ENGINEER PROFESSIONAL TOOL CATALOG

SD, SH, SK, SL, SS, ST, SW
MICROSCOPE, MAGNIFYING LOUPE, SOLDERING IRON, SOLDER, INSPECTION MIRROR, MULTIMETER, PCB TOOL, ETC.

DA, DB, DG, DH, DJ, DK, DN, DP, DR, DS, DT, DZ
CERAMIC ALIGNMENT DRIVER, SCREWDRIVER, RATCHET DRIVER, PRECISION DRIVER, DRIVER SET, CIRCUIT TESTING DRIVER, ETC.

NK, NN, NP, NS, NZ, PA, PC, PD, PH, PL, PM, PR, PS, PT, PW, PZ
NIPPERS, SCREW REMOVAL PLIERS, WIRE STRIPPER, CRIMPING PLIERS, COMBINATION PLIERS, LOCK HOLDER, SCISSORS, TWEEZERS, ETC.

TD, TF, TH, TM, TN, TP, TR, TS, TT, TV, TW, TZ
DRILL, FILE, HAMMER, SAW, PIN VISE, PICK-UP TOOL, SPANNER, TAPER REAMER, VISE, WRENCH, SOCKET WRENCH SET, ETC.

ZC
STATIC CONDUCTIVE BAG, CONDUCTIVE FOAM, ESD RUBBER MAT, WRIST STRAP, FLUX, GLOVES, CLEANER, CHEMICAL, ETC.

KA, KAC, KD, KDE, KP, KS, KSC, KSE
ATTACHE CASE, CLEANROOM CASE, PANEL KIT, TOOL PANEL, PARTS CASE, IC STORAGE BOX, TOOL KIT, TOOL CASE, ETC.

Service S P6~19
Driver D P20~31
Nippers Pliers N.P P32~53
Steel T P54~59
Others Z P60~63
Kits K P64~74

ULTIMATE BITE!!
SCREW REMOVAL PLIERS RX

NEW

PZ-59

MADE IN JAPAN

Super-advanced Combination Pliers with Unique Screw Removal Jaws

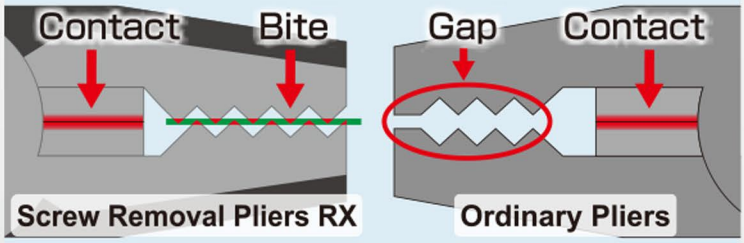
GOOD DESIGN AWARD 2014

International Patents
USA [PAT.6923097] [PAT.8656812B2]
JAPAN [PAT.3486776] [PAT.4471315] [PAT.5726365]
TAIWAN [PAT.178742] [PAT.363675]
KOREA [PAT.919966]
CHINA [PAT.201080014706.3]





Inter-meshed side teeth

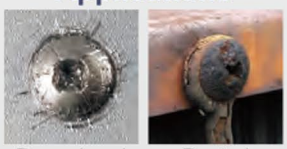


The cutting blades fully meet and every peak of serrated teeth can bite.

Designed to have a tiny gap at the top to ensure the cutting blades fully meet.

Designed to have 'crests' & 'troughs' inter-meshed with each other even to hold an extremely-thin plate securely **PATENT.P**

Applications


Dome head (Truss)

Rusted


Stripped

Parts


Screw Nail

Non-standard



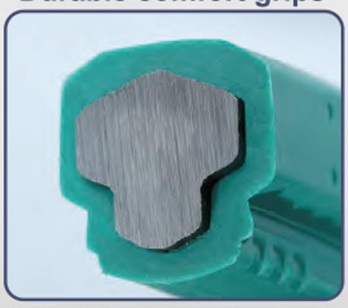
Ultimate bite on screw head



Unique jaws with vertical serrations to grip a screw head without slippage

PATENT

Durable comfort grips



Owing to T-shaped forging handles, the handle sleeve will not twist or slip off.

Screw Adapted



Top Jaws
ϕ3～15mm

Model	Size	Hardness	Cutting Capa.	Material	Weight
PZ-59	204mm	HRC60±2	ϕ3.2mm (Steel wire)	Carbon Steel	300g

Manufacturer
ENGINEER INC.

2-8-9 Higashi-Imazato, Higashinari-ku
Osaka 537-0011, Japan
☎ (81) 6-6974-0028 FAX (81) 6-6974-5661
URL http://www.engineer.jp

ENGINEER®
MADE IN JAPAN

SCREW REMOVAL PLIERS GT PZ-58

GRIP-A-TRUSS

Multi-purpose Extraction Tool for Stubborn Fasteners



Unique jaws with both vertical and horizontal serrations grip a screw head securely without slipping, helpful in confined areas



product design award 2011

GOOD DESIGN 2009

International Patents
JAPAN [PAT.3486776] [PAT.4471315]
USA [PAT.6923097] [PAT.8656812B2]
TAIWAN [PAT.178742] [PAT.I363675]
CHINA [PAT.ZL201080014706.3]
KOREA [PAT.919966]

Applications


Dome head (Truss)


Rusted


Stripped


Parts


Screw Nail


Non-standard

T-shaped handle

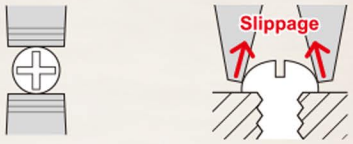


Screw Adapted


Top Jaws ϕ3～9.5mm

Q. How do Screw Removal Pliers work?
A. Both vertical and horizontal serrations grasp a screw head with no slip.

Ordinary Pliers



Ordinary plier jaws are lined with horizontal serrations. When you grasp and turn a screw head with ordinary pliers, the jaws slip and the screw remains stuck.

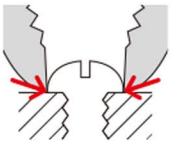
The tips of jaws can not reach the outer edge of screw head when the jaws are opened.

Vertical serrations



Specially-designed teeth generate gripping power.

Maximizes the friction



The serrated jaws angled inward grab the rim of screw head, so no slippage.

Model	Size	Hardness	Cutting Capa.	Material	Weight
PZ-58	160mm	HRC58±2	ϕ1.2mm (copper wire)	Carbon Steel	130g

Basic Model PZ-55

Top Jaws ϕ3 ～ 8mm



Size	Material	Weight
150mm	Carbon Steel	125g

Slip Joint Model PZ-56

Top Jaws ϕ3 ～ 10mm



Size	Material	Weight
175mm	CrV	187g

ESD-safe Model PZ-57

Top Jaws ϕ2 ～ 3.5mm



Size	Material	Weight
120mm	Carbon Steel	100g

ENGINEER®

MADE IN JAPAN

RoHS Compliant NEW

RAPID SCREW EXTRACTOR

DBZ-60G 2-in-1 Bit Set PATENT.P





High-torque handle grip

1st Bit



2nd Bit

Shock-absorbable rubber sleeve

APPLICATIONS



Countersunk Round Head Dome Head

No Power Required



No Drilling Required

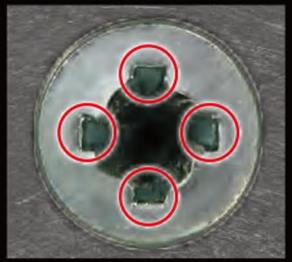


No Hammer Required



(1st Bit only)

1st Bit - Press & Twist !!



4 edges of the cross tip can firmly grip the remaining corners of Phillips recess.

2nd Bit - Strike & Turn !!



Sharp and durable blade can stick into the screw recess easily for secure grip.

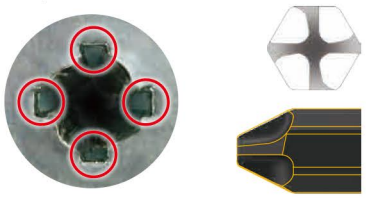
Stripped Screw Removal — How to

1st Bit - Press & Twist!!



DBZ-51

Phillips screw #2



Slightly Damaged



Scrape away burs in the screw recess.



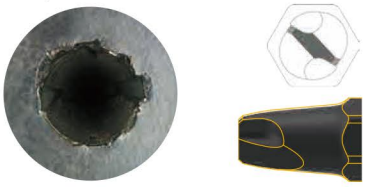
Give a jerk counterclockwise while pressing downward.

2nd Bit - Strike & Turn!!

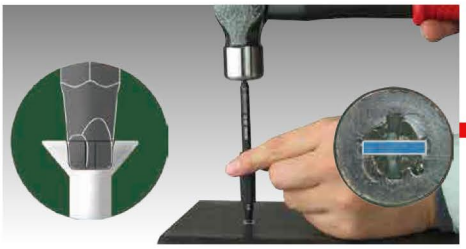


DBZ-52

Phillips screw #2

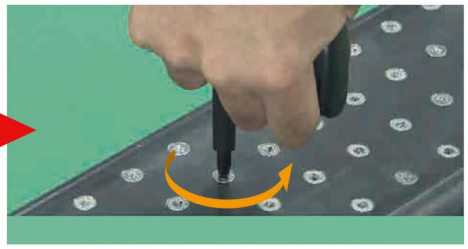


Heavily damaged or failure with the 1st Bit.



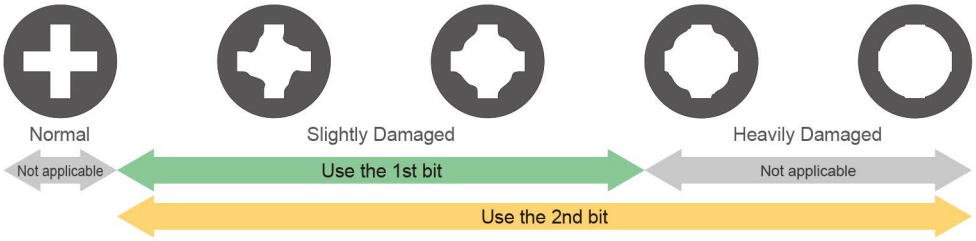
① Strike the end of the bit with a hammer to stick the blade into the recess.

② Then, affix the grip onto the bit.



Give a jerk counterclockwise while pressing downward.

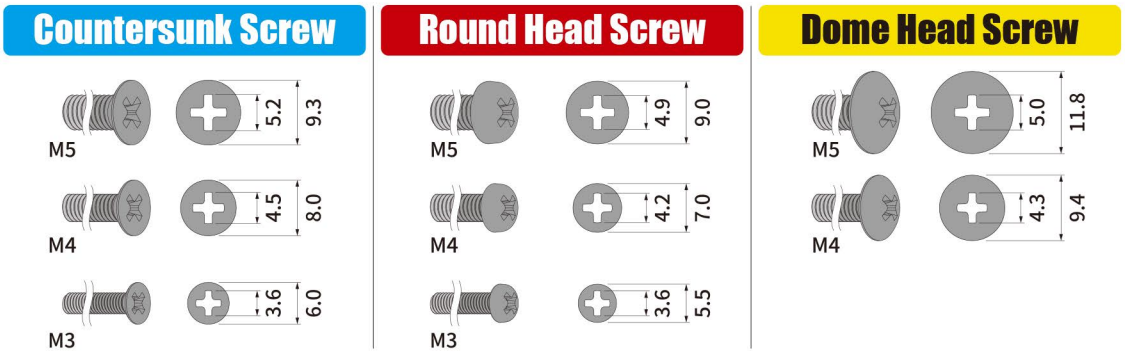
Applications





Screw Size

(mm)





DBZ-60G is applicable to Phillips screw #2

● Material
- Bit : Carbon Steel
- Sleeve : Elastmer (TPR)
- Handle Grip : ABS, Nylon

● Contents
- Bit (DBZ-51 & DBZ-52)
- Shock-absorbable rubber sleeve
- High-torque handle grip (W:100mm)

Product Page
http://goo.gl/nfQUvm

■ Rapid Screw Extractor

Model	Weight
DBZ-60G	135g

■ Replacement Bit

Model	Screw Size	Length	Weight
DBZ-51	Phillips screw #2	105mm	27g
DBZ-52			

■ Optional Bit

Model	Screw Size	Length	Weight
DBZ-53	Hex socket screw (Across flats:2.5 & 3.0mm)	105mm	26g

■Manufacturer
ENGINEER INC.
2-8-9 Higashi-Imazato, Higashinari-ku
Osaka 537-0011, Japan
☎(81)6-6974-0028 FAX(81)6-6974-5661
URL http://www.engineer.jp

ISO 9001
ISO 14001
BUREAU VERITAS
Certification
UKAS
008

SECTION

S



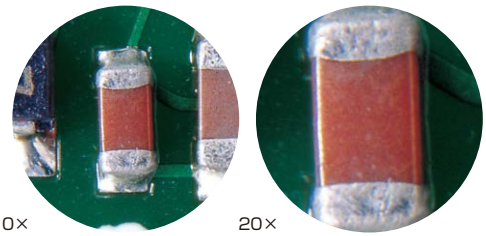
CONTENTS

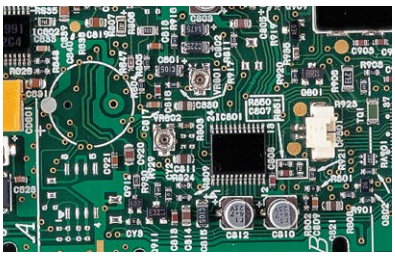
STEREO MICROSCOPE 7
MICROSCOPE CAMERA 8
POCKET LOUPE 9
FOLDABLE LOUPE 9
INSPECTION MIRROR 10
STAND & HEAD LOUPE 10
FLASHLIGHT LOUPE 10
SOLDERING IRON 11
CORDLESS SOLDERING IRON 13
DESOLDERING TOOL 15
SOLDERING TOOL 16
MULTIMETER 17
SOLDER & WICK 18
PCB TOOL 19
PIN EXTRACTOR 19

SL-60 STEREO MICROSCOPE

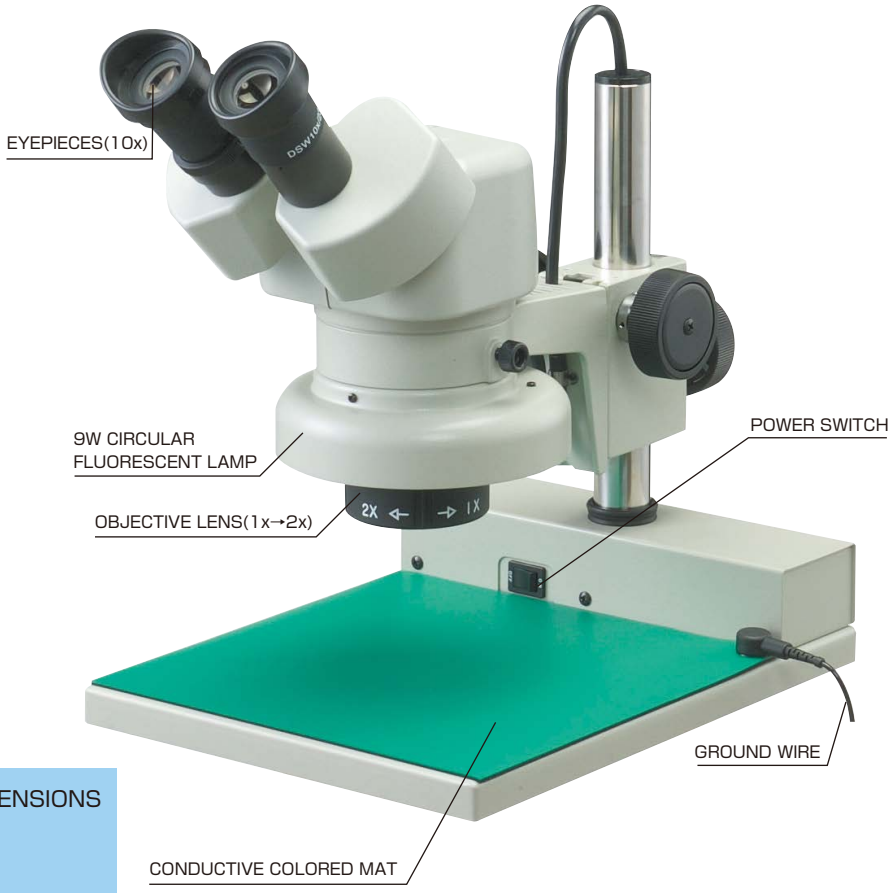
Well-functioned Stereo Microscope ideal for work on PC board.

- Very precise lens enables you to watch PCB, microscopic parts and the pattern clearly.
- 10x eyepieces and dual (1x, 2x)objective lens. 20x magnification max.
- Anti-fatigue and clear view by 9w fluorescent lamp
- Wide base stand for comfortable work
- Standard accessory of conductive mat with ground wire to prevent electronic parts from static electricity

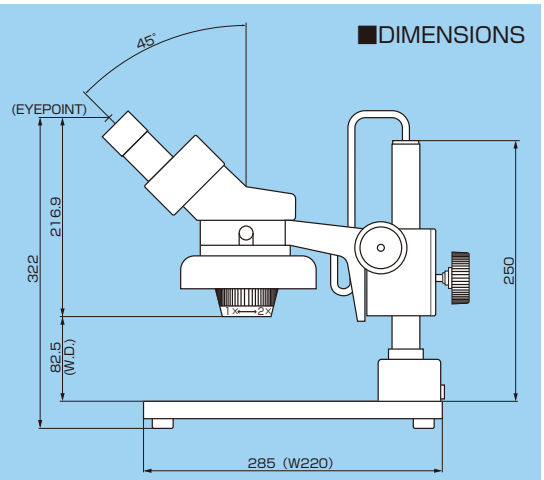



ACTUAL SIZE





■DIMENSIONS



SW-20X Optional eyepiece of x20 magnification.

Replace both right and left eyepieces with one pair of SW20X. Model SL-60 features the magnification of x20/x40 switchable by means of SW20X.

▼SW20X



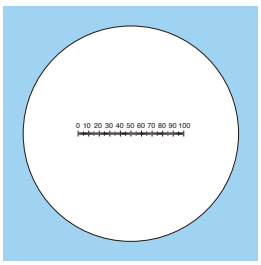
■Specifications

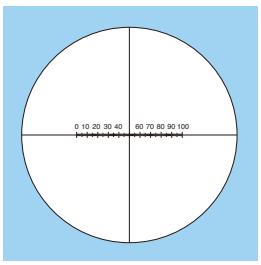
Magnification (Field of view)	10×(φ23mm),20×(φ11.5mm)
Objective Lens	1× · 2×
Eyepieces (Field Number)	SW×10(23)
Body	45° ANGLE, 360° ROTARY TYPE BINOCULAR BODY. DIOPTER ADJUSTMENT ON LEFT EYEPIECE TUBE
Working Distance	82.5mm
Stage Plate	Static Conductive Mat (220mm×220mm)
Interpupillary Distance	52mm～75mm
Incident Light(9W)	FLUORESCENT LAMP(FCL9EX-N)
Base	220mm×285mm
Height	326mm
Net Weight	5.1kg
Accessory	Acryl Plates, Earth Cord, Eye Guards, Dust Cover & Tension Control Pin

SL-65 • 66 RoHS EYEPIECE WITH MICRO SCALE



- 10x
- φ30mm


[SL-65]
Scale:
0.1mm x 100


[SL-66]
Cross Scale:
0.1mm x 100

SL-62 MICROSCOPE CMOS CAMERA

2.0 Megapixels High Definition!!

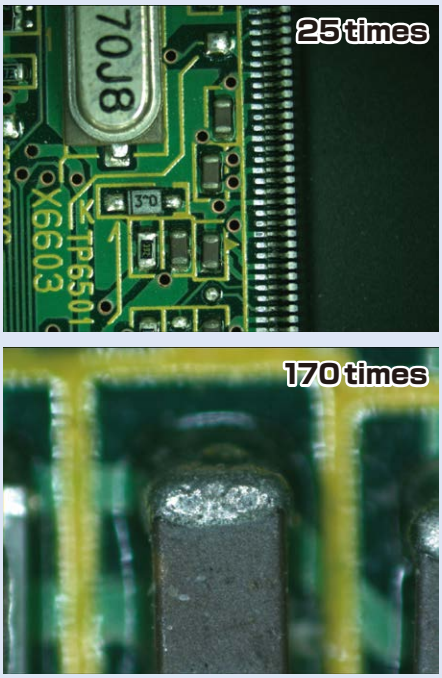
- Easy to capture a still image as well as a live image on PC monitor
- 1/3" high-grade CMOS camera
- Simple measurement software included



◆ Just insert camera into eyepiece tube.
※Eyepiece size:φ23.2㎜(direct-in)or φ30.0㎜(with adapter)



Sample Image



■Specifications

Item No.	SL-62
Camera	1/3" CMOS Sensor (2000K pixels)　50x84x57㎜ (WxDxH)
Max. Resolution	1600 x 1200
Frame Rate	8 frame/sec.
Interface	USB 2.0
Power Supply	5V (PC USB port)
Frame Size	1600x1200, 800x600
Sensitivity	1.8V/lux-sec.
M/S adaptable	SL-60 or others (eyepiece size: Φ23.2 or 30㎜ type)
Accessories	USB Cable, Measurement Software & Driver Software

■PC Environment

OS	Windows XP, Vista, 7 & 8 (32-bit & 64-bit versions)
CPU	Pentium III　2GHz or more
Memory	512MB or more (2GB for Windows Vista & 7)
HDD	1 GB or more
Monitor	1024x768 (XGA), 1600x1200 (UXGA) or more
Color	32bit

■Main Functions

- Live and Paused (still) image by one click
- Still image saving (J.PEG, BMP format)
- Distance measurement (two points)
- Cascade (Live & Still images shown in layers)
- Calibration setting, data save and data load
- Color Adjustment, Image Processing
- Reticle (Cross hairs) displayed

POCKET LOUPE/FOLDABLE LOUPE

SL-50~53 POCKET LOUPE

SL-50
- 10x/20mm diam.
- 83mm length
- 50mm (case)



SL-51
- 8x/25mm dia.& 15x/13mm dia.
- 150mm length
- 84mm (case)



SL-52
- Combination of 3x, 4x & 5x lens for max. 10x magnification
- 19mm diam. lens
- 83mm length
- 50mm (case)



SL-53
- Sharp and very distinct images with no color distortion
- Ideal for jewelry appraisal
- 18x/17mm diam.
- 63mm length
- 40mm (case)



SL-55~57 INSPECTION LOUPE

- Focus adjustment by sliding lens sleeve
- Built-in scale (detachable)

SL-55



- 10x
- 10mm diam. view
- Scale L

SL-56



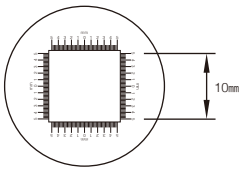
- 15x
- 6mm diam. view
- Scale S

SL-57

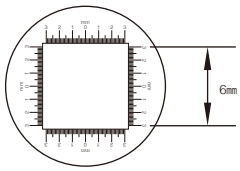


- 22x
- 4mm diam. view
- Scale S

BUILT-IN SCALE



L: 0.2mm/scale



S: 0.1mm/scale

SL-12・58 INSPECTION LOUPE

- Inspection loupe equipped with crosshairs
- Wide type light-through cylinder for bright and clear view

SL-12

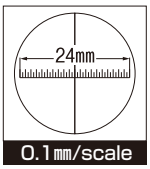


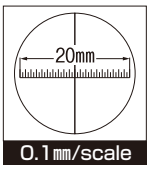
- x10 Glass Lens
- Lens diameter : 30mm
- Crosshairs 0.1mm x 240
- Ext. Size : dia.38 x 50(H)
- with carrying pouch

SL-58



- x7 Achromatic Glass Lens
- Lens diameter : 22mm
- Crosshairs 0.1mm x 200
- Ext. Size : dia.32 x 45(H)
- with lens cap & case





Model	SL-50	SL-51	SL-52	SL-53	SL-12	SL-55	SL-56	SL-57	SL-58
Magnification	x10	x8 & x15	x3, 4 & 5	x18	x10	x10	x15	x22	x7
Lens Material	Glass	Glass	White Glass	White Glass	White Glass	White Glass	White Glass	White Glass	White Glass
Lens Structure	1+1	1+1	single	5-fold	1+1	1+1	1+1	1+1	1+2

※ 1+1 Structure : 1 pce. of eyepiece and 1 pce. of objective lens
※ 1+2 Structure : Achromatic Lens - combination of different refractive lens minimizes chromatic aberration.
※ 5-fold lens : superior to achromatic lens in aspect of no aberration and creates clearer image.

SL-64 FOLDABLE MAGNIFIER

- x 3.5 Magnification acrylic lens
- Lens diameter: 40mm
- Foldable arm, flexible design
- Magnet attachment
- with carrying case





Portable magnifier



Attachment to a crimp tool



Self-standing for handsfree



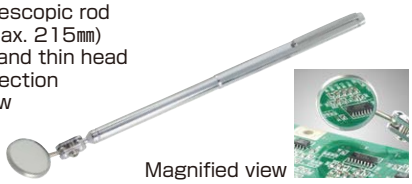
Collapsible to fit carrying case

SL-01~03・11 INSPECTION MIRROR

SL-01
- 35㎜ diam. angle-adjustable mirror
- O.A. length: 245㎜



SL-11
- Anti-magnetic stainless steel (AISI304) frame ideal for work on electronic parts and devices
- 21㎜ diam. adjustable all-angle ball joint magnifying mirror
- 2-sectioned telescopic rod (Min. 150㎜ - Max. 215㎜)
- Compact body and thin head (frame) for inspection even at a narrow space



Magnified view

SL-02
- 35㎜ diam. adjustable all-angle ball joint mirror with pocket clip
- Telescopic rod extends from 192 to 540㎜ in length



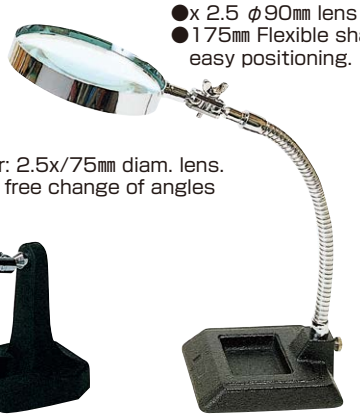
SL-03
- 35㎜ diam. adjustable all-angle ball joint magnifying mirror (Concave)
- Telescopic rod extends from 265 to 740㎜ in length



with built-in magnet

SL-04・07 DESK-TOP LOUPE

SL-07
- x 2.5 φ90㎜ lens
- 175㎜ Flexible shaft allows easy positioning.



SL-04
- Magnifying power: 2.5x/75㎜ diam. lens.
- Ball joint permits free change of angles and positions.



SL-22 LED LIGHT LOUPE

- 2x/95㎜ diam. Acrylic lens with x4 bifocal lens built-in
- Long-life and bright LED (16 bulbs)
- DC power (AA battery x 4 pcs.) ※Battery is not included.
- AC adapter (Input voltage 100-240V) included
- Magnet base stand for handsfree work
- 310㎜ Flexible arm for easy positioning
- Desk clamp (Max. opening 65㎜. Depth 58㎜)

NEW





LED(16bulbs)

SL-23 LED STAND LOUPE



Built-in LED

NEW

- 2x/105㎜ diam. Acrylic lens with x5 bifocal lens built-in
- Illuminated by 2 LED's, ideal for inspection and hobby use
- DC power (AA battery x 3 pcs.) ※Battery is not included.
- 300㎜ Flexible arm for easy positioning

SL-71 FLASHLIGHT LOUPE

- Light beam illuminates magnified area.
- 10X, 30㎜ diam.
- 2 x C-cell battery adapted
- O.A. length: 177㎜



Built-in 20㎜ scale

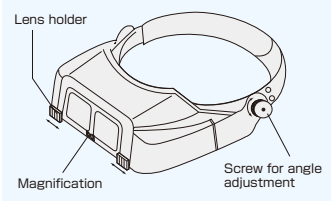
SL-72 UTILITY LOUPE

- 3X 65㎜ diam. lens consists of aberration-free white lens.
- Versatile use with chrome-plated frame and wooden shaft.
- O.A. length: 175㎜



SL-80~83/85~88 HEAD LOUPE

- Suitable for inspection/repair of electronic and precise instruments
- Well-fitted head band with velcro tape
- Usable even while wearing glasses.





■Head loupe

Item No.	Magnification
SL-80	1.8
SL-81	2.3
SL-82	2.7
SL-83	3.5

■Replacement lens

Item No.	Magnification
SL-85	1.8
SL-86	2.3
SL-87	2.7
SL-88	3.5

- The size of all the replacement lens is common and suitable for any head loupes.

SK-30/40SERIES

SOLDERING IRON

Excellent built-in ceramic heater. Compact & light-weight design suitable for accurate soldering operations

- High efficient ceramic heater permits quick heat-up, enabling soldering operation only in about 1 minute.
- The use of a small connector connecting heater and power cord permits exchange of heaters with one touch.
- Short length from grip to tip for easy operation
- Screw type tip permits easy exchange of tips.
- Perfect for accurate soldering operation with sharp soldering tip. (long life and non corrosive).
- With heat-resistance cap for handy storage after use. (SKC-30/31/32/40/41)

■SK-30~41
Grip made of reinforced glass fiber resin.



■SKC-30~41
With Heat-Resistant Cap.



■SKE-30~41
With 3-Pin plug to avoid damage of elements caused by electric leakage.



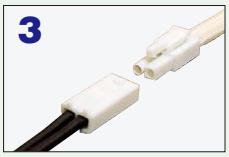
SK-30/40SERIES Three functions



Sharp iron tip
(Long life & durable type)

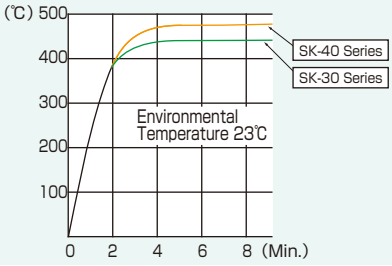


Special stainless steel inside tip for prevention against sticking and loosening of the tip



Plug-in type heater for instant replacement

■Time/Temp. Chart



SK-30 SERIES

■Specification

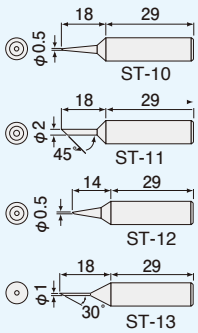
Item No.	Max.Tip Temp.	Watt	Tip	L'gth	Wgt(g)	Rated Voltage	Insulation Resistance
SK-30	400℃	26W	ST-10	202㎜	130	100V	100MΩ
SKC-30							
SKE-30							
SK-31	440℃		ST-11				
SKC-31							
SKE-31							
SK-32	390℃		ST-14	204㎜			
SKC-32							
SKE-32							

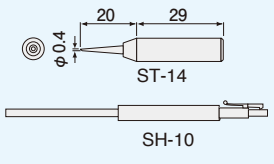
■ SKC with Heat-Resistant Cap. ■ SKE with 3-pin plug.

V 220V 230V 240V are also available. ☞REF. Page 12

Caution Ceramic heater is not elastic and may be broken by excess shock. Please refrain from beating and wrenching.

■REPLACEMENT PARTS (㎜)





Item No.	Description
ST-10	Tip
ST-11	Tip
ST-12	Tip
ST-13	Tip
ST-14	Tip
SH-10	Heater(100V)

SK-40 SERIES

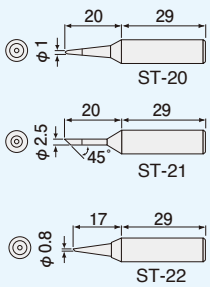
■Specification

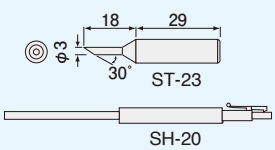
Item No.	Max.Tip Temp.	Watt	Tip	L'gth	Wgt(g)	Rated Voltage	Insulation Resistance
SK-40	450℃	32W	ST-20	204㎜	130	100V	100MΩ
SKC-40							
SKE-40							
SK-41	470℃		ST-21				
SKC-41							
SKE-41							

■ SKC with Heat-Resistant Cap. ■ SKE with 3-pin plug.

Caution Ceramic heater is not elastic and may be broken by excess shock. Please refrain from beating and wrenching.

■REPLACEMENT PARTS (㎜)





Item No.	Description
ST-20	Tip
ST-21	Tip
ST-22	Tip
ST-23	Tip
SH-20	Heater(100V)

SK-30 SERIES — SOLDERING IRON

Excellent built-in ceramic heater. Compact & light-weight design suitable for accurate soldering operations

- High efficient ceramic heater permits quick heat-up, enabling soldering operation only in about 1 minute.
- The use of a small connector connecting heater and power cord permits exchange of heaters with one touch.
- Short length from grip to tip for easy operation
- Screw type tip permits easy exchange of tips.
- Perfect for accurate soldering operation with sharp soldering tip. (long life and non corrosive).
- With heat-resistance cap for handy storage after use. (SKC-30/31)

■SK-30~31
Grip made of reinforced glass fiber resin.



■SKC-30~31
With Heat-Resistant Cap.



■SKE-30~31
With 3-Pin plug to avoid damage of elements caused by electric leakage.



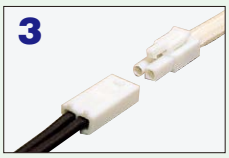
SK-30SERIES Three functions



Sharp iron tip
(Long life & durable type)

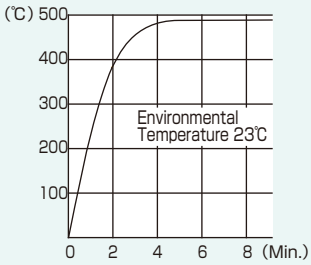


Special stainless steel inside tip for prevention against sticking and loosening of the tip



Plug-in type heater for instant replacement

■Time/Temp. Chart



SK-30 SERIES

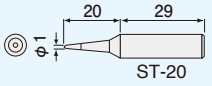
■Specification

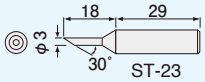
Item No.	Max.Tip Temp.	Watt	Tip	L'gth	Wgt(g)	Rated Voltage	Insulation Resistance
SK-30	445℃	30W	ST-20	204㎜	130	220 ~ 240V	100MΩ
SKC-30							
SKE-30							
SK-31	500℃		ST-21				
SKC-31							
SKE-31							

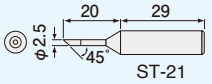
■ST-22 Max. Tip Temp. 430℃ ■ST-23 Max. Tip Temp. 500 ℃

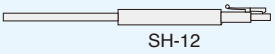
Caution Ceramic heater is not elastic and may be broken by excess shock. Please refrain from beating and wrenching.

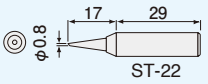
■REPLACEMENT PARTS (㎜)







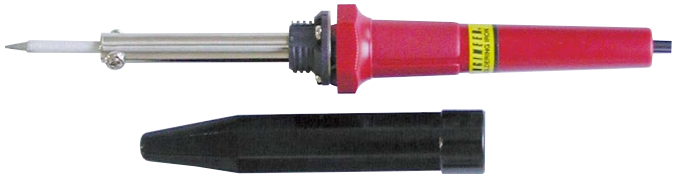




Item No.	Description
ST-20	Tip
ST-21	Tip
ST-22	Tip
ST-23	Tip
SH-12	Heater(220~240V)

SK-14 — SOLDERING IRON (30W Mica Heater)

- Ideal for electric work, job training, D.I.Y. and hobby use
- Tip φ1.2㎜
- Max. Temperature : 410℃



SK-50SERIES

RoHS KOTELYZER

3 in 1 Multipurpose and cordless soldering iron

- Pen type for easy carrying.
- No power source permits wider field of use.
- Soldering iron, torch & hot blow — 3 heat function makes the tool versatile.
- Safe & no flame gas catalyst system for soldering iron and hot blow.
- No AC current nor battery.
- Quick heat up in seconds and temperature control is very easy.
- Comes with a handy carrying case for keeping & carrying.
- O.A. length: 165㎜



■TORCH
By removing tip & tip housing, possible to use as Torch, easy control of flame. Possible to make metal works and other various applications like aluminium or stainless steel soldering or welding with temperature solders.





■Kotelyzer(SK-50)Specifications

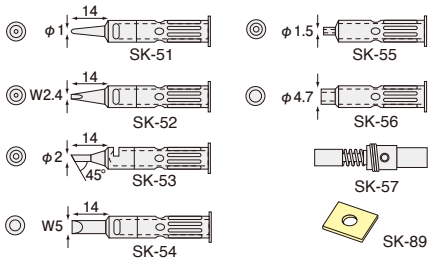
System		Gas Catalyst Reaction System Pressure Gas Burning System(Torch)
Themal Oulput	Soldering Iron	200℃~450℃ (Equivalent to 20~50W electric soldering iron)
	Hot Blow	430℃ MAX
	Torch	1300℃ MAX
Gas Container Capa.		6cc
Operation Time for One Gas Fill		More than 20 min. (Lever position : 2)
O.A. Length		165㎜
Weight		53g



SKA-50
- Body with protection cap
- Hot Blow tip

SK-50
- Body with protection cap
- Hot Blow tip
- Cleaner Sponge
- Carrying box with iron stand

SK-50SERIES REPLACEMENT PARTS



Item No.	Description
SK-51	Tapered needle
SK-52	Chisel
SK-53	φ2㎜ spade
SK-54	Chisel
SK-55	Hot blow tip
SK-56	Hot blow tip
SK-57	Ejector unit
SK-89	Cleaning sponge

SK-60SERIES

RoHS KOTELYZER

Newly designed compact body with various functions!

- Perfect for in-field service and maintenance where accessibility may be limited.
- Light weight for fatigue free use.
- One touch ignition and super quick heat-up (equivalent up to 60 watts).
- More than one hour continuous use capacity.

■Soldering iron



Completely cordless assures no electric leakage, no E.M.I. and free from voltage problem.

■Hot knife



Arts, craft, and hobby use such as plastic shaping and rope cutting.

Three-in-one heat tool with soldering, hot blow, and hot knife



SKB-60 Contents
- Body (SK-61 solder tip)
- Hot blow tip
- Hot knife tip
- Multi-holder
- Protective cap



SKA-60 Contents
- Body(SK-61 solder tip)
- Hot blow tip
- Multi-holder
- Protective cap

■Hot blower

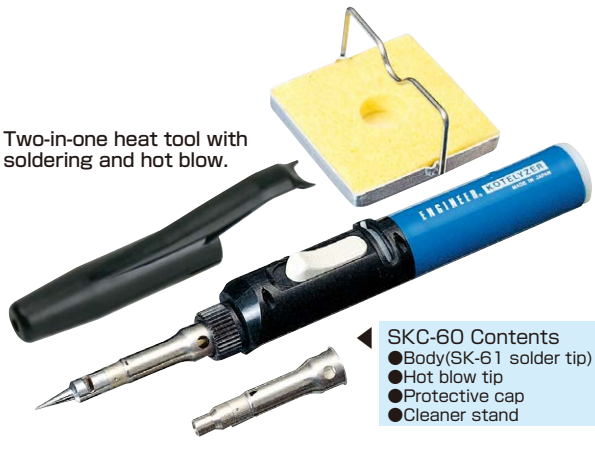


Pin point accurate hot air for shrink tubing and plastic welding.

■Kotelyzer(SK-60)Specifications

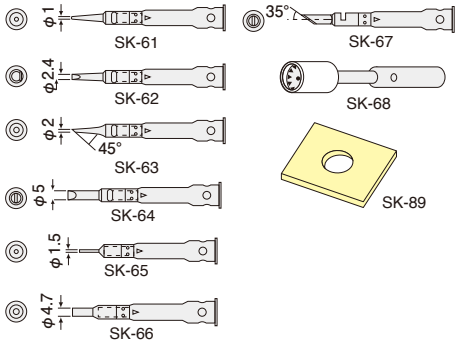
System		Gas Catalyst Reaction System
Themal Output	Soldering Iron	200℃~450℃ (Equivalent to 15~60W electric soldering iron)
	Hot Blow	650℃ MAX
Gas Container Capa.		14cc
Operation Time for One Gas Fill		Abt 1 hour 15min.
O.A. Length		208㎜
Weight		66g

Two-in-one heat tool with soldering and hot blow.



SKC-60 Contents
- Body(SK-61 solder tip)
- Hot blow tip
- Protective cap
- Cleaner stand

SK-60SERIES REPLACEMENT PARTS



Item No.	Description
SK-61	Tapered needle
SK-62	Chisel
SK-63	φ2㎜ spade
SK-64	Chisel
SK-65	Hot blow tip
SK-66	Hot blow tip
SK-67	Hot knife
SK-68	Ceramic unit
SK-89	Cleaning sponge

- Multi-Holder is not saleable separately.

SK-70SERIES

RoHS KOTELYZER

Multi-holder creates new field of cordless soldering iron!

- Perfect for in-field service and maintenance where instant heat is required.
- Super quick heat up with one touch operation.
- Completely cordless assures no electric leakage no E.M.I.
- Flameless and safe heat generating system by patented gas catalyst reaction.
- Variable temperature control (equivalent to 20-80 watts).



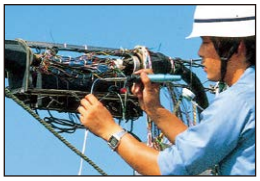
Two-in-one heat tool with soldering and hot blow.

◀ SKC-70 Contents
- Body(SK-71 solder tip)
- Hot blow tip
- Multi-holder
- Protective cap



Designed to perform telecommunication tasks.

◀ SKD-70 Contents
- Body(SK-79 solder tip)
- Solder tip(SK-72)
- Multi-holder
- Protective cap



■Telecommunication field

SKD-70 set comes with a high-power tip for cable maintenance tasks and an accurate tip for telephone office service.



Comes with soldering stand box. adjustable at 3 angles (SK-70)

▲ SK-70
- Body(SK-71 solder tip)
- Hot blow tip
- Carrying case with stand
- Cleaner sponge

SKA-70 Contents
- Body(SK-71 solder tip)
- Hot blow tip
- Protective cap

SKB-70 Contents
- Body(SK-71 solder tip)
- Hot blow tip

■Kotelyzer(SK-70)Specifications

System		Gas Catalyst Reaction System
Themal Output	Soldering Iron	200℃~500℃ (Equivalent to 20~80W electric soldering iron)
	Hot Blow	650℃ MAX
Gas Container Capa.		28cc
Operation Time for One Gas Fill		Abt 4 hours (Lever position : 2)
O.A. Length		265㎜
Weight		110g

Three function of Multi-holder assures safe and wide task field ! PAT.

1 Hanging from cable



2 Magnetic attachment



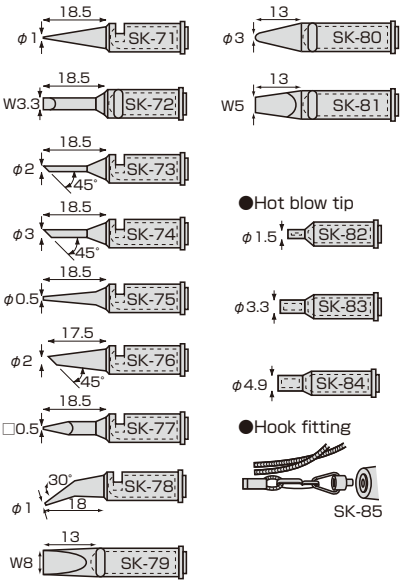
3 Stand



Multi-Holder is useable for both SK-60 series and SK-70 series.

SK-70SERIES REPLACEMENT PARTS

●Tip(Iron coated)



●Hot blow tip

●Hook fitting

●Protective cap



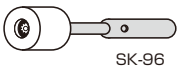
●Cleaning sponge



●Heat shrink



●Ceramic unit



Item No.	Description
SK-71	Tapered needle
SK-72	Chisel
SK-73	φ2㎜ spade
SK-74	φ3㎜ spade
SK-75	Tapered needle
SK-76	φ2㎜ spade
SK-77	Tapered pyramid
SK-78	Offset tapered needle
SK-79	High powered chisel
SK-80	High powered round head needle
SK-81	High powered long taper chisel
SK-82	Hot blow tip
SK-83	Hot blow tip
SK-84	Hot blow tip
SK-85	Hook fitting
SK-88	Protective cap
SK-89	Cleaning sponge
SK-93	Heat shrink W-22
SK-94	Heat shrink W-18
SK-96	Ceramic unit

SKM-40 HANDY KOTELYZER

- Advanced and streamlined design
- Hot blow & powerful torch
- Improved heat-generating structure of metal catalyst
- Come with cleaner stand & solder
- Capable of continuous use in one hour



■Soldering Iron



■Hot Blow



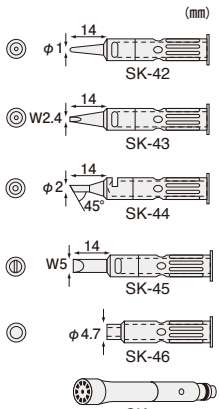
■Torch



■Specifications

System		Gas Catalyst Reaction System Pressure Gas Burning System (Torch)
Thermal Output	Soldering Iron	200℃~500℃ (Equivalent to 20~60W electric soldering iron)
	Hot Blow	650℃ MAX
	Torch	1300℃ MAX
Gas Container Capa.		12ml
Operation Time for One Gas Fill		about 60 min. (Lever position: Middle)
O.A.Length		197㎜ Cap Included
Weight		74g

(㎜)



Item No.	Description
SK-42	Tapered Needle
SK-43	Chisel
SK-44	φ2㎜ Spade
SK-45	Chisel
SK-46	Hot blow tip
SK-47	Ejector Unit

SK-90•95 RoHS GAS REFILL

●Please use our original gas for refill. (Butane liquefied odorless gas for industry use)

SK-90



265cc

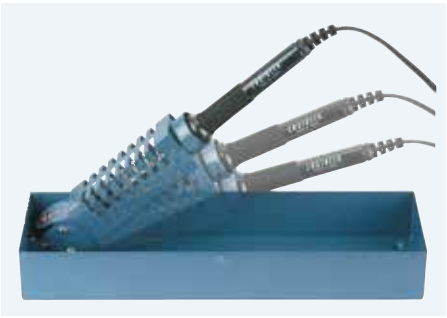
SK-95



480cc

SS-09 SOLDERING BOX

- Simple and functional design permits easy use and safe storage
- One touch soldering stand, adjustable to 3 angles
- Durable lid makes it easy to carry SS-09 box in any tool case
- Includes tip cleaner sponge
- Inner sizes: 300x85x44㎜



Adjustable at 3 steps of angle.



SD-20 DESOLDERING TOOL

High-capacity ceramic heater and powerful motor, capable of suction and hot air blow.

DESTINATIONS ARE LIMITED FOR EXPORT

- Built-in motor, diaphragm type vacuum pump, temperature adjustable circuit and indicator light.
- Low noise and low vibration due to floating mechanism.
- Minimum reaching time to the maximum vacuum and powerful suction capacity.
- Ideal for desoldering on 4-8 layered PCB's.
- No static damage to IC etc. due to carboniferous body.

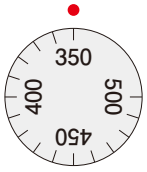
INDICATOR LIGHT
When the heater is on, light goes on and when the temperature reaches set-up level, it flickers.



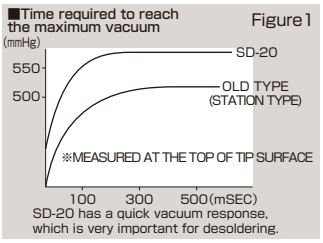


●Contents
- Carrying case
- Desoldering tool
- Spare tip (φ1.5)
- Spare filter cartridge (2pcs.)
- Cleaning pin

Temperature Adjustment Dial (350~500℃)

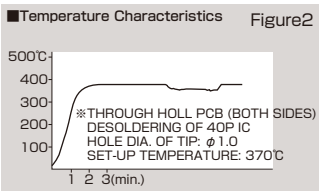


■Time required to reach the maximum vacuum Figure1



SD-20 has a quick vacuum response, which is very important for desoldering.

■Temperature Characteristics Figure2



■SPECIFICATIONS

POWER SOURCE	AC100V・50/60Hz
PUMP	DIAPHRAGM TYPE
MOTOR OUTPUT	12W
VACUUM ATTAINED	650㎜Hg
TIME REQUIRED TO REACH MAXIMUM VACUUM	0.2 seconds
AIR FLOW RATE (OPEN)	15 liter/min.
HEATER	100W(Ceramic)
CONTROL SYSTEM	Feed back zero cross over type
TEMPERATURE RANGE	350~500℃
TIP (HOLE DIA.)	1.0φ(STANDARD)
POWER SUPPLY CORD	3P CORD (W GROUND)1.8m
WEIGHT	420g(excluding cord)

■REPLACEMENT PARTS

Item No.	DESCRIPTION
SD-61	TIP φ0.8
SD-62	TIP φ1.0
SD-63	TIP φ1.5
SD-87	TAPERING SLIM TIPφ0.8
SD-88	TAPERING SLIM TIPφ1.0
SD-21	HEATER HOLER
SD-22	HEATER ASSY
SD-23	PIPE SETTER
SD-24	FILTER CARTRIDGE (5pcs.)
SD-25	SEAT VALVE
SD-26	DIAPHRAGM

TOOL STAND



SD-60

SD-30 SMD ACCESSORY KIT

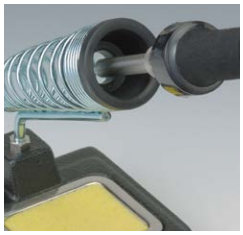
- For easy removal of SMD components including QFP & SOP owing to Hot Blow function of SD-20



■Contents:
SD-29 Filter Pipe
SD-31 Stainless Wire Reel
SD-86 Hot Air Nozzle

SS-20 IRON STAND

- Heat resistance engineering plastic on iron holder for cutting heat conduction to iron's grip
- Holds any soldering iron up to 13㎜ diam.
- 700g massive base stand creates high stability on bench.
- Dimensions:80Wx140Hx90D (㎜)









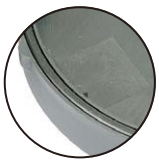
■Ring detachable

SS-05 TIP CLEANER

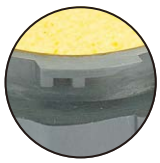
- Glass-filled nylon resin (Housing) featuring heat resistance of 130℃
- O-ring creates airtight condition to keep sponge moist.
- Comes with 2 pcs. of cleaning sponges of different density (blue & yellow)
- Easy to open the lid owing to sliding-lock structure
- Weight: 75g



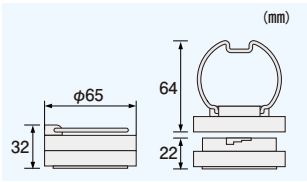




■O-ring in lid



■Sliding lock



SS-01・02 SOLDER SUCKER

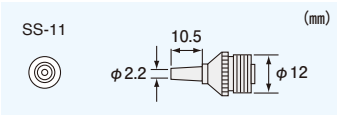
- All aluminum construction, well designed to suck up melted solder easily and efficiently with one-hand plunger action.
- Self-cleaning shaft allows high productivity of continual work without clogging.

Item No.	Cylinder Capa.	Weight
SS-01	5 cc	33 g
SS-02	9 cc	52 g

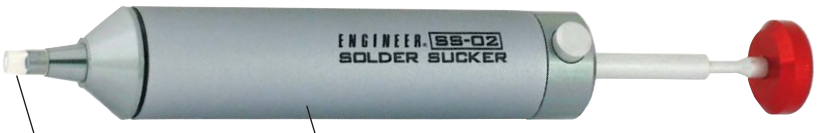
SS-01
- Teflon tip : φ2.2㎜ (Int.)
- Ideal for desoldering work at dense spot on PCB
- Body : φ14 x 170㎜



■Replacement nozzle for SS-01



SS-02
- Silicone nozzle : φ2㎜ (Int.) φ4㎜ (Ext.)
- High-power and efficient absorption by means of elastic nozzle contact
- Low maintenance cost owing to spare tube only required for replacement
- 2 pcs. of spare silicone tubes (50㎜ long) originally included
- Body : φ20 x 153㎜

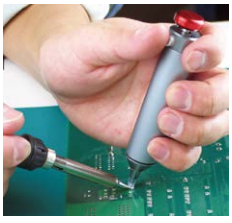


Heat resistant (350℃) silicone nozzle

Compact and durable aluminum body



Elastic and heat-resistant nozzle can stick to soldering iron on board closely and suck up solder powerfully with less residue.



Plunger is within easy reach of thumb. It is ideal for one-hand operation in continuous work.

SS-16 REPLACEMENT SILICONE TUBES

- φ2 x 50㎜ 2 pcs./set
- Cut desired length of tube freely.
- Use only for SS-02



SD-06 DIGITAL MULTIMETER

3200 Count LCD with bar-graph indicator

- AC·DC voltage measurement
- Resistance measurement
- Compact body with test lead rewinder
- Diode Testing
- Continuity Check
- Dust-proof carrying pouch



Dimensions:
114×72×22.5㎜
Weight:110g



Function	Range	Resolution	Accuracy
DC V	320.0mV	0.1mV	±1.3% rdg ±3 dgt.
	3.200V	1mV	±0.7% rdg ±3 dgt.
	32.00V	10mV	±1.3% rdg ±3 dgt.
	320.0V	100mV	
	500.0V	1V	
AC V	3.200V	1mV	±2.3% rdg ±6 dgt.
	32.00V	10mV	
	320.0V	100mV	
	500.0V	1V	
RESISTANCE	320.0Ω	100mΩ	±2.0% rdg ±5 dgt.
	3.200KΩ	1Ω	±2.0% rdg ±3 dgt.
	32.00KΩ	10Ω	
	320.0KΩ	100Ω	
	3.200MΩ	1KΩ	±6.0% rdg ±4 dgt.
	32.00MΩ	10KΩ	±10% rdg ±10 dgt.
DIODE TEST	3.200V	1mV	±10% rdg ±3 dgt.
CONTINUITY	320.0Ω	100mΩ	Beeper< 20Ω Approx.

SD-07 SOLDERING IRON THERMOMETER

Accurate temperature measurement

- The sensor resists corrosion and oxidation by solder, which realizes precise detection
- Quick and easy replacement of sensor (Plug-in type) SD-58
- Data hold : Max. temperature, Min. temperature and Average temperature
- With carrying case



SD-58

■Specifications

Measuring Range	−99.9℃~+1,200℃
Accuracy	±1℃ rdg. ±1 dgt.
Resolution	0.1℃/1℃ (Automatic shift)
Measuring Speed	3 times/sec.
Sensor	Thermo Couples, Type K(CA)
Power Source	9V (006P) Alkali Battery
Dimensions	225×42×27㎜
Weight	150g

SW-11~53 SOLDER

- High quality solder wire for precision electronic components.
- No paste is necessary because of activated rosin.



Item No.	diam.(㎜)	Weight(g)
SW-11	0.6	150
SW-12		500
SW-13		1000
SW-21	0.8	150
SW-22		500
SW-23		1000
SW-30	1.0	20
SW-31		150
SW-32		500
SW-33		1000
SW-41	1.2	150
SW-42		500
SW-43		1000
SW-51	1.6	150
SW-52		500
SW-53		1000

SWS-06~12 SUPERIOT RMA SOLDER

No cleaning high performance resin core solder, highest grade flux construction

- Completely non-corrosive flux residue which requires no cleaning after soldering
- Everlasting and reliable bonding owing to non-conductive and non-absorbable residue
- Wide solder spread and wetting for speedy work
- Contains organic amine activated rosin to meet highest JIS grade & MIL-RMA.



■Superiot RMA / For use on precision PCB of copper and its alloy

Item No.	Tin/Lead Ratio, Melting point	Flux(Wt%)	Soluble resistance Ω・cm	Insulation resistance Ω	Wire diam. (㎜)	Wire length. (m)
SWS-06	Sn60/Pb40 183~190℃	1.7% Noncleaning flux	1×10^{5}	3×10^{13} (Normal temp.) 5×10^{12} (Higher humidity)	0.6	5.6
SWS-08					0.8	4.4
SWS-10					1.0	5.5
SWS-12					1.2	4.6

SWA-06~12 SUPERIOT RA SOLDER

No cleaning high performance resin core solder for soldering stainless steel

- Non-corrosive flux residue featuring everlasting bonding
- Featuring stable bonding owing to non-conductive and non-absorbable residue
- Continuous and high performance activation makes it possible to solder stainless steel.
- Contains organic amine activated rosin to meet JIS standard.



■Superiot RA / For use on stainless steel & nickel

Item No.	Tin/Lead Ratio, Melting point	Flux(Wt%)	Soluble resistance Ω・cm	Insulation resistance Ω	Wire diam. (㎜)	Wire length. (m)
SWA-06	Sn60/Pb40 183~190℃	2.7% Noncleaning flux	6×10^{4}	2×10^{13} (Normal temp.) 2×10^{12} (Higher humidity)	0.6	5.6
SWA-08					0.8	4.4
SWA-10					1.0	5.5
SWA-12					1.2	4.6

SWS-56~82 SUPERIOT RMA SOLDER



SWS-58 SWS-80

Item No.	Wire diam. (㎜)	Weight (g)
SWS-56	0.6	500
SWS-58	0.8	
SWS-60	1.0	
SWS-62	1.2	
SWS-76	0.6	1000
SWS-78	0.8	
SWS-80	1.0	
SWS-82	1.2	

SWA-56~82 SUPERIOT RA SOLDER

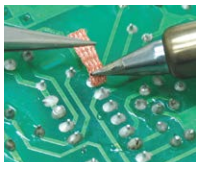


SWA-58 SWA-80

Item No.	Wire diam. (㎜)	Weight (g)
SWA-56	0.6	500
SWA-58	0.8	
SWA-60	1.0	
SWA-62	1.2	
SWA-76	0.6	1000
SWA-78	0.8	
SWA-80	1.0	
SWA-82	1.2	

SWU-02~06 RoHS SOLDER WICK

- SODER-WICK® Highest copper braid features fast absorption of solder.
- No cleaning process required and leaving less residue of flux on circuit board





For desoldering highly dense SMD

SWU-02 1.5㎜×1.5m



For desoldering small electronic parts or plated through hole

SWU-03 1.9㎜×1.5m



For desoldering medium electronic parts or solder bridges

SWU-04 2.8㎜×1.5m



For desoldering large-sized parts or terminals

SWU-05 3.9㎜×1.5m



For use at large solder lugs

SWU-06 5.6㎜×1.5m

※Product of chemtronics, U.S.A

SS-08 IC EXTRACTOR

- Ideal for extracting 8~42 pins ICs in one single operation.
- Squeeze clip and hold ICs tightly.
- Overall Length : 125㎜



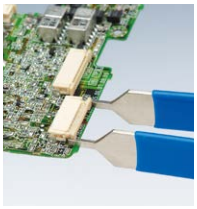


SS-10 PC BOARD CONNECTOR EXTRACTOR

- Ideal for insertion or extraction of housing connectors on the PC boards.
- Holds PC board connectors with accurately machined tip, picking them uprightly and smoothly without a cut of wire or deformity.
- Accurate tip design to insert or extract PCB connectors (straight type & right-angle type) mounted on dense PCB
- Overall Length : 112㎜

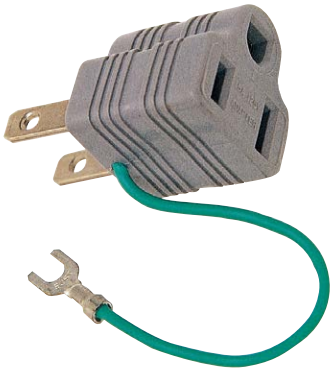






SS-15 2P-3P PLUG CONVERTER

- Convertes 3P Plug with ground wire into 2P.



SS-21・22 SPRING HOOK

- Ideal for inserting, removing and adjusting coil springs of electronic components or precision instruments
- Suitable for removing connector leads, aligning leads of resistor or condenser and testing arrangements of wires
- 3㎜ diam.X215 O.A. length



SS-21



SS-22



SS-21



SS-22

SS-30~34 PIN EXTRACTOR

Perfect for extracting both pin and socket terminals.

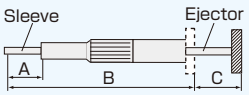
- The ejector rod inside the sleeve enables you to knock out both male & female pin easily from socket terminal.





SS-30 SS-31 SS-32 SS-33 SS-34

(Shape sizes)



(mm)

Item No.	Outer Diam of Sleeve	Inner Diam of Sleeve	A	B	C
SS-30	2.5	1.9	12	64	21
SS-31	2.7	2.1			
SS-32	2.9	2.4			
SS-33	3.6	3.1			
SS-34	3.2	2.7			



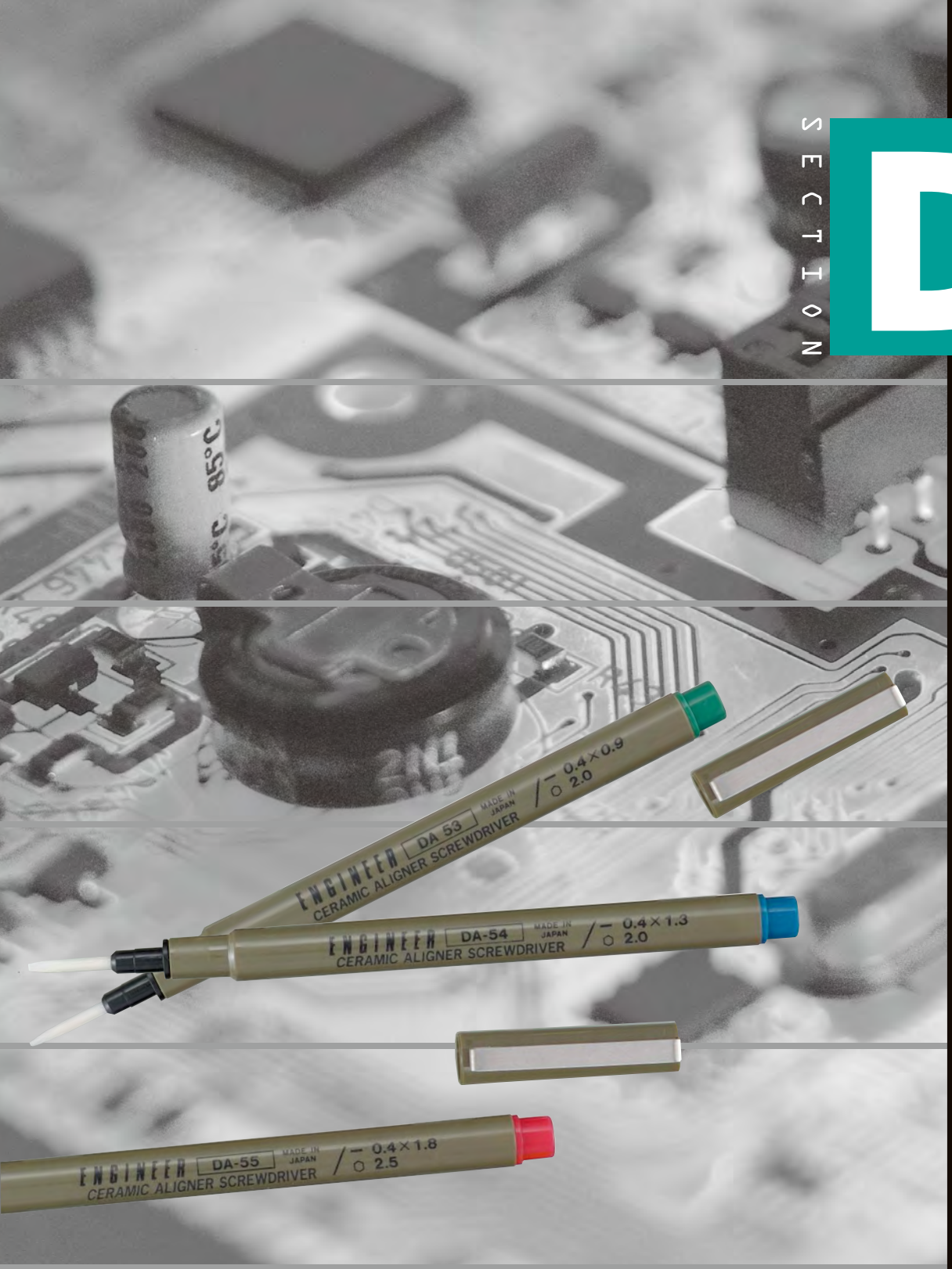


■Reference for extracting typical connectors

Brand/Connector	Pin Housing	Socket Housing
"TYCO" Mini Universal Mate-N-Lok	SS-30	SS-30
"TYCO" Universal Mate-N-Lok	SS-34	SS-34
"TYCO" Commercial Mate-N-Lok	SS-32	SS-34
"JST" ML & EL Series	SS-31	SS-31
"JST" L & LL Series	SS-33	SS-33
"MOLEX" 1545 Series	SS-33	SS-34
"MOLEX" 1625 Series	SS-30	SS-31
"MOLEX" 3191 Series	SS-33	SS-33
"MOLEX" 8980 Series (4-pin connector in PC)	SS-32	SS-34

SECTION

D





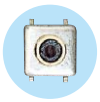
CONTENTS

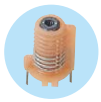
CERAMIC ALIGNMENT DRIVER……21
ALIGNMENT DRIVER……22
REVERSIBLE PRECISION DR. SET…22
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OFFSET RATCHET DRIVER……23
DRIVER BIT SET……23
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REVERSIBLE DRIVER……29
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DA-48~52 RoHS CERAMIC ALIGNMENT SCREWDRIVER

Four-in-One Slotted Tip & Hex Core Ceramic Alignment Screwdrivers.

- Tips are made of fine, durable zirconia ceramic.
- Perfect non-conductive tip for high frequency trimming.
- Ideal alignment screwdriver for short-circuit prevention
- Four-in-one double ended tool.
- Pen-type design with protective caps and pocket clip.
- φ8 x 136㎜ long


IFT trimmer (Slotted)


coil trimmer


trimmer (Slotted)


trimmer (Phillips)

(mm)

Item No.	Size	●Core
DA-48	⊖0.7×1.3	2
	⊖0.4×2.4	2.5
DA-50	⊖0.35×0.8	2
	⊕#0	–
DA-51	⊖0.4×0.9	2
	⊖0.4×1.8	2.5
DA-52	⊖0.4×1.3	2
	⊖0.7×2.5	2.5



DK-90 RoHS CERAMIC ALIGNMENT SCREWDRIVER SET

Assortment of DA-48~52 (4pcs.)



DA-53~59 RoHS CERAMIC ALIGNMENT SCREWDRIVER

Pen type Ceramic Alignment Driver for service and assembly line work

- Two-in-one, slotted tip and hex. core (except DA-58)
- With pen-type cap for protection and portable use
- φ9 x 135㎜ long



■BOTTOM COLOR

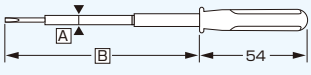


(mm)

Item No.	Size	●Core	Bottom color
DA-53	⊖0.4×0.9	2.0	Green
DA-54	⊖0.4×1.3	2.0	Blue
DA-55	⊖0.4×1.8	2.5	Red
DA-56	⊖0.7×2.5	2.5	Yellow
DA-57	⊖0.35×1.95	2.5	Black
DA-58	⊕#0	–	Gray
DA-59	⊖0.35×0.8	2.0	Purple

DA-72~79 RoHS CERAMIC ALIGNMENT SCREWDRIVER

The DA-70 series ceramic alignment screwdrivers are designed with a long slender shaft for a wider application of alignment in remote areas.



- Fine zirconia ceramic tipped alignment screwdrivers, highly intensive, durable, and perfectly non-conductive
- Slide-in shaft is attachable to other tools & equipment
- Long, slim design for easy access to remote areas
- Two-in-one, slotted tip and hex. core (except DA-78)




Detachable shaft from grip

(mm)

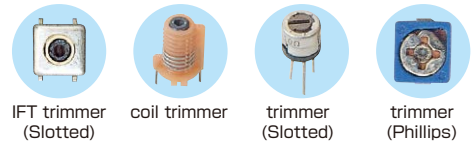
Item No.	Size	●Core	A Size	B Size	Bottom color
DA-72	⊖0.4×2.4	2.5	φ4	94	Orange
DA-73	⊖0.4×0.9	2.0	φ3.5	95	Green
DA-74	⊖0.4×1.3	2.0			Blue
DA-75	⊖0.4×1.8	2.5	φ4	94	Red
DA-76	⊖0.7×2.5	2.5			Yellow
DA-77	⊖0.35×1.95	2.5			Black
DA-78	⊕#0	–		92	Gray
DA-79	⊖0.35×0.8	2.0	φ3.5	95	Purple

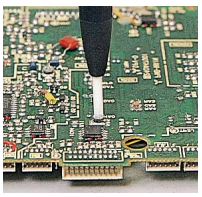
DA-81~88 CERAMIC ALIGNMENT SCREWDRIVER

Compact designed ceramic alignment drivers. Perfect for assembly line trimming.

- Fine zirconia ceramic tipped alignment screwdrivers, highly intensive, durable, and perfectly non-conductive.
- Two-in-one function with slotted tip and hex core. (except DA-88)
- Ergonomically designed with convenient rotary cap.

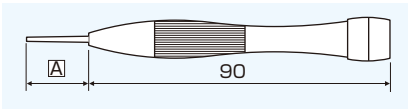






(mm)

Item No.	Size	●Core	ASize	BOTTOM COLOR
DA-81	⊖0.7×1.3	2	18	Purple
DA-82	⊖0.4×2.4	2.5		Orange
DA-83	⊖0.4×0.9	2		Green
DA-84	⊖0.4×1.3	2		Blue
DA-85	⊖0.4×1.8	2.5		Red
DA-86	⊖0.7×2.5	2.5		Yellow
DA-87	⊖ 0.35×1.95	2.5		Black
DA-88	⊕#0	–	15	Gray



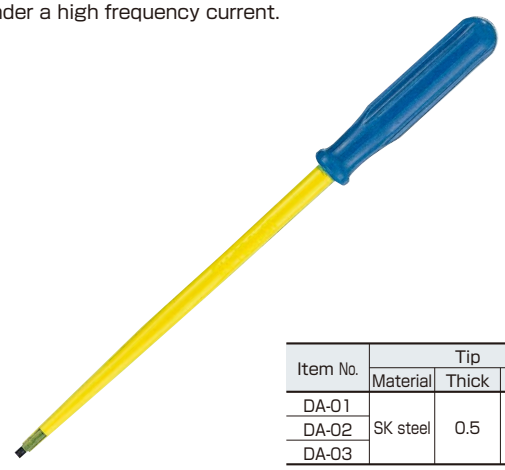
DK-91 CERAMIC ALIGNMENT SCREWDRIVER SET

Assortment of DA-81~88 (8pcs.)



DA-01~03 ALIGNMENT SCREWDRIVER

- Alignment tool for TV, tuner, trimmer under a high frequency current.



(mm)

Item No.	Tip			Length of Rod	Handle
	Material	Thick	Width		
DA-01	SK steel	0.5	2.0	100	φ12×54
DA-02				150	
DA-03				200	

DA-40 ALIGNMENT SCREWDRIVER

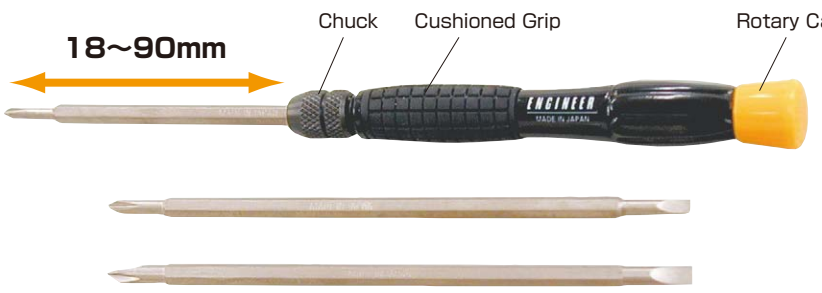
- E.S.D. free construction (Safe from static discharge)
- Overall length: 125㎜
- Tip: ⊖2×0.5 & ⊜2×0.5㎜

ESD SAFE

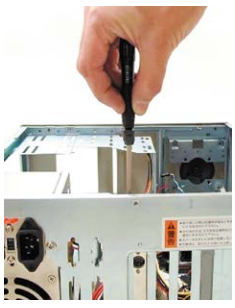


DK-13 REVERSIBLE PRECISION DRIVER SET

- Driver's shaft length to be adjustable 18~90㎜.
- Magnetic point ⊖ for hard-to-reach screws.
- ⬣4㎜ slim shaft with double-ended blade (5-in-1)
- Cushioned grip for well-fitting with fingers.
- With rotary cap for quick rotation or precise alignment work



Contents 3 pcs. (Double-ended)	
Length: 125㎜	
# 00	⊖ 2.5㎜
# 0	⊖ 3.0㎜
# 0	⊖ 4.0㎜



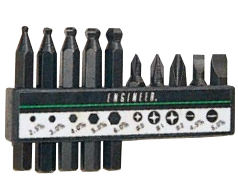
DR-03 RoHS RATCHET STUBBY DRIVER

- Compact 95㎜ O.A. length with a comfortable grip.
- Built-in ratchet mechanism.
- Replacement bits: ⊕#2/⊖6㎜, ⊕#1/⊖4.5㎜.
- Knurl shaft for quick rotation



DR-04 RoHS RATCHET STUBBY DRIVER SET

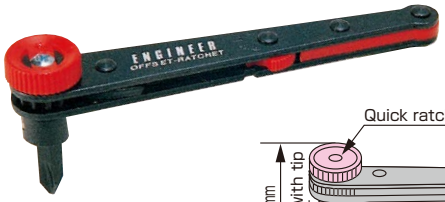
- Versatile driver with common replaceable ⊕/⊖ point bits.
- Built-in ratchet mechanism.
- Replacement set includes : ⊕#00,#1,#2,⊖4.5, 6, ●2.5, 3, 4, 5, 6
- Knurl shaft for quick rotation

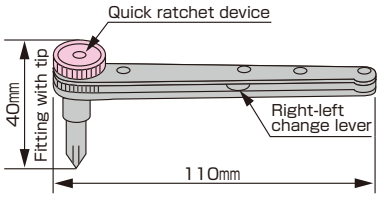




DR-05 RoHS OFF-SET RATCHET DRIVER

- Built-in quick ratchet mechanism increases work productivity.
- Designed to permit work in close areas that are inaccessible with ordinary drivers.
- Tip : ⊕#2/⊖6㎜

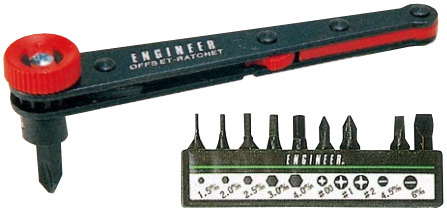


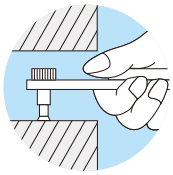


DR-06 RoHS OFFSET RATCHET DRIVER WITH BIT SET

Excellent for working in close areas!

- Versatile driver with most popular ⊕/⊖ & hex bits.
- Complete with handy bullet holder for carrying.
- Replacement set includes: ⊕#00, #1, #2, ⊖4.5, 6 ●1.5, 2, 2.5, 3, 4
- Built-in quick ratchet device.





DR-55 RoHS MINI OFFSET RATCHET

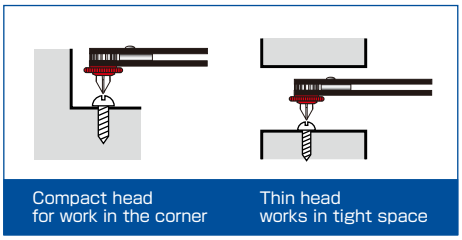
Only 22㎜-high low-profile head accessible to tight space!!

NEW

- Built-in quick ratchet device increases work productivity.
- Bit set includes : ⊕#1, #2, #3 &⊖6㎜

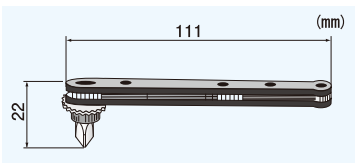






Super-thin Head 22㎜





DR-08 RoHS RATCHET STUBBY DRIVER SET WITH FLEXIBLE SHAFT

Versatile flexible shaft makes difficult jobs easy

- 6-in-1 ratchet stubby type comes with most needed ⊕/⊖, hex, box bits and flexible shaft.
- Easy access to tighten screws & nuts at hard-to-reach positions.
- Knurl shaft for quick rotation



Flexible shaft is designed to bend max. 75 degree in double construction. The piano wire is covered with flexible insulation.

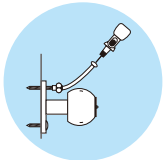




Bullet holder is clipped to belt or tool panel.

CONTENTS

●Ratchet stubby	O.A.length:80㎜
●Flexible shaft	O.A.length:182㎜
●⊕⊖bit	⊕#2/⊖6, ⊕#1/⊖4.5
●Hex bit	●2, 2.5, 3㎜
●Box bit	○5.5㎜



For use at hard-to-reach positions.



Flexible shaft is workable with rechargeable driver.

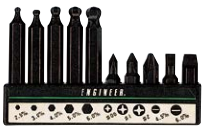
DR-10～14 RoHS DRIVER BIT SET

Perfect for service engineers who need and use a wide selection of driver bits.

- A comprehensive and wide selection of bits to handle any job or application.
- DR-10, 11, 14 just fit to DR-03～08 drivers.



DR-14 Contents
○5.5㎜
⊕#2/⊖6
⊕#1/⊖4.5
●2, 2.5, 3㎜



DR-10 Contents
⊕#00,#1,#2,⊖4.5, 6
●2.5, 3, 4, 5, 6(Ball point)



DR-11 Contents
⊕#00,#1,#2,⊖4.5, 6
●1.5, 2, 2.5, 3, 4(Hex)

DR-50 RoHS TWIN WRENCH DRIVER (For Special Screws)

Ideal for sure-gripped work in restricted areas.



- Off-set twin wrench driver with 8 Torx bits and 2 ⊕/⊖ bits.
- Non-slip knurled cushion handle.
- Bullet type replaceable bit holder.

CONTENTS (mm)

Shape of Bit	Point	Size							
Torx bit	✡	8	10	15	20	25	27	30	40
⊕⊖bit (2edges)	+−	⊕#1/⊖4.5				⊕#2/⊖6.0			

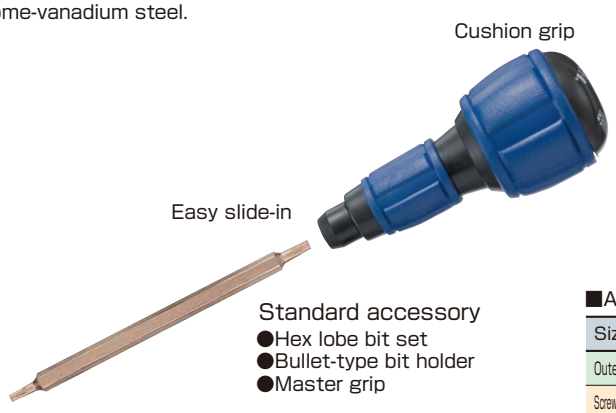
Bit set is separately available DR-17

DR-51 RoHS MASTER GRIP DRIVER (For Hex-Lobe Screws)

Accommodates 12 different sized Torx (hex-lobe) screws.

- 6 double ended hex-lobe bits fit 12 different screw sizes from T-5 to T-40.
- Bits are made of chrome-vanadium steel.
- Cushion grip handle.







■Contents of bit set (12 sizes)

Tip Shape	Tip Size	O.A.Length
✸／✸	T−5／T−6	110㎜
✸／✡	T−7／T−8	
✡／✡	T−9／T−10	
✡／✡	T−15／T−20	
✡／✡	T−25／T−27	
✡／✡	T−30／T−40	

Standard accessory
- Hex lobe bit set
- Bullet-type bit holder
- Master grip

Bit set is separately available DR-15

■Applications for hex-lobe screws (mm)

Size ✡	T5	T6	T7	T8	T9	T10	T15	T20	T25	T27	T30	T40
Outer diam.	1.4	1.7	2.0	2.3	2.5	2.7	3.3	3.8	4.4	5.0	5.5	6.6
Screw adapted	−	M2	−	M2.5	−	M3	M3.5	M4	M5	M5	M6	M8

※Diameter is just for reference

DR-52 RoHS MASTER GRIP DRIVER

Provides the most useful and popular magnetic bits.

- Tips also fit most rechargeable and electric drivers.
- Chrome-vanadium steel.
- Cushion grip handle.



Bullet-type bit holder for portable use.



Bit set is separately available DR-16

Contents
- Bit set(6pcs.)
- Bullet-type bit holder
- Master grip

■Contents of bit set (6pcs.) (mm)

Shape	Size	O.A. Length
⊕ Step type	# 2	150
⊕ Reversible	#2/#2	110
⊕ Reversible	#2/#2	65
⊕ Step type	# 0	85
⊕ Step type	# 1	100
⊕／⊖ Reversible	#2/−6	135

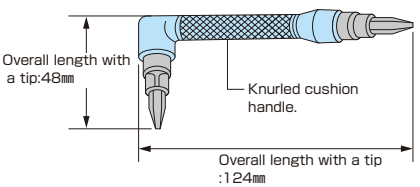
DR-07 RoHS TWIN WRENCH DRIVER SET

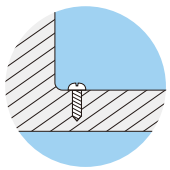
Designed for sure-gripped work in restricted areas.

- 10-in-1 combination of the most useful ⊕/⊖ tips.
- Knurled cushion handle fits the hand and the job.
- With portable bullet holder.
- Replacement bit sizes ⊕#00,#1,#2 ⊖4.5, 6
  ●1.5, 2, 2.5, 3, 4









Suitable to work in restricted area.

DRIVER SET

DK-10 RoHS ⊕⊖PRECISION DRIVER SET



(mm)

Item No.	Tip size
DK-32	⊖1.2×0.25
DK-24	⊕ #0
DK-34	⊖2.3×0.35
DK-25	⊕ #1
DK-35	⊖3.0×0.4
TP-31	Pick-up tool

DK-20 RoHS ⊕PRECISION DRIVER SET



(mm)

Item No.	⊕Tip size	Blade diam.	O.A Length
DK-21	#0000	1.4	78
DK-22	#000	1.6	88
DK-23	#00	2	95
DK-24	#0	2.3	104
DK-25	#1	3	115
DK-26	#1	3.5	126

DK-30 RoHS ⊖PRECISION DRIVER SET



(mm)

Item No.	⊖Tip size	Blade diam.	O.A Length
DK-31	0.9×0.2	0.9	76
DK-32	1.2×0.25	1.2	88
DK-33	1.8×0.3	1.8	95
DK-34	2.3×0.35	2.3	102
DK-35	3.0×0.4	3	115
DK-36	3.5×0.5	3.5	126

DK-60 RoHS ⊕⊖PRECISION DRIVER SET



(mm)

Item No.	Tip size	Blade diam.	O.A Length
DK-22	#000	1.6	88
DK-24	#0	2.3	104
DK-25	#1	3.0	115
DK-33	1.8×0.3	1.8	95
DK-34	2.3×0.35	2.3	102
DK-35	3.0×0.4	3.0	115

DK-05 RoHS INTERCHANGEABLE DRIVER SET

With circuit testing driver handle for low voltage.
(AC80~300V/DC100~250V)
Contents: ⊖5㎜,⊕#00,#0,#1,#2, #3



DK-06 RoHS INTERCHANGEABLE DRIVER SET

With circuit testing driver handle for low voltage.
(AC80~300V/DC100~250V)
Contents: ⊕#1,#2,⊖3, 5㎜, O5.5㎜, awl



DK-07 RoHS INTERCHANGEABLE DRIVER SET

Contents: ⊕#1,#2,⊖3, 5㎜, O5.5, 7㎜



DK-08 RoHS INTERCHANGEABLE DRIVER SET

Contents: O4, 5.5, 6, 7, 8,10㎜



DK-05P·06P RoHS INTERCHANGEABLE DRIVER SET

- Cost-saving package in Plastic blow-mould case
- Contents exactly same as DK-05 & DK-06 described above



DNC-55·57·65

RoHS NUT CATCHING DRIVER

Magnet hold type

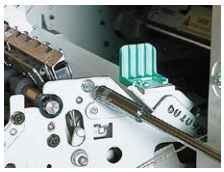
- Suitable for maintenance service of facsimile machine and photocopying machine.
- Sliding magnet in socket attracts and catches a hex bolt while fitting different heights of the heads.

DNC-55



DNC-65









(mm)

Item No.	Size	Socket Ext. Size	Shaft Length	O.A. Length
DNC-55	5.5	9	125	225
DNC-65	5.5	9	230	330
NEW DNC-57	7	11	125	225

DN-01～12

RoHS NUT DRIVER

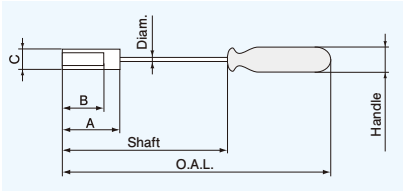
- Plastic handle.
- Anti-abrasive point of special steel.
- Nickel-plated finish.

DN-01



DN-05





(mm)

Model	Size	A	B	C	Shaft Length	Shaft diam.	Handle diam.	O.A. Length	Screw adapted
DN-01	3	18	9	6	75	3.0	11	130	(1.4)
DN-02	4	18	9	6	75	3.0	11	130	2
DN-03	4.5	18	9	8	75	4.0	13	145	(2.3)
DN-04	5	35	25	7.5	75	4.3	16	150	(2.6)
DN-05	5.5	35	25	9	125	5.5	18	210	3
DN-06	6	35	25	9	125	5.5	18	210	(3)
DN-07	7	35	25	11	125	5.5	18	210	4
DN-08	8	35	25	12	125	5.5	18	210	5
DN-09	9	35	25	13	125	5.5	18	210	(5)
DN-10	10	35	25	14	125	6.3	22	220	6
DN-12	12	36	25	17	125	6.3	22	220	(6)

( )=old specifications

DK-04

RoHS NUT DRIVER SET

7-in-1 assortment of Compact-sized Nut Drivers

Contents:○3, 3.5, 4, 4.5, 5, 5.5, 6㎜



(mm)

Size	A	B	C	Shaft length	Shaft diam.	Handle diam.	O.A. Length
3	18	9	6	75	3.0	11	130
3.5			6				
4			6				
4.5			8		4.0	13	145
5			8				
5.5			9				
6			9				

DNP-05～10

RoHS PRO NUT DRIVER

- Large soft-grip handle is shaped to provide a safe, sure grip for excellent tightening power.
- Chrome-plated finish.

(mm)

Item No.	Size	Shaft length	Shaft diam.	Handle diam.	O.A. Length	Screw adapted
DNP-05	5.5	125	5.5	28	227	3
DNP-07	7	125	5.5	28	227	4
DNP-08	8	125	5.5	28	227	5
DNP-10	10	125	6.3	32	237	6

DNP-05



DNP-10



PRO GRIP DRIVER/LONG SHAFT DRIVER/PRO-USE DRIVER

DG-01～04 RoHS PRO GRIP DRIVER

- Soft grip handle provides excellent tightening power without slipping.
- Chrome-vanadium alloy steel, perfectly heat-treated gives it lasting durability.
- Black magnetic oxide tip.
- Chrome plated.

DG-01



DG-04



(mm)

Item No.	Point Size	Shaft Length	Shaft diam.	Handle diam.	O.A. Length
DG-01	⊖5.5×0.7	80	5.5	28	200
DG-02	⊕#1	80	5.5	28	200
DG-03	⊖6.3×0.9	76	6.3	32	214
DG-04	⊕#2	76	6.3	32	214

DG-05 RoHS CUSHION DRIVER

- ⊕/⊖Two-in-one reversible blade.
- Comfortable soft-grip handle.
- Can also be used with electric and air drivers.



(mm)

Item No.	Point Size	Shaft Length	Shaft diam.	Handle diam.	O.A. Length
DG-05	⊕#2/⊖6	95	6.3	34	210

DP-03～64 RoHS PRO-USE DRIVER

- Chrome Vanadium alloy steel & complete heat treated blade.
- Black oxide finish blade.
- Knurl shaft for quick rotation



Size table (mm)

Item No.	Blade size	Shaft length	Shaft diam.	Handle diam.	O.A. Length
DP-03	#00	75	3	15	146
DP-24	#0	100	4.3	18	183
DP-44	#1	100	5.5	25	200
DP-64	#2	100	6.3	27	213
DP-13	⊖3.0×0.35	75	3	15	146
DP-34	⊖4.3×0.5	100	4.3	18	183
DP-54	⊖5.5×0.7	100	5.5	25	200

(Blade size=width×thickness)

DG-08・09 RoHS MASTER GRIP DRIVER

- Master Cushion grip assures powerful fastening power.
- Bottom marking & color distinguish phillips from slotted tip.
- Special alloy steel blade, tempered & plated for lasting durability.
- Precision black-point finish, magnetic point.

DG-08



DG-09



(mm)

Item No.	Point Size	Shaft Length	Shaft diam.	Handle diam.	O.A. Length
DG-08	⊕#2	70	6.3	40	195
DG-09	⊖6×1.0	70	6.3	40	195

DG-11～14 RoHS EXTRA LONG GRIP DRIVER

- Cushion grip handle which fits perfect in the hand provides excellent tightening power.
- Shafts are made of chrome vanadium alloy steel, entirely heat treated with black magnetic oxide tip.
- Chrome plated finish.

DG-12



(mm)

Item No.	Point Size	Shaft Length	Shaft diam.	Handle diam.	O.A. Length
DG-11	⊖6.0×0.8	225	6.3	32	362
DG-12	⊕#2	225	6.3	32	362
DG-13	⊖6.0×0.8	275	6.3	32	412
DG-14	⊕#2	275	6.3	32	412

DS-03～85 RoHS STANDARD DRIVER

DS-24



DS-34



Size table for ⊕ driver (mm)

Item No.	⊕Blade size	Shaft length	Shaft diam.	Handle diam.	O.A. Length
DS-03	#00	75	3	11	128
DS-23	#0	75	4.3	16	151
DS-24	#0	100	4.3	16	176
DS-44	#1	100	5.5	18	185
DS-46	#1	150	5.5	18	235
DS-64	#2	100	6.3	22	193
DS-85	#3	125	8	28	232

Size table for ⊖ driver (mm)

Item No.	⊖Blade size	Shaft length	Shaft diam.	Handle diam.	O.A. Length
DS-12	2.6×0.35	50	3	11	103
DS-13	2.6×0.35	75	3	11	129
DS-14	2.6×0.35	100	3	11	154
DS-16	2.6×0.35	150	3	11	204
DS-33	4.0×0.5	75	4.3	16	150
DS-34	4.0×0.5	100	4.3	16	175
DS-54	5.5×0.7	100	5.5	18	184
DS-76	6.0×0.8	150	6.3	22	243

DG-21~24 RoHS MINI SOFT DRIVER

- Comfortable soft-grip handle.
- Chrome-vanadium steel & perfectly heat-treated blade.
- Black oxide point.
- Chrome plated finish.

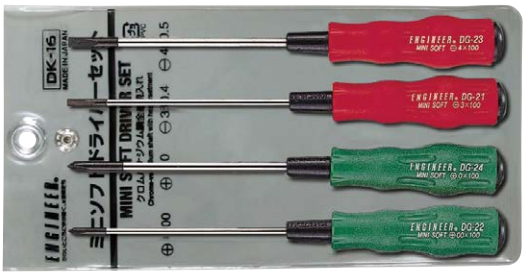


(mm)

Item No.	Blade size	Shaft length	Shaft diam.	Handle diam.	O.A. Length
DG-21	⊖3×0.4	80	3	21	167
DG-22	⊕#00	80	3	21	167
DG-23	⊖4×0.5	80	4	21	167
DG-24	⊕#0	80	4	21	167

DK-16 RoHS MINI SOFT DRIVER SET

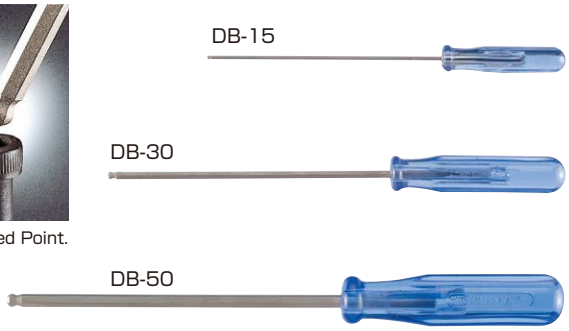
Contents
- DG-22
- DG-24
- DG-21
- DG-23



DB-13~60 RoHS BALL POINT DRIVER

- Ball head will work from an angle up to 30° off axis.
- Heat-treated alloy steel with electroless nickel plating
- Magnetized point


Ball Ended Point.

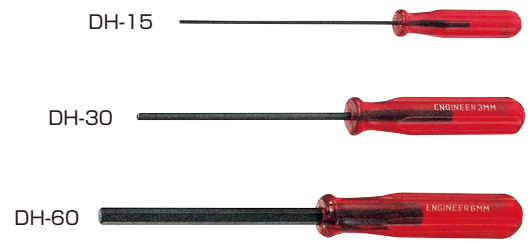


(mm)

Item No.	Size	Shaft length	Shaft diam.	Handle diam.	O.A. Length
DB-15	1.5	70	1.5	11	124
DB-20	2	70	2	11	124
DB-25	2.5	70	2.5	16	143
DB-30	3	100	3	16	173
DB-40	4	120	4	18	204
DB-50	5	140	5	22	233

DH-15~60 RoHS HEX DRIVER

- Heat-treated, chrome-molybdenum alloy steel blade.



(mm)

Item No.	Size	Shaft length	Handle diam.	O.A. Length
DH-15	1.5	90	11	144
DH-20	2	90	11	144
DH-25	2.5	90	11	144
DH-30	3	90	16	163
DH-40	4	90	16	163
DH-50	5	90	18	175
* DH-60	6	90	18	175

* DH-60 subject to being unsold

DK-03 RoHS BALL DRIVER SET

- Set of 5 most popular ball drivers in a vinyl pouch.



DK-03(5pcs)
- DB-15
- DB-20
- DB-25
- DB-30
- DB-40



DK-01・02 RoHS HEX DRIVER SET

- Set of 4 (DK-01) and 6 (DK-02) most popular hex drivers in a vinyl pouch.



DK-01
(4pcs)
- DH-15
- DH-20
- DH-25
- DH-30



DK-02
〈6pcs〉
- DH-15
- DH-20
- DH-25
- DH-30
- DH-40
- DH-50

Screw adapted (mm)

Size	Cap screw	Set screw
1.27	M1.4	
1.5	M1.6,M2	M3
2.0	M2.5,M2.6	M4
2.5	M3	M5
3.0	M4	M6
4.0	M5	M8
5.0	M6	M10
6.0	M8	M12,M14

DST-01・02 RoHS STUBBY DRIVER

DST-01



DST-02

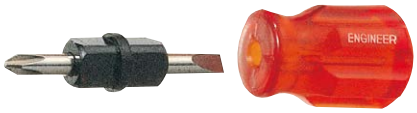


(mm)

Item No.	Tip size	Shaft length	Shaft diam.	Handle diam.	O.A. Length
DST-01	⊖6.3×0.9	38	6.3	30	86
DST-02	⊕ #2	38	6.3	30	86

DST-05 RoHS COMBINATION REVERSIBLE STUBBY DRIVER

- 2-in-1 ⊕/⊖reversible in single hand.
- Extra compact 85㎜ O.A. length.



(mm)

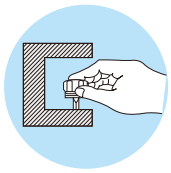
Item No.	Tip size	Blade length	Blade diam.	Handle diam.	O.A. Length
DST-05	⊕#2/⊖6.3	23	6.3	30	85

DST-06・07 RoHS MINIATURE REVERSIBLE DRIVER

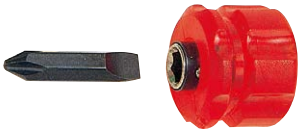
- 2-in-1 ⊕/⊖reversible in single hand.
- Specially compact design in 42㎜ O.A. length.



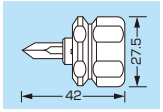
DST-06



Fluted design handle assures perfect thumb and finger grip.



DST-07



(mm)

Item No.	Tip size	Bit length	Bit diam.	Handle diam.
DST-06	⊕#1/⊖4.5	16	6.3	27.5
DST-07	⊕#2/⊖6	16	6.3	27.5

DK-50 RoHS REVERSIBLE DRIVER SET

- ⊕/⊖Reversible type, 3pcs. set
- Contents: DK-51 ⊕#00/⊖2.6
  DK-52 ⊕#1/⊖4.5
  DK-53 ⊕#2/⊖6



DK-51~53 RoHS REVERSIBLE DRIVER

- ⊕/⊖Two-in-one

DK-51



DK-52



DK-53

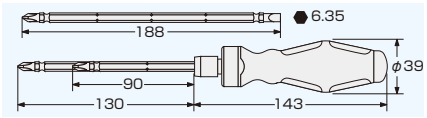


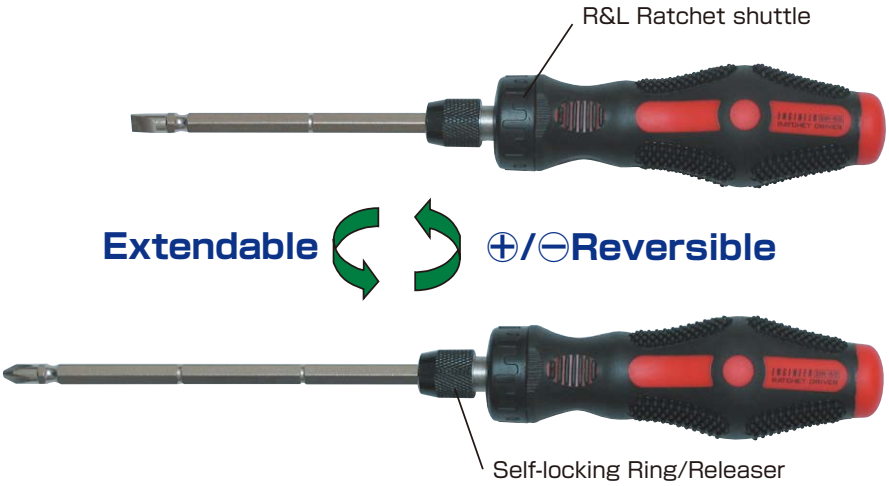
(mm)

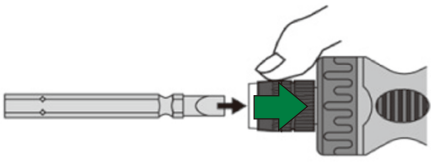
Item No.	Tip size	Blade length	Blade diam.	Handle diam.	O.A. Length
DK-51	⊕#00/⊖2.6	67	3	18	164
DK-52	⊕# 1 /⊖4.5	82	5	24	195
DK-53	⊕ #2/⊖ 6	89	6.3	26	216

DR-53 RoHS CUSHIONED GRIP RATCHET DRIVER

- Shaft length adjustable at 90㎜ or 130㎜ with self-locking stopper inside handle
- ⊕#2/⊖6㎜ Two-in-one magnetized blade
- High torque ratchet mechanism
- Ergonomically-designed 2-tone cushioned handle (ϕ39㎜)
- Overall length : 233㎜ or 273㎜







Insert the bit for self-locking at 130㎜ and 90㎜ as you like while sliding the lock-release ring downward.

DT/DTC/DTH/DTP/DTY SERIES

RoHS **MOBILE PHONE DRIVER**

Made for special screws, ideal for maintenance work of cordless phones, cellular phones, etc.





DT-06



DT-10



DT-20



Applicable to tampering-proof screws (T6~T20) (mm)

Item No.	Point size	Shaft length	Shaft diam.	Handle diam.	O.A. Length	Main Use
DT-02	✱0.9 T2	75	3.0	15	146	Game console
DTX-04	✱1.2 TX4	75	3.0	15	146	Smart phone/Mobile phone
DT-04	✱1.3 T4	75	3.0	15	146	Smart phone/Mobile phone
DT-05	✱1.4 T5	75	3.0	15	146	
DT-06	✡1.7 T6	75	3.0	15	146	
DTX-08	✡2.0 TX8	75	3.0	15	146	Smart phone/Mobile phone
DT-08	✡2.3 T8	75	3.0	15	146	
DT-10	✡2.7 T10	100	5.5	25	200	
DT-15	✡3.3 T15	100	5.5	25	200	
DT-20	✡3.8 T20	100	5.5	25	200	

■Torx (Hex-lobe) screws

There may be a projection in the center of screw hole for prevention of theft and tampering.
Torx (Hex-lobe) screws are used for cordless phone, transceiver, precision instruments, etc.

DTC-27



Point size (mm)

Item No.	Point size	Shaft Length	Shaft diam		Handle diam	O.A. Length	Main Use
DTC-20	3.6	90	4.5	7.0	25	190	Game console/Soft
DTC-27	4.6	90	5.9	7.0	25	190	Game console

DTH-03



Point size Hole diameter:1.8mm (mm)

Item No.	Point size	Shaft Length	Across flats	Handle diam.	O.A. Length	Main Use
DTH-03	3.0	75	⬢3	15	146	Car telephone, etc

DAP-01



DTP-05



Point size (mm)

Item No.	Point size	Shaft Length	Shaft diam.	Handle diam.	O.A. Length	Main Use
DAP-01	0.9	23	3.0	10	113	Smart phone
DTP-03	1.3	75	3.0	15	146	Mobile phone, etc
DTP-05	1.7	100	5.5	25	200	Mobile phone, etc





DAT-02



Point size (mm)

Item No.	Point size	Shaft Length	Shaft diam.	Handle diam.	O.A. Length	Main Use
DAT-02	✱0.9 T2	23	3.0	10	113	Game console

DTY-03



Point size (mm)

Item No.	Point size	Shaft Length	Shaft diam.	Handle diam.	O.A. Length	Main Use
DTY-02	1.7	75	3.0	15	146	Game/Mobile phone
DTY-03	2.4	75	3.0	15	146	Game/Mobile phone

DK-80・81・82

RoHS **DRIVER SET**



■DK-80 10pcs. set
●DT-06●DTX-08●DT-10●DT-15
●DT-20●DTC-20●DTC-27●DTH-03
●DTY-03●DP-64



■DK-81 11pcs. set
●DTX-04●DT-04●DT-05●DT-06
●DTX-08●DT-10●DTC-20●DTP-03
●DTP-05●DTY-03●DP-64



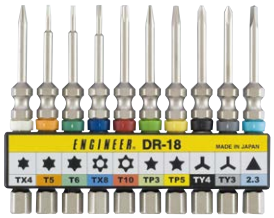
■DK-82 16 pcs. set
●DTX-04●DT-04●DT-05●DT-06
●DTX-08●DTP-03●DTY-03●DT-10
●DTC-20●DTP-05●DP-64●DK-24
●TP-31●PT-06●Housing Opener●Pick

DR-18・186

RoHS **BIT SET FOR MOBILE PHONE**

10-in-1 special driver bit set

- Easy to distinguish different color band.
- Magnet point attracting a tiny screw.



6-in-1 bit set with plastic handle

- 6 different bits assorted according to customer's choice.
- Economical pack including compact handle.



DZ-01・02 RoHS MINIATURE DRIVER



(mm)

Item No.	Point Size	Shaft Length	Shaft diam.	Grip diam.	O.A. Length
DZ-01	⊖1.6×0.3	30	2	6.3	55
DZ-02	⊕#000	30	2	6.3	55

DZ-03~05 RoHS CROSS DRIVER

● Powerful tightening and multi-function

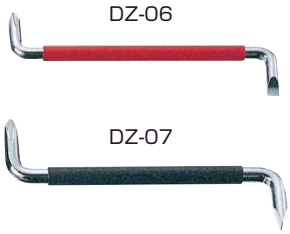


(mm)

Item No.	Size(Across flats)	O.A. Length
DZ-03	○ 4, 5, 5.5, 6	82
DZ-04	○ 7, 8, 9, 10	103
DZ-05	DZ-03,DZ-04set	

DZ-06~08 RoHS OFFSET DRIVER

● Ideal for work in narrow areas.



(mm)

Item No.	Point Size	O.A. Length	Blade
DZ-06	⊕#1/⊖5	108	23
DZ-07	⊕#2/⊖6	108	30
DZ-08	DZ-06,DZ-07set		

DZ-11・12 RoHS FLEXIBLE SHAFT DRIVER

● Flexible shaft is suited for use in narrow areas.

DZ-11



DZ-12



(mm)

Item No.	Point Size	Shaft Length	Grip diam.	O.A. Length
DZ-11	⊖5×0.6	135	18	220
DZ-12	⊕ #2	135	18	220

DZ-21~25 RoHS SCREW-HOLDING DRIVER

● Clipping screw at the point especially for remote and narrow areas

DZ-23



DZ-25

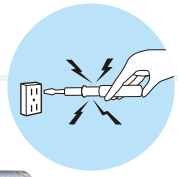


(mm)

Item No.	Point Size	Shaft Length	Shaft diam.	Grip diam.	O.A. Length
DZ-21	⊕ #00	100	3	11	154
DZ-23	⊕#0	100	4.3	16	175
DZ-24	⊕ #0	200	4.3	16	275
DZ-25	⊖4.0×0.5	100	4.3	16	175

DKD-01・02 RoHS CIRCUIT TESTING DRIVER

DKD-01 (For low voltage)



● AC80~300V, DC100~250V
● For continuity & transmitting test
● O.A. Length: 129㎜



DKD-02 (For automobile use only)

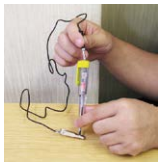
● For sparking plug & discharge testing.
● O.A. Length: 129㎜



DKD-03 RoHS LED CIRCUIT TESTER

NEW

● AC100-250V (Low voltage use)
● High brightness LED built-in
● Continuity check of circuit
● Polarity check of electric outlet
● Blade (3.0 x 0.4㎜) with protective cap
● O.A. Length : 120㎜



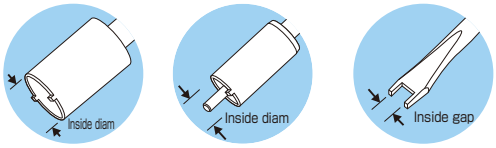
Continuity check

DJ-01~05 RoHS PLUG JACK DRIVER

Ideal for use with radio microphone jacks.



DJ-01 B type | DJ-02 B type | DJ-03 C type | DJ-04 C type | DJ-05 A type



A type | B type | C type

(mm)

Item No.	Tip shape & size A	B	C	Shaft length	Shaft diam.	Handle diam.	O.A. Length
DJ-01	–	4.5	–	75	4.3	16	150
DJ-02	–	6	–	75	4.3	16	150
DJ-03	–	–	4	75	4.3	16	150
DJ-04	–	–	6	75	4.3	16	150
DJ-05	15.8	–	–	53	8	28	150



SECTION

N.P

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■Cutting Capacity Comparison Table (Reference only)

(mm)

Model	Commodity	Size	Copper wire		Steel wire(φ)	Others	Page
			Solid(φ)	Stranded(㎟)			
NS-03	Micro Nippers	125	1.4	2			34
NS-04	Micro Nippers	115	1.2	2			34
NSX-04	Micro Nippers	115	1.2	2			34
NS-06	Micro Nippers	105	0.8				34
NZ-03	Chip Cutter	125	0.6				35
NZ-05	Chip Cutter	125	0.6			also applicable to plastic gate	35
NZ-12	Parallel Nippers	125	0.6				35
NZ-13	Parallel Nippers	125	0.6				35
NP-03	Plastic Nippers	125				Injection molding gate φ3㎜	37
NP-04	Plastic Nippers	150				Injection molding gate φ3㎜	37
NP-05	Plastic Nippers	120	0.8			Injection molding gate φ2.5㎜	37
NK-15	Diagonal Nippers	125	2.6	2	1.5		36
NK-16	Diagonal Nippers	150	3	2	1.9		36
NK-25	Diagonal Nippers	125	2.6	2	1.5	Stripping hole φ1.2 & 1.6㎜	36
NK-26	Diagonal Nippers	150	3	2	1.9	Stripping hole φ1.2 & 1.6㎜	36
NK-36	Diagonal Nippers	150	3.2		2	Vinyl insulated cable φ1.6㎜	36
NN-45	Slant Edge Nippers	125	2	2	1.2	Stripping hole φ1.2 & 1.6㎜	37
NN-46	Slant Edge Nippers	150	2.6	2	1.4	Stripping hole φ1.2 & 1.6㎜	37
NN-56	Slant Edge Nippers	150	2.6	2	1.4		37
PD-06	Side Cutting Pliers	150	3.2		1.6	Vinyl insulated cable φ1.6㎜	47
PD-07	Side Cutting Pliers	175	3.6		1.8	Vinyl insulated cable φ1.6㎜	47
PD-08	Side Cutting Pliers	200	4.0		2.0	Vinyl insulated cable φ2.0㎜	47
PS-01	Long Nose Pliers	125	2		1.2		46
PR-15	Long Nose Pliers	125	2.0	2	1.5		46
PR-16	Long Nose Pliers	150	2.6	2	1.5		46
PR-26	Long Nose Pliers	150	2.6	2	1.5		46
PR-36	Long Nose Pliers	150	2.6	2	1.5	Stripping hole φ1.2	46
PR-46	Needle Nose Pliers	160	2.6	2	1.2		46
PH-50	Combi. Scissors	170	1.5			Insulated cord	53
PZ-58	Screw Removal Pliers	160	1.2		1.0		39

■Wire Stripper AWG Conversion (Reference only)

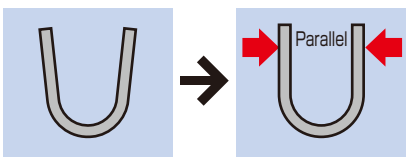
AWG		36	34	32	30	28	26	24	22	20	18	16	14	12	10	8
Conductor diameter (㎜)		0.13	0.16	0.2	0.25	0.32	0.41	0.51	0.64	0.81	1.02	1.29	1.63	2.05	2.59	3.26
Sectional area (㎟)		0.014	0.025	0.035	0.05	0.08	0.13	0.2	0.33	0.52	0.82	1.31	2.08	3.31	5.26	8.37
Outside diameter (㎜)		0.15	0.195 0.2	0.24 0.25	0.3	0.38	0.48 0.5	0.61 0.64	0.76 0.8	0.95 1	1.2 1.3	1.6	1.9	2.4 2.5	2.6 3.1	3.9 4.4
Stripping hole φ (㎜)	PA-05				0.4	0.5	0.65	0.8	0.95	1.15	1.45					
	PA-06				0.4	0.5	0.65	0.8	0.95	1.15	1.45					
	PA-07							0.8	0.95	1.15	1.45	1.8	2.1	2.5		
	PA-14		0.25	0.3	0.4	0.5	0.65	0.8	0.95							

( ) : Reference

■How to select the proper dies for crimping an open-barrel contact

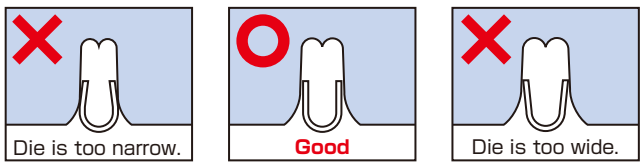
1. Measure the width of conductor barrel with a caliper while both barrel wings are in parallel.





Wings opened　　Measure the width

2. Select the die width which is close to the width of barrel wings measured.

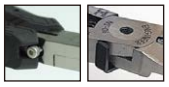


For example: 1.5㎜ measured ➡ Select 1.6㎜ dies.

※ If the length of barrel is longer than or smaller than the thickness of dies, crimping may be failed.
You are requested to refer to Contact Pin Application Chart first on our website (PA-09, PA-20, PA-21 & PAR-20)

NS & NZ SERIES

Features
- Our micro nippers are ideal for precise PCB work.
- Made of special steel and specially heat treated for excellent cutting capacity and durability.
- Full-flush cutting edge recommended for cutting copper and soft lead wires.
- Soft touch grip insulation and spring ensure long comfortable work.



- With opening angle adjuster or stopper

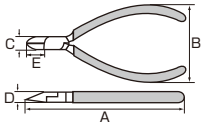
NS-03 RoHS MICRO NIPPERS

- Ideal for small PCB related work
- With opening angle adjuster
- Material: S58C
- Hardness: HRC 58±4
- Capacity: copper wire ϕ1.4㎜

Spring







(mm)

Size	A	B	C	D	E
125	128	52	13	7	14

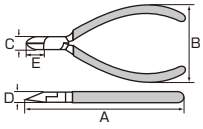
NS-04 RoHS MICRO NIPPERS

- Ideal for small PCB related work
- With opening angle adjuster
- Material: S58C
- Hardness: HRC 58±4
- Capacity: copper wire ϕ1.2㎜

Spring







(mm)

Size	A	B	C	D	E
115	117	52	13	7	14

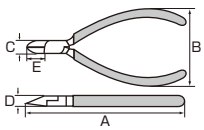
NSX-04 RoHS MICRO NIPPERS

- Cost-saving simple structure
- With side stopper
- Material: S58C
- Hardness: HRC 58±4
- Capacity: copper wire ϕ1.2㎜
- Especially for production line owing to economical and ecology package in poly bag

Spring







(mm)

Size	A	B	C	D	E
115	117	51	13	7	14

NS-06 RoHS MICRO NIPPERS

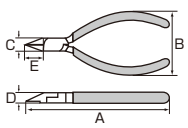
- Undercut design featuring thin blade
- Ideal for precise PCB related work
- With opening angle adjuster
- Material: S58C
- Hardness: HRC 58±4
- Capacity: copper wire ϕ0.8㎜

Spring





Under cut



(mm)

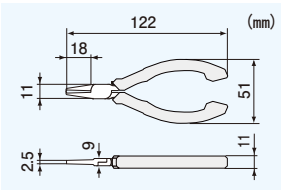
Size	A	B	C	D	E
105	107	48	10	7	10

NZ-03 CHIP CUTTER

- Opening angle adjuster (Max. 5㎜) with 1.5㎜ hex key wrench included
- Sharp & slender design of jaws for work on dense circuit board
- Material: S58C
- Hardness: HRC 58±4
- Capacity: copper wire ϕ0.6㎜
- Applications: Removal of chip resistance, IC, etc. on SMD

Spring ESD SAFE





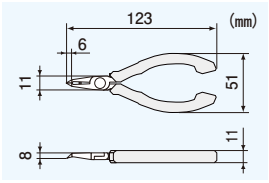


NZ-05 CHIP CUTTER

- Opening angle adjuster (Max. 5㎜) with 1.5㎜ hex key wrench included
- Sharp & slender design of jaws for work on dense circuit board
- Material: S58C
- Hardness: HRC 58±4
- Capacity: copper wire ϕ0.6㎜
- Applications: Leads of Dual In-line Package or Single In-line Package IC on SMD

Spring ESD SAFE





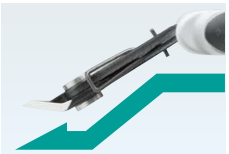


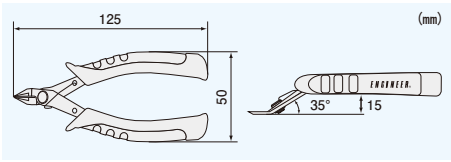
NZ-12・13 PARALLEL NIPPERS

Full flush & super-fine cutting edge

- Ideal to cut an IC lead of a narrow-pitch QFP or SOP with slender shears (0.3㎜+0.3㎜ width at top)
- Ergonomic elastomer handle for comfort gripping
- Cutting capacity : Copper wire ϕ0.6㎜
- Light weight of 45g only

Spring





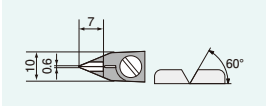
SHEARS & GRIP IN PARALLEL

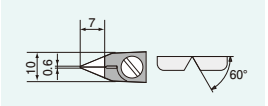


NZ-12



NZ-13







NZ-12 : Normal Blade
Enables you to make flush cut of a lead easily so as to prevent resist stripping or solder crack on the circuit board



NZ-13 : Reverse Blade
Enables you to cut IC lead in front of user with the best view while holding nippers vertically against circuit board

NK-15・16

RoHS

DIAGONAL NIPPERS

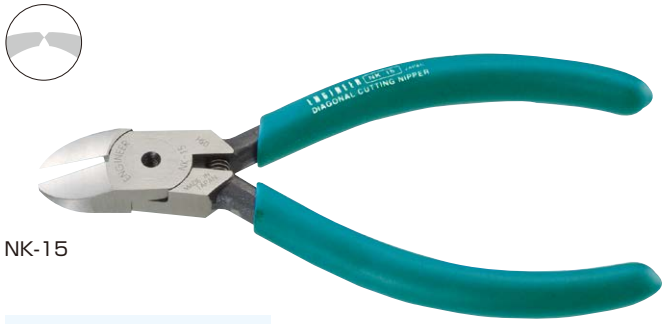
Sharp & durable cutting for precision wiring work



Spring



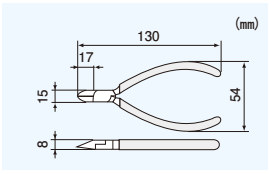
- With opening angle adjuster & coiled spring
- Material: S55C
- Hardness: HRC 58±4
- Capacity (copper wire) : NK-15 φ2.6mm
  NK-16 φ3mm

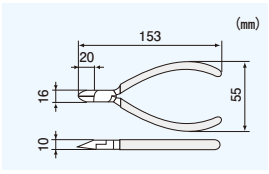


NK-15



NK-16





NK-25・26

RoHS

DIAGONAL NIPPERS

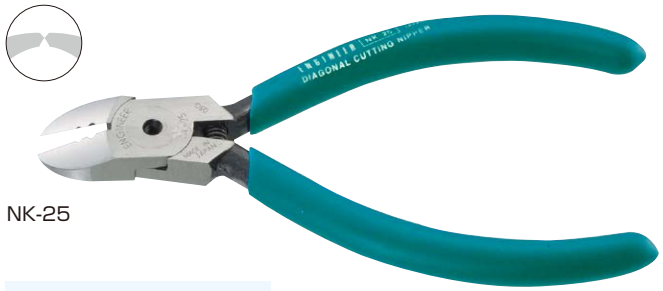
Precision cutter with wire stripper



Spring



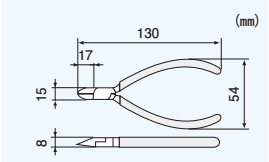
- With opening angle adjuster & coiled spring
- Stripping holes: φ1.2 & 1.6mm
- Material: S55C
- Hardness: HRC 58±4
- Capacity (copper wire) : NK-25 φ2.6mm
  NK-26 φ3mm

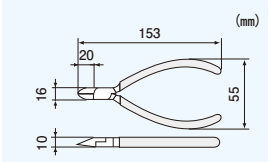


NK-25



NK-26





NK-36

RoHS

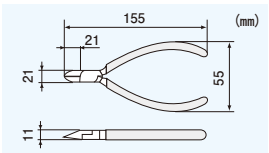
HEAVY DUTY DIAGONAL NIPPERS

JIS

Heavy-duty durable cutter

- Material: S58C
- Hardness: HRC 60±4
- Capacity: copper wire φ3.2mm





NN-45・46 RoHS SLANT EDGE NIPPERS

Professional type for sharp & easy use

- Stripping holes: ϕ1.2 & 1.6㎜
- Material: S58C
- Hardness: HRC 58±4



NN-45

(mm)

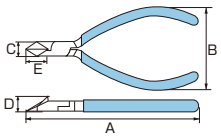
Item No.	Size	A	B	C	D	E	Capacity
NN-45	125	133	51	14	10	23	copper wire ϕ2㎜
NN-46	150	159	51	16	11	26	copper wire ϕ2.6㎜

NN-56 RoHS SLANT EDGE NIPPERS

Sharp cutting & easy handling

- Material : S58C
- Hardness : HRC 58±4
- Capacity : copper wire ϕ2.6㎜





(mm)

Size	A	B	C	D	E
150	159	51	16	11	26

NP-03・04 RoHS PLASTIC NIPPERS

- Ideal for cutting plastic mold gates & burns
- With opening angle adjuster & coiled spring
- Material: S58C
- Hardness: HRC 58±4

Spring



NP-03



NP-04

NP-05 RoHS PLASTIC NIPPERS

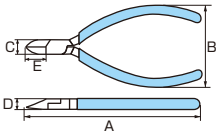
Tapered and slender head for work in restricted area

- Ideal for cutting and trimming various gates of injection molding
- Also capable of cutting thin copper wire (ϕ0.8㎜ max.)
- With side stopper & coiled spring
- Material: S58C
- Hardness: HRC 58±4

Spring



NP-05



(mm)

Item No.	Size	A	B	C	D	E
NP-03	125	130	54	14	8	17
NP-04	150	152	55	16	10	20
NP-05	120	120	50	11	7	12

SCREW REMOVAL PLIERS LINE-UP

Damaged Screws Impossible to Remove?
Remove Stripped, Rusted or Stuck screw easily!!

International Patent
- JAPAN PAT.3486776
- USA PAT.6923097
- TAIWAN PAT.178742
- KOREA PAT.919966

PZ-55

RoHS SCREW REMOVAL PLIERS

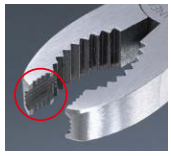
Make best use of PZ-55 while screwdriver being no use !

- Serrated jaw inside bites screw head firm and unfastens it with no slip.
- More powerful torque than screwdriver toward screw & nut
- Also ideal for rotating nut in case of no space to drive wrench in arc

※ For screw whose head was damaged and transformed
※ For screw whose slot on the head is special, unique or tamper-proof
※ For screw frozen with rust

Both vertical and horizontal serration for anti-slipping

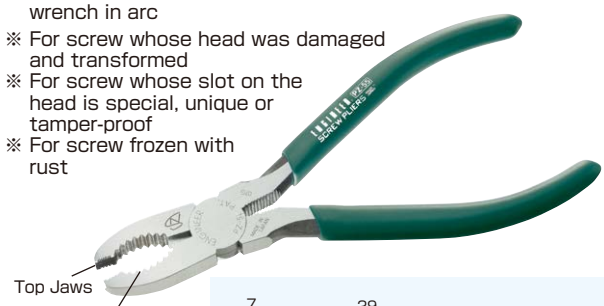
PAT.

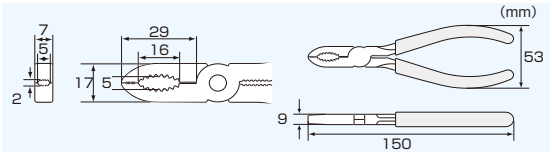












Item No.	Material	Hardness	Wgt. (g)
PZ-55	S58C	HRC56±2	125

■ Screws adaptable

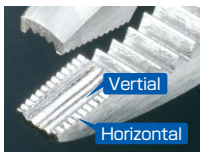
Top Jaws	Side Jaws
Screw head size: ϕ3~ϕ8mm	Screw head size: ϕ5.5~ϕ10mm

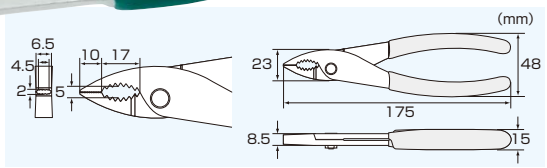
PZ-56

RoHS SCREW REMOVAL PLIERS XP Cross

Feel the powerful and extensive work !!

- Slip joint function makes it possible to select two points of opening jaws.
- Reverse cross-jointed structure to reduce the load which is imposed at joint bolt while unfastening work.



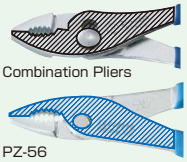


SLIP JOINT



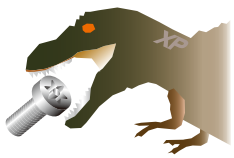
2 levels of opening jaws selectable to meet various sizes of screws

REVERSE X-JOINT



Reverse crossing structure prevents joint bolt from being loose and increases durability.

PAT.



LARGE SCREW HEAD

Capable of holding M6 screw at maximum



SLENDER TOP

Ideal for work even at narrow space owing to slender design of jaws



Item No.	Material	Hardness	Wgt. (g)
PZ-56	Cr-V	HRC56±2	187

■ Screws adaptable

Top Jaws	Side Jaws
Screw head size: ϕ3~ϕ10mm	Screw head size: ϕ5.5~ϕ14mm

PZ-57

RoHS SCREW REMOVAL PLIERS M2

Slender jaws and pocket-sized body

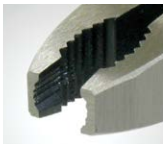
- Ideal for unfastening frozen or special screws of tiny size
- ESD-Safe handle made of thermoplastic Elastomer (TPR) featuring comfortable grip

PAT.

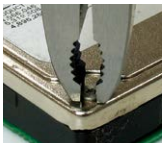
ESD SAFE


with strap hole



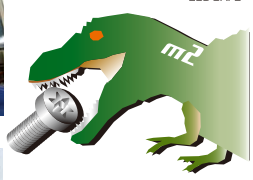


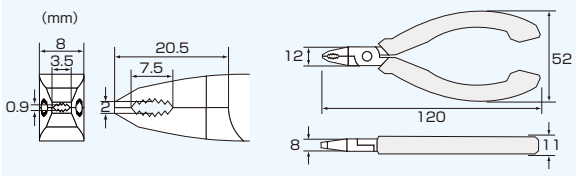

PCB


Hard Disk Drive


Damaged screw


Torx screw





Item No.	Material	Hardness	Wgt.(g)
PZ-57	S58C	HRC56±2	100

■ Screws adaptable

Top Jaws	Side Jaws
Screw head size: ϕ2~ϕ3.5mm	Screw head size: ϕ3.5~ϕ5.5mm

MULTI-PURPOSE SCREW REMOVING TOOL



PZ-58 SCREW REMOVAL PLIERS GT

RoHS

Stuck Screws Impossible to Remove? Just Grip and Turn with PZ-58!!

Spring PAT.

- Elaborately-designed serration fits the profile of screw head at the best angle.
- Also good for Truss head screw *Truss: Lower-profile dome head
- Comfortable cushioned handles (TPR)
- with wire cutter (Capacity: copper wire ϕ1.2㎜)



Neji-saurus

Elaborately-designed serration fits the profile of screw head at the best angle, also good for Truss head screw.
* Truss: Lower-profile dome head



product design award 2011

International Patent
JAPAN (PAT.3486776)
(PAT.4471315)
USA (PAT.6923097)
TAIWAN (PAT.178742)
(PAT.1363675)
KOREA (PAT.919966)



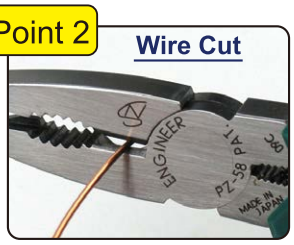
Advanced design of Vertical and Horizontal serrations


Rusted

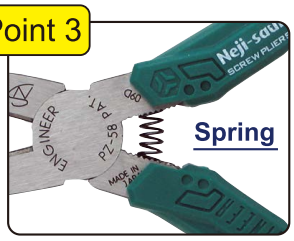

Stripped

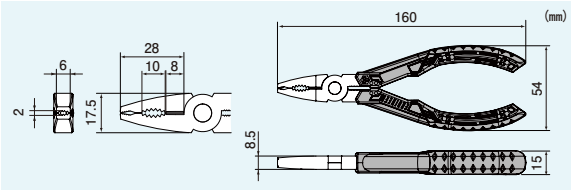

Stuck

Point 2 Wire Cut



Point 3





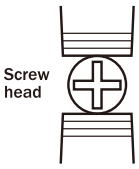
Item No.	Material	Hardness	Wgt. (g)
PZ-58	Carbon Steel	HRC58±2	130

■ Screws adaptable

Top Jaws	Side Jaws
Screw head size: ϕ3~ϕ9.5㎜	Screw head size: ϕ5.5~ϕ10㎜

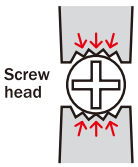
Q. How does Neji-saurus work?
A. Both vertical and horizontal serrations grasp a screw head with no slip.

Case of ordinary pliers



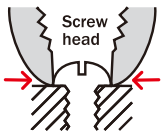
Ordinary plier jaws are lined with horizontal serrations. When you grasp and turn a screw head with ordinary pliers, the jaws slip and the screw remains stuck.

1. Vertical serration



Neji-saurus' specially-designed jaws generate gripping power.

2. Maximizes the friction



Neji-saurus' perfectly-fit serration maximizes the friction with no slip.

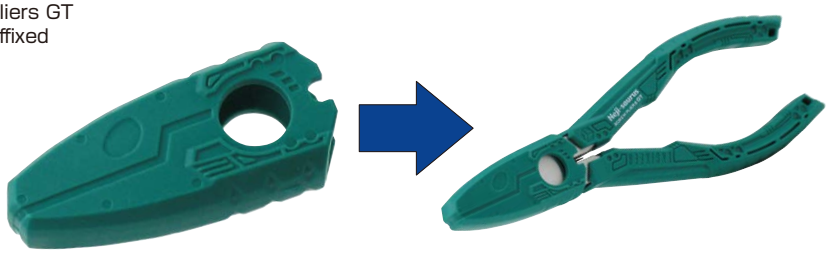
* The tool may not remove specially-hardened, heat-treated or glued screws.
* Be sure to apply this tool to a screw head, but not to screw thread.

PZM-58 PLIER'S MASK FOR PZ-58

RoHS

NEW

- Stylish and fancy mask for Screw Removal Pliers GT
- Keep the pliers jaws closed with this mask affixed
- Material : Elastomer (TPR)

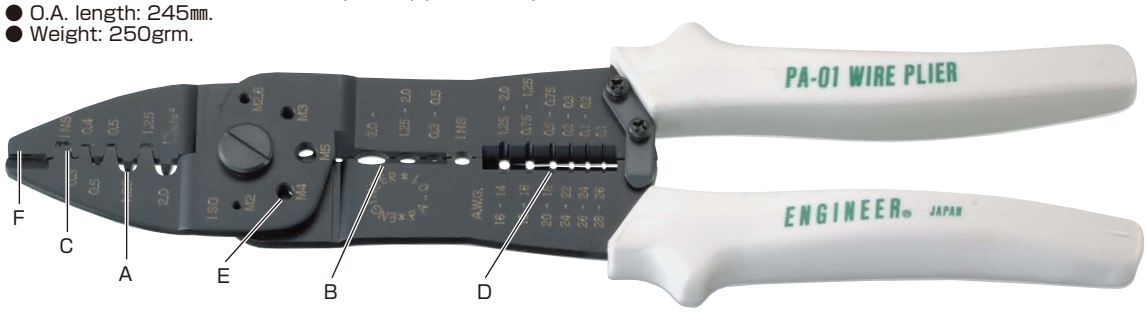


WIRE PLIERS SERIES

Features ● General purpose & compact wire pliers used for crimping, stripping & cutting for precision wiring work.

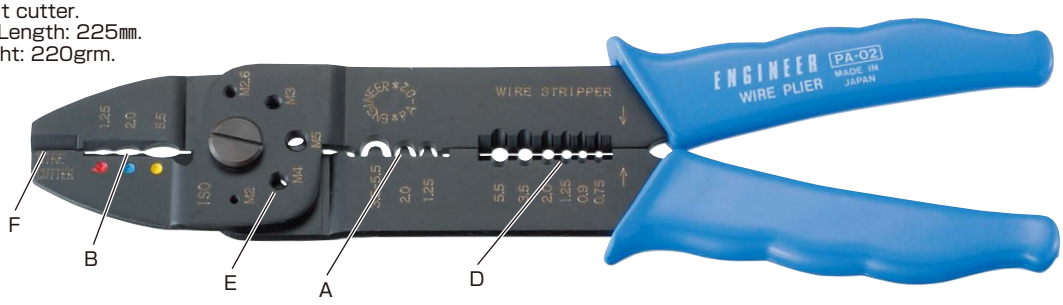
PA-01 RoHS WIRE PLIERS

● Six-in-one multipurpose type.
● For bare, insulated terminals & splices (open barrels).
● O.A. length: 245㎜.
● Weight: 250grm.



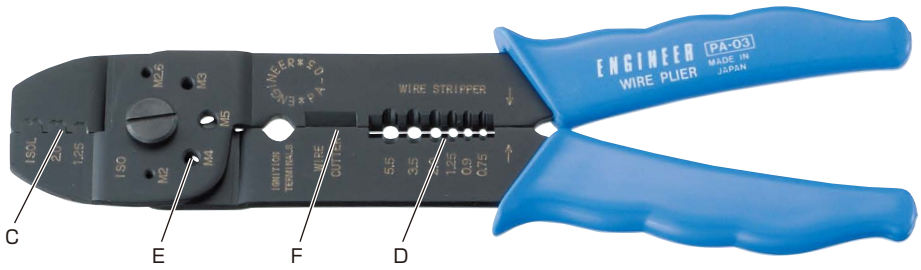
PA-02 RoHS WIRE PLIERS

● For bare, insulated terminals, with wire stripper & bolt cutter.
● O.A. Length: 225㎜.
● Weight: 220grm.



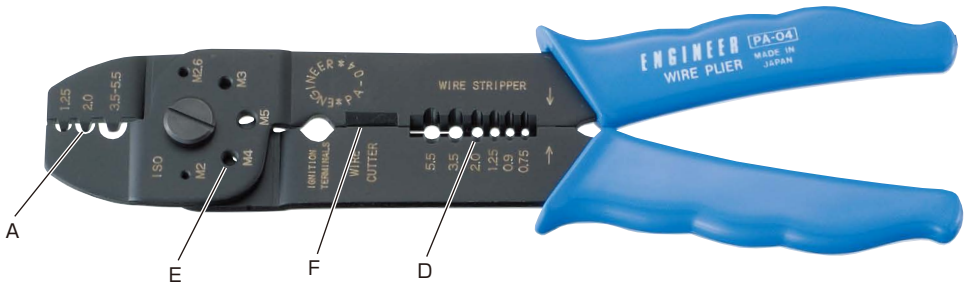
PA-03 RoHS WIRE PLIERS

● For splices (open barrel terminals) with wire stripper & bolt cutter.
● O.A. Length: 210㎜.
● Weight: 205grm.



PA-04 RoHS WIRE PLIERS

● For bare terminals with wire stripper & bolt cutter
● O.A. Length: 210㎜.
● Weight: 205grm.



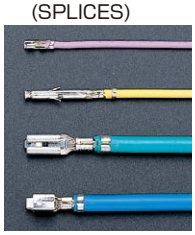
A. For crimping BARE terminals.



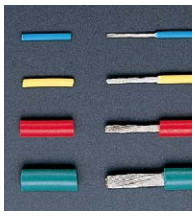
B. For crimping INSULATED terminals.



C. For crimping OPEN BARREL (SPLICES)



D. For stripping insulated WIRES.



E. For cutting SCREWS.



F. For cutting WIRES.



■Comparison table for PA series

(mm²)

Item No.	A	B	C	D	E	F
	Bare terminals' crimping	Insulated terminals' crimping	Splices' crimping	Wires' stripping	Small screw's cutter(iso)	Wires' cutting
PA-01	0.5 ~2.0	0.3 ~2.0	0.3 ~1.25	0.1 ~2.0	M2, M2.6, M3, M4, M5	○
PA-02	1.25~5.5	1.25~5.5	–	0.75~5.5	M2, M2.6, M3, M4, M5	○
PA-03	–	–	1.25~2.0	0.75~5.5	M2, M2.6, M3, M4, M5	○
PA-04	1.25~5.5	–	–	0.75~5.5	M2, M2.6, M3, M4, M5	○

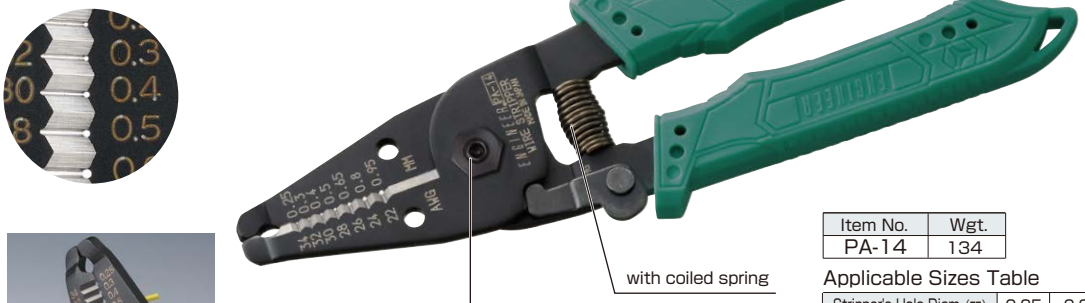
■Conversion A.W.G. table

AWG	8	10	12	14	16	18	20	22	24	26	28	30
Sectional area ㎟	8.37	5.26	3.31	2.08	1.31	0.82	0.52	0.33	0.20	0.13	0.08	0.05
Wire diam ㎜	3.26	2.59	2.05	1.63	1.29	1.02	0.81	0.64	0.51	0.41	0.32	0.25

PA-05・06・07・14 RoHS WIRE STRIPPER

- Giving a very round finish of wires after stripping by sharp and precise edge
- Made of carbon steel alloy withstanding abrasions
- Oil-resistant Elastomer (TPR) handle

Spring




with strap hole

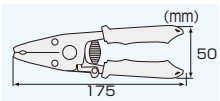
PA-14 for micro-thin wire





"ENGINEER" original Joint-Screw prevents the joint from being loose and offer you easy maintenance.

Item No.	Wgt.
PA-14	134



Applicable Sizes Table

Stripper's Hole Diam (mm)			0.25	0.3	0.4	0.5	0.65	0.8	0.95
Applicable wire	Outside diam. (mm)		0.2	0.25	0.3	0.38	0.5	0.64	0.8
	Sectional area (㎟)		0.025	0.035	0.05	0.08	0.13	0.2	0.33
	AWG conversion	Stranded	34	32	30	28	26	24	22
		Solid wire	32	30	28	26	24	22	20

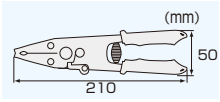
PA-05 for thin wire



■Crimping Function (mm²)

Bare Terminal	Connector Terminal
0.5~2.0	0.3~1.25

Item No.	Wgt.
PA-05	166



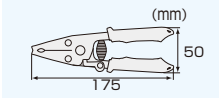
Applicable Sizes Table

Stripper's Hole Diam (mm)			0.4	0.5	0.65	0.8	0.95	1.15	1.45
Applicable wire	Outside diam. (mm)		0.3	0.38	0.5	0.64	0.8	1.0	1.3
	Sectional area (㎟)		0.05	0.08	0.13	0.2	0.33	0.52	0.82
	AWG conversion	Stranded	30	28	26	24	22	20	18
		Solid wire	28	26	24	22	20	18	16

PA-06 for thin wire



Item No.	Wgt.
PA-06	134



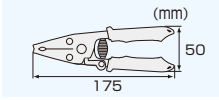
Applicable Sizes Table

Stripper's Hole Diam (mm)			0.4	0.5	0.65	0.8	0.95	1.15	1.45
Applicable wire	Outside diam. (mm)		0.3	0.38	0.5	0.64	0.8	1.0	1.3
	Sectional area (㎟)		0.05	0.08	0.13	0.2	0.33	0.52	0.82
	AWG conversion	Stranded	30	28	26	24	22	20	18
		Solid wire	28	26	24	22	20	18	16

PA-07 for thick wire



Item No.	Wgt.
PA-07	134



Applicable Sizes Table

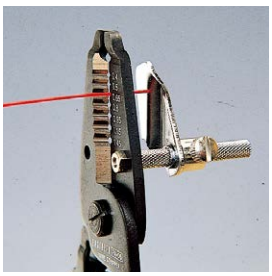
Stripper's Hole Diam (mm)			0.8	0.95	1.15	1.45	1.8	2.1	2.5
Applicable wire	Outside diam. (mm)		0.64	0.8	1.0	1.3	1.5	1.9	2.4
	Sectional area (㎟)		0.2	0.33	0.52	0.82	1.31	2.08	3.31
	AWG conversion	Stranded	24	22	20	18	16	14	12
		Solid wire	22	20	18	16	14	(12)	(10)

( ) Reference

PA-90 RoHS STRIPPING GAUGE

Min. stripping length 1mm!

- Saving time and giving you perfect stripping length every time
- Adjustable stripping length let you work more efficiently and reduces faults.



PA-08・15

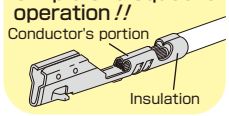
RoHS CONNECTOR PLIERS

DOUBLE ACTION MECHANISM

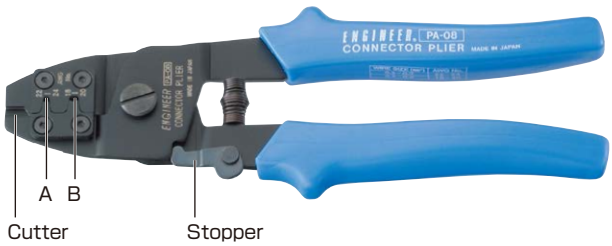
- It enables you to crimp lead wire portion and insulation by a simple one-squeeze operation.

Spring

Simple one-squeeze operation !!



■PA-08



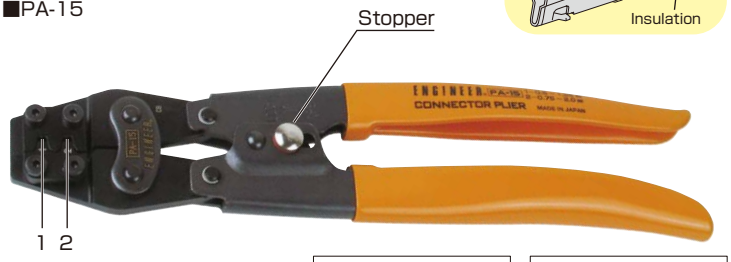


▲PA-08

■Applicable wire size

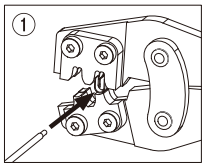
Item No.	Die No.	Conductors' cross section (㎟)	AWG No.	Net Weight	O.A. Length
PA-08	A	0.21~0.33	24~22	215g	195㎜
	B	0.52~0.82	20~18		

■PA-15

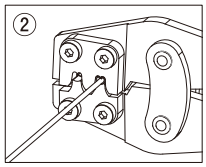




▲PA-15
Flat blade terminal and Bullet terminal adaptable



①Put a contact on to an adaptable die and close jaws just to hold the contact. Then, insert the lead wire into the barrel of contact.



②Grip the handles steadily. You may adjust crimping force slightly depending on grip strength.

■Applicable wire size

Item No.	Die No.	Die Width (㎜)	Die Height (㎜)	Die Thickness (㎜)	Wire applicable (Reference only) Cross section(㎟)	Wire applicable (Reference only) AWG No.	Net Weight	O.A. Length
PA-15	1	2.9	0.8	3.5	0.5~1.25	20~16	385g	250㎜
		3.1	1.5	4.5				
	2	3.1	0.8	3.5	0.75~2.0	18~14		
		3.3	1.6	4.5				

PAR-20

RoHS RATCHET CRIMPING CONNECTOR PLIERS

- Crimping wire and insulation simultaneously by a single gripping
- Ratchet mechanism ensures uniform and precise crimping.
- Handle sleeve made of PP, good for insulation and chemical resistance.
- Overall length : 265㎜
- Weight: 450g

Twin crimping of both conductor and insulation at the same time





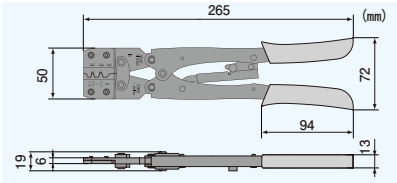


High accurate dies for fine crimping finish



Ratchet releaser

Dies



■How to use



①Put a contact pin to hold.



②Insert wire into barrel of contact.



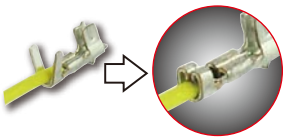
③Grip the handles steadily until ratchet is released.

■Applicable wire size

Item No.	Die No.	Die W(㎜)	Die H(㎜)	Die T(㎜)	Wire applicable (Reference only) φ㎜	Wire applicable (Reference only) ㎟	Wire applicable (Reference only) AWG(Cconductor)
PAR-20	W3	Conductor 1.6	0.7	1.5	0.41~0.64	0.13~0.33	26~22
		Insulation 1.7	1.7	2.5			–
	W4	Conductor 1.9	0.9	1.5	0.64~0.81	0.33~0.52	22~20
		Insulation 2.3	2.5	2.5			–

CONNECTOR CRIMPING PLIERS

Features
- Our line-up offers you very precise and perfect crimp finish of open-barrel contacts.
- ENGINEER original joint-screw prevents the joint from being loose and realizes easy maintenance.
- Pliers made of S55C high carbon steel for durability
- With locking latch and coiled spring, Light weight for fatigue-free work



PA-09 MICRO CONNECTOR PLIERS

Crimp AWG #32 to #20 wires in micro connectors of different makers!!



- 4 different crimping dies, 1.0, 1.4, 1.6 & 1.9㎜(W)
- Makes it possible to crimp 1.25 to 2.5㎜ pitch connector pin (Narrow pitch)
- D-sub connector contacts also adaptable
- Weight: 145 g



■Typical terminals applicable

PH Series(JST)	ZH Series(JST)	Molex 170363(Molex)
		
EH Series(JST)	**NH Series(JST)**	**Molex 170365(Molex)**
		

■Specifications

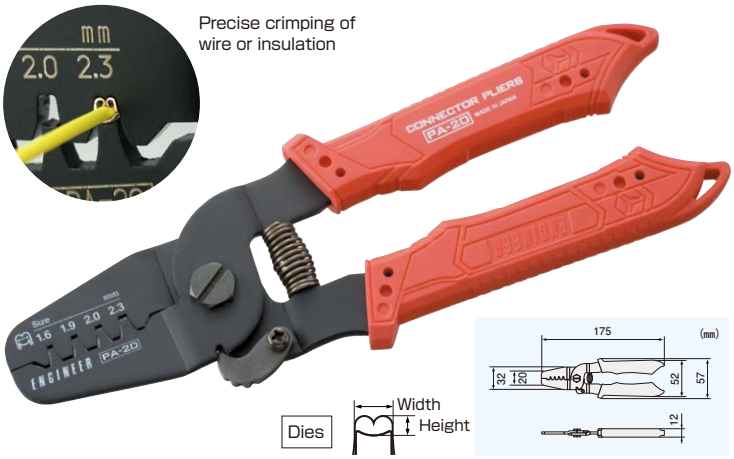
Item No.	Die Width (㎜)	Die Height (㎜)	Die Thickness (㎜)	Wires applicable (Reference only)		
				φ㎜	㎟	AWG (conductor)
PA-09	1.0	0.50	1.7	0.20~0.32	0.031~0.08	#32~#28
	1.4	0.55		0.32~0.51	0.08~0.21	#28~#24
	1.6	0.8	2.0	0.51~0.64	0.21~0.33	#24~#22
	1.9	0.9		0.51~0.81	0.21~0.52	#24~#20

PA-20 UNIVERSAL CRIMPING PLIERS

Crimp AWG #28 to #18 wires in micro connectors of different makers!!



- 4 different crimping dies, 1.6, 1.9, 2.0 & 2.3㎜(W)
- Makes it possible to crimp 2.5 to 5㎜ pitch connector pin (Universal type)
- Weight: 145 g



■Typical terminals applicable

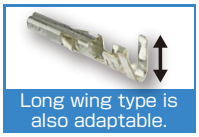
VH Series(JST)	NH Series(JST)	PH Series(JST)
		
EL Series(JST)	**3191 Series(Molex)**	**MATE-N-LOK(Tyco)**
		

■Specifications

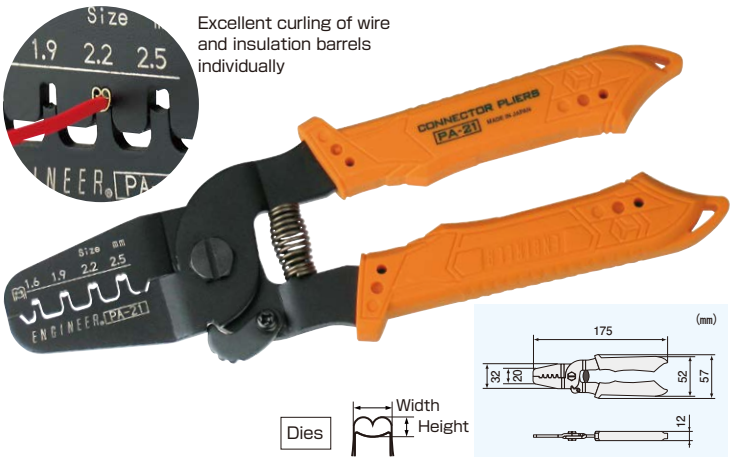
Item No.	Die Width (㎜)	Die Height (㎜)	Die Thickness (㎜)	Wires applicable (Reference only)		
				φ㎜	㎟	AWG (conductor)
PA-20	1.6	0.7	2.5	0.32~0.64	0.08~0.33	#28~#22
	1.9	0.8		0.51~0.81	0.21~0.52	#24~#20
	2.0	0.9		0.64~1.02	0.33~0.82	#22~#18
	2.3	1.0		0.81~1.02	0.52~0.82	#20~#18

PA-21 UNIVERSAL CRIMPING PLIERS

Precise crimpers for wide range of open-barrel contacts including long barrel wing type



- 4 different crimping dies, 1.6, 1.9, 2.2 & 2.5㎜(W)
- Crimping AWG #26~18 contacts of different connector makers
- Weight: 145 g



■Typical terminals applicable

XH Series(JST)	NH Series(JST)	VH Series(JST)
		
PA Series(JST)	**Mini Fit(Molex)**	**Universal MATE-N-LOK(Tyco)**
		

■Specifications

Item No.	Die Width (㎜)	Die Height (㎜)	Die Thickness (㎜)	Wires applicable (Reference only)		
				φ㎜	㎟	AWG (conductor)
PA-21	1.6	0.8	1.8	0.41~0.51	0.13~0.21	#26~#24
	1.9	1.0		0.41~0.64	0.13~0.33	#26~#22
	2.2	1.2		0.51~0.81	0.21~0.52	#24~#20
	2.5	1.4		0.64~1.02	0.33~0.82	#22~#18

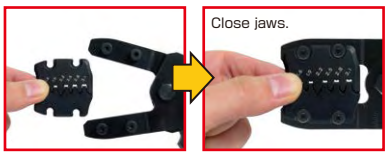
PRECISE CRIMPING SERIES – Tool Frame and Die Set

NEW

PAD-11~13 HANDY CRIMP TOOL

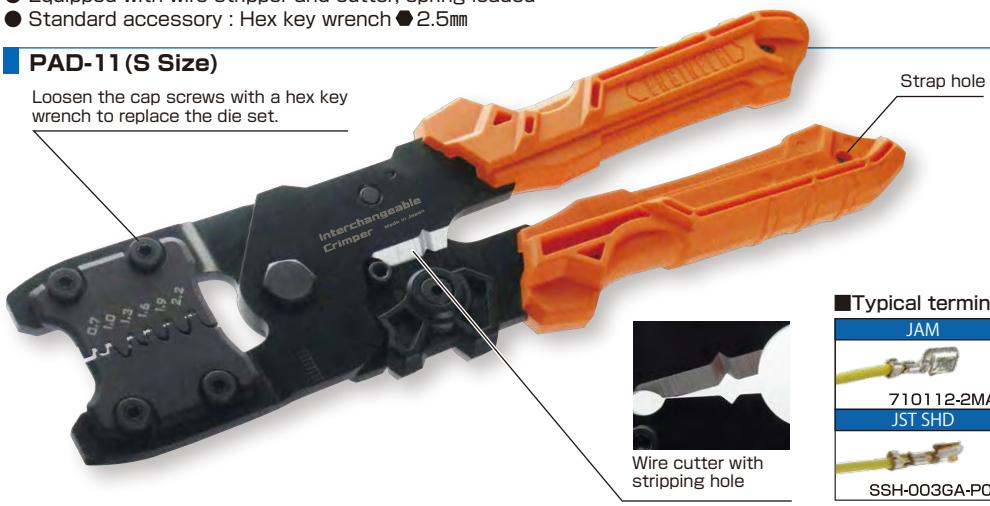
Ultra-precise crimper forming excellent crimping finish

- Interchangeable die set for open-barrel contacts. Easy replacement and perfect fitting to the frame
- Ergonomically-designed handles with strap hole
- Equipped with wire stripper and cutter, spring loaded
- Standard accessory : Hex key wrench ⬣2.5㎜
- Material :
  Frame & Die set – Special alloy steel
  Handles – Elastomer (TPR)

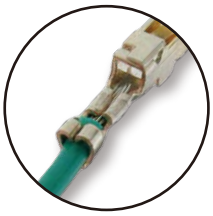


Easy fitting, No need to adjust positioning PAT.P

PAD-11 (S Size)



Wire cutter with stripping hole

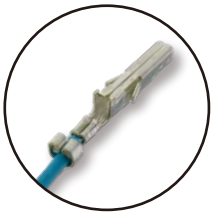


■Typical terminals applicable

JAM	Molex CLIK-Mate	Tyco D-1000
710112-2MAC	502381	1827586-2
JST SHD	Molex PicoBlade	Tyco D-1000
SSH-003GA-P0.2	50079	1827587-2

PAD-12 (M Size)





■Typical terminals applicable

JST NH	Molex New Mini Fit	Tyco D-3000
SHF-001T-0.8BS	5556T	175217-2
JST VH	Molex New Mini Fit	Tyco D-3000
SVH-21T-P1.1	5558T	175288-2

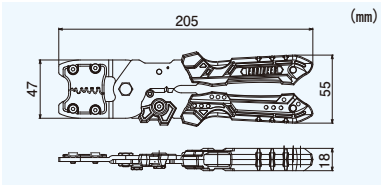
PAD-13 (L Size)





■Typical terminals applicable

JST VL	Molex 3191	Tyco D-3000
BVF-42T-P2.0	1189T	175218-2
JST VL	Molex 3191	Tyco D-3000
BVF-61T-P2.0	1190T	175289-2





■Crimper size (㎜)

Item No.	PAD-11										
	PAD-12										
	PAD-13										
Die width	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7
Die thickness	1.0		1.5		2.0		2.5		3.0		3.5

PAD-11S~13S INTERCHANGEABLE DIE SET

PAD-11S (S Size)

- Over 90 different terminals applicable



PAD-12S (M Size)

- Over 110 different terminals applicable



PAD-13S (L Size)

- Over 100 different terminals applicable





■Frame & Dies Combination

Item No.	Frame		Die set
PAD-11	PAD-10	+	PAD-11S
PAD-12	PAD-10	+	PAD-12S
PAD-13	PAD-10	+	PAD-13S

■Crimper size (㎜)

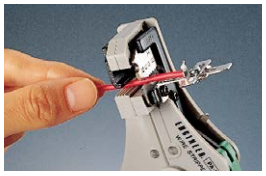
Item No.	PAD-11S										
	PAD-12S										
	PAD-13S										
Die width	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7
Die thickness	1.0		1.5		2.0		2.5		3.0		3.5

PA-11~13 WIRE STRIPPER

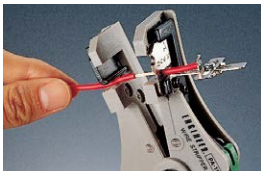
Super-Light weight wire stripper…140g!

- Accurate wire stripping with single squeeze action.
- Made of durable plastic.
- Stripping AWG #32 to 10, stranded wire
- Unique grip designed to fit the human hand.

《Super-Light grip for repeated action》



1.Insert wire into the hole applicable.



2. Grip handles to strip



■PA-13
Grip color: Yellow
For thin wires

■Size applicable

Hole diam ㎜	0.25	0.3	0.4	0.5	0.65
Stranded wire(AWG)	32	30	28	26	24
Solid wire AWG	30	28	26	24	22





■With strip gauge
Length of wire is adjustable using strip gauge.





■PA-11
Grip color: Green

■Size applicable

Hole diam. ㎜	0.5	1.2	1.6	2.0
Stranded wire(AWG)	26	18	16	14
Solid wire AWG	24	16	14	12





■PA-12
Grip color: Red

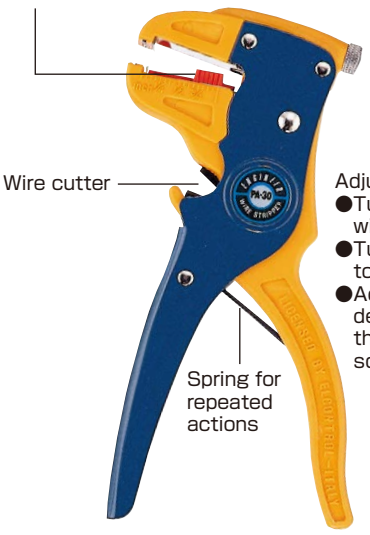
■Size applicable

Hole diam. ㎜	1.0	1.6	2.0	2.6	3.2
Stranded wire(AWG)	20	16	14	12	10
Solid wire AWG	18	14	12	10	8

PA-30 WIRE STRIPPER

- One-Squeeze operation for easy stripping of applicable flat cables, 12㎜ width max.
- With stopper for adjustment of stripping length, 2~20㎜.
- Applicable sectional area: 0.5~5.5㎟.(AWG20~10)

●Sliding stopper to adjust length of stripping.



PA-91~93 TERMINAL SET

- Popular crimping terminals and connectors in compact plastic case.

PA-91



PA-92



PA-93



■PA-91 Set

Terminal		Sectional area (㎟)	Screwdiam (㎜)	Contents
Bare Terminal	R	0.5	3	10
		1.25	3	
		1.25	4	
		2	5	
		5.5	6	5
	Y	1.25	4	10
		2	5	
		5.5	6	5

■PA-92 Set

Terminal		Sectional area (㎟)	Screwdiam (㎜)	Contents
Insulated terminal	RV	1.25	3	10
		1.25	4	
		2	5	
	YV	1.25	3	
		1.25	4	
		2	5	

■PA-93 Set

Terminal		Sectional area (㎟)	Screwdiam (㎜)	Contents
Insulated terminal	RV	5.5	6	4
	YV	5.5	6	
Splice terminal	BC	1.25	–	8
		2	–	
Twist connector	TC	1.25~2	–	10
		1.5 ~4	–	8

PS-01 MINIATURE LONG NOSE PLIERS

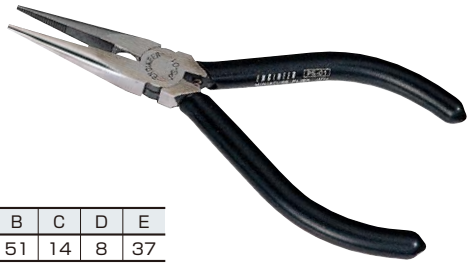
Ideal for precision work

- Jaws with inside serration
- Material: S58C
- Hardness: HRC 58±4
- Capacity: copper wire φ2mm



Point section

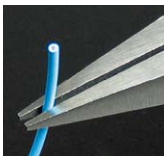
Spring



SIZE	A	B	C	D	E
125	132	51	14	8	37

PS-04 MINIATURE FLAT NOSE PLIERS

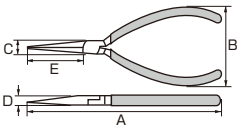
- Jaws without serration
- Material: S58C
- Hardness: HRC 46±4



Point section

Spring





SIZE	A	B	C	D	E
125	123	50	12	8	29

PS-03 MINIATURE NEEDLE NOSE PLIERS

Ideal for forming work

- Jaws without serration
- ESD-Safe handle made of Elastomer (TPR)
- Material: S58C
- Hardness: HRC 46±4



ESD SAFE

Point section

Spring



SIZE	A	B	C	D	E
125	141	55	11	8	38

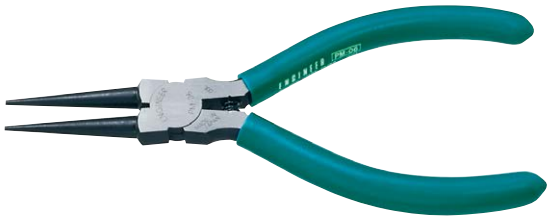
PM-06 ROUND NOSE PLIERS

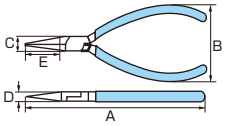
Ideal for looping & coiling of steel wires

- Material: SCM440H

Point section φ1.5

Spring





SIZE	A	B	C	D	E
150	145	53	15	8	35

PR-15・16 LONG NOSE PLIERS

General purpose pliers

- Material: S58C
- Hardness: HRC 58±4



Point section

PR-16

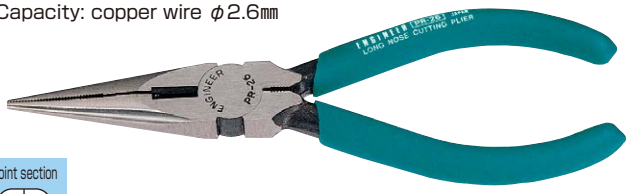
(mm)

Item No.	SIZE	A	B	C	D	E	Capacity
PR-15	125	142	51	17	10	43	Copper wire φ2.0mm
PR-16	150	160	55	17	10	49	Copper wire φ2.6mm

PR-26 LONG NOSE PLIERS

Professional type pliers

- Material: S58C
- Hardness: HRC 58±4
- Capacity: copper wire φ2.6mm



Point section

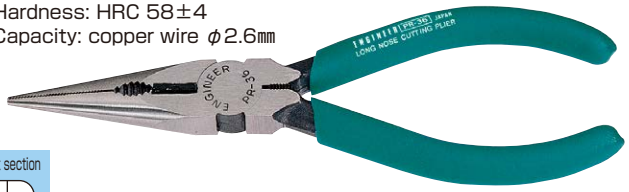
(mm)

SIZE	A	B	C	D	E
150	160	52	17	10	50

PR-36 LONG NOSE PLIERS

Multipurpose pliers with gripping jaws, cutter & wire stripper

- Stripping Hole: φ1.2mm
- Material: S58C
- Hardness: HRC 58±4
- Capacity: copper wire φ2.6mm



Point section

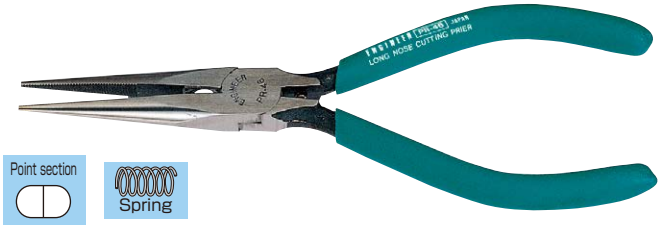
(mm)

SIZE	A	B	C	D	E
150	160	51	17	10	50

PR-46 NEEDLE NOSE PLIERS

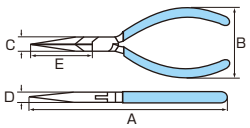
50mm-long slender nose ideal for work in deep area

- Material: S58C
- Hardness: HRC 58±4
- Capacity: copper wire φ2.6mm



Point section

Spring



(mm)

SIZE	A	B	C	D	E
160	160	51	13	8	50

STAINLESS STEEL PLIERS SERIES

Features
- Anti-corrosive stainless steel body
- Ideal for precision work
- Long-life box joint structure to avoid loosening

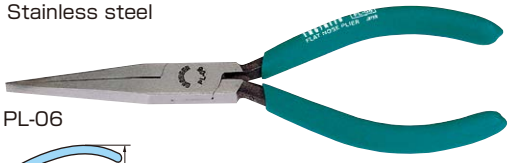

Box joint(3pcs. joint)

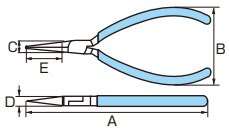
PL-05・06 LONG FLAT NOSE PLIERS

Thin and flat edge for efficient work

Point section

- Jaws without serration
- Long-life box joint structure to avoid loosening
- Material: Stainless steel


PL-06



(mm)

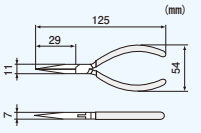
Item No.	SIZE	A	B	C	D	E
PL-05	125	143	50	11	7	40
PL-06	150	164	53	15	10	43

PSS-01 STAINLESS STEEL LONG NOSE PLIERS

Point section

- Serrated jaws

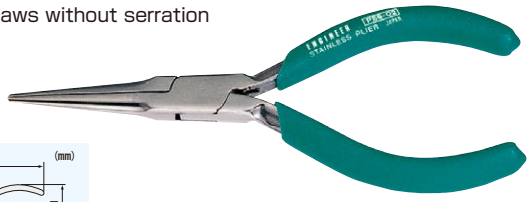


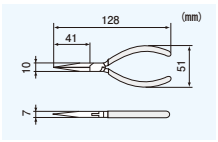


PSS-02 STAINLESS STEEL NEEDLE NOSE PLIERS

Point section

- Jaws without serration

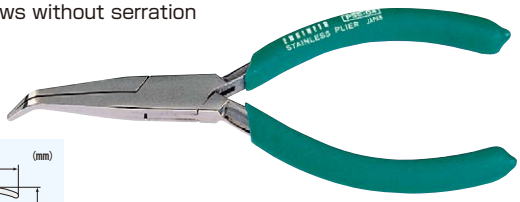


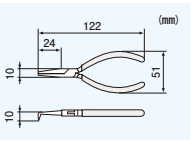


PSS-04 STAINLESS STEEL FLAT NOSE PLIERS (CURVED TYPE)

Point section

- Jaws without serration





PD SERIES

Features
- Durably constructed Electrician's Pliers

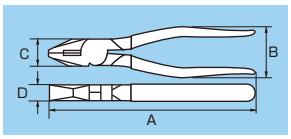
PD-06~08 SIDE CUTTING PLIERS


PD-06


PD-08

Heavy duty professional-use pliers

- Material: S58C
- Hardness: HRC 60±4



Item No.	S i z e	A	B	C	D	Capacity
PD-06	150	165	50	22	12	steel wire φ1.6mm
PD-07	175	185	52	24	13	steel wire φ1.8mm
PD-08	200	210	53	27	14	steel wire φ2.0mm

PC & PW SERIES

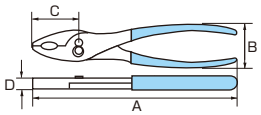
Features
- Slip Joint Pliers and Groove Joint Pliers for maintenance and general purpose

PC-06・08 COMBINATION PLIERS

- Slip joint for wide-open jaws
- Material: S55C


PC-06


PC-08



(mm)

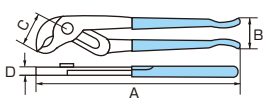
Item No.	Size	A	B	C	D
PC-06	150	165	45	42	9
PC-08	200	203	48	46	11

PW-05~10 WATER PUMP PLIERS

- Groove-joint leverage for heavy duty work
- Serrated jaws with soft-touch grip
- Material: S55C


PW-05


PW-08



(mm)

Item No.	Size	A	B	C	D	Max.Opening
PW-05	125	127	34	25	5.5	15
PW-08	200	200	37	38	8	33
PW-10	250	250	38	50	11	45

PZ-01・02 E-RING PLIERS

Ideal and smart pliers to remove and fasten E-ring!!

- Place the corner of E-ring into the recess of pliers' jaw for removal, fastening and replacement work.
- Magnetized point for convenient holding
- Long-life box joint structure to avoid loose joint
- Material : Stainless steel







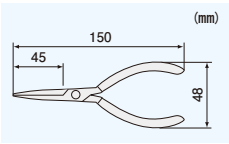
PZ-01

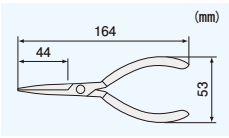


PZ-02



Box joint





Item No.	Ring Size	O.A. Length
PZ-01	φ3~4mm	150mm
PZ-02	φ5~9mm	164mm

The Ring Size shown above is the diameter of grooved shaft to which E-ring retains.



Ring Size

PZ-10 SNAP RING PLIERS

Convertible pliers for use with both internal & external rings.

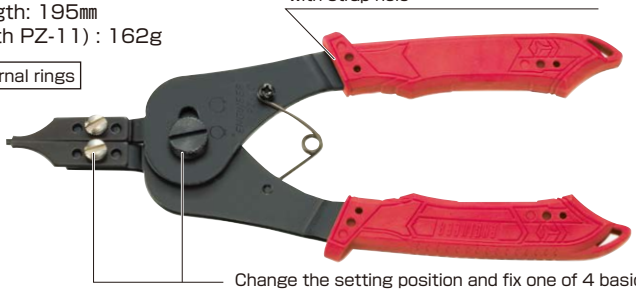
Spring

- Main body coming with 4 different tips
- Oil-resistant Elastomer (TPR) handle
- Overall length: 195mm
- Weight (with PZ-11) : 162g

Environment-friendly Elastomer handle with strap hole

Setting for internal rings





Change the setting position and fix one of 4 basic tips depending on work to Internal ring or External ring

How to convert setting from internal to external

①Unscrew & move setting position at the cross joint hole.
②Unscrew & alternate the right and left tips each other.



Setting for external rings





- Body with 4 bit set

For Internal Ring type C | For Internal Ring grip-type | For External Ring

Tip's Shape and Rings Applied (mm)

Item No.	Tip Diam.	Shape	Rings applied		
			For Internal Ring C type	For Internal Ring Grip type	For External Ring
PZ-11	0.7	Straight	3~11	2~5	6~13
PZ-12		Curved			
PZ-13	1.4	Straight	10~30	6~9	12~30
PZ-14		Curved			

PH-01~06 LOCK HOLDER

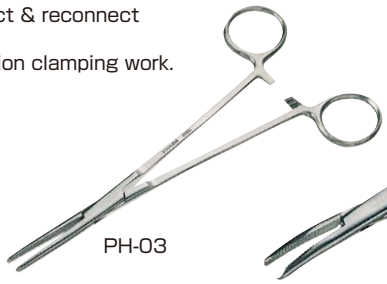
- Serrated ratchet allows quick disconnect & reconnect for temporary connection.
- Ideal for assembling, soldering & precision clamping work.
- Material: Stainless Steel



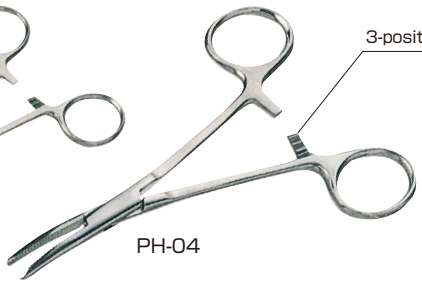
Holding component



Clipping oil hose



PH-03



PH-04

3-position Snap Lock

(mm)

Item No.	Length	Point shape
PH-01	125	Straight
PH-02		Curved
PH-03	150	Straight
PH-04		Curved
PH-05	200	Straight
PH-06		Curved

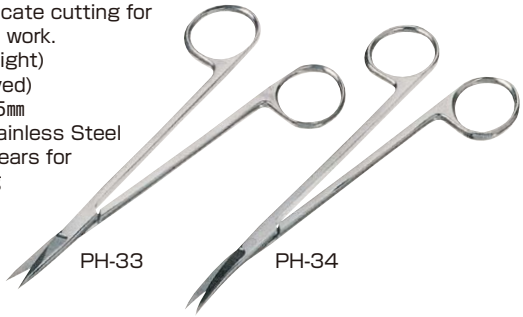
PH-31・32 ELECTRONIC SNIPS

- Ideal for PCB related work.
- PH-31 (straight)
  PH-32 (curved)
- Length: 115mm
- Material: Stainless Steel



PH-33・34 ELECTRONIC SNIPS

- Ideal for delicate cutting for PCB related work.
- PH-33 (straight)
  PH-34 (curved)
- Length: 145mm
- Material: Stainless Steel
- Serrated shears for anti-slipping



PT SERIES (AISI 304 Stainless Steel)

Features
- Standardized stainless steel (AISI 304), anti-magnetic, anti-acid & anti-corrosive alloy
- Hardened points are finished accurately and tensionized body to provide correct spring action & eliminate strain of fingers.
- Indicates spring action with

★ Soft ★★ Middle ★★★ Hard

PT-01 TWEEZERS(AA)

●Length:125㎜

★



PT-02 TWEEZERS (RR)

●Length : 150㎜

★★



PT-03 TWEEZERS (MM)

●Length : 125㎜

★



PT-04 TWEEZERS(I)

●Length : 120㎜

★



PT-05 TWEEZERS (GG)

●Length : 120㎜

★



PT-06 TWEEZERS(J)

●Length : 120㎜

★



PT-07 TWEEZERS(TS)

●Serrated inside point
●Length : 125㎜

★★



PT-08 TWEEZERS

●Length : 145㎜

★



PT-09 TWEEZERS

●Serrated inside point
●Length : 130㎜

★★



PT-10 TWEEZERS

●Serrated inside point
●Length : 150㎜

★★



PT-11 TWEEZERS

●Serrated inside point
●Length : 230㎜

★★



PT-12 TWEEZERS (BS)

●Length : 165㎜

★



PT-13 TWEEZERS

●Length : 190㎜

★★★



PT-14 REVERSE ACTION TWEEZERS

●Handles are squeezed to open points.
●Serrated inside points
●Length : 175㎜

★★★



PT-15 TWEEZERS

●Inside polished points for picking up small sheets.
●Length : 105㎜

★



SOLID ARM TWEEZERS SERIES

Features
- 2.2㎜ thickly-designed arms hold IC chip more steadily than conventional tweezers.
- Stiff arms can not bend easily and hold a small component very steadily.
- AISI 304 anti-magnetic stainless steel



PT-16•17•31 SOLID ARM TWEEZERS

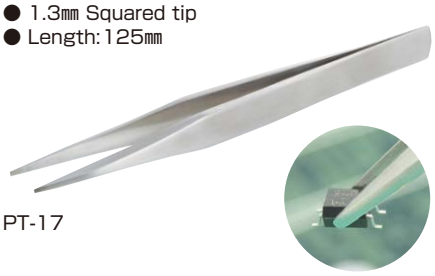
- 0.5㎜ Fine tip
- Length:125㎜

PT-16



- 1.3㎜ Squared tip
- Length:125㎜

PT-17



- 0.3㎜ Fine tip (GG)
- Length:120㎜

PT-31



TITANIUM TWEEZERS SERIES(100% ANTI-MAGNETIC)

Features
- Perfect anti-magnetic titanium, safety in work of electronics and computer device. No solder residue left.
- No corrosion, No rusting and Anti-ionization, ideal for chemical & biological fields
- Light weight, 40% less than ordinary stainless steel tweezers, for fatigue-free work

★ Soft ★★ Middle ★★★ Hard

PTN-01 AA TYPE

●Length : 125㎜
●with soft case

★



General use tweezers with strong sharply pointed type.

with Soft Case PTK-90

PTN-02 GG TYPE

●Length : 120㎜
●with soft case

★



Needel-like, very thin tips for handling microscopic parts.

with Soft Case PTK-90

PTN-03 J TYPE

●Length : 120㎜
●with soft case

★★



very thin and curved tips for working on microminiature assemblies.

with Soft Case PTK-90

PTN-04 TS TYPE

●Length : 125㎜
●with soft case

★★



Serrated inside points.

with Soft Case PTK-90

SMD TWEEZERS SERIES

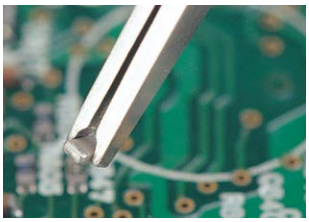
Features
- Ideal for handling highly complex SMD chip parts.
- Free selection according to shape of chip parts.
- Made of AISI 304, anti-magnetic, non-corrosive, less wear for long time.

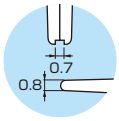
PT-28

RoHS SMD TWEEZERS

Especially designed for handling tiny SMD.

- Long needle-like nose
- Reverse action type
- Length : 138㎜

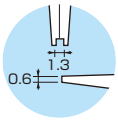






PT-19

RoHS

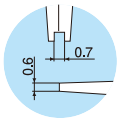


●Length : 115㎜



PT-20

RoHS



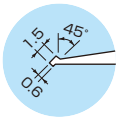


●Length : 115㎜



PT-21

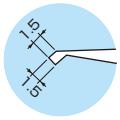
RoHS



●Length : 120㎜

PT-22

RoHS





●Length : 120㎜



PT-23

RoHS





●Length : 120㎜

PT-24

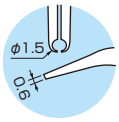
RoHS



●Length : 125㎜

PT-25

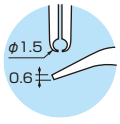
RoHS



●Length : 115㎜

PT-26

RoHS



●Reverse action type



●Length : 120㎜

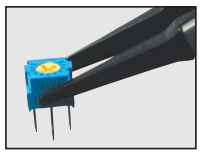
PTZ-41·42·43 ESD PLASTIC-TIPPED TWEEZERS

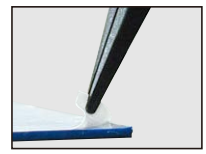
ENGINEERING PLASTIC, PPS (Polyphenylenesulfide) TIP

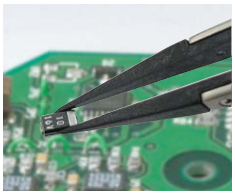
- ESD-Free tip ideal for handling static sensitive components
- Holding the object softly without any possibility of damage like metal tweezers
- Totally anti-magnetic body including stainless steel shank
- Anti-acid chemical resistance
- High wear-resistant and replaceable tip
- Heat resistance up to 270℃ (ASTM D648)

※ The above is Deflection temperature and is not to guarantee performance of tip against heated object.

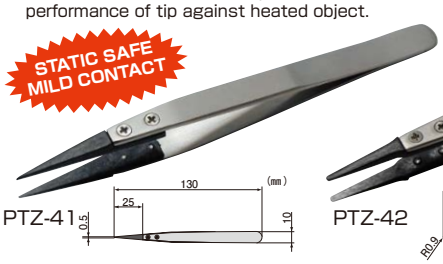
SOFT SPRING ACTION





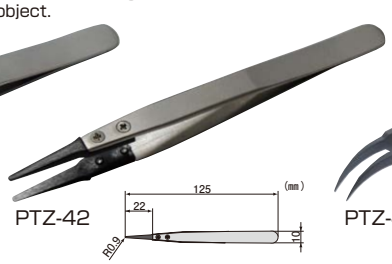


STATIC SAFE MILD CONTACT



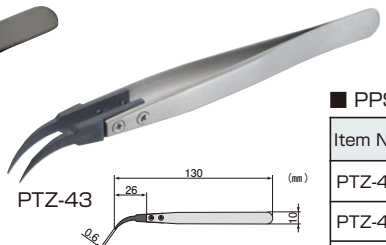
PTZ-41

▲ Fine Tip PTZ-41



PTZ-42

▲ Duckbill Tip PTZ-42



PTZ-43

▲ Curved Nose (J) PTZ-43

■ PPS-TIPPED STAINLESS TWEEZERS

Item No.	Overall Length	Tip	Shank Width	Weight
PTZ-41	130㎜	0.5㎜ Fine Tip	10㎜	16g
PTZ-42	125㎜	R0.9㎜ Duckbill	10㎜	16g
PTZ-43	130㎜	0.6㎜ Fine Tip	10㎜	16g

PTZ-91 SPARE TIP FOR PTZ-41



Fine tip

■ Contents : tip 2 pcs. & screw 4 pcs./set

Item No.	Material	Surface Resistivity
PTZ-91	PPS	$1\times10^{5}\sim10^{7}\Omega$

PTZ-92 SPARE TIP FOR PTZ-42



Duckbill tip

■ Contents : tip 2 pcs. & screw 4 pcs./set

Item No.	Material	Surface Resistivity
PTZ-92	PPS	$1\times10^{5}\sim10^{7}\Omega$

PTZ-93 SPARE TIP FOR PTZ-43



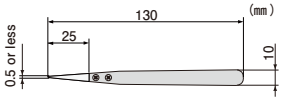
■ Contents : tip 2 pcs. & screw 4 pcs./set

Item No.	Material	Surface Resistivity
PTZ-93	PPS	$1\times10^{5}\sim10^{7}\Omega$

PTZ-51 CERAMIC-TIPPED TWEEZERS

High-temperature resistant ceramic tip featuring less solder adhesive

- Heat resistance : 1,000 ℃ (Tip)
- High wear-resistant and anti-acid tip
- Excellent electrical insulation
- Material : Anti-Magnetic stainless body with zirconia ceramic fine tip





PTZ-94 SPARE TIP FOR PTZ-51



■ Contents : tip 2 pcs. & screw 4 pcs./set

PTZ-01 WAFER HANDLING TWEEZERS

Purest Silicon Carbide (SiC) tipped tweezers, protect wafer completely from metallic pollution

- Cleanroom package (Class 100 ～ 1000)
- Anti-chemicals, heat-resistant allow cleaning process under boiling nitric acid etc.
- Made of the titanium alloy in 150㎜ length, anti-corrosive, anti-magnetic & light weight.

■Features

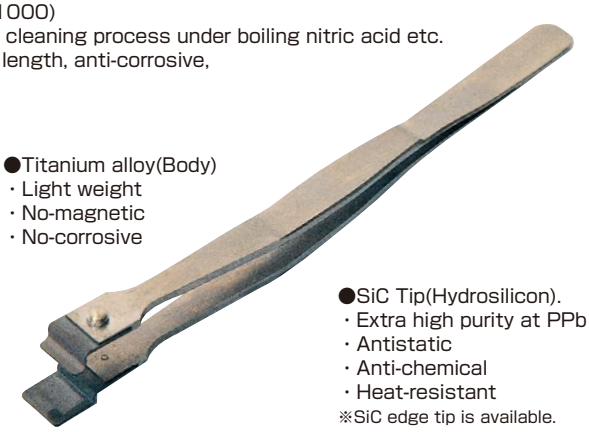
Item		Features
Density	(kg/M3)	3.21×10^{3}
Bending moment※	(kgf/mm²)	80
Tensile stress※	(kgf/mm²)	60
Young's modules	(kgf/mm²)	50,000
hardness	(kgf/mm²)	HK:3,500
Coefficient of linear exp ansion	(l/℃)	4.5×10^{-6}
Heat conductivity※	(cal/cm·s·℃)	0.16
Specific resistance※	(Ω·m)	10^{2}

(※) Figures at room temp.

●Holds max. 6inch diam. wafers



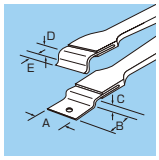
●Titanium alloy(Body)
- Light weight
- No-magnetic
- No-corrosive



●SiC Tip(Hydrosilicon).
- Extra high purity at PPb level.
- Antistatic
- Anti-chemical
- Heat-resistant

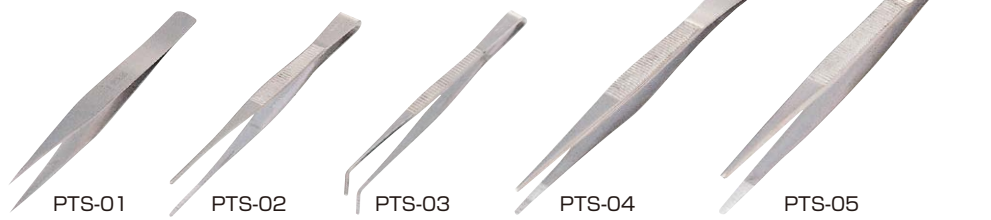
※SiC edge tip is available.

●Edge shape
A : 11㎜
B : 9㎜
C : 2㎜
D : 3.6㎜
E : 2.4㎜



PTS-01～08 TWEEZERS

- Anti-corrosive stainless steel



PTS-01 PTS-02 PTS-03 PTS-04 PTS-05

Item No.	Shape	Length
PTS-01	Straight AA type	126㎜
PTS-02	Straight with serrated inside	124㎜
PTS-03	Curved with serrated inside	122㎜
PTS-04	Straight with serrated inside	152㎜
PTS-05	Straight with serrated inside	180㎜
PTS-06	Straight with serrated inside	210㎜
PTS-07	Straight with serrated inside	240㎜
PTS-08	Straight with serrated inside	300㎜

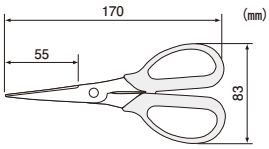
PH-50・51

RoHS COMBINATION SCISSORS

2-in-1 Unique cutting blade

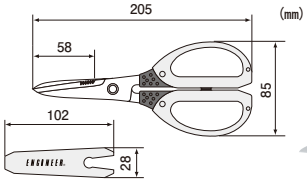
- Trimming various objects which you could not cut with ordinary scissors such as nylon fiber, cabtire cord, etc.
- Fine and flush cut in finish even compared with cut with cutting pliers
- Ideal for professional electricians as well as for hobby use.

PH-50





PH-51



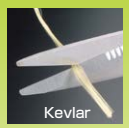


Notched Blade

Notched blades prevent the object from slipping



Trimming Nylon or Kevlar fiber without slipping



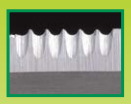




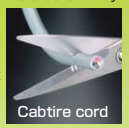
PH-50 Notched Blade Cutting Capacity	
Nylon/Kevlar fiber	Various types
Copper braided wire	
Aluminum/Copper sheet	0.5mm max.
Plastic plate / PET	1.0mm max.

U-type Blade

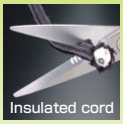
U-type notches hold cord firmly



Sharp cut against insulated cord with rubber or cotton braided







PH-50 U-type Blade Cutting Capacity	
Copper wire	ϕ1.5mm max.
Cabtire cord	Various types
Cotton braided cord	
Cotton insulated cord	

※Do not use U-type blade for cutting Aluminum or Copper sheet, which may damage the blade.

PH-51



Leather belt, (MAX.5mm thick) | Aramido fiber, | Rope (MAX.ϕ10mm) | Vinyl Flex. Flat (VFF) cord | Comes with blade cap (Made of ABS)

Item No.	Size	Blade (Hardness)	Handles	Weight
PH-50	170	Stainless Steel (HRC54±2)	PE	58g
PH-51	205	Stainless Steel (HRC58±2)	TPR+ABS	125g

PH-55

RoHS COMBINATION SCISSORS GT

4-in-1 Blade combination, Compact Body to Generate More Force!!

- Cut various materials cleanly
- Safely-designed and comfortable handles
- Blade cap with vent & drain holes
- Rust proof stainless steel body
- Applicable to professional users and hobbyist

Micro-serration



Holds the object without slipping

Finger Pinch Guard



The overlapping guard prevents your fingers being pinched in the handles.
PAT.

Anti-slip Handle



You can grasp the outer rim of the handles safely when the work requires a strong grip.

INTERNATIONAL DESIGN EXCELLENCE AWARDS '12 FINALIST

NEW

Flat Blade



Smooth cutting not only of cloth but also of paper

S-shaped Design



The unique form transmits gripping power efficiently to the shears.

Wire Cutter

Handy cutting blades for copper or steel wire

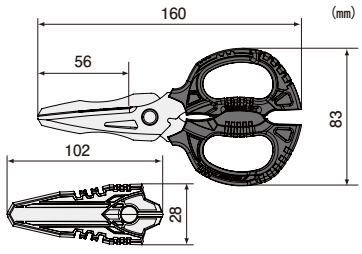
Safety Box Opener

Convenient to open carton boxes with ease

Cutting Capacity (Reference)

Micro-serration			Wire Cutter
Rope	Cabtire cord	Cotton insulated	Copper wire
			
ϕ10mm	ϕ9mm	ϕ8mm	ϕ1.6mm
Leather belt	CD·Card	Carpet	Wire
			
4mm thick	1.2mm thick	5mm thick	ϕ1.2mm





Item No.	Size	Blade (Hardness)	Handles	Weight
PH-55	160	Stainless Steel (HRC58±2)	PBT	120g

※Do not apply Copper or Steel wire to the Micro-serration to keep the life of main blades.
※Heat-treated or specially-hardened wire is not applicable for cutting. It may damage the blades.

SECTION T



CONTENTS

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SMART MONKEY WRENCH

Features
- Only 2mm-thick jaws fit into narrow gap of a thin nut
- Ideal for fastening coaxial (BNC) connectors, double nut, etc.
- No damage given to housing of BNC connectors
- Accurately machined finish of thin edge
- Made of Chrome Vanadium steel
- Extra long jaws and wide opening type (TWM-07 & TWM-08)

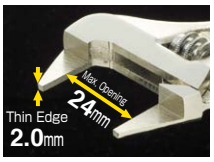
VARIOUS APPLICATIONS



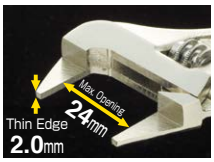
TWM-03・07・08 SMART MONKEY WRENCH



150mm size with soft handle



150mm size



100mm size Stubby with cushioned handle(TPR)



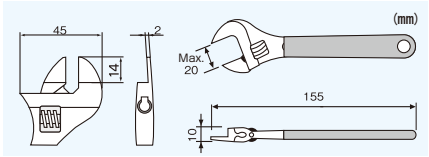
TWM-03

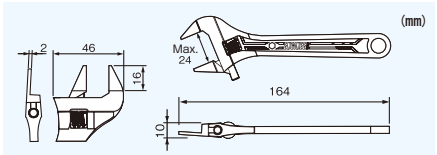


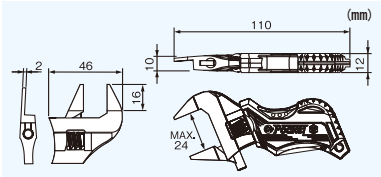
TWM-07



TWM-08







TWM-01・02・04・05 ADJUSTABLE ANGLE WRENCH

- Heavy duty adjustable wrench
- Soft grip for easy handling.



TWM-04



TWM-02



TWM-01



TWM-05

(mm)

Item No.	Nominal Size	A	B	C	D
TWM-04	100	100	32	13	8
TWM-01	150	155	45	20	10
TWM-02	200	210	57	25	14
TWM-05	250	260	68	30	15

TP-20~28 PIN VISE

- Used for various applications to drilling, tapping, piercing (handy reamer) grinding, etc.
- Featuring precision clamping chuck (collet)
- Material:Body-Brass Collet-Steel with plating

Single end shank (Through-hole body) TP-21
with 2 pcs. of Single head collets



Built-in collet



Double ended shank (Through-hole body) TP-22
with 2 pcs. of Single head collets



Double ended shank (Through-hole body) TP-23
with 2 pcs. of Double-head collets



Single end with swivel head TP-24
with 2 pcs. of Double-head collets



Remove the swivel head to put a collet inside.



Fitting to electric driver TP-20
with 2 pcs. of Single head collets





Fitting to drilling machine TP-25
with 1 pcs. of Double-head collet





Fitting to mini motor TP-26・28
with 2 pcs. of Double-head collets





(mm)

Item No.	Collet Type	Diameter of Drill Bit	Shank	Joint	O.A. Length	Weight (g)
TP-21	Single Head	0~1.6 / 1.6~2.8	φ9	–	100	40
TP-22	Single Head	0~1.6 / 1.6~2.5	φ8	–	110	35
TP-23	Double Head	0~1.1 1.9~2.6 / 1.1~1.9 2.6~3.2	φ8	–	105	35
TP-24	Double Head	0~1.1 1.9~2.6 / 1.1~1.9 2.6~3.2	φ8	–	95	40
TP-25	Double Head	0~1.1 1.1~1.6	–	φ6	67	20
TP-26 / TP-28	Double Head	0~1.1 1.9~2.6 / 1.1~1.9 2.6~3.2	–	φ2 / φ3	50	20
TP-20	Single Head	0.7~1.9 / 1.9~3.0	–	⬢6.3	50	20

* TP-26 comes with a pin adaptor (dia. 2mm) to fix a mini motor
* TP-28 comes with a pin adaptor (dia. 3mm) to fix a mini motor

TWB-01・02・04・05 RoHS BALL POINT HEX WRENCH SET

Ball head (magnetized) works from an angle up to 30° off axis.

- Heat treated special alloy with electroless nickel plating
- Hardness : HRC57±2



TWB-01 8-in-1 Standard Long Shank

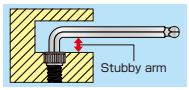




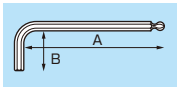
TWB-02 8-in-1 Stubby Arm, Long Shank

- Stubby arm accessible to restricted area where overhead space is tight









	TWB-01 (8 pcs./set)	TWB-02 (8 pcs./set)	TWB-04 (8 pcs./set)	TWB-05 (8 pcs./set)
Across Flat ⬢ (mm)	A×B (mm) (Individual model)	A x B (mm)	A x B (mm)	A x B (mm)
⬢1.5	81×14 (TWB-15)	81×4	51×14	51×4
⬢2.0	96×16 (TWB-20)	96×5	58×16	58×5
⬢2.5	111×18 (TWB-25)	111×6	65×18	65×6
⬢3.0	127×20 (TWB-30)	127×8	74×20	74×8
⬢4.0	142×25 (TWB-40)	142×9	78×25	78×9
⬢5.0	160×28 (TWB-50)	160×11	89×28	89×11
⬢6.0	180×32 (TWB-60)	180×13	101×32	101×13
⬢8.0	198×36 (TWB-80)	198×16	112×36	112×16

TWB-04 8-in-1 Standard Arm, Short Shank

- Hand-held compact sized body in bullet holder

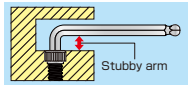




TWB-05 8-in-1 Stubby, Short Shank

- Stubby arm accessible to restricted area where overhead space is tight
- Hand-held compact sized body in bullet holder



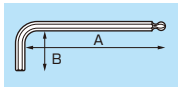




TWB-13~00 RoHS BALL POINT HEX WRENCH

- Electroless nickel plated

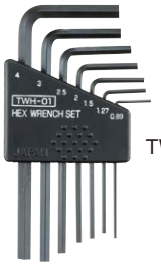




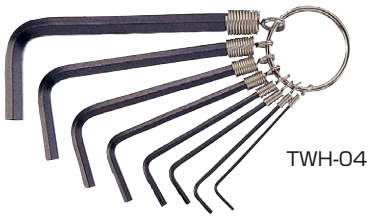
Item No.	Across Flats ⬢ mm	A×B mm
TWB-13	1.27	70×13
TWB-15	1.5	81×14
TWB-20	2.0	96×16
TWB-25	2.5	111×18
TWB-30	3.0	127×20
TWB-40	4.0	142×25
TWB-50	5.0	160×28
TWB-60	6.0	180×32
TWB-80	8.0	198×36
TWB-00	10	224×40

TWH-01・02・04 RoHS HEX KEY WRENCH SET

METRIC SIZE



TWH-01



TWH-04

Item No.	pcs.	Set(mm)
TWH-01	7	0.89, 1.27, 1.5, 2.0, 2.5, 3.0, 4.0
TWH-04	8	1.5, 2.0, 2.5, 3.0, 4.0, 5.0, 6.0, 8.0

INCH SIZE

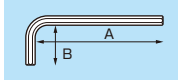


TWH-02

Item No.	pcs.	Set(inch)
TWH-02	7	0.71mm, 0.89mm, 0.05", 1/16", 5/64", 3/32", 7/64"

TWH-11~26 RoHS HEX KEY WRENCH





Applicable Sizes Chart

Hex Across Flats ⬢ mm	Cap Screw Diam.	Set Screw Diam.
1.27	M1.4	M2.5
1.5	M1.6, M2	M3
2.0	M2.5, M2.6	M4
2.5	M3	M5
3.0	M4	M6
4.0	M5	M8
5.0	M6	M10
6.0	M8	M12, M14
8.0	M10	M16, M18

Hex Key Wrench in metric size

Item No.	Across Flats ⬢ mm	L Size
TWH-11	1.5	45×14
TWH-12	2.0	50×16
TWH-13	2.5	56×18
TWH-14	3.0	63×20
TWH-15	4.0	70×25
TWH-16	5.0	80×28
TWH-17	6.0	90×32
TWH-18	8.0	100×36

Hex Key Wrench in inch size (mm)

Item No.	Across Flats	L Size
TWH-20	(0.71)	35×10
TWH-21	(0.89)	38×10
TWH-22	0.05"(1.27)	40×11.5
TWH-23	1/16"(1.59)	42.5×12.5
TWH-24	5/64"(1.98)	45.5×13.5
TWH-25	3/32"(2.38)	48.5×14.5
TWH-26	7/64"(2.79)	52×16

MINI SPANNER/SOCKET WRENCH SET/PICK-UP TOOL

TS-01・02 RoHS MINI SPANNER SET/Flat Head・Inclined Head

- Thickness: 3.2mm
- Material: S50C
- Hardness: HRC43±2

◆This item is individually available.



TS-01
(Flat heads set)
TS-11～15(5 pcs.)



TS-02
(24° inclined heads set)
TS-21～25(5 pcs.)

Flat heads (mm)

Item No.	Sizes	Length
TS-11	3.2×3.5	71
TS-12	4×5	82
TS-13	5.5×6	91
TS-14	6.5×7	102
TS-15	8×9	113

Inclined heads (mm)

Item No.	Sizes	Length
TS-21	3.2×3.5	70
TS-22	4×5	81
TS-23	5.5×6	90
TS-24	6.5×7	100
TS-25	8×9	111

TS-04 RoHS MINI COMBINATION SPANNER SET

- 8-in-1 Combination spanner set with key chain
- Box-end inclined (30°)
- Thickness: 1.5㎜
- Material: Stainless steel
- Hardness: HRC52±2



◆This item is individually available.

(mm)

Item No.	Sizes		Thick	Length
	Box	Open		
TS-41	4.0	3.5	1.5	100
TS-42	4.5	4.0		
TS-43	5.0	4.5		106
TS-44	5.5	5.0		
TS-45	6.0	5.5		
TS-46	6.5	6.0		114
TS-47	7.0	6.5		
TS-48	8.0	7.0		

TWS-01～05 RoHS SOCKET WRENCH SET

- Socket wrench sets contain the complete combination of most needed sockets.
- Chrome molybdenum steel sockets and chrome vanadium ratchet handles.



TWS-05

TWS-05 Contents ： 52pcs. per set

Contents	Size／Length(mm)
Sockets ○6.3(1/4")	4, 4.5, 5, 5.5, 6, 7, 8, 9, 10, 11, 13
○12.7(1/2")	10, 11, 12, 13, 14, 15, 17, 19, 22, 24, 27, 30, 32
Socket for 21mm plug	21 Across flats
Hex. Wrenches	1.5, 2, 2.5
Hex. Bits	3, 4, 5, 6, 7, 8
Phillips Bits	#1, #2, #3
Slotted Bits	4, 5.5, 7
Plastic Spinner Handle	200
Ratchet Handles	125, 300
Extension Shafts	100, 125, 250
T Type Sliding Handles	115, 300
Universal Joints	35, 70
Bit Adapters	25, 30
Steel Case	450×200×55

TWS-01
TWS-02



TWS-01・02 Contents ： 16pcs. per set

Contents		Size／Length(mm)
Sockets ○6.3(1/4")	TWS-01	5/32, 3/16, 7/32, 1/4, 9/32, 5/16 11/32, 3/8, 13/32, 7/16, 1/2 (inch)
	TWS-02	4, 4.5, 5, 5.5, 6, 7, 8 9, 10, 11, 13 (mm)
Ratchet Handles		125
Extension Shafts		50,150
Universal Handle		125
Cross Bar		115
Steel Case		180×120×30

TWS-03



TWS-03 Contents ： 20pcs. per set

Contents	Size／Length (mm)
Sockets ○6.3(1/4")	4, 4.5, 5, 5.5, 6, 7, 8
○9.5(3/8")	9,10,12,13,14,17,19
Adaptor3/8"→1/4"	25
Plastic Spinner Handle	150
Ratchet Handle	200
Extension Shaft	75,150
Socket for 21mm Plug	21 Across flats
Steel Case	292×145×35

TWS-04



- with quick drive ring

TWS-04 Contents ： 34pcs. per set

Contents	Size／Length(mm)
Sockets ○6.3(1/4")	4, 4.5, 5, 5.5, 6, 7 8, 9,10,11,13
Hex. Bits	3, 4, 5, 6, 8, 10
Phillips Bits	#1,#2,#3,#4
Slotted Bits	4, 5.5, 7
Hex Wrenches	1.5, 2, 2.5
Plastic Spinner Handle	150
Ratchet Handle	125
Extension Shaft	50, 100
T Type Sliding Handle	115
Universal Joint	35
Steel Case	200×110×30

TP-31・33・34 RoHS PICK-UP TOOL

- 4 spring jaws pick up small and ball bearing type parts easily and firmly.
- Suitable for assembly work of precision instruments.
- Ideal for pick-up work even in hard to reach areas.





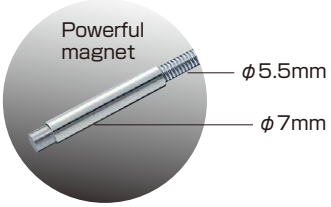
(mm)

Item No.	Housing	O.A. Length
TP-31	φ6.9	120
TP-33	φ6.2	250
TP-34	φ6.2	350

TP-35・36 RoHS MAGNETIC PICK-UP TOOL

- Ideal for part retrieval in hard to reach areas
- Flexible shaft conforms to any shape
- Alnico magnet tip





(mm)

Item No.	O.A. Length
TP-35	410
TP-36	525

TR-01~04 TAPER REAMER

- For reaming holes in sheet metal, aluminum and similar material
- Material : Carbon steel





(mm)

Item No.	Size	Blade	Length
TR-01	φ3.0~12	81	113
TR-02	φ4.0~16	85	118
TR-03	φ5.0~20	95	130
TR-04	φ6.0~30	107	145

※Hardness: HRC 55±3

TDS-01・02・03 TWIST DRILL SET



TDS-01



TDS-02



TDS-03

(mm)

Item No.	Contents	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.2	1.5	2.0	2.5
TDS-01	5			●	●		●		●	●			
TDS-02	6						●		●	●	●	●	●
TDS-03	8	●	●	●	●	●	●	●	●				

TD-03~60 DRILL



(mm)

Item No.	Size
TD-03	0.3
TD-04	0.4
TD-05	0.5
TD-06	0.6
TD-07	0.7
TD-08	0.8
TD-09	0.9
TD-10	1.0
TD-12	1.2
TD-15	1.5

(mm)

Item No.	Size
TD-16	1.6
TD-18	1.8
TD-20	2.0
TD-25	2.5
TD-30	3.0
TD-32	3.2
TD-35	3.5
TD-40	4.0
TD-50	5.0
TD-60	6.0

TT-01・02 TAP HANDLE



TT-01



TT-02

TAP HANDLE (mm)

Item No.	Capacity	Length
TT-01	M1~6.5	170
TT-02	M2~6.0	85 x 60

TT-03・10~16 TAP/TAP SET



◀TT-03
CONTENTS
●Tap, 4pcs(2, 3, 4, 5mm)
●Tap Handle(TT-02)

●Primary, Second & Finishing Taps (3pcs./set)



TAP (mm)

Item No.	Size	Pitch
TT-10	1.4	0.3
TT-11	1.7	0.35
TT-12	2.0	0.4
TT-13	3.0	0.5
TT-14	4.0	0.7
TT-15	5.0	0.8
TT-16	6.0	1.0

TF-01~10 FILE



TF-01



TF-03

TF-07



TF-10

Item No.	Shape	Length (mm)	Grip
TF-01	▭	265	Wood
TF-02	○		
TF-03	□		
TF-04	△		
TF-05	⌓		
TF-06	▭	200	Rubber
TF-07	○		
TF-10	⌓		

TFS-01~06 FILE SET

NORMAL TYPE



TFS-01



TFS-02
(TF-06~10)

PRECISE TYPE



TFS-03



TFS-04



TFS-06

Item No.	Contents	▭	⌓	○	□	△	▭	⬭	⌓	⌓	▱	⬭	⬭	Length (mm)
TFS-01	5	●	●	●	●	●								180
TFS-02	5	●	●	●	●	●								200
TFS-03	5	●	●	●	●	●								260
TFS-04	8	●	●	●	●	●	●	●	●					180
TFS-06	12	●	●	●	●	●	●	●	●	●	●	●	●	140

TV-01~34 VISE / CLAMP



TV-04



TV-14

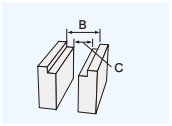
●With special clasp ideal for thin plate, round bar and square lumber.
●The reverse of the clasp to be used as a flat clasp.



TV-26



TV-32



BENCH VISE (mm)

Item No.	Size	Max. Opening	Clamp
TV-01	38	35	0~21
TV-02	50	35	0~32
TV-03	63	50	5~33
TV-04	75	50	18~40

ANVIL VISE (mm)

Item No.	Size	Max. Opening	Clamp
TV-11	38	35	0~25
TV-12	50	35	0~34
TV-13	63	55	20~45
TV-14	75	55	20~45

YANKEE VISE (mm)

Item No.	Size	Max. Opening	
		B	C
TV-25	50	61	55
TV-26	65	76	70
TV-27	75	84	78

CLAMP (mm)

Item No.	Max. Opening
TV-31	25
TV-32	50
TV-34	75

TN-01~05 JEWELLER'S SAW

- Light weight, durable and well-balanced frame design.
- Plastic handles are shaped for perfect grip without slip.
- Saw frame is designed to be adjustable in length and capable of using even broken pieces of saw blades. (TN-04/05)



TN-01



TN-02



TN-05
〈※Frame length adjustable(TN-04/05)〉

- Blade contained
  TN-17 (standard)
  TN-13&15 (spare)
- The ideal saw blades made of SKS special steel alloy with the technological know-how.
- Entirely heat treated, best quality saw blades available.

Item No.	Frame's Depth(mm)	Weight(g)
TN-01	125×75	170
TN-02	120×125	190
TN-03	110×280	240
*TN-04	~150×75	200
*TN-05	~150×125	220

TN-11~18 SAW BLADES



TN-17

Item No.	Nominal Size	Blade Thick (mm)	Notches/ 25mm	Applications
TN-11	#3/0	0.24	61	Noble metals
TN-12	#2/0	0.26	56	
TN-13	#0	0.28	53.5	Brass & thin Iron Sheet
TN-14	#1	0.30	51	
TN-15	#2	0.34	43	Copper, Shell
TN-16	#3	0.36	40.5	
TN-17	#4	0.38	38	Iron Sheet, Wood, Plastic
TN-18	#5	0.40	35.5	

TM-04・05 STEEL RULE

TM-04



Item No.	Scale
TM-04	15cm
TM-05	30cm

TH-01・02・05 HAMMER



TH-01



TH-05

Item No.	Head	Size
TH-01	Plastic	#1/2
TH-02		#1
TH-05	Tapering	21mm

TZ-02・03 HANDY SAW, HACK SAW

TZ-02 Adjustable blade



TZ-03



Die casting Aluminum handle

Item No.	Blade Size	Shape	Length
TZ-02	250mm24notches	Plastic Grip	260mm
TZ-03		Piping Frame	400mm

●Replacement blade TZ-04 (12pcs/dozen)

TZ-05~08 SCRIBER/PUNCH/ANVIL

SCRIBER
TZ-05
●220mm



PUNCH
TZ-07
●100mm



ANVIL
TZ-08
●Weight : 1kg
●Length : 152mm
●Height : 78mm

SECTION

Z



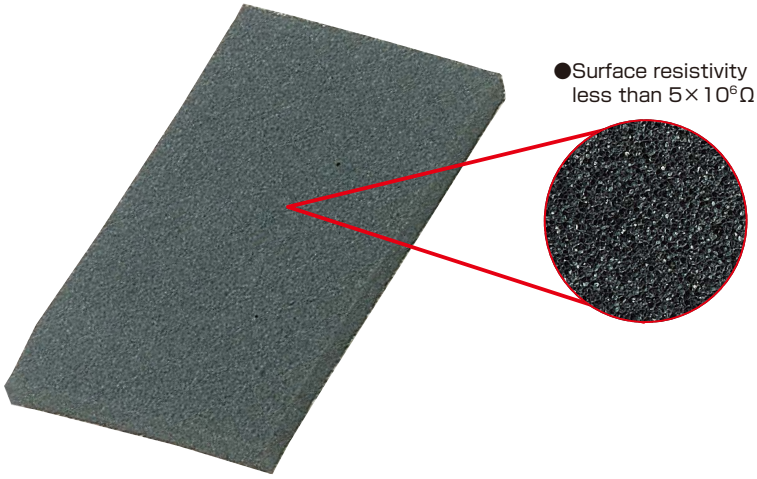
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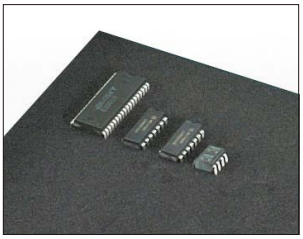
CONDUCTIVE FOAM ····· 61
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ZC-01~03

CONDUCTIVE FOAM

- Conductive urethane foam with high density in 10mm thickness.
- Protects CMOS IC and other static-sensitive components during storage, in transit and in hand.
- Material: Polyethylene





Item No.	Size(mm)
ZC-01	75×130×10
ZC-02	100×290×10
ZC-03	250×300×10

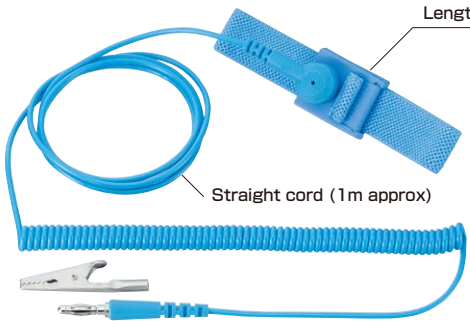
ZC-50

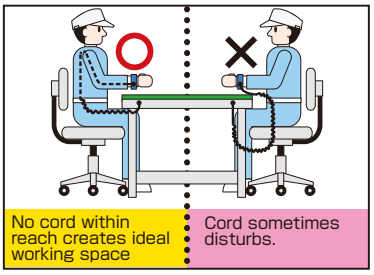
WRIST STRAP

- Conveniently-designed earth cord to improve precise work efficiently
- Curving-shaped & wide plastic body (30x20mm) featuring higher conductivity around wrist
- Silver filaments in elastic band ideal for high conductivity & anti-metallic allergy

■Applications

Assembly or repair of electronics and precise instrument for anti-static electricity







■Specifications :

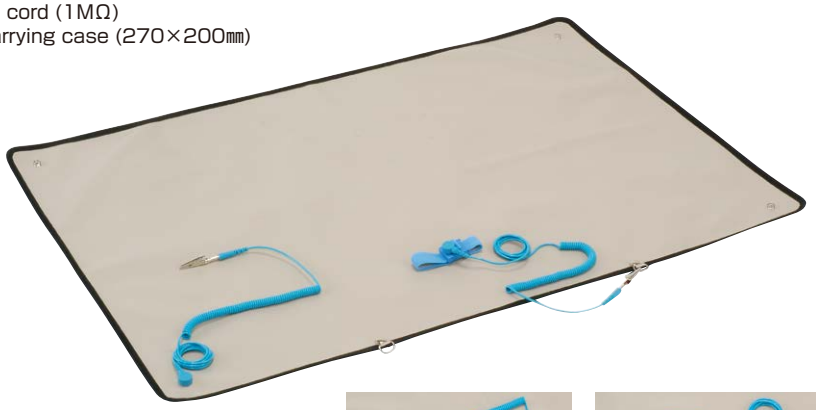
- Adjustable type wrist band
- Built-in 1MΩ resistor for safety
- Alligator clip included
- Polyester elastic band woven with silver filaments

If anyone who is charged with static electricity through clothes touches IC's and electronic components, he discharges electricity through his fingers and gives a damage to IC's and electronic components. Wrist Strap can eliminate static electricity through his wrist to prevent them from being damaged.

ZC-80

ANTI-STATIC SERVICE KIT

- Mat size : 900×600㎜ (Thickness 0.7㎜)
- Contents : Wrist strap with cord (1MΩ)
  Spare earth cord (1MΩ)
  Zippered carrying case (270×200㎜)





Rayon backing with stud

Layer	Color	Material	Thickness	Surface Resistivity
Top	Beige	PVC	0.35㎜	7.3X10⁸Ω
Bottom	Gray	Rayon	0.3㎜	1.5X10⁹Ω



Earth cord



Wrist strap



ZC-44~49 RoHS STATIC CONDUCTIVE GLOVES

- Surface resistivity : 10^5~10^6Ω sq.(Finger) 10^7Ω sq.(Palm)
- Ideal for clean room, assembly of electronic devices, handling of plastic products, etc.
- Copper sulfide mixed with acryl/nylon creates an excellent conductive effect (Finger Part)
- Seamless and dust-free mono-filament
- Chemical dyeing of conductive element features less reduction of conductivity withstanding repeated washing
- Material : Fabric - Nylon 90% Acryl 10%
  : Coating - Polyurethane Resin

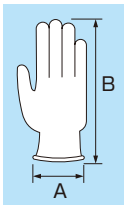
ESD SAFE





■Fingertip Coating (mm)

Item No.	Size	A×B
ZC-44	S	72×185
ZC-45	M	83×190
ZC-46	L	85×200



■Palm Coating (mm)

Item No.	Size	A×B
ZC-47	S	80×210
ZC-48	M	85×220
ZC-49	L	90×230

ZC-51~56 RoHS ANTI-STATIC GLOVES

- Surface resistivity : 10^6~10^8Ω sq.
- Ideal for any work in the facility where anti-static should be controlled
- Seamless and dust-free mono-filament
- Washable with ordinary detergent
- Material : Fabric - Nylon 75% Acryl 25%
  : Coating - Polyurethane Resin

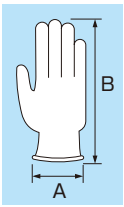
ESD SAFE





■Fingertip Coating (mm)

Item No.	Size	A×B
ZC-51	S	75×190
ZC-52	M	88×200
ZC-53	L	89×215



■Palm Coating (mm)

Item No.	Size	A×B
ZC-54	S	77×210
ZC-55	M	90×220
ZC-56	L	95×230

ZC-38~43 RoHS DUST-FREE GLOVES

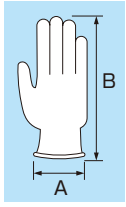
- Flexible & comfortable gloves made of elastic and breathable nylon fiber
- Ideal for use in clean room and handling of C.R.T., electric bulb, compact disc, glass, etc.
- Seamless and dust-free mono-filament
- Non-slip coating for accurate assembly work
- Washable with ordinary detergent
- Material : Fabric - Wooly Nylon
  : Coating - Polyurethane Resin





■Fingertip Coating (mm)

Item No.	Size	A×B
ZC-38	S	77×185
ZC-39	M	90×190
ZC-40	L	90×200



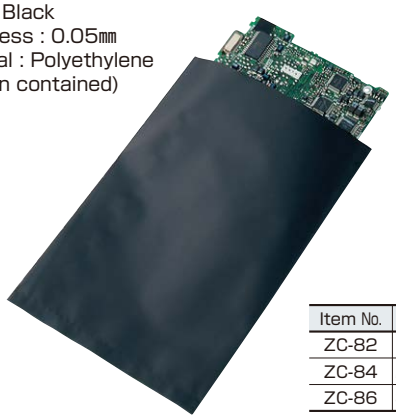
■Palm Coating (mm)

Item No.	Size	A×B
ZC-41	S	80×210
ZC-42	M	90×220
ZC-43	L	95×230

ZC-82·84·86 RoHS STATIC CONDUCTIVE BAG

- Surface resistivity : 10^4Ω or less
- Color : Black
- Thickness : 0.05㎜
- Material : Polyethylene
  (Carbon contained)

ESD SAFE

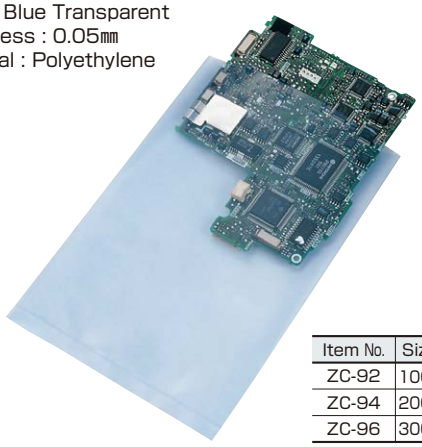


Item No.	Size(mm)	Package
ZC-82	100×150	100pcs.
ZC-84	200×300	100pcs.
ZC-86	300×450	100pcs.

ZC-92·94·96 RoHS ANTI-STATIC BAG

- Surface resistivity : 10^{11}Ω or less
- Color : Blue Transparent
- Thickness : 0.05㎜
- Material : Polyethylene

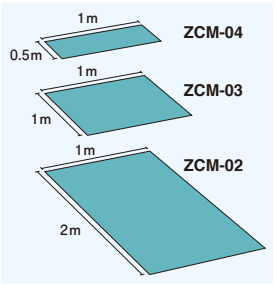
ESD SAFE

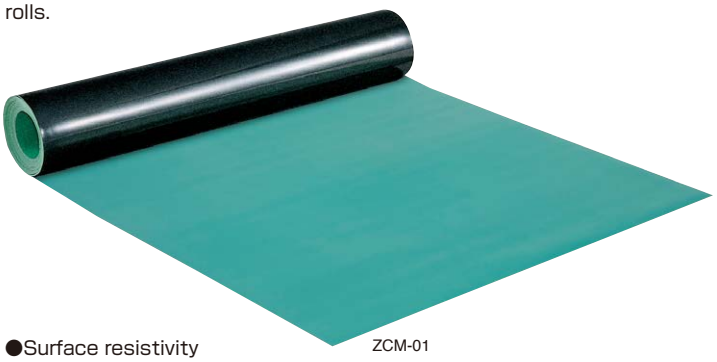


Item No.	Size(mm)	Package
ZC-92	100×150	100pcs.
ZC-94	200×300	100pcs.
ZC-96	300×450	100pcs.

ZCM-01～04 CONDUCTIVE COLORED MAT

- Static-Dissipative mat maintains an ESD-Safe working surface.
- Anti-Fatigue rubber material that provides cushioning comfort.
- Available in pre-cut mats or rolls.

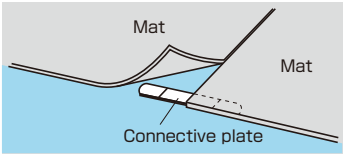




ZCM-01

●Surface resistivity
Top Layer (Green) : 10^{8}～$10^{10}\Omega$
Bottom Layer (Black) : 10^{3}～$10^{5}\Omega$

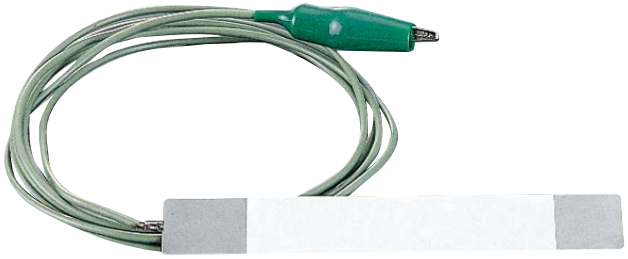
■Usage
Put ZC-62 on the reverse of the mat for grounding.
Use ZC-63 in connection of mat.



Item No.	Size
ZCM-01	1m×10m×2㎜
ZCM-02	1m×2m×2㎜
ZCM-03	1m×1m×2㎜
ZCM-04	1m×0.5m×2㎜

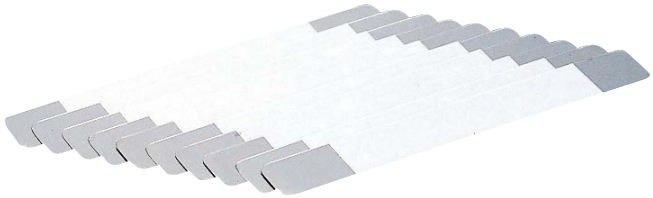
ZC-62 GROUND CORD

- For ZCM-01～04
  Size : Cord……2m Plate…15cm×2cm



ZC-63 CONNECTIVE PLATE

- For ZCM-01～04
- Contents : 10pcs.
  Size : 15cm×2cm

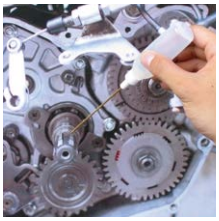


ZC-19 OILER

NEW

- Compact-sized and handy oiler
- Nozzle extendable (60㎜-long approx.) for oiling at hard-to-reach area
- Capacity: 20cc
- Material: PE (Bottle/Cap), Brass (Nozzle)
- Usage: Oil, Water, Cleaning fluid, etc.

■How to use
① Extend nozzle upward.
② Unscrew plastic cap.
③ Remove packing inside.
④ Pour oil in bottle.
⑤ Fasten the packing and the cap with nozzle in order.
※ Keep the bottle upright in storage.

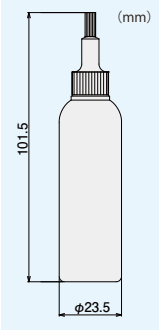


Machinery maintenance



Lubrication





ZC-70･71 FLUX/DISPENSER

Ideal for rework of SMD solders.

- Pin-point accuracy with no spillage

■ZC-70
- FLUX 50cc
- FLUX DISPENSER
- NEEDLE (Hole diam. 0.25/0.5㎜) 1pce. each
- CLEANING PIN 1pce. each

■ZC-71
- FLUX DISPENSER (BOTTLE)
- NEEDLE (Hole diam. 0.25/0.5㎜) 1pce. each
- CLEANING PIN 1pce. each





ZC-13～18 CHEMICALS



Item No.	Name	Applications	Capacity
ZC-13	Silicon Oil	Lubrication, insulation	50ml
ZC-14	Oil	Lubrication & anticorrosion(metallic)	65ml
ZC-15	Tap & Drill Oil	Easy removal of chip & cooling	300ml
ZC-16	Rust Preventive	Remove rust	110g
ZC-17	Silicon Grease	Lubrication between metal, rubber & plastic	20g
ZC-18	Super Grease	Lubrication & anticorrosion of outdoor equipment	200g



SECTION K

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ALUMINIUM CASE ····· 72·73
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IC STORAGE BOX ····· 74

KS-01 MY KIT

● Pocketable & reasonable kit for daily use



■Set of 7 items

NSX-04	Micro nippers	115㎜
PS-04	Miniature pliers	115㎜
PTS-01	Tweezers	125㎜
DK-22	⊕Precision driver	#3/0
DK-33	⊖Precision driver	1.8㎜

DS-03	⊕Screwdriver	#00
DS-13	⊖Screwdriver	2.6×75

●Case : 135×90×30㎜
●Weight : 0.25kg

KS-02 MY KIT

● Simple & basic tool kit



■Set of 11 items

NS-03	Micro nippers	125㎜
PS-01	Miniature long nose pliers	125㎜
PTS-01	Tweezers	125㎜
DS-03	⊕Screwdriver	#00
DS-23	⊕Screwdriver	#0
DS-33	⊖Screwdriver	4×75

DH-15	Hex driver	1.5㎜
DH-20	Hex driver	2.0㎜
DH-25	Hex driver	2.5㎜
	File(Half-round)	
	Cutter knife, S	

●Case : 215×145×30㎜
●Weight : 0.45kg

KS-20 MY KIT

● Pocket-sized and functional tool kit
● with Circuit testing driver handle



■Set of 12 items

NN-45	Slant edge nippers	125㎜
PR-15	Long nose pliers	125㎜
PTS-01	Tweezers	125㎜
Circuit testing driver with spare bits	Phillips bit	⊕#00
	Phillips bit	⊕#1
	Phillips bit	⊕#2
	Slotted bit	⊖2.5㎜
	Slotted bit	⊖3.5㎜
	Slotted bit	⊖5.5㎜
	Hex nut bit	⬡5.5㎜
	Awl (square)	
	Cutter knife (S)	

●Case : 160×90×35㎜
●Weight: 0.5kg



Circuit testing handle
(AC80~300V/DC100~250V)

KS-27 MY KIT

● Pocket-sized tool kit, ideal for electronics
● with Penlight & Circuit testing driver



■Set of 13 items

NS-03	Micro nippers	125㎜
PS-01	Miniature long nose pliers	125㎜
PT-06	Tweezers (J)	120㎜
Circuit testing driver with spare bits	Phillips bit	⊕#1
	Phillips bit	⊕#2
	Slotted bit	⊖3.5㎜
	Slotted bit	⊖5.5㎜
DK-22	⊕Precision driver	#000
DK-24	⊕Precision driver	#0
DK-32	⊖Precision driver	1.2㎜
DK-34	⊖Precision driver	2.3㎜
TWH-01	Hex key wrench set	
	Mini penlight (AAA type)	

●Case : 160×90×35㎜
●Weight: 0.6kg



Circuit testing handle
(AC80~300V/DC100~250V)

KS-05 MAINTENANCE KIT

- For field maintenance service
- Environment-friendly polyester-made case (Lining: made of nylon)



■Set of 13 items

NK-15	Diagonal nippers	125㎜
PR-16	Long nose pliers	150㎜
PC-06	Combination pliers	150㎜
DS-03	⊕Screwdriver	#00
DS-23	⊕Screwdriver	#0
DS-64	⊕Screwdriver	#2
DS-33	⊖Screwdriver	4×75
DA-02	Alignment screwdriver	150㎜

PTS-01	Tweezers	125㎜
TWH-01	Hex key wrench set	
SKC-30	Soldering iron	26W
SW-30	Solder	20g
	File (flat)	

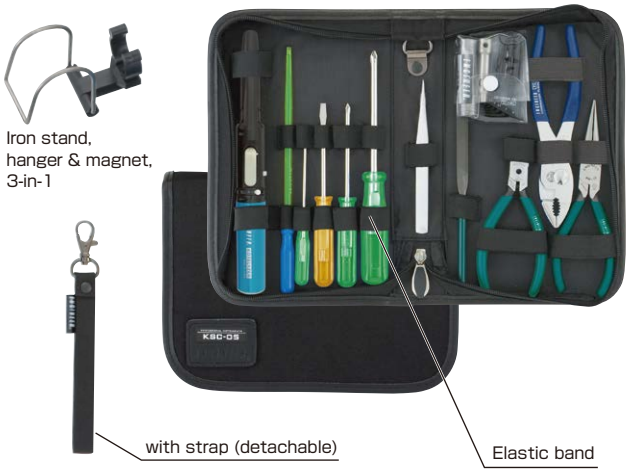
●Case : 255×150×50㎜
●Weight : 1kg

V Soldering Iron 220V~240V available by assortment of SKC-30 as per Page 12

KSC-05 MAINTENANCE KIT

Cordless soldering iron (with Multi-holder) expands the utility of traditional tool kits.

- For field maintenance service
- Environment-friendly polyester-made case (Lining: made of nylon)



■Set of 14 items

NK-15	Diagonal nippers	125㎜
PR-16	Long nose pliers	150㎜
PC-06	Combination pliers	150㎜
DS-03	⊕Screwdriver	#00
DS-23	⊕Screwdriver	#0
DS-64	⊕Screwdriver	#2
DS-33	⊖Screwdriver	4×75
DA-02	Alignment screwdriver	150㎜

PTS-01	Tweezers	125㎜
TWH-01	Hex key wrench set	
SK-60	Cordless soldering iron(w/cap)	
SK-66	Hot blow tip	
SW-30	Solder	20g
	File (flat)	

●Case : 255×150×50㎜
●Weight : 1kg

KS-06 MAINTENANCE KIT

●For field maintenance service (Complete Set)



■Set of 20 items

NN-46	Slant edge nippers	150㎜
PR-16	Long nose pliers	150㎜
PD-06	Side cutting pliers	150㎜
PC-06	Combination pliers	150㎜
PTS-02	Tweezers	125㎜
DS-03	⊕Screwdriver	#00
DS-23	⊕Screwdriver	#0
DS-64	⊕Screwdriver	#2
DS-13	⊖Screwdriver	2.6×75
DS-54	⊖Screwdriver	5.5×100
DN-05	Nut driver	5.5㎜
DA-02	Alignment screwdriver	150㎜

SKC-40	Soldering iron	32W
SW-30	Solder	20g
TWM-02	Adjustable angle wrench	200㎜
	File (flat)	
	File (round)	
TM-04	Steel rule	150㎜
TWH-04	Hex key wrench set (8 pcs.)	
	Cutter knife (S)	

●Case : 305×220×45㎜
●Weight : 2kg

KSE-06 Case only

V Soldering Iron 220V~240V available by assortment of SKC-30 as per Page 12

KSC-06 MAINTENANCE KIT

Cordless soldering iron (with Multi-holder) expands the utility of traditional tool kits.

●For field maintenance service (Complete Set)



■Set of 21 items

NN-46	Slant edge nippers	150㎜
PR-16	Long nose pliers	150㎜
PD-06	Side cutting pliers	150㎜
PC-06	Combination pliers	150㎜
PTS-02	Tweezers	125㎜
DS-03	⊕Screwdriver	#00
DS-23	⊕Screwdriver	#0
DS-64	⊕Screwdriver	#2
DS-13	⊖Screwdriver	2.6×75
DS-54	⊖Screwdriver	5.5×100
DN-05	Nut driver	5.5㎜
DA-02	Alignment screwdriver	150㎜

SK-60	Cordless soldering iron(w/cap)	
SK-66	Hot blow tip	
SW-30	Solder	20g
TWM-02	Adjustable angle wrench	200㎜
	File (flat)	
	File (round)	
TM-04	Steel rule	150㎜
TWH-04	Hex key wrench set (8 pcs.)	
	Cutter knife (S)	

●Case : 305×220×45㎜
●Weight : 2kg

KS-08 ELECTRONICS KIT

●For electronics, PC maintenance, PC modification, etc.
●Environment-friendly polyester-made case (Lining: made of nylon)



■Set of 21 items

NS-03	Micro nippers 125mm	SL-02	Inspection mirror	Circuit testing driver with spare bits	Phillips bit ⊕#00
PS-01	Miniature long nose pliers 125mm	SWU-04	Solder wick 2.8mm		Phillips bit ⊕#0
PTS-01	Tweezers 125mm		Solder (1m)		Phillips bit ⊕#1
SS-01	Solder sucker	TWH-01	Hex key wrench set		Phillips bit ⊕#2
SS-08	IC extractor	DN-05	Nut driver 5.5mm		Slotted bit ⊖3.5mm
SS-22	Spring hook	DK-22	⊕Precision driver #000		Cutter knife (S)
	Soldering iron 30W	DK-33	⊖Precision driver 1.8mm		File (half-round)

●Case : 255×150×50mm ●Weight : 1.0kg

KS-14 RoHS ELECTRONICS KIT

●For electronics, office automation maintenance, etc.
●Environment-friendly polyester-made case (Lining: made of nylon)



■Set of 18 items

NS-03	Micro nippers 125mm	DP-64	Pro-use driver ⊕#2	TZ-05	Scriber 220mm
PR-16	Long nose pliers 150mm	DP-34	Pro-use driver ⊖4.3mm	TWH-01	Hex key wrench set
PTS-01	Tweezers 125mm	DN-05	Nut driver 5.5mm	TWH-03	Smart monkey wrench 150mm
PZ-56	Screw removal pliers 175mm	TS-23	Mini spanner 5.5×6	SL-02	Inspection mirror
DP-03	Pro-use driver ⊕#00	TS-25	Mini spanner 8×9		Cutter knife (S)
DP-24	Pro-use driver ⊕#0	TM-04	Steel rule 150mm		File (half-round)

●Case : 250×180×50mm ●Weight : 1.3kg

KS-03 TOOL KIT

● General electronic & job training use



■Set of 12 items

NN-45	Slant edge nippers	125mm
PR-16	Long nose pliers	150mm
DS-03	⊕Screwdriver	#00
DS-23	⊕Screwdriver	#0
DS-64	⊕Screwdriver	#2
DS-33	⊖Screwdriver	4×75
DA-01	Alignment screwdriver	100mm
PTS-01	Tweezers	125mm
	Soldering iron	30W
	Solder	
	Solder paste	
	Soldering stand	

●Case : 240×115×45mm
●Weight : 0.8kg

KSE-03 Case only

Soldering Iron 220V~240V available by assortment of SK-14 as per Page 12

KS-06R MAINTENANCE KIT

●Basic & cost-saving assortment (Order-made)



■Set of 18 items

NN-45	Slant edge nippers	125mm
PR-15	Long nose pliers	125mm
PD-06	Side cutting pliers	150mm
PC-06	Combination pliers	150mm
PTS-02	Tweezers	125mm
DS-03	⊕Screwdriver	#00x75
DS-23	⊕Screwdriver	#0x75
DS-64	⊕Screwdriver	#2x100
DS-13	⊖Screwdriver	2.6×75
DS-54	⊖Screwdriver	5.5×100
DN-05	Nut driver	5.5mm
DA-01	Alignment screwdriver	100mm
SK-14	Soldering iron (mica)	30W
TWM-01	Adjustable angle wrench	150mm
TWH-01	Hex key wrench set	
	File (half-round)	
	Solder	
	Cutter knife (S)	

●Case : 305×220×45mm
●Weight : 1.6kg

KS-04 TOOL KIT

● General electronic & job training use
● Environment-friendly polyester-made case (Lining: made of nylon)



■Set of 14 items

NN-45	Slant edge nippers	125mm
PR-16	Long nose pliers	150mm
PD-06	Side cutting pliers	150mm
DS-03	⊕Screwdriver	#00
DS-23	⊕Screwdriver	#0
DS-64	⊕Screwdriver	#2
DS-33	⊖Screwdriver	4×75
DN-05	Nut driver	5.5mm

PTS-02	Tweezers	125mm
SKC-30	Soldering iron	26W
	Solder	
	Solder Paste	
	Soldering stand	
	Cutter knife (S)	

●Case : 255×150×50mm
●Weight : 1.1kg

KSE-04 Case only

Soldering Iron 220V~240V available by assortment of SKC-30 as per Page 12

KSC-04 TOOL KIT

Cordless soldering iron (with Multi-holder) expands the utility of traditional tool kits.

● General electronic & job training use
● Environment-friendly polyester-made case (Lining: made of nylon)



■Set of 15 items

NN-45	Slant edge nippers	125mm
PD-06	Side cutting pliers	150mm
PR-16	Long nose pliers	150mm
PTS-02	Tweezers	125mm
DN-05	Nut driver	5.5mm
DS-03	⊕Screwdriver	#00
DS-23	⊕Screwdriver	#0
DS-64	⊕Screwdriver	#2
DS-33	⊖Screwdriver	4×75

SK-60	Cordless soldering iron(w/cap)	
SK-66	Hot blow tip	
	Solder	
	Solder Paste	
	Soldering stand	
	Cutter knife (S)	

●Case : 255×150×50mm
●Weight : 1.1kg

KS-09・10 TOOL KIT

● Compact ABS plastic case
with shoulder strap
KS-09 (Tool kit)
KSE-09 (Case and panel only) - Net 1.3 kg

● Compact ABS plastic case
with shoulder strap
KS-10 (Tool kit)
KSE-10 (Case and panel only) - Net 1.3 kg



KS-09

KS-10

■KS-09 Set of 17 items

NN-46	Slant edge nippers 150㎜	TWM-02	Adjustable angle wrench 200㎜
PR-16	Long nose pliers 150㎜	TWH-01	Hex key wrench set
PD-06	Side cutting pliers 150㎜		File (half-round)
PC-06	Combination pliers 150㎜	TM-04	Steel rule 150㎜
DS-03	⊕Screwdriver #00	SKC-30	Soldering iron 26W
DS-64	⊕Screwdriver #2	SW-30	Solder 20g
DS-13	⊖Screwdriver 2.6×75		Cutter knife (S)
DS-54	⊖Screwdriver 5.5×100		
DA-02	Alignment driver 150㎜		
PTS-01	Tweezers 125㎜		

●Case : 305×305×76 (Ext.)
290×290×70 (Int.)
●Weight : 3kg

V Soldering Iron 220V~240V available by assortment of SKC-30 as per Page 12

■KS-10 Set of 29 items

NN-46	Slant edge nippers 150㎜	TS-01	Mini spanner set (5 pcs.)
PR-36	Long nose pliers 150㎜	TP-23	Pin vise
PD-06	Side cutting pliers 150㎜	TR-03	Taper reamer 20㎜
PC-06	Combination pliers 150㎜	TH-05	Hammer 21㎜
PW-10	Pump pliers 250㎜		Measuring tape 2m
PT-01	Tweezers 125㎜	TWH-01	Hex key wrench set
DS-03	⊕Screwdriver #00		File (half-round)
DS-64	⊕Screwdriver #2	SKC-40	Soldering iron 32W
DS-13	⊖Screwdriver 2.6×75	SW-30	Solder 20g
DS-54	⊖Screwdriver 5.5×100	SS-05	Tip cleaner w/stand
DN-05	Nut driver 5.5㎜		Cutter knife (L)
DN-07	Nut driver 7㎜		Vinyl tape
DA-01	Alignment driver 100㎜		Solder paste
DKD-01	Circuit testing driver		
DZ-24	Screw-holding driver #0		
TWM-02	Adjustable angle wrench 200㎜		

●Case : 305×305×76(Ext.)
290×290×70(Int.)
●Weight : 4kg

V Soldering Iron 220V~240V available by assortment of SKC-30 as per Page 12

KS-11 TOOL KIT

Field service and maintenance of production lines & machinery

KS-11(Tool kit)
KSE-11(Case and panel only) - Net 5 kg



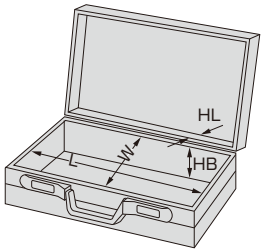
■Set of 61 items

NS-03	Micro nippers 125㎜	TWM-02	Adjustable angle wrench 200㎜
NN-46	Slant edge nippers150㎜	TS-01	Mini spanner set (5 pcs.)
PS-01	Miniature pliers 125㎜	TR-03	Taper reamer 20㎜
PR-46	Needle nose pliers 150㎜	TH-05	Hammer 21㎜
PD-06	Side cutting pliers 150㎜		Measuring tape 2m
PC-06	Combination pliers 150㎜	TWH-01	Hex key wrench set
PW-10	Pump pliers 250㎜	TWS-02	Socket wrench set
PA-01	Wire pliers	TFS-02	File set
PT-01	Tweezers 125㎜	TZ-02	Handy saw
PH-03	Lock holder 150㎜	SKC-40	Soldering iron 32W
PH-31	Electronic snips 115㎜	SW-31	Solder 150g
DS-03	⊕Screwdriver #00	SS-09	Soldering box
DS-24	⊕Screwdriver #0	SS-02	Solder sucker
DS-44	⊕Screwdriver #1	SS-08	IC Extractor
DS-64	⊕Screwdriver #2	SS-21	Spring hook
DS-13	⊖Screwdriver 2.6×75	SS-22	Spring hook
DS-34	⊖Screwdriver 4×100	SL-03	Inspection mirror
DS-76	⊖Screwdriver 6×150	TP-35	Magnetic pick-up tool
DA-02	Alignment driver 150㎜	KP-03K	Parts box
DK-22	⊕Precision driver #3/0	SWU-04	Solder wick 2.8㎜
DK-23	⊕Precision driver #00		Vinyl tape
DK-33	⊖Precision driver 1.8㎜		Pen light
DK-34	⊖Precision driver 2.3㎜		Cutter knife (L)
DZ-24	Screw-holding driver #0	ZC-19	Oiler 20cc
DG-12	Long pro-grip driver #2×250㎜		Flat brush
DN-02	Nut driver 4㎜		Poly bottle 50cc/2pcs.
DN-04	Nut driver 5㎜		Poly bottle 100cc/2pcs.
DN-05	Nut driver 5.5㎜		Silicon cloth
DN-07	Nut driver 7㎜	SD-06	Multimeter
DN-08	Nut driver 8㎜		
DR-04	Ratchet stubby driver set		
DZ-08	Offset driver set		

●Aluminum Case :
455×330×176 (Ext.)
440×315×168 (Int.)
●Weight : 12kg

V Soldering Iron 220V~240V available by assortment of SKC-30 as per Page 12





H=HL+HB

KS-12 ATTACHE TOOL KIT

Stylish and functional tool kit





■Set of 26 items

NS-03	Micro nippers	125mm
PS-01	Miniature pliers	125mm
PD-06	Side cutting pliers	150mm
PTS-01	Tweezers	125mm
DA-51	Ceramic alignment driver	
DG-21	⊖Mini soft driver	3×0.4
DG-22	⊕Mini soft driver	#00
DG-24	⊕Mini soft driver	#0
DG-01	⊖Pro grip driver	5.5×0.7
DG-04	⊕Pro grip driver	#2
DST-05	⊕⊖Reversible stubby driver	#2/⊖6.3
SD-06	Digital multimeter	
SKC-30	Soldering iron	26W
SS-02	Solder sucker	
SS-09	Soldering box	
SS-08	IC extractor	
SS-10	PCB connector extractor	
SW-30	Solder	20g
TWM-03	Smart monkey wrench	150mm
TWH-04	Hex key wrench set	
TS-01	Mini spanner set (5 pcs.)	
TM-04	Steel rule	150mm
PA-06	Wire stripper	
SWU-04	Solder wick	2.8mm
SL-50	Pocket loupe	
	Cutter knife (S)	

●Dividing plate for soldering box & tester

(mm)

Item No.	L	W	H	HL	HB	Weight(kg)	Color
KS-12	465 (450)	345 (320)	129 (105)	(35)	(70)	6	Black

( ): Internal size

V Soldering Iron 220V~240V available by assortment of SKC-30 as per Page 12

KSE-12 RoHS ATTACHE CASE WITH EMPTY PANEL

●Neatly designed for a stylish appearance
●Incorporating empty tool panel and document pocket





(mm)

Item No.	L	W	H	HL	HB	Weight(kg)	Color
KSE-12	465 (450)	345 (320)	129 (105)	(35)	(70)	3.3	Black

( ): Internal size

KS-28・KSE-28 TOOL KIT

Basic assortment of general purpose tools and free space in mesh pocket for your own use

- Soft touch EVA plastic case with double panel
- A4 size pocket is provided on the reverse of upper panel which is capable of documents, measuring instrument or notebook P.C. (max. 40mm thick)
- Tool panel is easily detachable with hook, which is convenient for field work.



330mm wide pocket on the reverse



■KS-28 Set of 22 items

NN-46	Slant edge nippers	150mm
PR-16	Long nose pliers	150mm
PD-06	Side cutting pliers	150mm
PZ-55	Screw removal pliers	150mm
PW-08	Pump pliers	200mm
PTS-01	Tweezers	125mm
DA-01	Alignment driver	100mm
DKD-01	Circuit testing driver	
DN-05	Nut driver	5.5mm
DG-05	⊕/⊖Cushion driver	#2/⊖6
DG-21	⊖Mini soft driver	3×100mm
DG-24	⊕Mini soft driver	#0×100mm

SKC-30	Soldering iron	26W
SS-05	Tip cleaner with stand	
SW-30	Solder	20g
	File (half-round)	
	Measuring tape	2m
TS-01	Mini spanner set	
TWH-01	Hex key wrench set	
TWM-02	Adjustable angle wrench	200mm
	Cutter knife (S)	
	Vinyl tape	

●Case : 405×306×100mm (Ext.)
380×276×73mm (Int.)
●Weight : 3.7kg

KSE-28 Case and panel 1.8kg

V Soldering Iron 220V~240V available by assortment of SKC-30 as per Page 12

OPTION Cordless Soldering Iron can be assorted instead of SKC-30 at customer's option.

KS-30・31 ATTACHE TOOL KIT

ABS attache case with complete assortment of tools

- Ideal for maintenance of copying and fax machines
- Tool panel is easily detachable with Velcro tape, which is more convenient for field work.
- Document pocket on the reverse side of tool panel
- Case inside can be divided by 2 pcs. of partitions freely.

KS-30







■KS-30 Set of 37 items

NS-03	Micro nippers	125mm
PS-01	Miniature pliers	125mm
PTS-06	Tweezers (long)	210mm
PZ-10	Snap ring pliers	
DA-02	Alignment driver	150mm
DP-13	⊖Screwdriver	3×75
DP-34	⊖Screwdriver	4.3×100
	⊕Screwdriver	#0×75
	⊕Screwdriver	#1×100
	⊕Screwdriver	#2×100
DK-22	⊕Precision driver	#000
DK-23	⊕Precision driver	#00
DST-05	⊕⊖Reversible stubby driver	#2/⊖6
	File (half-round)	
TS-13	Mini spanner	5.5×6
TS-14	Mini spanner	6.5×7
TS-15	Mini spanner	8.0×9
TM-04	Steel rule	150mm
TWH-04	Hex key wrench set	
TWM-01	Adjustable angle wrench	150mm

SKC-30	Soldering iron	26W
SS-05	Tip cleaner with stand	
SS-22	Spring hook	
SW-30	Solder	20g
KP-04	Parts box	
	Mini spanner	10×12
SWU-04	Solder wick	2.8mm
	Cutter knife (S)	
	Pen light	
	Plastic bottle (spray)	100cc
ZC-19	Oiler	20cc
	Blower brush	
	Copying machine brush	
	Non-woven cloth	3 pcs.
	Lens paper	80 pcs.
	A4-sized paper holder (clear)	
	Vinyl tape	
	(Partition: 2 pcs.)	

●Case : 377×264×120mm (Ext.)
362×249×107mm (Int.)
●Weight : 3.7kg

V Soldering Iron 220V~240V available by assortment of SKC-30 as per Page 12

KS-31







■KS-31 Set of 46 items

NS-03	Micro nippers	125mm
PC-06	Combination pliers	150mm
PS-01	Miniature pliers	125mm
PTS-06	Tweezers (long)	210mm
PTS-01	Tweezers	125mm
PZ-10	Snap ring pliers	
DA-02	Alignment driver	150mm
DP-13	⊖Screwdriver	3×75
DP-34	⊖Screwdriver	4.3×100
	⊕Screwdriver	#0×75
	⊕Screwdriver	#1×100
	⊕Screwdriver	#2×100
DG-12	Long pro grip driver	#2×250
DK-22	⊕Precision driver	#000
DK-23	⊕Precision driver	#00
DKD-01	Circuit testing driver	
DST-05	⊕⊖Reversible stubby driver	#2/⊖6
DZ-07	⊕⊖Offset driver	#2/⊖6
	File (flat)	
	File (round)	
TM-04	Steel rule	150mm
TS-01	Mini spanner set	
TWH-04	Hex key wrench set	
TWM-01	Adjustable angle wrench	150mm
SD-06	Digital multimeter	

SKC-30	Soldering iron	26W
SL-02	Inspection mirror	
SS-01	Solder sucker	
SS-05	Tip cleaner with stand	
SS-21	Spring hook	
SS-22	Spring hook	
SW-30	Solder	20g
KP-01	Parts box	
	Mini spanner	10×12
SWU-04	Solder wick	2.8mm
	Cutter knife (S)	
	Pen light	
	Thickness gauge	
	Plastic bottle (spray)	100cc
ZC-19	Oiler	20cc
	Blower brush	
	Copying machine brush	
	Non-woven cloth	3 pcs.
	Lens paper	80 pcs.
	A4-sized paper holder (clear)	
	Vinyl tape	
	(partition: 2 pcs.)	

●Case : 413×306×122mm (Ext.)
399×292×109mm (Int.)
●Weight : 5.2kg

V Soldering Iron 220V~240V available by assortment of SKC-30 as per Page 12

KSE-30・31 ATTACHE CASE WITH EMPTY PANEL

- Compact attache case equipped with 2 panels
- Tool panel is easily detachable with Velcro tape, which is more convenient for field work.
- Document pocket on the reverse side of tool panel
- Case inside can be divided by 2 pcs. of partitions freely.





H=HL+HB

(mm)

Item No.	L	W	H	HL	HB	PANEL	Wgt.(kg)
KSE-30	377 (362)	264 (249)	120 (107)	(42)	(65)	for KS-30	2.3
KSE-31	413 (399)	306 (292)	122 (109)	(43)	(66)	for KS-31	2.7

( ): Internal size

PANEL KITS FOR FIELD MAINTENANCE & ELECTRONICS

Sample combination KD-01 & KD-02 in KA-51 case



Features

- Basic panel provides standard tools. Panel A & B provide special tools necessary for each specific work.
- Each panel kit is adaptable to KA-50/51/91 & KAC-30 cases at your option.
- Please specify as follows to order a case equipped with panel(s).

KA-□□／KD-□□／KD-□□
Case　Panel assorted

●Panle size : 400×300
●KDE-01～06(Panel only)

KD-01 Basic panel kit for maintenance service



■KD-01: Set of 24 items

NN-46	Slant edge nippers 150mm	DST-02	⊕Stubby driver #2
PR-16	Long nose pliers 150mm	TS-01	Mini spanner set
PC-06	Combination pliers 150mm	TWH-04	Hex key wrench set
PTS-02	Tweezers 125mm		Measuring tape 2m
DS-03	⊕Screwdriver #00	SKC-40	Soldering iron 32W
DS-23	⊕Screwdriver #0	SW-30	Solder 20g
DS-44	⊕Screwdriver #1	SS-05	Tip cleaner w/stand
DS-64	⊕Screwdriver #2		Vinyl tape
DS-14	⊖Screwdriver 2.6×100	ZC-19	Oiler
DS-34	⊖Screwdriver 4×100		Cutter knife (L)
DS-54	⊖Screwdriver 5.5×100		Silicon cloth
DG-12	⊕Long pro grip driver #2×250mm	●Weight : 2.1kg	
DST-01	⊖Stubby driver 6×35		

V Soldering Iron 220V～240V available by assortment of SKC-30 as per Page 12

KD-02 Panel A for maintenance service



■KD-02: Set of 14 items

PD-06	Side cutting pliers 150mm	SWU-04	Solder wick 2.8mm
PA-03	Wire pliers	●Weight : 1.2kg	
PH-03	Lock holder 150mm		
DK-22	⊕Precision driver #3/0		
DK-23	⊕Precision driver #00		
DK-33	⊖Precision driver 1.8mm		
DK-34	⊖Precision driver 2.3mm		
DZ-24	⊕Screw-holding driver #0		
DKD-01	Circuit testing driver		
TWH-01	Hex key wrench set		
SS-22	Spring hook		
	Pen light		
	Blower brush		

KD-03 Panel B for maintenance service





■KD-03: Set of 23 items

PD-06	Side cutting pliers 150mm	DKD-01	Circuit testing driver
PA-03	Wire pliers	SS-21	Spring hook
PH-03	Lock holder 150mm	SS-22	Spring hook
PZ-10	Snap ring pliers	SL-02	Inspection mirror
DK-22	⊕Precision driver #3/0	ZC-14	Oil
DK-23	⊕Precision driver #00	SWU-04	Solder wick 2.8mm
DK-33	⊖Precision driver 1.8mm	KP-03K	Parts box
DK-34	⊖Precision driver 2.3mm		Blower brush
DZ-24	⊕Screw-holding driver #0		Flat brush
TWH-01	Hex key wrench set		Pen light
TP-35	Magnetic pick-up tool	●Weight : 2.2kg	
	File (flat)		
	File (round)		

KD-04 Basic panel kit for electronics



■KD-04: Set of 25 items

NS-03	Micro nippers 125mm	TS-01	Mini spanner set
PR-26	Long nose pliers 150mm	TWH-01	Hex key wrench set
PC-06	Combination pliers 150mm		Measuring tape 2m
PTS-01	Tweezers 125mm		File (flat)
DS-03	⊕Screwdriver #00		File (round)
DS-64	⊕Screwdriver #2	SKC-30	Soldering iron 26W
DS-13	⊖Screwdriver 2.6×75	SW-30	Solder 20g
DS-54	⊖Screwdriver 5.5×100	SS-05	Tip cleaner w/stand
DA-02	Alignment driver 150mm	SWU-04	Solder wick 2.8mm
DN-05	Nut driver 5.5mm		Vinyl tape
DK-22	⊕Precision driver #3/0		Cutter knife (L)
DK-23	⊕Precision driver #00	●Weight : 1.7kg	
DK-33	⊖Precision driver 1.8mm		
DK-34	⊖Precision driver 2.3mm		

V Soldering Iron 220V～240V available by assortment of SKC-30 as per Page 12

KD-05 RoHS Panel A for electronics



■KD-05: Set of 14 items

NN-46	Slant edge nippers 150mm	●Weight : 1.8kg
PD-06	Side cutting pliers 150mm	
PA-01	Wire pliers	
DS-23	⊕Screwdriver #0	
DS-34	⊖Screwdriver 4×100	
DST-01	⊖Stubby driver 6×35	
DST-02	⊕Stubby driver #2	
DN-07	Nut driver 7mm	
DA-40	Alignment driver	
DKD-01	Circuit testing driver	
DZ-24	Screw-holding driver #0	
TWH-04	Hex key wrench set	
SS-01	Solder sucker	
KP-52	IC Storage case	

KD-06 RoHS Panel B for electronics



■KD-06: Set of 17 items

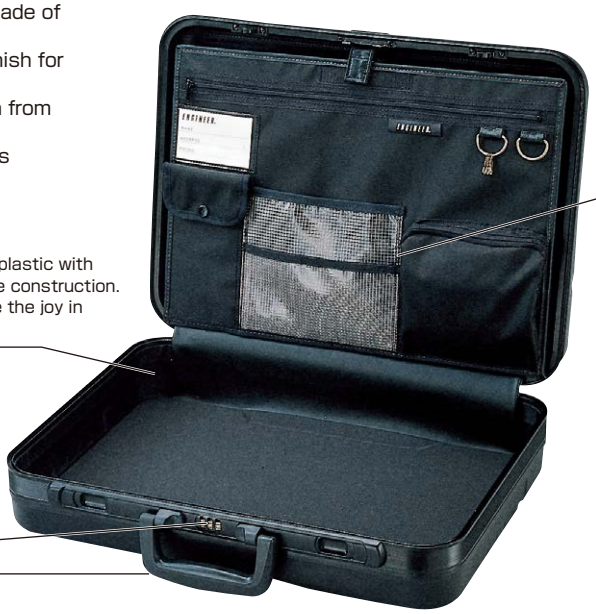
NN-46	Slant edge nippers 150mm	DKD-01	Circuit testing driver
PD-06	Side cutting pliers 150mm	KP-51	IC Storage case
PA-01	Wire pliers	KP-03K	Parts box
DS-23	⊕Screwdriver #0	●Weight : 3.1kg	
DS-34	⊖Screwdriver 4×100		
DN-07	Nut driver 7mm		
DR-03	Ratchet driver		
DZ-24	Screw-holding driver #0		
DA-40	Alignment driver		
TWM-02	Adjustable angle wrench 200mm		
TR-03	Taper reamer 20mm		
TH-05	Hammer 21mm		
SS-01	Solder sucker		
SS-08	IC Extractor		

KA-22

RoHS **ATTACHE CASE(WIDE TYPE)**

Attractive and functional multipurpose case

- Light-weighted & durable case made of ABS resin
- Nylon 100% (Hypalon) interior finish for more than just business
- Tool panel (option) can be hidden from free space by dividing plate.
- Comes with multipurpose pockets



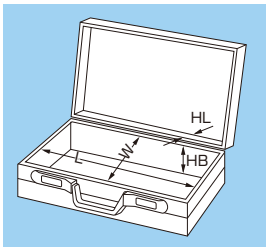
INSIDE
Besides business use, add functional and fashionable pockets and storage pouch to meet multipurpose requirements.
Offer clear see-through mesh type pocket at the back of dividing plate.

BODY
This handsome case is molded of ABS plastic with simple form line, lightweight and durable construction. Suggest a new field of use and produce the joy in possession of the case.

DIAL LOCK
Add security with combination dial lock and two pushing locks.
Open easily by sliding outside the 2 buttons.



HANDLE
Designed to fit the hand and reduce hand fatigue.



(Remark)
The dimensions indicate the internal sizes but subject to within a tolerance allowed.
H=HL+HB

(mm)

Item No.	L	W	H	HL	HB	Weight(kg)	Color
KA-22	450	320	105	35	70	2.4	Black

KA-50・51

RoHS **ALUMINIUM CASE**

- Featuring a matt surface in silver color
- Streamline appearance



KA-50

KA-51





●Durable handle

Internal Size (mm)

Item	L	W	H	HL	HB	Weight(kg)
KA-50	440	320	105	40	65	2.6
KA-51	440	320	130	50	80	2.8

KA-57

RoHS **ALUMINIUM CASE**

Stylish case coming with shock-proof sponges and tool panel







Stylish round corner

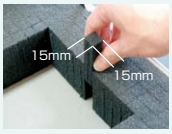


Tool panel affixed to shell with Velcro and detachable

Wavy formed urethane (upper shell) and cut sponges (body) protect contents such as camera, camcorder, etc.







Each cut sponge (15x15mm) can be removed so as to fit the size and shape of content.

■External dimensions (Internal dimensions) (mm)

Item No.	L	W	H	HL	HB	Tool Panel (single)	Weight(kg)
KA-57	450(435)	330(314)	135(120)	(52)	(68)	420×300	4.1

KA-30~44

RoHS ALUMINIUM CASE

- Heavy-duty type
- Made of 1.5mm-thick rugged aluminium of anodized finish
- All the corners reinforced with aluminum frame and rivets
- Case inside in melton finish



●Durable handle

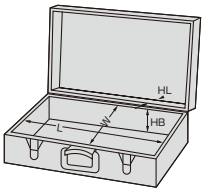


KA-30

KA-44

CUSTOM Water-repellent, anti-static or cleanroom type is available at option.

KA-44 is originally equipped. Other models can be equipped with casters at option.



(Remark)
The dimensions indicate the internal sizes but subject to within a tolerance allowed.
H = HL+HB

Internal Size (mm)							(kg)
Item No.	L	W	H	HL	HB	Wgt.	Max.Load
KA-30	440	315	165	55	110	4.3	15
KA-42	540	320	160	50	110	4.6	
KA-43	590	410	205	50	155	6.2	20
KA-44	650	450	197	60	137	7.4	

KAC-30・42

RoHS ALUMINIUM CASE FOR CLEANROOM

- Constructed of aluminum sheets without any accessories nor material generating dust
- KAC-30 can be equipped with KD-01~06 (option).
- KAC-42 is ideal for storage of precision instruments in cleanroom



KAC-30

KAC-42

FOR CLEAN ROOM



●Durable handle

Internal Size (mm)							(kg)
Item No.	L	W	H	HL	HB	Wgt.	Max.Load
KAC-30	440	315	165	55	110	4	15
KAC-42	540	320	160	50	110	4.7	

KA-91

RoHS ALUMINIUM CASE

- Featuring a smooth surface owing to ribbed structure without using rivet nor angle bracket
- Made of 0.8mm aluminum sheet with clear coating
- Tool panel KD-01~06 adaptable



■External dimensions (Internal dimensions) (mm)

Item No.	L	W	H	HL	HB	Weight(kg)
KA-91	487(468)	332(311)	150(134)	(27)	(107)	3.5

KP-01~03 PARTS BOX

Durable transparent box, ideal for transporting, classification and storage of small parts.

- Lightweight, compact and durable component box made of polypropylene
- Interchangeable dividing plates can be configured to create storage space
- See-through, transparent box.
- With article labels.
- Optional dividing plate set
  KP-95 : 6 pcs./set adaptable to KP-01
  KP-96 : 6 pcs./set adaptable to KP-02
  KP-97 : 6 pcs./set adaptable to KP-03



●KP-01
Ext. Size ： 157×102×42mm
4 pcs. of dividing plates included



●KP-02
Ext. Size ： 207×145×40mm
12 pcs. of dividing plates included



●KP-03
Ext. Size ： 255×190×40mm
16 pcs. of dividing plates included

KP-02K•03K PARTS BOX (HEAVY DUTY TYPE)

Heavy duty transparent parts box, ideal for classification and storage

- Super clear transparent lid owing to shock-proof polycarbonate resin
- Micro-rib system of divider setting
- Material: Lid – Polycarbonate
  Body & Divider – Polypropylene
  Latch – ABS resin
- Optional dividing plate set
  KP-96 : 6 pcs./set adaptable to KP-02K
  KP-97 : 6 pcs./set adaptable to KP-03K



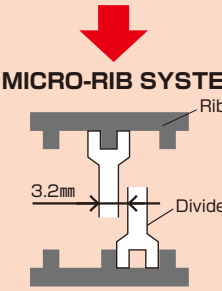
●KP-02K
Ext. Size ： 205×145×40mm
18 pcs. of dividers included



●KP-03K
Ext. Size ： 255×190×40mm
32 pcs. of dividers included







2 patterns of interchangeable divider setting are possible to adjust interval of partition at every 3.2mm

KP-04 MINIATURE BOX

- Most suitable for electronic parts and other small components.
- Compact, lightweight and portable.
- Material: Styrene resin(lid), Polypropylene (body).
- External Size:120×92×25mm



KP-51·52 IC STORAGE BOX

- Compact IC storage box made of anti-static plastic body
- Comes with 10mm-thick high density conductive foam (Surface resistivity less than $5x10^6\Omega$)

ESD SAFE



KP-51
- External Size : 80×135×25
- Internal Size : 75×130×19



KP-52
- External Size : 230×145×28
- Internal Size : 219×134×22

Discon : Discontinued

S

ITEM No.	CODE No.	ITEM	PAGE
SD-06	5706	DIGITAL MULTIMETER	17
SD-07	5707	IRON THERMOMETER	17
SD-20	5720	DESOLDERING TOOL	15
SD-21	5721	HEATER HOLDER	15
SD-22	5722	HEATER ASSY	15
SD-23	5723	PIPE SETTER	15
SD-24	5724	FILTER CARTRIDGE	15
SD-25	5725	SEAT VALVE	15
SD-26	5726	DIAPHRAGM	15
SD-29	5729	FILTER PIPE	15
SD-30	5730	SMD ACCESSORY KIT	15
SD-31	5731	STAINLESS WIRE REEL	15
SD-56	Discon	OPTIONAL SENSOR RING	
SD-58	5758	SENSOR PROBE	17
SD-60	5760	TOOL STAND FOR SD-20	15
SD-61	5761	φ0.8 TIP FOR SD-20	15
SD-62	5762	φ1.0 TIP FOR SD-20	15
SD-63	5763	φ1.5 TIP FOR SD-20	15
SD-86	5786	HOT AIR NOZZLE	15
SD-87	5787	TAPERING SLIM TIP	15
SD-88	5788	TAPERING SLIM TIP	15
SH-01	Discon	REPLACEMENT HEATER (100V)	
SH-05	Discon	REPLACEMENT HEATER	
SH-10	5410	REPLACEMENT HEATER (100V)	11
SH-12	5412	REPLACEMENT HEATER (220-240V)	12
SH-20	5420	REPLACEMENT HEATER (100V)	11
SK-01	Discon	MICRO SOLDER STATION	
SK-14	5014	SOLDERING IRON (MICA)	12
SK-21	Discon	QUICK-HEAT SOLDERING GUN	
SK-30	5030	SOLDERING IRON	11-12
SK-31	5031	SOLDERING IRON	11-12
SK-32	5032	SOLDERING IRON (100V)	11
SK-38	Discon	CERAMIC-COATED CHISEL FOR SKS-70	
SK-40	5040	SOLDERING IRON (100V)	11
SK-41	5041	SOLDERING IRON (100V)	11
SK-42	5042	TAPERED NEEDLE FOR SKM-40	14
SK-43	5043	CHISEL FOR SKM-40	14
SK-44	5044	φ2mm SPADE FOR SKM-40	14
SK-45	5045	CHISEL FOR SKM-40	14
SK-46	5046	HOT BLOW TIP FOR SKM-40	14
SK-47	5047	EJECTOR UNIT FOR SKM-40	14
SK-50	5050	KOTELYZER	13
SK-51	5051	TAPERED NEEDLE FOR SK-50	13
SK-52	5052	CHISEL FOR SK-50	13
SK-53	5053	φ2mm SPADE FOR SK-50	13
SK-54	5054	CHISEL FOR SK-50	13
SK-55	5055	HOT BLOW TIP FOR SK-50	13
SK-56	5056	HOT BLOW TIP FOR SK-50	13
SK-57	5057	EJECTOR UNIT FOR SK-50	13
SK-61	5061	TAPERED NEEDLE FOR SK-60	13
SK-62	5062	CHISEL FOR SK-60	13
SK-63	5063	φ2mm SPADE FOR SK-60	13
SK-64	5064	CHISEL FOR SK-60	13
SK-65	5065	HOT BLOW TIP FOR SK-60	13
SK-66	5066	HOT BLOW TIP FOR SK-60	13
SK-67	5067	HOT KNIFE FOR SK-60	13
SK-68	5068	CERAMIC UNIT FOR SK-60	13
SK-70	5070	KOTELYZER	14
SK-71	5071	TAPERED NEEDLE FOR SK-70	14
SK-72	5072	CHISEL FOR SK-70	14
SK-73	5073	φ2mm SPADE FOR SK-70	14
SK-74	5074	φ3mm SPADE FOR SK-70	14
SK-75	5075	TAPERED NEEDLE FOR SK-70	14
SK-76	5076	φ2mm SPADE FOR SK-70	14
SK-77	5077	TAPERED PYRAMID FOR SK-70	14
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SK-79	5079	HIGH POWERED CHISEL FOR SK-70	14
SK-80	5080	HIGH POWERED ROUND HEAD NEEDLE FOR SK-70	14
SK-81	5081	HIGH POWERED LONG TAPER CHISEL FOR SK-70	14
SK-82	5082	HOT BLOW TIP FOR SK-70	14
SK-83	5083	HOT BLOW TIP FOR SK-70	14
SK-84	5084	HOT BLOW TIP FOR SK-70	14
SK-85	5085	HOOK FITTING FOR SK-70	14
SK-88	5088	PROTECTIVE CAP FOR SK-70	14
SK-89	5089	CLEANING SPONGE FOR KOTELYER	13-14
SK-90	5090	GAS REFILL FOR KOTELYZER	14
SK-93	5093	HEAT SHRINK FOR SK-70	14
SK-94	5094	HEAT SHRINK FOR SK-70	14
SK-95	5095	GAS REFILL FOR KOTELYZER	14
SK-96	5096	CERAMIC UNIT FOR SK-70	14
SKA-50	5100	KOTELYZER	13
SKA-60	5105	KOTELYZER	13
SKA-70	5101	KOTELYZER	14
SKB-60	5106	KOTELYZER	13
SKB-70	5102	KOTELYZER	14
SKC-30	5130	SOLDERING IRON	11-12
SKC-31	5131	SOLDERING IRON	11-12
SKC-32	5132	SOLDERING IRON (100V)	11
SKC-40	5140	SOLDERING IRON (100V)	11
SKC-41	5141	SOLDERING IRON (100V)	11
SKC-60	5107	KOTELYZER	13
SKC-70	5103	KOTELYZER	14
SKD-70	5104	KOTELYZER	14
SKE-01	Discon	MICRO SOLDER STATION	
SKE-30	5180	SOLDERING IRON	11-12
SKE-31	5181	SOLDERING IRON	11-12
SKE-32	5182	SOLDERING IRON (100V)	11
SKE-40	5190	SOLDERING IRON (100V)	11
SKE-41	5191	SOLDERING IRON (100V)	11
SKM-40	5108	HANDY KOTELYZER	14
SKS-70	Discon	CERAMIC COATING KOTELYZER	
SL-01	5801	INSPECTION MIRROR	10
SL-02	5802	INSPECTION MIRROR	10
SL-03	5803	INSPECTION MIRROR	10
SL-04	5804	DESK-TOP LOUPE	10
SL-06	Discon	POCKET MICROSCOPE	
SL-07	5807	DESK-TOP LOUPE	10
SL-08	Discon	STAND LOUPE	
SL-11	5811	INSPECTION MIRROR	10
SL-12	5812	INSPECTION LOUPE	9
SL-21	Discon	BOOSTER LENS	
SL-22	5822	LED LIGHT LOUPE	10
SL-23	5823	LED STAND LOUPE	10
SL-30	Discon	LIGHT LOUPE	
SL-50	5850	POCKET LOUPE	9
SL-51	5851	POCKET LOUPE	9
SL-52	5852	POCKET LOUPE	9
SL-53	5853	POCKET LOUPE	9
SL-55	5855	INSPECTION LOUPE	9
SL-56	5856	INSPECTION LOUPE	9
SL-57	5857	INSPECTION LOUPE	9
SL-58	5858	INSPECTION LOUPE	9
SL-60	5860	STEREO MICROSCOPE	7
SL-62	5862	MICROSCOPE CMOS CAMERA	8
SL-63	Discon	CCD CAMERA WITH DIGITAL SCALE	
SL-64	5896	FOLDABLE MAGNIFIER	9
SL-65	5865	EYEPIECE WITH MICRO SCALE	7
SL-66	5866	EYEPIECE WITH MICRO SCALE	7
SL-67	Discon	EYEPIECE WITH MICRO SCALE	
SL-71	5871	FLASHLIGHT LOUPE	10
SL-72	5872	UTILITY LOUPE	10
SL-80	5880	HEAD LOUPE	10
SL-81	5881	HEAD LOUPE	10
SL-82	5882	HEAD LOUPE	10
SL-83	5883	HEAD LOUPE	10
SL-85	5885	REPLACEMENT LENS FOR HEAD LOUPE	10
SL-86	5886	REPLACEMENT LENS FOR HEAD LOUPE	10
SL-87	5887	REPLACEMENT LENS FOR HEAD LOUPE	10
SL-88	5888	REPLACEMENT LENS FOR HEAD LOUPE	10
SS-01	5501	SOLDER SUCKER	16
SS-02	5502	SOLDER SUCKER	16
SS-05	5505	TIP CLEANER	16
SS-06	Discon	HEAT STOPPER	
SS-07	Discon	HEAT STOPPER	
SS-08	5508	IC EXTRACTOR	19
SS-09	5509	SOLDERING BOX	15
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SS-11	5511	REPLACEMENT NOZZLE	16
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SS-16	5516	REPLACEMENT SILICONE TUBES	16
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SS-21	5521	SPRING HOOK	19
SS-22	5522	SPRING HOOK	19
SS-24	Discon	TELESCOPIC SPRING HOOK	
SS-30	5530	PIN EXTRACTOR	19
SS-31	5531	PIN EXTRACTOR	19
SS-32	5532	PIN EXTRACTOR	19
SS-33	5533	PIN EXTRACTOR	19
SS-34	5534	PIN EXTRACTOR	19
ST-05	Discon	REPLACEMENT TIP	
ST-10	5210	REPLACEMENT TIP FOR SK-30	11
ST-11	5211	REPLACEMENT TIP FOR SK-30	11
ST-12	5212	REPLACEMENT TIP FOR SK-30	11
ST-13	5213	REPLACEMENT TIP FOR SK-30	11
ST-14	5214	REPLACEMENT TIP FOR SK-30	11
ST-16	Discon	REPLACEMENT TIP FOR SK-01	
ST-17	Discon	REPLACEMENT TIP FOR SK-01	
ST-18	Discon	REPLACEMENT TIP FOR SK-01	
ST-20	5220	REPLACEMENT TIP	11-12
ST-21	5221	REPLACEMENT TIP	11-12
ST-22	5222	REPLACEMENT TIP	11-12
ST-23	5223	REPLACEMENT TIP	11-12
ST-24	Discon	REPLACEMENT TIP FOR SK-01	
ST-25	Discon	REPLACEMENT TIP FOR SK-01	
SW-11	5611	SOLDER	17
SW-12	5612	SOLDER	17
SW-13	5613	SOLDER	17
SW-21	5621	SOLDER	17
SW-22	5622	SOLDER	17
SW-23	5623	SOLDER	17
SW-30	5630	SOLDER	17
SW-31	5631	SOLDER	17
SW-32	5632	SOLDER	17
SW-33	5633	SOLDER	17
SW-41	5641	SOLDER	17
SW-42	5642	SOLDER	17
SW-43	5643	SOLDER	17
SW-51	5651	SOLDER	17
SW-52	5652	SOLDER	17
SW-53	5653	SOLDER	17
SWA-06	4006	SUPERIOT RA SOLDER	18
SWA-08	4008	SUPERIOT RA SOLDER	18
SWA-10	4010	SUPERIOT RA SOLDER	18
SWA-12	4012	SUPERIOT RA SOLDER	18
SWA-56	4056	SUPERIOT RA SOLDER	18
SWA-58	4058	SUPERIOT RA SOLDER	18
SWA-60	4060	SUPERIOT RA SOLDER	18
SWA-62	4062	SUPERIOT RA SOLDER	18
SWA-76	4076	SUPERIOT RA SOLDER	18
SWA-78	4078	SUPERIOT RA SOLDER	18
SWA-80	4080	SUPERIOT RA SOLDER	18
SWA-82	4082	SUPERIOT RA SOLDER	18
SWS-06	4106	SUPERIOT RMA SOLDER	18
SWS-08	4108	SUPERIOT RMA SOLDER	18
SWS-10	4110	SUPERIOT RMA SOLDER	18
SWS-12	4112	SUPERIOT RMA SOLDER	18
SWS-56	4156	SUPERIOT RMA SOLDER	18
SWS-58	4158	SUPERIOT RMA SOLDER	18
SWS-60	4160	SUPERIOT RMA SOLDER	18
SWS-62	4162	SUPERIOT RMA SOLDER	18
SWS-76	4176	SUPERIOT RMA SOLDER	18
SWS-78	4178	SUPERIOT RMA SOLDER	18
SWS-80	4180	SUPERIOT RMA SOLDER	18
SWS-82	4182	SUPERIOT RMA SOLDER	18
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SWU-03	5606	SOLDER WICK	18
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SWU-06	5609	SOLDER WICK	18

D

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DA-02	1002	ALIGNMENT SCREWDRIVER	22
DA-03	1003	ALIGNMENT SCREWDRIVER	22
DA-20	Discon	CORE ALIGNMENT TOOL SET	
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PGT-01

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