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Screw Removal

SCREW REMOVAL PLIERS SERIES

PATENTED TECHNIQUE

Remove all kinds of screws, fasteners, pins, etc. easily!

PZ-22

RoHS SCREW EATER

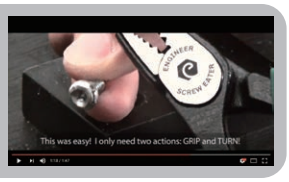
Finally, the world-standard model of the Screw Removal Pliers!

- Vertical serrations bite and grip a screw head without slippage.
- Also good for Truss head screw. *Truss: Lower-profile dome head
- Also ideal for situations when the correct size or type of screwdriver is not available.
- Serrated side teeth lined consecutively, inter-meshed with each other. Good for holding a thin plate securely.
- Owing to T-shaped forging handles, the handle sleeve will not twist or slip off during heavy duty use.

International Patents

JAPAN [PAT.3486776] [PAT.4471315] [PAT.5726365]
EU [PAT.2436488]
USA [PAT.6923097] [PAT.8656812B2]
TAIWAN [PAT.178742] [PAT.363675]
KOREA [PAT.919966]
CHINA [PAT.201080014706.3]

PRODUCT VIDEO




Stripped


Dome head (Truss)


Rusted


Non-standard


Vertical serrations

T-shaped handle





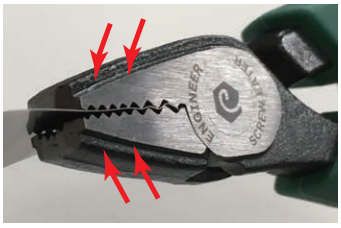
Vertical Serrations (PAT.)

You can remove damaged screws in seconds. Just grip and turn!



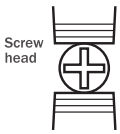
Inter-meshed Teeth (PAT.)

Need to hold a thin material? Get a firm grip!



How does it work?

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.

"Vertical serrations"



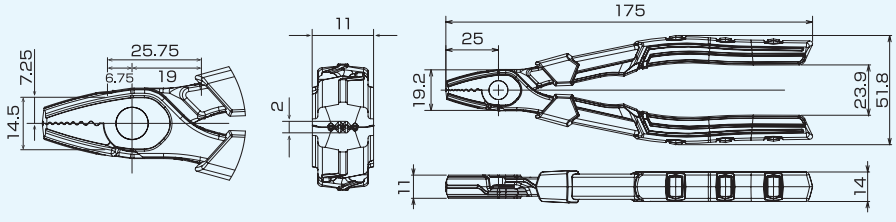
Specially-designed jaws generate gripping power.

"Maximizes the friction"



Perfect fitting serrations maximize friction with no slippage.

(mm)



Item No.	Material	Hardness	Wgt.(g)
PZ-22	Carbon Steel	HRC60±2	165

■ Screw head size

Top Jaws
ϕ3~ϕ11㎜

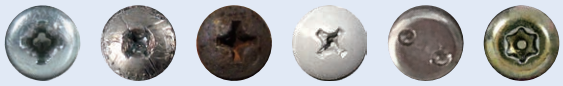


Rust Remover (ZC-28)

Screw stuck due to rust? Try our Rust Remover to remove the rust off screws within seconds!

Turn to page 84 for further information.





Remove all kinds of screws, fasteners, pins, etc. easily!

PZ-58 SCREW REMOVAL PLIERS GT

The best selling Screw Removal Pliers in the whole world!!

- Elaborately-designed serration fits the profile of screw head at the best angle.
- Also good for Truss head screw. *Truss: Lower-profile dome head
- with wire cutter (Capacity: copper wire ϕ1.2㎜)
- Owing to T-shaped forging handles, the handle sleeve will not twist or slip off during heavy duty use.

GOOD DESIGN 2009

product design award 2011

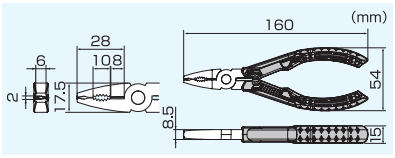


PZM-58 PLIERS MASK FOR PZ-58







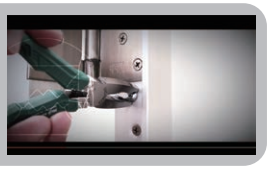


Item No.	Material	Hardness	Wgt. (g)
PZ-58	Carbon Steel	HRC58±2	130

■ Screw head size

Top Jaws
ϕ3~ϕ9.5㎜

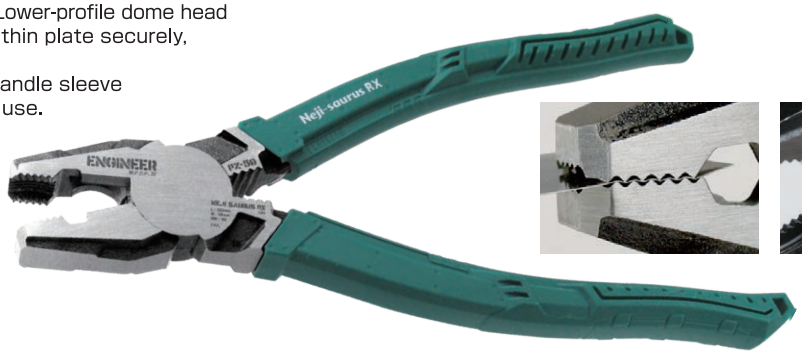
PRODUCT VIDEO



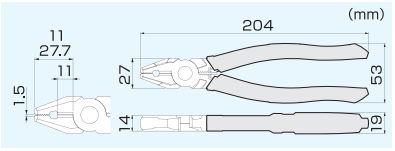
PZ-59 SCREW REMOVAL PLIERS RX

- Removes screws with stripped or rusted heads or stubborn fasteners in seconds
- Also good for Truss head screw. *Truss: Lower-profile dome head
- Inter-meshed side teeth even hold a very thin plate securely, no slippage !
- Owing to T-shaped forging handles, the handle sleeve will not twist or slip off during heavy duty use.

GOOD DESIGN AWARD 2014







Item No.	Material	Hardness	Wgt.(g)
PZ-59	Carbon Steel	HRC60±2	300

■ Screw head size

Top Jaws
ϕ3~ϕ15㎜



PRODUCT VIDEO



PZ-60 SCREW REMOVAL PLIERS Z

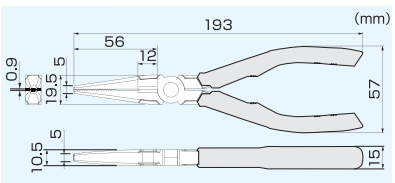
- Long nose ideal for a hard-to-reach small screws up to 5.5㎜
- Vertical serrations bite a screw head without slippage.
- Also good for Truss head screw. *Truss: Lower-profile dome head
- Inter-meshed teeth to hold even a thin plate securely, so no slippage.
- Owing to T-shaped forging handles, the handle sleeve does not twist or slip off the handle.

GOOD DESIGN AWARD 2016

DESIGN AWARD 2017







Item No.	Material	Hardness	Wgt.(g)
PZ-60	Carbon Steel	HRC60±2	180

■ Screw head size

Top Jaws
ϕ2~ϕ5.5㎜ (Head Height < 2.2㎜)





PZ-55 SCREW REMOVAL PLIERS

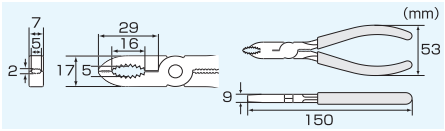
The basic Screw Removal Pliers: Powerful and simple!



- 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





■ Screw head size

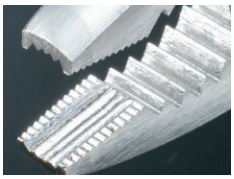
Top Jaws
φ3~φ8mm

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

PZ-56 SCREW REMOVAL PLIERS XP

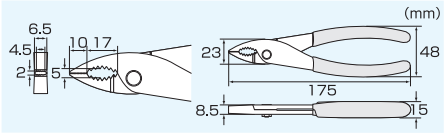
Feel the powerful and extensive work !!





- 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.





■ Screw head size

Top Jaws
φ3~φ10mm

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

PZ-57 SCREW REMOVAL PLIERS M2

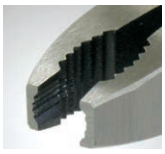
Slender jaws and pocket-sized body

ESD SAFE

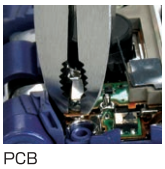
- Ideal for unfastening frozen or special screws of tiny size
- ESD-Safe handle made of thermoplastic Elastomer (TPR) featuring comfortable grip



with strap hole







PCB



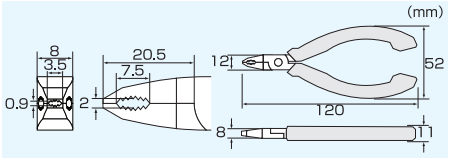
Hard Disk Drive



Damaged screw



Torx screw



■ Screw head size

Top Jaws
φ2~φ3.5mm

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

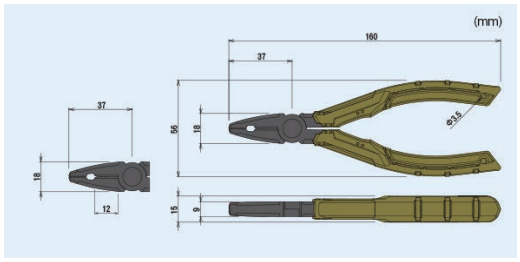
PZ-32 SCREW REMOVAL PLIERS JS

- Vertical serrations bite and grip a screw head without slippage.
- Also good for Truss head screw. *Truss: Lower-profile dome head
- Serrated side teeth lined consecutively, inter-meshed with each other
- Black oxide finish to increase rust-resistance!
- Owing to T-shaped forging handles, the handle sleeve will not twist or slip off during heavy duty use.

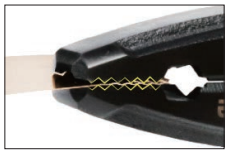




PZM-30 PLIERS MASK FOR PZ-32



Inter-meshed, never let go.



Strap hole goes through the steel handle.



Item No.	Size	Material	Hardness	Cutting Capacity	Wgt.	Safety Hole
PZ-32	160㎜	Body:Carbon Steel Handles:TPR	HRC60±2	φ1.2㎜ (copper wire)	125g	φ3.5㎜

■ Screw head size

Top Jaws
φ3~φ9.5㎜

PZ-64・65 SCREW REMOVAL LOCKING PLIERS

- Vertically serrated jaws bite a screw head while locking it securely. It helps to optimize your hand strength for twisting off stubborn screws.
- Also good for Truss head screw. *Truss: Lower-profile dome head
- Quick release mechanism, just open the handles to unlock the gripping jaws
- Rubber handles provide you with a comfortable grip.

PRODUCT VIDEO

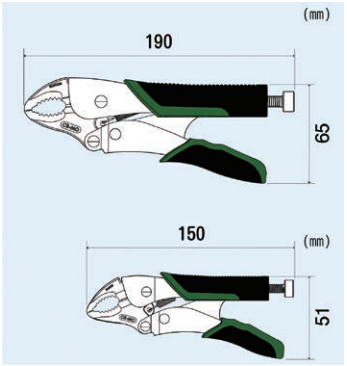








PZ-65





PZ-64

Item No.	Max.Jaws	Cutting Capacity	O.A. Length	Hardness (Jaws)	Wgt.	Material
PZ-64	38㎜	Steel wire φ1.6㎜	150㎜	HRC57±3	205g	Body:Cr-Mo Handles:TPR
PZ-65	48㎜	Steel wire φ2.3㎜	190㎜		400g	

■ Screw head size

Item No.	Top Jaws
PZ-64	φ3~φ9.5㎜
PZ-65	φ7~φ12㎜

KS-34 SCREW EMERGENCY TOOL KIT

The all-in-one solution for your screw troubles!

- Screw Eater + Rapid Screw Extractor with 3 bits
- Lightweight and stylish bundle case

*Turn to page 08 for more information on the Rapid Screw Extractor





Compact and lightweight!

■ Contents

Item No.	Description
PZ-22	Screw Eater
DBZ-50G	Handle Grip for DBZ (Green)
DBZ-51	⊕#2 (Press & Twist type bit)
DBZ-52	⊕#2 (Strike & Turn type bit)
DBZ-57	⊕#1 (Press & Twist type bit)
	Bundle case

Item No.	Case Size (When unfold)	Wgt.
KS-34	380×220㎜	394g

PDS-01 SCREW REMOVAL TOOL KIT

Screw Removal Pliers GT with Mask + Rapid Screw Extractor with 5 bits in a compact heavy duty case

*Turn to page 08 for more information on the Rapid Screw Extractor



■ Contents

Item No.	Description
PZ-58	Screw Removal Pliers GT
PZM-58	Pliers Mask for PZ-58
DBZ-50B	Handle Grip For DBZ (Black)
DBZ-51	⊕#2 (Press & Twist type bit)
DBZ-52	⊕#2 (Strike & Turn type bit)
DBZ-53	Hex socket screw(⬣:2.5-3.0㎜)
DBZ-54	Hex socket screw(⬣:4.0㎜)
DBZ-56	Hex socket screw(⬣:5.0㎜)
	Bit holder

Item No.	Case Size	Wgt.
PDS-01	300×63×200㎜	896g

PGT-03 GT PACK(PAULOWNIA BOX)

The perfect gift for tool lovers!

- The Screw Removal Pliers GT and the Combination Scissors GT in a beautiful box made of paulownia wood.



■ Contents

Item No.	Description
PZ-58	Screw Removal Pliers GT
PZM-58	Pliers Mask for PZ-58
PH-55	Combination Scissors GT

Item No.	Case Size	Wgt
PGT-03	252×132×32㎜	372g

DBZ-60G

RAPID SCREW EXTRACTOR

The unique extracting tool, especially designed to remove damaged countersunk screws!

- Special screw driver for screw extraction
- No power supply or drilling required
- 2 bits for more possibilities
- High-torque handle grip
- Shock-absorbable rubber sleeve included

PRODUCT VIDEO



Contents:
- Handle Grip for DBZ(Green)(DBZ-50G)
- ⊕#2 Press & Twist type bit (DBZ-51)
- ⊕#2 Strike & Turn type bit (DBZ-52)
- Rubber Sleeve for DBZ-52





Handle grip

DBZ-52



DBZ-51

Item No.	Material	Wgt.
DBZ-60G	Bit:Carbon Steel Sleeve: TPR Grip: ABS, Nylon	135g

DBZ-50B

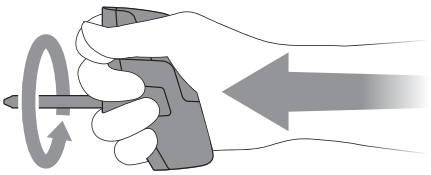
HANDLE GRIP FOR DBZ(BLACK)

High-torque handle grip



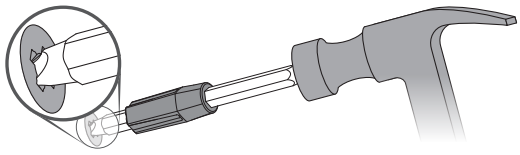
Item No.	Material	Width	Wgt.
DBZ-50B	Grip: ABS, Nylon	100㎜	83g

How to



Press & Twist type (for slightly damaged screws)

1) Insert the bit into the handle grip.
2) Place the bit tip into the screw head, then scrape away burs in the recess by twisting it back and forth lightly.
   *Do not attempt to hit the bit with a hammer.
3) After you feel the bit tip catches the corner of recess, give a jerk counterclockwise while pressing firmly downward.



Strike & Turn type (for heavily damaged screws)

1) Clean out any steel chips left in the screw recess.
2) Fix the rubber sleeve to the Strike & Turn bit and position the tip in the recess.
3) Strike the end of the bit with a hammer to stick the tip into the recess.
4) Make sure the bit is self-standing upright, and then affix the grip onto the bit.
   *Do not hit the grip with a hammer.
5) Give a jerk counterclockwise while pressing firmly downward.

DBZ-51～65

RoHS REPLACEMENT AND OPTIONAL BITS FOR DBZ-60G

Press & Twist type



Slightly damaged Philips screws

■DBZ-51



■DBZ-57





Slightly damaged Hex screws

■DBZ-62



■DBZ-63



■DBZ-64



■DBZ-65



Strike & Turn type



Heavily damaged Philips screws

■DBZ-52





Heavily damaged Hex screws

■DBZ-53



■DBZ-54

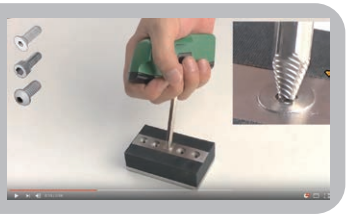


■DBZ-56



Item No.	Screw type/size	Bit type	Length	Wgt.
DBZ-51	⊕#2	Press & Twist type	105mm	27g
DBZ-52		Strike & Turn type		
DBZ-53	Hex socket screw (⬢: 2.5-3.0mm)	Strike & Turn type		26g
DBZ-54	Hex socket screw (⬢: 4.0mm)	Strike & Turn type		
DBZ-56	Hex socket screw (⬢: 5.0mm)	Strike & Turn type		
DBZ-57	⊕#1	Press & Twist type		25g
DBZ-62	Hex socket screw (⬢: 2.0mm)	Press & Twist type		
DBZ-63	Hex socket screw (⬢: 2.5-3.0mm)	Press & Twist type		27g
DBZ-64	Hex socket screw (⬢: 4.0mm)	Press & Twist type		
DBZ-65	Hex socket screw (⬢: 5.0mm)	Press & Twist type		

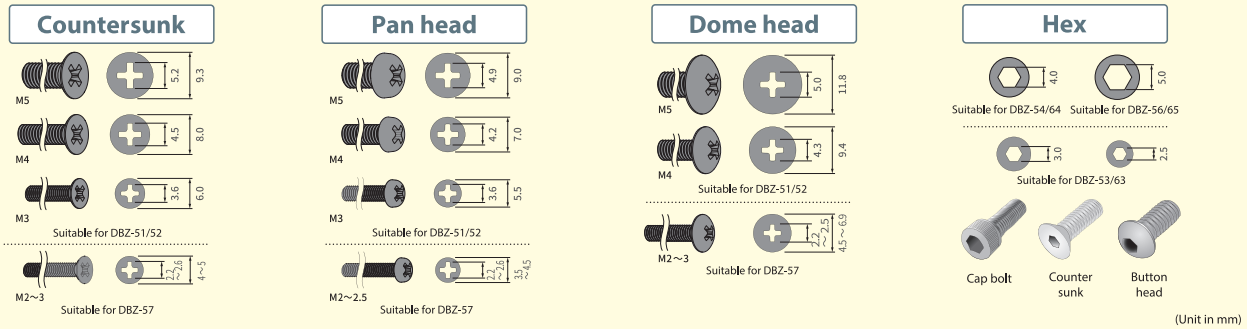
PRODUCT VIDEO





DBZ-62～65 can be used with your power driver

Screw types





Scissors

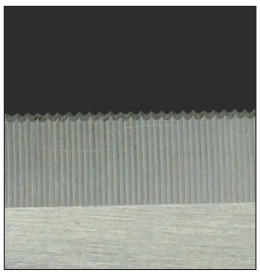
PH-57•PH-57R•PH-57G•PH-57Y

COMBINATION SCISSORS DP

- 2-in-1 anti-slip serrations and U-shaped blade
- 3㎜-thick durable blades, made of stainless steel

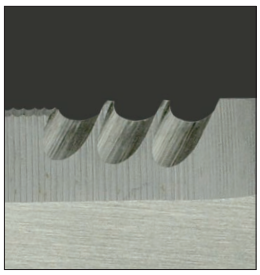


Micro-serrations



Hold the object without slippage such as Aramid fiber, plastic plate, etc.

U-shaped blade



Ideal for power supply cord, coaxiale cable, rope, etc.

TPR cushioned handles



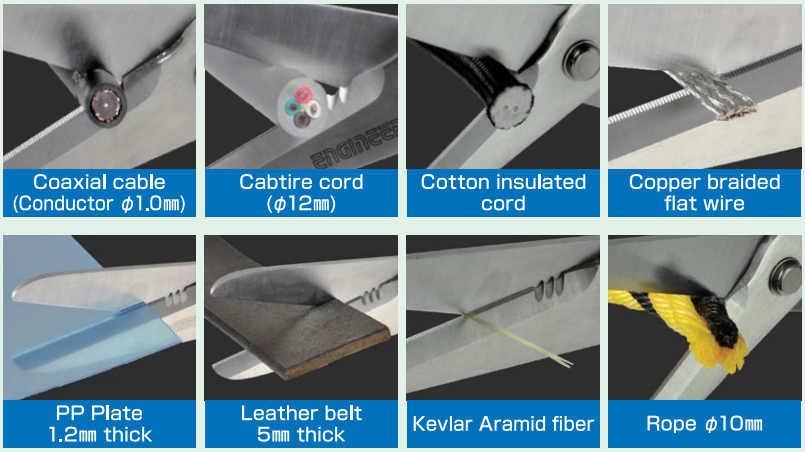
Comfort gripping

Finger pinch guard



The overlapping guard prevents your fingers from being pinched PAT.

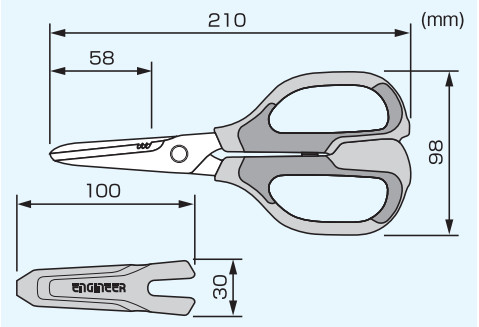
Cutting capacity (Reference only)



※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.

Color variations





Item No.	Size	Hardness	Material	Wgt.
PH-57	210㎜	HRC56±2	Blades:Steinless Steel Handles:ABS & TPR Cap:ABS	136g
PH-57R				
PH-57G				
PH-57Y				

PH-56R•PH-56G•PH-56Y

COMBINATION SCISSORS MP

- 2-in-1 anti-slip serrations and U-shaped blade
- 2.5㎜-thick blades, made of stainless steel

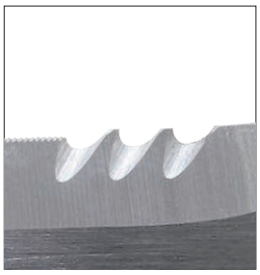


Nano-serrations



Hold the object without slippage such as Aramid fiber, plastic plate, etc.

U-shaped blade



Ideal for power supply cord, coaxiale cable, rope, etc.

Finger pinch guard



The overlapping guard prevents your fingers from being pinched PAT.

Cutting capacity (Reference only)



Coaxial cable (Conductor ϕ1.0㎜)



Cabtire cord (ϕ12㎜)



Cotton insulated cord



Copper braided flat wire



PP Plate 1.2㎜ thick



Leather belt 5㎜ thick



Kevlar Aramid fiber

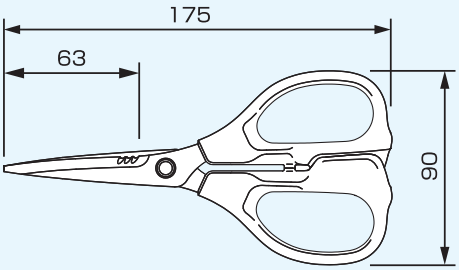


Rope ϕ10㎜

※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.

Color variations





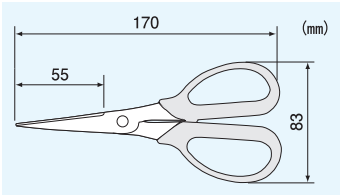
Item No.	Size	Hardness	Material	Wgt.
PH-56R PH-56G PH-56Y	175㎜	HRC56+2	Blades: Stainless Steel Handles: ABS	75g

PH-50 COMBINATION SCISSORS

2-in-1 Unique cutting blade

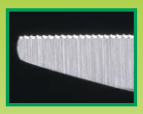
- Trimming various objects which you could not cut with ordinary scissors such as nylon fiber, cabtire cord, etc.
- Fine and flush cut in finish even compared with cut with cutting pliers
- Ideal for professional electricians as well as for hobby use.



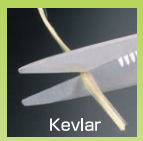


Notched Blade

Notched blades prevent the object from slipping



Trimming Nylon or Kevlar fiber without slipping



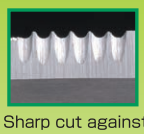




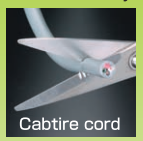
PH-50 Notched Blade Cutting Capacity	
Nylon/Kevlar fiber	Various types
Copper braided wire	
Aluminum/Copper sheet	0.5mm max.
Plastic plate / PET	1.0mm max.

U-type Blade

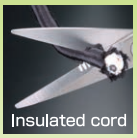
U-type notches hold cord firmly



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.

Item No.	Size	Hardness	Material	Wgt.
PH-50	170mm	HRC54±2	Handles:PE Blades:Stainless Steel	58g

PH-55 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

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.

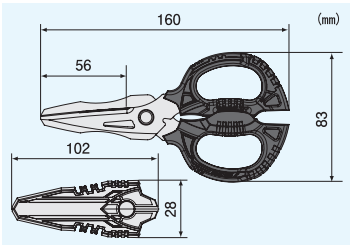
Wire Cutter

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	Hardness	Material	Wgt.
PH-55	160mm	HRC56±2	Handles:PBT Blades:Stainless Steel	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.

PH-33•34 ELECTRONIC SNIPS

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



PH-33



PH-34

PK-50•51 CABLE SHEARS

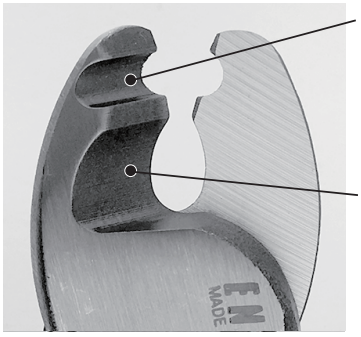
- Makes a fine cut surface owing to the curved blades
- High leverage for easy operation



PK-50



PK-51



■Foremost Blades
Wire cutter suitable for copper wires

■Main Blade (Rearmost)
Curved blades suitable for insulated cables, make a fine cut surface.
Flat cables, Coaxial cables, Power supply cords, LAN cables, etc. are also applicable.



Vinyl Insulated



Cabtire Cable



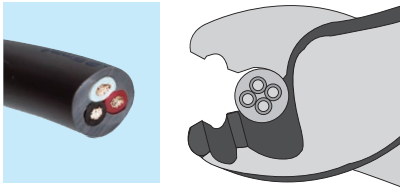
Flat Cable



Coaxial Cable

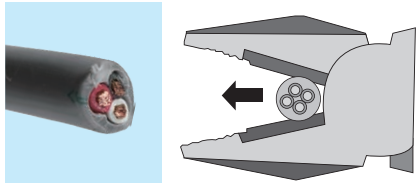
Comparison of Cut Surface

Cable Shears



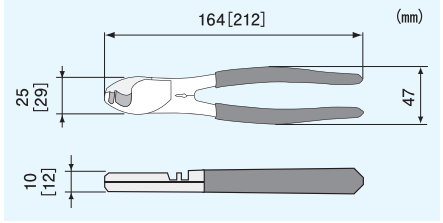
The curved blades can hold a cable securely and the shears mechanism enables you to make a cut surface finely.

Conventional Pliers



The pressure given from flat blades crushes a cable or it may slip sideways.





[ ]:PK-51

Item No.	Size	Hardness	Cutting Capacity			Wgt.
			Vinyl insulated Cable		Flat Cable	
PK-50	164㎜	HRC58±4	9㎜ outside diameter	22 ㎟	2.0㎜×2core	150g
PK-51	212㎜	HRC58±4	11㎜ outside diameter	38 ㎟	2.0㎜×3core	250g

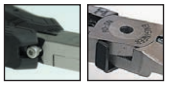
Nippers



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.



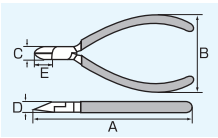
- With opening angle adjuster or stopper

NS-03 RoHS MICRO NIPPERS

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

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
- ESD-Safe handles made of Elastomer (TPR)
- Material: S58C
- Hardness: HRC 58±4
- Capacity: copper wire ϕ1.2mm

Spring

ESD SAFE



(mm)

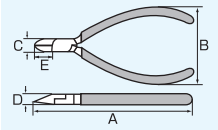
Size	A	B	C	D	E	F
115	120	50	13	7	14	11

NSX-04 RoHS MICRO NIPPERS

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

Spring





(mm)

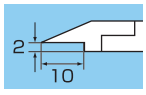
Size	A	B	C	D	E
115	117	51	13	7	14

NS-06 RoHS MICRO NIPPERS

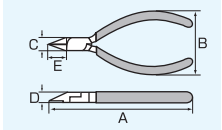
- Undercut design featuring thin blade
- Ideal for precise PCB related work
- With opening angle adjuster
- Material: S58C
- Hardness: HRC 58±4
- Capacity: copper wire ϕ0.8mm

Spring





Under cut



(mm)

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

■Nippers cutting capacities (Reference only)

(mm)

Item No.	Commodity	Size	Copper wire		Steel wire (⌀)	Others	Page
			Solid (ϕ)	Stranded			
NS-03	Micro Nippers	125	1.4	2			16
NS-04	Micro Nippers	115	1.2	2			16
NSX-04	Micro Nippers	115	1.2	2			16
NS-06	Micro Nippers	105	0.8				16
NZ-03	Chip Cutter	125	0.6				17
NZ-05	Chip Cutter	125	0.6			also applicable to plastic gate	17
NZ-12	Parallel Nippers	125	0.6				17
NZ-13	Parallel Nippers	125	0.6				17
NP-03	Plastic Nippers	125				Injection molding gate ⌀3mm	19
NP-04	Plastic Nippers	150				Injection molding gate ⌀3mm	19
NP-05	Plastic Nippers	115	0.8			Injection molding gate ⌀3mm	19
NK-15	Diagonal Nippers	125	2.6	2	1.5		18
NK-16	Diagonal Nippers	150	3	2	1.9		18
NK-25	Diagonal Nippers	125	2.6	2	1.5	Stripping hole ⌀1.2 & 1.6mm	18
NK-26	Diagonal Nippers	150	3	2	1.9	Stripping hole ⌀1.2 & 1.6mm	18
NK-36	Diagonal Nippers	150	3.2		2	Vinyl isulated cable ⌀1.6mm	18
NN-45	Slant Edge Nippers	125	2	2	1.2	Stripping hole ⌀1.2 & 1.6mm	19
NN-46	Slant Edge Nippers	150	2.6	2	1.4	Stripping hole ⌀1.2 & 1.6mm	19
NN-56	Slant Edge Nippers	150	2.6	2	1.4		19

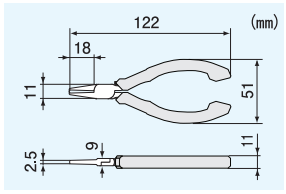
NZ-03 CHIP CUTTER

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

Spring









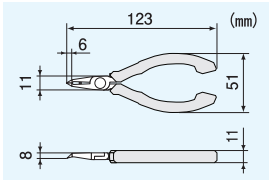
NZ-05 CHIP CUTTER

- Opening angle adjuster (Max. 5㎜) with 1.5㎜ hex key wrench included
- Sharp & slender design of jaws for work on dense circuit board
- ESD-Safe handles made of Elastomer (TPR)
- 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







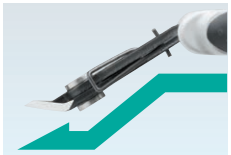


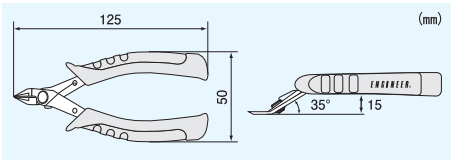
NZ-12・13 PARALLEL NIPPERS

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





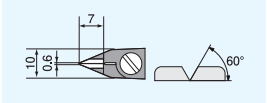
SHEARS & GRIP IN PARALLEL

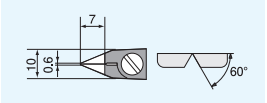


NZ-12



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 DIAGONAL NIPPERS

RoHS

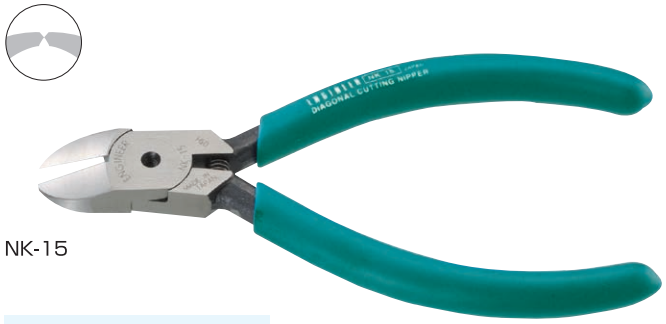
Sharp & durable cutting for precision wiring work



Spring



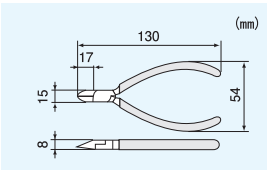
- With opening angle adjuster & coiled spring
- Material: S55C
- Hardness: HRC 58±4
- Capacity (copper wire) : NK-15 φ2.6mm
  NK-16 φ3mm

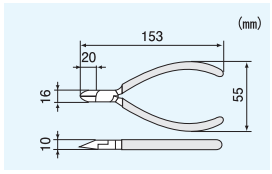


NK-15



NK-16





NK-25・26 DIAGONAL NIPPERS

RoHS

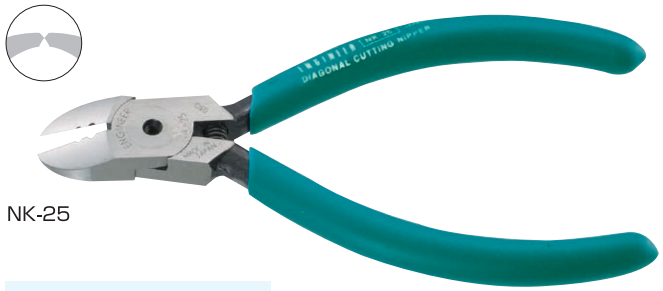
Precision cutter with wire stripper



Spring



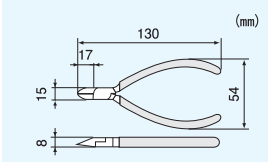
- With opening angle adjuster & coiled spring
- Stripping holes: φ1.2 & 1.6mm
- Material: S55C
- Hardness: HRC 58±4
- Capacity (copper wire) : NK-25 φ2.6mm
  NK-26 φ3mm

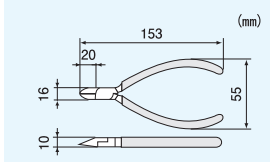


NK-25



NK-26





NK-36 HEAVY DUTY DIAGONAL NIPPERS

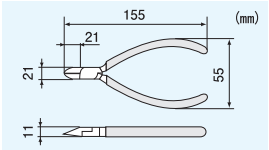
RoHS

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)

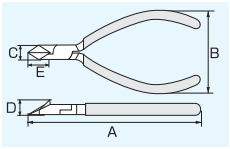
Item No.	Size	A	B	C	D	E	Capacity
NN-45	125	133	51	14	10	23	copper wire φ2㎜
NN-46	150	159	51	16	11	26	copper wire φ2.6㎜

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

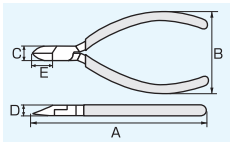




NP-03



NP-04



(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 RoHS PLASTIC NIPPERS

Tapered and slender head for work in restricted area

Spring

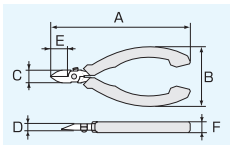


ESD SAFE

- Ideal for cutting and trimming various gates of injection molding
- Also capable of cutting thin copper wire (φ0.8㎜ max.)
- ESD-Safe handles made of Elastomer (TPR)
- With side stopper & coiled spring
- Material: S58C
- Hardness: HRC 59±3



NP-05



(mm)

Item No.	Size	A	B	C	D	E	F
NP-05	115	123	52	11	7	12	11

Pliers



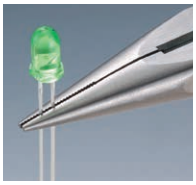
PS-01 MINIATURE LONG NOSE PLIERS

Ideal for precision work

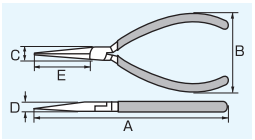
- Jaws with inside serration
- Material: S58C
- Hardness: HRC 58±4
- Capacity: copper wire ϕ2mm

Point section

Spring







(mm)

Item No.	Size	A	B	C	D	E
PS-01	125	132	51	14	8	37

PS-03 MINIATURE NEEDLE NOSE PLIERS

Ideal for forming work

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

ESD SAFE

Point section

Spring





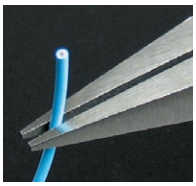
PS-04 MINIATURE FLAT NOSE PLIERS

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

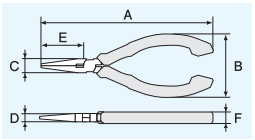
ESD SAFE

Point section

Spring







(mm)

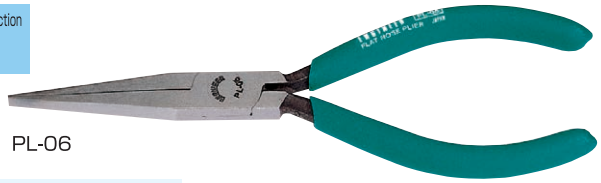
Item No.	Size	A	B	C	D	E	F
PS-03	125	141	55	11	8	38	11
PS-04	125	132	50	11	8	29	11

PL-05・06 LONG FLAT NOSE PLIERS

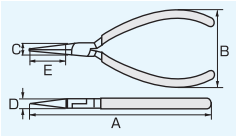
Thin and flat edge for efficient work

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

Point section



PL-06



(mm)

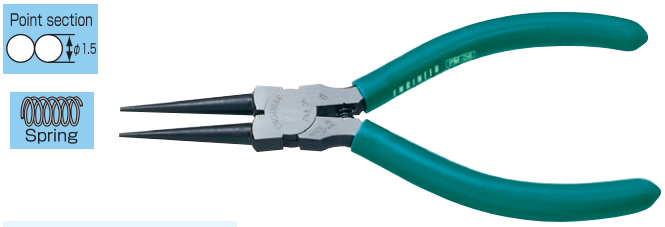
Item No.	SIZE	A	B	C	D	E
PL-05	125	143	50	11	7	40
PL-06	150	164	53	15	10	43

PM-06 ROUND NOSE PLIERS

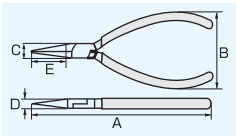
Ideal for looping & coiling of steel wires

- Material: SCM440H

Point section



Spring



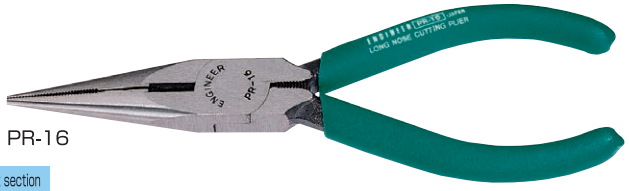
(mm)

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



PR-16

Point section

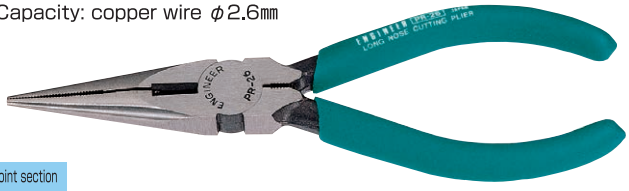
(mm)

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

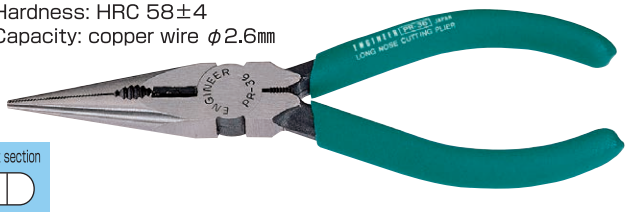
(mm)

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

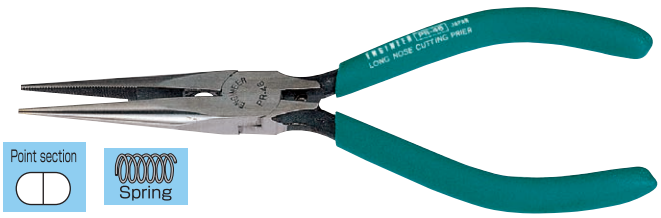
(mm)

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

PR-46 NEEDLE NOSE PLIERS

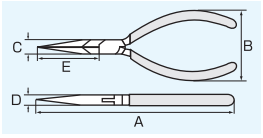
50mm-long slender nose ideal for work in deep area

- 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

PD SERIES

Features ● Durably constructed Electrician's Pliers

PD-06~08 SIDE CUTTING PLIERS



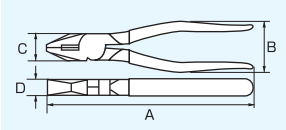
PD-06



PD-07

Heavy duty professional-use pliers

- Material: S58C
- Hardness: HRC 60±4



(mm)

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

PC & PW SERIES

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

PC-06・08 COMBINATION PLIERS

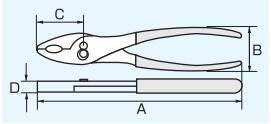
- Slip joint for wide-open jaws
- Material: S55C

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

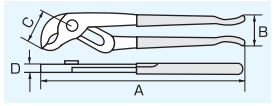
- Groove-joint leverage for heavy duty work
- Serrated jaws with soft-touch grip
- Material: S55C

PW-05



PW-08





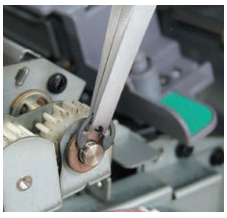
(mm)

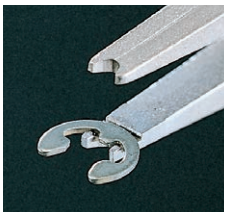
Item No.	Size	A	B	C	D	Max.Opening
PW-05	125	127	34	25	5.5	15
PW-08	200	200	37	38	8	33
PW-10	250	250	38	50	11	45

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

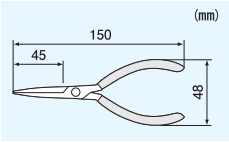


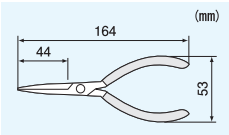
PZ-02



Box joint







(mm)

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

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



Ring Size

PZ-16~19 SNAP RING PLIERS

- Slender design of jaws ideal for work at a confined area
- The spiked tips are angled outward (PZ-16&17) or inward (PZ-18&19) to hold a snap ring securely without slippage.
- Spring built into the joint screw for smooth and repeated work
- Material: Carbon steel

PZ-16





External ring type

PZ-18





Internal ring type

(mm)

Item No.	Applicable Ring Size	Tip Diameter	Ring Type	Wgt.
PZ-16	#10-25㎜	ϕ1.3㎜	External ring	90g
PZ-17	#19-60㎜	ϕ1.8㎜		175g
PZ-18	#10-25㎜	ϕ1.1㎜	Internal ring	90g
PZ-19	#19-60㎜	ϕ1.8㎜		175g

Crimping and Stripping

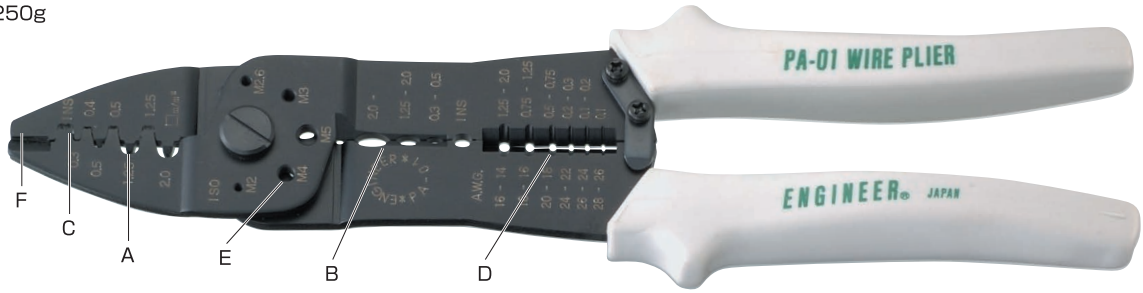


WIRE PLIERS SERIES

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

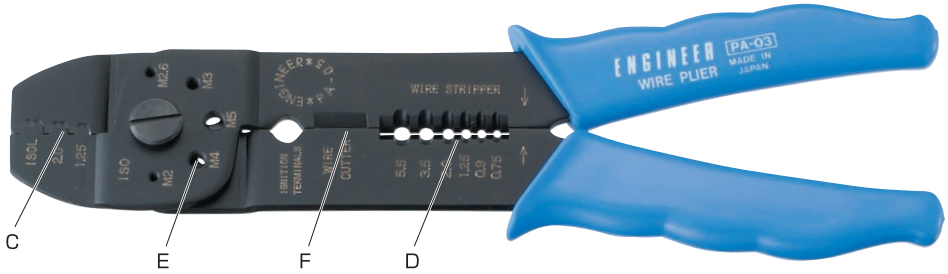
PA-01 WIRE PLIERS

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



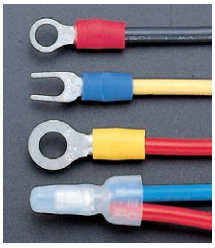
PA-03 WIRE PLIERS

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





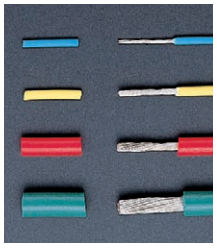
A. For crimping BARE terminals.



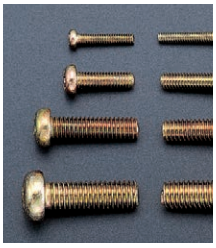
B. For crimping INSULATED terminals.



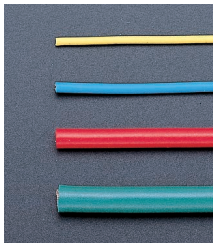
C. For crimping OPEN BARREL(SPLICES)



D. For stripping insulated WIRES.



E. For cutting SCREWS.



F. For cutting WIRES.

(㎟)

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-03	–	–	1.25~2.0	0.75~5.5	M2, M2.6, M3, M4, M5	○

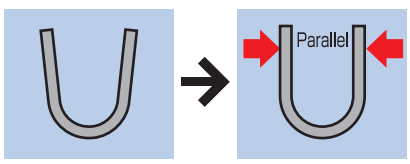
■Conversion A.W.G. table

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	0.40	0.32	0.25

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

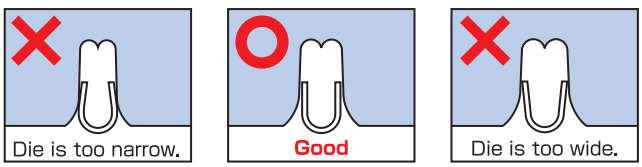
1. Measure the width of conductor barrel with a caliper while both barrel wings are in parallel.





Wings opened → Measure the width

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

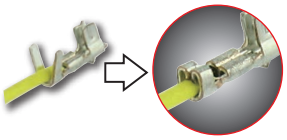


For example: 1.5㎜ measured ➡ Select 1.6㎜ dies.

Turn to page 26 for Crimping Pliers ➡

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

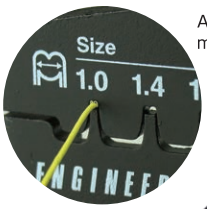


PA-09 MICRO CONNECTOR PLIERS

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



AWG32 wire in microscopic die

Dies

■Typical terminals applicable

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

■Specifications

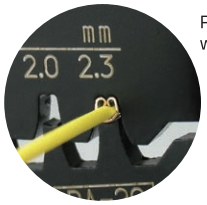
Item No.	Die Width (㎜)	Die Height (㎜)	Die Thickness (㎜)	Wires applicable (Reference only)		
				φ㎜	㎟	AWG (conductor)
PA-09	1.0	0.50	1.7	0.20~0.32	0.031~0.08	#32~#28
	1.4	0.55		0.32~0.51	0.08~0.21	#28~#24
	1.6	0.8	2.0	0.51~0.64	0.21~0.33	#24~#22
	1.9	0.9		0.51~0.81	0.21~0.52	#24~#20

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



Precise crimping of wire or insulation

Dies

■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

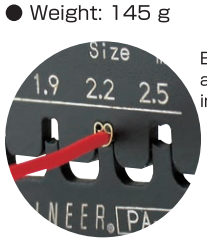
PA-21 UNIVERSAL CRIMPING PLIERS

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



Long wing type is also adaptable.

- 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



Excellent curling of wire and insulation barrels individually

Dies

■Typical terminals applicable

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

■Specifications

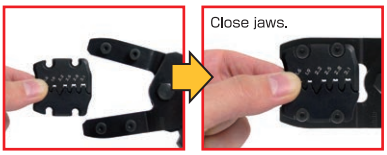
Item No.	Die Width (㎜)	Die Height (㎜)	Die Thickness (㎜)	Wires applicable (Reference only)		
				φ㎜	㎟	AWG (conductor)
PA-21	1.6	0.8	1.8	0.41~0.51	0.13~0.21	#26~#24
	1.9	1.0		0.41~0.64	0.13~0.33	#26~#22
	2.2	1.2		0.51~0.81	0.21~0.52	#24~#20
	2.5	1.4		0.64~1.02	0.33~0.82	#22~#18

PRECISE CRIMPING SERIES – Tool Frame and Die Set

PAD-11~13 HANDY CRIMP TOOL

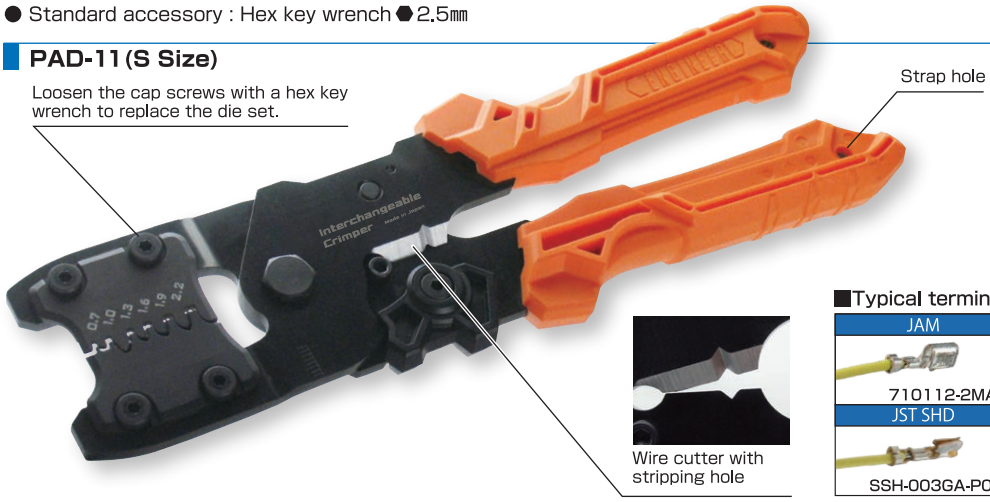
Ultra-precise crimper forming excellent crimping finish

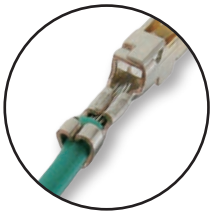
- Interchangeable die set for open-barrel contacts. Easy replacement and perfect fitting to the frame
- Ergonomically-designed handles with strap hole
- Equipped with wire stripper and cutter, spring loaded
- Standard accessory : Hex key wrench ⬣2.5㎜
- Material :
  Frame & Die set – Special alloy steel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



Easy fitting, No need to adjust positioning PAT.

PAD-11 (S Size)

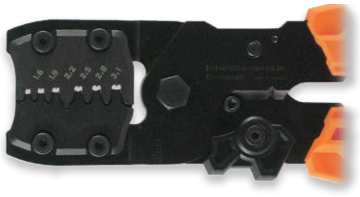


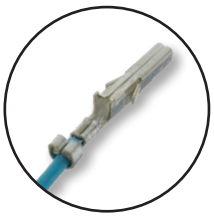


■Typical terminals applicable

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)

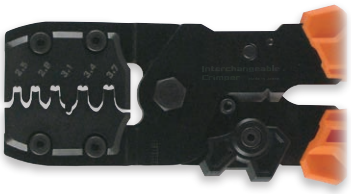




■Typical terminals applicable

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

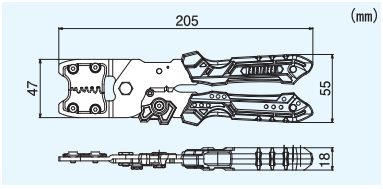
PAD-13 (L Size)





■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 (mm)

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)

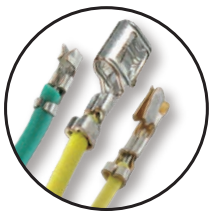
- Over 110 different terminals applicable



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 (mm)

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

PAD-02 HANDY CRIMP TOOL COMPLETE SET

- Comes with 3 different interchangeable Die Sets
- Tool Frame & Parts Boxes in a stylish carrying case



■Set Content

Item No.	Description
PAD-11	Handy Crimp Tool
PAD-12S	Interchangeable Die Set (M Size)
PAD-13S	Interchangeable Die Set (L Size)
	2.5㎜ Hex. key wrench
	Connectable parts box (6 pcs.) Ext. size:20×29×16㎜
	Carrying case (HDPE)

(㎜)

Item No.	Case Size	Wgt.(g)
PAD-02	300×200×63㎜	910g approx.

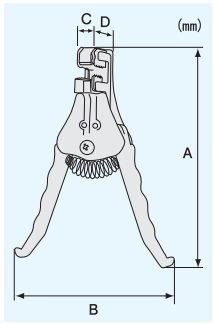
PA-11 WIRE STRIPPER

- Super-Light weight wire stripper
- Accurate wire stripping with single squeeze action.
- Fatigue-free owing to spring action
- Made of durable plastic



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





■Size applicable

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

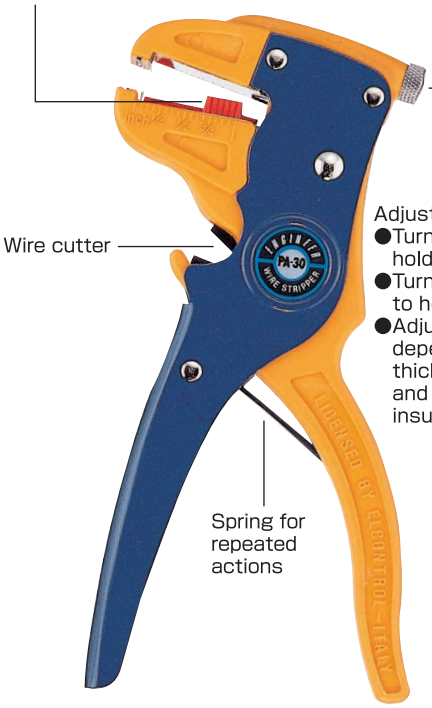
(㎜)

Item No.	A	B	C	D	Wgt.(g)
PA-11	165	128	20	30	140

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: 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-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

■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

■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

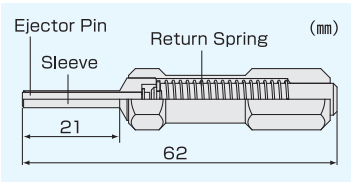
PAS-30~34 CONNECTOR EXTRACTOR (Spring Loaded Type)

- Perfect and simple work for extracting pin & socket contacts
- Newly designed construction with built-in return spring
- Owing to built-in spring, ejector pin retracts in the sleeve after work. It prevents the ejector pin from being damaged while carrying or not in use.

PRODUCT VIDEO







(mm)

Item No.	Inner Diam of Sleeve	Outer Diam of Sleeve	Material
PAS-30	1.9	2.5	SUS303 Stainless Steel
PAS-31	2.1	2.7	
PAS-32	2.4	2.9	
PAS-33	3.1	3.6	
PAS-34	2.7	3.2	

■Reference for extracting typical connectors

Brand/Connector	Pin Housing	Socket Housing
"TE" Mini Universal Mate-N-Lok	PAS-30	SS-30
"TE" Universal Mate-N-Lok	PAS-34	PAS-34
"TE" Commercial Mate-N-Lok	PAS-32	PAS-34
"JST" ML & EL Series	PAS-31	PAS-31
"JST" L & LL Series	PAS-33	PAS-33
"MOLEX" 1545 Series	PAS-33	PAS-34
"MOLEX" 1625 Series	PAS-30	PAS-31
"MOLEX" 3191 Series	PAS-33	PAS-33

SS-30~34 PIN EXTRACTOR

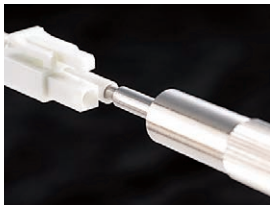
Perfect for extracting both pin and socket terminals.

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

PRODUCT VIDEO

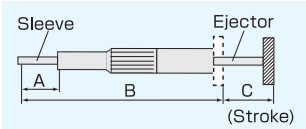








(Shape sizes)



(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

PH-01~04 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



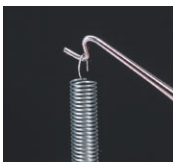
PH-03 PH-04

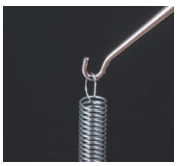
(mm)

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

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

TP-33・34 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.




TP-33

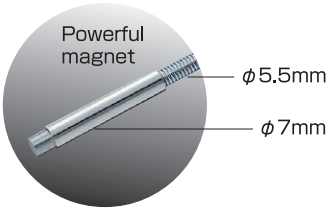
(mm)

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

TP-35・36 MAGNETIC PICK-UP TOOL

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





(mm)

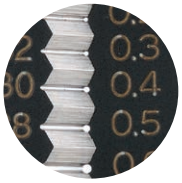
Item No.	O.A. Length
TP-35	410
TP-36	525

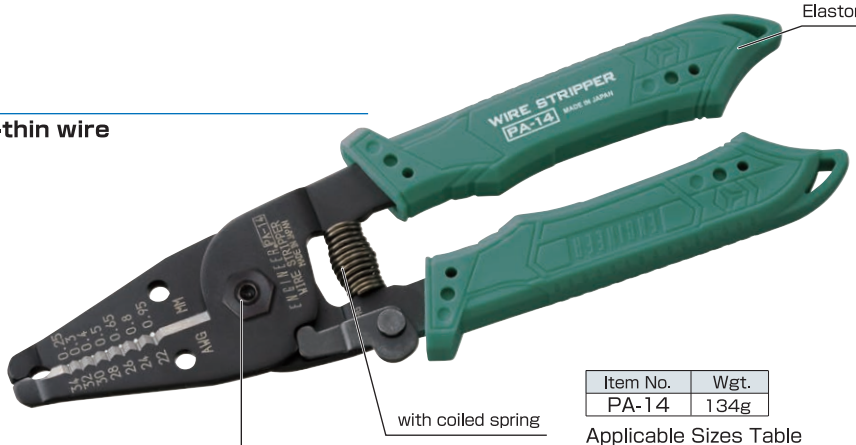
PA-05・06・07・14 RoHS WIRE STRIPPER

- 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

PA-14 for micro-thin wire





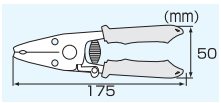

with strap hole





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

Item No.	Wgt.
PA-14	134g



Applicable Sizes Table

Stripper's Hole Diam(mm)			0.25	0.3	0.4	0.5	0.65	0.8	0.95
Applicable wire	AWG conversion	Stranded	34	32	28~30	26	24	22~24	20~22
		Solid wire	32	30	28	26	24	22	20

( ) Reference

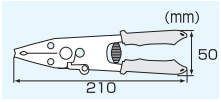
PA-05 for thin wire



■Crimping Function (mm²)

Bare Terminal	Connector Terminal
0.5~2.0	0.3~1.25

Item No.	Wgt.
PA-05	166g



Applicable Sizes Table

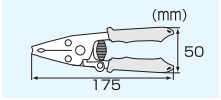
Stripper's Hole Diam(mm)			0.4	0.5	0.65	0.8	0.95	1.15	1.45
Applicable wire	AWG conversion	Stranded	28~30	26~28	24	22~24	20~22	20	(18)
		Solid wire	28	26	24	22	20	18	16

( ) Reference

PA-06 for thin wire



Item No.	Wgt.
PA-06	134g



Applicable Sizes Table

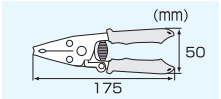
Stripper's Hole Diam(mm)			0.4	0.5	0.65	0.8	0.95	1.15	1.45
Applicable wire	AWG conversion	Stranded	28~30	26	24	22~24	20~22	20	(18)
		Solid wire	28	26	24	22	20	18	16

( ) Reference

PA-07 for thick wire



Item No.	Wgt.
PA-07	134g



Applicable Sizes Table

Stripper's Hole Diam(mm)			0.8	0.95	1.15	1.45	1.8	2.1	2.5
Applicable wire	AWG conversion	Stranded	22~24	20~22	20	(18)	(16)	14	12
		Solid wire	22	20	18	16	14	(12)	(10)

( ) Reference

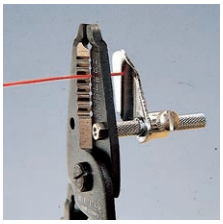
■Wire Stripper AWG Conversion (Reference only)

AWG		34	32	30	28	26	24	22	20	18	16	14	12
Strauded wire diameter(mm)		0.19	0.23	0.29	0.37	0.47	0.59	0.74	0.94	1.18	1.49	1.88	2.37
Conductor diameter(mm)		0.16	0.2	0.25	0.32	0.40	0.51	0.64	0.81	1.02	1.29	1.63	2.05
Sectional area(mm²)		0.025	0.032	0.05	0.08	0.13	0.2	0.33	0.52	0.82	1.31	2.08	3.31
Stripping hole φ (mm)	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					

PA-90 RoHS STRIP 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.



Tweezers



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 : 160㎜

★



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㎜

★



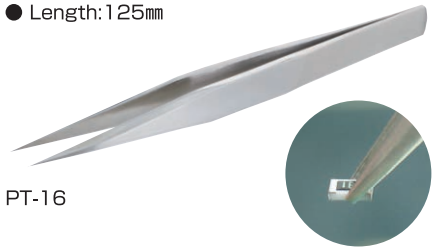
SOLID ARM TWEEZERS SERIES

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



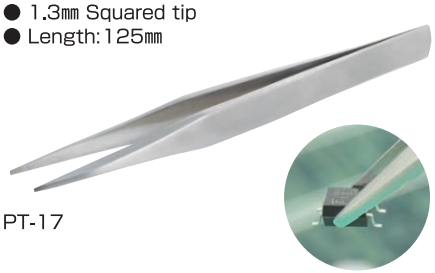
PT-16•17•31 SOLID ARM TWEEZERS

- 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 TYPE AA TITANIUM TWEEZERS

●Length : 125㎜
●with soft case

★



General use tweezers with strong sharply pointed type.

with Soft Case PTK-90

PTN-02 TYPE GG TITANIUM TWEEZERS

●Length : 120㎜
●with soft case

★



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

with Soft Case PTK-90

PTN-03 TYPE J TITANIUM TWEEZERS

●Length : 120㎜
●with soft case

★★



very thin and curved tips for working on microminiature assemblies.



with Soft Case PTK-90

ENGINEERING PLASTIC, PPS (Polyphenylenesulfide) TIP

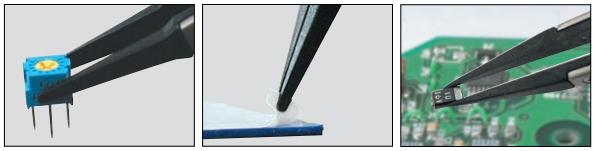
Features
- ESD-Safe tip ideal for handling static sensitive components
- Holding the object softly without any possibility of damage like metal tweezers
- Totally anti-magnetic body including stainless steel shank
- Anti-acid chemical resistance
- High wear-resistant and replaceable tip
- Heat resistance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

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

STATIC SAFE MILD CONTACT

SOFT SPRING ACTION

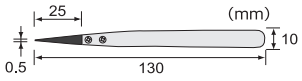
ESD SAFE



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

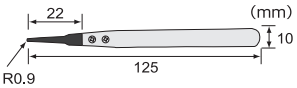


PTZ-41



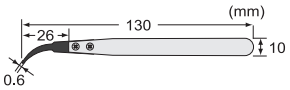
▲ Fine Tip PTZ-41

PTZ-42



▲ Duckbill Tip PTZ-42

PTZ-43



▲ Curved Nose (J) PTZ-43

■ PPS-TIPPED STAINLESS TWEEZERS

Item No.	Overall Length	Tip	Shank Width	Wgt.
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	$1\times10^{5}\sim10^{7}\Omega$

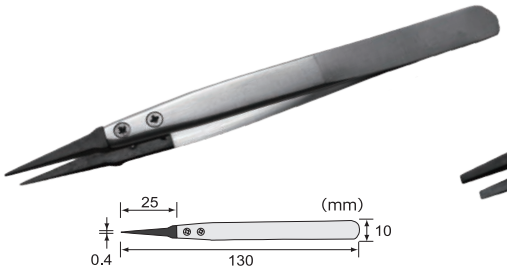
PTZ-93 SPARE TIP FOR PTZ-43



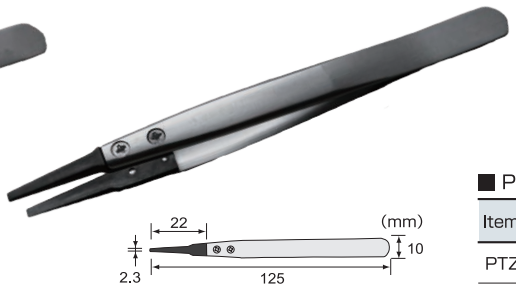
■ Contents : tip 2 pcs. & screw 4 pcs./set

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

PTZ-45·46 ESD PLASTIC TIPPED TWEEZERS



▲ Fine Tip PTZ-45



▲ Squared Tip PTZ-46

■ PPS-TIPPED STAINLESS TWEEZERS

Item No.	Overall Length	Tip	Shank Width	Wgt.
PTZ-45	130㎜	0.4㎜ Fine tip	10㎜	16g
PTZ-46	125㎜	2.3㎜ Squared	10㎜	16g

PTZ-95 SPARE TIP FOR PTZ-45



Fine tip

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

Item No.	Material	Surface Resistivity
PTZ-95	PPS	$1\times10^{5}\sim10^{7}\Omega$

PTZ-96 SPARE TIP FOR PTZ-46



Squared tip

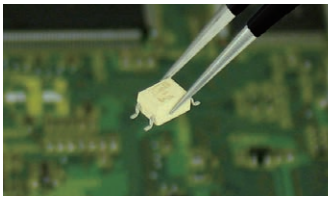
■ Contents : tip 2 pcs. & screw 4 pcs./set

Item No.	Material	Surface Resistivity
PTZ-96	PPS	$1\times10^{5}\sim10^{7}\Omega$

PTZ-61~63 BLACK-COATED ESD TWEEZERS

Static dissipative black-coated tweezers

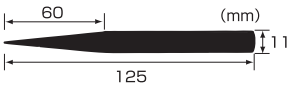
- ESD-safe body ideal for handling static sensitive components (1×10^{5}~$10^{8}\Omega$)
- Anti-magnetic and non-corrosive stainless steel body
- Non-slip and anti-glare rugged surface for easy handling



PTZ-61



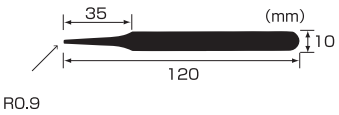
▲ Fine tip PTZ-61



PTZ-62



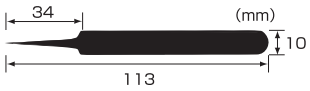
▲ Duckbill tip PTZ-62



PTZ-63



▲ Type GG PTZ-63



(mm)

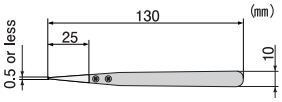
Item No.	Overall Length	Tip Length	Shank Width
PTZ-61	125	60	11
PTZ-62	120	35	10
PTZ-63	113	34	10

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

PTS SERIES

Features ● Anti-corrosive stainless steel

PTS-01 TWEEZERS

- Straight AA type
- Length:125㎜



PTS-03 TWEEZERS

- Curved with serrated inside
- Length:125㎜



PTS-02·04~08 TWEEZERS

- Straight with serrated inside







Item No.	Length(㎜)
PTS-02	125
PTS-04	150
PTS-05	180
PTS-06	210
PTS-07	240
PTS-08	300

Screwdrivers



DG-01～04 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-08・09 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-05 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

DG-11～14 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

DP-03～64 PRO-USE DRIVER

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

DP-03



DP-13



DP-44



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)

DS-03～64 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

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-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

DG-21~24 MINI SOFT DRIVER

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

DG-21



DG-22

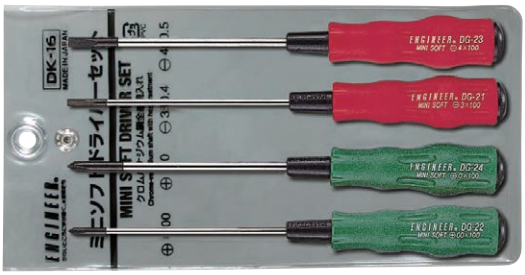


(mm)

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 MINI SOFT DRIVER SET

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



DST-01・02 STUBBY DRIVER

DST-01



DST-02

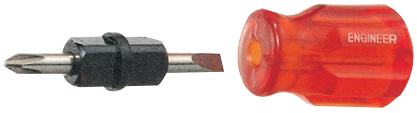


(mm)

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 COMBINATION REVERSIBLE STUBBY DRIVER

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

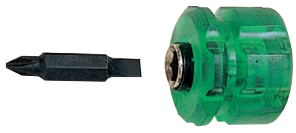


(mm)

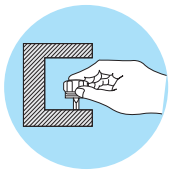
Item No.	Tip size	Blade length	Blade diam.	Handle diam.	O.A. Length
DST-05	⊕#2/⊖6.3	23	6.3	30	85

DST-06・07 MINIATURE REVERSIBLE DRIVER

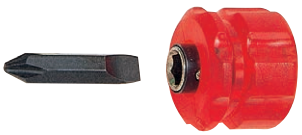
- 2-in-1 ⊕/⊖ reversible in single hand.
- Specially compact design in 42㎜ O.A. length.



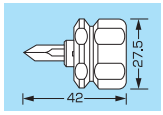
DST-06



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 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 REVERSIBLE DRIVER

- ⊕/⊖ Two-in-one

DK-51



DK-52



DK-53

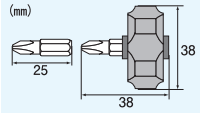


(mm)

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-54 STUBBY RATCHET DRIVER

- Super compact stubby driver for hard-to-reach areas
- Improved efficiency due to the ratchet mechanism
- Magnet bit socket to attract and hold the bit firmly and securely in place







Item No.	Bit size	Gear positions	Swing arc	Material	Wgt.
DR-54	⊕#2×25㎜	45	8 degrees	Handle:Aluminium Bit:Carbon steel	50g

DZ-01・02 MINIATURE DRIVER



DZ-01



DZ-02

(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

DR-52 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.

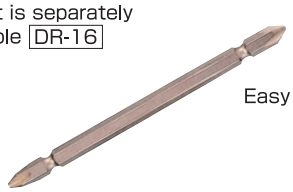
Bullet-type bit holder for portable use.



Cushion grip



Bit set is separately available DR-16



Easy slide-in

DR-07 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



DR-03 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 RATCHET STUBBY DRIVER SET

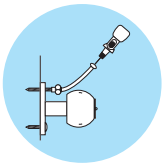
- Versatile driver with common replaceable ⊕/⊖ point bits.
- Built-in ratchet mechanism.
- Replacement set includes : ⊕#00,#1,#2,⊖4.5, 6,
  ●2.5, 3, 4, 5, 6
- Knurl shaft for quick rotation



DR-08 RATCHET STUBBY DRIVER SET WITH FLEXIBLE SHAFT

Versatile flexible shaft makes difficult jobs easy

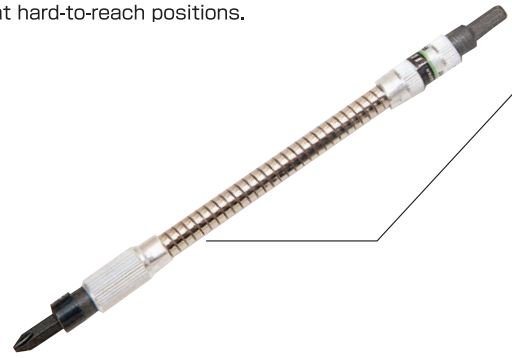
- 6-in-1 ratchet stubby type comes with most needed⊕/⊖, hex, box bits and flexible shaft.
- Easy access to tighten screws & nuts at hard-to-reach positions.
- Knurl shaft for quick rotation



For use at hard-to-reach positions.



Flexible shaft is workable with rechargeable driver.



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



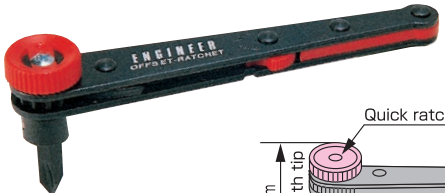
Bullet holder is clipped to belt or tool panel.

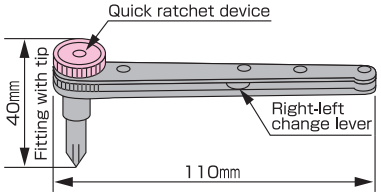
CONTENTS

●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㎜

DR-05 OFFSET 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㎜

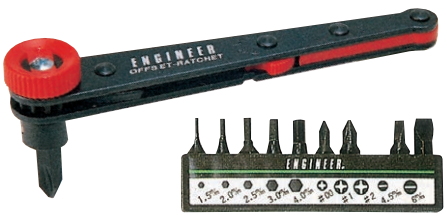


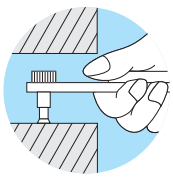


DR-06 OFFSET RATCHET DRIVER WITH BIT SET

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.



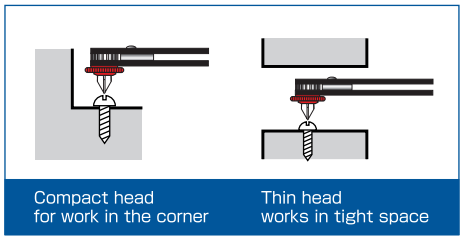


DR-55 MINI OFFSET RATCHET

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

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

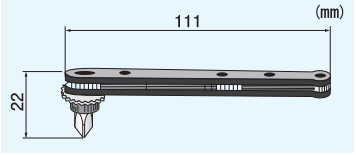






Super-thin Head 22㎜





DR-56 7-in-1 ANGLED RATCHET

- Ratchet handle with angled heads for ease of operation (Max. torque: 27.4 Nm)
- Use as a screwdriver (adaptor included) with a selection of 5 low-profile bits in a bullet holder.
- Bit adaptor accepts standard 6.35㎜ (1/4") hex bits.
- Low-profile head accessible to tight spaces

※ No socket is included in this product.

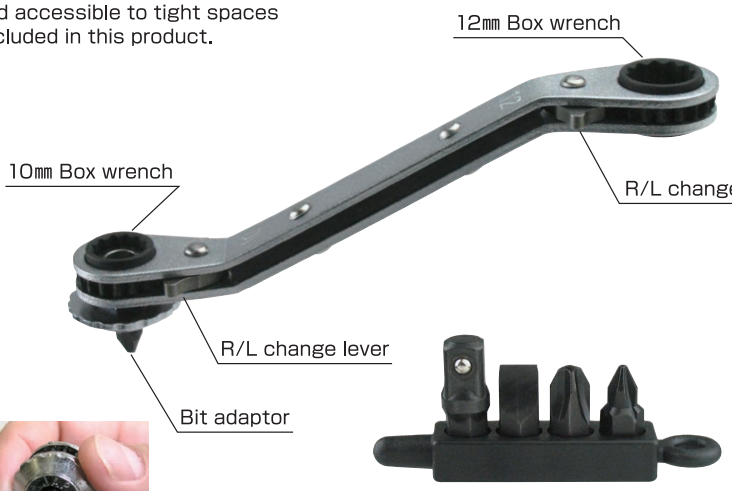


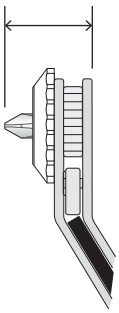


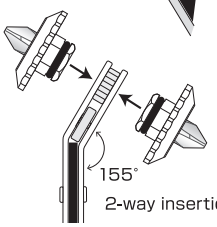


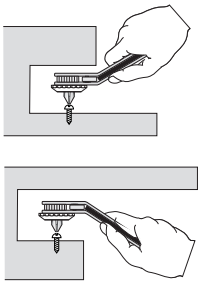












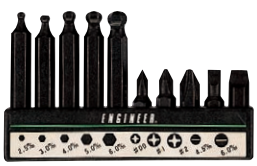
(mm)

Item No.	Bit Sizes	Length	Wgt.(g)
DR-56	⊕#1, #2, #3,⊖6 ¼" socket adapter	135	78

DR-10・11・15~17 BIT SET

- A comprehensive and wide selection of bits to handle any job or application.
- Bullet type bit holder suitable for portable use
- DR-16 bits are also used for rechargeable or electric drivers.

DR-10



DR-11



DR-17



DR-15



DR-16



(mm)

Item No.	Number of bits	Bit Sizes	Length	Wgt.(g)
DR-10	10	⊕#00 , #1 , #2 , ⊖4.5 , 6 , ⬢2.5 , 3 , 4 , 5 , 6(Ball bit)		97
DR-11	10	⊕#00 , #1 , #2 , ⊖4.5 , 6 , ⬢1.5 , 2 , 2.5 , 3 , 4(Hex bit)	30	67
DR-15	6	✸/✸ T5/T6, ✸/✡ T7/T8, ✡/✡ T9/T10, T15/T20, T25/T27, T30/T40	110	159
DR-16	6	⊕ Double end bit…#2×65 #2×110 ⊕Step type…#0×85 #1×100 #2×150 ⊕⊖bit……#2/⊖6×135		147
DR-17	10	✡…T8 , T10 , T15 , T20 , T25 , T27 , T30 , T40 ⊕⊖ Double end bit……#1/ ⊖4.5 , #2/⊖6 (⊕⊖bits are magnetic)	30	68

Special Drivers



DT/DTC/DTP/DTY SERIES — MOBILE PHONE DRIVER

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





DT-06



DT-10



DT-20



■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

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	

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



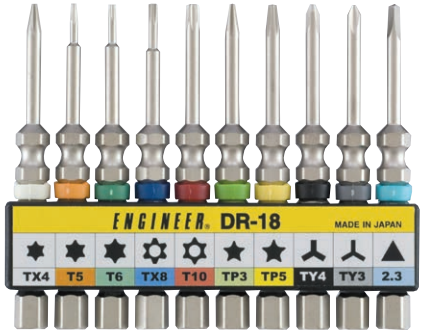
Point size (mm)

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

DR-18 — BIT SET FOR MOBILE PHONE

10-in-1 special driver bit set

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



DR-50 — 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)

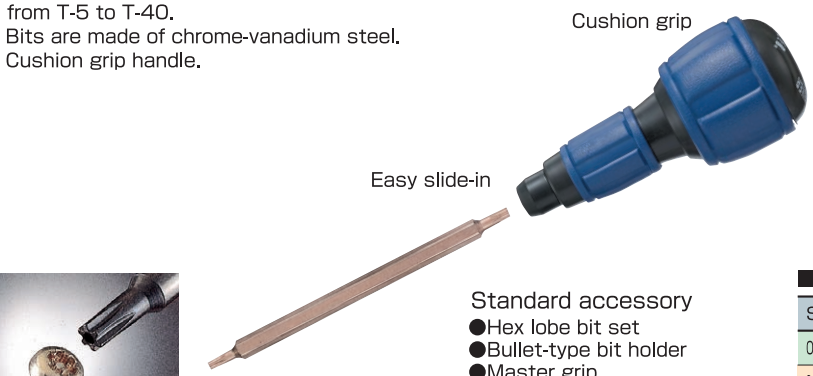
Shape of Bit	Point	Size
Torx bit	✡	8 10 15 20 25 27 30 40
⊕⊖bit (2edges)	+ −	⊕#1/⊖4.5 ⊕#2/⊖6.0

Bit set is separately available DR-17

DR-51 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

DJ-03・04 PLUG JACK DRIVER

- Ideal for use with radio microphone jacks.





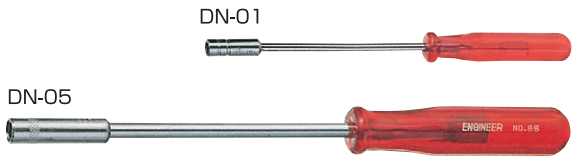
C type

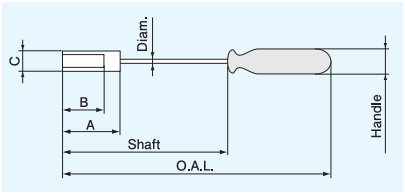
(mm)

Item No.	Tip shape & size A	B	C	Shaft length	Shaft diam.	Handle diam.	O.A. Length
DJ-03	—	—	4	75	4.3	16	150
DJ-04	—	—	6	75	4.3	16	150

DN-01～12 NUT DRIVER

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





(mm)

Item No.	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

DNC-55T・57T・65T NUT CATCHING DRIVER

Magnet hold type for easy operation

- Solid shaft machined from one piece of metal, for improved durability.
- 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.
- Material: Cr-V (shaft), Cellulose Acetate (handle)

DNC-55T

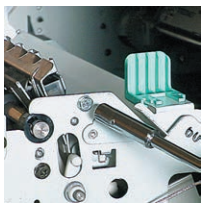


DNC-57T



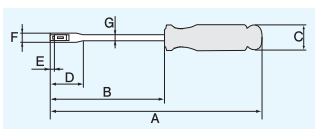
DNC-65T











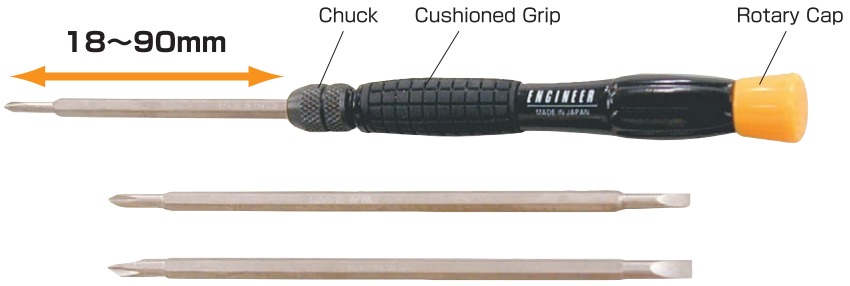
(mm)

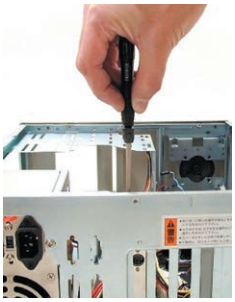
Item No.	Size ⬣↕	A	B	C	D	E	F	G	Wgt.
DNC-55T	5.5	233	127	29	32	0.5～3.0	9	7	120g
DNC-57T	7	233	127	29	37	0.5～4.3	11	7	125g
DNC-65T	5.5	336	230	29	32	0.5～3.0	9	7	153g

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

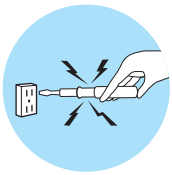
Contents 3 pcs. (Double-ended)	
Length: 125㎜	
# 00	⊖2.5㎜
# 0	⊖3.0㎜
# 0	⊖4.0㎜





DKD-01 CIRCUIT TESTING DRIVER

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





DKD-03 LED CIRCUIT TESTER

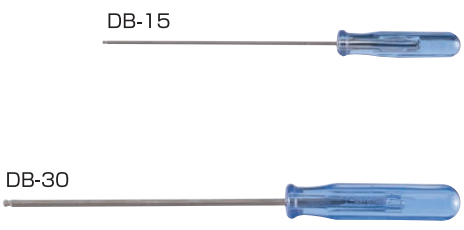
- AC100-250V (Low voltage use)
- High brightness LED built-in
- Continuity check of circuit
- Polarity check of electric outlet
- Blade (3.0 x 0.4㎜) with protective cap
- O.A. Length : 120㎜


Continuity check

DB-15~40 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.



(㎜)

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

DH-15~50 HEX DRIVER

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



(㎜)

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

DK-14 NUT DRIVER SET

- Set of 6 nut drivers with across flats 3~6㎜
- Magnetized sockets





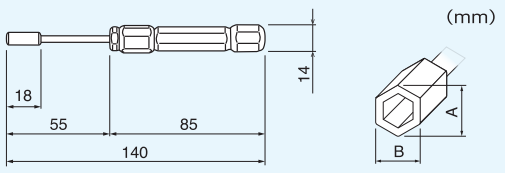
Slim socket design



With rotary cap



Self-standing holder



Materials
Socket:Cr-Mo Shaft:Cr-V Handle:Cellulose Acetate Cap:PP

(mm)

Item No.	Across Flats	Screw Diameter	Ext. Socket Size A	Ext. Socket Size B	Wgt.
DK-14	3	M1.4/M1.5	6.3	5.6	155g (Holder included)
	4	M2	6.3	5.6	
	4.5	M2.3	8	7	
	5	M2.5/M2.6	8	7	
	5.5	M3	9.1	8	
	6	M3.5	9.1	8	

DK-01・02 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
1.5	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

DK-03 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

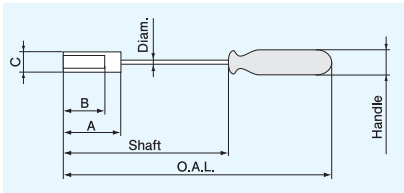


DK-04 NUT DRIVER SET

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				

DM-20 RoHS ⊕PRECISION DRIVER SET



(mm)

Item No.	Tip Size	Blade Diam.	O.A. Length
DM-21	#0000	1.4	76
DM-22	#000	1.6	84
DM-23	#00	2	90
DM-24	#0	2.4	102
DM-25	#1	3	110
DM-26	#1	3	118

DM-30 RoHS ⊖PRECISION DRIVER SET



(mm)

Item No.	Tip Size	Blade Diam.	O.A. Length
DM-31	1.0×0.2	1	73
DM-32	1.2×0.3	1.2	79
DM-33	1.8×0.3	1.8	89
DM-34	2.4×0.45	2.4	102
DM-35	3.0×0.6	3	110
DM-36	3.5×0.7	3.5	118

DM-60 RoHS ⊕⊖PRECISION DRIVER SET

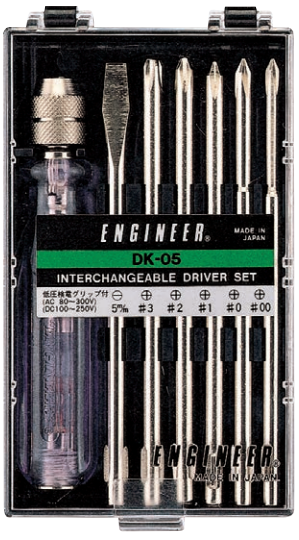


(mm)

Item No.	Tip Size	Blade Diam.	O.A. Length
DM-22	#000	1.6	84
DM-24	#0	2.4	102
DM-25	#1	3	110
DM-33	1.8×0.3	1.8	89
DM-34	2.4×0.45	2.4	102
DM-35	3.0×0.6	3	110

DK-05 RoHS INTERCHANGEABLE DRIVER SET

With circuit testing driver handle for low voltage.
(AC80~250V/DC100~300V)
Contents:⊖5.5㎜,⊕#00,#0,#1, #2,#3



DK-06 RoHS INTERCHANGEABLE DRIVER SET

With circuit testing driver handle for low voltage.
(AC80~250V/DC100~300V)
Contents:⊕#1,#2,⊖3, 5.5㎜, ○5.5㎜, awl



DK-08 RoHS INTERCHANGEABLE DRIVER SET

Contents: ○4, 5.5, 6, 7, 8,10㎜



DK-05P·06P RoHS INTERCHANGEABLE DRIVER SET

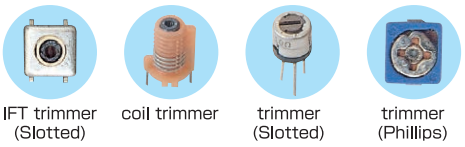
- Cost-saving package in Plastic blow-mould case
- Contents exactly same as DK-05 & DK-06



DA-48~52 CERAMIC ALIGNMENT SCREWDRIVER

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

- 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



(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



Tips are made of fine, durable zirconia ceramic.



DK-90 CERAMIC ALIGNMENT SCREWDRIVER SET

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

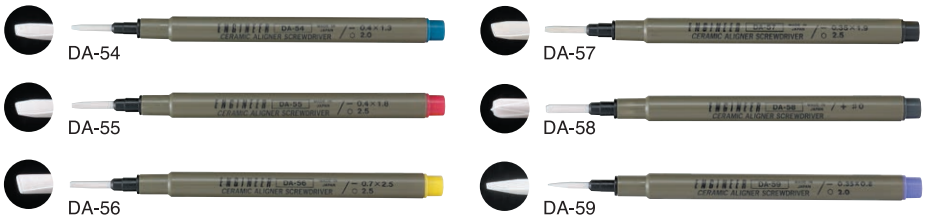


DA-53~59 CERAMIC ALIGNMENT SCREWDRIVER

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





(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 CERAMIC ALIGNMENT SCREWDRIVER

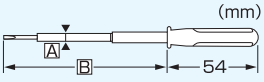
The DA-70 series ceramic alignment screwdrivers are designed with a long slender shaft for a wider application of alignment in remote areas.

- Fine zirconia ceramic tipped alignment screwdrivers, highly intensive, durable, and perfectlynon-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)





(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

RoHS **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.



IFT trimmer (Slotted) | coil trimmer | trimmer (Slotted) | trimmer (Phillips)



DA-81



DA-85



DA-82



DA-86



DA-83



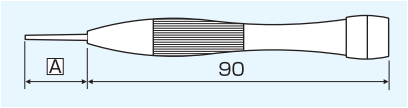
DA-87

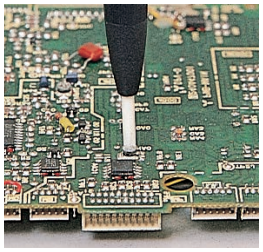


DA-84



DA-88





(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

RoHS **CERAMIC ALIGNMENT SCREWDRIVER SET**

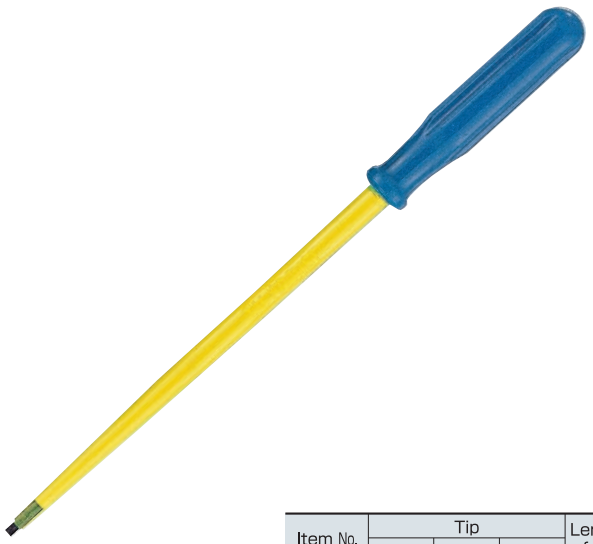
- Assortment of DA-81~88 (8pcs.)



DA-01・02

RoHS **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-40

RoHS **ALIGNMENT SCREWDRIVER**

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

ESD SAFE



Wrenches



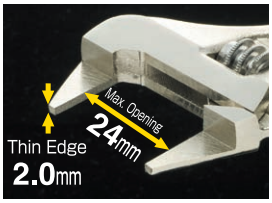
SMART MONKEY WRENCH

Features
- Only 2mm-thick jaws fit in a narrow area.
- 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)

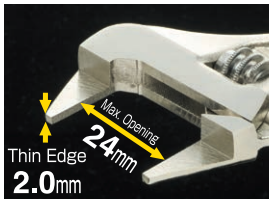
TWM-03・07・08 SMART MONKEY WRENCH



150mm size with soft handle



150mm size



100mm size Stubby with cushioned handle(TPR)



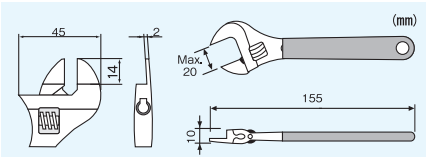
TWM-03

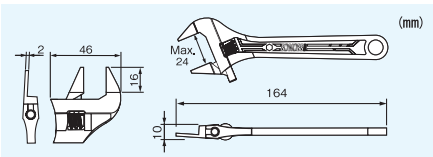


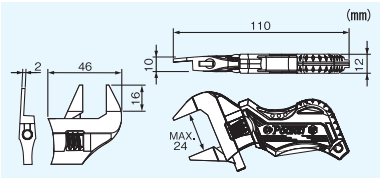
TWM-07



TWM-08







VARIOUS APPLICATIONS

Caster	Coaxial Connector	Bike, Bicycle	Double Nut	Volume Nut
				

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

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



TWM-04



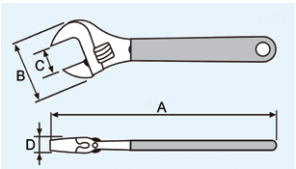
TWM-02



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

TS-04 MINI COMBINATION SPANNER SET

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



◆This item is individually available.

(mm)

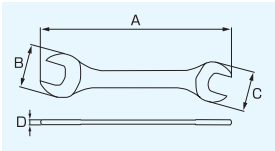
Item No.	Sizes		Thick	Length
	Box	Open		
TS-41	4.0	3.5	1.5	100
TS-42	4.5	4.0		
TS-43	5.0	4.5		106
TS-44	5.5	5.0		
TS-45	6.0	5.5		
TS-46	6.5	6.0		114
TS-47	7.0	6.5		
TS-48	8.0	7.0		

DROP-FORGED WRENCH SET

Features
- 5-in-1 Set with carrying case
- Material:Cr-V Steel

TS-05 OPEN-END WRENCH SET



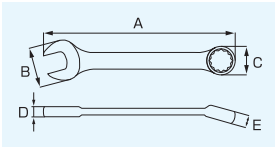


(mm)

Size	A	B	C	D	Wgt.(g)
3.2×5.5	70	13	10	2.4	7
4×5	70	13	10	2.4	7
6×7	80	16	14	2.7	12
8×9	90	20	18	3	17
10×11	100	23	21	3	23

TS-06 COMBINATION WRENCH SET



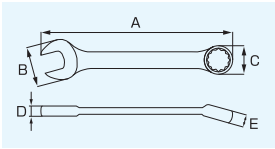


(mm)

Size	A	B	C	D	E	Wgt.(g)
3.2	77	10	6.5	3	3.1	7
3.5	77	10	6.5	3	3.1	7
4	77	10	7.5	3	3.1	7
5	82	11.8	9	3.2	4.1	9
5.5	82	11.8	9.5	3.2	4.1	9

TS-07 COMBINATION WRENCH SET





(mm)

Size	A	B	C	D	E	Wgt.(g)
6	88	15	10.4	3.8	5	14
7	88	15	11.5	3.8	5	14
8	94	17.2	12.5	4.3	6	20
9	98	19.4	14	4.6	6.2	23
10	103	21.5	15.3	5.1	6.6	29

TWB-01・02・04・05 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

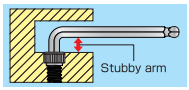




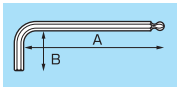
TWB-02 8-in-1 Stubby Arm, Long Shank

- 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 ⬢t (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

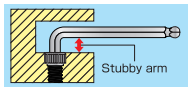




TWB-05 8-in-1 Stubby, Short Shank

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



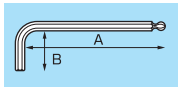




TWB-13~80 BALL POINT HEX WRENCH

- Electroless nickel plated

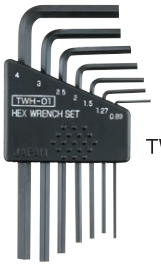




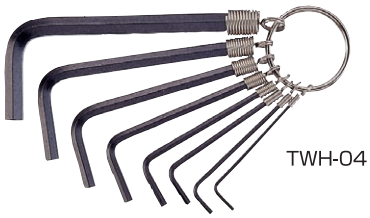
Item No.	Across Flats ⬢mm	A×B mm
TWB-13	1.27	70×13
TWB-15	1.5	81×14
TWB-20	2.0	96×16
TWB-25	2.5	111×18
TWB-30	3.0	127×20
TWB-40	4.0	142×25
TWB-50	5.0	160×28
TWB-60	6.0	180×32
TWB-80	8.0	198×36

TWH-01・02・04 HEX KEY WRENCH SET

METRIC SIZE



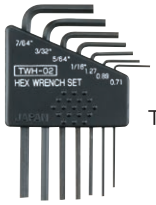
TWH-01



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

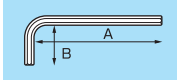


TWH-02

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

TWH-11~25 HEX KEY WRENCH





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

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 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

TWS-01~05 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(㎜)
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 21㎜ 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(㎜)
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 (㎜)
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 (㎜)
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 21㎜ Plug	21 Across flats
Steel Case	292×145×35

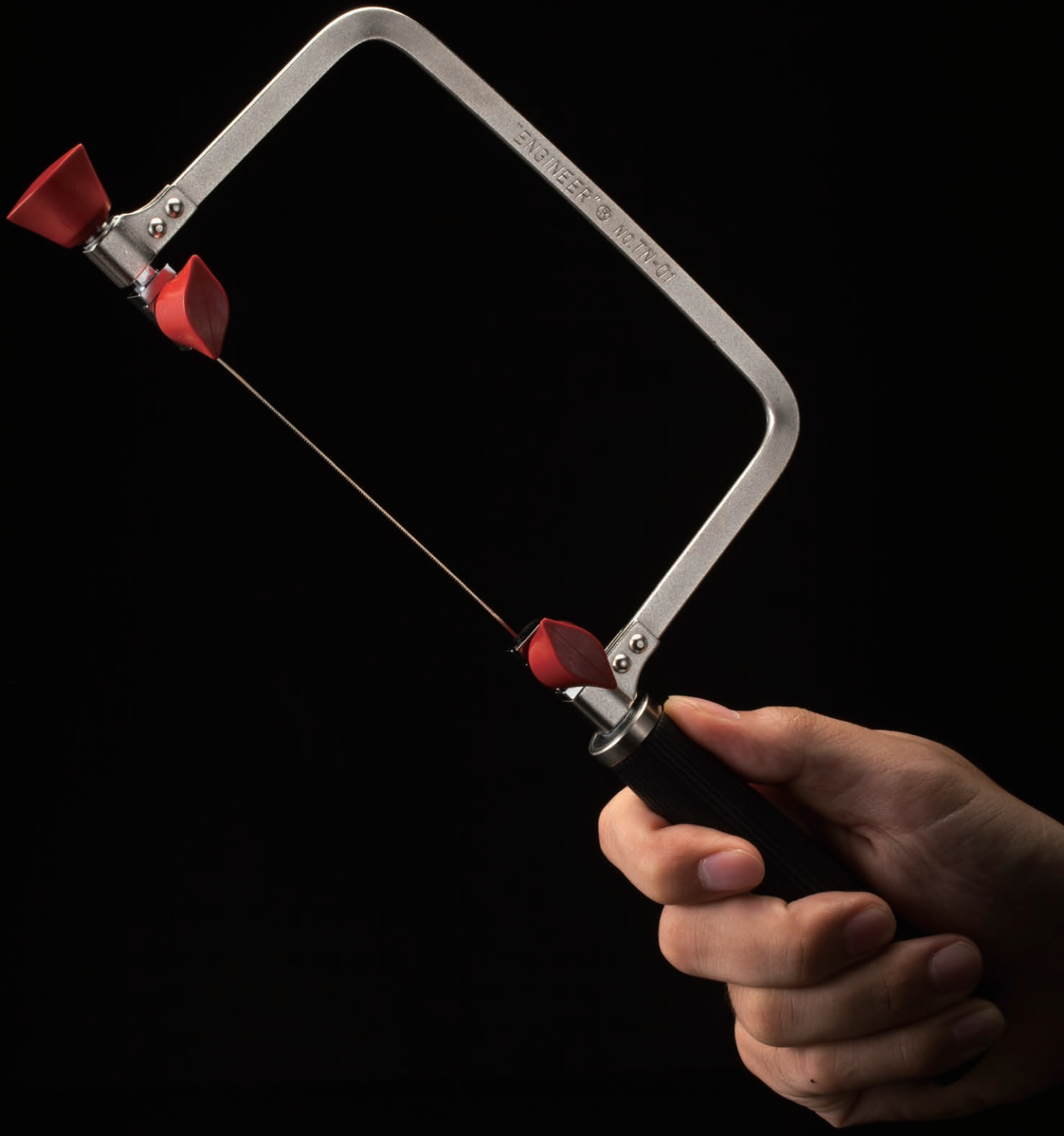
TWS-04



● with quick drive ring

TWS-04 Contents : 34pcs. per set

Contents	Size／Length(㎜)
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



Cutting and Processing

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 TWIST 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, 5㎜)
- 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

TP-20・23・24 MINI DRILL CHUCK/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

Fitting to electric driver — TP-20

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.



(mm)

Item No.	Collet Type	Diameter of Drill Bit	Shank	Joint	O.A. Length	Weight (g)
TP-23	Double Head	0.1~1.2 / 2.0~2.5 1.2~2.0 / 2.5~3.2	φ8	–	105	35
TP-24	Double Head	0.1~1.2 / 2.0~2.5 1.2~2.0 / 2.5~3.2	φ8	–	95	40
TP-20	Single Head	0.7~1.9 1.9~3.0	–	●6.3	50	20

TV-01~27 VISE

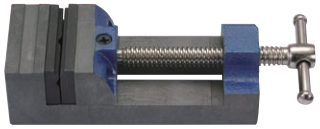


TV-04

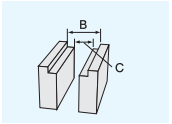


TV-14

●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



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	45	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

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

TZ-02~04 HANDY SAW/HACK SAW

TZ-02 Adjustable blade



TZ-03



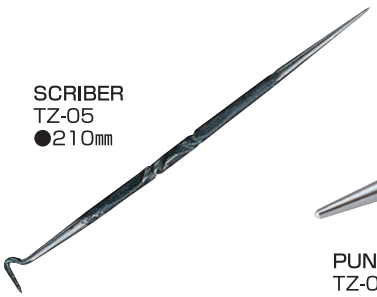
Die casting Aluminum handle

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・07 SCRIBER/PUNCH

SCRIBER
TZ-05
●210mm





PUNCH
TZ-07
●100mm

TF-06・07・10 FILE



TF-07



TF-10

Item No.	Shape	Length(mm)	Grip
TF-06	▭	200	Rubber
TF-07	○		
TF-10	⌓		

TF-11~45 JET BLACK FILE

High performance, Rust-resistant, Black coated files

PRODUCT VIDEO





(mm)

Item No.	Shape	Coarseness	Blade length	O.A. length	Wgt (g)
TF-11	▭	Second-cut	100	215	58
TF-12	⌓				59
TF-13	○				41
TF-14	□				52
TF-15	△				56
TF-21	▭	#3		200	21
TF-22	⌓				18
TF-23	○				16
TF-24	□				19
TF-25	△				17
TF-31	▭	Smooth-cut		215	58
TF-32	⌓				61
TF-33	○				40
TF-34	□				55
TF-35	△				58
TF-41	▭	Second-cut	175	325	166
TF-42	⌓				153
TF-43	○			300	109
TF-44	□			325	112
TF-45	△				166



ORIDINARY FILES
Clogged with filing debris



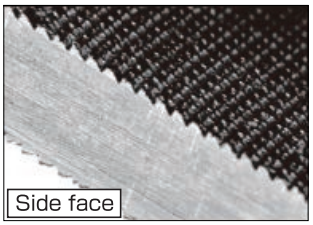
Burr on each file tooth is eliminated before black coating, good for high and lasting performance of filing.



Sharp edge of teeth



Rust-resistant black coating



Smooth machined surface, ideal for filing a corner without damage. (TF-11, 21, 31, 41 only)

TFS-07・10・20・30 JET BLACK FILE SET

● A set of Jet Black Files in a roll-up storage with a strap



TFS-10 W240×L240(㎜) W50×L240×H50(㎜)

(mm)

Item No.	Shape					Brush	Coarseness	Blade length	O.A.length	Wgt (g)
	▭	⌓	○	□	△					
TFS-07	TF-11	TF-12	TF-13	–	–	–	Second-cut	100	215	274
	TF-21	TF-22	TF-23				Precision	100	200	
TFS-10	TF-11	TF-12	TF-13	TF-14	TF-15	○	Second-cut	100	215	349
TFS-20	TF-21	TF-22	TF-23	TF-24	TF-25	○	Precision	100	200	170
TFS-30	TF-31	TF-32	TF-33	TF-34	TF-35	○	Second-cut	100	215	371

TFS-01・02 FILE SET

NORMAL TYPE



TFS-01



TFS-02
(TF-06~10)

Item No.	Contents	▭	⌓	○	□	△	Length(㎜)
TFS-01	5	●	●	●	●	●	180
TFS-02	5	●	●	●	●	●	200

Sets and Cases



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㎜
DM-22	⊕Precision driver	#3/0
DM-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 : 220×145×35㎜
●Weight : 0.5kg

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
(AC80~250V/DC100~300V)

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㎜
DM-22	⊕Precision driver	#000
DM-24	⊕Precision driver	#0
DM-32	⊖Precision driver	1.2㎜
DM-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
(AC80~250V/DC100~300V)

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)	

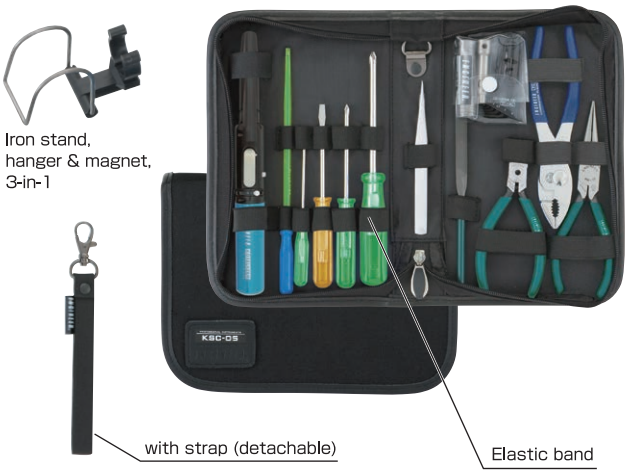
●Case : 255×150×50㎜
●Weight : 1kg

V Soldering Iron 220V~240V available by assortment of SKC-30 as per Page 71

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)



Cordless soldering iron

■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(KSE-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 71

KSC-06 MAINTENANCE KIT

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

●For field maintenance service (Complete Set)



Cordless soldering iron

■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-03(KSE-03) TOOL KIT

● General electronic & job training use



■Set of 12 items

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

●Case : 240×115×45㎜
●Weight : 0.8kg

KSE-03 Case only

Ⓥ Soldering Iron 220V~240V available by assortment of SK-14 as per Page 71

KS-04(KSE-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	125㎜	DN-05	Nut driver	5.5㎜
PR-16	Long nose pliers	150㎜	PTS-02	Tweezers	125㎜
PD-06	Side cutting pliers	150㎜	SKC-30	Soldering iron	26W
DS-03	⊕Screwdriver	#00		Solder	
DS-23	⊕Screwdriver	#0		Solder Paste	
DS-64	⊕Screwdriver	#2		Soldering stand	
DS-33	⊖Screwdriver	4×75		Cutter knife (S)	

●Case : 255×150×50㎜
●Weight : 1.1kg

KSE-04 Case only

Ⓥ Soldering Iron 220V~240V available by assortment of SKC-30 as per Page 71

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	125㎜	DS-33	⊖Screwdriver	4×75
PD-06	Side cutting pliers	150㎜	SK-60	Cordless soldering iron(w/cap)	
PR-16	Long nose pliers	150㎜	SK-66	Hot blow tip	
PTS-02	Tweezers	125㎜		Solder	
DN-05	Nut driver	5.5㎜		Solder Paste	
DS-03	⊕Screwdriver	#00		Soldering stand	
DS-23	⊕Screwdriver	#0		Cutter knife (S)	
DS-64	⊕Screwdriver	#2			

●Case : 255×150×50㎜
●Weight : 1.1kg

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

●Case : 255×150×50㎜
●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	125㎜
PR-16	Long nose pliers	150㎜
PTS-01	Tweezers	125㎜
PZ-56	Screw removal pliers	175㎜
DP-03	Pro-use driver	⊕#00
DP-24	Pro-use driver	⊕#0
DP-64	Pro-use driver	⊕#2
DP-34	Pro-use driver	⊖4.3㎜
DN-05	Nut driver	5.5㎜
	Mini spanner	5.5×6
	Mini spanner	8×9
TM-04	Steel rule	150㎜
TZ-05	Scriber	220㎜
TWH-01	Hex key wrench set	
TWM-03	Smart monkey wrench	150㎜
SL-02	Inspection mirror	
	Cutter knife (S)	
	File (half-round)	

●Case : 250×180×50㎜
●Weight : 1.3kg

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

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

●Case : 405×306×100㎜ (Ext.)
380×276×73㎜ (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 71

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

KS-11(KSE-11)

TOOL KIT

Field service and maintenance of production lines & machinery

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





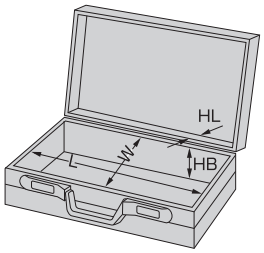
■Set of 60 items

NS-03	Micro nippers	125mm
NN-46	Slant edge nippers	150mm
PS-01	Miniature pliers	125mm
PR-46	Needle nose pliers	150mm
PD-06	Side cutting pliers	150mm
PC-06	Combination pliers	150mm
PW-10	Pump pliers	250mm
PA-01	Wire pliers	
PT-01	Tweezers	125mm
PH-03	Lock holder	150mm
PH-33	Electronic snips	145mm
DS-03	⊕Screwdriver	#00
DS-24	⊕Screwdriver	#0
DS-44	⊕Screwdriver	#1
DS-64	⊕Screwdriver	#2
DS-13	⊖Screwdriver	2.6×75
DS-34	⊖Screwdriver	4×100
DA-02	Alignment driver	150mm
DM-22	⊕Precision driver	#3/0
DM-23	⊕Precision driver	#00
DM-33	⊖Precision driver	1.8mm
DM-34	⊖Precision driver	2.3mm
DZ-24	Screw-holding driver	#0
DG-12	Long pro-grip driver	#2×250mm
DN-02	Nut driver	4mm
DN-04	Nut driver	5mm
DN-05	Nut driver	5.5mm
DN-07	Nut driver	7mm
DN-08	Nut driver	8mm
DR-04	Ratchet stubby driver set	
DZ-08	Offset driver set	

TWM-02	Adjustable angle wrench	200mm
TS-05	Mini spanner set (5 pcs.)	
TR-03	Taper reamer	20mm
	Hammer	
	Measuring tape	2m
TWH-01	Hex key wrench set	
TWS-02	Socket wrench set	
TFS-02	File set	
TZ-02	Handy saw	
SKC-40	Soldering iron	32W
SW-31	Solder	150g
SS-05	Tip cleaner with stand	
SS-02	Solder sucker	
SS-08	IC Extractor	
SS-21	Spring hook	
SS-22	Spring hook	
SL-03	Inspection mirror	
TP-35	Magnetic pick-up tool	
KP-03K	Parts box	
SWU-04	Solder wick	2.8mm
	Vinyl tape	
	Pen light	
	Cutter knife (L)	
ZC-19	Oiler	20cc
	Flat brush	
	Poly bottle	50cc/2pcs.
	Poly bottle	100cc/2pcs.
	Silicon cloth	
SD-10	Digital Multimeter	

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

Ⓥ Soldering Iron 220V~240V available by assortment of SKC-30 as per Page 71



H=HL+HB

KS-12

ATTACHE TOOL KIT

Stylish and functional tool kit





■Set of 25 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-10	Digital multimeter	
SKC-30	Soldering iron	26W
SS-02	Solder sucker	
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-05	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

Ⓥ Soldering Iron 220V~240V available by assortment of SKC-30 as per Page 71

KSE-12 ATTACHE CASE WITH EMPTY PANEL

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

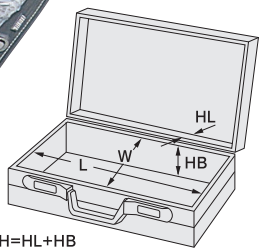






Dividing panel is easily detachable with Velcro.

●Speedy and easy attachment of empty panel



H=HL+HB

(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

KA-22 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.

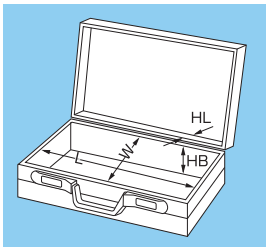


BODY
This handsome case is molded of ABS plastic with simple form line, lightweight and durable construction. Suggest a new field of use and produce the joy in possession of the case.

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

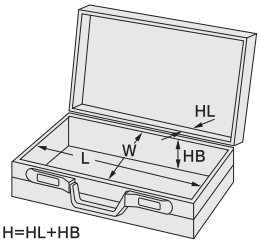
(mm)

Item No.	L	W	H	HL	HB	Weight(kg)	Color
KA-22	450	320	105	35	74	2.4	Black

KA-15

RoHS **ABS ATTACHE CASE**





H=HL+HB

(mm)

Item	L	W	H	HL	HB	Weight(kg)
KA-15	440	320	92	32	60	2

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

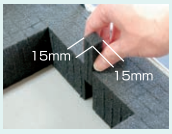


Tool panel affixed to shell with Velcro and detachable

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・42~44

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

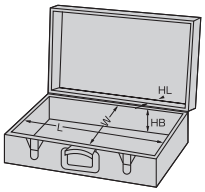


KA-30

KA-44

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

KA-44 is originally equipped with casters. 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-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-54

RoHS ALUMINIUM ATTACHE CASE

- Featuring a glossy surface in black color Streamline appearance





(mm)

Item	L	W	H	HL	HB	Weight(kg)
KA-54	440	320	130	50	80	2.8

KP-01~03(KP-95~97) 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(KP-96•97) 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

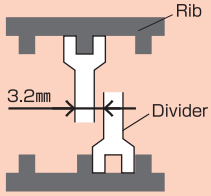


●KP-03K
Ext. Size ： 255×190×40mm
32 pcs. of dividers included





MICRO-RIB SYSTEM



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

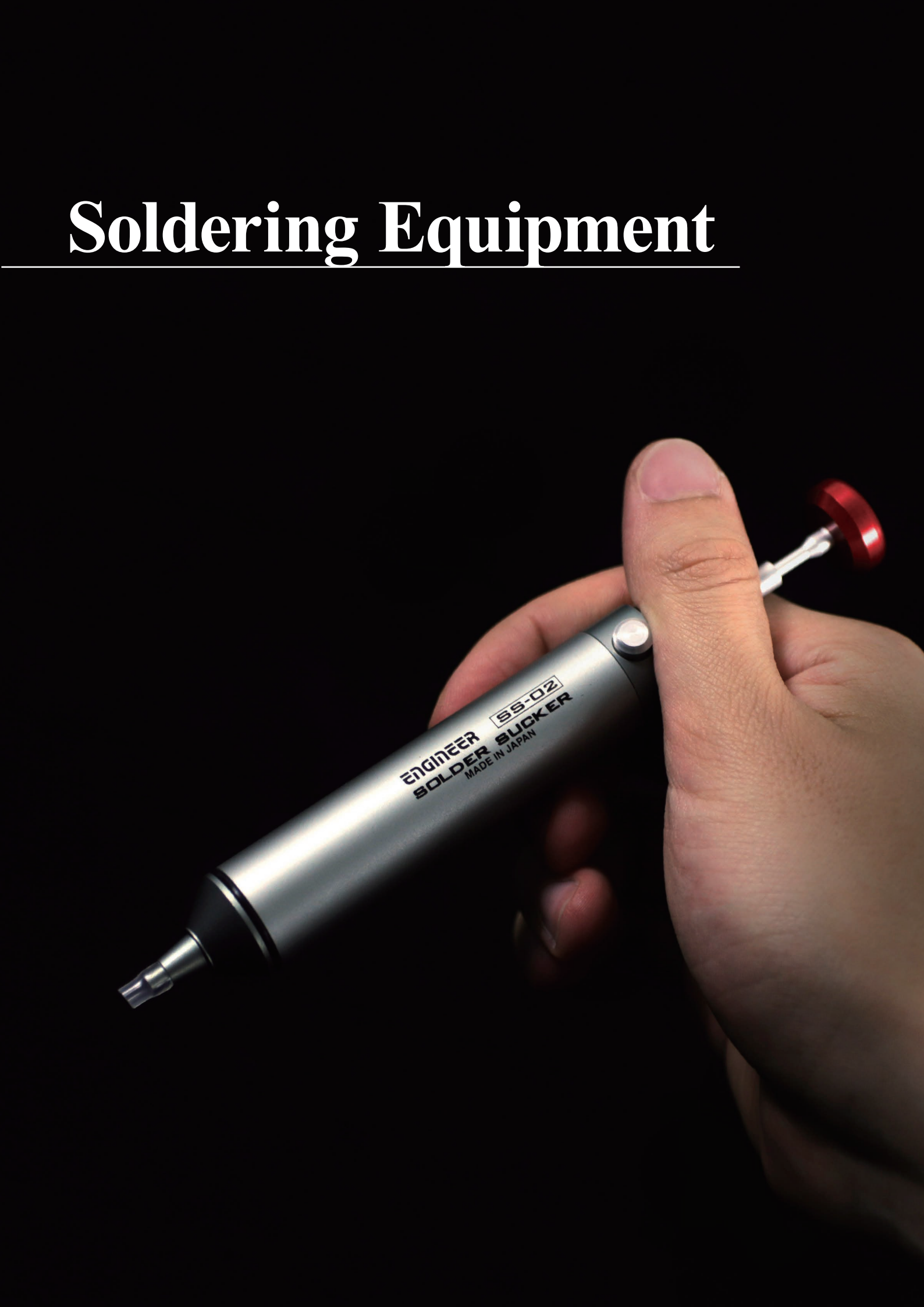


KP-51
- External Size : 80×135×25
- Internal Size : 75×130×19



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

Soldering Equipment



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.

SK-30



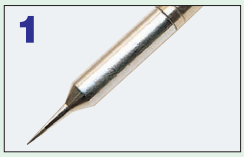
■SKC-30~41
With Heat-Resistant Cap.

SKC-32





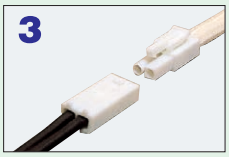
SK-30/40SERIES Three functions



Sharp iron tip
(Long life & durable type)

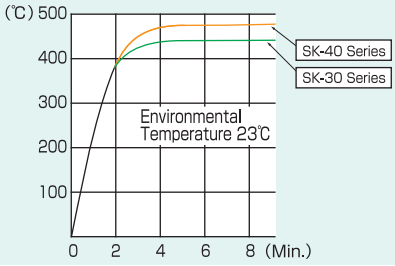


Special stainless steel inside tip for prevention against sticking and loosening of the tip



Plug-in type heater for instant replacement

■Time/Temp. Chart



SK-30 SERIES

■Specification

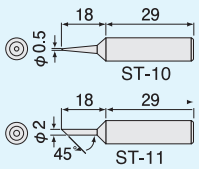
Item No.	Max.Tip Temp.	Watt	Tip	L'gth	Wgt(g)	Rated Voltage	Insulation Resistance
SK-30	400℃	26W	ST-10	202㎜	130	100V	100MΩ
SKC-30							
SKE-30							
SK-31	440℃		ST-11				
SKC-31							
SKE-31							
SK-32	390℃		ST-14	204㎜			
SKC-32							

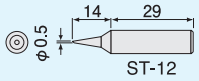
■ SKC with Heat-Resistant Cap. ■ SKE with 3-pin plug.

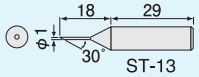
V 220V 230V 240V are also available. ☞REF. Page 71

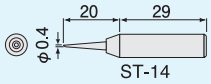
Caution Ceramic heater is not elastic and may be broken by excess shock. Please refrain from beating and wrenching.

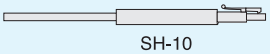
■REPLACEMENT PARTS (㎜)











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

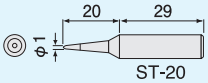
■Specification

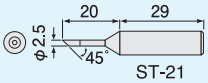
Item No.	Max.Tip Temp.	Watt	Tip	L'gth	Wgt(g)	Rated Voltage	Insulation Resistance
SK-40	450℃	32W	ST-20	204㎜	130	100V	100MΩ
SKC-40							
SK-41	470℃		ST-21				
SKC-41							

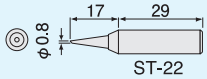
■ SKC with Heat-Resistant Cap.

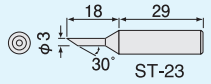
Caution Ceramic heater is not elastic and may be broken by excess shock. Please refrain from beating and wrenching.

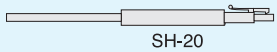
■REPLACEMENT PARTS (㎜)











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.



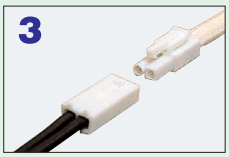
SK-30SERIES Three functions



Sharp iron tip
(Long life & durable type)

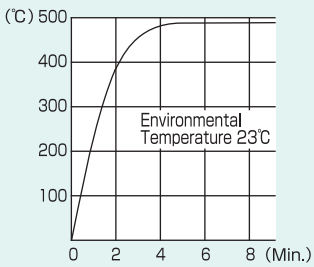


Special stainless steel inside tip for prevention against sticking and loosening of the tip



Plug-in type heater for instant replacement

■Time/Temp. Chart



SK-30 SERIES

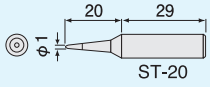
■Specification

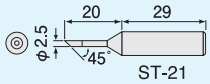
Item No.	Max.Tip Temp.	Watt	Tip	L'gth	Wgt(g)	Rated Voltage	Insulation Resistance
SK-30	445℃	30W	ST-20	204㎜	130	220 ≀ 240V	100MΩ
SKC-30							
SKE-30							
SK-31	500℃		ST-21				
SKC-31							
SKE-31							

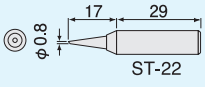
■ST-22 Max. Tip Temp. 430℃ ■ST-23 Max. Tip Temp. 500 ℃

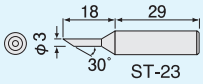
Caution Ceramic heater is not elastic and may be broken by excess shock. Please refrain from beating and wrenching.

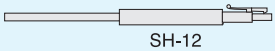
■REPLACEMENT PARTS (㎜)











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

SK-60SERIES — 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

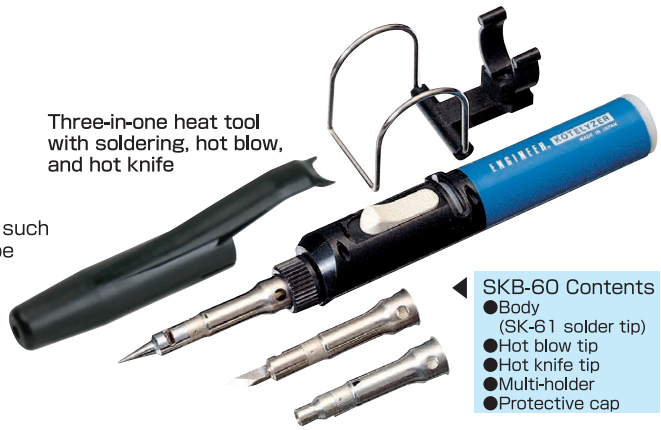


■Hot knife



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

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



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.		14ml
Operation Time for One Gas Fill		Abt 1 hour 15min.
O.A. Length		216㎜ including cap
Weight		66g

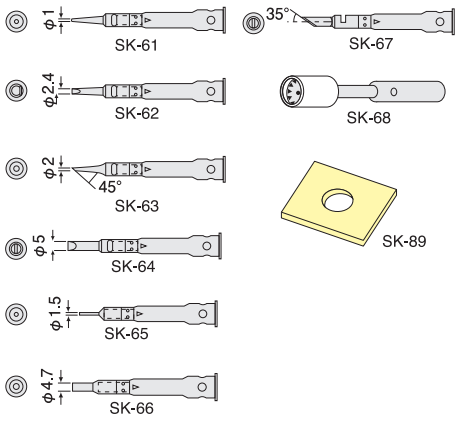
Two-in-one heat tool with soldering and hot blow.



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.

SS-08 — IC EXTRACTOR

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



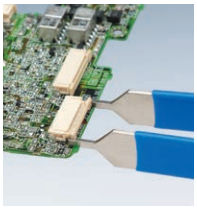


SS-10 — PC BOARD CONNECTOR EXTRACTOR

- 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㎜







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 gas catalyst reaction.
- Variable temperature control (equivalent to 20-80 watts).



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

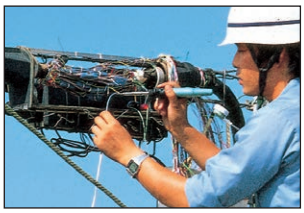
SKC-70 Contents
- Body(SK-71 solder tip)
- Hot blow tip
- Multi-holder
- Protective cap



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.

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

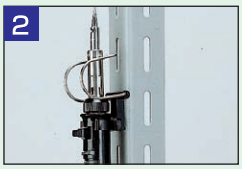
System		Gas Catalyst Reaction System
Thermal Output	Soldering Iron	200℃~500℃ (Equivalent to 20~80W electric soldering iron)
	Hot Blow	650℃ MAX
Gas Container Capa.		28ml
Operation Time for One Gas Fill		Abt 4 hours (Lever position : 2)
O.A.Length		281㎜ including cap
Weight		110g

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

1 Hanging from cable



2 Magnetic attachment



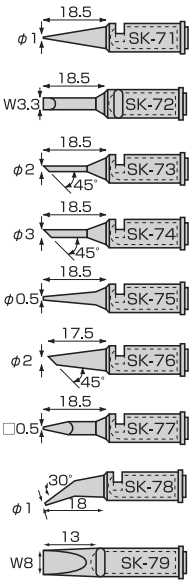
3 Stand



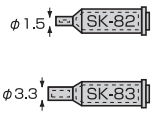
Multi-Holder is useable for both SK-60 series and SK-70 series.

SK-70SERIES REPLACEMENT PARTS

●Tip(Iron coated) (㎜)



●Hot blow tip



●Hook fitting



●Protective cap



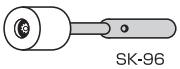
●Cleaning sponge



●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•SK-42~47 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



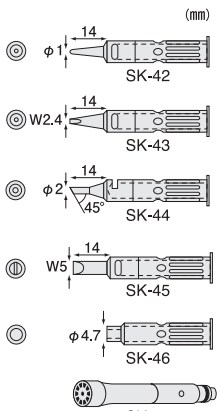
■Torch



■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



265ml

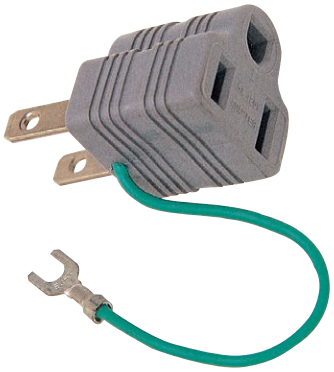
SK-95



480ml

SS-15 2P-3P PLUG CONVERTER

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



ZC-70・71 RoHS 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



SD-20(SD-21~26・SD-60~88) RoHS DESOLDERING TOOL

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

● 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.

ESD SAFE

DESTINATIONS ARE LIMITED FOR EXPORT

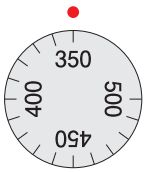
INDICATOR LIGHT
When the heater is on, light goes on and when the temperature reaches set-up level, it flickers.



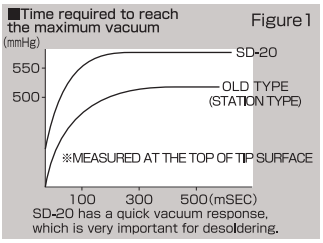
●Contents
・Carrying case
・Desoldering tool
・Spare tip (φ1.5)
・Spare filter cartridge (2pcs.)
・Cleaning pin



Temperature Adjustment Dial (350~500℃)

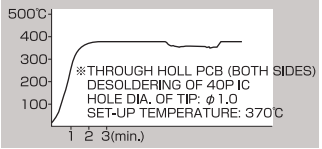


■Time required to reach the maximum vacuum Figure1



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(SD-29・31・86) RoHS SMD ACCESSORY KIT

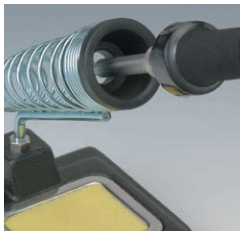
● For easy removal of SMD components including QFP & SOP owing to Hot Blow function of SD-20



■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 (㎜)









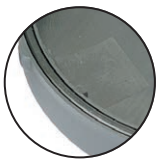
■Ring detachable

SS-05 TIP CLEANER

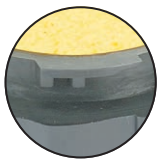
- Glass-filled nylon resin (Housing) featuring heat resistance of 130℃
- O-ring creates airtight condition to keep sponge moist.
- Comes with 2 pcs. of cleaning sponges of different density (blue & yellow)
- Easy to open the lid owing to sliding-lock structure
- Weight: 75g



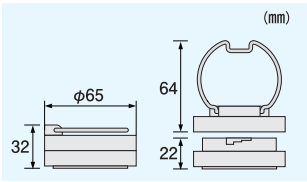




■O-ring in lid



■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.

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



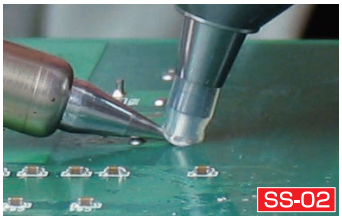
SS-02
- Silicone nozzle : φ2㎜ (Int.) φ4㎜ (Ext.)
- High-power and efficient absorption by means of elastic nozzle contact
- Low maintenance cost owing to spare tube only required for replacement
- 2 pcs. of spare silicone tubes (50㎜ long) originally included
- Body : φ20 x 153㎜



Heat resistant (350℃) silicone nozzle

Compact and durable aluminum body

Item No.	Cylinder Capa.	Wgt.
SS-01	5 ml	33g
SS-02	9 ml	52g

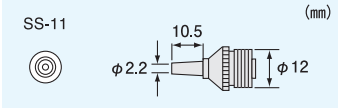


Elastic and heat-resistant nozzle can stick to soldering iron on board closely and suck up solder powerfully with less residue.



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

SS-11 REPLACEMENT NOZZLE FOR SS-01





SS-16 REPLACEMENT SILICONE TUBES

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



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. (mm)	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. (mm)	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-80

SWS-58

Item No.	Wire diam. (mm)	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



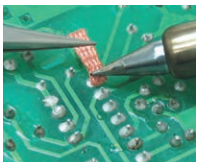
SWA-80

SWA-58

Item No.	Wire diam. (mm)	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

SW-11~53 SOLDER

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

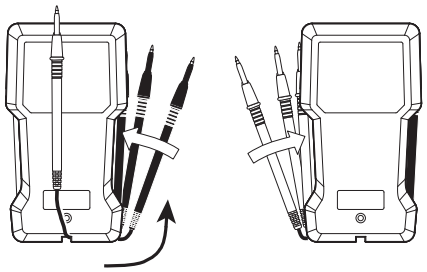


Item No.	diam.(mm)	Weight(g)
SW-11	0.6	150
SW-12		500
SW-13		1000
SW-21	0.8	150
SW-22		500
SW-23		1000
SW-30	1.0	20
SW-31		150
SW-32		500
SW-33		1000
SW-41	1.2	150
SW-42		500
SW-43		1000
SW-51	1.6	150
SW-52		500
SW-53		1000

SD-10 DIGITAL MULTIMETER

Multifunctional and compact : The ultimate tool for all your measurements!

- 3999 Counts, Auto-ranging
- Magnetic attachment to a metallic surface
- Gold-plated test leads for corrosion-resistance



Test leads can be stored conveniently.



Operating principle	Dual integration
Display	LCD, 3999 Counts
Range switch	Auto range
Auto power off	Approx. 30 minutes (can be disabled)
Sampling	3 times / sec.
Operating temperature	0℃ to 40℃ less than 80% RH (without condensation)
Storage temperature	-10℃ to 60℃ less than 70% RH (without condensation)
Power	CR2032(3V) lithium battery x 1
Battery life	Approx. 120 hours
Dimensions and weight	70(W) x 127(H) x 12.5(D)mm Approx. 101g (incl. battery)
Lead length	Approx. 70cm
Standard	IEC61010-1 CATⅡ 600V、CATⅢ 300V
Accessories	Operation manual, Soft case

Function	Range	Resolution	Accuracy
DCV	4V	0.001V	±(1.0%+3dgt)
	40V	0.01V	
	400V	0.1V	
	600V	1V	
ACV	4V	0.001V	±(2.0%+5dgt)
	40V	0.01V	
	400V	0.1V	
	600V	1V	
Resistance	400Ω	0.1Ω	±(2.0%+5dgt)
	4kΩ	0.001kΩ	
	40kΩ	0.01kΩ	
	400kΩ	0.1kΩ	
	4MΩ	0.001MΩ	
	40MΩ	0.01MΩ	
Frequency	5Hz	0.001Hz	±(0.5%+5dgt)
	50Hz	0.01Hz	
	500Hz	0.1Hz	
	5kHz	0.001kHz	
	50kHz	0.01kHz	
	100kHz	0.1kHz	
Capacitance	50nF	0.01nF	±(5.0%+5dgt)
	500nF	0.1nF	
	5uF	0.001uF	
	50uF	0.01uF	
	100uF	0.1uF	

※Accuracy assurance of ACV･Frequency is limited to sine wave.

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



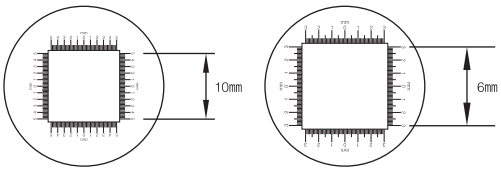
- 15x
- 6mm diam. view
- Scale S

SL-57



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

BUILT-IN SCALE



L: 0.2mm/scale

S: 0.1mm/scale

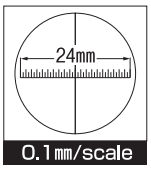
SL-12 INSPECTION LOUPE

- 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



Item No.	SL-50	SL-51	SL-52	SL-53	SL-12	SL-55	SL-56	SL-57
Magnification	x10	x8 & x15	x3, 4 & 5	x18	x10	x10	x15	x22
Lens Material	Glass	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+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



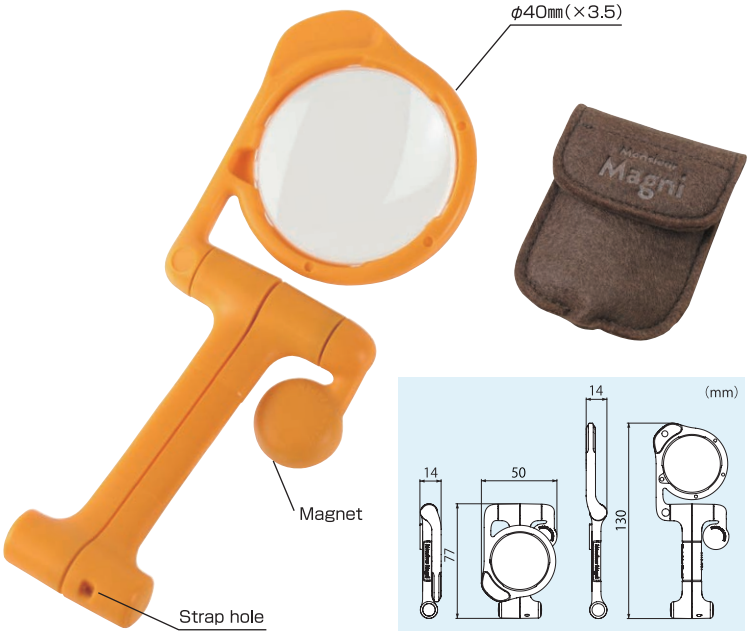
Attachment to a crimp tool



Self-standing for handsfree



Collapsible to fit carrying case

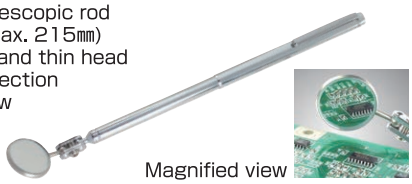


SL-01~03・11 INSPECTION MIRROR

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㎜)



LED(16bulbs)



SL-23 LED STAND LOUPE



Built-in LED

- 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

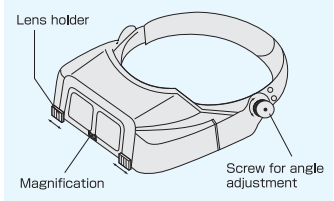
SL-72 UTILITY LOUPE

- 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

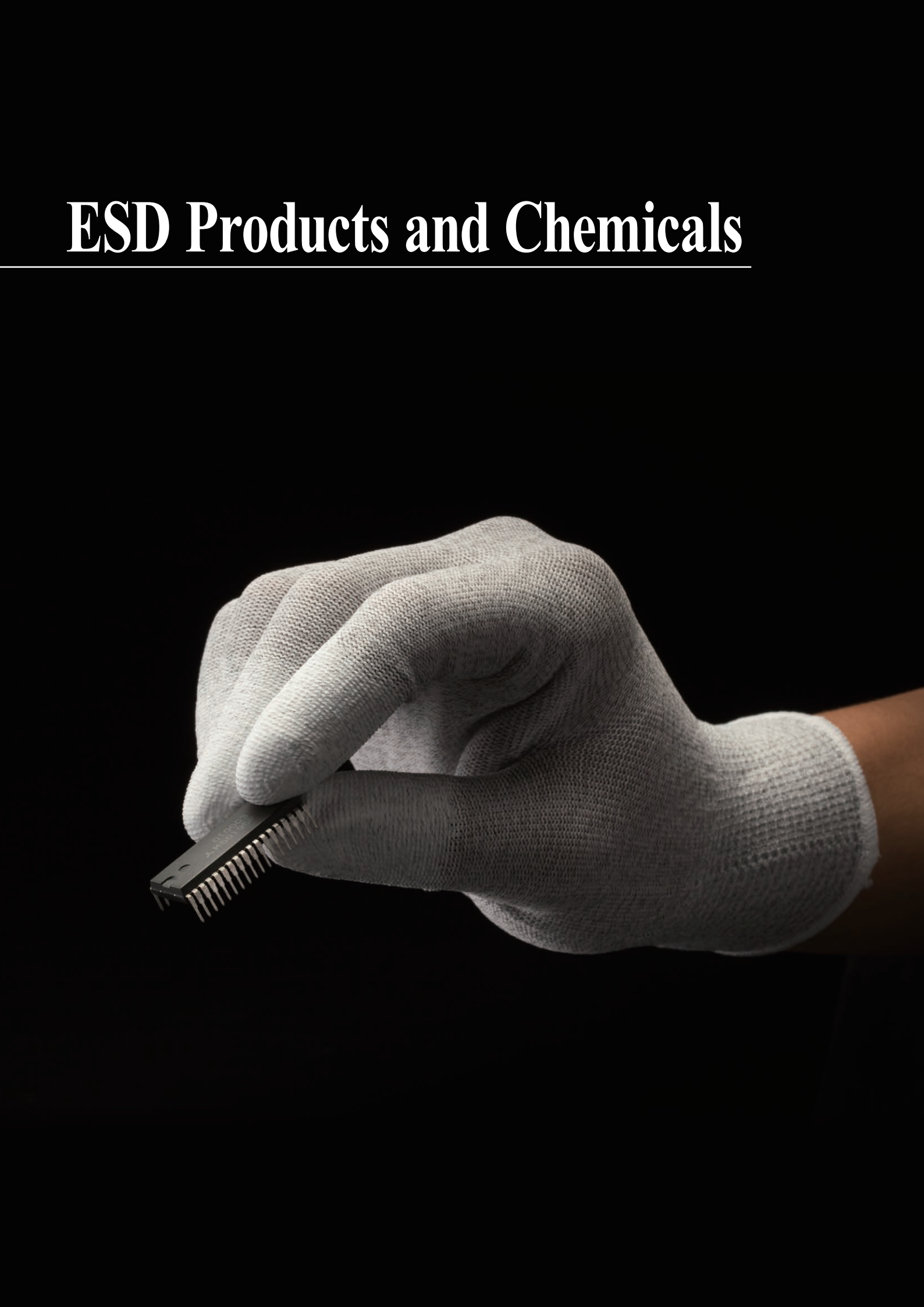
Item No.	Magnification
SL-80	1.8
SL-81	2.3
SL-82	2.7
SL-83	3.5

■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.

ESD Products and Chemicals

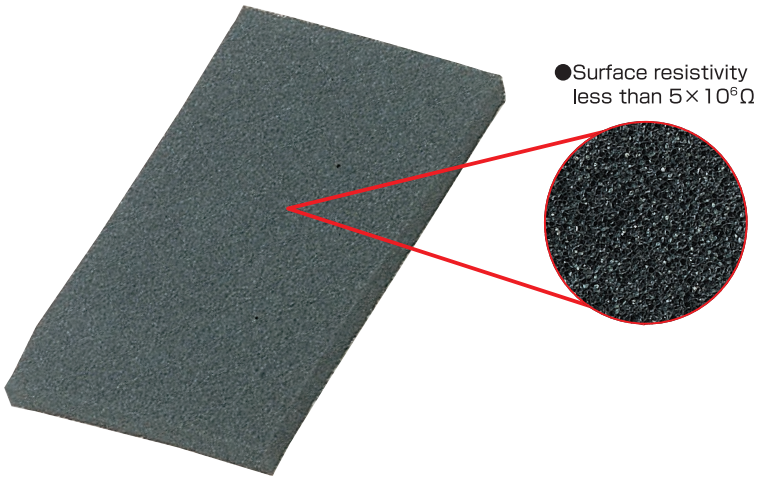


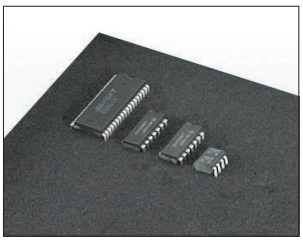
ZC-01・02

RoHS **CONDUCTIVE FOAM**

ESD SAFE

- 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	075×130×10
ZC-02	100×290×10

ZC-50

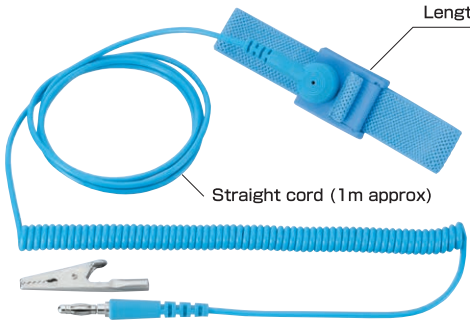
RoHS **WRIST STRAP**

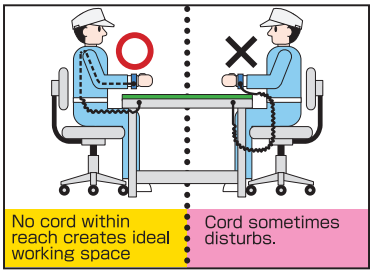
ESD SAFE

- 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

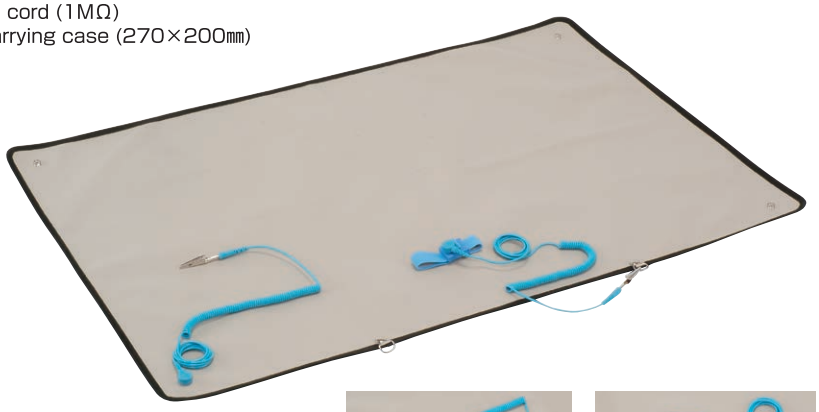
If anyone who is charged with static electricity through clothes touches IC's and electronic components, he discharges electricity through his fingers and gives a damage to IC's and electronic components. Wrist Strap can eliminate static electricity through his wrist to prevent them from being damaged.

ZC-80

RoHS **ANTI-STATIC SERVICE KIT**

ESD SAFE

- 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 STATIC CONDUCTIVE GLOVES

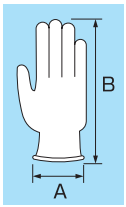
- Surface resistivity : 10^5~$10^6\Omega$ sq.(Finger) $10^7\Omega$ sq.(Palm)
- Ideal for clean room, assembly of electronic devices, handling of plastic products, etc.
- Copper sulfide mixed with acryl/nylon creates an excellent conductive effect (Finger Part)
- Seamless and dust-free mono-filament
-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





■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 ANTI-STATIC GLOVES

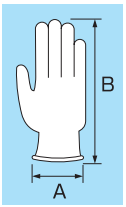
- Surface resistivity : 10^6~$10^9\Omega$ sq.
- Ideal for any work in the facility where anti-static should be controlled
- Seamless and dust-free mono-filament
- Washable with ordinary detergent
- Material : Fabric - Nylon 75% Acryl 25%
  : Coating - Polyurethane Resin





■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 DUST-FREE GLOVES

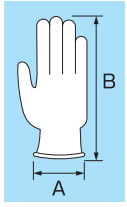
- Flexible & comfortable gloves made of elastic and breathable nylon fiber
- Ideal for use in clean room and handling of C.R.T., electric bulb, compact disc, glass, etc.
- Seamless and dust-free mono-filament
- Non-slip coating for accurate assembly work
- Washable with ordinary detergent
- Material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

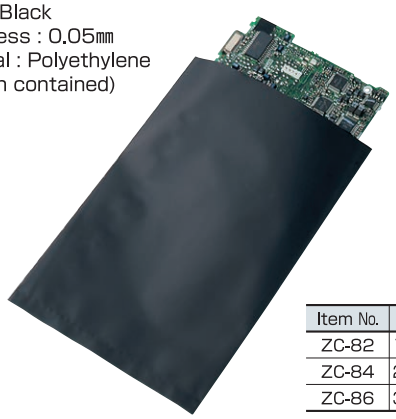


■Palm Coating (mm)

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

ZC-82·84·86 STATIC CONDUCTIVE BAG

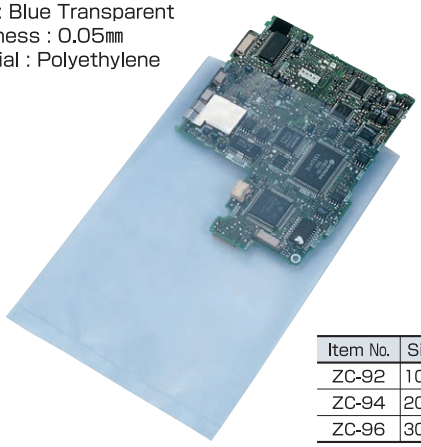
- Surface resistivity : $10^4\Omega$ or less
- Color : Black
- Thickness : 0.05㎜
- Material : Polyethylene
  (Carbon contained)



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

ZC-92·94·96 ANTI-STATIC BAG

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



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

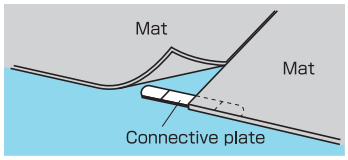
ZCM-01～04

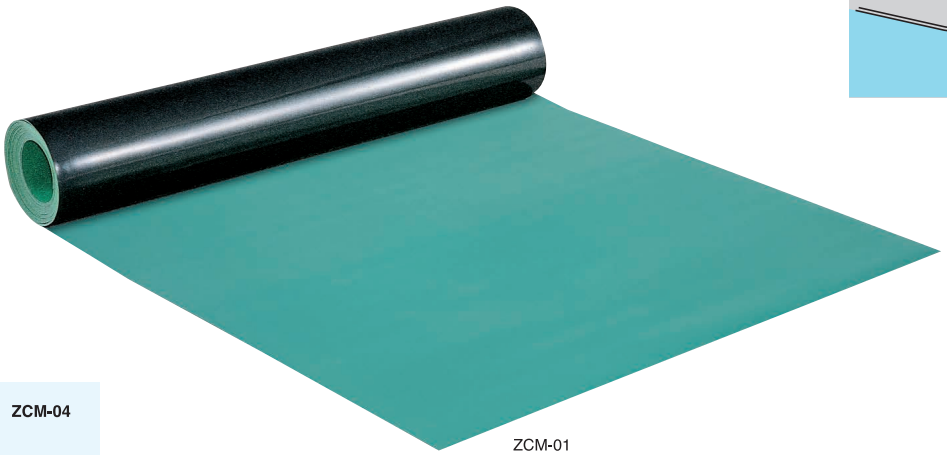
RoHS CONDUCTIVE COLORED MAT

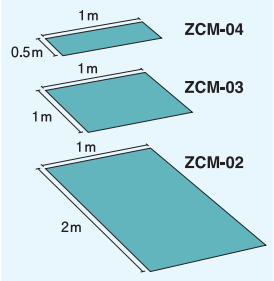
- Static-Dissipative mat maintains an ESD-Safe working surface.
- Anti-Fatigue rubber material that provides cushioning comfort.
- Available in pre-cut mats or rolls.

ESD SAFE

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




ZCM-01



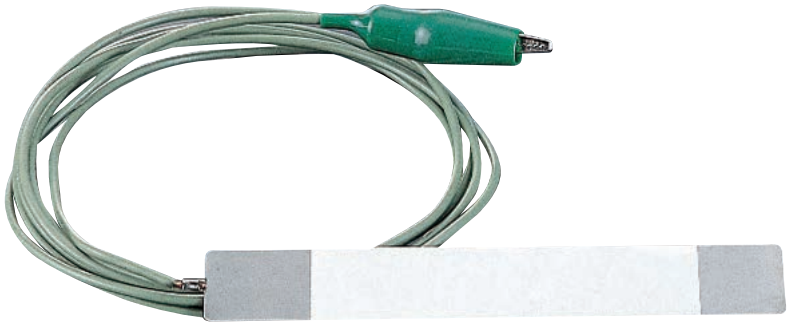
●Surface resistivity
Top Layer (Green) : 10^{8}～$10^{10}\Omega$
Bottom Layer (Black) : 10^{3}～$10^{5}\Omega$

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

RoHS GROUND CORD

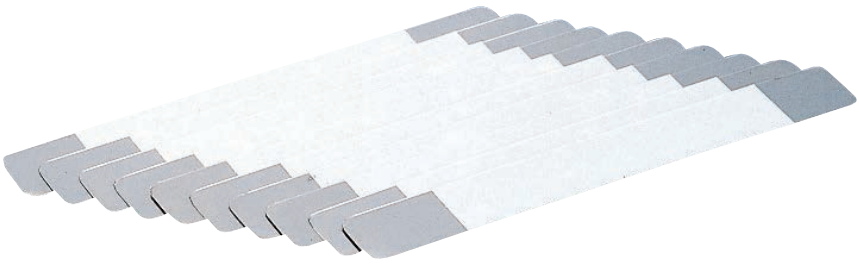
- For ZCM-01～04
  Size : Cord……2m　Plate…15cm×2cm



ZC-63

RoHS CONNECTIVE PLATE

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



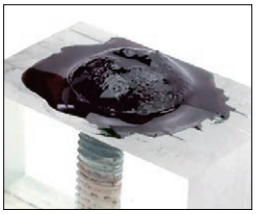
ZC-28 RUST REMOVER

Amazing - How quickly it cleans rust off!

- Since it is a neutral liquid, you can work safely (it does not contain acid or alkali).
- Rust on small components, such as rusted screws, can be removed in seconds.
- No need to scrub.



How it works on rusty screws



1. Penetration

The liquid penetrates through small gaps and reaches the screw's thread in seconds!



2. Rapid Action

It instantly reacts on the rust and turns purple!



3. Screw Removal

Utilize Screw Removal Pliers to loosen the treated screw with sure-gripping jaws.

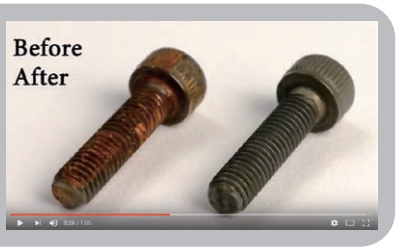
SAFE:Neutral liquid
Less harmful to bare skin
(unlike acid or alkali)



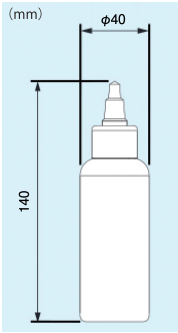




PRODUCT VIDEO



Item No.	pH	Capacity	Bottle size
ZC-28	Neutral	100ml	φ40 x H140mm



ZC-19 RoHS OILER

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

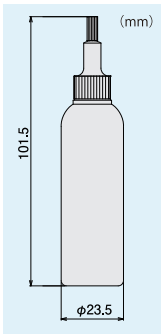


■How to use

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



D

ITEM No.	CODE No.	ITEM	PAGE
DA-01	1001	Alignment Screwdriver	49
DA-02	1002	Alignment Screwdriver	49
DA-03	Discon.	Alignment Screwdriver	
DA-40	1040	Alignment Screwdriver	49
DA-48	1048	Ceramic Alignment Screwdriver	48
DA-50	1050	Ceramic Alignment Screwdriver	48
DA-51	1051	Ceramic Alignment Screwdriver	48
DA-52	1052	Ceramic Alignment Screwdriver	48
DA-53	1053	Ceramic Alignment Screwdriver	48
DA-54	1054	Ceramic Alignment Screwdriver	48
DA-55	1055	Ceramic Alignment Screwdriver	48
DA-56	1056	Ceramic Alignment Screwdriver	48
DA-57	1057	Ceramic Alignment Screwdriver	48
DA-58	1058	Ceramic Alignment Screwdriver	48
DA-59	1059	Ceramic Alignment Screwdriver	48
DA-72	1072	Ceramic Alignment Screwdriver	48
DA-73	1073	Ceramic Alignment Screwdriver	48
DA-74	1074	Ceramic Alignment Screwdriver	48
DA-75	1075	Ceramic Alignment Screwdriver	48
DA-76	1076	Ceramic Alignment Screwdriver	48
DA-77	1077	Ceramic Alignment Screwdriver	48
DA-78	1078	Ceramic Alignment Screwdriver	48
DA-79	1079	Ceramic Alignment Screwdriver	48
DA-81	1081	Ceramic Alignment Screwdriver	49
DA-82	1082	Ceramic Alignment Screwdriver	49
DA-83	1083	Ceramic Alignment Screwdriver	49
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DA-85	1085	Ceramic Alignment Screwdriver	49
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DA-87	1087	Ceramic Alignment Screwdriver	49
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DB-25	1325	Ball Point Driver	45
DB-30	1330	Ball Point Driver	45
DB-40	1340	Ball Point Driver	45
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DBZ-52	1452	Replacement Bit for DBZ-60G	9
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DBZ-54	1465	Optional Bit for DBZ-60G	9
DBZ-56	1466	Optional Bit for DBZ-60G	9
DBZ-57	1467	Optional Bit for DBZ-60G	9
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DBZ-62	1471	Optional Bit for DBZ-60G	9
DBZ-63	1472	Optional Bit for DBZ-60G	9
DBZ-64	1473	Optional Bit for DBZ-60G	9
DBZ-65	1474	Optional Bit for DBZ-60G	9
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DG-02	1102	Pro Grip Driver	38
DG-03	1103	Pro Grip Driver	38
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DG-09	1109	Master Grip Driver	38
DG-11	1111	Extra Long Grip Driver	38
DG-12	1112	Extra Long Grip Driver	38
DG-13	1113	Extra Long Grip Driver	38
DG-14	1114	Extra Long Grip Driver	38
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DH-25	1525	Hex Driver	45
DH-30	1530	Hex Driver	45
DH-40	1540	Hex Driver	45
DH-50	1550	Hex Driver	45
DH-60	Discon.	Hex Driver	
DJ-01	Discon.	Plug Jack Driver	
DJ-02	Discon.	Plug Jack Driver	
DJ-03	1763	Plug Jack Driver	44
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DK-08	1608	Interchangeable Driver Set	47
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DK-13	1613	Reversible Precision Dr. Set	45
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DK-20	Discon.	⊕Precision Driver Set	
DK-21	Discon.	Precision Driver	
DK-22	Discon.	Precision Driver	
DK-23	Discon.	Precision Driver	
DK-24	Discon.	Precision Driver	
DK-25	Discon.	Precision Driver	
DK-26	Discon.	Precision Driver	
DK-30	Discon.	⊖Precision Driver Set	
DK-31	Discon.	Precision Driver	
DK-32	Discon.	Precision Driver	
DK-33	Discon.	Precision Driver	
DK-34	Discon.	Precision Driver	
DK-35	Discon.	Precision Driver	
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DK-81	Discon.	Mobile Phone Driver Set	
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DM-25	1185	⊕Precision Driver	47
DM-26	1186	⊕Precision Driver	47
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DN-04	1704	Nut Driver	44
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DN-07	1707	Nut Driver	44
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DS-23	1923	Standard Driver⊕	38
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DS-46	1946	Standard Driver⊕	38
DS-54	1954	Standard Driver⊖	38
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DS-85	Discon.	Standard Driver⊕	
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DST-02	1582	Stubby Driver	39
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REV. 08/18