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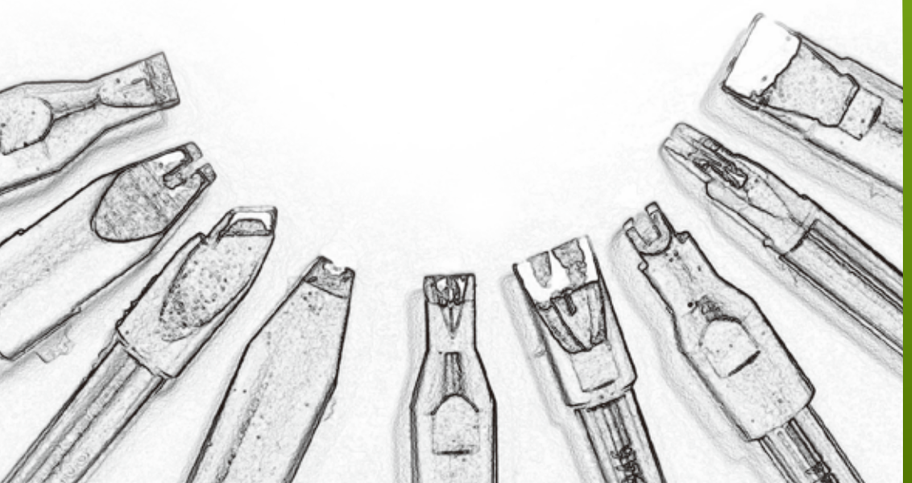
*These specifications may be changed for improvement without prior notice.



APOLLO SEIKO

Your Automated Soldering Partner

Product Catalog

2016-2017

APOLLO SEIKO LTD.

Apollo Seiko is
Your Automated Soldering Partner.

Apollo Seiko is the creator and worldwide leader of selective soldering solutions. Our patented technologies and dedication to customer service set us apart from the competition.

Since our start up in 1969,
we are committed to research and development of advanced soldering solutions and building strong partnerships with our customers.

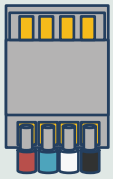
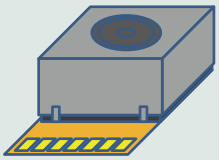
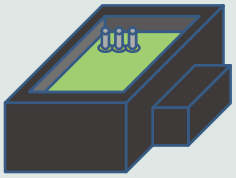
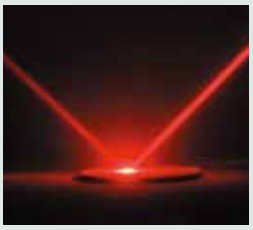
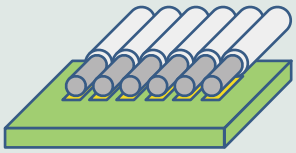
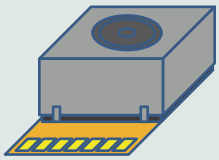
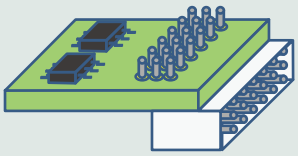
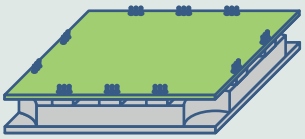
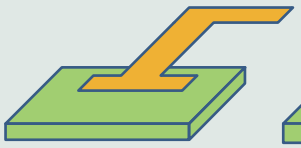
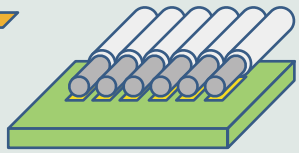
To Continue being
Your Automated Soldering Partner

We have over 45 years of experience and results as a designer & builder of the soldering robot.
Our Apollo Seiko global family network can provide professional technical service and friendly support to our customer.

Koichi Hirosaki
CEO
Apollo Seiko Ltd.

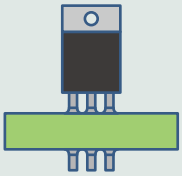
Apollo Seiko Global Family

Selective Soldering Technologies

Method		Application Example	
Substitution from manual soldering **Iron**		 Harness	 Camera Module
Precise Solder Amount **Sleeve**		 Insert Molded Product + PCB	 Coil Terminal Wiring
Non-contact soldering **Laser**		 Board + Micro Cable	 Camera Module
Energy saving & Eco solder bath **Selective Flow**		 Multi-row Connector	 Intelligent Power Module
A variety of applications **Alternative methods**		 FPC + PC Board	 PC Board + Micro Cable

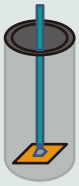
Capacitor + Terminal

P7~



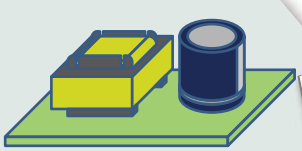
Perfect Back Fillet

P21~



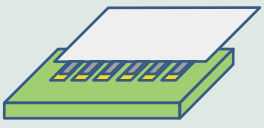
Fine Pitch and
Micro Soldering

P23~



High Heat
Capacity Parts

P23~



FFC Soldering

P30~

Manual Soldering

- Manual Soldering Station
- Solder Wire Feeder

P32~

Soldering Peripheral Equipment

- Dispensing
- Screw tightening
- Board cutting etc.

P37~

Options

- Iron Tip Cleaner
- Fume Extractor etc.

P39~

Consumable Items

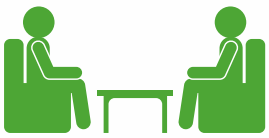
- Solder Wire
- Solder Wire Feeding Tube
- Iron Cartridge etc.

P45~

Introduction Flow of Automated Soldering

We offer Automated Soldering Consulting in order to provide a complete solution from product introduction to installation support.

Automated Soldering Consulting



Determine Requirements → **Proposal**

- Soldering application
- Quality Requirements
- Cycle time
- Equipment constraints
- Budget / Lead time

- Test & report
- Suggestion of best method
- Demonstration
- Quotation

Delivery → **Follow-up**

- Field work
- Acceptance inspection
- Training
- Maintenance Method

- Consumable and spare parts supply
- Troubleshooting
- Program & soldering condition changes
- Reconfiguration or improvement suggestions

We are always Your Automated Soldering Partner.

Advantage of Apollo Seiko's iron soldering

Iron Cartridge Page 45~

- Just 8 seconds to exchange iron cartridge without tools.
- The iron tip always returns to the exact same position after replacement.
- Direct heating system conducts the heat quickly to the iron tip.
- You can select the most suitable tip profile from a wide variety of iron cartridges.
- Built-in nitrogen nozzle iron cartridge is available.

Iron Unit Page 18~

Micro Adjust Unit

This feature allows for fast, easy adjustment of the solder wire supply position up / down & left / right.

Changeable Second Solder Feeding Position

The solder wire is fed under the iron tip to prolong tip plating life and prevent the flux from burning off too rapidly. Upon tip extension, the solder wire contacts the tip thus melting the solder directly onto the solder pad and transferring thermal energy very rapidly. The solder feeding position can be set by programming the Z axis to raise or lower the solder wire location to feed directly into the desired area of the solder joint. This allows the solder to spread evenly around the joint for optimal results

Roulette Cutting Blade (ZSB) Page 37~

No.1 Selected Option

The ZSB was designed to prevent solder balls and flux spattering.It reduces product defects, inspection process and reworking time due to the lack of solder ball formation.

Low-voltage, Low-power Consumption and Multi-power

Apollo Seiko's soldering robot is designed with safe, low-voltage and eco-friendly low-power consumption. The multiple power input has been designed for world-wide factory use and easy transfer to oversea facilities.

L-CAT NEO

Original Gantry Type Soldering Robot

This next generation robot has all the functions necessary for selective soldering built into the machine. The L-CAT NEO has been designed for either an in-line or lean manufacturing process.

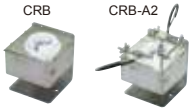
A data management plan is available for PC, IPAD, Android & PC tablet communications & teaching. Fiducial recognition & tip position alignment can easily be added to ensure proper tip & PCB alignment to guarantee positional accuracy and to ensure the highest quality soldering results.

Accessories

ZSB Feeder

Air Blow Cleaners

CRB CRB-A2



Rotary Cleaners

SRC-500DC BRC-3000

Tip Position Correction Unit

F71RH

Fume Extractors

Bofa VAC-3000

VAC-4001A VAC-4002A

Pre-Heater

YPH-10

High-Quality Portable Video Recorder

CVR-2100

Tip Thermometer

TTM-140

“The Robot Designed Exclusively for Soldering” Designed & Built by Apollo Seiko

All Required Functions Built Into the L-CAT NEO

We have over 40 years of experience & results as a designer & builder of soldering robots. Our application knowledge and strategic customer partnerships have positioned Apollo Seiko as the market leader. Together with our engineering team and customer input, we have developed the L-CAT NEO to be utilized exclusively for selective robotic soldering.

Exclusive Gantry Type Soldering Robot

All 4 axes (X, Y, Z & R) are suspended from the gantry which allows for simple fixture design and easy integration into conveyor, manual load & dual shuttle environments. Fixture size and weight & cable/wire harness lengths are not an issue as the fixture remains stationary on the robot base table.

Programming Freedom & Flexibility

Normally soldering robots have a fixed sequence to program solder parameters. However, the L-CAT NEO has a very flexible solder sequence that can be customized to meet the needs of your specific application. The L-CAT NEO offers flexibility of parameter sequencing to provide solutions for high thermal energy, fine pitch devices, large & small lead combinations etc. The soldering parameters (solder feed amount, feeding speed & temperature) can be arranged in a sequence that provides a solution for each particular soldering challenge.

Robot Communication – A Simple Matter of Choice & Functionality

You can choose your own device when it comes to communication & teaching of the L-CAT NEO, such as an IPAD, Android device or PC tablet.
This capability has set a new standard for the next generation of selective soldering robots.

PC Software Screen Example

Available for Windows 7, & Windows 8 (32 bit & 64 bit)
Can manage multiple robots via Ethernet
Robot status data-logging – saved as .CSV file type
Teaching data editing and file transfer is very simple

L-CAT NEO

L-CAT NEO Specifications

Type		L-CAT NEO4330	L-CAT NEO4430	L-CAT NEO4530
Drive Method		Stepping Motor		
Encoder		4-axes Applicable		
Resolution	X,Y,Z Axes	0.01mm		
	R Axis	0.1°		
Operation Range	X,Y Axes	300× 300mm	400× 300mm	500× 300mm
	Z Axis	60mm		
	R Axis	± 180°		
Portable weight		6 Kg		
Axis Speed	X,Y Axes	Max : 800mm/sec , Min : 0.1mm/sec		
	Z Axis	Max : 320mm/sec , Min : 3.2mm/sec		
	R Axis	Max : ± 800° /sec , Min : 8° /sec		
Repeatability	X,Y,Z Axes	± 0.01mm		
	R Axis	± 0.02°		
Teaching Method		Remote Teaching (JOG)		
		Manual Data Input (MDI)		
External Input / Output		Input : 39 Output : 39		
Program Capacity		511 programs		
Memory Capacity		500,000 point		
Setting Temperature		0 ～ 500℃		
Solder Feeding Speed		1.0mm/sec ～ 50.0mm/sec		
Solder Feeding Amount Resolution		0.1mm		
Solder Diameter	Using ZSB Feeder	φ 0.4mm ～φ 1.0mm (Option: φ 0.3、1.2、1.6mm)		
	Using Normal Feeder	φ 0.3mm ～φ 1.6mm		
Heater Capacity		130W (Option: 200W Available)		
Nitrogen Generator		Standard Equipment to Robot inside With Digital Flow meter		
Display Language		English, Chinese, Korean, Japanese, Spanish		
Power Source		AC94V ～ 260V (Single Phase)		
Power Consumption		650W max		
Other		Equipped with a monitoring camera		
Dimensions (WxDxH)		658×812×645mm	758×812×645mm	1005×812×645mm
Weight		90kg	95kg	150kg

L-CAT EVO

Desktop or In-Line Soldering Robot

For in-line and desktop use, the L-CAT EVO specialized soldering robot has innovated features and has evolved from proven technology. Defining the soldering parameters is fast and simple due to the intuitive interface of the EVO robot. All the cables are internally routed via the Z-axis head and will not tangle during rotation. The L-CAT EVO has a capacity of 100 programs and 100,000 points to meet virtually all PCB soldering requirements. The soldering temperature can be customized inside each of the 300 soldering profiles to provide optimal quality and cycle time. X & Y motors with high accuracy rotary encoders achieve 0.01mm resolution (repeatability 0.02mm) with a maximum speed 750 mm/sec.

L-CAT EVO Specifications

L–CAT–EVO4330 Operation Range Dimensions (WxDxH) Weight	X=300㎜, Y=300㎜ Z=60㎜, R=340° 520×995×714 mm 50kg
L–CAT–EVO4430 Operation Range Dimensions (WxDxH) Weight	X=400㎜, Y=300㎜ Z=60㎜, R=340° 620×995×714 mm 52kg
L–CAT–EVO4540 Operation Range Dimensions (WxDxH) Weight	X=500㎜, Y=400㎜ Z=60㎜, R=340° 720×1100×714mm 55kg

Soldering Condition	198 Conditions
Soldering Step	21 Step
Setting Temperature	TEM:0~500℃
Solder Feeding Speed	S+／S−:1~50.0（㎜／sec.）
Timer	TIM:0.1~99.9（sec.）
Iron Up/Down	CY:ON／OFF
Solder Diameter	φ0.4㎜–φ1.6㎜
Heater Capacity	130W（Option:200W available）

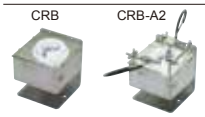
Drive Method	5 Phase stepping motor with X,Y Axes
X, Y Axes	750㎜／sec.
Z Axis	150㎜／sec.
R Axis	360°／sec.
Teaching Method	Remote teaching (JOG) Manual Data Input (MDI)
Program Capacity	100 program
Memory Capacity	100,000 point
External Input / Output	Input:5 Output:7
External Interface	RS232C
Solder Feeding Amount Resolution	0.01㎜
Repeatability	±0.02㎜
Portable Weight	3kg
Weight	50kg
Power Source	AC94V~260V (Single Phase)
Air Supply	0.4~0.5 MPa (Dry & Clean air)
Power Consumption	MAX330VA (including heater)
Power Consumption	Standard equipment
Nitrogen Generator	Standard Equipment to Robot inside with Digital Flow Meter

Accessories

ZSB Feeder

Air Blow Cleaners

CRB CRB-A2



Rotary Cleaners

SRC-500DC BRC-3000

Fume Extractors

Bofa VAC-3000

VAC-4001A VAC-4002A

Pre-Heater

YPH-10

Micro Monitoring Camera

CSS-2100

High-Quality Portable Video Recorder

CVR-2100

Tip Thermometer

TTM-140

J-CAT COMET

Desktop Soldering Robot

This soldering robot is available in four work envelope sizes (200mm ~500mm work areas). The PC software is very simple and user friendly and allows for program customization. The COMET controller can store 500 solder profiles.The robot's 255 X-Y programs (30,000 total points), provides endless flexibility.

500 Soldering Conditions

500 soldering conditions can be programed to meet various soldering requirements for many soldering points.
The solder feed / reverse amount is adjustable in 0.1mm increments and the pre-heat / heat time is also adjustable in 0.1 second increments.

High Speed Soldering

The specialized program achieves a much shorter tact/cycle time. Shortening of the tact/cycle time is a big challenge in a production process. However, the J-CAT COMET has been designed to minimize cycle time by using customized programs.

Excellent Temperature Control and Auto Tuning

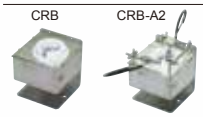
The excellent temperature controller equipped J-CAT COMET, raises the iron temperature from room temperature to 350 degrees in approximately 10 seconds. Automatic temperature calibration function improves iron tip performance and stability. High precision thermocouple is built into the Apex of the iron tip so minimal temperature drop can be detected and recovered very quickly.

Accessories

ZSB Feeder

Air Blow Cleaners

CRB CRB-A2



Rotary Cleaners

SRC-500DC BRC-3000

Fume Extractors

Bofa VAC-3000

VAC-4001A VAC-4002A

Nitrogen Generator

APN-05

Tip Position Correction Unit

F71RH

Pre-Heater

YPH-10

Micro Monitoring Camera

CSS-2100

High-Quality Portable Video Recorder

CVR-2100

Position Calibration Camera

SC+A

Tip Thermometer

TTM-140

J-CAT COMET Line Up

J-CAT200 COMET

J-CAT300 COMET

J-CAT400 COMET

J-CAT COMET Specifications

Type		J-CAT200COMET	J-CAT300COMET	J-CAT400COMET
Drive Method		5-phase Stepping Motor		
Encoder		4-axes Applicable		
Resolution	X,Y,Z Axes	0.01mm		
	R Axis	0.08°		
Operation Range	X,Y Axes	200×200mm	300×320mm	400×400mm
	Z Axis	50mm	100mm	100mm
	R Axis	± 360°		
Portable Weight		7.0Kg	11.0Kg	
Maximum Speed	X,Y Axes	700mm/sec	800mm/sec	
	Z Axis	250mm/sec	320mm/sec	
	R Axis	600°/sec	800° /sec	
Repeatability	X,Y,Z Axes	± 0.01mm		
	R Axis	± 0.008°		
Teaching Method		Remote Teaching (JOG)		
		Manual Data Input (MDI)		
External Input / Output		Input : 16 Output : 16		
Program Capacity		255 program		
Memory Capacity		30,000 point		
Soldering Condition		Point and Slide Total; 500 Conditions		
Setting Temperature		0 ~ 500℃		
Solder Feeding Speed		1.0mm/sec ~ 50.0mm/sec		
Solder Feeding Amount Resolution		0.1mm		
Solder Diameter	Using ZSB Feeder	φ0.4 ~φ1.0mm (Option;φ0.3, 1.2, 1.6mm)		
	Using Normal Roller	φ0.3 ~φ1.6mm		
Heater Capacity		130W		
Air Supply		0.4 ~ 0.5 MPa (Dry & Clean Air)		
Nitrogen Generator		Available (Option: APN-05)		
Display Language		English, Chinese, Korean, French, Spanish, German, Italian		
Power Source		AC94V ~ 260V (Single-phase)		
Power Consumption		366W		
Dimensions (WxDxH)		450×609×992mm	679×620×1100mm	671×630×1100mm
Weight		26kg	43kg	50kg

J-CAT STELLAR

Desktop Soldering Robot

This robot is the high-powered model of the J-CAT COMET. A 200 watt heater can be added as an attachment and is able to use the larger 2.0mm solder diameter. This machine is most useful in soldering high heat sink applications such as a multilayer board and shielding case.

High Power Heater

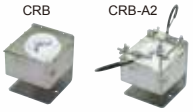
Main Specifications			
Type	J-CAT200 STELLAR	J-CAT300 STELLAR	J-CAT 400 STELLAR
Operation Range	X=200mm, Y=200mm Z=50mm, R=±360°	X=300mm, Y=300mm Z=100mm, R=±360°	X=400mm, Y=400mm Z=100mm, R=±360°
Dimensions (WxDxH)	450×610×992mm	679×620×1100mm	671×630×1100mm
Weight	27kg	44kg	51kg
Soldering condition	Point and Slide Total; 297 conditions		
Power	AC90 ~ 250V		
Power Consumption	490W		
Other	Standard equipment; 200W high capacity heater		
	High power solder feeder can feed maximum 2.0mm diameter		
	Sequence function is equipped to work independently from robot		

Accessories

ZSB Feeder

Air Blow Cleaners

CRB CRB-A2



Rotary Cleaners

SRC-500DC BRC-3000

Fume Extractors

Bofa VAC-3000

VAC-4001A VAC-4002A

Nitrogen Generator

APN-05

Tip Position Correction Unit

F71RH

Pre-Heater

YPH-10

Micro Monitoring Camera

CSS-2100

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CVR-2100

Position Calibration Camera

SC+A

Tip Thermometer

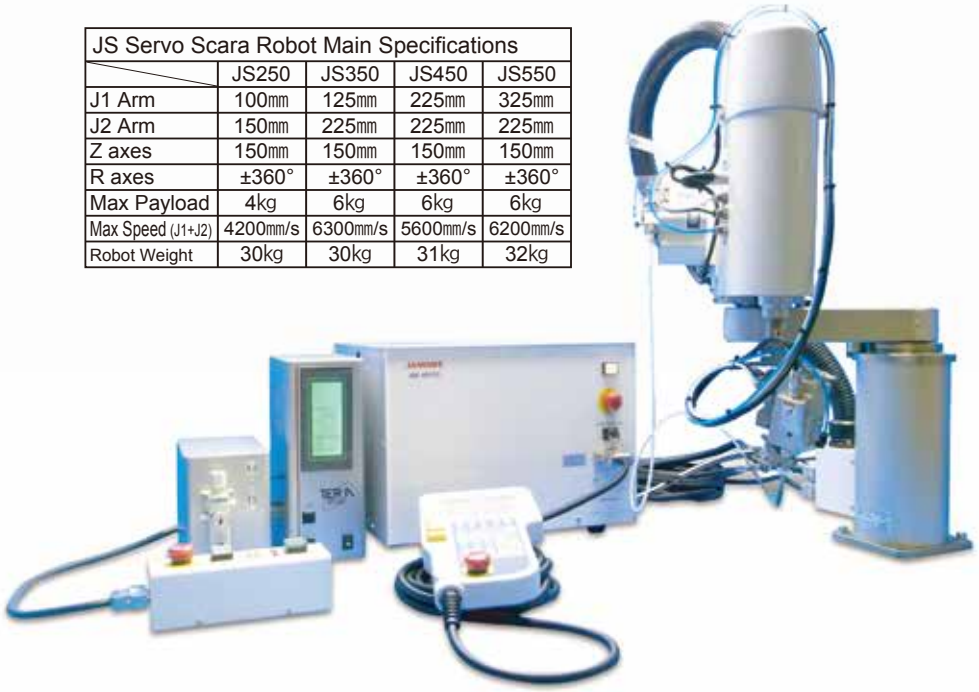
TTM-140

JS TERRA / JS COMET

SCARA: Selective Compliance Assembly Robot Arm

This high speed axially moving robot is ideal for use with in-line applications designed for full automation.

JS Servo Scara Robot Main Specifications				
	JS250	JS350	JS450	JS550
J1 Arm	100mm	125mm	225mm	325mm
J2 Arm	150mm	225mm	225mm	225mm
Z axes	150mm	150mm	150mm	150mm
R axes	±360°	±360°	±360°	±360°
Max Payload	4kg	6kg	6kg	6kg
Max Speed (J1+J2)	4200mm/s	6300mm/s	5600mm/s	6200mm/s
Robot Weight	30kg	30kg	31kg	32kg



Comet

Terra

Teaching Pendant

Control Box

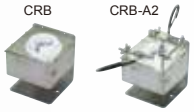
Drive Method	AC servo motor
Control Method	PTP(Point to Point)control、CP(Continuous Path)control
Interpolating Function	3-Dimensional line and Arc interpolation
Position Detection	Absolute Encoder
Teaching Method	Remote teaching (JOG)/ Manual data input(MDI) / Direct teaching
Teaching System	Original software : Simple and broad-use teaching system
Teaching Pattern	Programming by teaching pendant
Programming Capacity	255 programs
Data Memory Capacity	Maximum 30,000 points
Simple Sequencer	Maximum 1,000 steps
External Serial Interface	RS422 1ch（For teaching pendant） RS232C 1ch(For PC COM1) RS232C 1ch(Extenal device COM3)　COM2: Using solder controller
External Input / Output	I/O-SYS Input 15 / Output 14 I/O-1 Input 18 / Output 22(4-relay contact) I/O-H Input 4 / Output 4(2-relay contact)
Power Consumption	950W(JS250) 1,050W(JS350～550)
Power Supply	AC180～250V(Single phase)
Working Ambience	Ambient temperature：0～40℃　Relative Humidity：20～90%

Accessories

ZSB Feeder

Air Blow Cleaners

CRB　CRB-A2



Rotary Cleaners

SRC-500DC　BRC-3000

Fume Extractors

Bofa　VAC-3000

VAC-4001A　VAC-4002A

Nitrogen Generator

APN-05

Tip Position Correction Unit

FW71RH

Pre-Heater

YPH-10

Micro Monitoring Camera

CSS-2100

High-Quality Portable Video Recorder

CVR-2100

Position Calibration Camera

SC+A

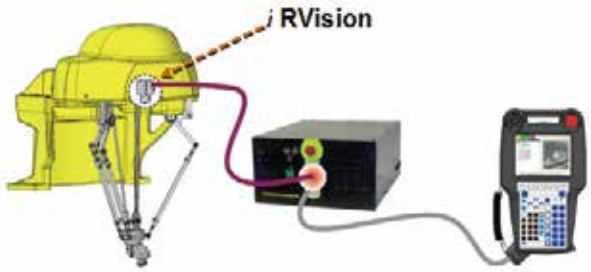
Tip Thermometer

TTM-140

M1-CAT300 *i*

Parallel-Link Soldering Robot

The M1-CAT300i is a high speed, multi-function soldering robot that adopts the technology of the Fanuc Genkotsu robot (fist dexterity). This is the world's first soldering robot that operates with parallel-link technology. The high performance operation of six flexible axes make it possible to change the height, direction and angle of the iron tip. This lightweight and compact mechanical unit has been designed to fit into tight work spaces. Incorporating the optional **iRVision** image positioning system, the robot will be guided to the correct solder location every time.

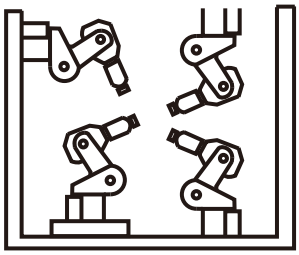


Type		M1-CAT300i
Operation Mode		Parallel link mechanism
Drive Method		Electric servo drive by AC servo motor
Controlled Axes		6 axes（J 1, J 2, J 3,J4, J 5, J 6）
Operation Range (Max. speed)	J1-J3	Diameter 280mm, Height 100mm
	J4	720°(1440°/sec)　12.57rad (25.13rad/sec)
	J5	300°(1440°/sec)　5.24rad (25.13rad/sec)
	J6	720°(1440°/sec)　12.57rad (25.13rad/sec)
Repeatability		±0.02mm
Setting Temperature		0～500℃
Solder Feeding Speed		1.0mm/sec～50.0mm/sec
Solder Feeding Amount Resolution		0.1mm
Solder Diameter	Using ZSB Feeder	φ0.4～φ1.0mm (Option：φ0.3mm、φ1.2mm、φ1.6mm)
	Using Normal Feeder	φ0.3～φ1.6mm
Heater Capacity		100W, 130W, 200W (Depends on the unit)
Nitorogen Generator		Available (Option：APN-05)
Power Source		Single Phase AC200V

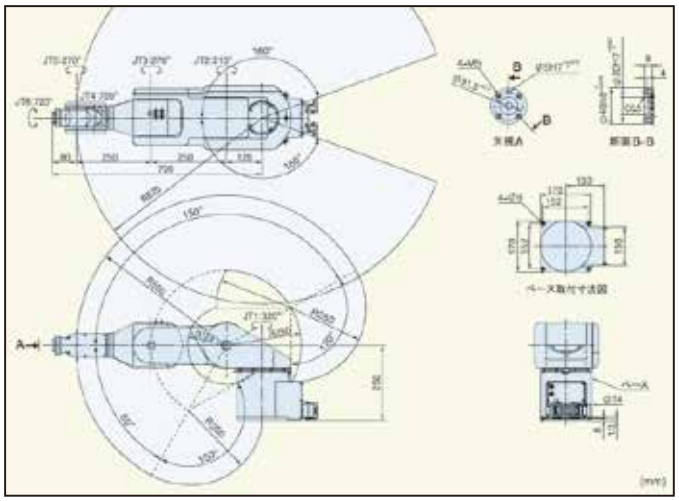
RS003N

This compact unit offers 6-axis high function performance to handle PCB's and components for soldering, component replacement and automating repetitive tasks. The robot's main unit weighs an easy-to-handle, 20kg and can be mounted on the floor, wall or ceiling. Even with the small size, the robot is equipped with fast accurate and sturdy 6-axis arms for ensuring high reliability and precision. The robot can withstand most operating enviroments in the industry. When the power is turned off there is no need to worry about a stop position because all six axes have brakes.

APOLLO SEIKO/KAWASAKI RS003N			
Arm Type		Articulated	
Degrees of Freedom		6 Axes	
Axis Work Envelope	Axis	Max. Stroke	Max. Speed
	JT1: Arm rotation	±160°	360° /S
	JT2: Arm out-in	+150° ~-60°	250° /S
	JT3: Arm up-down	+120° ~-150°	225° /S
	JT4: Wrist swivel	±360°	540° /S
	JT5: Wrist bend	±135°	225° /S
	JT6: Wrist twist	±360°	540° /S
Max. Reach		620mm (Distance from JT1 to JT5)	
Max. Payload		3 kg	
Moment	JT4: Wrist swivel	5.8N・m	
	JT5: Wrist bend	5.8N・m	
	JT6: Wrist twist	2.9N・m	
Moment of Inertia	JT4: Wrist swivel	0.12kg・m²	
	JT5: Wrist bend	0.12kg・m²	
	JT6: Wrist twist	0.03kg・m²	
Position Repeatability		±0.05mm (At wrist flange surface)	
Max. Linear Speed		6,000mm/s (At wrist flange surface)	
Mass		20kg (Excluding option)	
Body Color		Munsell 10GY9/1 equivalent	
Installation		Floor, Ceiling or Shelf mount	
Environmental	Ambient Temperature	0~45℃	
	Relative Humidity	35~85% (No dew, nor frost allowed)	
	Vibration	Less than 0.5G	
	Other	The robot installing place should be free from: *inflammable or corrosive liquid or gas *electric noise interference	
Option		Wall Mounting (Max. Payload: 2kg) 1 Double solenoid valve Restriction of motion range (mechanical): JT1 (45! pitch) 2 Double solenoid valves 1 Single solenoid valve External sensor harness (4 circuits) 2 Single solenoid valves	



Floor, Wall or Ceiling Mount



TERRA / LUNA

LUNA and TERRA systems have been designed exclusively for automated soldering. These soldering units can be widely adapted for use in semi & fully automated systems, desk-top robots, linear actuators and your special purpose machine.

TERRA

The 297 soldering profiles can be customized to provide a solution for all types of soldering application challenges. Our 200 watt heater addresses the requirement to solder large thermal mass components and can feed a range of solder diameter between 0.4mm to 1.6mm.

TERRA Specifications

Power	AC 90V ~ AC 264V
Power Consumption	240W
Air Supply	0.4 ~ 0.5 MPa
Solder Type	0.4 ~ 2.0mm Select 1 type 0.4~1.6mm for ZSB Geyan 0.3mm (Optional)
Solder Conditions	297 conditions (Point 198 & Slide 99) Point 99 Slide 99 Special 99
Setting Temperature	0 ~ 500°
Heater Capacity	200W
Solder step	9 Steps
Wait Temperature	250°C (Adjustable)
External Start Box	Optional
Controller Weight	4.3 kg
Feeder Unit Weight	1.3 kg
Iron Unit Weight	0.8 kg

Configuration

TERRA - SP + ☐ + ☐
Iron Tip / Solder Diameter

SP: Feeder and controller seperate type

Components

TERRA Controller
RSP/RSL Iron Unit
Solder Wire Feeder
Solder Wire Feeding Tube
Iron Unit/Feeder signal Cable
Air Tube for Iron Unit
Power supply Cable

LUNA

This unit is equipped with a color touch panel and parameter control, similar to the TERRA.
You can select the Luna controller orientation from Vertical & Horizontal options.

LUNA Specifications

Power	AC 85V ~ AC 264V
Powewr Consumption	154W
Air Supply	0.4 ~ 0.5 MPa
Solder Type	0.4 ~ 1.6mm Select 1 type 0.4~1.2mm for ZSB 0.3mm (Optional)
Solder Conditions	7 conditions (Point 4 & Slide 3)
Setting Temperature	0 ~ 500°
Heater Capacity	130W (Max)
Solder step	9 Steps
Wait Temperature	250°C (Adjustable)
External Start Box	Optional
Controller Weight	3.5 kg
Feeder Unit Weight	1.3 kg
Iron Unit Weight	0.8 kg

Configuration

LUNA - LSP + ☐ + ☐
or SSP + Iron Tip / Solder Diameter
or LCO

L:Vertical S: Horizontal

SP: Feeder and controller seperate type

CO: Feeder and controller combined type

Components

LUNA Controller
RSP/RSL Iron Unit
Solder Wire Feeder
Solder Wire Feeding Tube
Iron Unit/Feeder signal Cable
Air Tube for Iron Unit
Power supply Cable

RSP / RSL / LFD

Iron Unit for Point and Slide Soldering

It takes 8 seconds to replace the iron cartridge and it does not require position adjustment upon iron cartridge replacement.
The solder feeding position can be precisely set by adjusting the set screw.

Iron Unit For Point Soldering *RSP*

This unit can achieve high speed point soldering. The slim design makes it possible to solder applications with tight accessibility issues. This unit has both a pre-feed and secondary feed height adjustment.

Iron Unit For Slide Soldering *RSL /RSL-FPR*

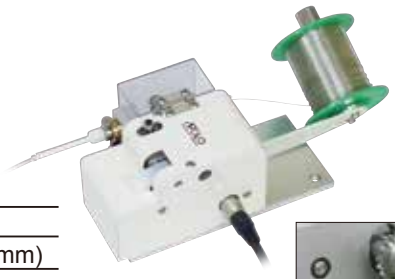
This iron unit is designed for slide soldering. The spring loaded tip assembly will not damage PCB solder mask during the slide operation.

RSL

RSL-FPR

Solder Feeder for Automatic Soldering *LFD*

It can control feeding amount precisely by its pulse motor and the ZSB roller blade can be attached as an option.



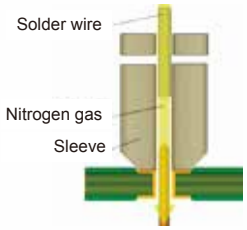
LFD Solder Feeder Specification

Solder Feed Motor	Pluse motor
Solder Wire Diameter	φ0.4～1.6mm (Option:φ0.3mm)
Feed/Reverse Speed	0.1～50.0mm/s
Sensor	Clogged, Shortage
Weight	1.3kg

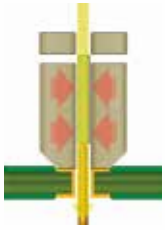
Constant Amount Sleeve Soldering

This sleeve soldering meters, cuts and melts a programmed length of solder wire in the "ceramic sleeve". The iron tip plating oxidation / erosion does not occur when utilizing this special ceramic material. Flux spattering and solder balls are eliminated as the solder melts inside the sleeve. The simple head design allow for quick and easy maintenance. The coaxial design of the heater and mechanical parts provide for easy position teaching. The ceramic heating unit has a very long operational life.

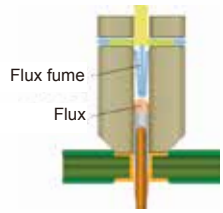
Sleeve Soldering Mechanism



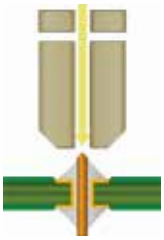
After pre-heating by the sleeve, the solder wire is cut and dropped into the solder joint area.



The solder wire is heated up and melted inside the sleeve.



The solder melts smoothly because the flux fume is exhausted through the vent holes on the sleeve. Also, solder clogs do not occur.



All the supplied solder wire is fed to the solder joint without remaining it in the sleeve.

Constant Amount

Solder wire is cut to a programmed length. All the cut solder wire melts and flows to the application without remaining it in the ceramic sleeve.

Few Consumable Parts

The ceramic sleeve has a long life because the sleeve is not consumed by wetting solder. There is no need to consider consumable costs.

Standard Equipment of Nitrogen Generator

It enables better soldering by melting the solder wire in an inert nitrogen atmosphere.

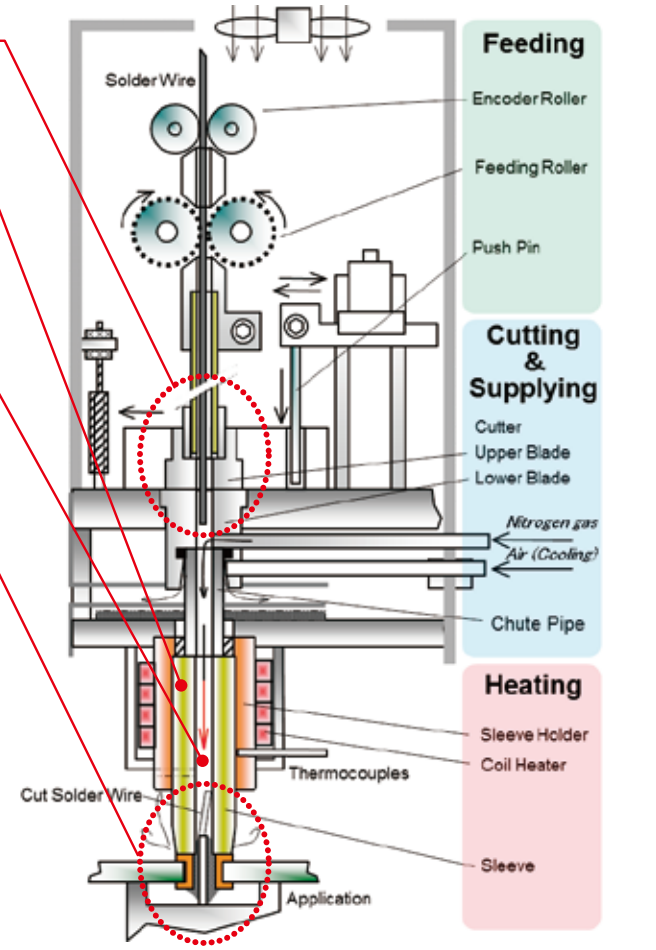
No Spattering

Flux and solder wire do not spatter because the high conductivity sleeve encapsulates the complete process.

Easy Maintenance

The simply designed head allows quick and easy maintenance. Daily maintenance is only sleeve cleaning as flux fumes do not come in contact with the mechanical feeding components.

Internal Structure of SLV Head



J-CAT SLV

Desktop Sleeve Soldering Robot

This desktop sleeve soldering robot easily installs into a “Lean” cellular production environment.

	J-CAT300 SLV	J-CAT400 SLV
Weight	40kg	50kg
Operation range	X=300mm, Y=320mm, Z=100mm	X=400mm, Y=400mm, Z=150mm
Portable Weight	11g	
Repeatability	X,Y,Z±0.007mm	
Program Capacity	255 programs	
Memory Capacity	30,000 points	
Soldering Condition	500 conditions	
Setting Temperature	0~550°C (1°C increment)	
Solder Feeding Amount Resolution	0.1~99.9mm (0.1mm increments)	
Solder Feeding Speed	1.0~50.0mm/sec (0.1mm/sec increments)	
Solder Diameter	φ0.8~1.2	
Apparent Power	400VA	
Heater Power Consumption	160W	
Power Source	Heater for AC100V: AC100V Single phase AC 50/60Hz Heater for AC200V:AC200V Single phase AC S0/60Hz	
Supply Air	0.5MPa (Dry & Clean Air)	
Interface	For external operation command D-SUB25 female pin (Harness side: male)	
Dimensions (WxDxH)	680×582×1089mm	672×641×1141mm
Weight	40kg	47kg

Ceramic Sleeve

A customized ceramic sleeve can be fabricated to meet your application requirements, clearances etc.

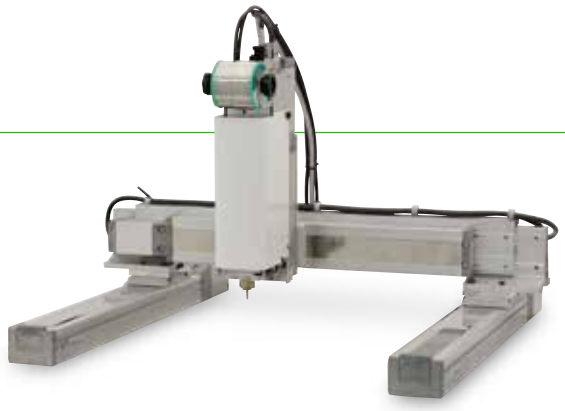
Accessories

Drill Cleaner	Cleaning Heater	Micro Monitoring Camera	High-Quality Portable Video Recorder	Position Calibration Camera	Tip Thermometer	VAC-4001A / VAC-4002A
DRC-1300	CCH-700	CSS-2100	CVR-2100	SC+A	TTM-140	

JC-3-3A SLV

Gantry Type Sleeve Soldering Robot

This robot consists of SLV and JC-3 (Page 35). It is well suited for an in-line process or as a special purpose machine.



Laser Soldering

MLU-808FS

Laser Soldering System

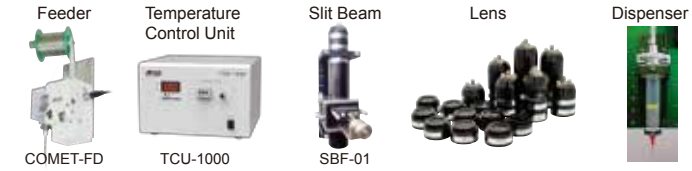
Desktop robot + Laser Oscillation Unit + Laser Controller
J-CAT300 MLU-808FS

ASST-MINI FS

Compact Laser Soldering Unit

Laser Controller
ASST-MINI FS

Accessories

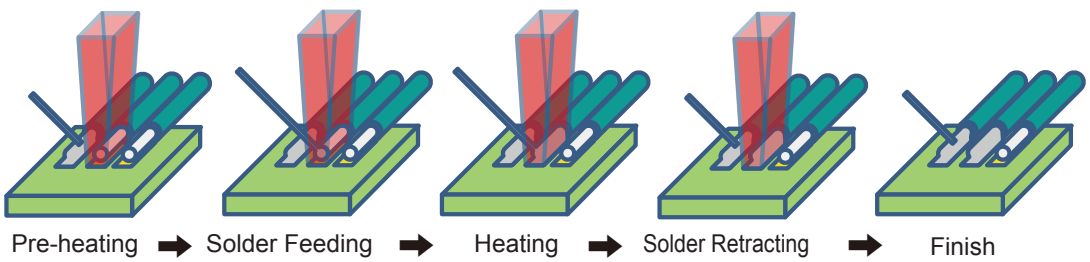


What is Laser Soldering?

It is non-contact soldering that heats up the target with a high energy light emitted from an oscillated laser diode and is focused with a lens.

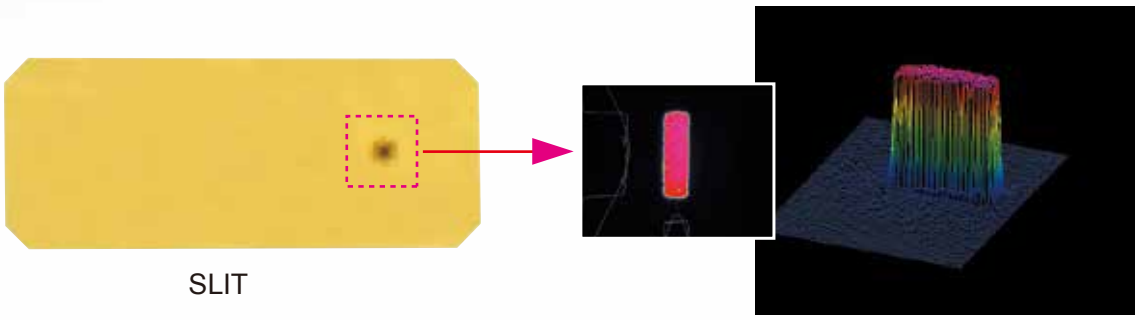
Laser Soldering Basic Process

The laser soldering process depends on the type of solder to be used (wire, pre-form or paste).
In the case of solder wire, laser irradiation is performed in advance to the joint area (Pre-heating). This is the most important process in order to wet and allow the solder to flow easily when supplying the solder wire to the joint area.



SLIT Beam Option

Although the laser beam shape is generally circular, this originally developed SLIT plate (metal plate with a hole) enables virtually any type of laser beam shape. This allows the beam to match the shape of the components and the pads to be soldered.



SLIT

Rectangular Beam

Circular Beam
φ500μm

Circular Beam
φ50μm

Circular Beam
φ1000μm

Various Beam Diameters
Free Beam Shape

Rectangular Beam
0.25 x 0.75 ㎜

Twin Beam
φ0.2 x 2

Square Beam
0.8 x 0.8 ㎜

Temperature Control Unit TCU-1000 (Option)

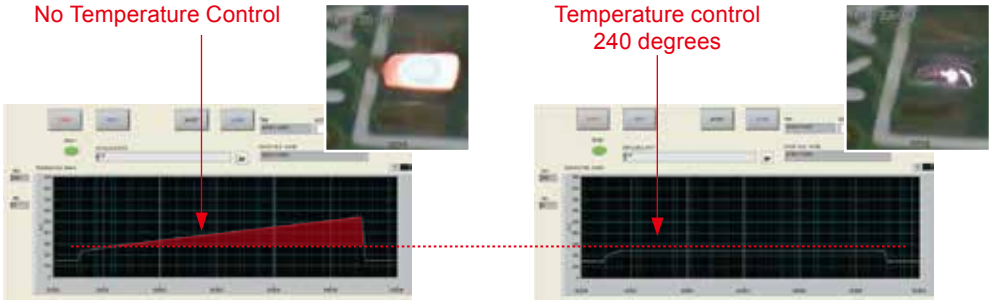
* Option only for MLU-808FS

This non-contact radiation thermometer (minimum φ0.25mm) measures the temperature of the soldering point in real time.

By sending the temperature data to the laser controller, it controls the laser power by temperature.

This prevents any unexpected temperature rise during soldering, and then it achieves stable soldering by controlling the soldering temperature.

Comparison of Temperature Data



Lens Variety

The type of lens to form a laser beam is composed of two components, the “Input lens” and “Output lens”.
With the combination of these lenses, over 100 diameter variations can be achieved.

Specifications

MLU-808FS				
Material			Semiconductor Laser	
Oscillation			CW (Continuous Wave)	
LD Type			Fiber Coupling	
LD Output			35W	50W
Wavelength			808nm	980nm
Guide Beam			◉	
Halation Prevention			◉	
LD Cooling System			Electric Cooling	
Coaxial Observation Function			◉	
Fiber Core Diameter			φ200μm / φ400μm	
Fiber Length			3m	
Focused Beam Diameter			φ50μm ~ 8000μm	
Focal Length			10mm ~ 200mm	
Focused Beam Shape			Circular / Rectangular / Free Shape by SLIT laser option	
Temperature Control			Available	
Parameter Control Mode	Time	Setting Resolution	0.1sec / 0.01sec	
		STEP	1 ~ 100 STEP	
		Time Setting	1 STEP = 0.1sec (Max: 0.1sec × 100STEP = 10sec)	
	Current (A) Control	Setting Resolution	0.1A	
Registered Waveform Capacity			16	
Interface			Input Terminal x 1 Sig. OUT (BNC) x 1 CURR. MINI (BNC) x 1 RS232 x 1 Analog Input (0~5V) x1	
Dimensions WxDxH	Laser Coaxial Head		160.5 x 114 x 366 mm (Maximum Size)	
	Laser Oscillation Unit		270 x 260 x 230 mm	
	Laser Controller		430 x 350 x 149 mm	
Weight	Laser Coaxial Head		Approx. 1 kg	
	Laser Oscillation Unit		Approx. 6.5 kg	
	Laser Controller		Approx. 16 kg	
Power			Single Phase AC100V / AC220V ±10% 50/60Hz	

Temperature Control Unit TCU-1000 (Option)	
Power Supply & Temperature Converter	
Overshoot	Below ±20℃ for setting value
Control Accuracy	Below ±5℃
Measured Temperature Range	160~900℃
Control Range	160~400℃
Warm-up Time	1 minute
Control Frequency Response	2 kHz
Parameter	Emissivity: 0~1, Reflection correction: 0~9999
Power Supply	AC85V~AC264V
Max. Electric Power	15 W
Dimension	270(W) × 260(D) × 148(H)
Weight	3 kg
Sensor Head	
Measurement Area	φ0.25 mm
Working Distance (WD)	25 mm
Dimension	φ20 mm × 75 mm
Fiber Length	1 m

F-CAT Series

Premiere Model

This selective flow system is an in-line module type consisting of Pre-fluxing, Pre-heating and Soldering.
It is equipped with various functions such as Automatic Nozzle Cleaner, Automatic Flow Control and a Position Calibration Camera.

F-CAT iN350-Z3 / iN500-Z3
In-line Selective Flow System

The modular type system allows for customization and expansion of your equipment.

Model	Power Consumption	Substrate Size (mm)	Dimensions W x D x H (mm)		
			Pre-fluxing	Pre-Heating	Soldering
F-CAT iN350-Z3	20 kW	50 x 50 ～ 350 x 250	800 x 1500 x 1400	800 x 1500 x 1400	1000 x 1500 x 1400
F-CAT iN500-Z3	25 kW	50 x 50 ～ 500 x 400	950 x 1600 x 1400	950 x 1600 x 1400	1200 x 1600 x 1400

F-CAT 350 A / 500 A
All-in-one Selective Flow System

F-CAT iN350 A / iN500 A
In-Line All-in-one Selective Flow System

This is an all-in-one selective flow system for the production in a high-mix, low-volume environment. It is possible to select from the combination of conveyor type and the application board size (robot stroke).

Model	Power Consumption	Substrate Size (mm)	Dimensions W x D x H (mm)
F-CAT 350 A	8 kW	50 x 50～350 x 350	1000 x 1500 x 1400
F-CAT 500 A	10 kw	50 x 50～500 x 400	1200 x 1600 x 1400
F-CAT iN350 A	8 kW	50 x 50～350 x 250	1000 x 1500 x 1400
F-CAT iN500 A	10 kW	50 x 50～500 x 400	1200 x 1600 x 1400

Entry Model

F-CAT e350 A / e500 A
All-in-one Selective Flow System

This entry level model consists of Pre-fluxing and Soldering. It is equipped with Automatic Nozzle Cleaner, Automatic Solder Feeder and Position Calibration Camera etc.

Model	Power Consumption	Substrate Size (mm)	Dimensions W x D x H (mm)
F-CAT e350 A	4 kW	50 x 50 ~ 350 x 250	1000 x 1400 x 1400
F-CAT e500 A	5 kw	50 x 50 ~ 500 x 400	1200 x 1500 x 1400

Compact Model

F-CAT C340
Compact Selective Flow System

The F-CAT C 340 is easy to implement into your process.
The compact design of this system with fluxer allows for easy integration.
The internal JC-3 controller with servo stepper motors enables the robot teaching without a PC.
A user friendly teach pendant can be used to create programs quickly and easily.
It is possible to program from a scanner, .DXF or Gerber data with the provided PC software.
By using the same solder bath and fluxer as the top models, it achieves reliable soldering results.

Model	Power Consumption	Substrate Size (mm)	Dimensions W x D x H (mm)
F-CAT C340	3 kW	50 x 50~300 x 400	1000 x 1000 x 1015

F-CAT Series Function List

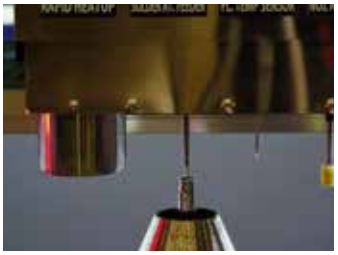
Model Class	Premiere			Entry	Compact
Model	iN350-Z3 iN500-Z3	iN350 A iN500 A	350 A 500 A	e350 A e500 A	C 340
Nozzle Size	φ4~20	φ4~20	φ4~20	φ4~20	φ4~20
Solder Bath	5 kg	5 kg	5 kg	5 kg	5 kg
Monitoring Camera	○	○	○	○	○
Solder Feeder	○	○	○	○	○
Spray or Dot Fluxer	○	○	○	○	○
Camera Scan Teaching	○	○	○	○	○*1
Nozzle Cleaner	○	○	○	○	–
Position Calibration Camera	○	○	○	○	–
Flow Height Control	○	○	○	○	–
Flow Temperature Control	○	○	○	○	–
Nozzle Position Detection	○	○	○	–	–
Quick Nozzle Heat Up	○	○	○	–	–
Pre-Heating	○	○	○	–	–
QR / Barcode Reader (Option)*2	△	△	△	–	–
MES Data Storage (Option)*2	△	△	△	–	–

*1 Although F-CAT C340 does not have the camera scanning function, the robot teaching is possible with the provided PC software if the application data is scanned by another source.
*2 To be discussed

Automatic Nozzle Cleaner

Considering safety and ease of maintenance, the nozzles that used to be cleaned manually are now cleaned automatically.

Automatic Solder Feeder

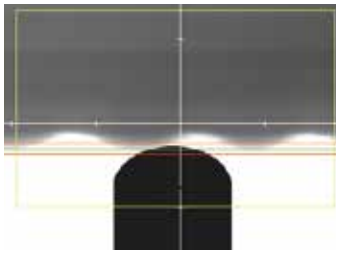


Solder wire is automatically fed into the solder pot. This is much easier and safer than adding bar solder.

Camera Scan Teaching

The application set to the F-CAT is directly scanned and teaching can be performed.

Flow Height Control



This camera observes and calibrates any flow height changes that occur from the solder surface height in the bath and any variation by the rotation of the impeller.

Position Calibration Camera

It detects and calibrates any application shift before pre-fluxing and soldering.

Nozzle Position Detection Camera

Any movement to the nozzle position shift and slope that can occur during nozzle change is automatically detected.

HASL

Hot Air Unit

This Hot Air Cartridge has been developed with Apollo Seiko' s direct heating technology that was accumulated by the development and production of our iron cartridges. The fine Hot Air Cartridge enables micro and narrow pitch soldering, The shape and size of the air outlet can be fabricated per your application requirements.

The control unit has an excellent response and stable high-performance temperature controller.
The equipped mass flow controller can perform accurate air (nitrogen) amount control.
It is also possible to use as a pre-heater prior to soldering.

Control Unit

Cartridge Unit

Specifications		
Temperature Range		0 – 500 degree
Power Supply		100V – 240 V AC
Flow Amount		0.1 – 5 L/Min
Hot Air Cartridge		130W DC Heater
Weight	Control Unit	Approx. 3kg
	Cartridge Unit	Approx. 0.5kg
Other		Option: Nitrogen Generator APN-05

PPH300

Power Pulse Heat Unit

The compact head design and fine heater cable allow easy attachment to a robot or other actuator. It is suitable for soldering, heat press-fit, heat-crimping and plastic welding etc.

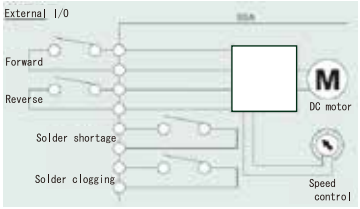
Specification	
Model	PPH300
Control Box	
Dimensions (W x D x H)	320×450×230 mm
Power Source / Power Consumption	AC90～132V, AC180～250V Single Phase / 300VA
Air Supply	0.5 MPa (Only Dry Clean Air)
Drive method	Inverter method by power MOSFET
Over-current protection	Electric current detection by current sensor
Temperature control method	
Detection sensor	K type themocouple sensor with safety protection
Control method	PID control using 16bit CPU
Tool temperature setting range	Room temperature - 500 ℃
Heat temperature setting range	150 ℃ - 500 ℃
Heat time setting range	0.1 second - 99.9 seconds
External control	
Photo isolation input / output	Photo transistor output / Photo diode input

SSA

Solder Feeder for Automation Equipment *SSA*

The solder can be fed forward or reverse and controlled by an external I/O controller. If used to control the solder liquid surface level, it automatically keeps the level constant. In addition, it can be attached to the equipment as a feeder of an automatic soldering system.

External I/O



SSA Main Specification	
Power	AC100V / AC220V 50/60Hz
Using Motor	DC motor 5 Watt
Solder Diameter	0.4mm～2.0mm
Solder Feed	External control (high / Low)
Solder Feed Speed	10mm/sec ～ 30mm/sec
Solder Feed Reverse	External control (30mm/sec)
Sensor	clogged / shortage sensor
External Control	Available
Weight	Approx 2kg
Accessories	I/O Connector, External Power Supply Connector, Power Cable
Option	Solder Wire Feeding Tube

TTM-3000N

Manual Soldering Station

The high-powered soldering station provides 100 watts of soldering power. The extremely fast heat up & temperature recovery, along with the ability to integrate N2 gas, make the TTM -3000N ideal for lead free soldering. The N2 gas can be pumped directly into the TTM-3000N via APN-05 generator or factory supplied Nitrogen. Statistical temperature data can be downloaded to a PC using an optical USB cable.

TTM-3000N Main Specifications	
Power	AC90-264V Single phase
Heater capacity	130W(max) DC48V
Grounding resistance	Less than 2Ω
Temp. Control	PID control
Control interval	0.1 second
Size	110(W) x 115(D) x 135(H) mm
Weight	2kg
Max. Power consumption	150W
Accessories	Iron Cartridge Grip, Iron Cartridge, Iron Holder Stand,Tip Removable Pad, Ground Terminal, Fuse 2A, Power Cable

TTM-1000H

Lead Free Manual Soldering Station

This equipment is designed to produce lead free soldering with no static electricity. It is economical because the only necessary replacement part is the Iron tip.

TTM-1000H Specifications		
Power		AC100, AC115V, AC220V
Setting temperature		200~420℃
Heat capacity		90W
Output power		36VAC, 400KHz High frequent current
Temp. consistency		±2℃ (No load)
Raising time		25sec. (300℃)
Weight	Contraller	2.5 kg
	Iron unit	0.1kg
	Iron stand	1.0kg
Accessories		Iron Cartridge Grip, Iron Cartridge, Iron Holder Stand, Power Cable

SSB

Iron Unit with Solder Feeder *SSB*

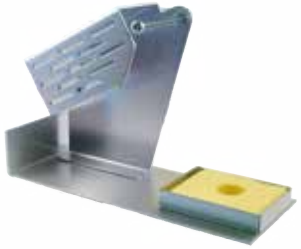
This integral unit will increase efficiency of manual solder work.Handling the iron unit and feeding the solder are two actions that can be done with one hand. The solder wire feed length is controlled with a timer which provides good soldering quality. There are two options of iron units. The pistol type or pencil type. In addition there are more than 20 different types of iron tips available.

AM Iron Unit (Hand Gun Type)
Feeding Tube Type: TU*.*-***V
Solder Wire Diameter / Total Length

PM-S Iron Unit (Pencil Type)
Feeding Tube Type: TU*.*-***S
Solder Wire Diameter / Total Length

PM-L Iron Unit (Pencil Type)
Feeding Tube Type: TU*.*-***L
Solder Wire Diameter / Total Length

	Heater Type	Iron Tip
60W	C-60-6	AS-6**
100W	SA-100W	AS-8**
150W	SA-150W	AS-10**



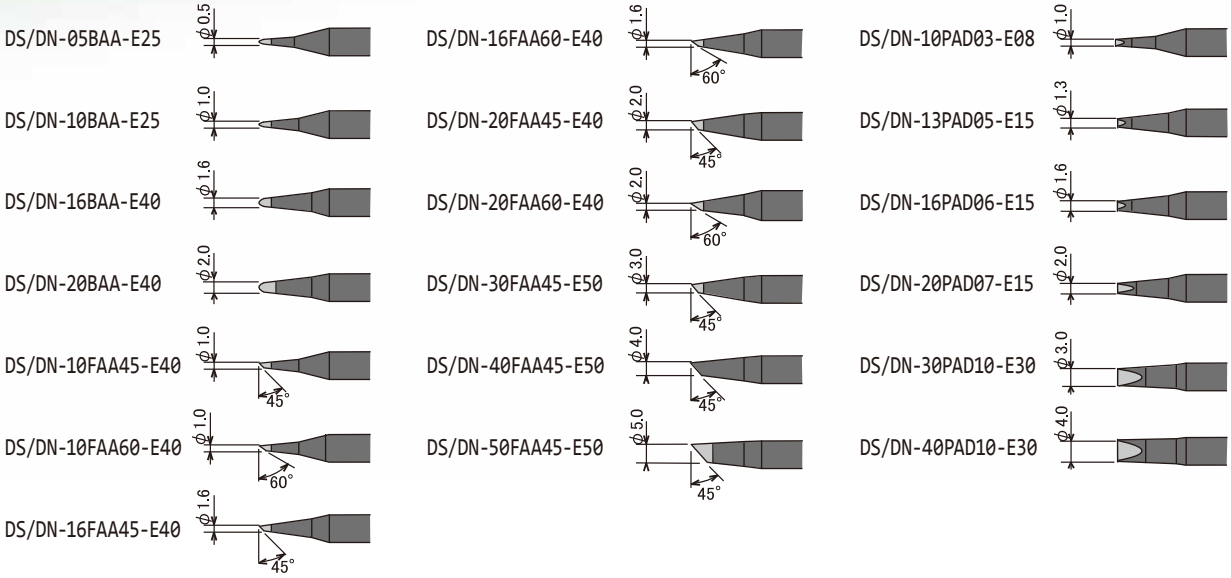
Iron Unit Stand: AK-1 (Option)

SSB Main Specifications

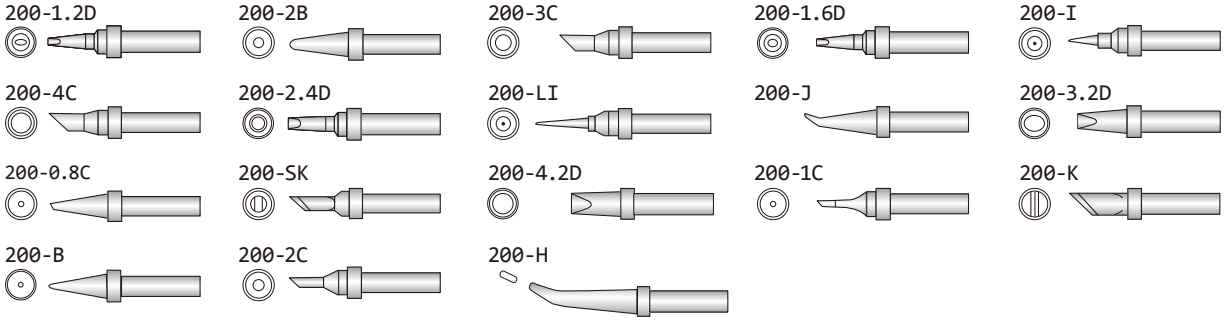
Power	AC100V 50/60Hz
Using Motor	DC motor 5 Watt
Thermostat	Vari-tap type
Solder Diameter	0.4mm～2.0mm
Solder Feed	1 Pulse timer / Continuous
Solder Feed Speed	10mm/sec ～30mm/sec
Solder Feed Reverse	N/A
Weight	Approx. 2kg
Constitution	Solder Wire feeder, Iron Unit, Iron Tip, Power Cable
Options	Iron Unit Stand (AK-1) Foot Switch (can be connected) Solder Wire Feeding Tube

Iron Cartridge

TTM-3000N

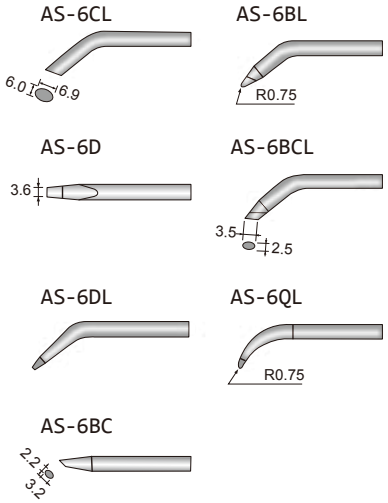


TTM-1000H

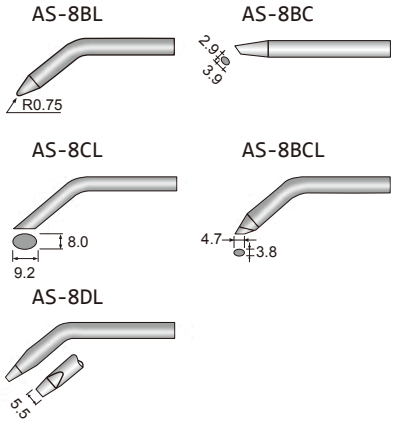


SSB

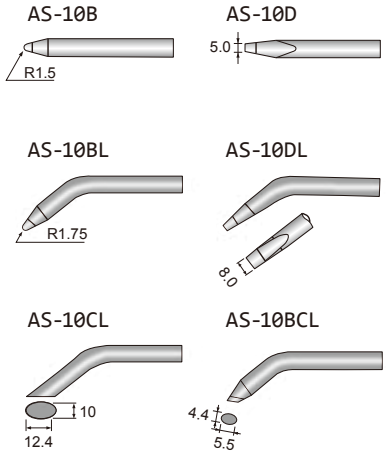
For 60W(C-60-6)



For 100W(SA-100W)



For 150W(SA-150W)



ZSB-10 / 16

Zero Solder Ball Feeder

The ZSB feeder has a built-in roulette cutting blade which creates evenly spaced holes while precisely feeding solder wire. During soldering, the flux is released evenly through these holes which provides consistent flux coverage without spattering.

ZSB-10/16	
ZSB-10	0.4mm～1.0mm *(0.3mm Optional)
ZSB-16	1.0mm～1.6mm
Weight	1.5kg
Size	190(W) x 85(D) x 80(H) mm
Power consumption	45VA
Power	AC100-240V multi adaptor
Accessories	Foot Switch, Power Cable
Option	Solder Wire Feeding Tube

WICK GUN

Wick Dispenser to Absorb Solder

The desoldering "Wick gun" is easy to feed and absorb solder. The used wick can easily be cut with one hand by pulling the built-in trigger.

Model 1000-1 Standard Parts	
1 x Model 1000-1 dispenser	
1 x W4015-1 cassette	
Model 1000-1 Spare Parts	
Part No.	Description & Size (Width, Length)
W4015-1	Wick cassette #1, W=0.9mm L=4.57mm
W4015-2	Wick cassette #2, W=1.5mm L=4.57mm
W4015-3	Wick cassette #3, W=2.2mm L=4.57mm
W4015-4	Wick cassette #4, W=2.9mm L=4.57mm
W10010	Cutter blade

J-CAT GRT

Board Cutting Desktop Robot

This is a three axis desktop robot that comes in three sizes with integral position detection encoders. An electric router with an exclusive and easy to use software firmware and high powered dust collection kit are included. A glass epoxy or standard FR-4PCB equal to or less than 1.6mm thickness can be cut while monitoring the router bit sharpness.The capability greatly reduces faulty cutting situations.

Main Specification			
Mode	J-CAT200GRT	J-CAT300GRT	J-CAT400GRT
Maximum Work Dimensions	X=200mm Y=195mm Z=45mm	X=300mm Y=320mm Z=95mm	X=400mm Y=400mm Z=95mm
Dimensions (W×D×H)	350×436×615mm	585×580×650mm	646×641×650mm
Weight	26kg	39kg	47kg
Applicable Board Materials	Glass epoxy / Paper phenol laminate, etc.(Maximun thickness1.6mm)		
Tool Specifications	DC brushless motor Rated speed 40,000rpm		
Trace Accurancy	0.2mm（guide value） （When Router 0.8mm, Cutting speed 10mm/s, PCB thickness1.6mm）		
Vacuuming Method	Ejector		
Teaching Method	Remote teaching(JOG) / Manual data input(MDI)		
Power Supply	AC90～132V AC180～250V1Ph／340VA		
Air Supply	0.5MPa (Only dry clean air)		
Air Consumption	200Nl/min		
Standard Accessories	Teaching pendant,Manual,Software(Factory installed),Dust collecting kit, Router bit(Consumable) Spare vacuum nozzle		

Powerful Swarf Collecting System

Spindle Motor Load Indicator

JC-3 Series

Cartesian robot

The multifunctional JC-3 Series Cartesian Robot comes complete with an easy-to-use dedicated controller and robot unit with a rich selection of stroke lengths for each axis.
Like our desktop robots, the JC-3 has convenient installation settings. Program teaching is easy; with the interactive method teaching pendant there is no need for complicated settings.

		JC-3A00-0T3 (One side holding)		JC-3A00-0H3 (Both-side holding)		JC-3B01-0H4 (Both-side holding)	
Number of Axes		3 Axes Synchronous Control		3 Axes Synchronous Control		4 Axes Synchronous Control	
Stroke	X Axis (mm)	200/300/400/500/600		300/400/500/600		300/400/500/600	
	Y Axis (mm)	200/300		300/400/500		300/400/500	
	Z Axis (mm)	50/100/150/200		50/100/150/200		100/150	
	R Axis (deg)	–		–		±360	
Drive Motor		Stepping Motor		Stepping Motor		Stepping Motor	
	X Axis	Feedback Control		Feedback Control		Feedback Control	
	Y Axis						
	Z Axis					Open Loop Control	
	R Axis	–		–			
Maximum Portable Load (kg)		4		8		3	
Maximum Speed <PTP Movement>	X Axis (mm)	200 300 400	500 600	300 400	500 600	300 400	500 600
	X Axis (mm/s)	700	800	700	800	700	800
	Y Axis (mm/s)	800		800		800	
	Z Axis (mm/s)	400		400		400	
	R Axis (deg/s)	–		–		900	
R Axis Acceptable Moment of Inertia (kg/cm2)		–		–		90	
Repeatability(mm)	X Axis (mm)	±0.02		±0.02		±0.02	
	Y Axis (mm)	±0.02		±0.02		±0.02	
	Z Axis (mm)	±0.02		±0.02		±0.01	
	R Axis (deg)	–		–		±0.008	
Control Method		PTP(Point to Point) control、CP(Continuous Path) control					
Interpolation		3-dimensional linear and arc interpolation					
Teaching Method		Remote Teaching (JOG)/Manual Data Input (MDI)					
External Input/Output		I/O-SYS： 16 Inputs/ 16 Outputs I/O-1：8 Inputs / 8 Outputs I/O-MT(Optional)：for auxiliary axes (pulse string input type*8) control, control up to 2 axes Fieldbus（Optional）：Choose CC-Link / DeviceNet / PROFIBUS COM Port(RS232C)：COM1, COM2, COM3 （for external device control） EMG OUT: For external safety circuit connection MEMORY：For USB memory connection LAN：For PC connection via the Ethernet SWITCHBOX（Optional）：Dedicated switchbox connector					
Power Source		AC90～240V (single phase) 50/60Hz + external DC48V (depending upon facility supply)					

Peripheral Equipment

J-CAT SCD

Screw Tightening Desktop Robot

There are two types of drivers, a Servo and mechanical torque driver. The software of the robot can detect a jammed screw, loose screw and driver racing.

J-CAT SCD Series Main Specifications			
Type	J-CAT 200 SCD	J-CAT300 SCD	J-CAT 400 SCD
Move Area	X=200mm Y=200mm Z=50mm	X=300mm Y=320mm Z=100mm	X=400mm Y=400mm Z=150mm
Size (W X D X H)	350 x 436 x 615mm	585 x 580 x 650mm	646 x 641 x 650 mm
Weight	26kg	39kg	47kg
Portable Weight	7kg	11kg	11kg
Max Speed PTP X,Y Axis	500mm/sec	800mm/sec	800 mm/sec
Z Axis	250mm/sec	320mm/sec	320mm/sec
Resolution	X, Y, Z Axis: +/- 0.01mm		
External I/O	I/0-SYS Input 16, Output 16		
Teaching Method	Remote Teaching (JOG) / Manual Data Input (MDI)		
Available Screw	M1.0 X M8.0 mm		
Output Torque	0.03 Nm - 5.55 Nm		
Power Source	AC90V-132V, AC180-250V 1 Ph		
Accessories	Operating Manual (CD-ROM), Power Cable		

J-CAT DSV

Dispensing Desktop Robot

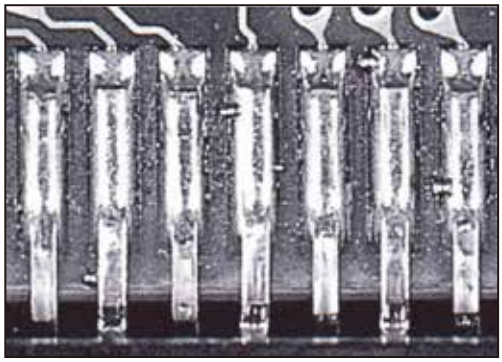
The J-CAT DSV is a newly introduced, economical dispensing robot. The unit has a push button to allow the robot to move to an area for dispense material purging.The standard machine can handle most dispensing applications.

J-CAT DSV Main Specification		
Type	J-CAT 200 DSV	J-Cat 300 DSV
Move Area	X=200mm Y=200mm Z=50mm	X=300mm Y=320mm Z=50mm
Size (W X D X H)	320 x 364 x 549 mm	560 x 511 x 609 mm
Weight	17kg	30kg
MAX SPEED PTP	500 mm/sec (1-500mm/sec)	
X, Y, Z Axes	200mm/sec (2-200mm/sec)	
Max Speed CP XYZ Axes	200mm/sec (0.1-200mm/sec)	
Portable Weight	Work 5kg, Tool 2kg	
Resolution Interpolating Function	X, Y, Z Axes: +/- 0.01mm 3-dimensional line and arc interpolation	
External I/O	I/O-SYS Input 8, Output 8 II/O-DSP Input 1, Output 2	
Teaching Method	Remote Teaching (JOG) / Manual Data Input (MDI)	
Power Source	AC 90-132V, AC 180-250V 1PH 150VA	
Air pressure	0.5 MPa Dry Air	
Accessories	Operational Manual (CD-ROM), Power Cable	

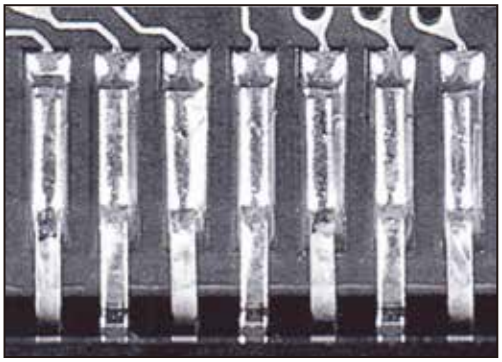
ZSB

The built-in roulette cutting blade makes evenly spaced holes while precisely feeding solder wire. During soldering, flux is released evenly through these holes. This provides consistent flux coverage without spattering and allows solder to melt on a clean, active surface.

Comparison test results:

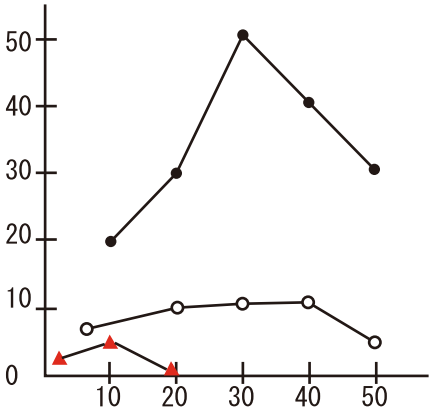


Solder ball spreading test without ZSB



Solder ball spreading test with ZSB

Test Results



- ● Normal (No cut)
- ○ V cut
- ▲ ZSB-10

Comparison Test Conditions

Iron Temperature	350°C
Solder Feeding Spread	10mm/sec
Solder Feeding Quality	100mm
Solder Diameter	0.5mm (.020")
	Sn60%Pb40%
	2%Flux

Options

Iron Tip Cleaners

Air Blow Iron Tip Cleaner

You can select the iron tip cleaner based upon your application.

CRB

CRB
Air blow from one direction

CRB-A2

CRB-A2
Air blow from two directions (front & back)

Rotary Iron Tip Cleaner

SRC-500DC

The wet sponges rotate and clean the iron tip. Sponges can be programmed to rotate forward and reverse based upon I/O signal.

BRC-3000

The stainless steel brush rollers rotates and removes oxides from the tip and are designed to be utilized in lead free process.

APN-05

Nitrogen Gas Generator

This is an ultra small N2 gas generator which can be built into a soldering robot or attached externally. A 0.5 liter per minute flow rate helps clean the soldering surface and eliminate oxidation.

Specifications	
Model	APN-05
Air supply	0.5~0.6MPa(Only dry & clean Air)
Nitrogen Gas Flow	0.5l/min
Nitrogen Gas Con	99% (When nitrogen gas flow 0.5l/min)
Power Supply	AC100V~240V less than 1.4W
Dimension	Approx 110(W)x 200(D)x 100(H)mm
Weight	Approx 1.4kg
Accessories	Power Adapter, I/O Connector, Air Tube (2 types), Air Cock

F71RH / FW71RH

Automatic Tip Position Correction Unit

This optical sensor prevents misalignment of a wearing iron tip.

Specifications	
Type	F71RH (For J-CAT Desktop robot) FW71RH (For JS Servo Scara robot)
Sensor	Optical sensor (For X/Y-axis) Low-contact touch sensor (For Z axis)
Correction Accuracy	±0.1mm (X/Y/Z- axis)
Power Supply	12 ~ 24 V DC
Weight	Approx. 0.8kg
Accessories	I/O SYS Cable. Attaching Plate

TTM-140

Tip Thermometer

The well-designed sensor allows for easy placement and accurate readings for iron tips.
It achieves stable measurement within seconds.

Specifications	
Type	TTM-140
Power Supply	AA batt:ery LR6 x 4ppcs : 6V
Dimensions	83 (W) x 42 (H) x 140 (D) mm
Weight	150g (w/o battery)
Temperature Resolution	1℃
Temperature Measuring Range	Sensor (TIM•140S) : 0-500℃ Probe (TIM•140SP) : 0-700℃
Temperature Accuracy	0-500℃ → ±3℃ / 501-700℃ → ±4℃ (excluding sensor error)
Operating Environment	0-50℃ 20-85%RH (no condensation)
Accessories	Sensor 3pcs / AA battery LR6x4 pcs

TTM-140SP
Sensor Probe
for Solder Pot

TTM-140S
Temperature Sensor
(3pcs)

Options

Fume Extractor

Solder fumes can irritate eyes, nose and throat.
Also, they could cause problems if the fumes accumulate on the equipment.
For these reasons, we recommend the use of the fume extractor. We offer three types of Fume Extractor systems.

VAC-1000

VAC-3000

If there is no air duct near the work space, use the VAC-3000 together with VAC-1000. Three carbon filters make solder fumes and exhaust clean.

Specifications	
Filtering Rate	More than 95%,0.3μm
Vacuum Type	Ejector
Air supply	0.5Mpa (Dry Air)
Noise Level	Below 82dB
Size	194(W)×170(D)×308(H)
Weight	Aprrox. 4.0kg

VAC-4001A / VAC-4002A

This triple filtering design allows for 99.97% efficiency. The equipped DC motor is low noise, low vibration and low power consumption. The high-power motor generates large air flow.

Type	VAC-4001A	VAC-4002A
Power Supply	100-110V AC or 220 – 240V AC	100-110V AC or 220 – 240V AC
Power Consumption	120W	250W
Air Flow	140㎥/h	250㎥/h
System Flow (Including filter)	120㎥/h	100㎥/h×2
Filtering Efficiency	99.97% (0.3μm)	99.97% (0.3μm)
Duct Hose Length	φ75mm×1500mm	φ75mm×1500mm×2
Static Pressure	2400Pa	3000Pa
Noise	60dB	65dB
Size (WxDxH)	420×230×430mm	470×230×500mm
Weight	13.4kg	14.2kg

Solder fumes are vacuumed through a silicone tube mounted directly to the point of soldering. The combination of the two filtering units (pre-filter & HEPA filter) removes all harmful gases, thus preventing flux build-up on the iron and extending tip life all while keeping the environment clean and safe.

System15 Specifications

Filtering Rate	More than 99.997%,0.3μm (HEPA)
Vacuum Type	IP54 Synchronous (Brushless) motor
Air Flow	70m3/Hr
Noise Level	Below 50dB
Size	360(W)×330(D)×500(H) mm
Power	AC230V 1ph 50Hz or 110V 1ph 60Hz

Purex Specifications

Filtering Rate	More than 99.997%
Wattage	50W / 75W
Air Flow	100m 3/hr 59cf/m
Noise Level	52 dBA
Size	455mm(W)x480mm(D)x720mm(H)
Power	AC230V +/- 10%, 120V +/- 10%

SC+A

Position Calibration Camera

This camera has been designed exclusively for use with our soldering robot. It can be installed on both the J-CAT and JS SCARA robot.

Monitoring Example

Specifications	
Dimensions	61mm x 134mm x 40mm
Weight	410g (without lens)

CSS-2100

Small Soldering Camera Monitor

The micro cameras easily attach to the Apollo soldering robot. The function of the CMOS camera is for teaching and process monitoring. Due to the miniature size, each camera can be easily integrated on all Apollo robots.

Specifications	
Sensor	1/4 inch color CCIQ II
Indication pixel	316K pixel
Resolution	400 TV line
Picture signal	NTSC video
Focus distance (Min.)	About 20 mm
Min. vision area	About 5 mm(D) x 40 mm(W)
Focus distance (Max.)	About 100 mm
Max. vision area	About 30 mm(D) x 40 mm(W)
Ambient environment	-10C~45C, 85% no condensation
Voltage	DC5-12V (AC 100-240V Multi Adaptor)
Power consumption	50mA
Accessories	Attaching Bracket, Adapter, Power+Data Cable

CVR-2100

High-Quality Portable Video Recorder

By connecting to CSS-2100 of CMOS camera, this recorder allows real-time recording of the soldering process without a PC. The stored data on the SD card makes it easy to transfer to a PC.

Specifications	
Memory Type	SD card (Max. 32GB)
Resolution	1280 x 720 pixels
Video Input	Composite AV input
Video Output	HDMI / Composite AV output
Weight	260g
Dimensions	75mm (W) x 25mm (D) x 130mm (H)
Battery	4400mAH (Max. recording time 9h)
Accessories	Multi-adapter, USB cable, AV cable

YPH-10

The stainless steel sleeve is equipped with two heaters to pre-heat the solder wire as it is being fed. This helps to prevent solder ball spattering by pre-heating the solder wire & internal flux. This is designed to be used with large diameter solder wire and is effective in reducing tact/cycle time as well as improving quality in lead free and tin/lead applications.

Specifications	
Setting Temperature	0~200℃
Heater Capacity	10W
Power Source	AC85~240V
Solder Diameter	φ1.0~1.6
Constitution	Temperature Controller, Solder Wire Heater, Attaching Bracket, Heater Cable,Power Cable, Feeding Tube

Tube type…TAL-*.*-***Y

Solder wire Diameter

Tube total length

DRC-1300 For SLV

Drill Cleaner

The rotating drill bit removes the dross inside the sleeve.

Specifications	
Type	DRC-1300
Dimensions	91.5mm (W) x 130mm (D) x 120.7mm (H)
Rotation Speed	Approx. 8000rpm
Power Source	24V DC (30mA)
Drill Diameter	φ1.1 / φ1.3 / φ1.5 (Choose one)
Weight	Approx. 1.7kg
Accessories	Drill bit 1 piece

CCH-700 For SLV

Cleaning Heater

This cleaner heats the ceramic sleeve and burns out the dross inside.

Specifications	
Type	CCH-700
Dimensions	170 mm(W) X 247 mm(D) X 167mm(H)
Heater	135 W
Max. Temperature	700℃
Power Source	AC85～264V

*An separate amplifier is attached.

High Quality Lead Free Solder

Introducing the Apollo Seiko solder material lineup, cored-wire, bar and paste for robotics. All products are high quality solder, providing for good wettability and less spattering of lead free materials.

Flux-cored solder				
Type	Alloy Composition	Melting Point	Flux Content	Characteristic
ASW01-C114	Sn96.5Ag3Cu0.5	217 ~ 220℃	4.0%	Good wettability
ASW01-C214	Sn96.5Ag3Cu0.5	217 ~ 220℃	4.0%	High reliability
ASW01-C215	Sn96.5Ag3Cu0.5	217 ~ 220℃	4.0%	Halogen Free
ASW02-C115	Sn99Ag0.3Cu0.7	217 ~ 227℃	4.0%	Low silver, High reliability
ASW03-C214	Sn99.7Cu0.3	227 ~ 230℃	4.0%	Silver less
Bar solder				
Type	Alloy Composition	Melting Point	Characteristic	
ASB01-001	Sn96.5Ag3Cu0.5	217 ~ 220℃	High reliability	
ASB02-001	Sn99Ag0.3Cu0.7	217 ~ 227℃	Low silver	
ASB03-001	Sn99.7Cu0.3	227 ~ 230℃	Silver less	
Paste solder				
Type	Alloy Composition	Melting Point	Flux Content	Characteristic
ASP01-P114	Sn96.5Ag3Cu0.5	217 ~ 220℃	11.0%	High reliability
ASP02-P114	Sn99Ag0.3Cu0.7	217 ~ 227℃	11.0%	Low silver, Reliability

*Available in various solder wire diameters, forms, flux contents.

Solder Wire Feeding Tubes

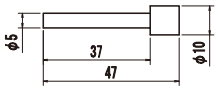
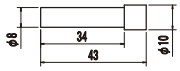
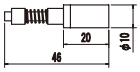
The flexible double layer solder feed tube provides for smooth and precise feeding of solder wire. Please specify the optimal tube set for the robot unit along with the solder wire diameter and point/slide soldering.

Configuration: TAL | 1.0 — 650 | S60

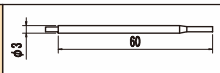
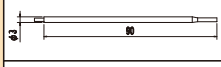
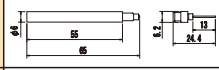
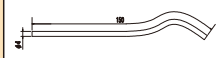
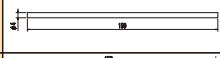
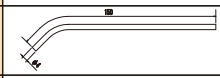
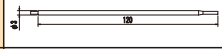
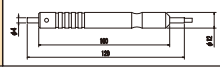
Solder Wire Diameter

Eg) Point soldering feeding tube
Solder Wire Diameter: 1.0mm
Total length:650mm

Tube Type

TAL		L-CAT NEO L-CAT EVO J-CAT Series JS SCARA Series TERRA-SP LUNA-LCO / LSP YPH-10 (SSA)
TR		SSA
TU		SSB
TZB		ZSB-10/16

Nozzle Type

S60		For Point Soldering, SSA (Solder Diameter Φ0.3 - 1.2mm)
		For Point Soldering, SSA (Solder Diameter Φ1.4 - 2.0mm)
S90		For Slide Soldering, SSA (Solder Diameter Φ0.3 - 1.2mm)
		For Slide Soldering, SSA (Solder Diameter Φ1.4 - 2.0mm)
N55		Needle Type*
Y	No nozzle	For YPH-10
L		For SSB PM-L Iron Unit (Pencil)
S		For SSB PM-S Iron Unit (Pencil)
V		For SSB AM Iron Unit (Hand Gun)
S120		For ZSB-10/16, SSA
H120		For ZSB-10/16

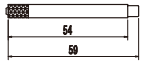
Tube Total Length

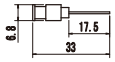
The requested length can be fabricated.
Recommended Length is as follows:

Model	Point Soldering	Slide Soldering
L-CAT NEO	650mm	780mm
L-CAT EVO	450mm	600mm
J-CAT200 Series	650mm	780mm
J-CAT300 Series	750mm	880mm
J-CAT400 Series	750mm	880mm
TERRA-SP LUNA-LCO / -LSP	1500mm	
SSA	1500mm	
SSB	1500mm	
ZSB-10/16	700mm	

For KTU tube set, please order the following three parts.

TAL＊.＊-＊＊＊ (Tube)

KTU-HOL(Needle Holder) 

KTU-N＊.＊(Needle) 

Solder Wire Diameter

*N55 Needle Size: N55-N *.*

Solder Wire Diameter

Iron Cartridge

Many types of iron cartridges are available with varying heater types & overall length

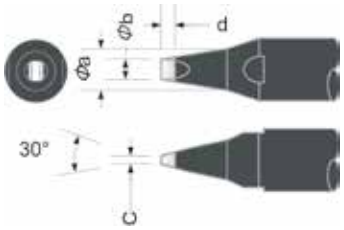
DS: DC48V: Total length 101mm　DM: DC48V: Total length 145mm
TS: AC100V: Total length 101mm　TM: AC100V: Total length 145mm
DN: DC48V: Total length 101mm with nitrogen sleeve

Configuration: Type - "Size & Tip" shape
(Eg: DS-08PAD03-E08)

TS/DS/DN (Old Type : TS/DCS/DCN) Cartridge

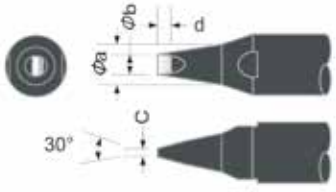
TM/DM (Old Type : TM/DCM) Cartridge

PAD/PDS



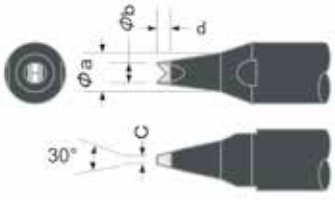
	a(mm)	b	c	d All
＊＊-08PAD03-E08	3	0.8	0.3	0.8
＊＊-10PAD03-E08	3	1.0	0.3	0.8
＊＊-13PAD05-E15	4	1.3	0.5	1.5
＊＊-16PAD06-E15	4	1.6	0.6	1.5
＊＊-20PAD07-E15	4	2.0	0.7	1.5
＊＊-24PAD08-E15	4	2.4	0.8	1.5
＊＊-30PAD10-E30	5	3.0	1.0	3.0
＊＊-40PAD10-E30	5	4.0	1.0	3.0
＊＊-50PDS-E40	5	5.0	1.3	4.0
＊＊-60PDS-E40	6	6.0	1.3	4.0
＊＊-80PDS-E50	8	8.0	1.6	5.0

PAD/PDS



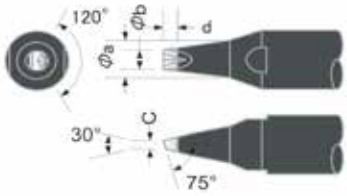
	a(mm)	b	c	d2
＊＊-08PAD03-B08	3	0.8	0.3	0.8
＊＊-10PAD03-B08	3	1.0	0.3	0.8
＊＊-13PAD05-B15	4	1.3	0.5	1.5
＊＊-16PAD06-B15	4	1.6	0.6	1.5
＊＊-20PAD07-B15	4	2.0	0.7	1.5
＊＊-24PAD08-B15	4	2.4	0.8	1.5
＊＊-30PAD10-B30	5	3.0	1.0	3.0
＊＊-40PAD10-B30	5	4.0	1.0	3.0
＊＊-50PDS-B40	5	5.0	1.3	4.0
＊＊-60PDS-B40	6	6.0	1.3	4.0
＊＊-80PDS-B50	8	8.0	1.6	5.0

PDZ



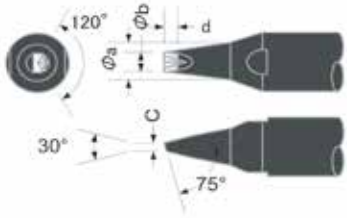
	a(mm)	b	c	d All
＊＊-13PDZ08-EZ15	4	1.3	0.5	1.5
＊＊-16PDZ12-EZ15	4	1.6	0.6	1.5
＊＊-20PDZ14-EZ15	4	2.0	0.6	1.5
＊＊-24PDZ16-EZ15	4	2.4	0.8	1.5
＊＊-30PDZ20-EZ30	5	3.0	1.0	3.0
＊＊-40PDZ24-EZ30	5	4.0	1.0	3.0
＊＊-50PDZ35-EZ40	5	5.0	1.3	4.0

GDV



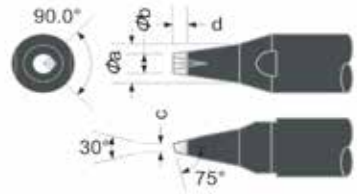
	a(mm)	b	c	d All
＊＊-10GDV07-EZ10	3	1.0	0.4	1.0
＊＊-13GDV08-EZ15	4	1.3	0.5	1.5
＊＊-16GDV10-EZ15	4	1.6	0.6	1.5
＊＊-20GDV14-EZ15	4	2.0	0.8	1.5
＊＊-24GDV14-EZ15	4	2.4	0.8	1.5
＊＊-30GDV17-EZ30	5	3.0	1.0	3.0
＊＊-40GDV17-EZ30	5	4.0	1.0	3.0
＊＊-50GDV17-EZ40	5	5.0	1.0	4.0
＊＊-60GDV23-EZ40	6	6.0	1.3	4.0

GDV



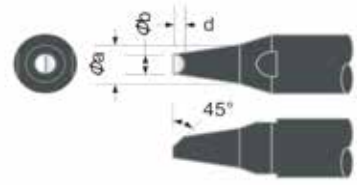
	a(mm)	b	c	d2
＊＊-10GDV07-BZ10	3	1.0	0.4	1.0
＊＊-13GDV08-BZ15	4	1.3	0.5	1.5
＊＊-16GDV10-BZ15	4	1.6	0.6	1.5
＊＊-20GDV14-BZ15	4	2.0	0.8	1.5
＊＊-24GDV14-BZ15	4	2.4	0.8	1.5
＊＊-30GDV17-BZ30	5	3.0	1.0	3.0
＊＊-40GDV17-BZ30	5	4.0	1.0	3.0
＊＊-50GDV17-BZ40	5	5.0	1.0	4.0
＊＊-60GDV23-BZ40	6	6.0	1.3	4.0
＊＊-80GDV60-BZ50	8	8.0	1.6	$5.0^{V}_{150°}$

GAV



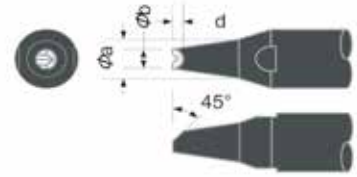
	a(mm)	b	c	d All
＊＊-20GAV14-EZ15	4	2.0	—	1.5
＊＊-24GAV17-EZ20	4	2.4	—	2.0
＊＊-30GAV21-EZ30	5	3.0	—	3.0
＊＊-40GAV28-EZ30	5	4.0	—	3.0

PCA/PCS



	a(mm)	b	c	d2
＊＊-10PCA-B	3	1.0	—	—
＊＊-13PCA-B	3	1.3	—	—
＊＊-16PCA-B	4	1.6	—	—
＊＊-20PCA-B	4	2.0	—	—
＊＊-24PCA-B	4	2.4	—	—
＊＊-30PCA-B	5	3.0	—	—
＊＊-40PCA-B	5	4.0	—	—
＊＊-50PCS-B	5	5.0	—	—
＊＊-60PCS-B	6	6.0	—	—
＊＊-80PCS-B	8	8.0	—	—

PCZ

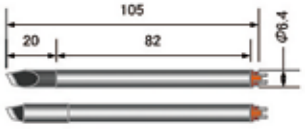


	a(mm)	b	c	d2
＊＊-20PCZ10-BZ	4	2.0	—	—
＊＊-24PCZ12-BZ	4	2.4	—	—
＊＊-30PCZ14-BZ	5	3.0	—	—
＊＊-40PCZ16-BZ	5	4.0	—	—
＊＊-50PCZ24-BZ	5	5.0	—	—

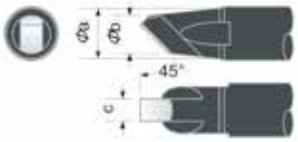
Iron Cartridge

Slide Soldering Iron Cartridge

TS/DS/DN (Old Type : TS/DCS/DCN)
Cartridge

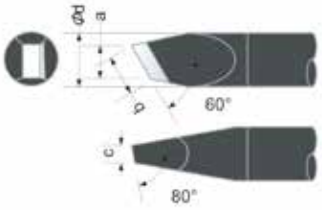


TM/DM (Old Type : TM/DCM)
Cartridge



KAA

	a(mm)	b	c	—
＊＊-16KAA45-B	6.0	3.4	1.6	—
＊＊-20KAA45-B	6.0	3.4	2.0	—
＊＊-24KAA45-B	6.0	4.0	2.4	—
＊＊-30KAA45-B	6.0	4.5	3.0	—
＊＊-40KAA45-A	6.0	5.5	4.0	—
＊＊-50K45AS-A	6.0	6.0	5.0	—

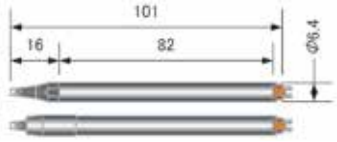


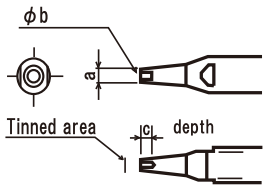
RDD

	a(mm)	b	c	d
＊＊-20RDD-B20	2.0	2.0	0.6	6.4
＊＊-24RDD-B20	2.4	2.4	0.6	6.4
＊＊-30RDD-B20	3.0	3.0	0.6	6.4
＊＊-40RDD-B20	4.0	4.0	0.9	6.4
＊＊-50RDD-B20	5.0	5.0	1.3	8.0

UP Type Iron Cartridge

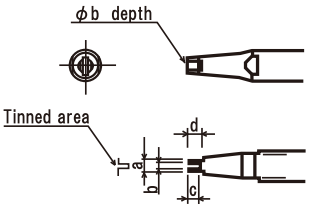
TS/DS/DN
(Old Type : TS/DCS/DCN)
Cartridge





PAH

	a(mm)	b	c	d
＊＊-14PAH08-F-AZ	1.4	0.8	1.6	7.5
＊＊-20PAH13-F-AZ	2.0	1.3	2.5	9.0
＊＊-26PAH18-F-AZ	2.6	1.8	2.5	10.9
＊＊-32PAH22-F-AZ	3.2	2.2	3.0	10.9
＊＊-40PAH30-F-AZ	4.0	3.0	3.0	13.5

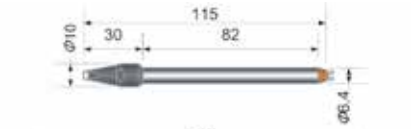


PSW

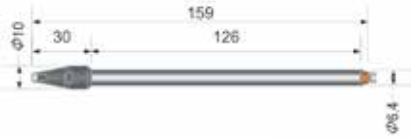
	a(mm)	b	c	d
＊＊-16PSW08-F-AZ	1.6	0.8	2.5	3.0
＊＊-22PSW11-F-AZ	2.2	1.1	2.5	3.0
＊＊-30PSW15-F-AZ	3.0	1.5	3.0	4.0

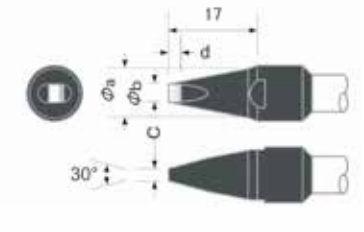
Heat Storage Type Iron Cartridge

TB/SB (Old Type : TSB/DCSB)
Cartridge



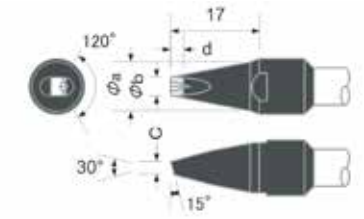
MB/DB (Old Type : TMB/DCNB)
Cartridge





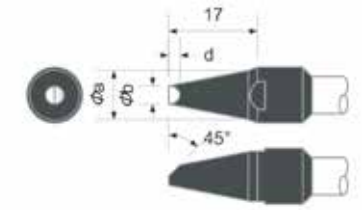
PAD

	a(mm)	b	c	d
＊B-16PAD06-B20	7	1.6	0.6	2.0
＊B-20PAD07-B20	7	2.0	0.7	2.0
＊B-24PAD08-B20	7	2.4	0.8	2.0
＊B-30PAD10-B30	8	3.0	1.0	3.0
＊B-40PAD10-B30	8	4.0	1.0	3.0
＊B-50PAD10-B30	8	5.0	1.0	3.0



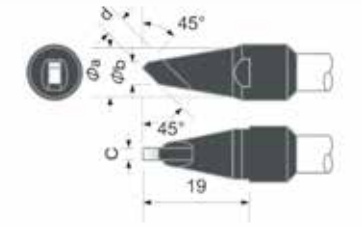
GDV

	a(mm)	b	c	d
＊B-16GDV10-BZ20	7	1.6	0.6	2.0
＊B-20GDV12-BZ20	7	2.0	0.7	2.0
＊B-24GDV14-BZ20	7	2.4	0.8	2.0
＊B-30GDV17-BZ30	8	3.0	1.0	3.0
＊B-40GDV17-BZ30	8	4.0	1.0	3.0
＊B-50GDV23-BZ30	8	5.0	1.3	3.0



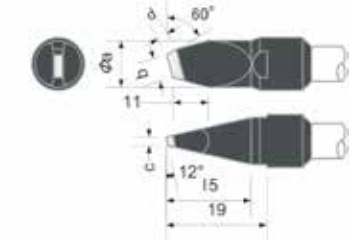
PCA

	a(mm)	b	c	d
＊B-24PCA-B	7	2.4	—	—
＊B-30PCA-B	8	3.0	—	—
＊B-40PCA-B	8	4.0	—	—



KAA

	a(mm)	b	c	d
＊B-16KAA45-B10	8	3.4	1.6	—
＊B-24KAA45-B10	8	4.0	2.4	—
＊B-30KAA45-B10	8	4.5	3.0	—
＊B-40KAA45-B10	8	5.5	4.0	—



RDD

	a(mm)	b	c	d
＊B-30RDD-B15	8	3.0	0.6	1.5
＊B-40RDD-B20	8	4.0	0.9	2.0
＊B-50RDD-B25	8	5.0	1.3	2.5

Iron Cartridge

One Touch Quick Change Iron Cartridge DX

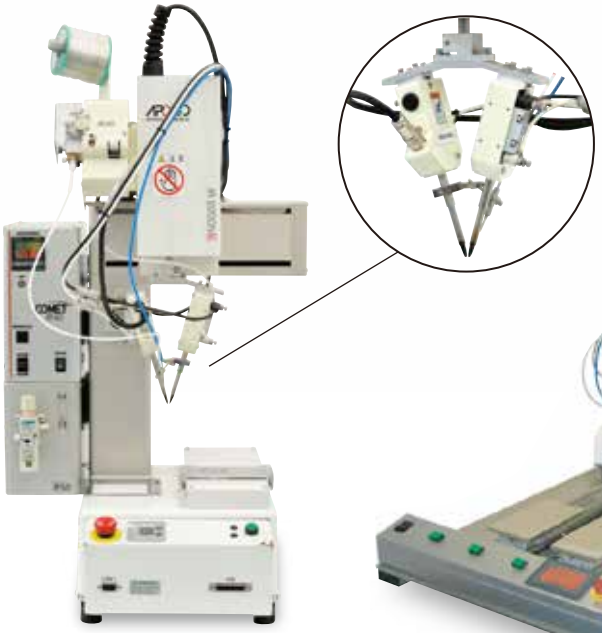
The patented design of the one-touch quick-change DX iron is easy to change and there is no position variation after tip replacement.

Custom Made Iron Cartridge

Upon request, various custom tips can be made. Feel free to request.

Custom Made Reference

Dual Head Robot



Twin Shuttle Soldering Robot

Dual Iron Unit Soldering Robot

LED Soldering System with Triple Parts Feeders

Multi Iron Unit Soldering System

Company Profile

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Registered Date : October 1,1969

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