

Vessel's  
**AIR TOOL**

- AIR SCREWDRIVERS
  - CLUTCH TYPE 2/3
  - IMPACT TYPE 2/4
  - OIL-XTRA SERIES/IMPACT TYPE 2/5
  - TORQUE CONTROL CLUTCH TYPE 2/6
- AIR IMPACT WRENCHES
  - IMPACT TYPE V HAMMER SERIES LIGHTWEIGHT SERIES 2/8
  - IMPACT TYPE SINGLE HAMMER 2/9
  - TORQUE CONTROL TYPE 2/10
  - AIR MICRO DIE GRINDER 2/11
  - AIR NIPPERS 2/12
  - AIR GUN 2/18

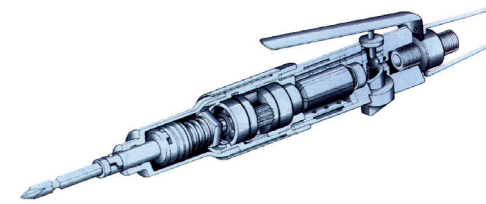
**AIR TOOLS**

ไขควงลมเวสเซล

**AIR SCREWDRIVERS** "VESSEL" ไขควงลมเวสเซล

สำหรับงานขันสกรูหรือถอดต่างๆ เครื่องมีกำลังสูงซึ่งทำให้ขันได้แน่น รวดเร็ว เบาแรง น้ำหนักเบา มีให้เลือกหลายรุ่นหลายขนาดตามความเหมาะสมของงาน มีอุปกรณ์ประกอบ ได้แก่ ดอกไขควง และลูกบอล

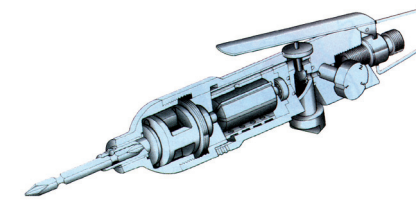
**CLUTCH TYPE AIR SCREWDRIVER**



**ไขควงลมเวสเซล แบบคลัทช์ Clutch Type Air Screwdriver**  
ความเร็วรอบของมอเตอร์จะถูกทอนรอบลงโดยเฟืองเกียร์ จึงส่งผลให้ค่าแรงบิดในการบิดของข้อเหวี่ยงถูกเพิ่มขึ้น โดยโครงสร้างระบบนี้จะส่งให้การเพิ่มค่าแรงบิดเป็นไปโดยสม่ำเสมอ

- แรงบิดที่ค่อยๆ กระจายไปอย่างสม่ำเสมอ การขันสกรูเป็นไปได้อย่างสม่ำเสมอไม่สะดุด
- เครื่องทำงานเงียบ ไม่ก่อให้เกิดเสียงรบกวน
- ชิ้นส่วนในเครื่องมีการเสียดสีน้อย ทำให้อายุการใช้งานยาวนาน

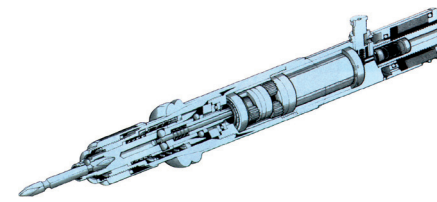
**IMPACT TYPE AIR SCREWDRIVER**



**ไขควงลมเวสเซล แบบกระแทก Impact Type Air Screwdriver**  
หมอนซึ่งหมุนโดยใช้ใบพัด จะถูกนำมาใช้ในการกระแทกลงบน ANVIL ทำให้การขันสกรูมีแรงมาก

- ขนาดกะทัดรัด น้ำหนักเบา แต่เครื่องมีแรงขันสูง
- อัตราความเร็วรอบในการขันขึ้นงานสูง
- เนื่องจากเป็นคอนซินดรู (หมุน 1 รอบ ตอก 2 ครั้ง) ทำให้การขันสกรูเป็นไปอย่างสม่ำเสมอและรวดเร็ว

**TORQUE TYPE AIR SCREWDRIVER**



**ไขควงลมเวสเซล แบบควบคุมแรงบิด Torque Control Type Air Screwdriver**  
เมื่อการขันไปถึงค่าแรงบิดที่กำหนดไว้ ลมจะถูกตัดโดยอัตโนมัติที่ค่าแรงบิดนั้น

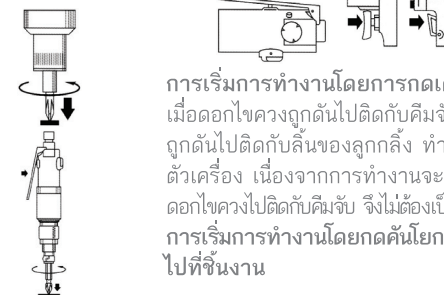
- ชนิดคลัทช์ ในการสร้างชิ้นงาน เมื่อแรงบิดเพิ่มขึ้นถึงระดับที่กำหนดไว้ ลมจะถูกตัดโดยอัตโนมัติ
- ชนิดกระแทก เมื่อสลักหรือเป็นเกลียวถูกยึดจนแน่น แรงดันก็จะเพิ่มขึ้น และส่วนของลิ้นกับส่วนของใบพัดก็จะพลิกกลับ มุมของการพลิกกลับจะถูกยึดโดยคลัทช์และส่งผ่านไปยังลิ้นเพื่อบังคับให้หยุด จากนั้นลมจะถูกตัด นอกจากนี้เพื่อให้แรงบิดมีความแข็งแกร่งยิ่งขึ้น ส่วนของ ANVIL จะถูกบิดไปด้วย

**1.รูปแบบการใส่ดอกไขควง**

- 1.1 แบบใช้แหวนสปริงนำ Bit-guide spring method  
เมื่อ Guide cover left screw ถูกคลายให้สวมแหวนสปริงที่สวมดอกไขควงจะถอดออกได้ ส่วนการติดตั้งทำได้โดยสอด Guide spring เข้าไปในดอกไขควงและยึดให้แน่นด้วย Guide bar
- 1.2 แบบ Ball retainer method  
เมื่อดอกไขควงถูกกดไปอย่างแรง ทำให้ลูกกลิ้งหลุดลงไปในร่องของดอกไขควงได้พอดี
- 1.3 แบบ Quick chuck method  
หลังจากสอดลงไปจนกระทั่งจำปาจับดอกไขควงขยับและดอกไขควงหยุดหมุน จากนั้นจำปาจับดอกไขควงก็จะถูกคลายออก ทำให้มันถูกตรึงเข้าที่พอดี

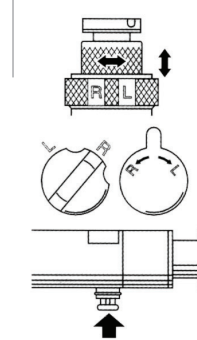
**2.เครื่องเริ่มทำงาน**

รูปแบบการเริ่มทำงานของเครื่องเมื่อคันโยกถูกดัน ลมก็จะผ่านไปในระบบการทำงานจะเริ่มขึ้น



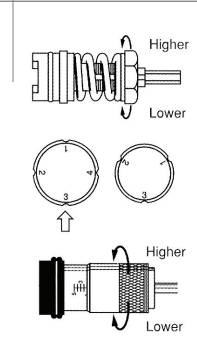
การเริ่มการทำงานโดยการกดเครื่องไปที่ชิ้นงาน เมื่อดอกไขควงถูกดันไปติดกับคีมจับ ลิ้นบังคับลมก็จะถูกดันไปติดกับลิ้นของลูกกลิ้ง ทำให้ลมไหลเข้าไปในตัวเครื่อง เนื่องจากการทำงานจะเริ่มขึ้นเมื่อมีการดันดอกไขควงไปติดกับคีมจับ จึงไม่ต้องเป็นภาระในการดันคาน การเริ่มการทำงานโดยกดคันโยกพร้อมกับกดเครื่องไปที่ชิ้นงาน

**3.ปุ่มปรับเปลี่ยนทิศทางการหมุน**



โดยใช้การปรับที่ปุ่มหรือตัวหมุน ไปที่ทิศทางขวาจะเป็นการขันแน่นและการปรับไปที่ทิศทางซ้ายจะเป็นการคลายออก

**4.ปุ่มปรับค่าแรงบิด**



**การปรับขันสปริง**  
การปรับขันสปริงให้แน่นขึ้นค่าแรงบิดสูงขึ้น และเมื่อคลายให้สปริงหลวมค่าแรงบิดจะลดลง

**การปรับตามตัวเลขบนหน้าปิด**  
ตัวเลขบนหน้าปิดจะให้อัตราการไหลของลมที่ต่างกัน ควรเลือกให้เหมาะสมกับงาน

**การปรับตามตัวเลขบนหน้าปิด (ชนิดควบคุมแรงบิด)**  
ค่าของแรงบิดได้ถูกกำหนดไว้ด้วยการหมุนหน้าปิด การปรับค่าของแรงบิดให้สูงขึ้นสามารถทำได้โดยการหมุนหน้าปิดไปทางขวา และลดค่าแรงบิดโดยการหมุนไปทางซ้าย

# AIR TOOLS

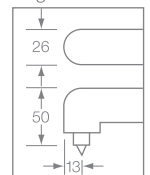
## AIR SCREWDRIVERS ไขควงลม

### CLUTCH TYPE FOR HIGH PERFORMANCE FASTENING

MACHINE SCREW Dia. 2.6~3.5mm

GT-H4RC

Angle head size



- Ball spring retainer 6.35 mm
- Noise reducer
- Torque adjusting spring (medium / weak)

Accessories  $\varnothing 2 \times 23H$

MACHINE SCREW Dia. 3~4 mm

GT-H4R



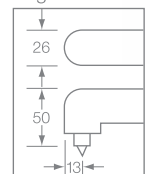
- Ball spring retainer 6.35 mm
- Lever push starting / Noise reducer
- Anvil for A/F 5mm bit
- Torque adjusting spring (medium / weak)

Accessories  $\varnothing 2 \times 65G$

MACHINE SCREW Dia. 3.5~4.5 mm

GT-H5RC

Angle head size



- Ball spring retainer 6.35 mm

Accessories  $\varnothing 2 \times 23H$

MACHINE SCREW Dia. 3.5~4.5 mm

GT-H5R



- Ball spring retainer 6.35 mm
- Lever push starting

Accessories  $\varnothing 2 \times 65G$

MACHINE SCREW Dia. 4~5 mm

GT-H5P



- Ball spring retainer 6.35 mm
- Push startup type / Rear exhaust

Accessories  $\varnothing 2 \times 65G$

#### Specifications

| รุ่น    | ค่าแรงบิด<br>N.m<br>(ft. lbf) | ความเร็วรอบ<br>rpm | ความสิ้นเปลืองลม<br>m <sup>3</sup> /min | ความยาว<br>mm | น้ำหนัก<br>g | ขนาดสายลม |
|---------|-------------------------------|--------------------|---|---------------|--------------|-----------|
| GT-H4RC | 0.5-1.8<br>(0.4-1.3)          | 1,500              | 0.20                                    | 216           | 900          | PF1/4     |
| GT-H4R  | 1.0-2.2<br>(0.7-1.6)          | 1,500              | 0.20                                    | 190           | 590          | PF1/4     |
| GT-H5RC | 1.0-3.0<br>(0.7-2.2)          | 1,500              | 0.25                                    | 248           | 1,047        | PF1/4     |
| GT-H5R  | 2.0-5.4<br>(1.5-4.0)          | 1,500              | 0.25                                    | 225           | 880          | PF1/4     |
| GT-H5P  | 2.0-5.4<br>(1.5-4.0)          | 1,500              | 0.25                                    | 235           | 880          | PF1/4     |

\*Air pressure...6kg/cm<sup>2</sup> (85psi) \*Air hose bore diameter...6.35mm (1/4") \*Overall length...Accessory, hanger part not included.  
\*Weight...Accessories not included.

# AIR TOOLS

## AIR SCREWDRIVERS ไขควงลม

### IMPACT TYPE FOR POWERFUL FASTENING

MACHINE SCREW Dia. 4~5 mm

GT-S4.5DR



- Bit sleeve retainer 6.35 mm
- Noise reducer

Accessories  $\varnothing 2 \times 65G$

GT-PLR



- Ball spring retainer 6.35 mm
- Anvil for A/F 5 mm bit

Accessories  $\varnothing 2 \times 65G$

GT-PLZ



- Bit sleeve retainer (Pull type) 6.35 mm
- Noise reducer

Accessories  $\varnothing 2 \times 65G$

GT-PLP



- Ball spring retainer 6.35 mm
- Push startup type / Rear exhaust

Accessories  $\varnothing 2 \times 65G$

GT-PLRC



- Ball spring retainer 6.35 mm

Accessories  $\varnothing 2 \times 23H$



Angle head size

MACHINE SCREW Dia. 6~8 mm

GT-S6.5D



- Bit sleeve retainer 6.35 mm
- Anvil (Bit insertion length 9 mm)

Accessories  $\varnothing 2 \times 65E / \varnothing 3 \times 65E$

GT-P6.5D



- Bit sleeve retainer 6.35 mm
- Anvil (Bit insertion length 9 mm)

Accessories  $\varnothing 2 \times 65E / \varnothing 3 \times 65E$

MACHINE SCREW Dia. 8~10 mm

GT-P8D



- Bit sleeve retainer 8 mm

Accessories  $\varnothing 2 \times 65G / \varnothing 3 \times 65E$

#### Specifications

| รุ่น       | ค่าแรงบิด<br>N.m<br>(ft. lbf) | ความเร็วรอบ<br>rpm | ความสิ้นเปลืองลม<br>m <sup>3</sup> /min | ความยาว<br>mm | น้ำหนัก<br>g | ขนาดสายลม |
|------------|-------------------------------|--------------------|---|---------------|--------------|-----------|
| GT-S4.5D   | 3.4-6.4<br>(2.5-4.7)          | 14,000             | 0.20                                    | 180           | 585          | PF1/4     |
| GT-PLR     | 2.9-6.9<br>(2.2-5.1)          | 9,000              | 0.20                                    | 187           | 830          | PF1/4     |
| GT-PLP     | 3.4-6.4<br>(2.5-4.7)          | 9,000              | 0.20                                    | 197           | 750          | PF1/4     |
| GT-PLZ     | 2.9-6.9<br>(2.2-5.1)          | 9,000              | 0.20                                    | 205           | 950          | PF1/4     |
| GT-PLRC    | 2.0-5.9<br>(1.5-4.3)          | 9,000              | 0.20                                    | 228           | 1,100        | PF1/4     |
| GT-S6MLR   | 4.4-10.8<br>(3.3-8.0)         | 8,500              | 0.25                                    | 215           | 1,120        | PF1/4     |
| GT-P6LSIII | 3.9-9.8<br>(2.9-7.2)          | 9,000              | 0.30                                    | 177           | 955          | PT1/4     |
| GT-S6.5D   | 7.9-24.5<br>(5.8-18.1)        | 1,400              | 0.34                                    | 220           | 1,400        | PT1/4     |
| GT-P6.5D   | 7.9-24.5<br>(5.8-18.1)        | 8,500              | 0.38                                    | 152           | 1,450        | PT1/4     |
| GT-P8D     | 9.8-58.8<br>(7.2-43.4)        | 7,500              | 0.40                                    | 172           | 1,930        | PT1/4     |

\*Air pressure...6kg/cm<sup>2</sup> (85psi)

\*Air hose bore diameter...6.35mm (1/4")

\*Overall length...Accessory, hanger part not included.

\*Weight...Accessories not included.

# AIR TOOLS

## AIR SCREWDRIVERS ไขควงลม

### OIL-XTRA SERIES / IMPACT TYPE FOR POWERFUL FASTENING

MACHINE SCREW Dia. 4~5 mm

No. GT-PLXD

6.35 Bit-sleeve type  
With silencer

Accessories

Double-end bit : A14 ⊕ 2×65G / Air coupling : BPN-2F /  
Lubrication oil for rotating mechanism, ISO VG-10 /  
Lubrication oil for impact mechanism, ISO VG-32



No. GT-P4.5XD

6.35 Bit-sleeve type

With silencer / Rear exhaust

Accessories

Double-end bit : A14 ⊕ 2×65G / Air coupling : BPB-2F /  
Lubrication oil for rotating mechanism, ISO VG-10 /  
Lubrication oil for impact mechanism, ISO VG-32

No. GT-S4.5XD

6.35 Bit-sleeve type  
With silencer

Accessories

Double-end bit : A14 ⊕ 2×65G / Air coupling : BPN-2F /  
Lubrication oil for rotating mechanism, ISO VG-10 /  
Lubrication oil for impact mechanism, ISO VG-32



MACHINE SCREW Dia. 5~6 mm

No. GT-S6LXD

6.35 Bit-sleeve type

With silencer

Accessories

Double-end bit : A14 ⊕ 2×65G / Air coupling : BPN-2F /  
Lubrication oil for rotating mechanism, ISO VG-10 /  
Lubrication oil for impact mechanism, ISO VG-32



6.35 Bit-sleeve type

With silencer

Accessories

Double-end bit : A14 ⊕ 2×65G / Air coupling : BPN-2F /  
Lubrication oil for rotating mechanism, ISO VG-10 /  
Lubrication oil for impact mechanism, ISO VG-32



No. GT-P6EXD

6.35 Bit-sleeve type

With silencer / Rear exhaust

Accessories

Double-end bit : A14 ⊕ 2×65G / Air coupling : BPB-2F /  
Lubrication oil for rotating mechanism, ISO VG-10 /  
Lubrication oil for impact mechanism, ISO VG-32

No. GT-P6LXD

6.35 Bit-sleeve type

With silencer / Rear exhaust

Accessories

Double-end bit : A14 ⊕ 2×65G / Air coupling : BPB-2F /  
Lubrication oil for rotating mechanism, ISO VG-10 /  
Lubrication oil for impact mechanism, ISO VG-32



#### Specifications

| รุ่น      | ค่าแรงบิด<br>N.m | ความเร็วรอบ<br>rpm | ความสิ้นเปลืองลม<br>m <sup>3</sup> /min | ความยาว<br>mm | น้ำหนัก<br>g | ขนาดสายลม |
|-----------|------------------|--------------------|---|---------------|--------------|-----------|
| GT-S4.5XD | 3.0-6.5          | 14,500             | 0.2                                     | 188           | 585          | G 1/4     |
| GT-PLXD   | 3.5-7.5          | 11,000-12,000      | 0.35                                    | 198.5         | 670          | G 1/4     |
| GT-P4.5XD | 3.0-6.5          | 14,000             | 0.2                                     | 170           | 735          | Rc 1/4    |
| GT-S6LXD  | 7.0-23.0         | 12,000             | 0.4                                     | 212           | 815          | G 1/4     |
| GT-P6LXD  | 7.5-23.0         | 12,500             | 0.45                                    | 184           | 876          | Rc 1/4    |
| GT-P6EXD  | 8.0-25.0         | 9,300              | 0.55                                    | 155           | 1,085        | Rc 1/4    |

\*Air pressure...6kg/cm<sup>2</sup> (85psi) \*Air hose bore diameter...6.35mm (1/4") \*Overall length...Accessory, hanger part not included.  
\*Weight...Accessories not included.

# AIR TOOLS

## AIR SCREWDRIVERS ไขควงลม

### TORQUE CONTROL, CLUTCH TYPE AUTOMATIC SUSPENSION BY TORQUE SET UP

MACHINE SCREW 2~2.5 mm

GT-S4TG



Ball spring retainer

6.35 mm

Push startup / Noise reducer /

Rear exhaust

Accessories



MACHINE SCREW Dia. 2.2~3 mm

GT-S4TS



Ball spring retainer

6.35 mm

Push startup / Noise reducer /

Rear exhaust

Accessories



MACHINE SCREW Dia. 3~4 mm

GT-S4TR



Ball spring retainer

6.35 mm

Push startup / Noise reducer /

Rear exhaust

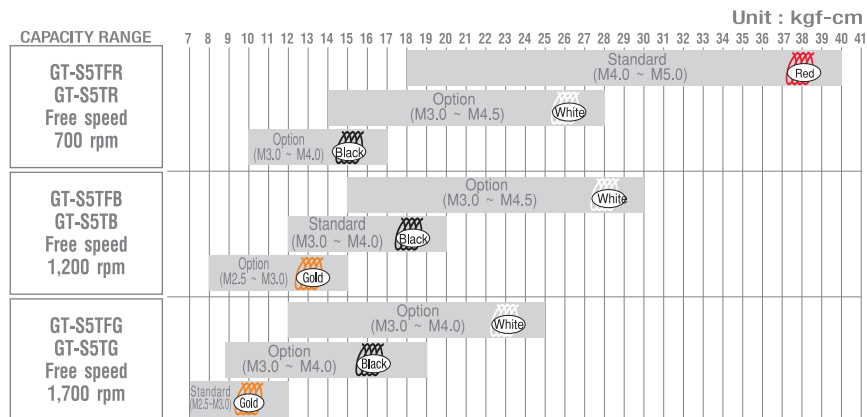
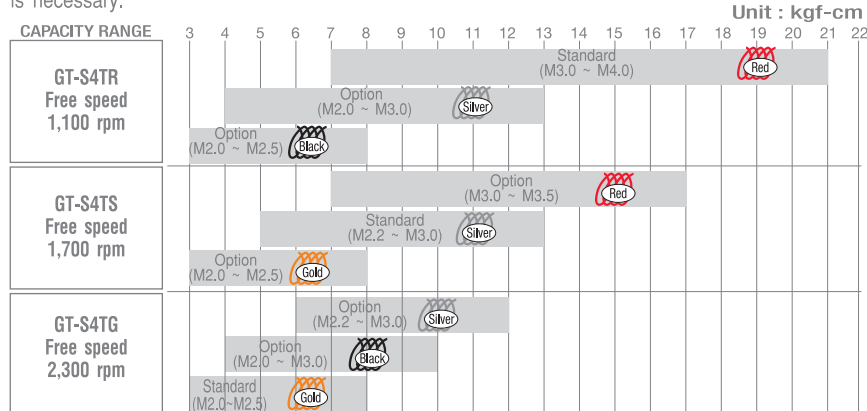
Accessories



GT-S4T series S4TR / S4TS / S4TG

Torque Spring Change

GT-S4T series are easy to adjust torque range only by replacing optional torque spring. Torque value of screw fastenings should be in the center of the torque range when adjusted. (see right) Also we will recommend you to choose larger freespeed when faster fastening is necessary.



#### Specifications

| รุ่น    | ค่าแรงบิด |          | ความเร็วรอบ<br>rpm | ความสิ้นเปลืองลม<br>m <sup>3</sup> /min | ความยาว<br>mm | น้ำหนัก<br>g | ขนาดสายลม |
|---------|-----------|----------|--------------------|---|---------------|--------------|-----------|
|         | N.m       | kgf cm   |                    |   |               |              |           |
| GT-S4TG | 0.3~0.8   | 3~8      | 2,300              | 0.28                                    | 215           | 650          | PF1/4     |
| GT-S4TS | 0.5~1.3   | 5~13     | 1,700              | 0.28                                    | 215           | 640          | PF1/4     |
| GT-S4TR | 0.7~2.0   | 7~21     | 1,100              | 0.28                                    | 215           | 650          | PT1/4     |
| GT-S5TS | 4.0~9.8   | 40~99.93 | 6,500              | 0.25                                    | 292           | 1,280        | PF1/4     |
| GT-S5TG | 0.7~1.1   | 7~12     | 1,700              | 0.35                                    | 260           | 920          | PT1/4     |
| GT-S5TR | 1.8~3.9   | 18~40    | 700                | 0.35                                    | 260           | 930          | PT1/4     |
| GT-S5TB | 1.2~1.9   | 12~20    | 1,200              | 0.35                                    | 260           | 910          | PT1/4     |

MACHINE SCREW Dia. 4.5~6 mm

GT-S5TG



Ball spring retainer 6.35 mm

Push startup / Noise reducer /  
Rear exhaust

Accessories



MACHINE SCREW Dia. 3~4 mm

GT-S5TB



Ball spring retainer 6.35 mm

Push startup / Noise reducer /  
Rear exhaust

Accessories



MACHINE SCREW Dia. 2.2~3 mm

GT-S5TR



Ball spring retainer 6.35 mm

Push startup / Noise reducer /  
Rear exhaust

Accessories



MACHINE SCREW 4.5~6 mm

GT-S5TS



Bit sleeve retainer IMPACT TYPE

(Pull type) 6.35 mm

Accessories



\*Air pressure...6kg/cm<sup>2</sup> (85psi) \*Air hose bore diameter...6.35mm (1/4") \*Overall

length...Accessory, hanger part not included.

\*Weight...Accessories not included.

# AIR TOOLS

## AIR IMPACT WRENCHES บล็อกลม

### LIGHTWEIGHT SERIES

Capacity and working torque are listed as listed as instead as instant reference and depends on operation conditions.

**MACHINE BOLT** Dia. 20 mm

GT-2000PF



Square drive size  
19 mm  
(Retainer ring)  
Rear exhaust / Noise reducer

Accessories BPB-2

**MACHINE SCREW** Dia. 25 mm

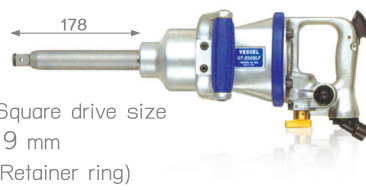
GT-2500PF



Square drive size  
19 mm  
(Retainer ring)  
Rear exhaust / Noise reducer

Accessories BPB-3

GT-2500LF



Square drive size  
19 mm  
(Retainer ring)

Accessories BPB-3

**MACHINE BOLT** Dia. 38 mm

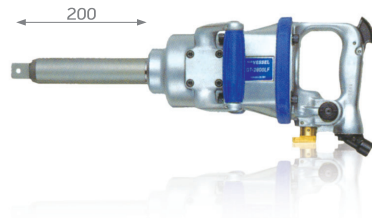
GT-3800PF



Square drive size  
25.4 mm  
(Pin-lock)

Accessories BPB-3

GT-3800LF



Square drive size  
25.4 mm  
(Pin-lock)

Accessories BPB-4

**MACHINE BOLT** Dia. 42 mm

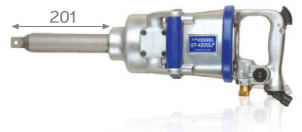
GT-4200PF



Square drive size  
25.4 mm  
(Pin-lock)

Accessories BPB-3

GT-4200LF



Square drive size  
25.4 mm  
(Pin-lock)

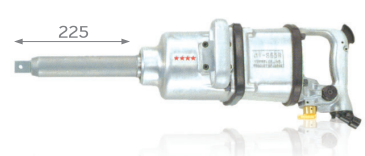
Accessories BPB-3

147

245

**MACHINE BOLT** Dia. 52 mm

GT-S55R



Square drive size  
25.4 mm  
(Pin-lock)

Noise reducer  
Accessories 1/2\"X1/2\"

| รุ่น      | ค่าแรงบิด<br>N-m | ความเร็วรอบ<br>rpm | ความสิ้นเปลืองลม<br>m <sup>3</sup> / min. | ความยาว<br>มม. | น้ำหนัก<br>กก. | ขนาดสายลม |
|-----------|------------------|--------------------|---|----------------|----------------|-----------|
| GT-2000PF | 98- 461          | 5,500              | 0.43                                      | 210            | 3.5            | PT1/4     |
| GT-2500PF | 147- 961         | 3,200              | 0.7                                       | 242            | 6.2            | PT3/8     |
| GT-2500LF | 245- 961         | 4,400              | 0.7                                       | 478            | 7.3            | PT3/8     |
| GT-3800PF | 343-1,569        | 3,500              | 0.8                                       | 254            | 9.2            | PT3/8     |
| GT-3800LF | 343-1,569        | 4,000              | 0.8                                       | 504            | 10.5           | PT1/2     |
| GT-4200PF | 343-1,863        | 2,500              | 1.0                                       | 297            | 11.5           | PT3/8     |
| GT-4200LF | 343-1,863        | 3,200              | 1.0                                       | 547            | 13.3           | PT3/8     |
| GT-S55R   | 343-2,450        | 2,800              | 1.2                                       | 610            | 17.0           | PT1/2     |

\* Air pressure...6kgf / cm<sup>2</sup> (85psi) \* Air hose bore diameter...9.5mm(3/8") for 2000PF,2500LF; 12.7mm(1/2") for 3800PF,3800LF,4200PF,4200LF,S55R  
\*Overall length...Accessories, hanger part not included. \* Weight...Accessories not included.

# AIR TOOLS

## AIR IMPACT WRENCHES บล็อกลม

### IMPACT TYPE V HAMMER SUPER LIGHTWEIGHT SERIES

สำหรับงานขันน็อตต่างๆ เครื่องมือกำลังสูงจึงทำให้ขันได้แน่น รวดเร็ว เบาแรง น้ำหนักเบา มีให้เลือกหลายรุ่นและหลายขนาดตามความเหมาะสมของงาน มีอุปกรณ์ ประกอบ อันได้แก่ ดอกไขควงและลูกบล็อกต่างๆ

**MACHINE BOLT** Dia. 16 mm

GT-1600VPX



Square drive size  
12.7 mm

Accessories BPB-2

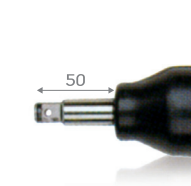
GT-1600VP



Square drive size  
12.7 mm

Accessories BPB-2

GT-1600VPL



Square drive size  
12.7 mm

Accessories BPB-2

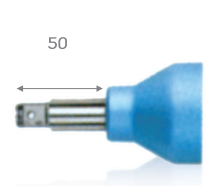
GT-1600VPH



Square drive size  
12.7 mm

Accessories BPB-2

GT-1600VPHL

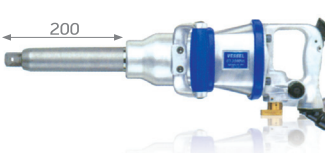


Square drive size  
12.7 mm

Accessories BPB-2

**MACHINE BOLT** Dia. 39 mm

GT-3900VL



Square drive size  
25.4 mm

Accessories BPB-4

GT-3900VP



Square drive size  
25.4 mm

Accessories BPB-3

GT-3900V

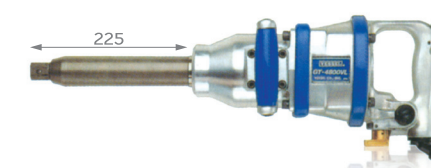


Square drive size  
25.4 mm

Accessories BPB-4

**MACHINE BOLT** Dia. 48 mm

GT-4800VL



Square drive size  
25.4 mm

Accessories 1/2\"X1/2\"

| รุ่น        | ค่าแรงบิด<br>N-m | ความเร็วรอบ<br>rpm | ความสิ้นเปลืองลม<br>m <sup>3</sup> / min. | ความยาว<br>มม. | น้ำหนัก<br>กก. | ขนาดสายลม |
|-------------|------------------|--------------------|---|----------------|----------------|-----------|
| GT-1600VPX  | 49~294.2         | 8,200              | 0.4                                       | 169            | 1.48           | PT1/4     |
| GT-1600VP   | 49~304           | 8,500              | 0.4                                       | 171            | 1.91           | PT1/4     |
| GT-1600VPL  | 49~304           | 8,500              | 0.4                                       | 199            | 1.95           | PT1/4     |
| GT-1600VPH  | 49~284           | 8,200              | 0.4                                       | 174.5          | 1.75           | PT1/4     |
| GT-1600VPHL | 49~284           | 8,200              | 0.4                                       | 202.5          | 1.8            | PT1/4     |
| GT-3900VP   | 490~1716         | 4,200              | 0.7                                       | 268            | 7.95           | PT1/2     |
| GT-3900V    | 490~1716         | 4,200              | 0.7                                       | 360.6          | 8.2            | PT1/2     |
| GT-3900VL   | 490~1716         | 4,200              | 0.7                                       | 524            | 8.95           | PT1/2     |
| GT-4800VL   | 343~2010         | 3,200              | 1.0                                       | 559            | 12.8           | PT1/2     |

\* Air pressure...8kgf / cm<sup>2</sup> (85-113psi) \* Air hose bore diameter...6.35mm(1/4") for 1600VP,1600VPL; 9.5mm(3/8") for 3900VP,3900V,3900VL; 12.7mm(1/2") for 4800VL  
\*Overall length...Accessories, hanger part not included. \* Weight...Accessories not included.

# AIR TOOLS

## AIR IMPACT WRENCHES บล็อกลม

### IMPACT TYPE SINGLE HAMMER

Capacity and working torque are listed as listed as instead as instant reference and depends on operation conditions.

MACHINE BOLT Dia. 6-8 mm

GT-S650



Square drive size  
9.5 mm  
(Retainer ring)

Accessories BPB-2

GT-P6II



Square drive size  
9.5 mm  
(Retainer ring)

Accessories BPB-2

GT-S600C



Square drive size  
9.5 mm  
(Ball-Lock)

Accessories BPB-2

MACHINE BOLT Dia. 8-10 mm

GT-P8II / GT-P8IIZ (W/Noise reducer)



Square drive size  
12.7 mm  
(Retainer ring)

Accessories BPB-2

MACHINE BOLT Dia. 14 mm

GT-P12 / GT-P12Z (W/Noise reducer)



Square drive size  
12.7 mm  
(Retainer ring)

Accessories BPB-2

| รุ่น     | ค่าแรงบิด<br>N-m | ความเร็วรอบ<br>rpm | ความสิ้นเปลืองลม<br>m <sup>3</sup> / min. | ความยาว<br>มม. | น้ำหนัก<br>กก. | ขนาดสายลม |
|----------|------------------|--------------------|---|----------------|----------------|-----------|
| GT-S650  | 49 - 121.6       | 7,500              | 0.35                                      | 210            | 1.33           | PT1/4     |
| GT-P6II  | 49 - 121.6       | 8,500              | 0.38                                      | 146            | 1.43           | PT1/4     |
| GT-S600C | 25 - 47          | 7,300              | 0.35                                      | 255            | 1.87           | PT1/4     |
| GT-P8II  | 49 - 259.8       | 7,500              | 0.4                                       | 166            | 1.89           | PT1/4     |
| GT-P8IIZ | 49 - 259.8       | 7,200              | 0.4                                       | 166            | 1.89           | PT1/4     |
| GT-P12   | 49 - 254.1       | 7,500              | 0.4                                       | 185            | 2.3            | PT1/4     |
| GT-P12Z  | 49 - 254.1       | 7,300              | 0.4                                       | 185            | 2.3            | PT1/4     |

\*Overall length...Accessories, hanger part not included. \* Weight...Accessories not included.

### ECONOMY SERIES

Capacity and working torque are listed as listed as instead as instant reference and depends on operation conditions.

MACHINE BOLT Dia. 14 mm

GT-1400P



Square drive size  
12.7 mm  
(Retainer ring)

Accessories BPB-2

MACHINE BOLT Dia. 16 mm

GT-1600P



Square drive size  
12.7 mm  
(Retainer ring)

Accessories BPB-2

MACHINE BOLT Dia. 20 mm

GT-2000P



Square drive size  
19 mm  
(Retainer ring)

Accessories BPB-2

GT-2000PL



Square drive size  
19 mm  
(Retainer ring)

Accessories BPB-2

| รุ่น      | ค่าแรงบิด<br>N-m | ความเร็วรอบ<br>rpm | ความสิ้นเปลืองลม<br>m <sup>3</sup> / min. | ความยาว<br>มม. | น้ำหนัก<br>กก. | ขนาดสายลม |
|-----------|------------------|--------------------|---|----------------|----------------|-----------|
| GT-1400P  | 49 - 294.1       | 7,000              | 0.35                                      | 182            | 2.25           | PT1/4     |
| GT-1600P  | 75 - 308.9       | 6,700              | 0.36                                      | 196            | 2.7            | PT1/4     |
| GT-2000PL | 98 - 441.3       | 4,700              | 0.45                                      | 354            | 4.7            | PT1/4     |

\*Overall length...Accessories, hanger part not included. \* Weight...Accessories not included.

# AIR TOOLS

## AIR IMPACT WRENCHES บล็อกลม

### ECONOMY SERIES

Capacity and working torque are listed as listed as instead as instant reference and depends on operation conditions.

Square drive size  
20 mm  
(Retainer ring)



Square drive size  
16 mm  
(Retainer ring)



Accessories BPB-2

| รุ่น      | ค่าแรงบิด<br>N-m                  | ความเร็วรอบ<br>rpm | ความสิ้นเปลืองลม<br>m <sup>3</sup> / min. | ความยาว<br>มม. | น้ำหนัก<br>กก. | ขนาดสายลม |
|-----------|-----------------------------------|--------------------|---|----------------|----------------|-----------|
| GT-1700BX | Forward 49 - 450 Reverse 75 - 500 | 7,000              | 0.9                                       | 192            | 2.2 kg         | PT1/4     |
| GT-1600JP | 50 - 220                          | 10,000             | 0.6                                       | 109            | 1.4            | PT1/4     |

\*Overall length...Accessories, hanger part not included. \* Weight...Accessories not included.

### TORQUE CONTROL TYPE ชนิดปรับความแน่นอัตโนมัติ

MACHINE BOLT Dia. 6-8 mm

GT-P6T



Square drive size  
9.5 mm  
(Retainer ring)

Accessories BPB-2

MACHINE BOLT Dia. 8-10 mm

GT-P8T



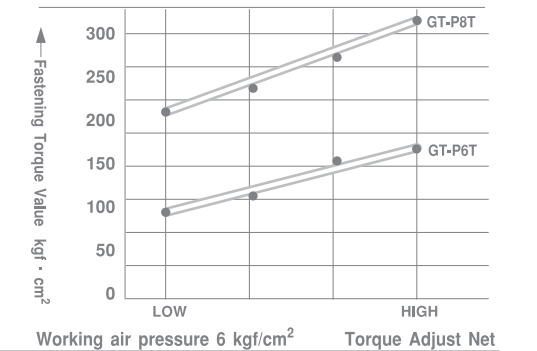
Square drive size  
12.7 mm  
(Retainer ring)

Accessories BPB-2

| รุ่น   | ค่าแรงบิด<br>N-m | ความเร็วรอบ<br>rpm | ความสิ้นเปลืองลม<br>m <sup>3</sup> / min. | ความยาว<br>มม. | น้ำหนัก<br>กก. | ขนาดสายลม |
|--------|------------------|--------------------|---|----------------|----------------|-----------|
| GT-P6T | 7.8 - 17.6       | 3,000              | 0.27                                      | 246            | 1.5            | PT1/4     |
| GT-P8T | 17.6 - 31.4      | 2,500              | 0.31                                      | 264            | 2.2            | PT1/4     |

\* Air pressure...6kgf / cm<sup>2</sup> (85 psi) \* Air hose bore diameter...6.35mm(1/4")  
\*Overall length...Accessories, hanger part not included. \* Weight...Accessories not included.

The figure showed in the right box is upon our standard torque tester. It is depending upon screws, bolts, nuts, material differences.



# AIR TOOLS

## AIR MICRO DIE GRINDERS เครื่องเจียร

เครื่องเจียร (AIR MICRO DIE GRINDERS) เหมาะสำหรับงานเจียรแม่พิมพ์ ตกแต่งผิวงานโลหะต่างๆ ความเร็วสูงทำให้เจียรได้เที่ยงตรง ได้งานละเอียด ระบบทำงานเงียบ ทำงานต่อเนื่องกันได้นาน ขนาดเล็กกะทัดรัด แต่แข็งแรงทนทาน

|              |              |
|--------------|--------------|
| GT-MG75SAR   | GT-MG75S     |
| GT-MG55SAR   | GT-MG25S     |
| GT-MG35-12CC | GT-MG35-12CR |
| GT-MG25-12CF | GT-MG25-12CR |
| GT-MG25-9CF  | GT-MG25-9CR  |

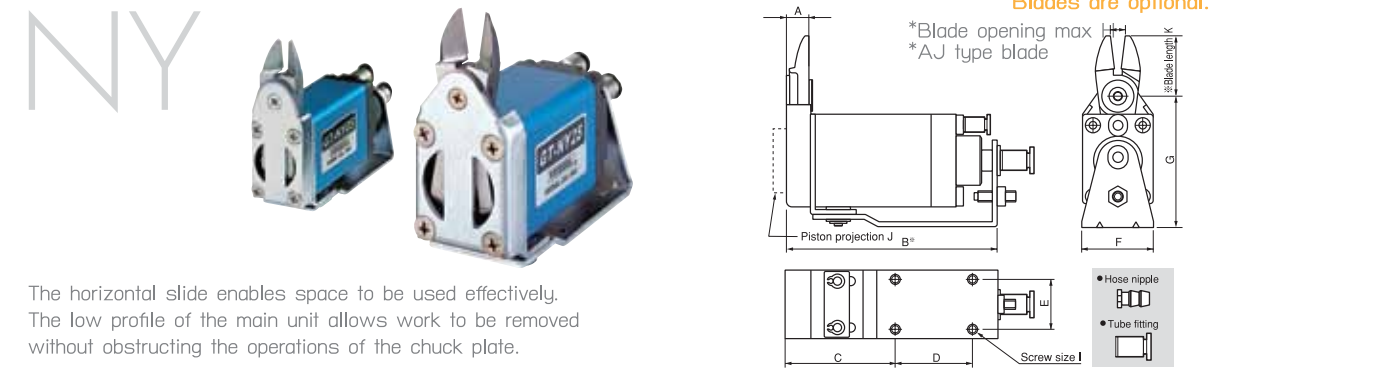
### Specifications

| รุ่น         | ขนาดแกนจับ dia.(mm) | ความเร็วรอบ (rpm) | ความสิ้นเปลืองลม (m <sup>3</sup> /min) | ความดันลม (kg/cm <sup>2</sup> ) | ความยาว (mm) | น้ำหนัก (g) | ข้อต่อท่อ |
|--------------|---------------------|-------------------|--|---------------------------------|--------------|-------------|-----------|
| GT-MG75SAR   | 3                   | 75,000            | 0.16                                   | 6                               | 156          | 180         | PT 1/4    |
| GT-MG75S     | 3                   | 75,000            | 0.16                                   | 6                               | 170          | 190         | PT 1/4    |
| GT-MG55SAR   | 3                   | 55,000            | 0.245                                  | 6                               | 178          | 260         | PT 1/4    |
| GT-MG25S     | 6                   | 25,000            | 0.175                                  | 6                               | 198          | 600         | PT 1/4    |
| GT-MG35-12CC | 3                   | 35,000            | 0.25                                   | 6                               | 183          | 305         | PT 1/4    |
| GT-MG35-12CR | 3                   | 35,000            | 0.16                                   | 6                               | 151          | 160         | PT 1/4    |
| GT-MG25-12CF | M7                  | 25,000            | 0.25                                   | 6                               | 181          | 315         | PT 1/4    |
| GT-MG25-9CF  | M7                  | 25,000            | 0.25                                   | 6                               | 173          | 310         | PT 1/4    |
| GT-MG25-12CR | M7                  | 25,000            | 0.16                                   | 6                               | 160          | 200         | PT 1/4    |
| GT MG25 9CR  | M7                  | 25,000            | 0.16                                   | 6                               | 143          | 200         | PT 1/4    |

# AIR NIPPERS

## FOR RESIN GATE

### GT-NY05/10/15/25 SLIDING AIR NIPPERS HORIZONTAL-TYPE



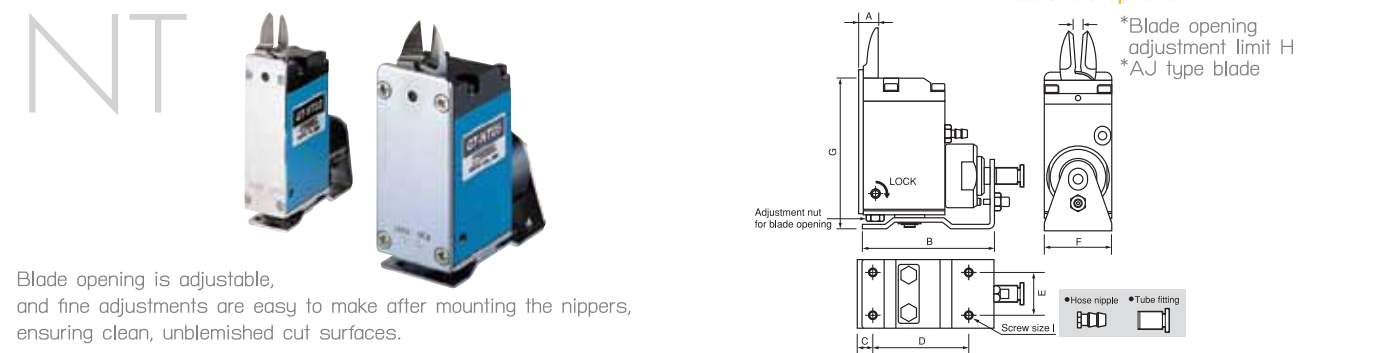
The horizontal slide enables space to be used effectively. The low profile of the main unit allows work to be removed without obstructing the operations of the chuck plate.

| Capacity φ (mm) | Capacity φ (mm) |              |        |            | Model No. | Size (mm) |      |    |    |    |      |   |    |   |    | Air Consumption (cm <sup>3</sup> /str.) | Weight (g) | Slide Distance (mm) | Hose Port                |
|-----------------|-----------------|--------------|--------|------------|-----------|-----------|------|----|----|----|------|---|----|---|----|---|------------|---------------------|--------------------------|
|                 | Soft Plastic    | Hard Plastic | Copper | Steel      |           | A         | B    | C  | D  | E  | F    | G | H  | I | J  |   |            |                     |                          |
| 3.0             | 2.0             | 1.6          | 1.0    | GT-NY05    | 8.6       | 75.9      | 40.9 | 25 | 15 | 23 | 47.6 | 4 | M4 | 3 | 22 | 48                                      | 155        | Pull 0~3            | W/hose nipple            |
| 3.0             | 2.0             | 1.6          | 1.0    | GT-NY05R   |           |           |      |    |    |    |      |   |    |   |    | 48                                      | 155        | Push 0~3            | Hose I.D. φ2.5mm         |
| 3.0             | 2.0             | 1.6          | 1.0    | GT-NY05-4  |           |           |      |    |    |    |      |   |    |   |    | 48                                      | 155        | Pull 0~3            | W/tube fitting           |
| 3.0             | 2.0             | 1.6          | 1.0    | GT-NY05R-4 |           |           |      |    |    |    |      |   |    |   |    | 48                                      | 155        | Push 0~3            | Hose I.D. φ2.5XO.D. φ4mm |
| 3.5             | 2.3             |              |        | GT-NY10    | 8.8       | 82.1      | 42.1 | 30 | 20 | 28 | 51.6 | 6 | M4 | 5 | 24 | 68                                      | 210        | Pull 0~3            | W/hose nipple            |
| 3.5             | 2.3             |              |        | GT-NY10R   |           |           |      |    |    |    |      |   |    |   |    | 68                                      | 210        | Push 0~3            | Hose I.D. φ2.5mm         |
| 3.5             | 2.3             |              |        | GT-NY10-4  |           |           |      |    |    |    |      |   |    |   |    | 68                                      | 210        | Pull 0~3            | W/tube fitting           |
| 3.5             | 2.3             |              |        | GT-NY10R-4 |           |           |      |    |    |    |      |   |    |   |    | 68                                      | 210        | Push 0~3            | Hose I.D. φ2.5XO.D. φ4mm |
| 4.0             | 2.6             |              |        | GT-NY15    | 10.2      | 93        | 48   | 35 | 25 | 33 | 58   | 8 | M4 | 5 | 27 | 136                                     | 319        | Pull 0~3            | W/hose nipple            |
| 4.0             | 2.6             |              |        | GT-NY15R   |           |           |      |    |    |    |      |   |    |   |    | 136                                     | 319        | Push 0~3            | Hose I.D. φ2.5mm         |
| 4.0             | 2.6             |              |        | GT-NY15-4  |           |           |      |    |    |    |      |   |    |   |    | 136                                     | 319        | Pull 0~3            | W/tube fitting           |
| 4.0             | 2.6             |              |        | GT-NY15R-4 |           |           |      |    |    |    |      |   |    |   |    | 136                                     | 319        | Push 0~3            | Hose I.D. φ2.5XO.D. φ4mm |
| 5.0             | 3.4             |              |        | GT-NY25    | 12.5      | 108.5     | 54.5 | 40 | 30 | 42 | 69   | 9 | M5 | 2 | 31 | 184                                     | 580        | Pull 0~5            | W/hose nipple            |
| 5.0             | 3.4             |              |        | GT-NY25R   |           |           |      |    |    |    |      |   |    |   |    | 184                                     | 580        | Push 0~5            | Hose I.D. φ4mm           |
| 5.0             | 3.4             |              |        | GT-NY25-6  |           |           |      |    |    |    |      |   |    |   |    | 184                                     | 580        | Pull 0~5            | W/tube fitting           |
| 5.0             | 3.4             |              |        | GT-NY25R-6 |           |           |      |    |    |    |      |   |    |   |    | 184                                     | 580        | Push 0~5            | Hose I.D. φ4XO.D. φ6mm   |

\*Air Pressure >>>0.4~0.5 MPa (NY25 type: 0.5~0.6)

\*B refers to the distance from the cut position for PUSH style models, and the distance from the start position for PULL style models.

### GT-NT03/05/10/20 SLIDING AIR NIPPERS VERTICAL-TYPE



Blade opening is adjustable, and fine adjustments are easy to make after mounting the nippers, ensuring clean, unblemished cut surfaces.

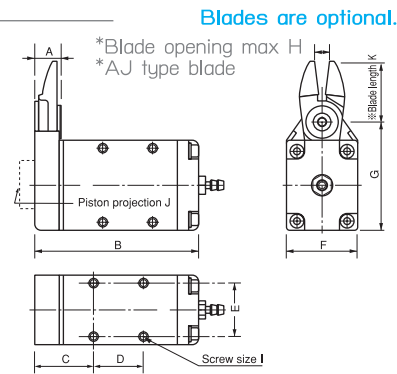
| Capacity φ (mm) | Capacity φ (mm) |              |        |            | Model No. | Size (mm) |    |    |    |    |       |       |    |         |     | Air Consumption (cm <sup>3</sup> /str.) | Weight (g)               | Slide Distance (mm) | Hose Port |
|-----------------|-----------------|--------------|--------|------------|-----------|-----------|----|----|----|----|-------|-------|----|---------|-----|---|--------------------------|---------------------|-----------|
|                 | Soft Plastic    | Hard Plastic | Copper | Steel      |           | A         | B  | C  | D  | E  | F     | G     | H  | I       |     |   |                          |                     |           |
| 1.5             | 1.0             |              |        | GT-NT03    | 9         | 62        | 7  | 43 | 14 | 19 | 68.1  | 1.5~3 | M3 | 0.4~0.5 | 178 | Pull 0~3                                | W/hose nipple            |                     |           |
| 1.5             | 1.0             |              |        | GT-NT03R   |           |           |    |    |    |    |       |       |    | 0.4~0.5 | 178 | Push 0~3                                | Hose I.D. φ2.5mm         |                     |           |
| 1.5             | 1.0             |              |        | GT-NT03-4  |           |           |    |    |    |    |       |       |    | 0.4~0.5 | 178 | Pull 0~3                                | W/tube fitting           |                     |           |
| 1.5             | 1.0             |              |        | GT-NT03R-4 |           |           |    |    |    |    |       |       |    | 0.4~0.5 | 178 | Push 0~3                                | Hose I.D. φ2.5XO.D. φ4mm |                     |           |
| 2.5             | 1.5             |              |        | GT-NT05    | 9         | 64        | 7  | 45 | 20 | 32 | 71.1  | 3~6   | M4 | 0.4~0.5 | 325 | Pull 0~3                                | W/hose nipple            |                     |           |
| 2.5             | 1.5             |              |        | GT-NT05R   |           |           |    |    |    |    |       |       |    | 0.4~0.5 | 325 | Push 0~3                                | Hose I.D. φ2.5mm         |                     |           |
| 2.5             | 1.5             |              |        | GT-NT05-4  |           |           |    |    |    |    |       |       |    | 0.4~0.5 | 325 | Pull 0~3                                | W/tube fitting           |                     |           |
| 2.5             | 1.5             |              |        | GT-NT05R-4 |           |           |    |    |    |    |       |       |    | 0.4~0.5 | 325 | Push 0~3                                | Hose I.D. φ2.5XO.D. φ4mm |                     |           |
| 3.5             | 2.3             |              |        | GT-NT10    | 11        | 73        | 8  | 53 | 24 | 38 | 88.1  | 4~7   | M4 | 0.4~0.5 | 515 | Pull 0~3                                | W/hose nipple            |                     |           |
| 3.5             | 2.3             |              |        | GT-NT10R   |           |           |    |    |    |    |       |       |    | 0.4~0.5 | 515 | Push 0~3                                | Hose I.D. φ2.5mm         |                     |           |
| 3.5             | 2.3             |              |        | GT-NT10-6  |           |           |    |    |    |    |       |       |    | 0.4~0.5 | 515 | Pull 0~3                                | W/tube fitting           |                     |           |
| 3.5             | 2.3             |              |        | GT-NT10R-6 |           |           |    |    |    |    |       |       |    | 0.4~0.5 | 515 | Push 0~3                                | Hose I.D. φ4XO.D. φ6mm   |                     |           |
| 5.0             | 3.4             |              |        | GT-NT20    | 14        | 103       | 10 | 80 | 28 | 44 | 102.1 | 4.5~9 | M5 | 0.5~0.6 | 930 | Pull 0~8                                | W/hose nipple            |                     |           |
| 5.0             | 3.4             |              |        | GT-NT20R   |           |           |    |    |    |    |       |       |    | 0.5~0.6 | 930 | Push 0~8                                | Hose I.D. φ4mm           |                     |           |
| 5.0             | 3.4             |              |        | GT-NT20-6  |           |           |    |    |    |    |       |       |    | 0.5~0.6 | 930 | Pull 0~8                                | W/tube fitting           |                     |           |
| 5.0             | 3.4             |              |        | GT-NT20R-6 |           |           |    |    |    |    |       |       |    | 0.5~0.6 | 930 | Push 0~8                                | Hose I.D. φ4XO.D. φ6mm   |                     |           |

\*Air Pressure >>>0.4~0.5 MPa

# AIR NIPPERS

FOR RESIN GATE

## GT-NF05/10/15 TYPE-F AIR NIPPERS

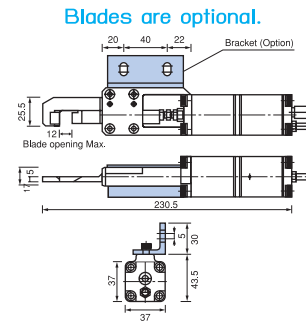


These compact, lightweight nippers have been designed for easy mounting inside equipment and to enable secure mounting under high-density mounting conditions.

| Capacity φ (mm) |              |        |       | Model No. | Size (mm) |      |      |    |    |    |      |   |      |   |    | Air Consumption (cm <sup>3</sup> /str.) | Weight (g) | Spec. & Size of the Hose Port          |
|-----------------|--------------|--------|-------|-----------|-----------|------|------|----|----|----|------|---|------|---|----|---|------------|--|
| Soft Plastic    | Hard Plastic | Copper | Steel |           | A         | B    | C    | D  | E  | F  | G    | H | I    | J | K  |   |            |  |
| 3.0             | 2.0          | 1.6    | 1.0   | GT-NF05   | 8.6       | 59.9 | 21.9 | 17 | 18 | 23 | 39.5 | 4 | M3   | 3 | 22 | 43                                      | 101        | W/hose nipple<br>Hose I.D. φ2.5mm×φ4mm |
| 3.5             | 2.3          | 1.7    | 1.1   | GT-NF10   | 8.8       | 65.1 | 23.1 | 20 | 22 | 28 | 43.5 | 6 | M3.5 | 5 | 24 | 63                                      | 143        |  |
| 4.0             | 2.6          | 1.8    | 1.2   | GT-NF15   | 10.2      | 73   | 25   | 25 | 26 | 33 | 48.5 | 8 | M4   | 5 | 27 | 128                                     | 219        |  |

\*Mounting screw for NF10 (M3.5) is regarded as spare part. \*Air Pressure▶▶0.4~0.5 MPa

## GT-NK10 THRUST-CUT AIR NIPPERS

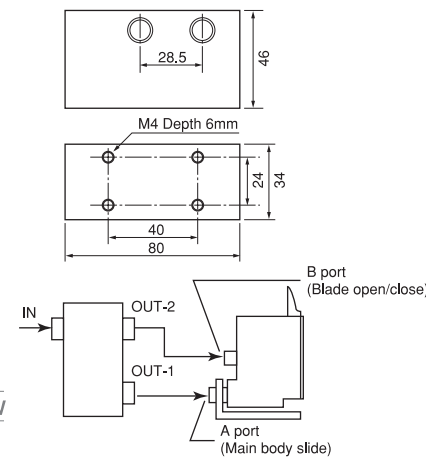
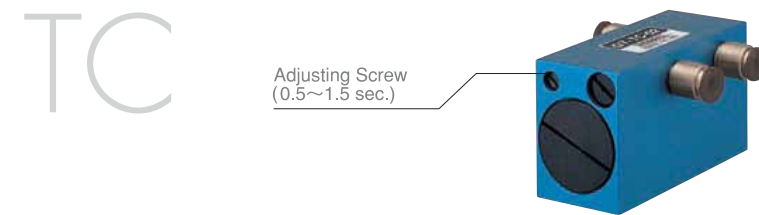


These nippers are equipped with a foot switch and are linked to high precision drivers, enabling the cutting of film-shaped gates from the thin end, preventing wrinkles around the cut.

| Capacity φ (mm) | Model No. | Air Consumption (cm <sup>3</sup> /str.) | Air Pressure (MPa) | Weight (g) | Applied Pressure (N) | Spec.&Size of the Hose Port |
|-----------------|-----------|---|--------------------|------------|----------------------|-----------------------------|
| 5               | GT-NK10   | 110                                     | 0.4~0.5            | 800        | 735                  | Hose I.D. φ2.5xO.D. φ4mm.   |

\*Hose Coupling: I.D.φ2.5xO.D. φ6 mm \*Piston Stroke▶▶Max. 12 mm

## GT-TC-02 TIMING CONTROLLER



Connected between the compressor and the air nippers, the timing controller enables adjustments to the slide and cutting timing. (Approximately 0.5 seconds to 1.5 seconds)

### Connectable nippers (Reference)

| No.                      | GT- | NY05 | NY10 | NY15 | NY25 | NT03 | NT05 | NT10 | NT20 | NB20 | NB30 | NB20LW | NB30LW |
|--------------------------|-----|------|------|------|------|------|------|------|------|------|------|--------|--------|
| Connectable unit numbers |     | 4    | 3    | 1    | 1    | 6    | 4    | 2    | 1    | 2    | 1    | 2      | 1      |

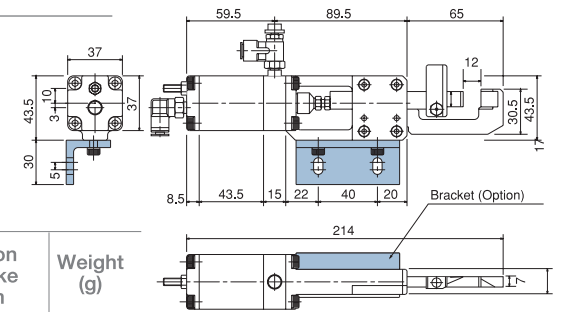
Working air pressure▶▶▶0.6MPa  
Size▶▶▶Height 46×Length80×thickness 34 (mm)  
Weight▶▶▶275g With tube joint: I.D. φ4×O.D. φ6 mm



# HEAT AIR NIPPERS

## GT-NKH10 HEAT AIR NIPPERS

# NKH



Speed control of cut speed and heater temperature allows for variable cutting surface solutions for extremely high precision cutting demands.

| Model No. | Cutting Capacity Width X thickness (mm) Acril | Blade Edge Temp. (MAX °C) | Cutting Cycle (sec/cut) | Air Consumption (cm <sup>3</sup> /str.) | Piston Stroke mm | Weight (g) |
|-----------|---|---------------------------|-------------------------|---|------------------|------------|
| GT-NKH10  | 7 x 1.5                                       | 200                       | 4 ~ 5                   | 73                                      | 12               | 715        |

\*Included Heater  
\*Included temperature sensor  
\*Air Pressure: 0.4 ~ 0.5MPa

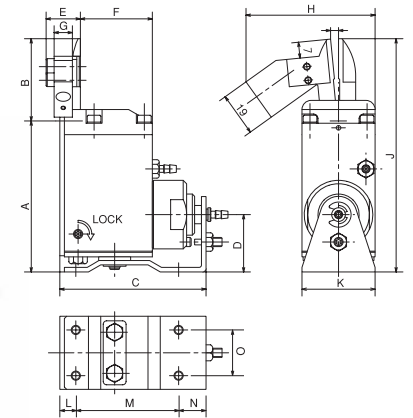
### Blades Specifications

| Model No.        | Material    | Blade Shape        | Blade Opening (mm) | Cutting blade effective (mm) | Weight (g) |
|------------------|-------------|--------------------|--------------------|------------------------------|------------|
| NKH10AJ/NKH10RAJ | Alloy Steel | Knife type (resin) | 12                 | 10                           | 137        |

Option Parts \*Temperature controller (DTC-001)

## GT-NTH05/10 HEAT AIR NIPPERS (Sliding, Vertical-Type)

# NTH



One blade is fixed in position, facilitating easy gate alignment. In addition, a slide function presses the product into position.

| Model No. | Cutting Capacity φ (mm) Acril | Blade Edge Temp. (MAX °C) | Cutting Cycle (sec/cut) | Air Consumption (cm <sup>3</sup> /str.) | Slide Distance (mm) | Weight (g) | Dimensions (mm) |    |    |      |      |      |   |      |     |       |    |   |    |    |    |    |
|-----------|-------------------------------|---------------------------|-------------------------|---|---------------------|------------|-----------------|----|----|------|------|------|---|------|-----|-------|----|---|----|----|----|----|
|           |                               |                           |                         |   |                     |            | A               | B  | C  | D    | E    | F    | G | H    | I   | J     | K  | L | M  | N  | O  | P  |
| GT-NTH05  | 2.5                           | 200                       | 4~5                     | 47                                      | 0~3                 | 325        | 66.1            | 36 | 64 | 25.1 | 15   | 31.5 | 8 | 56.5 | 3.5 | 102.1 | 32 | 7 | 45 | 12 | 20 | M4 |
| GT-NTH10  | 3.5                           | 200                       | 4~5                     | 82                                      | 0~3                 | 515        | 83              | 47 | 73 | 29   | 16.2 | 37.5 | 8 | 63   | 4.5 | 130   | 38 | 8 | 53 | 12 | 24 | M4 |

\*Included heater  
\*Included temperature sensor  
\*Air Pressure: 0.4 ~ 0.5MPa

### Blades Specifications

| Model No. | Material            | Blade Shape         | Blade Opening (mm) | Cutting blade effective (mm) | Weight (g) |
|-----------|---------------------|---------------------|--------------------|------------------------------|------------|
| NTH05AJ   | Special Alloy Steel | Nipper type (resin) | 3.5                | 15                           | 40         |
| NTH10AJ   | Special Alloy Steel | Nipper type (resin) | 4.5                | 17                           | 88         |

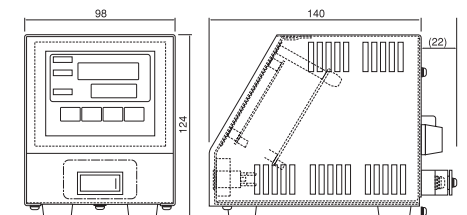
HTH type blade weight does not include heater and sensor.

Option Parts \*Temperature controller (DTC-001)

## DTC-001 BENCHTOP TEMPERATURE CONTROLLER

# DTC

The heating element can be connected directly to the main unit, a useful feature that saves labor during wiring installation. Compact construction enables the unit to be easily carried, allowing for changing the work site at any time.



Please inform us of the product number of the heat nipper when placing an order.

| Model No. | Temperature range Thermocouple K (°C) | Power supply (V) | Power consumption (with 100 VAC input)  | Ambient temperature and humidity (°C) | Protection fuse               | Weight (g) |
|-----------|---------------------------------------|------------------|---|---------------------------------------|-------------------------------|------------|
| DTC-001   | 0~200                                 | AC100~240        | Approx. 3W (Approx. 5VA) (With no load) | 0~40 RH 35~85% (No condensing)        | One 15A fuse is incorporated. | 900        |

\*Please ensure the input voltage in prior to operation as it is directly connected to the heater.  
\*Two types of heaters are available for 100V and 240V.

Option Parts \*Power supply cable: Model No. DTC-001-□-□

- : Cable for connection to the terminal block is necessary to be included.
- : (N/A) Cable not necessary.
- : 2m power cable w/Japanese type plug (A-type)
- : 2m power cable w/European type plug (C-type)
- : (N/A) Cable not necessary.

# AIR NIPPERS

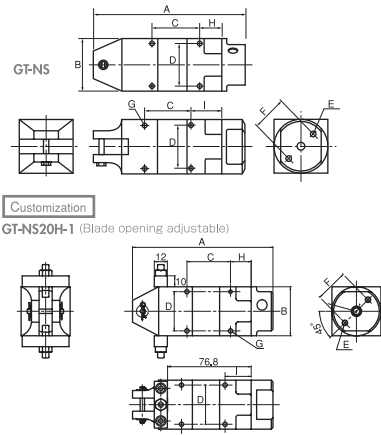
## GT-NS3/5/7/10L/20/30 SQUARE AIR NIPPERS

# NS

VESSEL provides a generous selection of blades for all wire cutting needs, including resin product gate cuts and automatic welding equipment.



Blades are optional.



Customization  
GT-NS20H-1 (Blade opening adjustable)

\*The position of air intake port is 180-degree rotatable.  
\*Two air intake ports are provided, so they can be switched depending on the mounting place.

| Capacity φ(mm) |              |        |       | Model No.  | Size (mm) |    |    |    |             |    |              |    | Air Consumption (cm³/str.) | Air Pressure (MPa) | Weight (g) | Hose coupling |       |
|----------------|--------------|--------|-------|------------|-----------|----|----|----|-------------|----|--------------|----|----------------------------|--------------------|------------|---------------|-------|
| Soft Plastic   | Hard Plastic | Copper | Steel |            | A         | B  | C  | D  | E           | F  | G            | H  |                            |                    |            |               | I     |
| 2.0            | 1.0          | 0.5    |       | GT-NS3     | 110       | 23 | 40 | 19 | M3 Depth 8  | 17 | M3 Depth 3.5 | 19 | 24                         | 45                 | 0.4~0.5    | 95            | Rc1/8 |
| 2.0            | 1.0          | 0.5    |       | GT-NS5     | 94        | 30 | 30 | 24 | M4 Depth 10 | 20 | M3 Depth 5   | 14 | 19                         | 64                 | 0.4~0.5    | 135           |       |
| 2.0            | 1.0          | 0.5    |       | GT-NS7     | 113       | 36 | 30 | 28 | M4 Depth 10 | 24 | M4 Depth 5.5 | 18 | 23                         | 116                | 0.4~0.5    | 215           |       |
| 3.0            | 2.0          | 1.6    | 1.0   | GT-NS10L   | 113       | 36 | 30 | 28 | M4 Depth 10 | 24 | M4 Depth 5.5 | 18 | 23                         | 116                | 0.4~0.6    | 215           |       |
| 4.0            | 2.6          | 1.8    | 1.2   | GT-NS20    | 129       | 45 | 40 | 36 | M5 Depth 12 | 30 | M4 Depth 7   | 19 | 24                         | 230                | 0.5~0.6    | 370           |       |
| 7.0            | 5.0          | 2.6    | 2.0   | GT-NS30    | 170       | 56 | 60 | 46 | M6 Depth 12 | 40 | M5 Depth 10  | 20 | 30                         | 584                | 0.5~0.6    | 685           |       |
| 10.0           | 6.5          | 3.3    | 2.8   | GT-NS20H-1 | 129       | 45 | 40 | 36 | M5 Depth 12 | 30 | M4 Depth 7   | 19 | 24                         | 230                | 0.5~0.6    | 455           |       |
| 7.0            | 5.0          | 2.6    | 2.0   |            |           |    |    |    |             |    |              |    |                            |                    |            |               |       |

\*Air hose inner dia. : 5mm \*Overall length/Weight: Accessories not included.

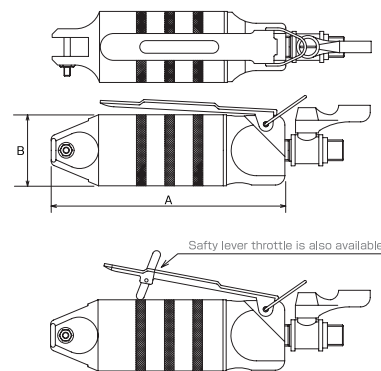
## GT-N3/5/7/10/12/20/30/50 HAND HELD AIR NIPPERS

# N

VESSEL's special order blades provide solutions for a virtually unlimited range of needs, leading to safer, and more efficient work with less fatigue.



Blades are optional.



\*N20, N30 and N50 have the air cock.

| Capacity φ(mm) |              |        |       | Model No. | Size (mm) |    | Air Consumption (cm³/str.) | Air Pressure (MPa) | Weight (g) | Body  | Hose coupling |
|----------------|--------------|--------|-------|-----------|-----------|----|----------------------------|--------------------|------------|-------|---------------|
| Soft Plastic   | Hard Plastic | Copper | Steel |           | A         | B  |                            |                    |            |       |               |
| 2.0            | 1.0          | 0.5    |       | GT-N3     | 112       | 23 | 45                         | 0.4~0.5            | 95         | Rc1/8 | Rc1/4         |
| 2.0            | 1.0          | 0.5    |       | GT-N5     | 103       | 30 | 64                         | 0.4~0.5            | 135        | Rc1/8 |               |
| 3.0            | 2.0          | 1.6    | 1.0   | GT-N7     | 123       | 34 | 116                        | 0.4~0.5            | 180        | Rc1/4 |               |
| 4.0            | 2.6          | 1.8    | 1.2   | GT-N10    | 132       | 34 | 116                        | 0.4~0.5            | 185        | Rc1/4 |               |
| 4.5            | 4.0          | 2.3    | 1.7   | GT-N12    | 142       | 36 | 116                        | 0.5~0.6            | 210        | Rc1/4 |               |
| 7.0            | 5.0          | 2.6    | 2.0   | GT-N20    | 156       | 45 | 230                        | 0.5~0.6            | 375        | Rc1/4 |               |
| 10.0           | 6.5          | 3.3    | 2.8   | GT-N30    | 193       | 56 | 584                        | 0.5~0.6            | 625        | Rc1/4 |               |
|                | 5.5          | 4.5    |       | GT-N50    | 237       | 75 | 1,170                      | 0.5~0.6            | 1,220      | Rc1/4 |               |

\*Hose coupling: R1/4 \*Air hose inner dia.: 5mm \*Overall length: Accessories, Hunger not included. \*Weight: Accessories not included.

# AIR NIPPERS

## GT-NR3/5/7/10L/20/30/50 AIR NIPPER ROUND-TYPE WITHOUT LEVER

# NR

Blades are optional.



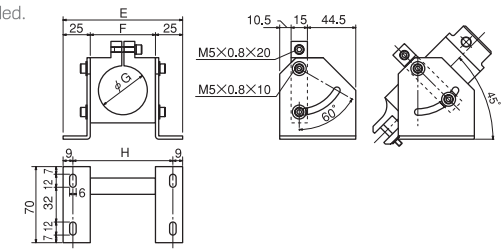
\*The position of air intake port is 180-degree rotatable.  
\*Two air intake ports are provided, so they can be switched depending on the mounting place.

| Capacity φ(mm) |              |        |       | Model No. | Size (mm) |    |    |             | Air Consumption (cm³/str.) | Air Pressure (MPa) | Weight (g) | Hose coupling |
|----------------|--------------|--------|-------|-----------|-----------|----|----|-------------|----------------------------|--------------------|------------|---------------|
| Soft Plastic   | Hard Plastic | Copper | Steel |           | A         | B  | C  | D           |                            |                    |            |               |
| 2.0            | 1.0          | 0.5    |       | GT-NR3    | 110       | 23 | 17 | M3 Depth 8  | 45                         | 0.4~0.5            | 70         | Rc1/8         |
| 2.0            | 1.0          | 0.5    |       | GT-NR5    | 94        | 30 | 20 | M4 Depth 10 | 64                         | 0.4~0.5            | 110        |               |
| 3.0            | 2.0          | 1.6    | 1.0   | GT-NR7    | 113       | 34 | 22 | M4 Depth 10 | 116                        | 0.4~0.5            | 150        |               |
| 4.0            | 2.6          | 1.8    | 1.2   | GT-NR10L  | 113       | 36 | 24 | M4 Depth 10 | 116                        | 0.4~0.6            | 215        |               |
| 7.0            | 5.0          | 2.6    | 2.0   | GT-NR20   | 129       | 45 | 30 | M5 Depth 12 | 230                        | 0.5~0.6            | 280        |               |
| 10.0           | 6.5          | 3.3    | 2.8   | GT-NR30   | 165       | 56 | 40 | M6 Depth 12 | 584                        | 0.5~0.6            | 505        |               |
| 12.0           | 6.5          | 5.5    | 4.5   | GT-NR50   | 222       | 75 | 50 | M8 Depth 12 | 1,170                      | 0.5~0.6            | 1,190      |               |

\*Air hose inner dia. : 5mm \*Overall length/Weight: Accessories not included.

### Stand

| Model No.       | Size (mm) |     |    |     | Weight (g) |
|-----------------|-----------|-----|----|-----|------------|
|                 | E         | F   | F  | H   |            |
| NR10LST         | 102       | 52  | 36 | 84  | 335        |
| NR20ST          | 110       | 60  | 45 | 92  | 385        |
| NR30ST          | 130       | 80  | 56 | 112 | 535        |
| NR50ST (Option) | 150       | 100 | 75 | 132 | 835        |



## P-10L/20/30/50 EXTRA PRESSURE BOOSTERS

This unit is to be used in case the originally required pressure is not obtainable by the limit of space and air pressure.



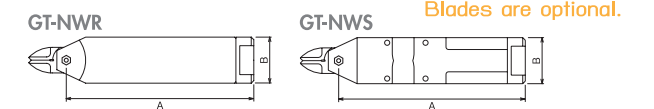
| Capacity φ(mm) |              |        |       | Applicable Mode   | Model No. | Size (mm) |    | Air Consumption (cm³/str.) | Air Pressure (MPa) | Weight (g) |
|----------------|--------------|--------|-------|-------------------|-----------|-----------|----|----------------------------|--------------------|------------|
| Soft Plastic   | Hard Plastic | Copper | Steel |                   |           | A         | B  |                            |                    |            |
| 5.0            | 4.0          | 2.6    | 1.6   | NS10L, NR10L, N12 | P-10L     | 71        | 36 | 223                        | Up to 0.4 MPa      | 115        |
| 8.0            | 6.0          | 3.0    | 2.2   | N20, NS20, NR20   | P-20      | 87        | 45 | 508                        | Up to 0.5 MPa      | 215        |
| 13.0           | 7.0          | 4.8    | 4.0   | N30, NS30, NR30   | P-30      | 92        | 56 | 956                        | Up to 0.5 MPa      | 330        |
|                |              | 6.5    | 5.5   | N50, NR50         | P-50      | 133       | 75 | 2,670                      | Up to 0.5 MPa      | 840        |

\*Above figures of overall length and the weight are defined for the extra booster specs only. And these figures in the installation.

## GT-NWR10/20/30 GT-NWS1/10/20 DOUBLE ACTION AIR NIPPERS

Patented

# NWR · NWS



Blade opening and closing is air piston driven. Having no spring mechanism in the main unit facilitates maintenance operations.



| Model No.   | Capacity φ (mm) |       |             | Air Consumption (cm³/str.) | Applied Pressure (N) | Air Pressure (MPa) | Size (mm) |     | Weight (g) |
|---|-----------------|-------|-------------|----------------------------|----------------------|--------------------|-----------|-----|------------|
|   | Copper          | Steel | ABS Plastic |                            |                      |                    | A         | B   |            |
| Double Action Air Scissors (Round Type without Lever) |                 |       |             |                            |                      |                    |           |     |            |
| GT-NWR10  | 1.8             | 1.2   | 4.0         | 116                        | 588                  | 0.4~0.5            | 146       | φ36 | 280        |
| GT-NWR20  | 2.6             | 2.0   | 6.5         | 230                        | 1,372                | 0.5~0.6            | 165       | φ45 | 523        |
| GT-NWR30  | 3.3             | 2.8   | 9.5         | 584                        | 2,744                | 0.5~0.6            | 216       | φ56 | 980        |

| Double Action Air Scissors (Round Type without Lever) |     |     |     |     |       |         |     |       |     |
|---|-----|-----|-----|-----|-------|---------|-----|-------|-----|
| GT-NWS1   | 1.0 | 0.5 | 2.0 | 45  | 294   | 0.4~0.5 | 96  | 23x20 | 116 |
| GT-NWS10  | 1.8 | 1.2 | 4.0 | 116 | 588   | 0.4~0.5 | 146 | 36x36 | 356 |
| GT-NWS20  | 2.6 | 2.0 | 6.5 | 230 | 1,372 | 0.5~0.6 | 165 | 45x45 | 610 |



# BLADES FOR AIR NIPPERS

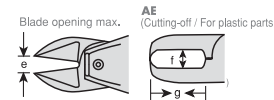
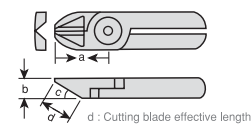
## Blade for NS, NR, N

BLADE TYPE

| No.              | N10L | A | S |
|------------------|------|---|---|
| Air Nipper       |      |   |   |
| Applicable model |      |   |   |

**Blade Shape**

- AS : Standard
- HS : Standard (High Speed Steel)
- AG : Strong Cutting
- ACD : Crimping
- BJ : Straight
- BFB : Clipper (Sintered Alloy)
- BBB : Strong Cutting (Sintered Alloy)
- AP : Plastic, Standard
- AJ : Plastic, Straight Thin
- PF : Plastic, Flat Cutting
- AJL : Plastic, Straight Long
- AE : Plastic, Cutting-off
- AJB : Plastic, Straight (Sintered Alloy)
- AH : Plastic, Crank
- AML : Plastic, Leftward cutting
- AMR : Plastic, Rightward cutting



\*Material (Cutting Blade)

- ... Sintered Alloy: Hardest, most durable material. For cutting hard steel wire, glass fiber-reinforced resin, etc.
- ... High Speed Steel: When more durability than special steel alloy is needed, such as to cut piano wire.

|   |   |
|---|---|
| <b>AS</b> Standard type Ordinary blades for cutting copper wire and steel wire. | <b>HS</b> High speed steel brazed for durability. |
| <b>N50AS</b> For metal cutting  | For metal cutting                                 |
| <b>AG</b> Shorter than the standard type for greater strength.                  | <b>ACD</b> For crimping.                          |
| For metal cutting   | For metal cutting                                 |

|   |   |   |   |  |   |
|---|---|---|---|--|---|
| <b>BJ</b> Only one blade is edged for cutting metal wires.                | <b>BFB</b> Clipper type blades with ultra hard carbide tips.                  | <b>BBB</b> These blades have ultra hard carbide tips.             | <b>AP</b> Standard blades used for cutting resin. | <b>AJ</b> Vertical blades whose cutting edges are not angled.                        | <b>PF</b> These blades produce a flat cut, and are used for cutting resin.            |
| For metal cutting   | For metal cutting   | For metal cutting   | For resin cutting                                 | For resin cutting  | For resin cutting   |
| <b>AJL</b> In case there is a long distance between nipper body and gate. | <b>AE</b> For many gate treatments such as over-fit gate, modified gate, etc. | <b>AJB</b> Carbide tipped blades suitable for cutting hard resin. | <b>AH</b> Cramped blades for resin cutting.       | <b>AML</b> These blades have a 90° angle to the left and are used for cutting resin. | <b>AMR</b> These blades have a 90° angle to the right and are used for cutting resin. |
| For resin cutting   | For resin cutting   | For resin cutting   | For resin cutting                                 | For resin cutting  | For resin cutting   |

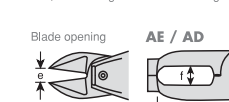
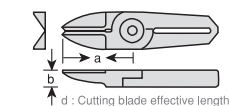
## STANDARD BLADES FOR SLIDING AIR NIPPER

BLADE TYPE

| No.              | N10 | A | J |
|------------------|-----|---|---|
| Air Nipper       |     |   |   |
| Applicable model |     |   |   |

**Blade Shape**

- AJ : Plastic, Straight
- AJL : Plastic, Straight long
- AJT : Plastic, Straight thin
- AE : Plastic, Cutting off
- AJY : Plastic, Recessed straight
- AD : Plastic, Over-ride
- AH : Plastic, Crank
- AJB : Plastic, Straight (Sintered Alloy)
- AJV : Plastic, Straight V-shaped
- AJH : Plastic, Straight (High Speed Steel)
- BJ : Metal, Straight
- RAJ : Plastic, Straight Reversed
- RAH : Plastic, Crank Reversed
- RBJ : Metal, Straight Reversed



... Sintered Alloy ... High Speed Steel

|   |  |  |   |  |   |
|---|--|--|---|--|---|
| <b>AJ</b> Vertical blades whose cutting edges are not angled. | <b>AJL</b> In case there is a long distance between nipper body and gate.                            | <b>AJT</b> Blade section is thin enabling beautiful finish of surface.         | <b>AE</b> For many gate treatments such as Over-fit gate, modified gate, etc. | <b>AJY</b> In case the required gate width is small and ordinary blade is thick excessively. | <b>AD</b> In case multi-dimensional de-getting is required. |
| For resin cutting   | For resin cutting  | For resin cutting  | For resin cutting   | For resin cutting  | For resin cutting   |
| <b>AH</b> Cramped blades for resin cutting.                   | <b>AJB</b> Carbide tipped blades for cutting hard resin.   | <b>AJV</b> In case cutting surface is curve and cutting face should be smooth. | <b>AJH</b> HSS tipped blades suitable for cutting hard resin works.           | <b>NK10AJ</b>  |   |
| For resin cutting   | For resin cutting  | For resin cutting  | For resin cutting   | For resin cutting  |   |
| <b>RAJ</b> Reversed AJ blades                                 | <b>RAH</b> Reversed AH blades to be employed when a pair of nipper bodies is installed face-to-face. | <b>BJ</b> Only one blade is edged for cutting metal wires.                     | <b>RBJ</b> Reversed BJ blades.  |  |   |
| For resin cutting   | For resin cutting  | For metal cutting  | For metal cutting   |  |   |

d: Cutting blade effective length --- 10.3 mm  
e: Max. blade opening --- 12 mm

| Material            | Shape                          | Weight (g) |
|---------------------|--------------------------------|------------|
| Special alloy steel | For metal cutting (Knife type) | 96         |

# AIR TOOLS

## AIR BLOW GUN ปืนฉีดลม

สำหรับเป่าลมทำความสะอาด เป่าแห้ง มีให้เลือกหลายแบบ ตามความต้องการใช้งาน  
Air blowing and drying for metal forming, automobile repair, molding milling, etc.

### APPLICABLE FOR DUSTING METAL,

### WOOD CUT-OFF ARTICLES AND DRYING WET PAINT

Standard Nozzle  
AD-2 0N

Long Nozzle  
AD-2 100N



Designed for Pinpointed Blowing

25° Degree Long Nozzle  
AD-2 100A

### SOFT RUBBER ADAPTER FOR SAFETY BLOWING

Nozzle with soft rubber tip

Rubber Tip Nozzle  
AD-2 0R

Rubber Tip Long Nozzle  
AD-2 100R

### SAFETY, CALM AND SOFT BLOWING

Widely spreads air safe and quiet

Safety By-Pass Nozzle  
AD-2 0S

Safety By-Pass Long Nozzle  
AD-2 100S

### LOW PRESSURED BUT

### FOR LARGE AIR FLOW

High Volume Nozzle  
AD-2 0M

Air flow booster type Venturi nozzle emits air to wider range 2.5 times more emission than #0N type

### MADE PLATE PREVENTS

### DUST AND DEBURRINGS FLYING

Chip Shield Long Nozzle  
AD-2 100P

Transparent resin plate shuts out the spreading of cutting dust

### AIR SCREEN BLOW PREVENTS DUST

### AND ARTICLES REFLECTED

Air Screen Nozzle  
AD-2 0C

Air curtain shuts out the spreading of oil, moisture and cutting dust

| Model No. | Nozzle length              | Nozzle length | O. A. L. |          | Weight |      | Air consumption at 5 Kg/cm <sup>2</sup> | Pack/Box Size   | Exterior |
|-----------|----------------------------|---------------|----------|----------|--------|------|---|-----------------|----------|
|           |                            | mm.           | mm       | in.      | g.     | lb.  | l/min                                   | mm.             |          |
| AD-2 0N   | Standard nozzle            | 0             | 145      | 5 23/32  | 116    | 0.27 | 135                                     | 152X232X30      | 10       |
| AD-2 100N | Long nozzle                | 100           | 242      | 9 1/2    | 124    | 0.27 | 135                                     | 182X232X30      | 10       |
| AD-2 200N | Long nozzle                | 200           | 342      | 13 15/32 | 132    | 0.29 | 135                                     | (Box)140X455X30 | 1        |
| AD-2 300N | Long nozzle                | 300           | 442      | 19 3/8   | 140    | 0.31 | 135                                     | (Box)140X455X30 | 1        |
| AD-2 100A | 25° Degree long nozzle     | 100           | 242      | 9 1/2    | 124    | 0.27 | 135                                     | 182X232X30      | 10       |
| AD-2 0R   | Rubber tip nozzle          | 0             | 155.5    | 6 1/8    | 118    | 0.26 | 115                                     | 152X232X30      | 10       |
| AD-2 100R | Rubber tip long nozzle     | 100           | 227      | 8 5/16   | 141    | 0.31 | 115                                     | 182X232X30      | 10       |
| AD-2 0S   | Safety by-pass nozzle      | 0             | 155.5    | 6 1/8    | 124    | 0.27 | 105                                     | 152X232X30      | 10       |
| AD-2 100S | Safety by-pass long nozzle | 100           | 239.5    | 9 3/8    | 130    | 0.29 | 105                                     | 182X232X30      | 10       |
| AD-2 100P | Chip shield long nozzle    | 100           | 242      | 9 1/2    | 149    | 0.33 | 135                                     | 182X232X30      | 10       |
| AD-2 0M   | High volume nozzle         | 0             | 160      | 6 9/32   | 121    | 0.27 | 185                                     | 152X232X30      | 10       |
| AD-2 0C   | Air screen nozzle          | 0             | 145      | 5 23/32  | 117    | 0.26 | 260                                     | 152X232X30      | 10       |

\*Power source...Compressed air \*Max. working pressure...9.9kg/cm<sup>2</sup>(140 psi) \*Working temperature range...0~60°C (32~140°F) \*Air Inlet screw diameter...PT1/4 \*Working air hose I.D...more than O4mm \*Apply locally sold air coupling to this air inlet fitting (PT 1/4 male screw). \*Pre-packed (200N/300N in paper box

## ปืนฉีดลม AIR BLOW GUN AIR PENGUIN Serie



MODEL AD-4 N

### TECHNICAL DATA

|                      |                    |
|----------------------|--------------------|
| Max Working Pressure | 0.7 MPa            |
| Working temperature  | 0°C ~ 60°C         |
| Weight               | 245g               |
| Dimensions           | W125 mm x H145 mm  |
| Intel                | G1/4               |
| Material             | Housing → Aluminum |

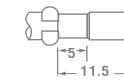
# BITS & SOCKETS

## PRECISION BITS

### BITS FOR PRECISION SCREWS

ดอกไขควงสำหรับขันสกรูขนาดเล็ก

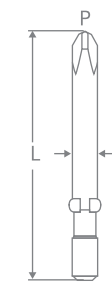
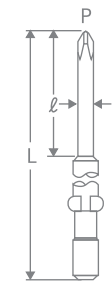
ดอกไขควง เวสเซล สำหรับทุกงานที่มีขันสกรูหรือน็อต มีให้เลือกหลายแบบ เช่น ดอกไขควงสี่แฉก, ปากแบนและลูกบิดค แล้วแต่ลักษณะของงานที่จะใช้



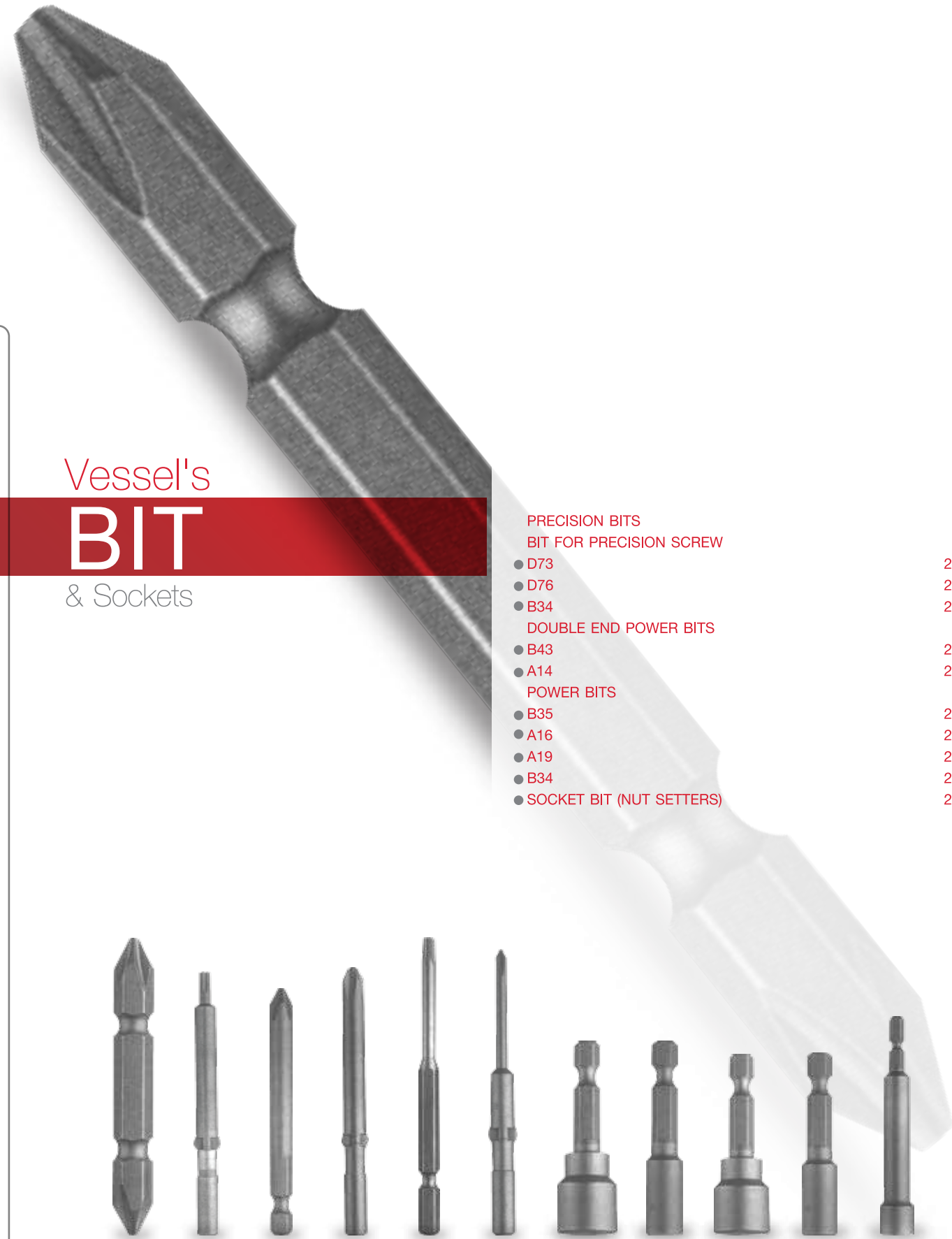
4mm SHANK DRIVE

FOR : DELVO (DENSEL), HIOS (FERRA TOOLS)

⊕ = CROSS POINT =



| EDP #      | MODEL # | P x d x l x L |
|------------|---------|---------------|
| 488005-101 | D73     | 00x1.2x20x 40 |
| 488005-102 | D73     | 00x1.2x20x 60 |
| 483001     | D73     | 00x1.5x20x 40 |
| 483002     | D73     | 00x1.5x20x 60 |
| 488005-103 | D73     | 00x1.7x20x 40 |
| 488005-104 | D73     | 00x1.7x20x 60 |
| 483005     | D73     | 00x 2 x20x 40 |
| 483006     | D73     | 00x 2 x20x 60 |
| 488005-105 | D73     | 00x 2 x20x 80 |
| 488005-106 | D73     | 00x 2 x25x 40 |
| 488005-107 | D73     | 00x 2 x25x 60 |
| 488005-108 | D73     | 00x 2 x25x 80 |
| 488005-109 | D73     | 00x 2 x30x 60 |
| 488005-110 | D73     | 00x 2 x30x 80 |
| 488005-111 | D73     | 00x 2 x30x100 |
| 488005-112 | D73     | 00x 2 x40x 60 |
| 488005-113 | D73     | 00x 2 x40x 80 |
| 488005-114 | D73     | 00x 2 x40x100 |
| 488005-115 | D73     | 0x1.4x20x 40  |
| 488005-116 | D73     | 0x1.4x20x 60  |
| 488005-117 | D73     | 0x1.4x20x 80  |
| 488005-118 | D73     | 0x1.4x30x 60  |
| 488005-119 | D73     | 0x1.4x30x 80  |
| 488005-120 | D73     | 0x1.4x30x100  |
| 483010     | D73     | 0x1.7x20x 40  |
| 483011     | D73     | 0x1.7x20x 60  |
| 488005-121 | D73     | 0x1.7x30x 60  |
| 488005-122 | D73     | 0x1.7x40x 80  |
| 488005-123 | D73     | 0x 2 x20x 40  |
| 488005-124 | D73     | 0x 2 x20x 60  |
| 488005-125 | D73     | 0x 2 x20x 80  |
| 488005-126 | D73     | 0x 2 x20x100  |
| 488005-127 | D73     | 0x 2 x30x 80  |
| 488005-128 | D73     | 0x 2 x30x100  |
| 483015     | D73     | 0x2.5x20x 40  |
| 483016     | D73     | 0x2.5x20x 60  |
| 488005-129 | D73     | 0x2.5x20x 80  |
| 488005-130 | D73     | 0x2.5x20x100  |
| 488005-131 | D73     | 0x2.5x30x 80  |
| 488005-132 | D73     | 0x2.5x30x100  |
| 488005-133 | D73     | 0x 3 x20x 40  |
| 488005-134 | D73     | 0x 3 x20x 60  |
| 488005-135 | D73     | 0x 3 x20x 80  |
| 488005-136 | D73     | 0x 3 x20x100  |
| 488005-137 | D73     | 0x 3 x30x 80  |
| 488005-138 | D73     | 0x 3 x30x100  |
| 488005-139 | D73     | 0x 4 x 40     |
| 488005-140 | D73     | 0x 4 x 60     |



Vessel's  
**BIT**  
& Sockets

PRECISION BITS  
BIT FOR PRECISION SCREW

- D73 2/20
- D76 2/22
- B34 2/23

DOUBLE END POWER BITS

- B43 2/24
- A14 2/24

POWER BITS

- B35 2/26
- A16 2/27
- A19 2/27
- B34 2/28

- SOCKET BIT (NUT SETTERS) 2/29

**VESSEL**

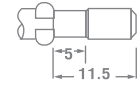
# BITS & SOCKETS

## PRECISION BITS

### BITS FOR PRECISION SCREWS

ดอกไขควงสำหรับขันสกรูขนาดเล็ก

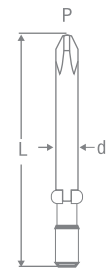
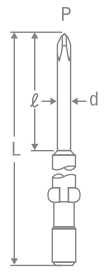
ดอกไขควง เวสเซล สำหรับทุกงานที่มีขันสกรูหรือน็อต มีให้เลือกหลายแบบ เช่น ดอกไขควงสี่แฉก, ปากแบนและลูกบล็อค แล้วแต่ลักษณะของงานที่จะใช้



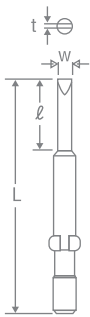
4mm SHANK DRIVE

FOR : DELVO (DENSEL), HIOS (FERRA TOOLS)

⊕ = CROSS POINT =



⊖ = PLAIN SLOT =



| EDP #      | MODEL # | P x d x l x L  |
|------------|---------|----------------|
| 488005-141 | D73     | 1x2.2x20x 40   |
| 488005-142 | D73     | 1x2.2x30x 60   |
| 488005-143 | D73     | 1x2.5x20x 40   |
| 488005-144 | D73     | 1x2.5x20x 60   |
| 488005-145 | D73     | 1x2.5x30x 60   |
| 488005-146 | D73     | 1x2.5x30x 80   |
| 488005-147 | D73     | 1x2.5x30x100   |
| 483021     | D73     | 1x 3 x20x 40   |
| 488005-148 | D73     | 1x 3 x20x 60   |
| 488005-149 | D73     | 1x 3 x20x 80   |
| 488005-150 | D73     | 1x 3 x20x100   |
| 488005-151 | D73     | 1x 3 x30x 60   |
| 488005-152 | D73     | 1x 3 x30x 80   |
| 488005-153 | D73     | 1x 3 x30x100   |
| 483025     | D73     | 1x 4 x 40      |
| 488005-154 | D73     | 1x 4 x 60      |
| 488005-155 | D73     | 1x 4 x 80      |
| 488005-156 | D73     | 1x 4 x 100     |
| 488005-157 | D73     | 1x 4 x 120     |
| 488005-158 | D73     | 2x 3 x20x 40   |
| 488005-159 | D73     | 2x 3 x20x 60   |
| 488005-160 | D73     | 2x 3 x20x 80   |
| 488005-161 | D73     | 2x 3 x30x 60   |
| 488005-162 | D73     | 2x 3 x30x 80   |
| 488005-163 | D73     | 2x 3 x30x100   |
| 488005-164 | D73     | 2x 3 x30x120   |
| 483031     | D73     | 2x 4 x 40      |
| 488005-165 | D73     | 2x 4 x 60      |
| 488005-166 | D73     | 2x 4 x 80      |
| 488005-167 | D73     | 2x 4 x 100     |
| 488005-168 | D73     | 2x 4 x 120     |
| EDP #      | MODEL # | W x t x l x L  |
| 488005-169 | D73     | 1.1x0.28x20x40 |
| 488005-170 | D73     | 1.1x0.28x20x60 |
| 488005-171 | D73     | 1.1x0.28x20x80 |
| 488005-172 | D73     | 1.3x0.28x20x40 |
| 488005-173 | D73     | 1.3x0.28x20x60 |
| 488005-174 | D73     | 1.3x0.28x20x80 |
| 488005-175 | D73     | 1.5x0.30x20x40 |
| 488005-176 | D73     | 1.5x0.30x20x60 |
| 488005-177 | D73     | 1.5x0.30x20x80 |
| 488005-178 | D73     | 1.7x0.30x20x40 |
| 488005-179 | D73     | 1.7x0.30x20x60 |
| 488005-180 | D73     | 1.7x0.30x20x80 |
| 488005-181 | D73     | 1.8x0.40x20x40 |
| 488005-182 | D73     | 1.8x0.40x20x60 |
| 488005-183 | D73     | 1.8x0.40x20x80 |
| 488005-184 | D73     | 2 x0.40x20x40  |
| 488005-185 | D73     | 2 x0.40x20x60  |
| 488005-186 | D73     | 2 x0.40x20x80  |

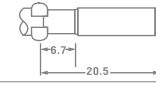
# BITS & SOCKETS

## PRECISION BITS

### BITS FOR PRECISION SCREWS

ดอกไขควงสำหรับขันสกรูขนาดเล็ก

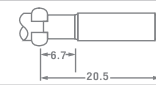
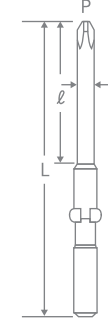
ดอกไขควง เวสเซล สำหรับทุกงานที่มีขันสกรูหรือน็อต มีให้เลือกหลายแบบ เช่น ดอกไขควงสี่แฉก, ปากแบนและลูกบล็อค แล้วแต่ลักษณะของงานที่จะใช้



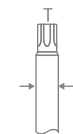
5mm SHANK DRIVE

FOR : HIOS (FERRA TOOLS)

⊕ = CROSS POINT =



⊕ = HEXLOBU = (H = TAMPER PROOF)



| EDP #      | MODEL # | P x d x l x L |
|------------|---------|---------------|
| 4883105    | D76     | 00x 2 x20x 60 |
| 488005-219 | D76     | 0x2.5x20x 40  |
| 483115     | D76     | 0x2.5x25x 60  |
| 488005-220 | D76     | 0x2.5x30x 80  |
| 488005-221 | D76     | 0x 3 x30x 60  |
| 488005-222 | D76     | 0x 5 x 60     |
| 488005-223 | D76     | 1x2.6x30x 60  |
| 488005-224 | D76     | 1x2.6x30x 80  |
| 488005-225 | D76     | 1x2.6x30x100  |
| 488005-226 | D76     | 1x2.6x30x120  |
| 488005-227 | D76     | 1x 3 x15x 40  |
| 483121     | D76     | 1x 3 x30x 60  |
| 488005-228 | D76     | 1x 3 x30x 80  |
| 488005-229 | D76     | 1x 3 x30x100  |
| 488005-230 | D76     | 1x 3 x30x120  |
| 483125     | D76     | 1x 5 x 60     |
| 488005-231 | D76     | 1x 5 x 80     |
| 488005-232 | D76     | 1x 5 x 100    |
| 488005-233 | D76     | 1x 5 x 120    |
| 488005-234 | D76     | 1x 5 x 150    |
| 488005-235 | D76     | 2x 3 x20x 60  |
| 488005-236 | D76     | 2x 3 x30x 60  |
| 488005-237 | D76     | 2x 3 x30x 80  |
| 488005-238 | D76     | 2x 3 x40x100  |
| 488005-239 | D76     | 2x 3 x40x120  |
| 483131     | D76     | 2x 5 x 60     |
| 488005-240 | D76     | 2x 5 x 80     |
| 488005-241 | D76     | 2x 5 x 100    |
| 488005-242 | D76     | 2x 5 x 120    |
| 488005-243 | D76     | 2x 5 x 150    |

5mm SHANK DRIVE

FOR : HIOS (FERRA TOOLS)

| EDP #      | MODEL # | T x d x L |
|------------|---------|-----------|
| 488005-244 | D76     | 5 x5x60   |
| 488005-245 | D76     | 6 x5x60   |
| 488005-246 | D76     | 7 x5x60   |
| 488005-247 | D76     | 8Hx5x60   |
| 488005-248 | D76     | 10Hx5x60  |
| 488005-249 | D76     | 15Hx5x60  |

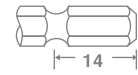
# BITS & SOCKETS

## PRECISION BITS

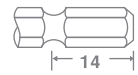
### BITS FOR PRECISION SCREWS

ดอกไขควงสำหรับขันสกรูขนาดเล็ก

ดอกไขควง เวสเซล สำหรับทุกงานที่มีขันสกรูหรือน็อต มีให้เลือกหลายแบบ เช่น ดอกไขควงสี่แฉก, ปากแบนและลูกบล็อค แล้วแต่ลักษณะของงานที่จะใช้



⊕ = CROSS POINT =



= HEXLOBU = (H = TAMPER PROOF)



#### ⊕ 5mm HEX DRIVE

FOR : DELVO (DENSEL), HIOS (FERRA TOOLS), HITACHI, MATSUSHITA, URYU, YOKOTA

| EDP #      | MODEL # | P x d x l x L  |
|------------|---------|----------------|
| 488002-101 | B34     | 0x 2 x30x 50   |
| 488002-102 | B34     | 0x 2 x30x 75   |
| 488002-103 | B34     | 1x 2.5x30x 50  |
| 488002-104 | B34     | 1x 2.5x30x 75  |
| 488002-105 | B34     | 1x 2.5x30x 100 |
| 488002-106 | B34     | 1x 4 x30x 70   |
| 488002-107 | B34     | 1x 4 x30x 100  |
| 488002-108 | B34     | 1x 5 x30x 70   |
| 488002-109 | B34     | 1x 5 x30x 100  |
| 488002-110 | B34     | 2x 3 x30x 50   |
| 488002-111 | B34     | 2x 3 x30x 75   |
| 488002-112 | B34     | 2x 3 x30x 100  |
| 488002-113 | B34     | 2x 3.5x30x 75  |
| 488002-114 | B34     | 2x 5 x30x 70   |
| 488002-115 | B34     | 2x 5 x30x 100  |

#### ⊕ 5mm HEX DRIVE

FOR : DELVO (DENSEL), HIOS (FERRA TOOLS), HITACHI, MATSUSHITA, URYU, YOKOTA

| EDP #      | MODEL # | T x d x l x L   |
|------------|---------|-----------------|
| 488002-116 | B34     | 6 x 2 x30x 75   |
| 488002-117 | B34     | 6 x 2 x30x 100  |
| 488002-118 | B34     | 8Hx2.5x30x 75   |
| 488002-119 | B34     | 8Hx2.5x30x 100  |
| 488002-120 | B34     | 10Hx 3 x30x 75  |
| 488002-121 | B34     | 10Hx 3 x30x 100 |
| 488002-122 | B34     | 15Hx3.5x30x 75  |
| 488002-123 | B34     | 15Hx3.5x30x 100 |

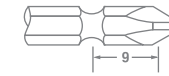
# BITS & SOCKETS

## PRECISION BITS

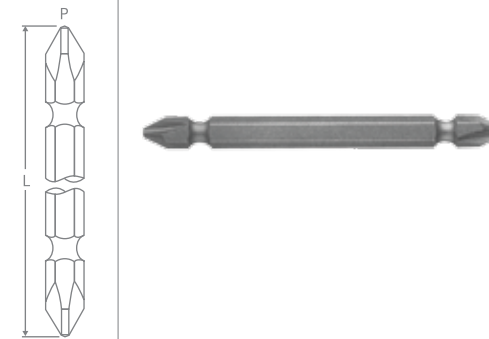
### DOUBLE END POWER BITS

ดอกไขควงแบบปลาย 2 ด้าน

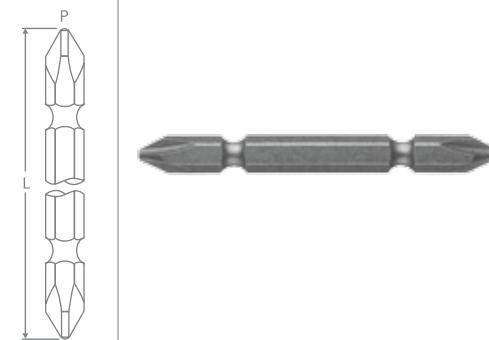
ดอกไขควง เวสเซล สำหรับทุกงานที่มีขันสกรูหรือน็อต มีให้เลือกหลายแบบ เช่น ดอกไขควงสี่แฉก, ปากแบนและลูกบล็อค แล้วแต่ลักษณะของงานที่จะใช้



⊕ = CROSS POINT = ⊕



⊕ = CROSS POINT = ⊕



#### ⊕ 1/4" = 6.35mm HEX DRIVE

FOR : FUJI, HITACHI, MAKITA, NPD, TONICHI, URYU, YOKOTA, YUTANIOTA

| EDP #      | MODEL # | P x L (HEAT TREATMENT) |
|------------|---------|------------------------|
| 489131     | 3111/45 | 1x 45 H                |
| 425031     | B43     | 1x 75 X                |
| 488002-128 | B43     | 1x 100 H               |
| 488002-129 | B43     | 1x 150 H               |
| 489132     | 3112/45 | 2x 45 H                |
| 425036     | B43     | 2x 50 X                |
| 425037     | B43     | 2x 50 H                |
| 425038     | B43     | 2x 50 E                |
| 425039     | B43     | 2x 75 X                |
| 425040     | B43     | 2x 75 H                |
| 425041     | B43     | 2x 75 G                |
| 425042     | B43     | 2x 75 E                |
| 425046     | B43     | 2x 100 X               |
| 425047     | B43     | 2x 100 H               |
| 425043     | B43     | 2x 100 G               |
| 425044     | B43     | 2x 100 E               |
| 425048     | B43     | 2x 150 X               |
| 425049     | B43     | 2x 150 H               |
| 425045     | B43     | 2x 150 G               |
| 425050     | B43     | 2x 200 G               |
| 488002-130 | B43     | 2x 300 H               |
| 425053     | B43     | 3x 75 X                |
| 425054     | B43     | 3x 75 H                |
| 425055     | B43     | 3x 75 E                |
| 425056     | B43     | 3x 100 X               |
| 425057     | B43     | 3x 100 H               |
| 425058     | B43     | 3x 100 E               |

#### ⊕ 1/4" = 6.35mm HEX DRIVE

FOR : FUJI, HITACHI, MAKITA, NPD, TONICHI, URYU, YOKOTA, YUTANIOTA

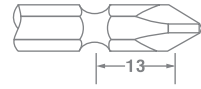
| EDP #  | MODEL # | P x L (HEAT TREATMENT) |
|--------|---------|------------------------|
| 413028 | A14     | 1x 45 X                |
| 413029 | A14     | 1x 45 H                |
| 413030 | A14     | 1x 65 X                |
| 413031 | A14     | 1x 65 H                |
| 413032 | A14     | 1x 65 G                |
| 413230 | A14     | 1x 110 X               |
| 413231 | A14     | 1x 110 H               |
| 413232 | A14     | 1x 110 G               |
| 413039 | A14     | 2x 45 X                |
| 413041 | A14     | 2x 45 H                |
| 413040 | A14     | 2x 45 G                |
| 413047 | A14     | 2x 65 X                |
| 413042 | A14     | 2x 65 H                |
| 413043 | A14     | 2x 65 G                |
| 413045 | A14     | 2x 65 E                |

# BITS & SOCKETS

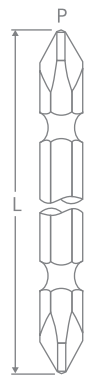
## PRECISION BITS

### DOUBLE END POWER BITS ดอกไขควงแบบปลาย 2 ด้าน

ดอกไขควง เวสเซล สำหรับทุกงานที่มีชิ้นสกรูหรือน็อต มีให้เลือกหลายแบบ เช่น ดอกไขควงสี่แฉก, ปากแบนและลูกบล็อควง แล้วแต่ลักษณะของงานที่จะใช้



⊕ = CROSS POINT = ⊕



● 1/4" = 6.35mm HEX DRIVE

FOR : MAKITA, MATSUSHITA, MAX, NITTO-KOHI, NPK, RYOBI, TONICHI, TOSHIBA, VESSEL, YUTANI

| EDP #  | MODEL # | P x L (HEAT TREATMENT) |
|--------|---------|------------------------|
| 413262 | A14     | 2x 110 X               |
| 413241 | A14     | 2x 110 H               |
| 413242 | A14     | 2x 110 G               |
| 413243 | A14     | 2x 110 E               |
| 413263 | A14     | 2x 150 X               |
| 413245 | A14     | 2x 150 H               |
| 413246 | A14     | 2x 150 G               |
| 413247 | A14     | 2x 150 E               |
| 413264 | A14     | 2x 200 X               |
| 413249 | A14     | 2x 200 H               |
| 413248 | A14     | 2x 200 G               |
| 413250 | A14     | 2x 200 E               |
| 413255 | A14     | 2x 300 G               |
| 413051 | A14     | 3x 45 H                |
| 413050 | A14     | 3x 45 E                |
| 413054 | A14     | 3x 65 X                |
| 413052 | A14     | 3x 65 H                |
| 413053 | A14     | 3x 65 E                |
| 413266 | A14     | 3x 110 X               |
| 413252 | A14     | 3x 110 H               |
| 413251 | A14     | 3x 110 E               |

| EDP #  | MODEL # | P x L (HEAT TREATMENT) |
|--------|---------|------------------------|
| 413401 | M-A14   | 1x 45 H                |
| 413402 | M-A14   | 1x 65 H                |
| 413407 | M-A14   | 1x 110 H               |
| 413403 | M-A14   | 2x 45 H                |
| 413404 | M-A14   | 2x 45 G                |
| 413405 | M-A14   | 2x 65 H                |
| 413406 | M-A14   | 2x 65 G                |
| 413408 | M-A14   | 2x 110 H               |
| 413411 | M-A14   | 2x 110 G               |
| 413409 | M-A14   | 2x 150 H               |

8mm HEX DRIVE

FOR : HITACHI, MATSUSHITA, VESSEL

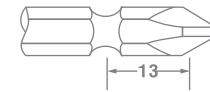
| EDP #      | MODEL # | P x L (HEAT TREATMENT) |
|------------|---------|------------------------|
| 414041     | A15     | 2x 65 G                |
| 488001-103 | A15     | 2x 65 H                |
| 414042     | A15     | 2x 110 G               |
| 488001-104 | A15     | 2x 110 H               |
| 414051     | A15     | 3x 65 E                |
| 414052     | A15     | 3x 110 E               |

# BITS & SOCKETS

## PRECISION BITS

### DOUBLE END POWER BITS ดอกไขควงแบบปลาย 2 ด้าน

ดอกไขควง เวสเซล สำหรับทุกงานที่มีชิ้นสกรูหรือน็อต มีให้เลือกหลายแบบ เช่น ดอกไขควงสี่แฉก, ปากแบนและลูกบล็อควง แล้วแต่ลักษณะของงานที่จะใช้



⊕ = CROSS POINT = ⊕



● 5mm HEX DRIVE

FOR : DELVO (DENSEL), HITACHI, HIOS (FERRA TOOLS), MATSUSHITA, URYU, YOKOTA

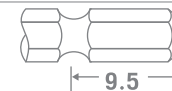
| EDP #  | MODEL # | P x L (HEAT TREATMENT) |
|--------|---------|------------------------|
| 423035 | B36     | 1x 70 X                |
| 423031 | B36     | 1x 70 H                |
| 423032 | B36     | 1x 100 H               |
| 423045 | B36     | 2x 70 X                |
| 423041 | B36     | 2x 70 H                |
| 423046 | B36     | 2x 100 X               |
| 423042 | B36     | 2x 100 H               |
| 423047 | B36     | 2x 150 X               |
| 423043 | B36     | 2x 150 H               |

● 1/4" = 6.35mm HEX DRIVE

FOR : AEG, ARO, ATLAS-COPCO, BIAH, B&D, BOSCH, BUCKEY-TOOLS, CHICAGO-PNEUMATIC, CLECO, DELVO (DENSEL), DEPRAG, DESOUTTER, FIAM, FUJI-KUKI, GARDNER-DENVER, HIOS (FERRA TOOLS), HITACHI, INGERSOLL, KELLER, MAKITA, MALL, MATSUSHITA, METABO, NPK, PNEUTEC, PREMAG, ROCKWELL, ROTOR-TOOL, SKIL, STANLAY, STAR, STAYER, THOR, TONICHI, URYU, VAN-DORN, VIRAX, WOLF, YOKOTA, YUTANI

| EDP #  | MODEL # | P x L (HEAT TREATMENT) |
|--------|---------|------------------------|
| 424031 | B35     | 1x 50 X                |
| 424032 | B35     | 1x 50 H                |
| 424061 | B35     | 2x 50 X                |
| 424040 | B35     | 2x 50 G                |
| 424034 | B35     | 1x 75 X                |
| 424035 | B35     | 1x 75 H                |
| 424062 | B35     | 2x 75 X                |
| 424047 | B35     | 2x 75 H                |
| 424041 | B35     | 2x 75 G                |
| 424042 | B35     | 2x 75 E                |
| 424072 | B35     | 3x 75 X                |
| 424050 | B35     | 3x 75 H                |
| 424051 | B35     | 3x 75 E                |
| 424063 | B35     | 2x 100 X               |
| 424048 | B35     | 2x 100 H               |
| 424043 | B35     | 2x 100 G               |
| 424044 | B35     | 2x 100 E               |
| 424073 | B35     | 3x 100 X               |
| 424052 | B35     | 3x 100 H               |
| 424053 | B35     | 3x 100 E               |
| 424064 | B35     | 2x 150 X               |
| 424049 | B35     | 2x 150 H               |
| 424045 | B35     | 2x 150 G               |
| 424046 | B35     | 2x 150 E               |
| 424131 | B39     | 1x 23 H                |
| 424141 | B39     | 2x 23 H                |
| 424143 | B39     | 2x 40 H                |
| 424147 | B39     | 2x 100 H               |

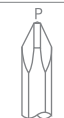
### POWER BITS ดอกไขควงชนิดใช้กับเครื่องมือ



⊕ = CROSS POINT =



(HEX SHANK TYPE)



# BITS & SOCKETS

## PRECISION BITS

### POWER BITS

ดอกไขควงแบบปลาย 2 ด้าน

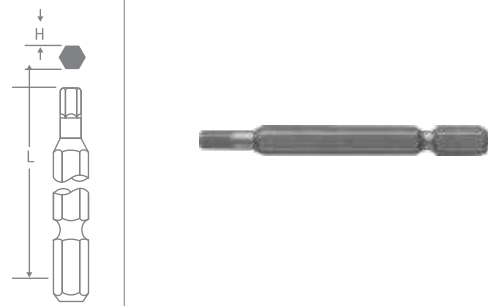
ดอกไขควง เวสเซล สำหรับทุกงานที่มีชิ้นสกรูหรือน็อต มีให้เลือกหลายแบบ เช่น ดอกไขควงสี่แฉก, ปากแบนและลูกบล็ออค แล้วแต่ลักษณะของงานที่จะใช้



1/4" = 6.35mm HEX DRIVE

FOR : MAKITA, MATSUSHITA, MAX, NPK, RYOBI, TONICHI, TOSHIBA, VESSEL, YOKOTA, YUTANI

○ = HEXAGON HEAD = (METRIC)

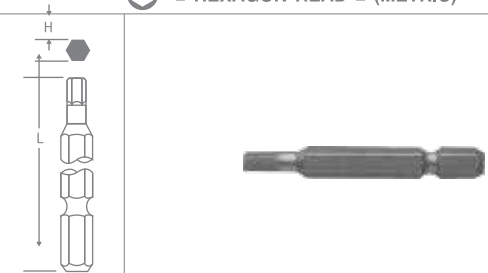


| EDP #  | MODEL # | H X L (HEAT TREATMENT) |
|--------|---------|------------------------|
| 481090 | A16     | 2 x 65 H               |
| 481091 | A16     | 2.5x 65 H              |
| 481092 | A16     | 3 x 65 H               |
| 481093 | A16     | 4 x 65 H               |
| 481094 | A16     | 5 x 65 G               |
| 481096 | A16     | 6 x 65 G               |
| 481100 | A16     | 2 x 110 H              |
| 481101 | A16     | 2.5x 110 H             |
| 481102 | A16     | 3 x 110 H              |
| 481103 | A16     | 4 x 110 H              |
| 481104 | A16     | 5 x 110 G              |
| 481105 | A16     | 6 x 110 G              |

8mm HEX DRIVE

FOR : HITACHI (WH-12DB), MATSUSHITA (EZ6608D), VESSEL (GT-P8D, P10SII)

○ = HEXAGON HEAD = (METRIC)



| EDP #  | MODEL # | H X L (HEAT TREATMENT) |
|--------|---------|------------------------|
| 481191 | A19     | 5 x 65 G               |
| 481192 | A19     | 6 x 65 G               |
| 481193 | A19     | 8 x 65 G               |
| 481194 | A19     | 10 x 65 S              |
| 481196 | A19     | 6 x130 G               |
| 481197 | A19     | 8 x130 G               |
| 481198 | A19     | 10 x130 S              |

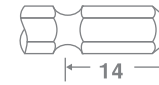
# BITS & SOCKETS

## PRECISION BITS

### POWER BITS

ดอกไขควงแบบปลาย 2 ด้าน

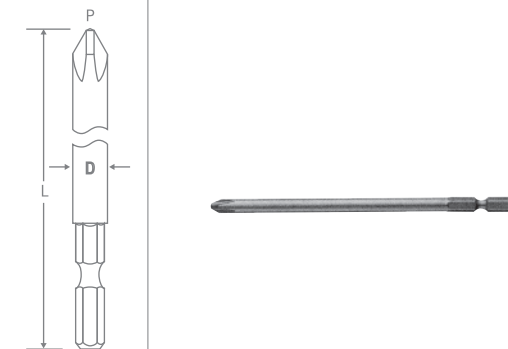
ดอกไขควง เวสเซล สำหรับทุกงานที่มีชิ้นสกรูหรือน็อต มีให้เลือกหลายแบบ เช่น ดอกไขควงสี่แฉก, ปากแบนและลูกบล็ออค แล้วแต่ลักษณะของงานที่จะใช้



5mm HEX DRIVE

FOR : DELVO (DENSEI), HIOS (FERRA TOOLS), HITACHI, MATSUSHITA, URYU, YOKOTA

⊕ = CROSS POINT =



| EDP #  | MODEL # | P x D X L (HEAT TREATMENT) |
|--------|---------|----------------------------|
| 422036 | B34     | 1x 6 x 70 X                |
| 422031 | B34     | 1x 6 x 70 H                |
| 422037 | B34     | 1x 6 x 100 X               |
| 422032 | B34     | 1x 6 x 100 H               |
| 422038 | B34     | 1x 6 x 150 X               |
| 422033 | B34     | 1x 6 x 150 H               |
| 422041 | B34     | 2x 6 x 70 H                |
| 422042 | B34     | 2x 6 x 100 H               |
| 422053 | B34     | 2x 6 x 120 X               |
| 422045 | B34     | 2x 6 x 120 H               |
| 422067 | B34     | 2x 6 x 125 X               |
| 422068 | B34     | 2x 6 x 125 H               |
| 422043 | B34     | 2x 6 x 150 H               |
| 422055 | B34     | 2x 6 x 200 X               |
| 422044 | B34     | 2x 6 x 200 H               |
| 422039 | B34     | 1x5.3x 105 X               |
| 422034 | B34     | 1x5.3x 105 H               |
| 422040 | B34     | 1x5.3x 120 X               |
| 422035 | B34     | 1x5.3x 120 H               |
| 422062 | B34     | 1x5.3x 125 H               |
| 422058 | B34     | 2x5.3x 105 X               |
| 422046 | B34     | 2x5.3x 105 H               |
| 422059 | B34     | 2x5.3x 120 X               |
| 422047 | B34     | 2x5.3x 120 H               |
| 422064 | B34     | 2x5.3x 125 X               |
| 422065 | B34     | 2x5.3x 125 H               |

BITS & SOCKETS

PRECISION BITS

SOCKET BITS (NUT SETTERS) ดอกไขควงแบบลูกบล็อค

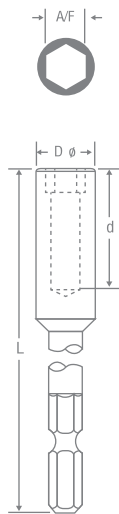
ดอกไขควง เวสเซล สำหรับทุกงานที่มีขันสกรูหรือนอต มีให้เลือกหลายแบบ เช่น ดอกไขควงสี่แฉก, ปากแบนและลูกบล็อค แล้วแต่ลักษณะของงานที่จะใช้

1/4" = 6.35mm HEX DRIVE

FOR : AEG, ARO, ATLAS-COPCO, BIAH, B&D, BOSCH, BUCKEY-TOOLS, CHICAGO-PNEUMATIC, CLECO, DELVO (DENSEI), DEPRAG, DESOUTTER, FIAM, FUJI-KUKI, GARDNER-DENVER, HIOS (FERRA TOOLS), HITACHI, INGERSOLL, KELLER, MAKITA, MALL, MATSUSHITA, METABO, NPK, PNEUTEC, PREMAG, ROCKWELL, ROTOR-TOOL, SKIL, STANLAY, STAR, STAYER, THOR, TONICHI, URYU, VAN-DORN, VIRAX, WOLF, YOKOTA, YUTANI



⊙ = METRIC (NON MAGNETIC)



| EDP #      | MODEL #  | A/F x D x d x L |
|------------|----------|-----------------|
| 489301     | 1304/50  | 4 x 8 x15x 50   |
| 489302     | 1345/50  | 4.5x 8 x15x 50  |
| 489303     | 1305/50  | 5 x8.5x15x 50   |
| 489304     | 1355/50  | 5.5x 9 x15x 50  |
| 489305     | 1306/50  | 6 x10 x15x 50   |
| 489306     | 1307/50  | 7 x13 x15x 50   |
| 489307     | 1308/50  | 8 x13 x15x 50   |
| 489308     | 1309/50  | 9 x14 x15x 50   |
| 489309     | 1310/50  | 10 x16 x15x 50  |
| 489310     | 1311/50  | 11 x17 x15x 50  |
| 489311     | 1312/50  | 12 x19 x15x 50  |
| 489312     | 1313/50  | 13 x19 x15x 50  |
| 489313     | 1314/50  | 14 x20 x15x 50  |
| 489314     | 1304/75  | 4 x 8 x25x 75   |
| 489315     | 1345/75  | 4.5x 8 x25x 75  |
| 489316     | 1305/75  | 5 x8.5x25x 75   |
| 489317     | 1355/75  | 5.5x 9 x25x 75  |
| 489318     | 1306/75  | 6 x10 x25x 75   |
| 489319     | 1307/75  | 7 x13 x25x 75   |
| 489320     | 1308/75  | 8 x13 x30x 75   |
| 489321     | 1309/75  | 9 x14 x30x 75   |
| 489322     | 1310/75  | 10 x16 x30x 75  |
| 489323     | 1311/75  | 11 x17 x30x 75  |
| 489324     | 1312/75  | 12 x18 x30x 75  |
| 489325     | 1313/75  | 13 x19 x30x 75  |
| 489326     | 1314/75  | 14 x20 x30x 75  |
| 489327     | 1304/100 | 4 x 8 x25x100   |
| 489328     | 1345/100 | 4.5x 8 x25x100  |
| 489329     | 1305/100 | 5 x8.5x25x100   |
| 489330     | 1355/100 | 5.5x 9 x25x100  |
| 489331     | 1306/100 | 6 x10 x25x100   |
| 489332     | 1307/100 | 7 x13 x25x100   |
| 489333     | 1308/100 | 8 x13 x30x100   |
| 489334     | 1309/100 | 9 x14 x30x100   |
| 489335     | 1310/100 | 10 x16 x30x100  |
| 489336     | 1311/100 | 11 x17 x30x100  |
| 489337     | 1312/100 | 12 x18 x30x100  |
| 489338     | 1313/100 | 13 x19 x30x100  |
| 489339     | 1314/100 | 14 x20 x30x100  |
| 489899-113 | 1305/150 | 5 x8.5x25x150   |
| 489899-114 | 1355/150 | 5.5x 9 x25x150  |
| 489899-115 | 1306/150 | 6 x10 x25x150   |
| 489899-116 | 1307/150 | 7 x13 x25x150   |
| 489899-117 | 1308/150 | 8 x13 x30x150   |
| 489899-118 | 1310/150 | 10 x16 x30x150  |
| 489899-119 | 1312/150 | 12 x18 x30x150  |
| 489899-120 | 1313/150 | 13 x19 x30x150  |

BITS & SOCKETS

PRECISION BITS

SOCKET BITS (NUT SETTERS) ดอกไขควงแบบลูกบล็อค

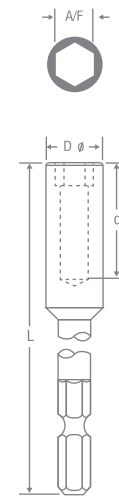
ดอกไขควง เวสเซล สำหรับทุกงานที่มีขันสกรูหรือนอต มีให้เลือกหลายแบบ เช่น ดอกไขควงสี่แฉก, ปากแบนและลูกบล็อค แล้วแต่ลักษณะของงานที่จะใช้

1/4" = 6.35mm HEX DRIVE

FOR : AEG, ARO, ATLAS-COPCO, BIAH, B&D, BOSCH, BUCKEY-TOOLS, CHICAGO-PNEUMATIC, CLECO, DELVO (DENSEI), DEPRAG, DESOUTTER, FIAM, FUJI-KUKI, GARDNER-DENVER, HIOS (FERRA TOOLS), HITACHI, INGERSOLL, KELLER, MAKITA, MALL, MATSUSHITA, METABO, NPK, PNEUTEC, PREMAG, ROCKWELL, ROTOR-TOOL, SKIL, STANLAY, STAR, STAYER, THOR, TONICHI, URYU, VAN-DORN, VIRAX, WOLF, YOKOTA, YUTANI



(MAGNETIC)



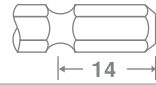
| EDP #      | MODEL #   | A/F X D X L  |
|------------|-----------|--------------|
| 489340     | 1305/50M  | 5 x 8.5x 50  |
| 489341     | 1355/50M  | 5.5 x 9 x 50 |
| 489342     | 1306/50M  | 6 x 10 x 50  |
| 489343     | 1307/50M  | 7 x 13 x 50  |
| 489344     | 1308/50M  | 8 x 13 x 50  |
| 489345     | 1309/50M  | 9 x 14 x 50  |
| 489346     | 1310/50M  | 10 x 16 x 50 |
| 489347     | 1311/50M  | 11 x 17 x 50 |
| 489348     | 1312/50M  | 12 x 19 x 50 |
| 489349     | 1313/50M  | 13 x 19 x 50 |
| 489350     | 1314/50M  | 14 x 20 x 50 |
| 489351     | 1305/75M  | 5 x 8.5x 75  |
| 489352     | 1355/75M  | 5.5 x 9 x 75 |
| 489353     | 1306/75M  | 6 x 10 x 75  |
| 489354     | 1307/75M  | 7 x 13 x 75  |
| 489355     | 1308/75M  | 8 x 13 x 75  |
| 489356     | 1309/75M  | 9 x 14 x 75  |
| 489357     | 1310/75M  | 10 x 16 x 75 |
| 489358     | 1311/75M  | 11 x 17 x 75 |
| 489359     | 1312/75M  | 12 x 18 x 75 |
| 489360     | 1313/75M  | 13 x 19 x 75 |
| 489361     | 1314/75M  | 14 x 20 x 75 |
| 489362     | 1305/100M | 5 x 8.5x100  |
| 489363     | 1355/100M | 5.5 x 9 x100 |
| 489364     | 1306/100M | 6 x 10 x100  |
| 489365     | 1307/100M | 7 x 13 x100  |
| 489366     | 1308/100M | 8 x 13 x100  |
| 489367     | 1309/100M | 9 x 14 x100  |
| 489368     | 1310/100M | 10 x 16 x100 |
| 489369     | 1311/100M | 11 x 17 x100 |
| 489370     | 1312/100M | 12 x 18 x100 |
| 489371     | 1313/100M | 13 x 19 x100 |
| 489372     | 1314/100M | 14 x 20 x100 |
| 489899-121 | 1305/150M | 5 x 8.5x150  |
| 489899-122 | 1355/150M | 5.5 x 9 x150 |
| 489899-123 | 1306/150M | 6 x 10 x150  |
| 489899-124 | 1307/150M | 7 x 13 x150  |
| 489899-125 | 1308/150M | 8 x 13 x150  |
| 489899-126 | 1310/150M | 10 x 16 x150 |
| 489899-127 | 1312/150M | 12 x 18 x150 |
| 489899-128 | 1313/150M | 13 x 19 x150 |

# BITS & SOCKETS

## PRECISION BITS

### SOCKET BITS (NUT SETTERS) ดอกไขควงแบบลูกบล็อค

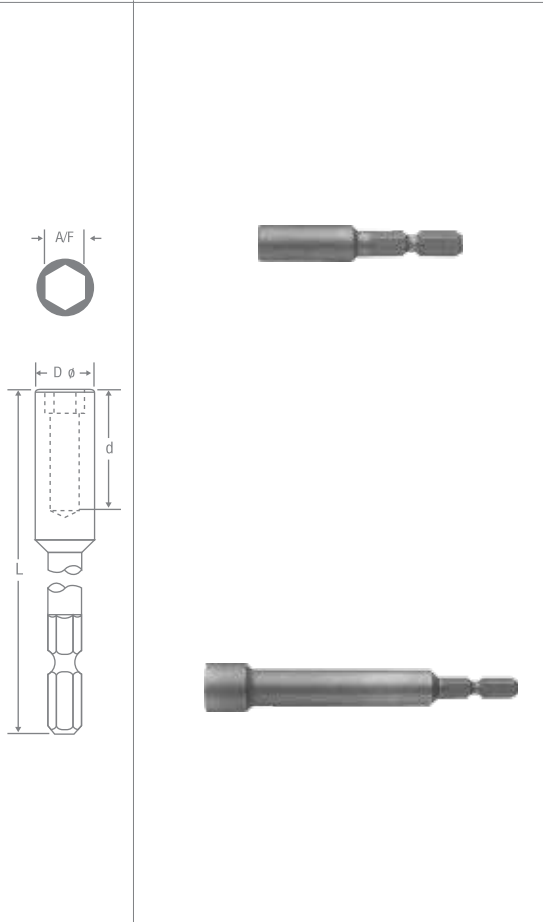
ดอกไขควง เวสเซล สำหรับทุกงานที่มีขันสกรูหรือน๊อต มีให้เลือกหลายแบบ เช่น ดอกไขควงสี่แฉก, ปากแบนและลูกบล็อค แล้วแต่ลักษณะของงานที่จะใช้



1/4" = 6.35mm HEX DRIVE

FOR : HITACHI, MAKITA, MATSUSHITA, MAX, NPK, RYOBI, TONICHI, TOSHIBA, VESSEL, YOKOTA, YUTANI

○ = METRIC (NON MAGNETIC)



| EDP #      | MODEL # | A/F x D x d x L |
|------------|---------|-----------------|
| 416080     | A20     | 4.5x7.5x20x 55  |
| 416081     | A20     | 5 x8.5x20x 55   |
| 416082     | A20     | 5.5 x10 x20x 55 |
| 416083     | A20     | 6 x10 x20x 55   |
| 416084     | A20     | 7 x13 x20x 55   |
| 416181     | A20     | 8 x13 x20x 55   |
| 416182     | A20     | 9 x16 x20x 55   |
| 416188     | A20     | 9.6x16 x20x 55  |
| 416183     | A20     | 10 x16 x20x 55  |
| 416184     | A20     | 11 x16 x20x 55  |
| 416185     | A20     | 12 x19 x20x 55  |
| 416186     | A20     | 13 x19 x20x 55  |
| 416187     | A20     | 14 x20 x20x 55  |
| 416189     | A20     | 15 x22 x20x 55  |
| 416190     | A20     | 17 x23 x20x 55  |
| 416281     | A20     | 5.5x10 x25x100  |
| 416282     | A20     | 6 x10 x25x100   |
| 416283     | A20     | 7 x13 x25x100   |
| 416284     | A20     | 8 x13 x25x100   |
| 488001-105 | A20     | 9 x16 x25x100   |
| 488001-106 | A20     | 9.6x16 x25x100  |
| 416286     | A20     | 10 x16 x25x100  |
| 488001-107 | A20     | 11 x16 x25x100  |
| 416287     | A20     | 12 x18 x25x100  |
| 416288     | A20     | 13 x19 x25x100  |
| 416289     | A20     | 14 x20 x25x100  |

# BITS & SOCKETS

## SELECTION OF THE PROPER HEAT TREATMENT

VESSEL industrial bits are classified according to five main heat treatment classes based on our long-time research data. The selection of the proper heat treatment is important in securing the longest life for bits, but it may require some trial and error to select the proper heat treatment for a particular application.

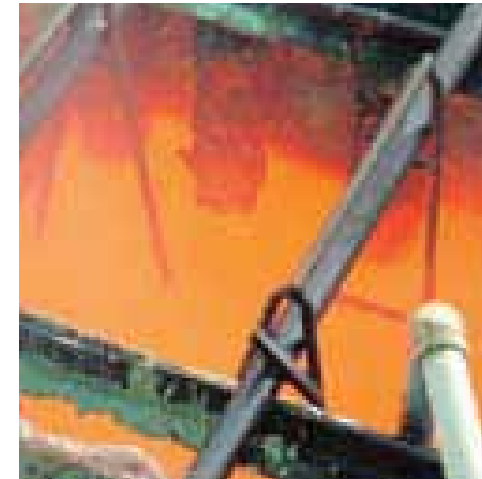
In general, if your bits tend to get broken or chip-off, a bit with less hardness such as "G" will be selected. If your bits wear quickly, choose a harder bit such as "H" or "X".

If any excessive shock is given to the tops of your bits according to the connecting condition of the products or types of the tightening tools, select a bit with less hardness.

X-H-G-E-S

High ← Bit hardness → Low

However, bits may often break or get worn due to various factors such as different operations, different torque values and different power tool settings (different tightening structures or using an unnecessarily high torque).



| HEAT TREATMENT CLASS | SCREWS TO BE FASTENED  | TYPE OF FIELD  |
|----------------------|--|--|
| X HIGHEST HARDNESS   | PRECISION SCREWS, AUTOMATIC MOUNTING SCREWS, CONNECTING SCREWS         | ASSEMBLY OF PRECISE EQUIPMENT, AUTOMATIC MACHINE SCREWING OF LIGHT ELECTRICAL APPLIANCE, HOUSING |
| H HIGH HARDNESS      | WOOD SCREWS, MACHINE SCREWS, SELF-TAPPING SCREWS, SELF-DRILLING SCREWS | ASSEMBLY OF LIGHT ELECTRICAL APPLIANCE & AUDIO EQUIPMENT, BUILDING & WOODWORKING                 |
| G STANDARD HARDNESS  | TAPPING SCREWS, MACHINE SCREWS   | ASSEMBLY OF CAR, MACHINE PARTS & WINDOW DOOR SASHES  |

VESSEL supplies "E" and "S" -type bits with low hardness for heavy works. They are ideal for the tools with high impact.

| Joining  | Type of fastening tool   | Bit hardness |
|--|--|--------------|
| <b>Rigid joining, screw fastening</b><br><ul style="list-style-type: none"> <li>●Resistance is low at first but increases rapidly the instant the screw head sits.</li> <li>●Requires comparatively little time to fasten.</li> </ul>  | Fastening by compact power screwdrivers and automatic screw fastening machine (Low torque work) → <b>X</b><br><br>Torque control type/Deceleration type pneumatic screwdrivers and power screwdrivers (Medium torque work) → <b>H</b><br><br>Oil pulse and impact type pneumatic screwdrivers and rechargeable impact screwdrivers (High torque work) → <b>G</b> |              |
| <b>Flexible joining (packing inserted) and resin tapping and fastening</b><br><ul style="list-style-type: none"> <li>●Resistance increases with every turn of the screw. Resistance increases even after seating.</li> <li>●Requires comparatively little time to fasten.</li> </ul> | Fastening by compact power screwdrivers and automatic screw fastening machine (Low torque work) → <b>X</b><br><br>Oil pulse, impact and other types of pneumatic screwdrivers and rechargeable impact screwdrivers (Medium to high torque work) → <b>G</b>   |              |
| <b>Fastening of drill screws and tapping screws</b><br><ul style="list-style-type: none"> <li>●Resistance is felt as the screw penetrates. Resistance lessens momentarily only to increase after seating.</li> <li>●Requires a comparatively long time to fasten.</li> </ul>         | Power screwdrivers and reduction type pneumatic screwdrivers (Medium torque work) → <b>H</b><br><br>Oil pulse, impact and other types of pneumatic screwdrivers and rechargeable impact screwdrivers (High torque work) → <b>G</b>   |              |
| <b>Wood screw fastening</b><br><ul style="list-style-type: none"> <li>●At first, resistance is low, but then it increases as the screw penetrates.</li> <li>●Requires a comparatively long time to fasten.</li> </ul>  | Power screwdriver with screw feeder (Low torque work) → <b>X</b><br><br>Oil pulse and impact type pneumatic screwdrivers and rechargeable impact screwdrivers (High torque work) → <b>H</b>  |              |





Vessel's  
**STATIC**  
Solutions

- Fan Type 2/34
- Bar Type 2/36
- Gun Type 2/37
- Ion Parts Cleaner 2/38
- Nozzle Type 2/39
- Commercial Frequency Type 2/40
- EPA Flooring 2/41
- ESD Countermeasure Wrist Straps 2/42
- EPA Working Items 2/43
- Clean Walker 2/44



**VESSEL**

**STATIC SOLUTIONS**

FAN TYPE

**F6CL-E IONIZING MINI FAN WITH CLIP** (EDP No. 621632)

Ionizing method: Piezoelectric high-frequency AC corona discharge  
Electrode needles : Inconel

This compact-sized mini fan comes with a clip for ready installation anywhere on a workbench.



A built-in LED inside lights up during operation



CE RoHS

- Compact and light body. Comes with a clip for easy installation.
- Fan speed can be switched to High/Low.

**F6ST-E IONIZING MINI FAN WITH STAND** (EDP No. 621631)

Ionizing method: Piezoelectric high-frequency AC corona discharge  
Electrode needles : Inconel

This compact-sized mini fan comes with a stand for ready installation anywhere on a workbench.



Easy to open and close the cover

CE RoHS

- Compact and light body. Comes with a stand.
- Fan speed can be switched to High/Low.

- LED ILLUMINATION
- HIGH-SPEED 60mm FAN
- LOW-VOLTAGE DRIVE 24 VDC
- INCLUDED TRANSFORMER 100-240 VAC
- ALARM FAN LOCKUP
- ALARM H.V.

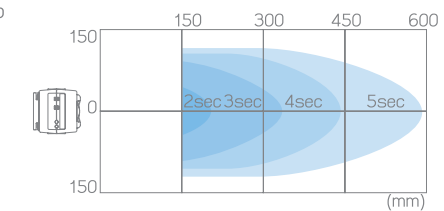
**Primary specifications**

|                                      |   |
|--------------------------------------|---|
| Applied voltage                      | 3.5 kV AC   |
| Power supply and current consumption | 24 V DC ± 5%, 220 mA (typ.)                               |
| Weight                               | 514 g (clip included)                                     |
| Airflow                              | 0.78 m <sup>3</sup> /min (at max. airflow)                |
| Noise level                          | 58.5 dBA (measured 1 m from device at max. air flow)      |
| Ozone production                     | 0.05 ppm or less (measured 50 mm from device)             |
| Operating temperature and humidity   | 5°C to 40°C, 35% to 65% RH (non-condensing, non-freezing) |
| Accessories                          | Power supply transformer No. AD24-ITF6-E, AC cable (1.8m) |

**Static erasing performance**

Ion balance: Within ±10 V; Decay time: 3.0 sec or less

**Static erasing area**



**Accessories**

Power Supply Transformer  
**AD24-ITF6-E**  
EDP No. 806096  
Input: 100 to 240 VAC, 0.4 A  
Output: 24 VDC, 0.75A

- LED ILLUMINATION
- HIGH-SPEED 60mm FAN
- LOW-VOLTAGE DRIVE 24 VDC
- INCLUDED TRANSFORMER 100-240 VAC
- ALARM FAN LOCKUP
- ALARM H.V.

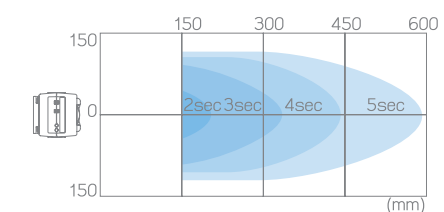
**Primary specifications**

|                                      |   |
|--------------------------------------|---|
| Applied voltage                      | 3.5 kV AC   |
| Power supply and current consumption | 24 V DC ± 5%, 220 mA (typ.)                               |
| Weight                               | 460 g (stand included)                                    |
| Airflow                              | 0.78 m <sup>3</sup> /min (at max. airflow)                |
| Noise level                          | 58.5 dBA (measured 1 m from device at max. air flow)      |
| Ozone production                     | 0.05 ppm or less (measured 50 mm from device)             |
| Operating temperature and humidity   | 5°C to 40°C, 35% to 65% RH (non-condensing, non-freezing) |
| Accessories                          | Power supply transformer No. AD24-ITF6-E, AC cable (1.8m) |

**Static erasing performance**

Ion balance: Within ±10 V; Decay time: 3.0 sec or less

**Static erasing area**



**Accessories**

Power Supply Transformer  
**AD24-ITF6-E**  
EDP No. 806096  
Input: 100 to 240 VAC, 0.4 A  
Output: 24 VDC, 0.75A

# STATIC SOLUTIONS

## FAN TYPE

### F120R-E FAN-TYPE IONIZER

Butterfly Louver !  
for wider and far reach static erasing area



- Power supply DC24V
- Fan speed HI/MD/LO
- Included transformer 100-240VAC
- Electrode needle unit replacement
- Alarm fan lockup
- Alarm H.V.
- External grounding terminal

### CE RoHS

- Butterfly Louver. Press outer side to disperse air. Press center to let air out straight.
- Apparent operation status indication. The new alarm function uses a 2-color LED. The red light indicates various errors.
- Easy maintenance. The electrode needle unit is set into the front cover.

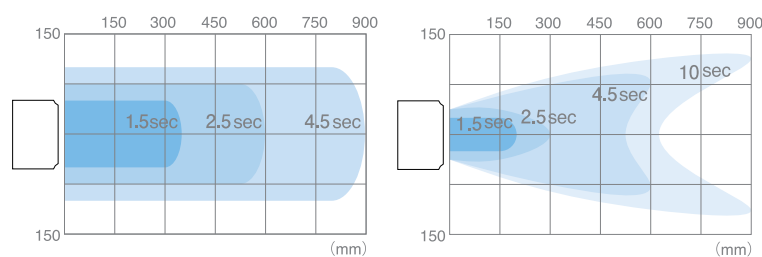
### Primary specifications

|  |  |
|--|--|
| Ionizing method/Applied voltage                | Piezoelectric high-frequency AC corona discharge/AC 10kV (p-p)   |
| Power supply and current consumption           | DC24V±5%/700mA(max.)   |
| Ion balance                                    | within ± 10 V  |
| Decay time                                     | 1.5 sec or less  |
| Operating range                                | 150 mm to 900 mm   |
| HxWxDmm  | H198xW162xD70mm  |
| Weight   | 0.9kg  |
| Fan speed                                      | 3.66m3/min (max.)  |
| Noise level                                    | HL : 61 dBA/LO : 55dBA   |
| Ozone production                               | 0.5ppm or less (measured 50mm)                                   |
| Operating environment temperature and humidity | 5°C to 40°C/35% to 85% RH (with no dew condensation or freezing) |
| Accessories                                    | AC adapter AD24-IT-EX AC cable (1.8m)                            |

### Static erasing performance

Ion balance: Within ±10 V; Decay time: 1.5 sec or less

### Static erasing area



### Accessories



AC Adapter  
**AD24-IT-EX**  
EDP No. 806050  
I/P : AC100V~240V 0.4A  
O/P : DC24V 0.75A

# STATIC SOLUTIONS

## BAR TYPE

### SH-SERIES compact AC pulse ionizing bars

Slim & High-speed Neutralization. Compact bar type ionizer with separate power supply for easy installation.



- Air purging functions.
- Safe Design. Flexible silicone sheath cable.
- Up to three bars can be branched and wired using the branch box (SH-SP2).

### Primary specifications

|  |  |
|--|--|
| Model No.                                      | SH-16 ~ SH-70  |
| Ionizing method/Applied voltage                | Pulse AC Corona discharge / AC10.5kV (p-p)                       |
| frequency                                      | 30Hz   |
| pulse ratio                                    | Positive ion 40 to 70 %, negative ion 60 to 30%                  |
| Power supply and current consumption           | AC100V~AC240V / 10W (SH-G3)                                      |
| Ion balance                                    | within ±50V (Distance 1000mm)                                    |
| Decay time                                     | See below  |
| Operating range                                | 50 to 2000mm   |
| HxWxDmm  | Refer to the figure on the right                                 |
| Weight   | Refer to the figure on the right                                 |
| Air supply hose diameter                       | tube fitting Φ6mm  |
| Operating fluid                                | Clean dry air or nitrogen (N <sup>2</sup> ) (0.5 MPa or less)    |
| Ozone production                               | 0.05ppm or less  |
| Operating environment temperature and humidity | 5°C to 55°C/25% to 85% RH (with no dew condensation or freezing) |
| Accessories                                    | High-voltage cable 2.3m (included with device)                   |

### SH-G3 Power supply units supporting 100 to 240 VAC

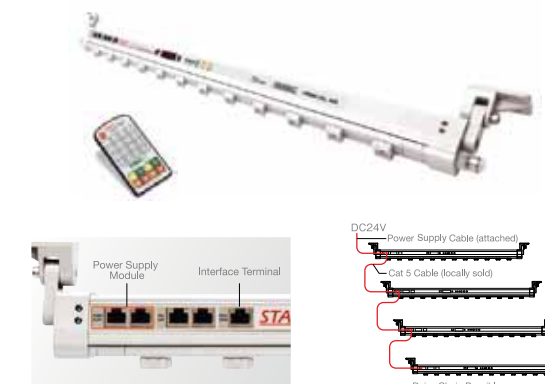


### Primary specifications

|                                      |   |
|--------------------------------------|---|
| HxWxDmm                              | L230xW138xH62.7mm   |
| Power supply and current consumption | AC100V~AC240V/10W (SH-G3)                                   |
| Weight                               | 1.5kg   |
| Accessories                          | AC power cable 1.8m (for 100 VAC and 240 VAC input) 2cables |

### C-SERIES AC Pulse Ionizing Clean Bars

(separate power supply type)

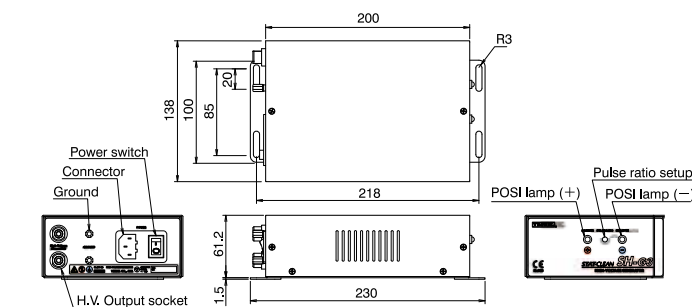


- Newly designed super-fast ionizing air discharge port
- Auto Balance Mode (Target distance: 50 to 100 mm)
- Terminals grouped on one side. Enabling a daisy-chain connection.

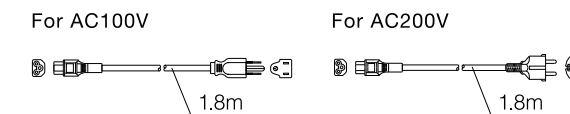
### Primary specifications

|  |  |
|--|--|
| Model No.                                      | C-40 ~ C-300   |
| Ionizing method/Applied voltage                | Pulse AC Corona discharge / AC8~12.5kV (p-p)   |
| frequency                                      | 0.1 to 50Hz (Select form ten steps)  |
| pulse ratio                                    | Positive ion 40 to 70 %, negative ion 60 to 30%  |
| Power supply and current consumption           | DC24V±5% / 600mA(max.)   |
| Ion balance                                    | within ±30V (Distance 1000mm)  |
| Decay time                                     | See below  |
| Operating range                                | 50 to 2000mm   |
| HxWxDmm  | Refer to the figure on the right   |
| Weight   | Refer to the figure on the right   |
| Air supply hose diameter                       | PT1/8  |
| Operating fluid                                | Clean dry air or nitrogen (N <sup>2</sup> ) (0.3 MPa or less)  |
| Ozone production                               | 0.05ppm or less (measured 50mm)  |
| Operating environment temperature and humidity | 5°C to 40°C/35% to 85% RH (with no dew condensation or freezing)   |
| Accessories                                    | Remote controller / Power cable (5m) / End brackets (included with device) / Middle bracket (included with device / except C-40, C-60, and C-90) |

\*Silicon discharge needles also available. For more detail please contact us.



### AC power cable



## STATIC SOLUTIONS

### GUN TYPE

**G7R-E** GUN-TYPE IONIZER (EDP No. 621621)

Ionizing method : Piezoelectric high-frequency AC corona discharge  
Electrode needles : Tungsten

Ergonomic and powerful at hand!



LED illumination (an industry first)

CE RoHS

- Ideal for neutralization and dust elimination of precision parts at hand, for example, in cell production.
- LED light integrated to make dust visible.
- Ergonomic grip enabling operator to hold it at a right angle.
- Non-slip grip suitable even for clean room gloves.
- Lightweight and less fatigue of operators.



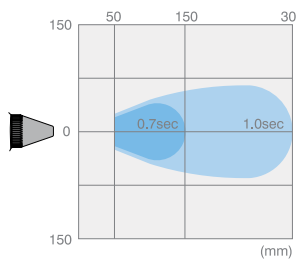
#### Primary specifications

|  |   |
|--|---|
| Ionizing method/Applied voltage                | Piezoelectric high-frequency AC corona discharge/AC 2kV                     |
| Power supply and current consumption           | DC24V±5% / 85mA (typ.)  |
| Ion balance                                    | within ±10 V  |
| Decay time                                     | 1.0 sec or less (standard nozzle-measured 150mm from device at 0.3 MPa)     |
| Operating range                                | 50 mm to 600 mm   |
| H×W×Dmm  | L105×H150×D36mm   |
| Weight   | 200g  |
| Air supply hose diameter                       | tube fitting Φ6mm   |
| Operating fluid                                | Clean dry air (0.1MPa to 0.6MPa)  |
| Airflow  | 200 ℓ /min(0.3MPa)  |
| Noise level                                    | 92 dBA (0.3MPa)   |
| Ozone production                               | 0.05ppm or less(measured 50mm)  |
| Operating environment temperature and humidity | 5°C to 40°C/35% to 65% RH(with no dew condensation or freezing)             |
| Accessories                                    | AC adapter AD24ITC-E AC cable(1.8m)/ Standard Nozzle (included with device) |

#### Static erasing performance

Ion balance: Within ±10 V; Decay time: 0.5 sec or less  
(150 mm from surface, 0.3 MPa, Standard Nozzle)

#### Static erasing area



#### Accessories

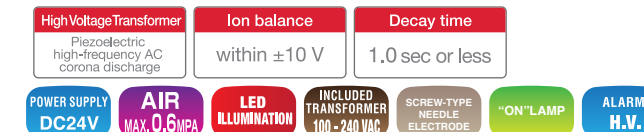


**G2-E** GUN-TYPE IONIZER (EDP No. 621638)



CE RoHS

\*Possible to fix the direction of the air hose and the power cable.



Changeable wiring direction upward or downward. This makes it easy to use the G2-E by hanging it from the top of a cell production table (e.g. when using a tool balancer).

Compact, lightweight, and ergonomically designed grip that fits your hand.

Operating status and alarm lamps.

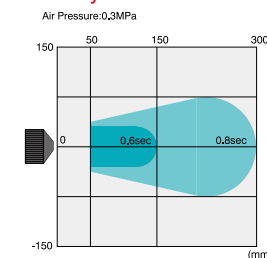
Interchangeable nozzle for various applications. (option)

The electrode needle can be easily replaced with a dedicated tool.

#### Specifications

|  |  |
|--|--|
| Model No.                                      | G2-E   |
| Ionizing method/Applied voltage                | Piezoelectric high-frequency AC corona discharge/AC4.5 kV        |
| Power supply and current consumption           | DC24V±5% / 100mA (typ.)  |
| Ion balance                                    | Within ±10 V (at 0.3 MPa measured at 150mm)                      |
| Decay time                                     | 0.4sec. (Before shipment 0.6MPa Measured at 150mm)               |
| Operating range                                | 50 mm ~ 300 mm (Installation: Indoor, non-hazardous area)        |
| H×W×Dmm  | L 148mm × H 57mm × W 44mm  |
| Weight   | 260g   |
| Air supply hose diameter                       | ODφ6 mm x IDφ4 mm  |
| Operating fluid                                | Clean dry air (0.1MPa to 0.6MPa)                                 |
| Airflow  | 153 ℓ /min (0.3MPa)  |
| Noise level                                    | 81 dBA (0.3MPa)  |
| Ozone production                               | 0.05ppm or less (measured 50mm)                                  |
| Operating environment temperature and humidity | 5°C to 40°C/35% to 65% RH (with no dew condensation or freezing) |
| Accessories                                    | AC adapter AD24-ITC  |

#### Decay area



#### Accessories



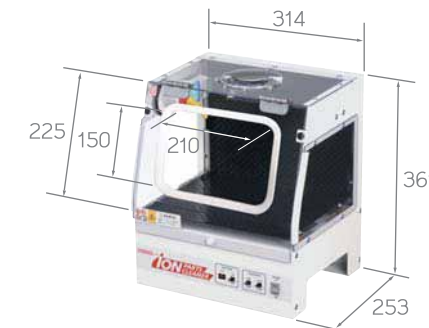
## STATIC SOLUTIONS

### ION PART CLEANERS

**IPC-A4** ION PARTS CLEANER (EDP No. 621610)

Ionizing method : Piezoelectric high-frequency AC corona discharge  
Electrode needles : Stainless steel

Innovative dust collection system with self-adhesive polyurethane gel sheets. No built-in dust collector.



CE RoHS

Eco-friendly product

Ionizing air blow can be switched between Pulse mode and Continuous mode. With a built-in sensor. The operation time is adjustable.

- Compact desktop type (W:314mm x D:253mm)
- An infrared sensor is used to emit a stream of dust-eliminating air.
- Pulse mode uses bursts of air to vibrate dust and forcibly dislodge it. The operation time is adjustable.
- Dust can be collected by the adhesive gel sheets
- The adhesive gel sheets are washable and reusable.
- With no built-in dust collector, its power consumption is substantially reduced (Only 17W).

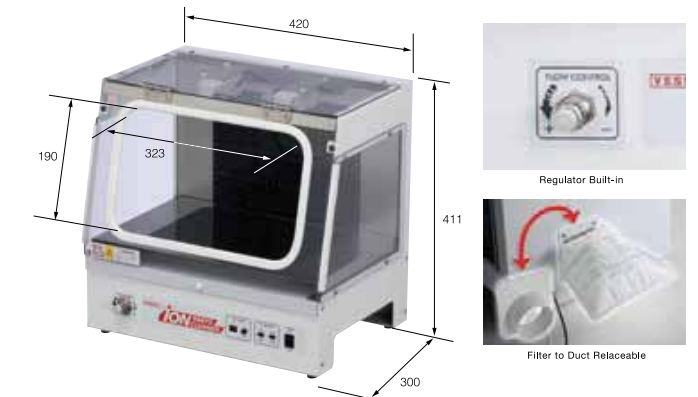


#### Primary specifications

|                                    |   |
|------------------------------------|---|
| Dust collection method             | Self-adhesive polyurethane gel sheets and non-woven fabric filter   |
| Applied voltage                    | 10 kV AC (p-p)  |
| Input voltage/ Current consumption | 24 V DC ±5% / 700 mA  |
| Power consumption                  | 17 W  |
| Applied fluid                      | 0.1 MPa to 0.5 MPa (Clean air)  |
| Air supply hose diameter           | 6 mm x 4 mm   |
| Air consumption                    | 187 L/min (0.3MPa, Continuous mode)   |
| Modes for ionizing blow            | Continuous mode<br>High-frequency pulse mode (Cycle length: 100msec, Pulse width: 40msec)<br>Low-frequency pulse mode (Cycle length: 250msec, Pulse width: 100msec) |
| OFF-timer setting                  | 1, 2, 5, 10, 30seconds (selected by DIP switch)   |
| Ozone generation                   | Less than 0.05ppm (measured 50mm from device)   |
| Operating temperature and humidity | 5°C to 40°C, 35% to 65% RH (non-condensing, non-freezing)   |
| Noise                              | 86.5 dB (A) (0.3MPa, Continuous mode, 1m distance in the front position)  |
| Weight                             | 6.0 kg  |
| Accessories                        | Power supply transformer (Input AC100 to 240V Output DC24V),<br>Mounting bracket for N-1, Electro Needle Replacement Screwdriver (separately sold)                  |

**IPC-A3** ION PARTS CLEANER (EDP No. 621612)

A3 size is ideal for capturing dust with adhesive urethane gel at cell workbench



CE RoHS

Eco-friendly product

|   |                                 |                           |
|---|---------------------------------|---------------------------|
| Sensor  | Air blow                        | Off delay timer           |
| Diffused reflection type                                    | Continuous/pulse blow selection | 1 to 30 seconds (5 steps) |
| Power supply DC24V  | Air Pressure max 0.7MPa         | Ionizer N-1x2pcs          |
| Pinpoint L-shape corner nozzlex2pcs                         | AC adapter 100 to 240V          | Regulator Built-in        |
| Self-adhesive polyurethane gel sheets and paper pack filter | Integrated hood/dust collector  |                           |



- With no built-in dust collector, its power consumption is substantially reduced.
- Dislodged dust will be collected by the adhesive gel sheets.
- A paper pack filter can be attached to the exhaust port on the rear side (standard).

#### Specifications

|  |  |
|--|--|
| Model No.                                      | IPC-A3   |
| Ionizing method/Applied voltage                | Piezoelectric high-frequency AC corona discharge/AC10kV  |
| Power supply                                   | DC24V±5%   |
| Current consumption                            | 900mA or less  |
| Dust collection airflow                        | 1.13 m³/min (Built-in fan)   |
| Static pressure                                | 460Pa (Built-in fan)   |
| Dust collection filter                         | Self-adhesive polyurethane gel sheets and paper pack filter  |
| H×W×Dmm  | H411×W420×D300mm   |
| Weight   | 9.5kg  |
| Air supply hose diameter                       | tube fitting Φ 10mm  |
| Operating fluid                                | Clean dry air (0.1MPa to 0.7MPa)   |
| Airflow  | 333 ℓ /min (0.3MPa)  |
| Ozone production                               | 0.05ppm or less (measured 50mm)  |
| Operating environment temperature and humidity | 0°C to 40°C/20% to 80% RH (with no dew condensation or freezing)   |
| Accessories                                    | AC adapter AD24-IT19-EX Pinpoint nozzlex1pc<br>Adhesive gel sheet plate (included with device)×2pcs<br>Duct flange (for φ 75mm) Paper pack filter (6pc.) |

#### Replacement parts

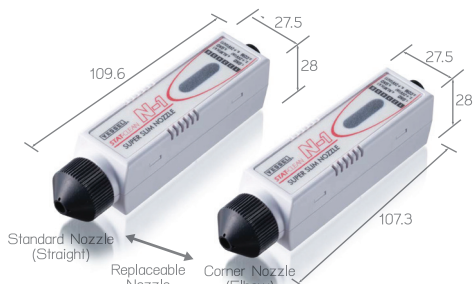


## STATIC SOLUTIONS

### NOZZLE TYPE

**N-1 SUPER SLIM NOZZLE-TYPE IONIZER** EDP No. 621639

Super Compact Slim Body.  
A rotating nozzle enables to ionize anywhere

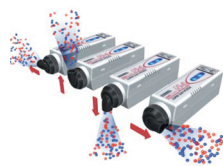


- Super slim and compact design enabling to be installed at any place for any direction. 27.5mm×28mm.
- Change the blow direction by turning the rotary corner nozzle.

|   |                                    |                                      |                             |
|---|------------------------------------|--------------------------------------|-----------------------------|
| <b>High Voltage Transformer</b><br>Piezoelectric high-frequency AC corona discharge | <b>Ion balance</b><br>within ±10 V | <b>Decay time</b><br>0.7 sec or less | <b>Directive</b><br>CE RoHS |
|---|------------------------------------|--------------------------------------|-----------------------------|

- External grounding terminal
- Power supply DC24V
- Power supply AIR/N2 max 0.6MPa
- LED illumination
- AC Adapter (Option)
- Screw-type needle electrode
- "ON" lamp
- ALARM H.V.

|  |   |
|--|---|
| Model No.                                      | N-1   |
| Ionizing method/Applied voltage                | Piezo high-frequency AC Corona discharge method/AC10kV (p-p)      |
| Power supply and current consumption           | DC24V ±5%/58mA(typ.)  |
| Ion balance                                    | within ±10V (standard nozzle 0.3MPa, 150mm) [measured values]     |
| Decay time                                     | 0.7 sec or less (standard nozzle 0.3MPa, 150mm) [measured values] |
| Operating range                                | 50 mm to 600 mm   |
| HxWxDmm  | L109.6xW27.5xH28mm (with standard nozzle mounted)                 |
| Weight   | 62 g (with standard nozzle mounted)                               |
| Air supply hose diameter                       | tube fitting Φ6mm   |
| Operating fluid                                | Clean dry air (0.1MPa to 0.3MPa), nitrogen N2 (0.1MPa to 0.3MPa)  |
| Airflow  | 1.6L/min (With standard nozzle mounted at 0.3MPa)                 |
| Ozone production                               | 0.05ppm or less (measured 50mm)                                   |
| Operating environment temperature and humidity | 5°C to 40°C/35% to 65% RH (with no dew condensation or freezing)  |
| Accessories                                    | Standard Nozzle (included with device), Corner Nozzle             |



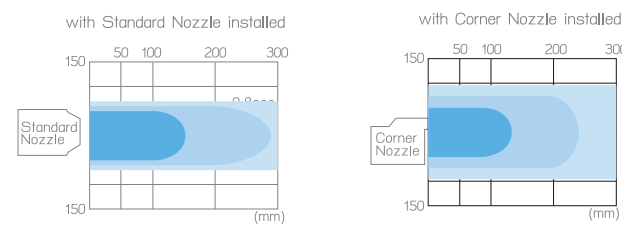
The nozzle position clicks at 90° intervals (w/corner nozzle)

#### Accessories



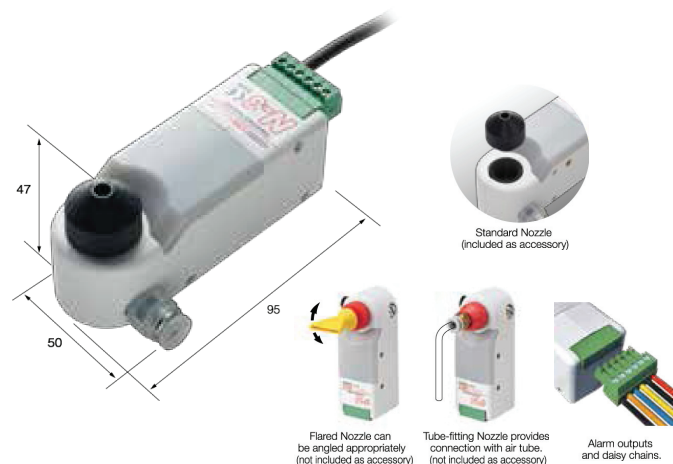
#### Static erasing area

Decay area Air Pressure : 0.3 MPa



**N-3 PINPOINT NOZZLE IONIZER**

Featuring an LED indicator that communicates the device's operating status at a glance



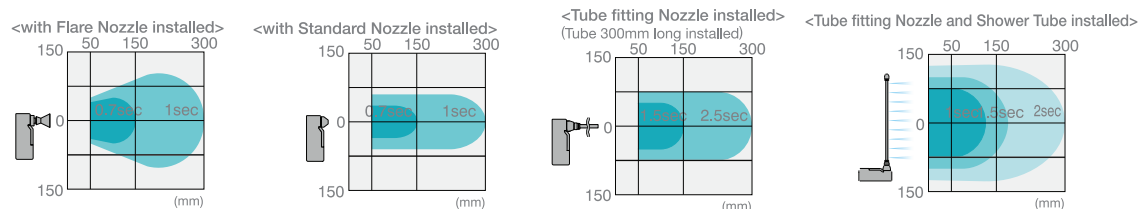
- Easy to wire with connector terminals.
- Diverse nozzles support various applications.

- External grounding terminal
- Power supply DC24V
- Power supply AIR/N2 max 0.6MPa
- AC Adapter (Option)
- Screw-type needle electrode
- "ON" lamp
- ALARM H.V.

|   |                                    |                                      |                             |
|---|------------------------------------|--------------------------------------|-----------------------------|
| <b>High Voltage Transformer</b><br>Piezoelectric high-frequency AC corona discharge | <b>Ion balance</b><br>within ±10 V | <b>Decay time</b><br>0.7 sec or less | <b>Directive</b><br>CE RoHS |
|---|------------------------------------|--------------------------------------|-----------------------------|

|  |  |
|--|--|
| Ionizing method/Applied voltage                | Piezo high-frequency AC Corona discharge method/AC6kV (p-p)                  |
| Power supply and current consumption           | DC24V±5% / 90mA(max.)  |
| Ion balance                                    | ±10V or less (at the time of factory shipment)                               |
| Decay time                                     | 0.7 sec or less (±100V > ±100V) (at the time of factory shipment)            |
| Operating range                                | 50 mm to 600 mm  |
| HxWxDmm  | L95xW50xH47mm  |
| Weight   | 104g (with standard nozzle mounted)  |
| Air supply hose diameter                       | tube fitting Φ6mm  |
| Operating fluid                                | Clean dry air (0.1MPa to 0.6MPa), nitrogen N <sub>2</sub> (0.1MPa to 0.6MPa) |
| Airflow  | 170 L/min (With standard nozzle mounted at 0.3MPa)                           |
| Noise level                                    | 99.4 dBA (With standard nozzle mounted at 0.3MPa)                            |
| Ozone production                               | 0.05ppm or less (measured 50mm)  |
| Operating environment temperature and humidity | 5°C to 40°C/35% to 65% RH (with no dew condensation or freezing)             |
| Accessories                                    | Standard Nozzle (included with device), Power supply harness                 |

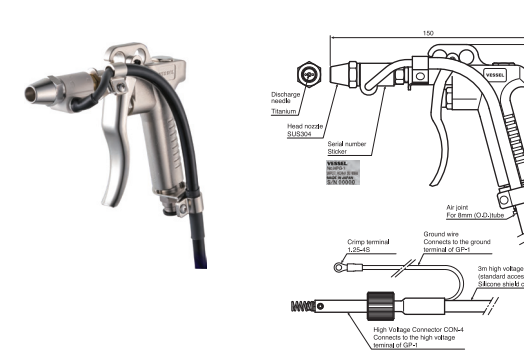
Decay area Air Pressure : 0.3MPa



## STATIC SOLUTIONS

### COMMERCIAL FREQUENCY TYPE HIGH VOLTAGE POWER SUPPLY

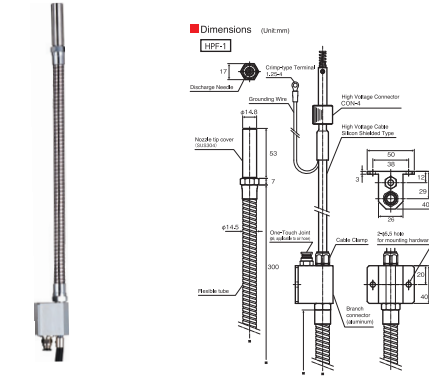
**HPG-1 HIGH POWER IONIZING GUN**



#### Specifications

|                                  |  |
|----------------------------------|--|
| Model                            | HPG-1  |
| Type                             | High voltage applied type ionizing   |
| Structure                        | Direct-coupled (Touch the electrode when applying current may bring electric shocks)   |
| Applied High Voltage             | High Voltage Power Supply Unit GP-1 4kV  |
| Ionizing Method                  | AC corona discharge  |
| Applied Voltage/Frequency        | 3.5kVAC / 50/60Hz (to be set and/or adjusted on the GP-1 4kV)  |
| Operating Fluid / Input Pressure | Clean air/max. input pressure of 0.7MPa (PROHIBITED TO SUPPLY AIR AT MORE THAN 0.7MPa. SERIOUS RISK OF DAMAGE OR BREAKAGE ON THE BODY AND OTHER PARTS) |
| Operating Temp./Humidity         | 0~45°C/10~90%RH (without freezing or dew condensation)   |
| Storage Temp./Humidity           | -30~50°C/10~90%RH (without freezing or dew condensation)   |
| Installation Distance            | 50mm~300mm approx. (between a charged product and discharge tip of the gun)  |
| Decay Time                       | Approx. 0.5 sec. (Input air pressure: 0.3MPa, Distance: 150mm)   |
| Ion Balance                      | Adjustable on GP-1 4kV (Charged plate monitor or an equivalent is required.)   |
| Installation Place               | Indoor   |
| Protective Circuit               | High Voltage Power Supply GP-1 4kV has high voltage anomaly detection function and automatic stop circuit.   |
| High Voltage Cable               | 3m (standard), silicon shielded cable  |
| Termination Connector            | High pressure connector CON-4  |
| Air Connection                   | Outer dia. 8mm tube applied, one-touch joint   |
| Material                         | Air gun: Aluminum die-cast, Nozzle: PA66+SUS304, Electrode needle: Titanium  |
| Weight                           | Approx. 550g including high pressure cable (3m) and high pressure connector.   |
| Noise                            | Approx. 95dBA (Input air pressure: 0.3MPa)   |
| Air Consumption                  | Approx. 110L/min (Input air pressure: 0.3MPa)  |
| Life Expectancy                  | 10,000 hours (only as a guide) (8hours operation x 250days x 5years)   |

**HPF-1 HIGH POWER IONIZING FLEXIBLE NOZZLE**

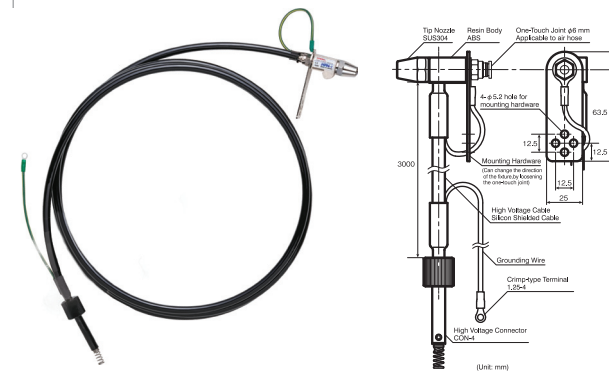


#### Specifications

|                                  |  |
|----------------------------------|--|
| Model                            | HPF-1  |
| Type                             | High voltage applied type ionizing Flexible Nozzle   |
| Structure                        | Direct-coupled (Touch the electrode when applying current may bring electric shocks)   |
| Applied high voltage             | High voltage power supply unit GP-1 4kV  |
| Ionizing method                  | Alternating current corona discharge method  |
| Applied voltage/Frequency        | 3.5kVAC and 50 to 60Hz (set/adjusted on the GP-1 4kV side)   |
| Operating fluid / input pressure | Clean dry air/Max. input pressure: 0.4MPa  |
| Operating temp & humidity        | 0 to 45°C and 10 to 80%RH (without freezing or dew condensation)   |
| Storage temp & humidity          | -10 to 50°C and 10 to 80%RH (without freezing or dew condensation)   |
| Installation distance            | Approx. 50 to 300mm (the distance between a charged object and the discharge tip of the gun)   |
| Decay time                       | Approx. 1 sec. or less (Input air pressure: 0.3MPa, Distance: 150mm)   |
| Ion balance                      | Adjustable on the GP-1 4kV (A Charged plate monitor or equivalent is required.)  |
| Installation place               | Indoors  |
| Protective circuit               | High Voltage Power Supply GP-1 is equipped with a high voltage anomaly detection function and automatic stop circuit.                          |
| High voltage cable               | 3m (standard)*1, silicon shielded cable  |
| Termination connector            | High Voltage Connector CON-4   |
| Air connection                   | dia. 6mm tube applied, one-touch joint   |
| Material                         | Nozzle tip cover: SUS304, Electrode needle: Titanium, Insulation: Fluorocarbon, Flexible tube: Steel, chrome plated, Air branch unit: Aluminum |
| Size                             | See the external dimension diagram.  |
| Weight                           | Approx. 690g including high pressure cable (3m) and high pressure connector.   |
| Noise                            | Approx. 95dBA (Input air pressure: 0.3MPa)   |
| Air consumption                  | Approx. 150L/min (Input air pressure: 0.3MPa)  |
| Life expectancy                  | 10,000 hours (only as a guide) *2 (8hours operation x 250days x 5years)  |

\*1 Longer cable up to 5m can be made-to-order. \*2 This is not a period of warranty.

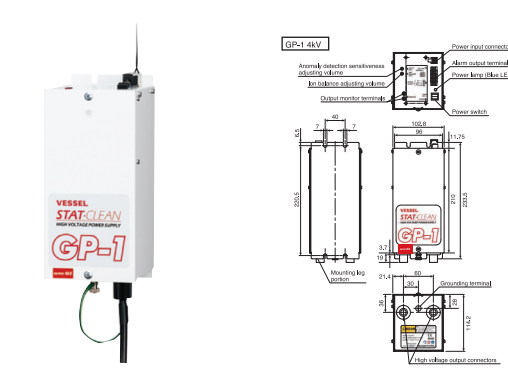
**HPN-1 HIGH POWER IONIZING NOZZLE**



#### Specifications

|                                |   |
|--------------------------------|---|
| Model                          | HPN-1   |
| Type                           | High voltage applied type ionizer   |
| Structure                      | Direct-coupled (Touch the electrode when applying current may bring electric shocks)                            |
| Applied High Voltage           | High Voltage Power Supply Unit GP-1 4kV   |
| Ionizing Method                | AC corona discharge   |
| Applied Voltage/Frequency      | 3.5kVAC / 50/60 Hz  |
| Operating Fluid/Input Pressure | Clean air/Max. input pressure 0.7MPa  |
| Operating Temp./Humidity       | 0~45°C/10~90%RH (without freezing or dew condensation)  |
| Storage Temp./Humidity         | -30~50°C/10~90%RH (without freezing or dew condensation)  |
| Installation Distance          | 50mm~300mm approx. (between charged product and discharge tip of nozzle)  |
| Decay Time                     | Approx. 0.5sec. (Input air pressure: 0.3MPa, distance: 150mm)   |
| Ion Balance                    | Adjustable on GP-1 4kV (Charged plate monitor or an equivalent is required.)                                    |
| Installation Place             | Indoor  |
| Protective Circuit             | High voltage power supply unit GP-1 4kV has high voltage anomaly detection function and automatic stop circuit. |
| High Voltage Cable             | 3m (standard), silicon shielded cable   |
| Connector                      | High pressure connector CON-4   |
| Air Connection                 | dia. 6mm tube applied, one-touch joint  |
| Material                       | Nozzle: PA66+SUS304, Electrode needle: Titanium   |
| Size                           | Refer to the external drawing (on the next page).   |
| Weight                         | Approx. 350g, including high pressure cable (3m), standard mounting hardware, and high pressure connector.      |
| Noise                          | Approx. 95dBA (Input air pressure: 0.3MPa)  |
| Air Consumption                | Approx. 110L/min (Input air pressure: 0.3MPa)   |

**GP-1 HIGH VOLTAGE POWER SUPPLY**



#### Specifications

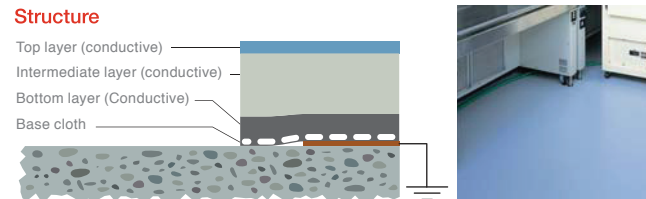
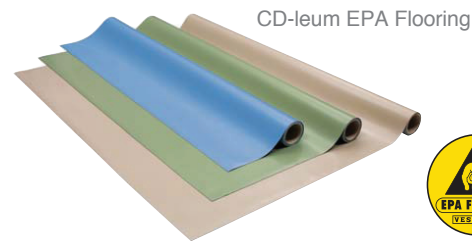
|  |   |
|--|---|
| Model                                    | GP-1 4kV  |
| Operating Temp./Humidity                 | 0~50°C/10~90%RH (without freezing or dew condensation)  |
| Storage Temp./Humidity                   | -30~70°C/10~95%RH (without freezing or dew condensation)  |
| Installation Place                       | Indoors   |
| Rated Input Voltage                      | 24V DC ±10%   |
| Variable Output Range                    | AC output 4kV<br>DC output -150 to +550V  |
| Secondary Short Circuit Current          | 5 mA or lower   |
| Output Monitor                           | 1/1000V ±5% of the output voltage is emit to the monitor terminals.   |
| Low-voltage Detection                    | Anomaly detection function will operate when each output drops to about 85 or less of the set voltage due to high voltage short circuit or abnormal sparks. |
| Overcurrent Detection                    | Anomaly detection function will operate when the output current is about 4mA or more.   |
| Anomaly Detection Sensitivity Adjustment | The anomaly detection response speed can be adjusted (using external adjustment knob)   |
| Power Supply Input                       | Molex 5569-04A1-210   |
| High Voltage Output Connector            | Ceramic high voltage output terminal 2  |
| Alarm Output Terminal                    | C contact relay output  |
| Switches And Displays                    | On-off rocker switches, Blue LED power indicator lamp (goes off when anomaly is detected)   |
| Material                                 | Housing SPCC, painted white   |
| Size                                     | W102.8x D233.5x H114.2mm  |
| Weight                                   | Approx. 4.5kg   |

# STATIC SOLUTIONS

## EPA WORKING ITEMS

### CONDUCTIVE VINYL FLOORING

Optimum for environments sensitive to static electricity damage, such as semiconductor plants and clean rooms.



| Common Specifications |                                    |        |        |
|-----------------------|------------------------------------|--------|--------|
| Model No.             | CH-01G                             | CD-134 | CD-602 |
| Color                 | Green                              | Beige  | Blue   |
| Size                  | W1.82m x L9.0m x t2.0mm            |        |        |
| Conductivity          | 10 <sup>6</sup> ~10 <sup>7</sup> Ω |        |        |
| Weight                | 51kg/roll (3.1kg/m <sup>2</sup> )  |        |        |
| Material              | PVC                                |        |        |

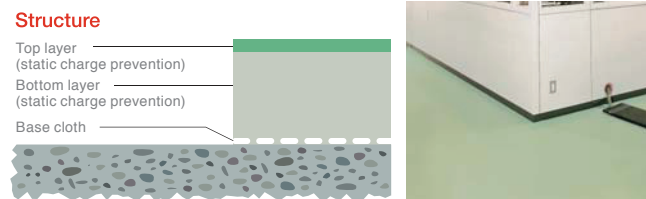
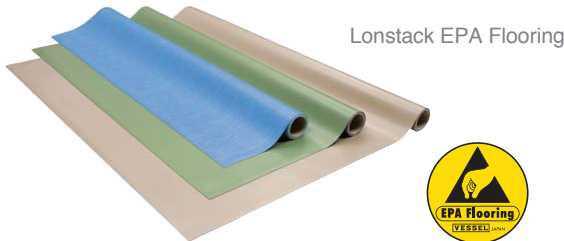
\*Sold separately: Grounding plate/welding rods \*Contact VESSEL if you want colors other than the above.

| Applications  | Conductivity                       | Material | Directive |
|---------------|------------------------------------|----------|-----------|
| Floor surface | 10 <sup>6</sup> ~10 <sup>7</sup> Ω | PVC      | EPA       |

- Uniform and stable conductivity performance (Suppresses generation of static electricity; attenuation performance is better than the antistatic floor materials)
- Special welding rods are used to create a seamless floor covering
- Dust resistance and easy maintenance
- Strong resistance to such chemicals as acids, alkali, and disinfectants

### ANTI-STATIC VINYL FLOORING

Prevents the generation of static electricity for less dust and less equipment malfunctions.



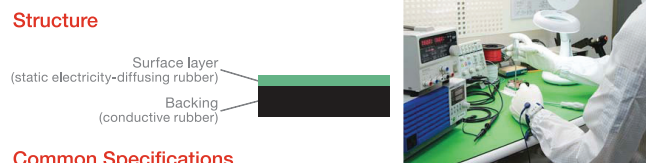
| Common Specifications |                         |        |              |
|-----------------------|-------------------------|--------|--------------|
| Model No.             | NA-01G                  | LS-134 | LS-5602      |
| Color                 | Green                   | Beige  | Blue(marble) |
| Size                  | W1.82m x L9.0m x t2.0mm |        |              |
| Conductivity          | 10 <sup>9</sup> Ω       |        |              |
| Weight                | 52kg / roll             |        |              |
| Material              | PVC                     |        |              |

| Applications  | Conductivity      | Material | Directive |
|---------------|-------------------|----------|-----------|
| Floor surface | 10 <sup>9</sup> Ω | PVC      | EPA       |

- Uniform and stable conductivity performance (Less generation of static electricity; attenuates it which is charged on humans)
- Special welding rods are used to create a seamless floor covering
- Dust resistance and easy maintenance
- Strong resistance to such chemicals as acids, alkali, and disinfectants

### CONDUCTIVE RUBBER MAT

Controlling electroconductivity to 10<sup>6</sup>Ω or more and 10<sup>7</sup>Ω or less, without influence from the working environment. Ideal for workbenches requiring static electricity measures on backing.



| Common Specifications |   |   |
|-----------------------|---|---|
| Model No.             | LG-100                                  | SG-100                                  |
| Color                 | Light green                             | Green                                   |
| Size                  | W1.0m x L10m x t2.0mm                   | W1.0m x L10m x t2.0mm                   |
| Conductivity          | 10 <sup>6</sup> ≤ R ≤ 10 <sup>7</sup> Ω | 10 <sup>6</sup> ≤ R ≤ 10 <sup>7</sup> Ω |
| Weight                | 31kg/roll                               | 31kg/roll                               |
| Material              | NBR+SBR                                 | NBR+SBR                                 |

| Applications                       | Conductivity                            | Material | Directive |
|------------------------------------|---|----------|-----------|
| Designed for use with work benches | 10 <sup>6</sup> ≤ R ≤ 10 <sup>7</sup> Ω | NBR+SBR  | EPA RoHS  |

- Offers uniform, consistent conductive performance.
- Features a matte surface finish, reducing reflections and helping prevent eye fatigue prevention.
- Heat resistant to dropping solder.

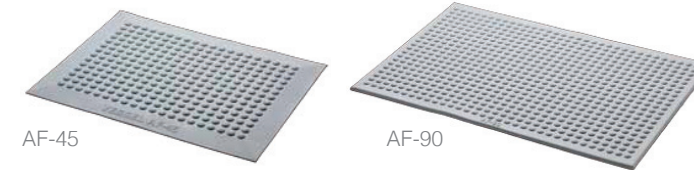
# STATIC SOLUTIONS

## EPA WORKING ITEMS

### CONDUCTIVE ANTI-FATIGUE MAT

Alleviate fatigue caused by standing for a long time

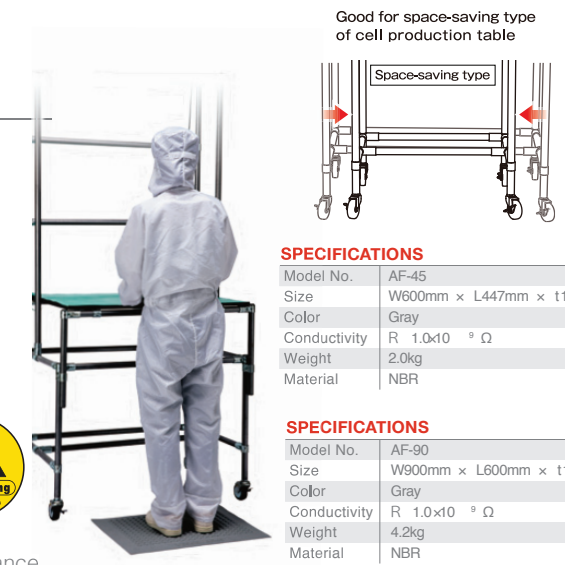
This conductive mat can be used on the ESD preventive floor.



| Applications  | Conductivity                | Material | Directive |
|---------------|-----------------------------|----------|-----------|
| Floor surface | R ≤ 1.0 x 10 <sup>9</sup> Ω | NBR      | EPA       |

Conductivity rating : R ≤ 1.0 x 10<sup>9</sup>Ω

- For indoor use only
- Uniform and stable conductive performance
- Thickness avoids warping
- Gray color for easy maintenance



Good for space-saving type of cell production table

| SPECIFICATIONS |                         |
|----------------|-------------------------|
| Model No.      | AF-45                   |
| Size           | W600mm x L447mm x t15mm |
| Color          | Gray                    |
| Conductivity   | R 1.0x10 <sup>9</sup> Ω |
| Weight         | 2.0kg                   |
| Material       | NBR                     |

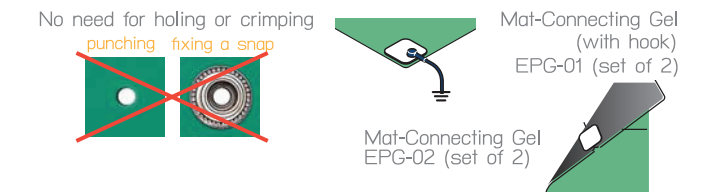
| SPECIFICATIONS |                         |
|----------------|-------------------------|
| Model No.      | AF-90                   |
| Size           | W900mm x L600mm x t15mm |
| Color          | Gray                    |
| Conductivity   | R 1.0x10 <sup>9</sup> Ω |
| Weight         | 4.2kg                   |
| Material       | NBR                     |

## ESD COUNTERMEASURE WRIST STRAPS

### EPG-01 (EDP No. 621481)

### EPG-02 MAT-CONNECTING GEL (EDP No. 621482)

Made from medical-grade conductive gel, VESSEL's mat-connecting gel eliminates the time-consuming need to string together eyelets.



#### Primary specifications

|                      |   |
|----------------------|---|
| Product name         | EPG-01: Mat-connecting gel with hook (set of 2) |
|                      | EPG-02: Mat-connecting gel (set of 2)           |
| Size                 | 50 mm x 50 mm                                   |
| Packaging (quantity) | 20 sets   |

### EPC-18 (EDP No. 621393)

### EPC-30 GROUNDING CORD (EDP No. 621394)

Designed to connect to a mat-connecting gel (includes a hook) or grounding tap. Available in 1.8 m and 3.0 m lengths.



#### Primary specifications

|                     |  |
|---------------------|--|
| Product name        | Grounding cord   |
| Built-in resistance | 1 MΩ   |
| Length              | EPC-18: Max. length of 1.8 m; EPC-30: max. length of 3.0 m |
| Accessories         | 1 alligator clip   |
| Contents (quantity) | 20 cords   |

### EPS-GT2 GROUNDING TAP (EDP No. 621402)

Provides ground connection points for anti-static wrist straps and conductive rubber mats



#### Primary specifications

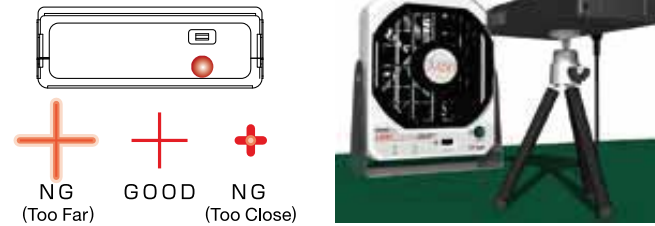
|                     |   |
|---------------------|---|
| Product name        | Grounding tap   |
| Grounding cord      | Approx. 3.0 m (with round jack)                             |
| Resistance value    | Approx. 1 MΩ between device and grounding cord (round jack) |
| Material            | Case : ABS plastic; connection hardware: stainless steel    |
| Contents (quantity) | 20 pcs  |

# STATIC SOLUTIONS

## EPA WORKING MAT

### EYE-02 ELECTROSTATIC FIELD METER

Visualizing invisible static electricity Peak hold supports long-time measurements



|                |                               |                         |                              |
|----------------|-------------------------------|-------------------------|------------------------------|
| CE RoHS        | measurement                   | measurement             | LCD display                  |
|                | Charge potential              | Ion balance             | Bargraph + 3 digits          |
| One 9V Battery | Ion balance measurement plate | measuring distance 25mm | Auto power off               |
|                |                               |                         | Out of measuring range alarm |
|                |                               |                         | Peak hold function           |
|                |                               |                         | Battery level display        |
|                |                               |                         | Anti-drop strap              |

### Primary specifications

|  |  |
|--|--|
| Charge potential measurement                   | ±0 to ±1.50 kV (LO range) / ±1.0 to ±20.0 kV (HI range)                                  |
| Ion balance measurement                        | 0 to ±200 V  |
| Response time                                  | within 1sec  |
| Accuracy                                       | ±10%   |
| Power  | One 9V battery (006P)  |
| Charged potential measurement distance         | 25mm±0.5mm   |
| LxWxDmm  | L123xW70xD25mm   |
| Weight   | 170g / Ion balance measurement plate 30g   |
| Operating environment temperature and humidity | 10°C to 50°C / 80% RH or less  |
| Accessories                                    | Ion balance measurement plate, Grounding cord, alligator clip, Battery (006P), Soft case |

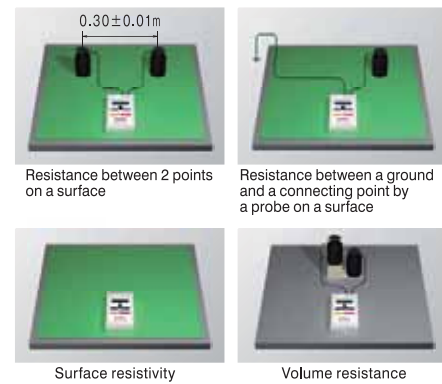
◆Complies with ISO 9000 traceability standards.  
Calibration tables and certificates can be issued for this instrument. (Option)

### SRC-01 SURFACE RESISTANCE CHECKER



- One 9V battery
- With probes
- With a carrying case
- Auto-off

With a carrying case  
Useful to carry all necessary items for measurement



|                                    |   |
|------------------------------------|---|
| Conformity standards               | IEC61340-4-1, JIS-C2170   |
| Measurement range                  | 10 <sup>3</sup> ~10 <sup>12</sup> Ω (Ω/□.)  |
| Applied voltage                    | 10V (R<1.0x10 <sup>6</sup> Ω or Ω/□.), 100V (R≥1.0x10 <sup>6</sup> Ω or Ω/□.)                     |
| Display                            | Triple-digit LCD (□.□□e□□) ex.: 3.14 e10 - 3.14x10 <sup>10</sup>                                  |
| Power source                       | 9V battery x 1 (Type: 006P, recommended alkaline battery)   |
| LxWxD                              | 190 (L) x 101.5 (W) x 54.7 (H) [mm]   |
| Weight                             | Body: around 340g (including a battery), gross weight: around 6.2kg (including the carrying case) |
| Operating temperature and humidity | 0°C~37°C, 10%~90%RH   |
| Material                           | Body case: ABS resin  |

|  |  |                     |                   |           |
|--|--|---------------------|-------------------|-----------|
| Measurement                              | Measurement  | Measurement         | Measurement       | Directive |
| Resistance between 2 points on a surface | Resistance between a ground and a point on a surface | Surface resistivity | Volume resistance | CE RoHS   |

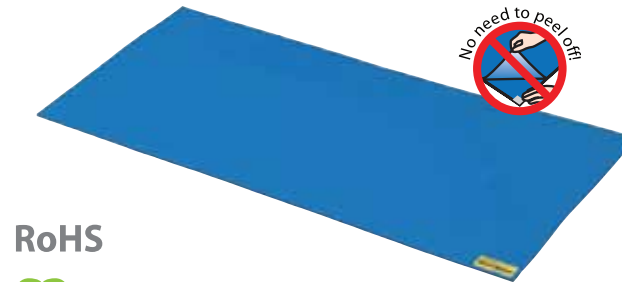
- All necessary for 4 types of measurement in one package.
- This can also measure temperature and humidity. (The values are for reference)
- Applied voltage selector switch enables to measure either the range from 1.0 x 10<sup>3</sup> ~ 10<sup>5</sup> Ω or from 1.0x10<sup>6</sup> ~ 10<sup>12</sup> Ω.

# STATIC SOLUTIONS

## CLEAN WALKER

### CW-900B CLEAN WALKER (EDP No. 621485)

Soft polyurethane gel mat effectively collects dust. Reusable by wiping dust off and economical.



### RoHS

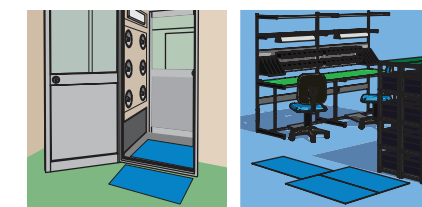
#### Eco-friendly product

- The 5mm high elasticity mat powerfully catches dust from shoe soles grooves and trolley wheels.
- Adhesiveness can be regained by wiping dust off the mat with a tightly wrung cloth.
- For indoor use only (e.g. at the entrance of clean room)

### Primary specifications

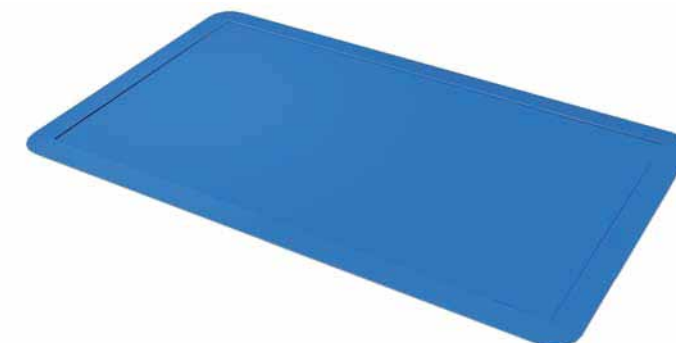
|                   |                             |
|-------------------|-----------------------------|
| Product name      | Clean Walker                |
| Model No.         | CW-900B                     |
| Material          | polyurethane                |
| Color             | Blue                        |
| Hardness          | Asker C3                    |
| Electroconductive | Insulator                   |
| Size              | W 900mm x L 500mm x T 5.0mm |
| Weight            | Approx. 2.4 kg              |

### Applications



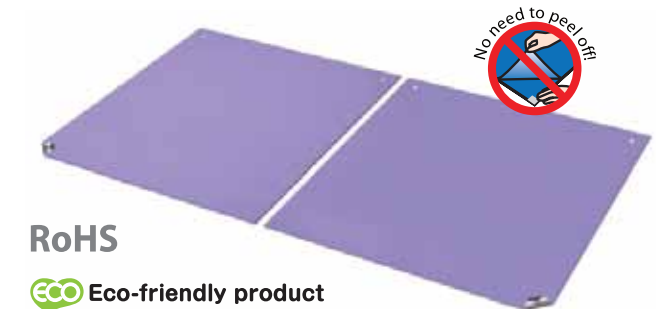
### CW-T900 CLEAN WALKER TRAY (EDP No. 621487)

Provides ground connection points for anti-static wrist straps and conductive rubber mats



### CW-900EZ CLEAN WALKER EASY (EDP No. 621486)

Polyurethane gel mat having just 3mm thickness. Reusable and easy maintenance.



### RoHS

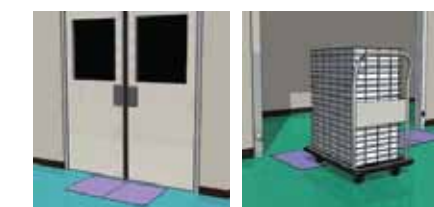
#### Eco-friendly product

- The 3mm high elasticity mat with non-woven textiles attains high durability and has tear resistance.
- The 450mm x 500mm size (2 pieces/set) enables to be placed in a limited area and easily brought to a tap water for cleaning.
- 2 hooks on a mat enable it to be hung, after cleaning with water, so that it gets dry effectively and regains adhesiveness. For indoor use only (e.g. at the entrance of clean room)

### Primary specifications

|                   |                                    |
|-------------------|------------------------------------|
| Product name      | Clean Walker Easy (2 pieces / set) |
| Model No.         | CW-900EZ                           |
| Material          | polyurethane, non-woven textiles   |
| Color             | Light purple                       |
| Hardness          | Shore A 8                          |
| Electroconductive | Insulator                          |
| Size              | W 450mm x L 500mm x T 3mm          |
| Weight            | 1.6 kg (2 pieces)                  |

### Applications



Inclined tray for easy trolley access (Applied to the CW-900B and CW-900EZ)

### Primary specifications

|              |                            |
|--------------|----------------------------|
| Product name | Clean Walker Tray          |
| Model No.    | CW-T900                    |
| Material     | EPDM + SBR                 |
| Color        | Blue                       |
| Size         | W 1000mm x L 600mm x T 5mm |
| Weight       | 2.45 kg                    |