Reset Timer Sequence (manageable order of tool usage) Selectable Language (Japanese / English)	JUDGE (Decremental Task Count / Tool Timer / Work Timer) Reset Timer Sequence (manageable order of tool usage) Selectable Language (Japanese / English)
Available Countries	Japan / Canada / USA	Japan / Canada / USA / China / Korea / Thailand / Vietnam / Philippines / Indonesia / India	Japan / Canada / USA / China / Thailand / Vietnam / Philippines / India	Japan / Canada / USA / China / Taiwan / Thailand / Vietnam / Malaysia / Philippines / Indonesia / India
Display	JUDGE LED : Red/Blue/Yellow RX LED: Red/Blue/Yellow	JUDGE LED: Red/Blue/Green/White RX LED: Red/Blue/Green/Yellow/White NW Status LED: Light Blue	(TW-800R Main Body); RX LED : Green (also as lighting switch for pairing) Power LED: Red (Count Unit); JUDGE LED : Red/Blue/Yellow/Green	(TW-800R Main Body); RX LED : Green (also as lighting switch for pairing) Power LED: Red (Count Unit); JUDGE LED : Red/Blue/Yellow/Green
Switches	5 Touch Keys; POWER / REG. / RESET / ▲(UP) / ▼(DOWN)	1 Power Switch 1 Switch (6-Position DIP) for Setting 1 Keyboard 16-Key: 0-9, ▲(UP), ▼(DOWN), ESC, 1 Lighting Switch for Pairing [ENT, F1, F2]	1 Power Switch 1 Switch (6-Position DIP) for Setting 1 Keyboard 16-Key: 0-9, ▲(UP), ▼(DOWN), ESC, 1 Lighting Switch for Pairing [ENT, F1, F2]	1 Power Switch 1 Switch (6-Position DIP) for Setting 1 Keyboard 16-Key: 0-9, ▲(UP), ▼(DOWN), ESC, 1 Lighting Switch for Pairing [ENT, F1, F2]
Buzzer	Piezo Buzzer 70 dB (at 0.1 m (3.9"))	Piezo Buzzer 90 dB (at 0.1 m (3.9"))	Piezo Buzzer 95 dB (at 1 m (3.3'))	Piezo Buzzer 95 dB (at 1 m (3.3'))
External Dimensions (W x H x D)	150 x 100 x 30 mm (5.9 x 3.9 x 1.2") (excluding protrusions)	150 x 100 x 30 mm (5.9 x 3.9 x 1.2") (excluding protrusions)	218 x 100 x 30 mm (8.6 x 3.9 x 1.2") (excluding protrusions)	218 x 100 x 30 mm (8.6 x 3.9 x 1.2") (excluding protrusions)
Power Source	AC 100-240 V (using included AC adapter)	DC 5 V** (connecting to Makita battery via included DC-4017A)	DC 24V±20% (DC 19-28 V) (Terminal Block M3)	DC 24V±20% (DC 19-28 V) (Terminal Block M3)
Current Consumption	120 mA or less	200 mA or less	110 mA or less	110 mA or less
Weight	Approx. 250 g (8.8 oz)	Approx. 290 g (10.2 oz)	Approx. 750 g (26.5 oz)	Approx. 750 g (26.5 oz)
Operating Environment	Temperature: 0-50 °C (32-122 °F) Humidity: 80% or less (without condensation)	Temperature: 0-50 °C (32-122 °F) Humidity: 80% or less (without condensation)	Temperature: 0-50 °C (32-122 °F) Humidity: 80% or less (without condensation)	Temperature: 0-50 °C (32-122 °F) Humidity: 80% or less (without condensation)
Frequency Band	2,403 MHz-2,478 MHz (automatic free channel selection by a frequency hopping function)	2,403 MHz-2,478 MHz (automatic free channel selection by a frequency hopping function)	2,403 MHz-2,478 MHz (automatic free channel selection by a frequency hopping function)	2,403 MHz-2,478 MHz (automatic free channel selection by a frequency hopping function)
Antenna	Chip Antenna	Chip Antenna	Dipole Antenna	Dipole Antenna
Accessory	1 AC Adapter [ADB24050]	USB(A)/DC Adapter Cable [DC-4017A]	–	–
Option	Input Cable for Work-Select [TW-SC24-4] Output Cable for JUDGE [TW-SC35-3] Switch Box for Work-Select [TW-WS-02] Desktop Stand [TW-SCDS01] AC Adapter [ADB24050]	Input Cable [TW-SCLI-6] Output Cable [TW-SCLC-4] Switch Box for Work-Select [TW-WS-03] Wall Mounting Bracket [TW-SCLF01] Desktop Stand [TW-SCDS01] AC Adapter [ADB24050]	Input Cable [TW-SCLI-6] Output Cable [TW-SCLC-4] Switch Box for Work-Select [TW-WS-03] Wall Mounting Bracket [TW-SCLF01] Desktop Stand [TW-SCDS01] Mobile Stand [TW-MCLDS01] AC Adapter [ADB24050]	AC Adapter [ADB24050-C] 2.4 GHz External Antenna [MB-13F] Switch Box for Work-Select [TW-WS-01]

*1: USB adapter (ADP05) and Makita battery are not included. Please prepare separately.

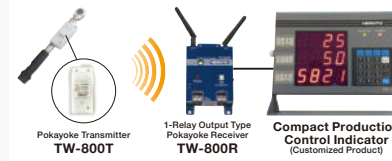
Customized Product Support

We custom-manufacture Pokayoke tools to meet customer requirements. If you cannot find the desired product or if you have customization requests, please feel free to contact us.

Introduction of Cases

Prevention of Forgetting to Calibrate Work Tools

▶ Delivery Destination: Automobile Manufacturer



- Details**
- By customizing our compact production control indicator SD-4, we developed a task count display device to manage the calibration timing of torque wrenches.
 - We developed a mechanism to connect a task count display device to a Pokayoke receiver and output the count results to a PLC during the period until the 'number of fastenings with a torque wrench' reaches the 'number requiring calibration' (which can be set up to a maximum of 99,990,000 times).

Integration System of Process Calls and Pokayoke

▶ Delivery Destination: Automobile Manufacturer



- Details**
- To enable the processing of data from both the remote control for call-outs in the process and Pokayoke transmitters using the same Pokayoke receiver, we standardized the wireless communication protocol of our remote control (RC series) and Pokayoke tools.
 - The remote control for call-outs in the process includes our RC series of 2, 4, 6 and 8-button remote controls, as well as custom-developed types with large buttons.

Pokayoke Support for Power Tools

▶ Delivery Destination: Automobile Manufacturer



- Details**
- We designed and developed a dedicated wireless board tailored to fit within the limited space inside power tools.
 - Power supply for the wireless board is provided from the power tool itself.
 - To utilize the Pokayoke receiver currently in use for fastening work with a torque wrench, we implemented the Pokayoke tool's wireless communication protocol into the wireless board.

Pokayoke for Marking in Multi-Variety Production Processes

▶ Delivery Destination: Construction Machinery Manufacturer



- Details**
- To enable selection of up to 26 different works (vehicle types) in a multi-variety production process, we modified the hardware of the Work-Select Switch Box TW-WS-02 and the software of the Simple Pokayoke Counter TW-800R-SCL.
 - Due to the request for a short delivery time of two weeks, we adopted an approach that enables quick and cost-effective realization.

QR code for detailed customized product examples on web page





Ensuring Traceability of Tasks and Safety

Production Process Support Software for Pokayoke Tool v3.01

POKAYOKE plus

For customers who wish to ensure traceability of 'task using tools' by workers in the factory, this is a Windows application that can be used in combination with LAN-connectable Pokayoke receivers.



Task Count Management with Pokayoke-compatible Tools

Ensuring Task Traceability and Real-Time Grasping of Tasks

POKAYOKE plus

Task Status Notification for Remote Staffs and Manufacturing Sites

POKAYOKE plus Viewer

Functional Overview

Ensuring Traceability of Tasks

Through the TW-800R-SCL or TW-800R-EXL installed in multiple processes, it is possible to record and store task results of each work.

* Work refers to 'the content of tasks using one or multiple tools', and for example, it is registered as '10 tasks with a cordless tool, 3 tasks with a Check Pen S, and 1 task with an inspection stamp'.



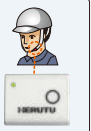
- Task Results
- Work Name
 - Start Date and Time of Task
 - End Date and Time of Task
 - JUDGE Result • FAIL Cause, etc.

Since it is possible to grasp the status of work where 'FAIL' has occurred or task results for each work in real-time, customers can take prompt action to address the process where a mistake has occurred.

Other Functions

Managing Workers Wearing Hard Hats

It is possible to grasp whether the worker performing tasks using tools is wearing a hard hat correctly, and to record and save the history of wearing a hard hat.



Workers are required to wear the hard-hat on sensor ENS-HH01 on the hard hat's chin strap.

Battery Level Notification

The application notifies the status of the remaining battery level of the Pokayoke transmitter.



Registering Photos of Pokayoke-Compatible Tools

By registering photos of Pokayoke-compatible tools, it becomes easier to identify the tools being used during work.



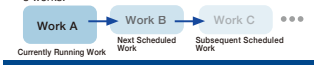
Capable of Pokayoke (Mistake-Proofing) Across Multiple Processes

From 'POKAYOKE plus', it is possible to issue work execution instructions, count-up setting for the task count, etc. for the TW-800R-SCL installed in multiple processes.



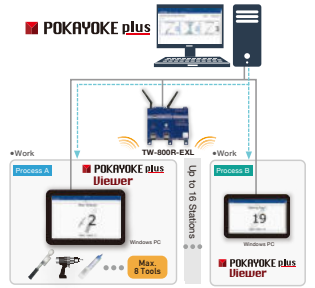
Since the TW-800R-SCL installed in up to 8 locations for one work can be registered, pokayoke (mistake-proofing) for tasks using up to 8 tools is possible. Additionally, the number of works that can be registered is unlimited.

You can schedule work execution reservations for up to 8 works.



Counter Feature Realized on a Computer (POKAYOKE plus Viewer)

In case of linking with TW-800R-EXL, by installing 'POKAYOKE plus Viewer' on a Windows computer at the work site, pokayoke (mistake-proofing) can be enabled at up to 16 stations.



Since up to 8 tools for one work can be registered, pokayoke (mistake-proofing) for tasks using up to 8 tools is possible. Additionally, the number of works that can be registered is unlimited.

'POKAYOKE plus Viewer' displays a work's task details, task count, JUDGE results, battery level notifications, etc., based on the work execution instructions from 'POKAYOKE plus'.

Work Execution Status Screen

The application displays a list of started works and work sequences, and you can grasp the work progress in real-time. Work consists of tasks using up to 8 tools. Work sequence consists of scheduled tasks involving up to 8 works.

Work Example: Repeating large unit AD assembly for 100 units.

Work Sequence: Up to 8 works can be set and each is executed from the top. When all the works are completed, they automatically disappear from the work execution status screen. Up to 16 work sequences can be managed simultaneously.

FAIL Occurrence: When a FAIL occurs, the application notifies with a message and sound, and a worker temporarily suspends the operation. FAIL Cause: Overcount/Tool Sequence Error/Remaining Count Error

Work Complete (PASS): When all tasks are completed and judged as 'PASS', the task frame, count value, and the external frame of the entire work turn green.

CSV Output of Work Execution History and Tool Usage History

Work Execution History (CSV format)

Column Name	Description	Display Example
Work No.	It is the work number.	LU0101_AD
Work Name	It is the work name.	Lage Unit AD Assembly
JUDGE Result	It is the JUDGE result (PASS or FAIL).	FAIL
FAIL Cause	It is the FAIL cause (Overcount/Tool Sequence Error/Remaining Count Error).	Overcount
Comment	It is the comment entered at the time of FAIL occurrence.	Work is continued as there are no issues.
Work Execution Order	At the start of work or when creating a work sequence, you set the number of repetitions for the work. This indicates the number of times the work has been executed within that repeat setting.	3
Start Date and Time of Task	It is the start date and time of a task.	2019/9/1 08:30:00
End Date and Time of Task	It is the end date and time of a task.	2019/9/1 17:30:00

File Name: work_yyyyMMdd.HH:mm:ss.csv
 (yyyy: year, MM: month, dd: day, HH: hour, mm: minute, ss: second)
 Example work: 20190901_083000.csv
 The column names in the above table are shown in the order of left to right in the CSV file.

Tool Usage History (CSV format)

Column Name	Description	Display Example
Transmitter ID	It is the transmitter ID (10 digits).	00010002F
Tool Name	It is the tool name.	Torque Wrench
JUDGE Result	It is the JUDGE result (PASS or FAIL).	FAIL
FAIL Cause	It is the start date and time of a task with the applicable tool.	Overcount
Start Date and Time of Task	It is the FAIL cause (Overcount/Tool Sequence Error/Remaining Count Error).	2019/9/1 08:30:00
End Date and Time of Task	It is the end date and time of a task with the applicable tool.	2019/9/1 17:30:00
Work No.	It is the work number.	LU0101_AD
Work Name	It is the work name.	Larger Unit AD
Tool Task Order	It is the order in which the applicable tools were used within the work.	2
Specified Count Value	It is the specified count value of a task.	6

File Name: work_yyyyMMdd.HH:mm:ss.csv
 (yyyy: year, MM: month, dd: day, HH: hour, mm: minute, ss: second)
 Example work: 20190901_083000.csv
 The column names in the above table are shown in the order of left to right in the CSV file.

Work Registration

The content of tasks using tools (up to 8) is registered as a work. The number of works that can be registered is unlimited.

Simply adding a registered tool to a work by drag-and-drop.

Safety Protector Wearing Status Screen

It is possible to grasp in real-time whether workers are wearing hard hats in each worker group (safety protection equipment group). Up to 16 task groups can be monitored simultaneously.

Workers are required to wear the hard-hat on sensor ENS-HH01 on the hard hat's chin strap.

Work Hour Name: Safety Protection Equipment Group Name
 Wearing Status: OK/NG(No Good: failed) Worker Count

'POKAYOKE plus' Specifications and Operating Environment

Supported OS	Windows® 11
CPU	Intel® Core™ 5.3GHz or above
Required Memory	4GB or above
Resolution	1136 x 768 (FWXGA) or above
HDD	Free space of 1GB or above, excluding data/log
Supported Languages	Japanese/English
Supported Devices	Tools: Pokayoke-compatible Tools (equipped with Pokayoke transmitters) Safety Protection Equipment: Hard-hat-on Sensor ENS-HH01 Pokayoke Receivers: TW-820R-EXL/TW-800R-EXL/TW-800R-SCL/TW-800R-MCL

'POKAYOKE plus Viewer' Specifications and Operating Environment

Supported OS	Windows® 11
CPU	Intel Atom® x5-2835 1.44GHz or above
Required Memory	4GB or above
Resolution	1280 x 800 (WXGA) or above
HDD	Free space of 1GB or above, excluding data/log
Supported Languages	Japanese/English

Fitting Unit

PU-SX10 / PU-SX24 / PU-SX48

The PU-SX is a product that enables pokayoke (mistake-proofing) for various fitting tasks by allowing the exchange of the tip section to match the fitting target.

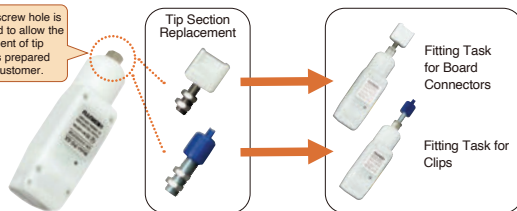
In a fitting task for board connectors, clips, etc., the unit applies a constant force to the fitting target (e.g., a connector), detects when it has been properly fitted, and wirelessly transmits the task result.

The tip section can be prepared by the customer.

Additionally, the fitting force (spring strength) can be selected.

- [PU-SX10] → Spring Strength: Approximately 10N
- [PU-SX24] → Spring Strength: Approximately 24N
- [PU-SX48] → Spring Strength: Approximately 48N

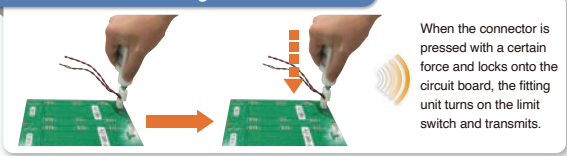
An M6 screw hole is provided to allow the attachment of tip sections prepared by the customer.



Specifications

External Dimensions (W x H x D)	28 x 30.5 x 93.5 mm (1.1 x 1.2 x 3.7")
Weight	Approximately 85 g (3.0 oz)
Input	1 Non-voltage Contact (transmission by being pressed with a certain force) *Adjustable through internal spring modification
Display	Communication Monitoring and Battery Level Notification (Green/Red)
Power Supply	1 Coin Battery (CR2032)

Mechanism of the Fitting Unit Transmission



Pulling Unit

PC-SX15 / PC-SX30 / PC-SX45

The PC-SX is a product that enables pokayoke (mistake-proofing) for various pulling tasks by allowing the exchange of the tip section to match the pulling target.

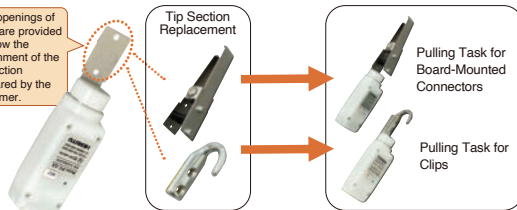
In a pulling task for board-mounted connectors, clips, etc., the unit pulls the target (e.g., a connector) with a constant force, detects when the target has been pulled, and wirelessly transmits the task result.

The tip section can be prepared by the customer.

Additionally, the pulling force (spring strength) can be selected.

- [PC-SX15] → Spring Strength: Approximately 15 N
- [PC-SX30] → Spring Strength: Approximately 30 N
- [PC-SX45] → Spring Strength: Approximately 45 N

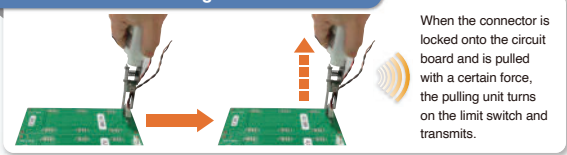
Two openings of φ3.2 are provided to allow the attachment of the tip section prepared by the customer.



Specifications

External Dimensions (W x H x D)	28 x 30.5 x 111 mm (1.1 x 1.2 x 4.4")
Weight	Approximately 75 g (2.6 oz)
Input	1 Non-voltage Contact (transmission by being pressed with a certain force) *Adjustable through internal spring modification
Display	Communication Monitoring and Battery Level Notification (Green/Red)
Power Supply	1 Coin Battery (CR2032)

Mechanism of the Pulling Unit Transmission



Attachment for Thread-Locking Adhesive

TFC-100-01-850

The TFC-100-01-850 is a product that enables pokayoke (mistake-proofing) of the thread-locking adhesive application task by attaching it to a thread-locking adhesive bottle.

The attachment is also compatible with ThreeBond's "Anaerobic Adhesive 250g Bottle" and "Anaerobic Adhesive 50g Bottle".



Attachment Connection Diagram



*The Pokayoke compact transmitter TW-850T is not included with the TFC-100-01-850.

For monitoring the safety of workers wearing a hard hat

NEW

Hard-hat-on Sensor ENS-HH01

The hard-hat-on sensor is a wearable device that prevents accidents that occur when employees are not wearing hard hats.

The sensor is easily attached to a hard hat's chin strap, and it can be used both inside and outdoors because it is waterproof and dustproof.

■ The sensor is easily attached to a hard hat's chin strap.



■ Available Countries : Japan / Canada / USA / China / Thailand / Vietnam / Philippines / India

Real-time detection of Hard-hat's tightened Chin-Strap

Hard-hat-on Sensor ENS-HH01



Approx. 30 m (98 ft)

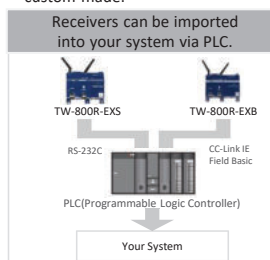
- Attaches easily to a chin strap
- Dustproof and Waterproof (IP65)
- Equipped with wireless technology with abundant proven results at industrial sites
- No battery replacement required for 1 year based on:
 - Depending on usage conditions
 - Wearing for 8 hours a day
 - Battery level notification feature

Capable of Communication with Pokayoke Receiver

Pokayoke Receiver TW-800R-EXL



- An unlimited number of hard-hat-on sensors can be connected to one receiver.
- A waterproof receiver can be custom-made.



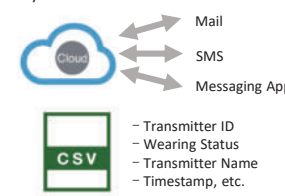
Ensuring Traceability of Safety

Application

POKAYOKE plus



- This application makes it possible to monitor whether workers are wearing hard hats at remote locations.
- The application notifies error information from Hard-hat-on Sensor by mail or SMS in real-time.



ENS-HH01 Specifications

Frequency Band	2,403 MHz-2,478 MHz
Antenna	Chip Antenna
Input	2 Touch Sensors
Comm. Distance	30 m/33 yd (depends on usage conditions)
Protection Structure	Waterproof and Dustproof (Protection Structure IP65)
Display	1 LED (Green)
Switch	1 Test Switch

External Dimensions (W x H x D)	28.6 x 17.0 x 37.6 mm (1.1 x 0.7 x 1.5") (excluding protrusions)
Power Source	1 Coin Battery (CR2032)
Battery Life	For about 1 year by wearing for 8 hours a day (depending on usage conditions)
Weight	Approx. 19g (0.67 oz)
Operating Environment	Temperature: 0-50 °C (32-122 °F) Humidity: 80% or less

POKAYOKE plus Specifications and operating environment

Supported OS	Windows 8.1 or later to Windows 10 32-bit / 64-bit
CPU	Intel® Core™ 2.3GHz or above
Required Memory	4GB or above
Resolution	1366 x 768 (FWXGA) or above
HDD	Free space of 1GB or above, excluding data / log
Supported Languages	Japanese / English



422-1 Higashimikata-cho, Chuok-ku, Hamamatsu, Shizuoka, 433-8104 Japan
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URL: https://www.herutu.co.jp/en/ Email: info@herutu.co.jp

Please contact your nearest distributor.

Pokayoke Wireless Unit HCP-2403T-MD



Pokayoke
Wireless Unit
HCP-2403T-MD

The HCP-2403T-MD is a wireless unit that communicates with Pokayoke receivers capable of data output.

Unlike conventional wireless units that handle pass/fail judgments, this unit wirelessly transmits data generated during tool operation (arbitrary data) to the Pokayoke receiver, which can then output the data directly.

Feature 1: Usable as a Built-in Unit

Since it is equipped with a pairing switch, LED display, antenna, and output terminals, it can be used as a built-in unit. No wireless circuit design is required.

Feature 2: Proprietary Communication Protocol with No License Fees

Incorporates a proprietary communication protocol developed from years of experience in factory wireless implementation. Unlike standard wireless protocols, no license fee is required.

Feature 3: Simple Communication via UART Commands

Arbitrary data can be wirelessly transmitted by simply sending UART commands from the tool's control board to this unit.

Arbitrary Data



Output Data

Output Data

Header (4 bytes)	Wireless Unit ID (10 bytes)	Fixed Data (2 bytes)	Arbitrary Data (24 bytes)	Footer (3 bytes)
---------------------	--------------------------------	-------------------------	------------------------------	---------------------

Item	Specifications
Frequency Band	2,403MHz – 2,478MHz
Input	1 Switch for Pairing
Display	1 Communication LED: (Green / Red)
Interface	1 Connector (5-pin, 1 mm pitch)
Operating Power Supply Voltage	DC 1.8V – 5.5V
External Dimensions (W x H x D)	20.0 x 30.0 x 6.25 mm (0.79 x 1.18 x 0.25")
Available Countries	Japan / Canada / USA / China / Thailand / India

HCP-2403T-MD can be built in by retrofitting to screwdriver made by Makita Corporation.

Screwdriver made by Makita Corporation



FT060TDNZH FT120TDNZH

Screw Fastening Data



(torque, angle, tightening time, etc.)

Pokayoke Receiver with Data Output Capability



(TW-870R-EXL/TW-800R-SCL/TW-800R-EXB/
TW-800R-EXL/TW-800R-EXS)



Comm. Distance



Approx. 30 m (98 ft)

TW-800R Series

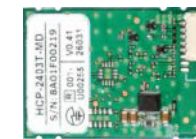


TW-820R Series
TW-870R Series



Approx. 50 m (164 ft)

Connection Spec.



- #5 GND
- #4 DET : Detection Output
- #3 RXD: UART Receive
- #2 TXD : UART Transmit
- #1 VB : DC 1.8V – 5.5V

Note: Communication distance varies depending on usage conditions.

POKAYOKE
ポカヨケ

Pokayoke Receiver with Enhanced Wireless Performance and Improved Power Efficiency

Pokayoke Receiver TW-870R Series

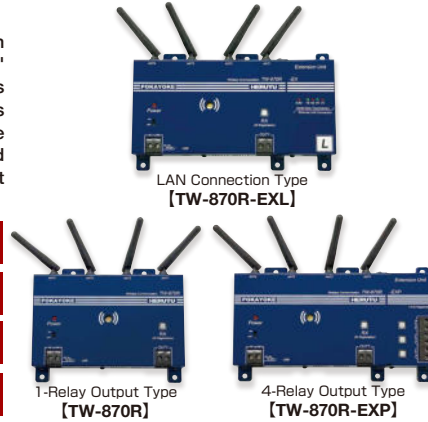
The TW-870R series is a Pokayoke receiver that achieves both "enhanced reception performance" and "improved power efficiency" by incorporating 4 antennas and 4 high-performance wireless modules with low power consumption. In addition, through the Windows application "Pokayoke Tools Settings", it is possible to "monitor the wireless communication status with the Pokayoke transmitters" and "change the channel used for wireless communication with the latest version of the Pokayoke transmitters"².

Wider-Range and More Efficient Wireless Communication

Monitorable Wireless Communication Status

Channel Changeable for Wireless Communication³

Standby Power Consumption 50% Lower (vs. TW-800R)



Wider-Range and More Efficient Wireless Communication

The TW-870R series, equipped with 4 antennas and 4 high-performance wireless modules, can receive data transmitted wirelessly from the Pokayoke transmitter over a wider range and with higher efficiency than the current receivers.

Up to 30% Improvement in Communication Efficiency with Pokayoke Transmitter (vs. Current Receiver)

Communication Efficiency Improved by up to **30%**

The TW-870R series reduces the average number of transmissions required to establish communication with Pokayoke transmitters by up to 30% (compared to current receivers), thereby extending the battery life of the transmitters.

Up to 6 Pokayoke Transmitters Can Communicate at the Same Time with the TW-870R-EXL [Reference] TW-800R-EXL: 4 Units

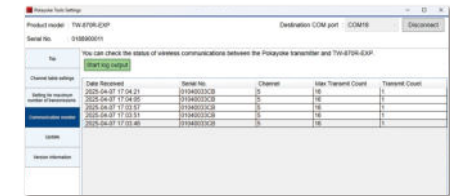
6 Units

Number of Pokayoke Transmitters That Can Communicate Simultaneously

While the TW-800R-EXL can communicate with up to 4 Pokayoke transmitters simultaneously, the TW-870R-EXL increases this number to 6, enabling coverage of a wider range of production processes.

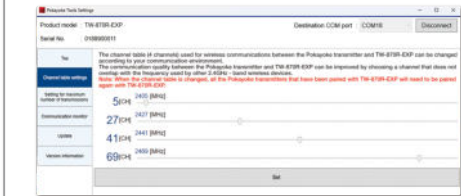
Monitorable Wireless Communication Status

Wireless communication status between Pokayoke transmitters and the TW-870R series can be monitored and recorded via "Pokayoke Tools Settings". If wireless communication between Pokayoke transmitters and the TW-870R series is unstable, monitoring the communication status may provide insights for improving communication quality.



Channel Changeable for Wireless Communication³

Via "Pokayoke Tools Settings", the wireless communication channel used between the latest version of the Pokayoke transmitters² and the TW-870R series can be changed. By selecting a channel that does not overlap with the frequencies used by other 2.4 GHz wireless devices, it may be possible to improve the communication quality between the Pokayoke transmitters and the TW-870R series.



Standby Power Consumption 50% Lower (vs. TW-800R)

The standby power consumption of the TW-870R is 50% lower than that of the TW-800R, contributing to improved energy efficiency.



Other Features

The optional high-volume buzzer "TW-870R-BZ01" (103 dB at 1 m) can be added later. Compared to the built-in piezo buzzer, it offers greater directionality, allowing operators to clearly confirm task completion when it is oriented toward them.



The configuration DIP switches of the TW-870R series are the same as those of the current receivers.



Firmware updates for the TW-870R series can be performed via a computer.



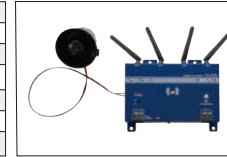
Specifications

	1-Relay Output Type TW-870R	4-Relay Output Type TW-870R-EXP	LAN Connection Type TW-870R-EXL
Output(s)	1 Relay Output (Terminal Block M3) Rated Load AC / DC 30 V / 0.5 A 1 Output for High-Volume Buzzer (TW-870R-BZ01)	4 Relay Outputs (Terminal Block M3) Rated Load AC / DC 30 V / 0.5 A 1 Output for High-Volume Buzzer (TW-870R-BZ01)	1 Relay Output (Terminal Block M3) Rated Load AC / DC 30 V / 0.5 A 1 Output for High-Volume Buzzer (TW-870R-BZ01)
Interface	USB Type-C (USB 2.0 Support) for Pokayoke Tools Settings Connection		RJ-45 Ethernet 10BASE-T/100BASE-TX (Auto-Sensing) "POKAYOKE plus" Support USB Type-C (USB 2.0 Support) for Pokayoke Tools Settings Connection
Available Countries	Japan / Canada / USA / China / Thailand / Vietnam / India		
Display	1 RX LED (Green) (also as lighting switch for pairing) 1 Power LED (Red)	4 RX LEDs (Green) (also as lighting switch for pairing) 1 Power LED (Red)	1 RX LED (Green) (also as lighting switch for pairing) 1 Power LED (Red) 3 Comm. Monitor LEDs (Red) 2 Comm. Monitor LEDs (Green)
Switch	1 Power Switch 2 Switches (6-Position DIP) for Setting 1 Lighting Switch for Pairing	1 Power Switch 2 Switches (6-Position DIP) for Setting 4 Lighting Switches for Pairing	1 Power Switch 3 Switches (6-Position DIP) for Setting 1 Lighting Switch for Pairing
Buzzer	Piezo Buzzer: 95 dB at 1 m (3.3 ft)		
External Dimensions (W x H x D)	160 x 100 x 30 mm (6.3 x 3.9 x 1.2") (excluding protrusions)	210 x 100 x 30 mm (8.3 x 3.9 x 1.2") (excluding protrusions)	
Power Source	DC 24 V ±20% (DC 19-28 V) (Terminal Block M3)		
Current Consumption	30 mA or less	40 mA or less	80 mA or less
Weight	Approx. 451 g (15.9 oz)	Approx. 607 g (21.4 oz)	Approx. 611 g (21.5 oz)
Operating Environment	Temperature: 0-50 °C (32-122 °F) Humidity: 80% or less (without condensation)		
Frequency Band	2.403 MHz ~ 2.478 MHz		
Antenna	Dipole Antennas: 4 (Non-removable)		
Accessory	-		
Options	AC Adapter [ADB24050-C] High-Volume Buzzer [TW-870R-BZ01]		

High-Volume Buzzer [TW-870R-BZ01]

The buzzer can be connected and used with the TW-870R, TW-870R-EXP, and TW-870R-EXL.

Power Source	DC 12-24 V
Current Consumption	80 mA or less
Sound Pressure	Minimum 103 dB at 1 m (3.3 ft)
External Dimensions (W x H x D)	69 x 73 x 64 mm (2.7 x 2.9 x 2.5") (excluding protrusions)
Weight	57 g (2.0 oz)
Cable	420 mm (16.5") (UL1007, 24 AWG)
Installation Method	Fixed with the included bracket (M4 screws)



Options



HERUTU
HERUTU ELECTRONICS CORPORATION

422-1 Higashimikata-cho, Chuo-ku, Hamamatsu, Shizuoka, 433-8104 Japan
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URL: <https://www.herutu.co.jp/en/>
Email: info@herutu.co.jp

Please contact your nearest distributor.

¹: The Windows application "Pokayoke Tools Settings" can be downloaded free of charge from the Herutu Electronics Corporation website (<https://www.herutu.co.jp/en/>).

²: "Latest version of the Pokayoke transmitters" refers to the following models: TW-800T, TW-800T-PLR, TW-810T, TW-810T-PLR, TW-820T, TW-850T, CP-SX, CP-SLX, and HCP-2402T-MC, with serial numbers beginning with the first three digits "014".

³: This applies only to wireless communication with the latest version of the Pokayoke transmitters.

POKAYOKE
ポカヨケ

Mistake-proofing (Pokayoke) for Tasks Using Tools in the Production Process

Simple Pokayoke Counter

Version Update
June 14, 2023

TW-800R-SCL V2.00

This Pokayoke receiver has a simple and sophisticated counter feature for customers who say, "I want to start mistake-proofing (pokayoke) right now for tasks using tools".

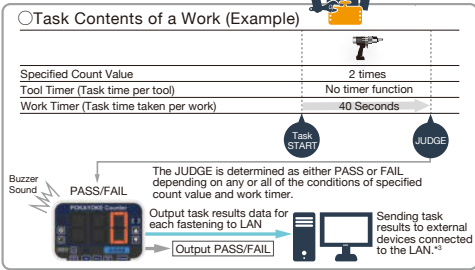
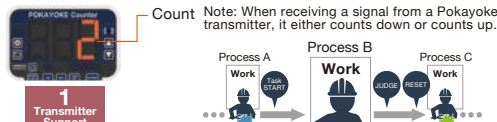


- Start Pokayoke Immediately
- Enhancement of Counter Feature and Expansion of Usage Environment
- Ensuring Traceability of Tasks

Contents of Version (V2.00) Update	Additional Features in "Stand-alone Mode"	Newly Added Mode
	<ul style="list-style-type: none"> Output task results data to LAN Counting-up JUDGE by work timer Sensor input to enable counting Work number display Automatic JUDGE ON/OFF setting Setting RESET-key disabled Setting to output PASS/FAIL continuously until RESET 	<ul style="list-style-type: none"> Simple count mode A mode that only counts up and does not JUDGE (counts up to 999 times)

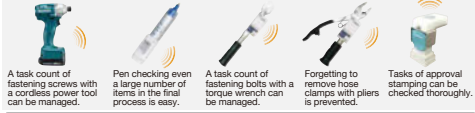
Start Pokayoke Immediately

Using just one easy button operation, you can construct a Pokayoke system (task count management) with a tool (installed our Pokayoke transmitter). You can register one type of work with TW-800R-SCL*1.



Various tools used at worksites such as manufacturing, logistics, and construction are compatible with this system.

- Check Pen S • Cordless Power Tool • Electric Screwdriver • Torque Wrench • Pliers Wrench
- Approval Stamp • Cable Tie Gun • Riveter • The LOCTITE® hand pump and more



We also offer the TW-800R-MCL, a battery-powered Pokayoke receiver with a count feature that allows 'Pokayoke Anywhere' regardless of location, while providing the same features as the TW-800R-SCL.

Enhancement of Counter Feature and Expansion of Usage Environment

For usability in factories in various industries and sizes, we have upgraded the following mistake-proofing (pokayoke) features to meet customer demands while maintaining the simplicity of our 'Simple Pokayoke Counter TW-800R-SC'.

	TW-800R-SC	TW-800R-SCL (Stand-alone mode)
Configurable Specified Count Value	Up to 99 times per work (2-digit count display)	Up to 999 times per work (3-digit count display)
Count-up of number of tasks	No (Countdown only)	Yes (Countdown, Count-up)
Buzzer Loudness	Piezo Buzzer 70dB (at 0.1 m (3.9")) (a loud voice)	Piezo Buzzer 90dB (at 0.1 m (3.9")) (a very loud voice)
JUDGE Method	JUDGE according to task count	JUDGE according to task count / JUDGE by external signal / JUDGE by work timer
RESET Method	RESET with the set timer / RESET-key press	RESET with the set timer / RESET-key press / RESET by external signal
Sensor Input Function to Enable Counting	No	Yes
Function to Output Task Results Data to LAN	No	Yes
Setting PASS/FAIL Output	Fixed (100 ms)	Selectable from 13 types of time
Installation Method	Desktop	Desktop, Wall mount possible
Available Countries	Japan / Canada / USA	Japan / Canada / USA / China / Thailand / Vietnam / Philippines / India

Ensuring Traceability of Tasks

By linking*2 with "POKAYOKE plus" via LAN, the functions of TW-800R-SCL can be greatly expanded, such as sequence function, work execution reservation function, history management of task results for each work, registrable unlimited number of works, etc.

	TW-800R-SCL (Stand-alone mode)	TW-800R-SCL (Application Interlock mode) × POKAYOKE plus
Work operation in TW-800R-SCL	Operation based on work registered in TW-800R-SCL	Operation based on work execution instruction from POKAYOKE plus
Registrable Task Contents for One Work	Task contents using 'one tool'	Task contents using 'up to 8 tools' (in the case of registering installed TW-800R-SCL at up to 8 stations in one work)
Registrable work count	1 Type (Up to 8 types with the use of option*1)	Unlimited
History Management of Task Results for Each Work	No	Yes ('Tool usage history' and 'work execution history' are saved in CSV format)
Remarks	-	Sequence function (manageable the order in which tools are used), work execution reservation function, battery level notification function

*1: You can register up to 8 types of work by using the option "Input Cable for Work-select".
 *2: With the TW-800R-SCL, you can select one of three operating modes: "stand-alone mode", "simple count mode" or "application interlock mode". When using the TW-800R-SCL in combination with "POKAYOKE plus", select "application interlock mode".
 *3: With the TW-800R-SCL, you can select one of three operating modes: "stand-alone mode", "simple count mode" or "application interlock mode". When using the TW-800R-SCL in combination with "POKAYOKE plus", select "application interlock mode".

POKAYOKE
ポカヨケ

Portable Pokayoke Counter

Mobile Pokayoke Counter

Version Update
June 14, 2023

TW-800R-MCL V2.00

This is a battery-powered Pokayoke receiver with a count feature that allows 'Pokayoke Anywhere' regardless of location where you need task count management at sites such as manufacturing, logistics, construction, etc.

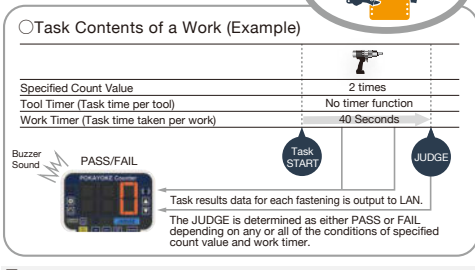
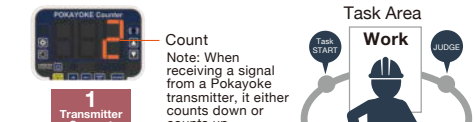


- Start Pokayoke Immediately
- Pokayoke Possible Anywhere (Battery-powered)
- Easy to Carry with Mobile Stand (Sold Separately)

Contents of Version (V2.00) Update	Additional Features in "Stand-alone Mode"	Newly Added Mode
	<ul style="list-style-type: none"> Output task results data to LAN Counting-up JUDGE by work timer Sensor input to enable counting Work number display Automatic JUDGE ON/OFF setting Setting RESET-key disabled Setting to output PASS/FAIL continuously until RESET 	<ul style="list-style-type: none"> Simple count mode A mode that only counts up and does not JUDGE (counts up to 999 times)

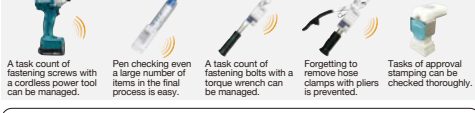
Start Pokayoke Immediately

Using just one easy button operation, you can construct a Pokayoke system (task count management) with a tool (installed our Pokayoke transmitter). You can register one type of work with TW-800R-MCL*1.



Various tools used at worksites such as manufacturing, logistics, and construction are compatible with this system.

- Check Pen S • Cordless Power Tool • Electric Screwdriver • Torque Wrench • Pliers Wrench
- Approval Stamp • Cable Tie Gun • Riveter • The LOCTITE® hand pump and more



POKAYOKE plus Ensuring Traceability of Tasks
 Production Process Support Software for Pokayoke Tool
 By linking with "POKAYOKE plus" via LAN, the functions of TW-800R-MCL can be greatly expanded, such as sequence function, work execution reservation function, history management of task results for each work, registrable unlimited number of works, etc.

<Comparison of TW-800R-MCL/TW-800R-SCL>

	TW-800R-MCL	TW-800R-SCL
Power Source	DC 5V	AC 100-240 V (using included AC adapter)
Accessory	1 DC JUDGE Cable [DC-4017A]	1 AC Adapter [ADB24050]
Count Display	7-SEG LED 3-Digit (W x H) 27 x 50 mm (1.1 x 2.0")/digit	
Output	2 Power Transistor Outputs (1 PASS / 1 FAIL), Rated Load DC 24 V / 0.1 A	
Interface	RJ45 Ethernet 10BASE-T/100BASE-T, Full/Half Duplex, "POKAYOKE plus" Compatible	
Input	5 Non-voltage Contact Inputs (1 JUDGE, 1 RESET, 3 Work-Select)	
Registrable Work Type Qty.	1 Type (more types possible with option*1)	
Main Features	Operation Modes (Stand-alone / Simple count / App-interlock) Note: When using the TW-800R-MCL/TW-800R-SCL by itself, select either 'stand-alone' or 'simple count' mode. When using the TW-800R-MCL/TW-800R-SCL in combination with "POKAYOKE plus", select 'app-interlock' mode. JUDGE (Number of Task Countdown / Count-up and Work Timer) Sensor Input (count valid only at sensor input) Timer Reset, Output Task Results Data to LAN, Work Number Display Sequence (manageable order of tool usage), Work Execution Reservation, History Management of Task Results for Each Work Note: Available in app-interlock mode	
Available Countries	Japan / Canada / USA / China / Thailand / Vietnam / Philippines / India	
Buzzer	Piezo Buzzer 90dB (at 0.1 m (3.9"))	
External Dimensions (W x H x D)	150 x 100 x 30 mm (5.9 x 3.9 x 1.2") (excluding protrusions)	
Weight	Approx. 230 g (10.2 oz)	

*1: Up to 8 work types can be registered by using the optional "Input Cable for Work-select". The registrable number of work types is unlimited by linking with "POKAYOKE plus".

Pokayoke Possible Anywhere (Battery-powered)

TW-800R-MCL operates with an input voltage of DC 5V. By connecting the TW-800R-MCL to a Makita battery via the USB(A)/DC Adapter Cable [DC-4017A] (included), you can use the TW-800R-MCL as battery-powered.



Note: USB adapter (ADP05) and Makita battery are not included. Please prepare separately.
 Note: ADP05: Applicable batteries are side-type Li-ion batteries 18 V/1.4 V (excluding light capacity batteries (up to 1.5 Ah)).

Easy to Carry with Mobile Stand (Sold Separately)



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 Email: info@herutu.co.jp

Please contact your nearest distributor.



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Please contact your nearest distributor.

Pokayoke Compatible Tools https://www.herutu.co.jp/en/product/pokayoke_tools_list.html

Fastening / Tightening								
 Impact Driver (Makita Corporation)	 Cordless Screwdriver (Makita Corporation)	 Battery Oil-Pulse Wrench (Uryu Seisaku, Ltd.)	 Oil-Pulse Wrench (Uryu Seisaku, Ltd.)	 Battery Shut-off Wrench (Yokota Industrial Co., Ltd.)	 Electric Screwdriver (Nitto Kohki Co., Ltd.)	 Spana Wrench (Nakamura Mfg. Co., Ltd.)	 Torque Wrench (Nakamura Mfg. Co., Ltd.)	 Torque Driver (Nakamura Mfg. Co., Ltd.)
Fastening	Fitting / Fastening				Tightening / Cutting		Applying	
 Cordless Riveter (Lobtex Co. Ltd.)	 【P200Y2】 Standard Type Pliers Wrench	 【FOS-185】 Snap-Ring Pliers Type	 【AE-200】 Spring Hose Clip Type Pliers Wrench	 Adhesive Tape Pressuring Tool (3M Japan Ltd.)	 E-Clip Holder	 Cable Tie Gun (Hellermann Tyton Co., Ltd.)	 【KN150】 Diagonal Cutting Pliers Type	 The LOCTITE(R) Hand Pump (Henkel Japan Ltd.)
Applying	Marking							
 Anaerobic Adhesive (ThreeBond Co., Ltd.)	 Primer Applicator	 【CP-02SX】 PX-20 (Mitsubishi Pencil Co., Ltd.), etc.	 【CP-09SX】 H-DM (Tombow Pencil Co., Ltd.)	 【CP-70SX】 Skill Writer (Shinwa Co.,Ltd)	 【CP-71SX】 TAT Stamper (Shachihata Inc.)	 【CP-72SX】 Steel Paint NEO (Alton Co.,Ltd)	 TAT Liquid Stamp HD (Shachihata Inc.)	 Self-Inking Stamp (Almarq Inc.)

Collection of Examples of Custom Developments for the Pokayoke Tools (1/6)

Example 1: Grease Gun



[Background of the Request]

In the manufacturing process of agricultural machinery manufacturer, there was a problem: "Grease gun was used, but grease was not injected into the required number of places" due to the difference in the number of grease injection points depending on the manufactured items, even though "Whether a grease gun was used" was obtained from the sensor, and pokayoke (mistake-proofing) was performed.

[Product Summary]

Without modifying the grease gun that the client had been using, we devised a way to detect when the trigger of the grease gun was pulled by installing a Pokayoke transmitter and using a small magnetic switch. Through these technical measures, we were able to achieve pokayoke (mistake-proofing) of the grease gun (and ensure the injection of grease into the required number of places).

Example 2: Cable Tie Tool



[Background of the Request]

We received the following request from an automobile parts manufacturer who bundles wire harnesses using a cable tie tool: "I want to perform pokayoke (mistake-proofing) of the cable tie tool because forgetting to tie INSULOK® (cable ties) has been discovered after shipping".

[Product Summary]

We attached a Pokayoke transmitter to the HellermannTyton cable tie tool MK9 that the customer was using, developed a mechanism to "send a wireless signal when detecting that the excess part of the cable tie has been cut after tying INSULOK®", and realized the pokayoke (mistake-proofing) of cable tie tool. In particular, we created a durable mechanism by adopting a method that did not directly impact the limit switch when detecting cutting.

Example 3: Grease Pencil



[Background of the Request]

We received a request from an automobile manufacturer saying, "We want to perform pokayoke (mistake-proofing) of the marking work by using a grease pencil (a mechanical colored pencil that can write on various materials, such as pottery, metal, glass, rubber, and plastic)".

[Product Summary]

Considering the characteristics of the grease pencil that the customer was using, we planned to realize the customer's request in a short period of time and at a low cost by newly developing the "barrel part" that matched the grease pencil while using the "main body unit" of the Check Pen S as it was. When designing the "barrel part" by considering both "the length to which the core of the grease pencil could be drawn out" and "the thickness that matched the grease pencil", we devised a way to support pokayoke (mistake-proofing) while maintaining the usability of the grease pencil.

Collection of Examples of Custom Developments for the Pokayoke Tools (2/6)

Example 4: Approval Stamp



[Background of the Request]

From a fan product assembly factory, we received a request saying, "I want to add the pokayoke (mistake-proofing) function to a large approval stamp to prevent forgetting to press the stamp used at the factory".

[Product Summary]

Since the shape and mechanism of the large approval stamp were different from the pokayoke (mistake-proofing)-compatible approval stamps developed in the past, we developed a new mechanism to sense stamp operation by combining the movable part of the mechanism and a small limit switch. In addition, by attaching a Pokayoke transmitter to the side of large stamp, we ensured pokayoke without impairing the workability of the large stamp. With these design ideas, we made "counting with the Pokayoke receiver every time a large stamp was pressed down as before" possible.

Example 5: Electric Screwdriver



[Background of the Request]

In the production of products for our own factories, the following improvement proposal was submitted: "After fastening screws at 30 places with an electric screwdriver, we check the number of screws to be fastened in the next process to prevent omission of the screw fastening work. We want to remove this check process".

[Product Summary]

We attached our newly developed Pokayoke transmitter to the electric screwdriver used in our own production process and developed a mechanism in which "a 'fastening complete' signal is transmitted wirelessly when you fasten a screw with an electric screwdriver". As a result, since the Simple Pokayoke Counter will notify the completion of the work by sound when the electric screwdriver tightens the specified 30 times, workers will come to perform fastening work at 30 places, and the check process is no longer required.

Example 6: LOCTITE® Hand Pump



[Background of the Request]

We received a request from an industrial machine manufacturer saying, "In the assembly process of industrial machines, we manually apply the threadlocker to the frequently moving parts of the industrial machine, and we want to prevent omission of threadlocker application".

[Product Summary]

The LOCTITE® hand pump (threadlocker hand pump applicator) that the customer was using had the feature through which a fixed amount of threadlocker was applied by pulling the trigger "lightly". Moreover, the hand pump itself had the characteristic of being light in weight. By devising a design that took this characteristic into consideration when attaching our Pokayoke transmitter to the LOCTITE® hand pump, the workability of the LOCTITE® hand pump application was maintained, and preventing the omission of thread-locking fluid application was realized.

Collection of Examples of Custom Developments for the Pokayoke Tools (3/6)

Example 7: TAT Stamp



[Background of the Request]

We received a request from an automobile manufacturer saying, "I want to prevent omission of installation of special parts by matching the 'number of stampings on the metal part of the engine' and the 'number of special parts dispensed' in a production line (process) that produces multiple products".

[Product Summary]

Following a request from a customer requiring the application of a "TAT stamp" that could stamp on metal parts, we devised a mechanism to count the number of times the TAT stamp was used. Upon realizing the mechanism, we received another request from the customer saying, "I want to be able to easily replace the TAT stamp, even if it becomes unusable". Therefore, we designed a mechanism by referring to Check Pen S, thereby achieving both workability and ease of maintenance.

Example 8: E-Clip Holder



[Background of the Request]

From a multifunction device manufacturer, we received a request saying, "We want to prevent omission of E-Clip fitting (E-shaped retaining clip) in the assembly process of the paper feed device (tray module) in a multifunction device".

[Product Summary]

We realized a mechanism "transmitting a signal when the E-clip is fitted" with the E-clip holder (a tool used for fitting the E-clip) that the customer was using to prevent omission of the E-clip fitting work. To realize the mechanism, we devised a mechanism that could handle different E-clips by changing the "barrel part" according to the shape of the E-clip holder, since "the shape of the E-clip holder differs depending on the size of the E-clip to be handled", and applying the Check Pen S mechanism (composed of the "main body unit" and a "barrel part").

Example 9: Torque Screwdriver



[Background of the Request]

We received a request from a building materials manufacturer saying, "I want the task count management (pokayoke) of screw tightening work not only for Makita rechargeable screwdrivers but also for manual torque screwdrivers in the production process".

[Product Summary]

Compared to other tools, since the torque screwdriver needed to detect the completion of work in a very short time, we devised a mechanism to accurately detect the completion of torque screwdriver's tightening work by modifying the Pokayoke transmitter for the torque screwdriver. In addition, since the customer had already installed our Pokayoke receiver on the same production line for task count management of screw fastening work, it was possible to introduce the task count management of a torque screwdriver on site in a short period of time by using the same receiver.

Collection of Examples of Custom Developments for the Pokayoke Tools (4/6)

Example 10: Spray Can



[Background of the Request]

We received a request from an automobile manufacturer saying, "We want to prevent omission of wax injection (rust preventive) with a spray can during the car body assembly process".

[Product Summary]

By attaching a commercially available spray can handle (a gun-shaped tool that sprays when the trigger is pulled) to the spray can used by the customer to inject wax into the car body, we realized a mechanism to count the number of times the trigger was pulled by combining our Pokayoke transmitter and the spray can handle. In considering the mechanism, assuming application to various spray cans used at manufacturing sites, we came up with an attachable mechanism without processing the main body of the spray can handle.

Example 11: Visual Check Process



[Background of the Request]

We received a request from an automobile manufacturer saying, "I want to prevent omission (pokayoke) of visual checks by workers as part of the visual inspection process of automotive glass marking".

[Product Summary]

In order to be able to confirm that the visual check of the glass marking was performed definitely, we developed a mechanism to "wirelessly transmit the work results when the glass marking was checked (contacted with the glass) with a pen that did not adhere ink". In developing the mechanism, we diverted the mechanism of the Check Pen S so that the pen could communicate with the TW-800 series Pokayoke receivers already in use at the customer's production site. Additionally, we came up with a structure that allowed the pen to be hung from the worker's neck so that visual check work could be performed easily.

Example 12: Calibration of Work Tools



[Background of the Request]

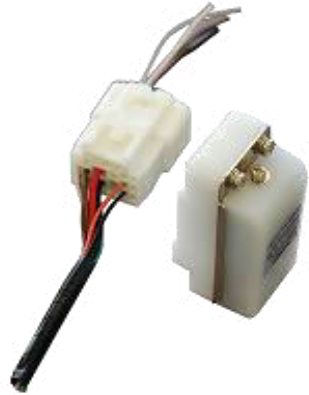
From an automobile manufacturer who used a torque wrench to prevent omission (pokayoke) of fastening work in the assembly process, we received a request saying, "I want to create a mechanism to notify the time to calibrate to prevent omission of work tool calibration".

[Product Summary]

To realize the customer's request at a low cost and in a short period of time, by utilizing existing Pokayoke products (Pokayoke receivers and work tools, such as Pokayoke transmitter-equipped torque wrenches) that customers were using and by connecting a task count display device that managed calibration timing to the Pokayoke receiver, we realized a mechanism "possible to grasp whether the number of times the work tool has been fastened has reached the number of times for the required calibration".

Collection of Examples of Custom Developments for the Pokayoke Tools (5/6)

Example 13: Connector Fitting



Example 14: Clip Fitting



Example 15: Feeler Gauge



[Background of the Request]

We received a request from an automobile parts manufacturer saying, "I want to prevent incomplete locking when fitting wire harness connectors".

[Product Summary]

To meet the needs of our customer, we developed a dedicated "connector fitting checker" tool to check whether the mutual connectors of wire harnesses used in the customer's production process were in a locked state. Additionally, by attaching a Pokayoke transmitter to the connector fitting checker, we developed a mechanism to "wirelessly transmit the work results when it is confirmed that the mutual connectors are in a locked state". We also realized the size that the connector fitting checker fits in one's hand so that confirmation work can be easily performed.

[Background of the Request]

We received a request from a plastic manufacturer saying, "There is a production process in which clips are fitted into molded plastic products using a hand press machine, and I want to pokayoke (to prevent omission in fitting) the clip fitting work".

[Product Summary]

The hand press machine was equipped with a clip tool for fitting the clip, and by creating a mechanism of "wireless transmission at the time of the clip tool being pressed", we realized the task count management of the clip fitting work. To realize this mechanism, which involves diverting the Check Pen S mechanism (a combination of the main body unit and barrel part), we developed a dedicated tool that could be attached to a hand press machine by manufacturing a "barrel part" that matched the shape of the clip tool and by adjusting the spring of the "main body unit".

[Background of the Request]

We received a request from an agricultural machinery manufacturer saying, "I want to prevent omission (pokayoke) of clearance checks using feeler gauges in the assembly process of agricultural machinery".

[Product Summary]

To meet the needs of our customer, we developed a dedicated "clearance checker" tool that wirelessly transmitted instances when the result of the clearance check using the feeler gauge was OK. By creating a mechanism through which "the feeler gauge is inserted into the clearance when you grasp the grip part of the clearance checker", it was possible to detect whether the clearance was within the standard. Additionally, the feeler gauge had a replaceable structure to accommodate gaps of different thicknesses. The clearance checker could communicate with the Pokayoke receiver used at the customer's production site.

Collection of Examples of Custom Developments for the Pokayoke Tools (6/6)

Example 16: Marking Various Types



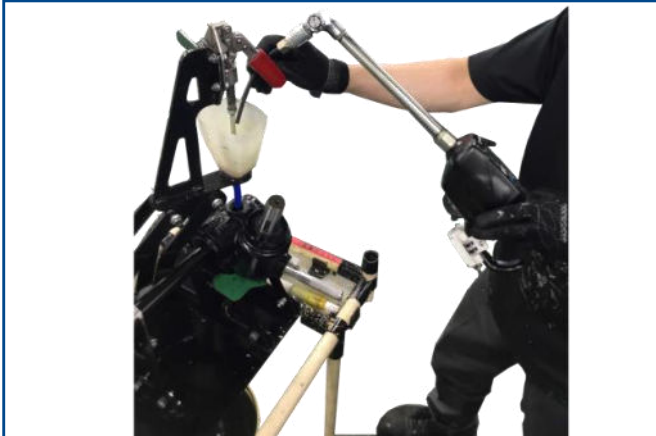
[Background of the Request]

We received a request from a construction machinery manufacturer: "We want to prevent missed markings with pens on the final vehicle assembly line, where various types of medium-sized vehicles are assembled".

[Product Summary]

The customer's final vehicle assembly line handles more than 20 types of vehicles, and the marking locations differ for each vehicle. As a result, it was necessary to have a system where the marking count could be selected for each of the 20 or more vehicle types. However, the Simple Pokayoke Counter TW-800R-SCL could only support up to 8 types of vehicles. By modifying both the TW-800R-SCL and the Work-Select Switch Box, we realized a system that allows the marking count to be selected for up to 26 vehicle types, all within a short delivery time of just two weeks.

Example 17: Oil Gun



[Background of the Request]

We received a request from a snow removal equipment manufacturer: "We want to prevent missed (pokayoke) oil injection into the gear case during the production process of household snow removal equipment"

[Product Summary]

By installing our Pokayoke transmitter on the oil gun (preset batch meter) used for oil injection into the gear case of the snow removal equipment, we developed a mechanism that "detects when the oil gun trigger is pulled". In addition to "preventing missed oil injection", by establishing a Pokayoke system that includes "preventing missed pen markings" and "preventing missed drain bolt fastening", visual inspection tasks became unnecessary, and we realized "reduction of work hours while maintaining quality assurance levels".

Example 18: Liquid Stamp



[Background of the Request]

We received a request from an automotive parts manufacturer: "We want to prevent omission (pokayoke) of marking process using a liquid stamp (identification marking stamp) during the truck fender assembly process".

[Product Summary]

Since the liquid stamp currently used by the customer is a large rotary stamp, while leveraging the mechanism of the main body unit CP-SLX of the Check Pen S for thick pens and stamps, by developing a "mechanism by which the liquid stamp with an uneven surface stably presses the switch of the CP-SLX" and a "mechanism that wirelessly transmits when the liquid stamp impression surface is pressed onto the fender", the prevention of omission in marking work with the liquid stamp was realized within a short period and at a low cost.