

*New*

# Tool Arm Series

- No.HFS1-300-1DR(-1D)** (Double-Link arm)
- No.HFC1-300DR** (Double-Link arm)
- No.HFAC-3-1DR** (Single-Link arm)
- No.HFKCC-3-1DR** (Double-Link arm)
- No.VAB-5** (Linear arm)
- No.VTS-5/950** (Telescopic arm)
- No.VRS-5** (Simplified arm)



**Optimal option  
before automatization!  
Usable at will,  
like your hand and arm.**

## VESSEL Tool Arms are chosen for



- 1) Reduction of rotational load**  
It reduces the reaction of the electric screwdriver to the hand holding it.



- 3) Improvement of vertical stability**  
It allows screws to go in straight, which reduces failures in screw tightening.



- 2) Reduction of weight load**  
It reduces the feeling of fatigue in your hand and arm, caused by the weight of the electric screwdriver.

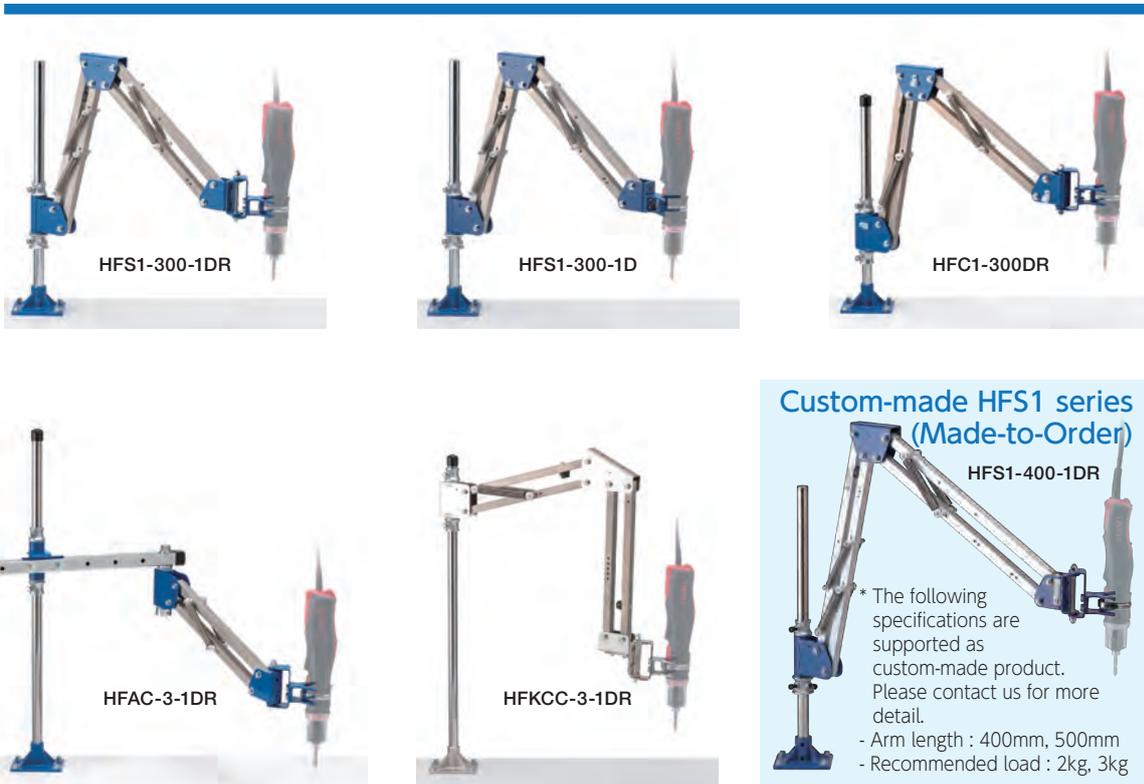


- 4) Improvement of tightening accuracy**  
It ensures consistent fastening quality with less irregularity.

## Succession of SANWA GIKEN's Hand-Free®

VESSEL took over the trademarks and patents of SANWA GIKEN CO., LTD., manufacturer of "Hand-Free (R)", simplified compact tool arms.

Please contact us for replacement parts for or repair of the products that are currently in use, or custom-made products.



## Collaboration with a Specialized Tool Arm Manufacturer

VESSEL is collaborating with a high-tech arm manufacturer, based in France, that possesses a wealth of know-how in automotive part assembly lines in Europe.

Considering productivity improvement as our mission, we will support assembly shops in cooperation with solution partners to achieve customer satisfaction.

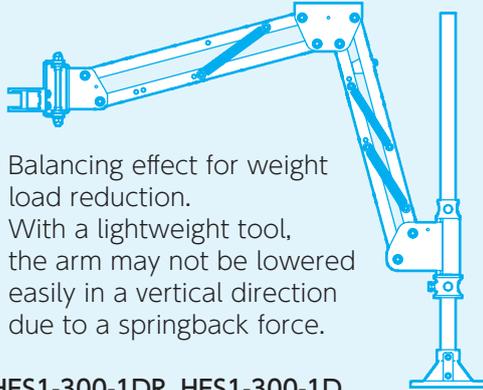


## Arm Types

### 1) Double-link arm

(with two arms connected by a linked structure)

- Advantages:**
- Highly flexible with a wide range of arm movement.
  - Stable tightening accuracy with horizontal movement of the electric screwdriver.



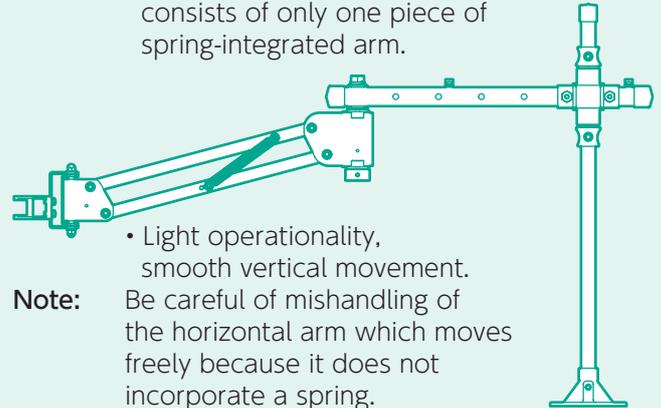
- Note:**
- Balancing effect for weight load reduction.
  - With a lightweight tool, the arm may not be lowered easily in a vertical direction due to a springback force.

**Model:** HFS1-300-1DR, HFS1-300-1D  
HFC1-300DR, HFKCC-3-1DR

### 3) Single-link arm

(combination of horizontal arm and spring-integrated arm)

- Advantages:**
- Suitable for use in a narrow space or on a small worktable than the double-link arm type.
  - Simple movement as this type consists of only one piece of spring-integrated arm.



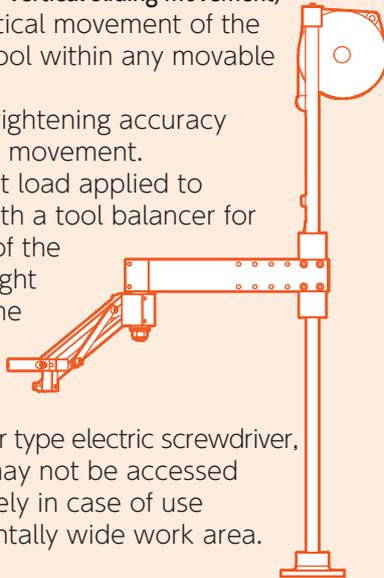
- Note:**
- Light operability, smooth vertical movement.
  - Be careful of mishandling of the horizontal arm which moves freely because it does not incorporate a spring.

**Model:** HFAC-3-1DR

### 2) Linear arm with tool balancer

(with bearing bushing for vertical sliding movement)

- Advantages:**
- Allows vertical movement of the mounted tool within any movable range.
  - Improved tightening accuracy with stable movement.
  - Less weight load applied to workers with a tool balancer for reduction of the overall weight including the mounted tool.



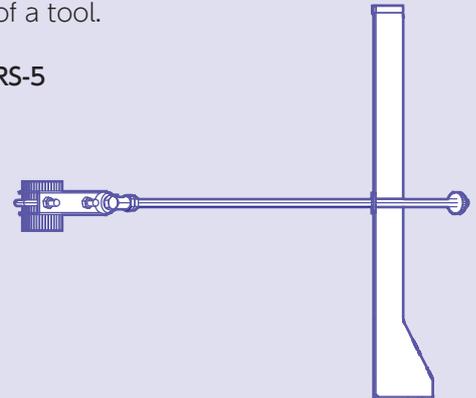
- Note:**
- With a lever type electric screwdriver, the lever may not be accessed appropriately in case of use in a horizontally wide work area.

**Model:** VAB-5

### 4) Simplified stand arm

- Advantages:**
- Effective to reduce the rotational load of the electric screwdriver.
  - Low cost due to simple structure design.
  - Can be moved freely in all directions.
- Notes:**
- A tool balancer is required to reduce the weight load of a tool.

**Model:** VRS-5



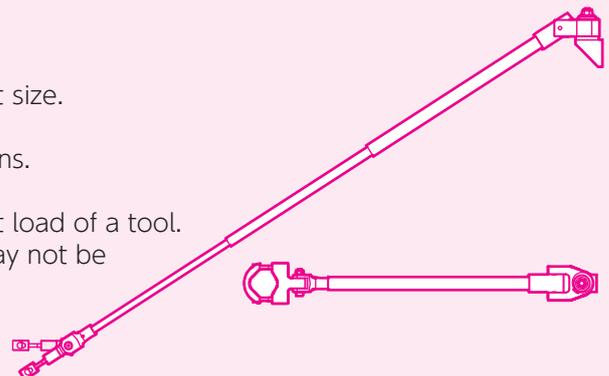
### 5) Telescopic arm

(with carbon pipes that extend and contract)

- Advantages:**
- Usable on a narrow workbench due to compact size.
  - Made of a strong lightweight carbon fiber.
  - Can be moved freely without load in all directions.
  - Installable in ceilings and walls.

- Notes:**
- A tool balancer is required to reduce the weight load of a tool.
  - With a lever type electric screwdriver, the lever may not be accessed appropriately in case of use in a horizontally wide work area.

**Model:** VTS-5/950



For efficient use of limited space

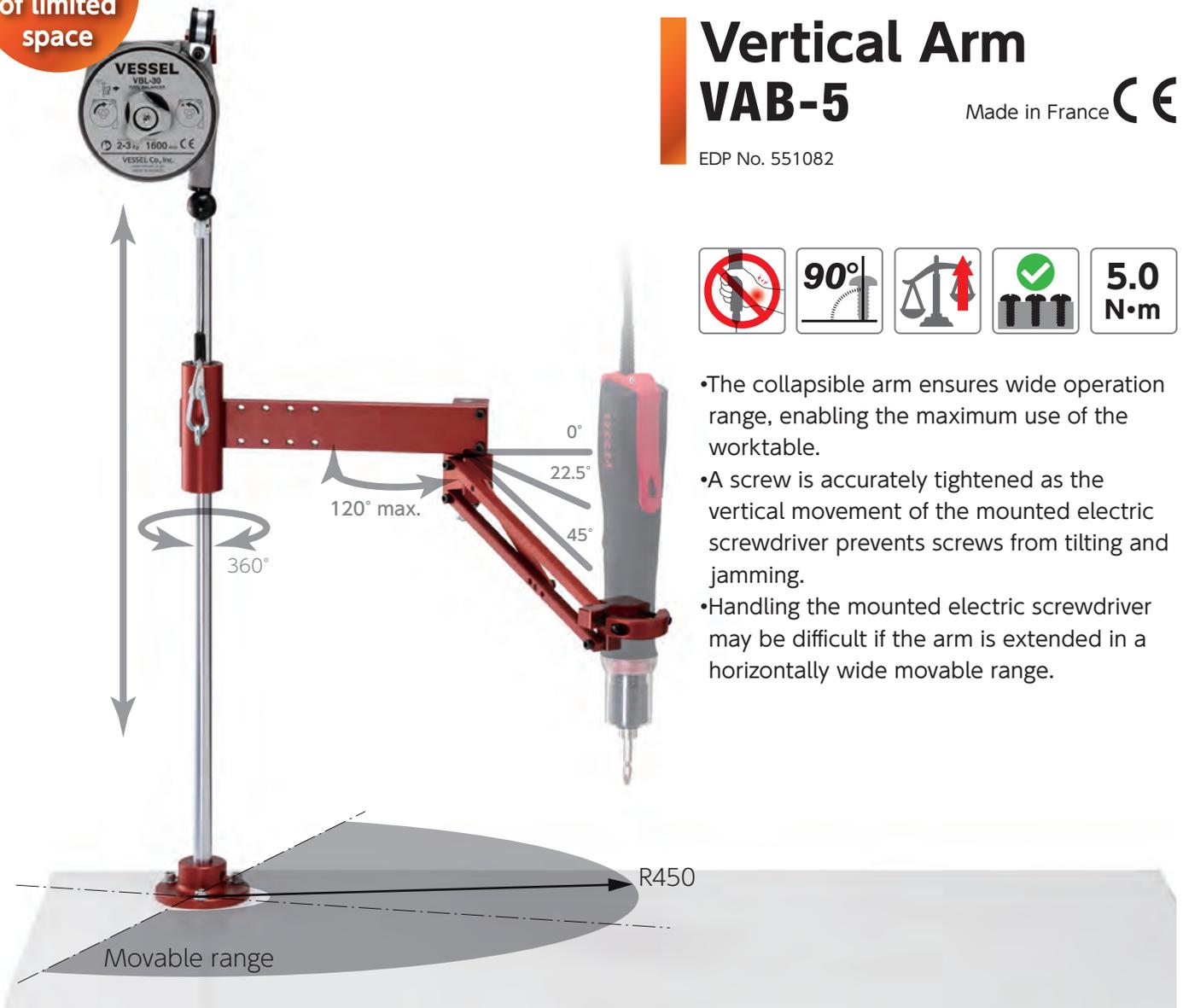
# Vertical Arm VAB-5

Made in France

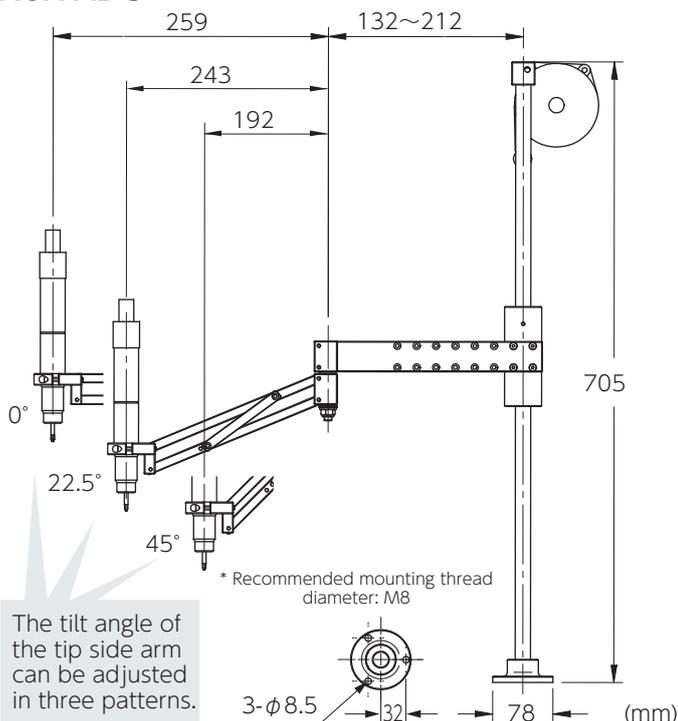
EDP No. 551082



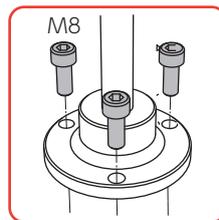
- The collapsible arm ensures wide operation range, enabling the maximum use of the worktable.
- A screw is accurately tightened as the vertical movement of the mounted electric screwdriver prevents screws from tilting and jamming.
- Handling the mounted electric screwdriver may be difficult if the arm is extended in a horizontally wide movable range.



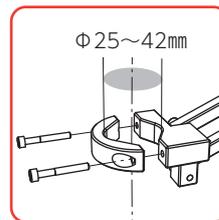
No.VAB-5



The tilt angle of the tip side arm can be adjusted in three patterns.



Mounting bracket



Tool holder



Built-in ball bearing

Model No.	VAB-5
Maximum reaction force (N·m)	5
Maximum load (kg)	1.2
Mounted tool outer diameter (mm)	25~42
Height (mm)	705
Movable range (mm)	Upto R450 (when the angle of the tip arm and the horizontal arm is 22.5°)
Weight (kg)	3.1 (including accessories)
Accessories	Tool balancer (VBL-30)
Operating temperature/humidity	0~40°C / 10~80%RH
Installation location	Indoor
Material	Steel (main pillar), Aluminum (holder/arm)
Applicable standard	CE (Compliant with Machinery Directive 2006/42/EC)
Applicable models	All VE-series models

For tilted work surfaces

# Telescopic Arm

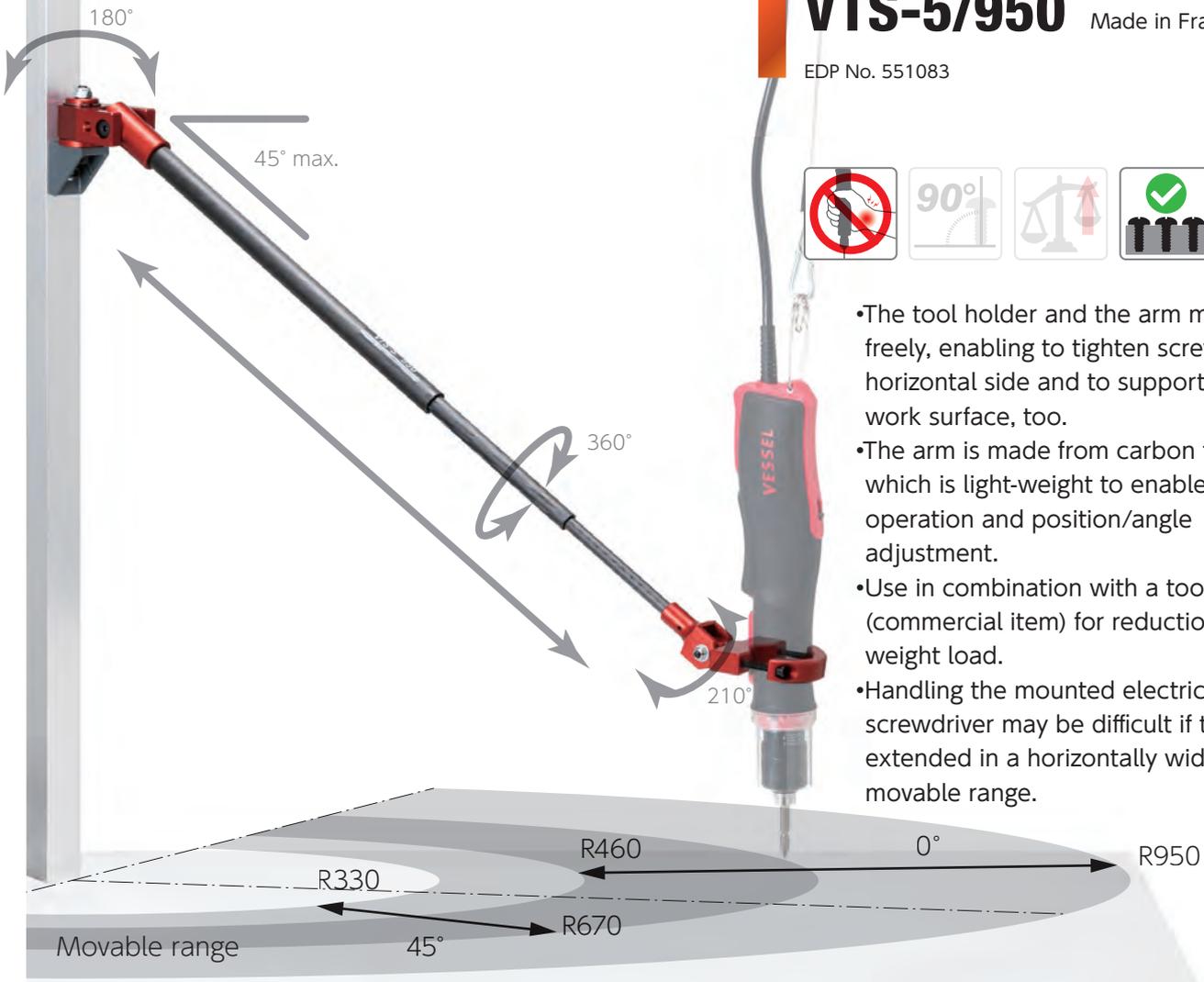
## VTS-5/950

Made in France

EDP No. 551083

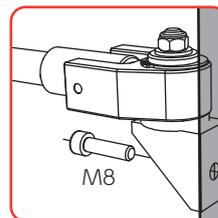
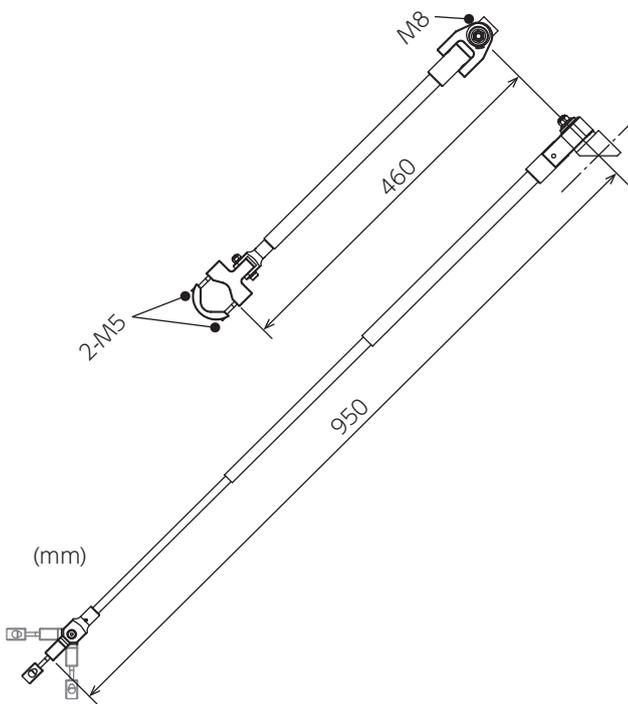


- The tool holder and the arm move freely, enabling to tighten screws from a horizontal side and to support a tilted work surface, too.
- The arm is made from carbon fiber, which is light-weight to enable smooth operation and position/angle adjustment.
- Use in combination with a tool balancer (commercial item) for reduction of weight load.
- Handling the mounted electric screwdriver may be difficult if the arm is extended in a horizontally wide movable range.

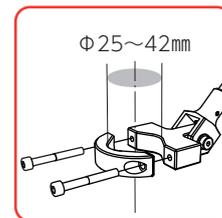


No.VTS-5/950

\* Recommended mounting thread diameter: M8



Universal adapter



Tool holder



Also applicable to horizontal driving

Model No.	VTS-5/950
Maximum reaction force (N·m)	5
Maximum load (kg)	1.2
Mounted tool outer diameter (mm)	25~42
Arm length (mm)	460~950
Movable range (mm)	R330 to 670 (when arm angle is 45°)
Weight (kg)	0.53 (including accessories)
Accessories	Universal adapter (factory-mounted)
Operating temperature/humidity	0~40°C / 10~80%RH
Installation location	Indoor
Material	Aluminum (holder), Carbon fiber (arm)
Applicable standard	CE (Compliant with Machinery Directive 2006/42/EC)
Applicable models	All VE-series models

Wide movable range and Weight reduction



# Hand-Free<sup>®</sup> Arm

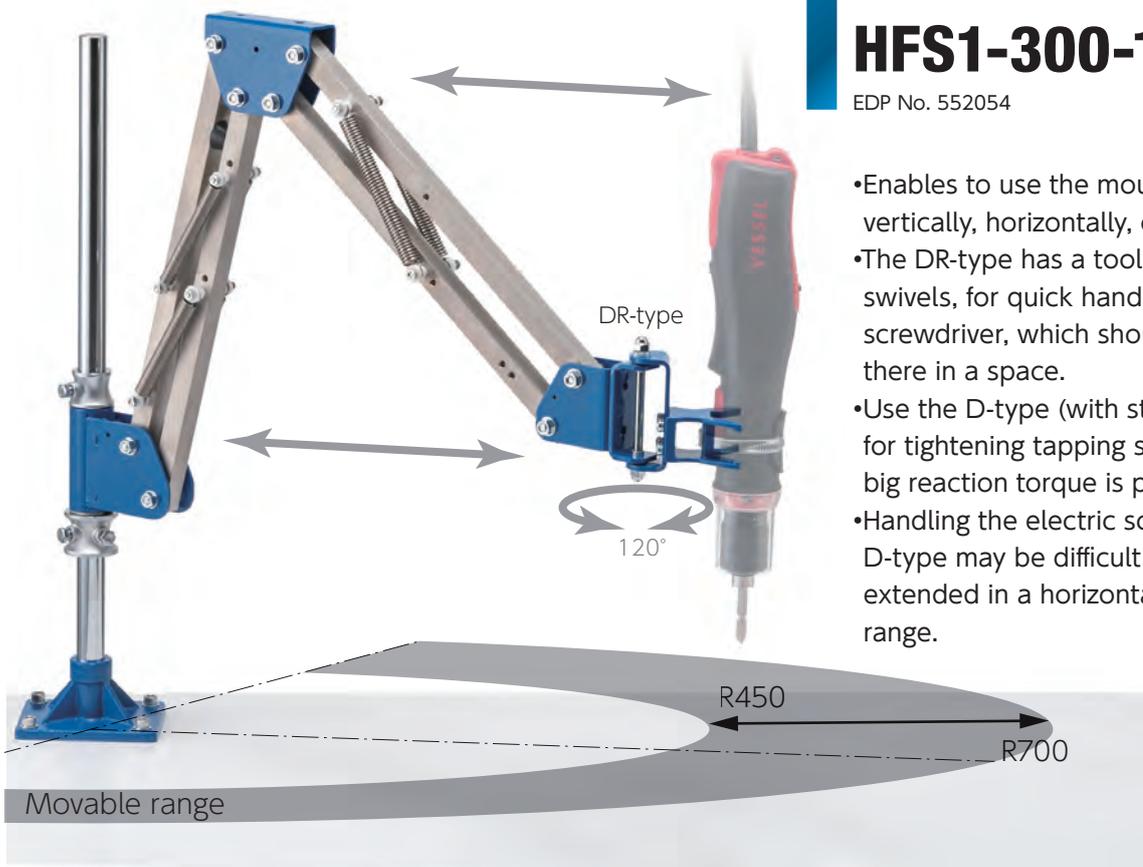
## HFS1-300-1DR

Made in Japan

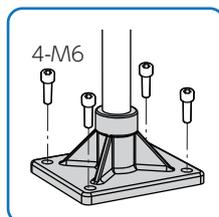
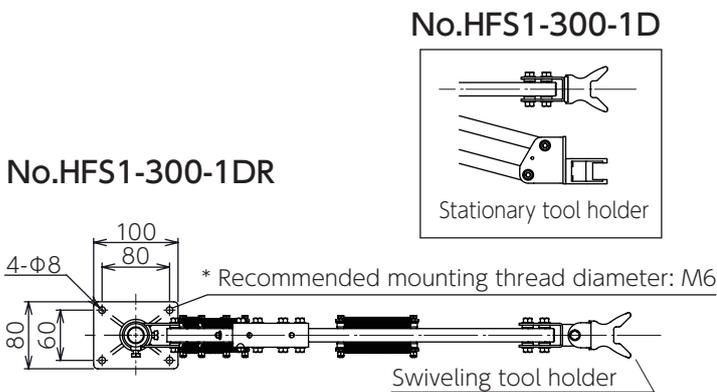
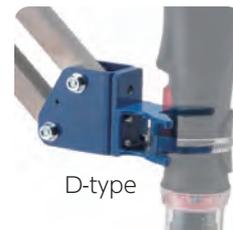
EDP No. 552053

## HFS1-300-1D

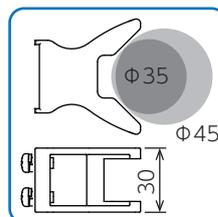
EDP No. 552054



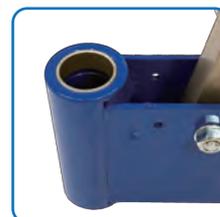
- Enables to use the mounted screwdriver vertically, horizontally, or at the same angle.
- The DR-type has a tool holder which swivels, for quick handling of the electric screwdriver, which should be used here and there in a space.
- Use the D-type (with stationary tool holder) for tightening tapping screws, during which big reaction torque is produced.
- Handling the electric screwdriver on the D-type may be difficult if the arm is extended in a horizontally wide movable range.



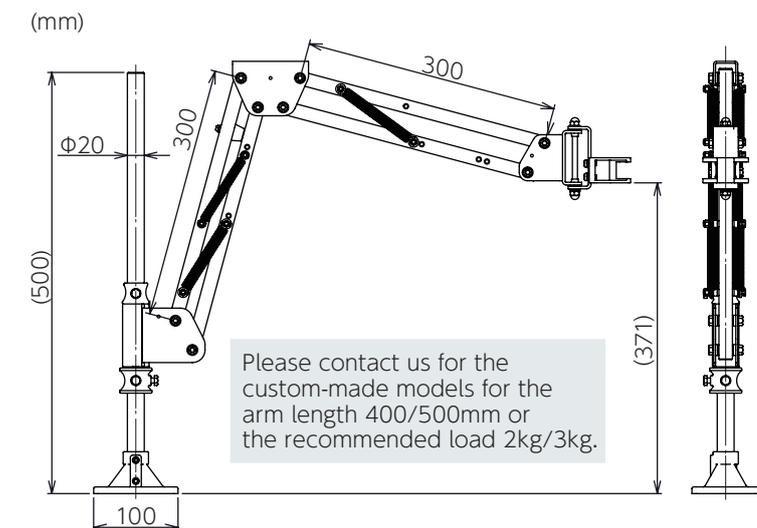
Mounting bracket



Tool holder



Metal bushing



Model No.	HFS1-300-1DR(-1D)
Maximum reaction force (N·m)	4.5
Recommended load range (kg)	0.8~1.2
Mounted tool outer diameter (mm)	35~45
Arm length (mm)	300+300
Movable range (mm)	R450~700
Weight (kg)	4.1 (excluding accessories)
Accessories	Replacement kit, Rubber sheet, Hose band
Operating temperature/humidity	0~40°C / 10~80%RH
Installation location	Indoor
Material	Steel (main pillar, holder, bracket), Aluminum (arm)
Applicable models	VE-3000, VE-4000 (P, AC, PAC), VE-4500 (P, AC, PAC), VE-5000 (P, SOP), VE-6000 (P, SOP)

Wide movable range and Weight reduction

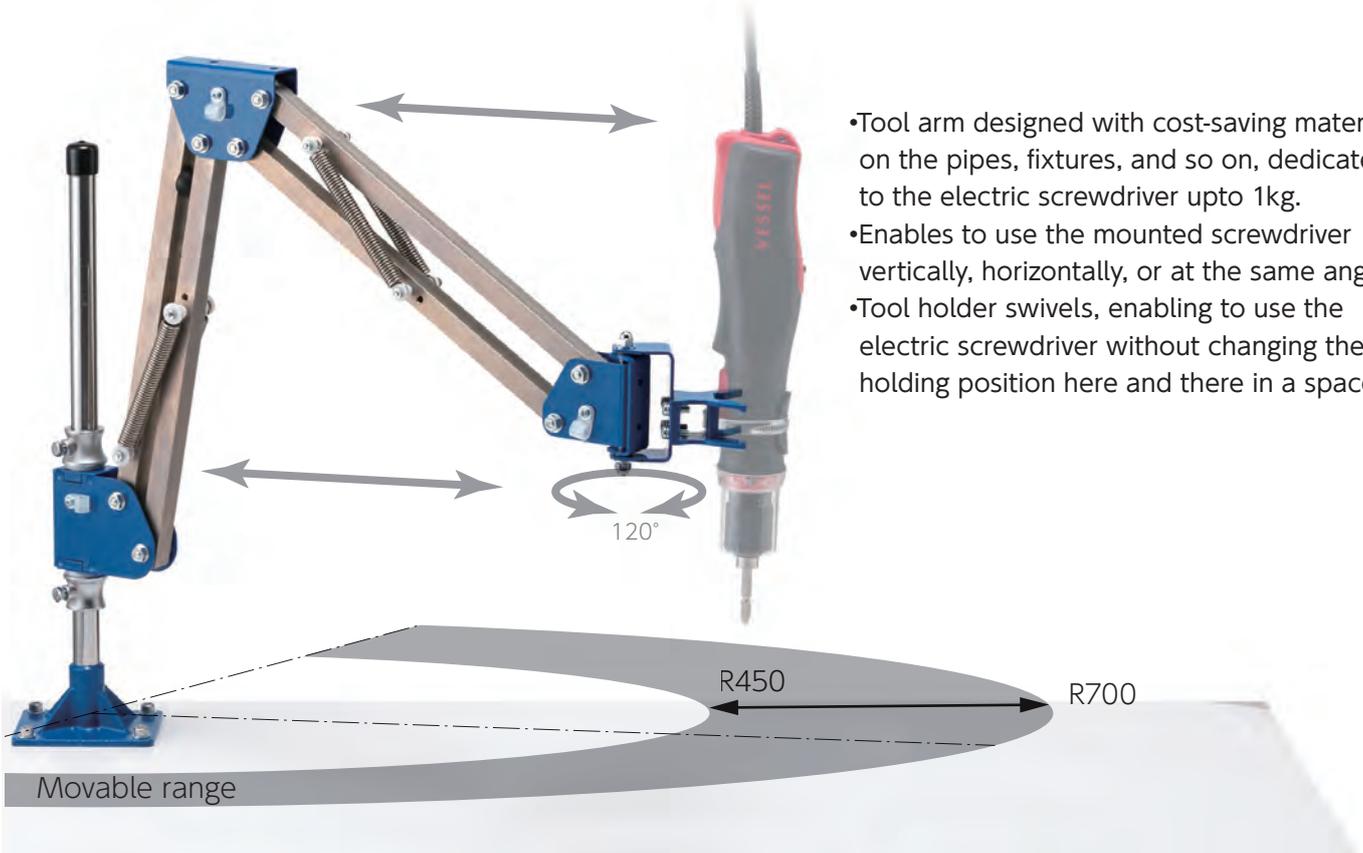
Tool Arm Series



# Hand-Free<sup>®</sup> Arm HFC1-300DR

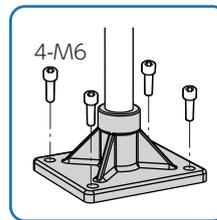
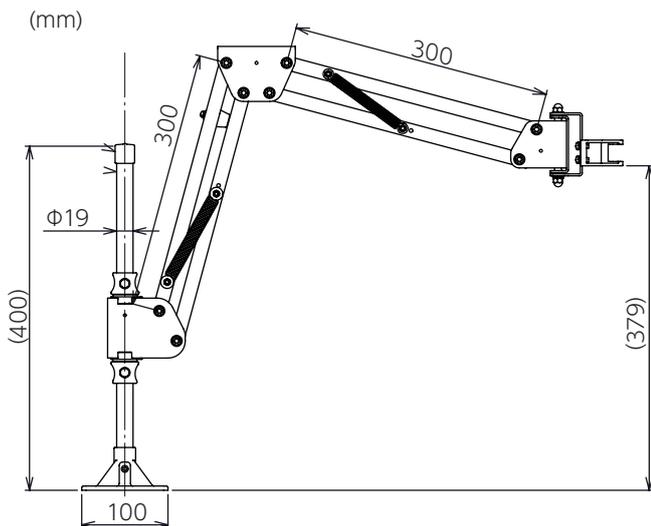
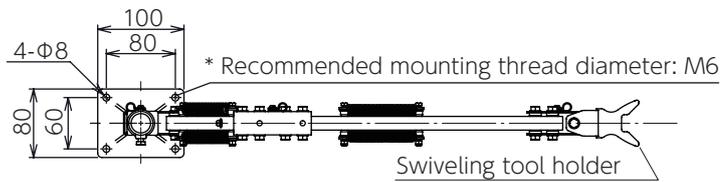
Made in Japan

EDP No. 552051

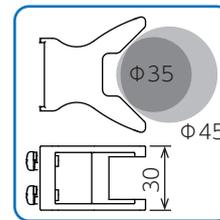


- Tool arm designed with cost-saving materials on the pipes, fixtures, and so on, dedicated to the electric screwdriver upto 1kg.
- Enables to use the mounted screwdriver vertically, horizontally, or at the same angle.
- Tool holder swivels, enabling to use the electric screwdriver without changing the holding position here and there in a space.

No.HFC1-300DR



Mounting bracket



Tool holder



Resin bushing

Model No.	HFC1-300DR
Maximum reaction force (N·m)	3
Recommended load range (kg)	0.8~1.2
Mounted tool outer diameter (mm)	35~45
Arm length (mm)	300+300
Movable range (mm)	R450~700
Weight (kg)	2.7 (excluding accessories)
Accessories	Replacement kit, Rubber sheet, Hose band
Operating temperature/humidity	0~40°C / 10~80%RH
Installation location	Indoor
Material	Steel (main pillar, holder, bracket), Aluminum (arm)
Applicable models	VE-3000, VE-4000(P, AC, PAC), VE-4500(P, AC, PAC), VE-5000(P, SOP), VE-6000(P, SOP)

For improved productivity with a small range of movement

*New*

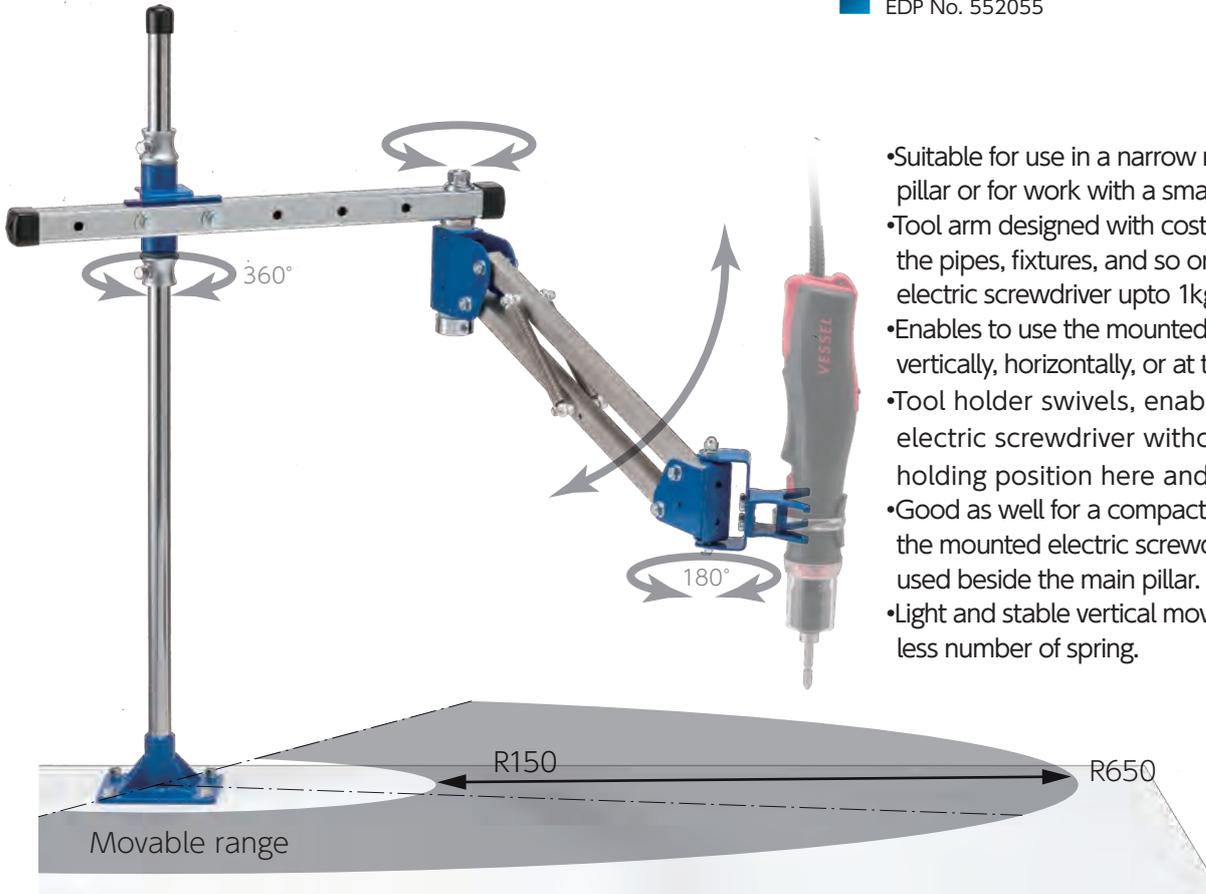
**Tool Arm Series**



**Hand-Free<sup>®</sup> Arm HFAC-3-1DR**

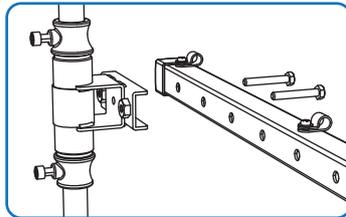
Made in Japan

EDP No. 552055

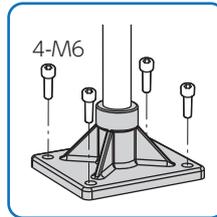


- Suitable for use in a narrow range near the main pillar or for work with a small product.
- Tool arm designed with cost-saving materials on the pipes, fixtures, and so on, dedicated to the electric screwdriver upto 1kg.
- Enables to use the mounted screwdriver vertically, horizontally, or at the same angle.
- Tool holder swivels, enabling to use the electric screwdriver without changing the holding position here and there in a space.
- Good as well for a compact workspace because the mounted electric screwdriver can be even used beside the main pillar.
- Light and stable vertical movement because of less number of spring.

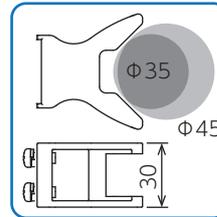
No.HFAC-3-1DR



Movable range can be adjusted.



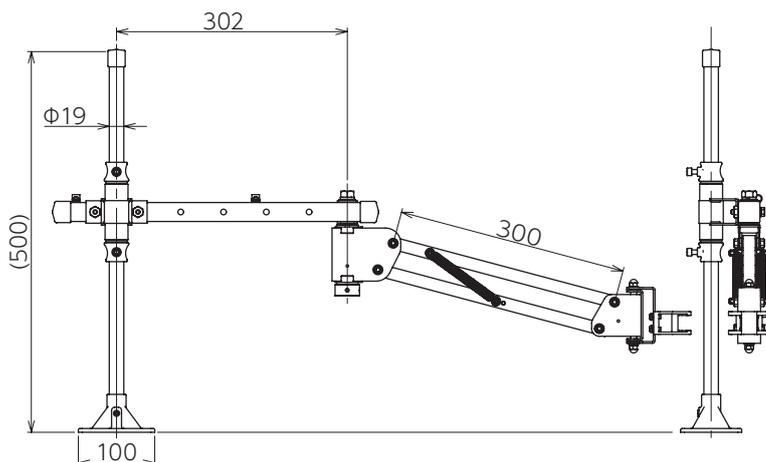
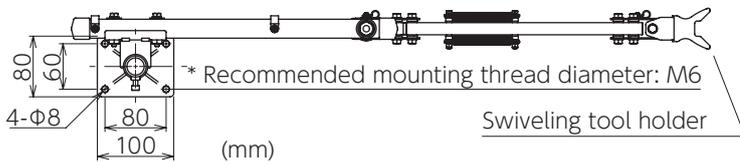
Mounting bracket



Tool holder



Resin bushing



Model No.	HFAC-3-1DR
Maximum reaction force (N·m)	3.0
Mounted tool weight (kg)	0.6~1.0
Mounted tool outer diameter (mm)	35~45
Arm length (mm)	302+300
Movable range (mm)	R150~650
Weight (kg)	3.1 (excluding accessories)
Accessories	Replacement kit, Rubber sheet, Hose band
Operating temperature/humidity	0~40°C / 10~80%RH
Installation location	Indoor
Material	Stainless steel (main pillar), Steel (holder), Aluminum and steel (arm)
Applicable models	VE-3000, VE-4000(P, AC, PAC), VE-4500(P, AC, PAC), VE-5000(P, SOP, PSOP), VE-6000(P, SOP, PSOP)

For improved productivity with simple movement

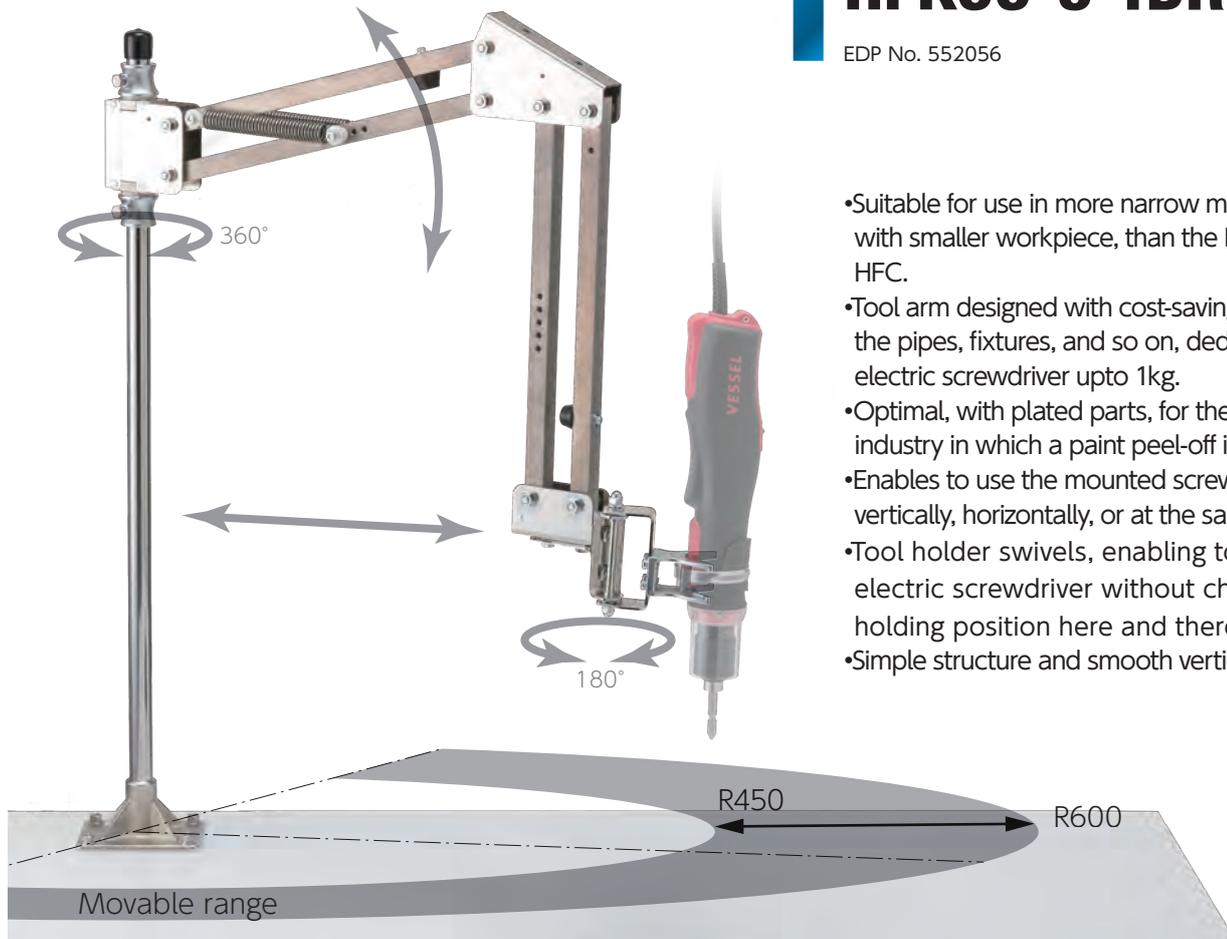
*New*

**Tool Arm Series**



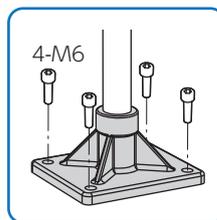
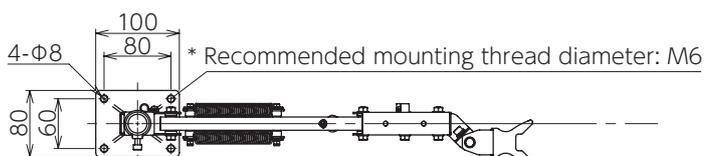
# Hand-Free<sup>®</sup> Arm HFKCC-3-1DR Made in Japan

EDP No. 552056

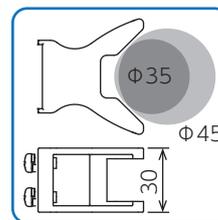


- Suitable for use in more narrow movable range or with smaller workpiece, than the HFS and the HFC.
- Tool arm designed with cost-saving materials on the pipes, fixtures, and so on, dedicated to the electric screwdriver upto 1kg.
- Optimal, with plated parts, for the electric industry in which a paint peel-off is not allowed.
- Enables to use the mounted screwdriver vertically, horizontally, or at the same angle.
- Tool holder swivels, enabling to use the electric screwdriver without changing the holding position here and there in a space.
- Simple structure and smooth vertical movement.

## No.HFKCC-3-1DR



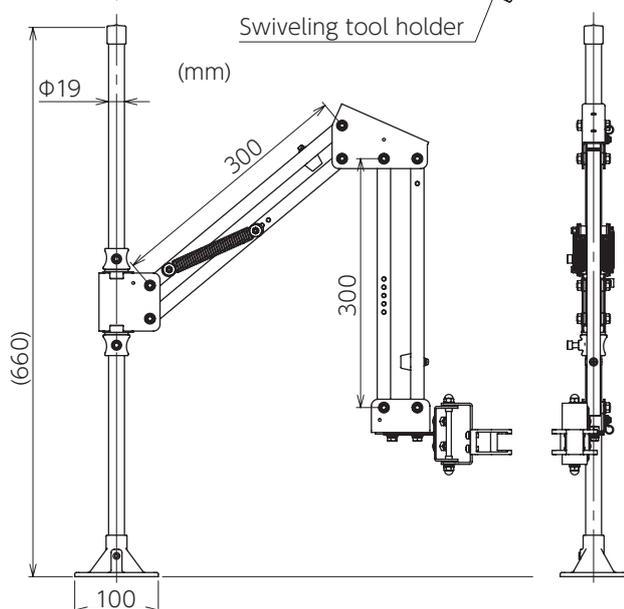
Mounting bracket



Tool holder



Resin bushing



Model No.	HFKCC-3-1DR
Maximum reaction force (N·m)	3.0
Mounted tool weight (kg)	0.6~1.0
Mounted tool outer diameter (mm)	35~45
Arm length (mm)	300+300
Movable range (mm)	R450~600
Weight (kg)	2.9 (excluding accessories)
Accessories	Replacement kit, Rubber sheet, Hose band
Operating temperature/humidity	0~40°C / 10~80%RH
Installation location	Indoor
Material	Stainless steel (main pillar), Steel (holder), Aluminum (arm)
Applicable models	VE-3000, VE-4000 (P, AC, PAC), VE-4500 (P, AC, PAC), VE-5000 (P, SOP, PSOP), VE-6000 (P, SOP, PSOP)

For reaction suppression by high-torque tool

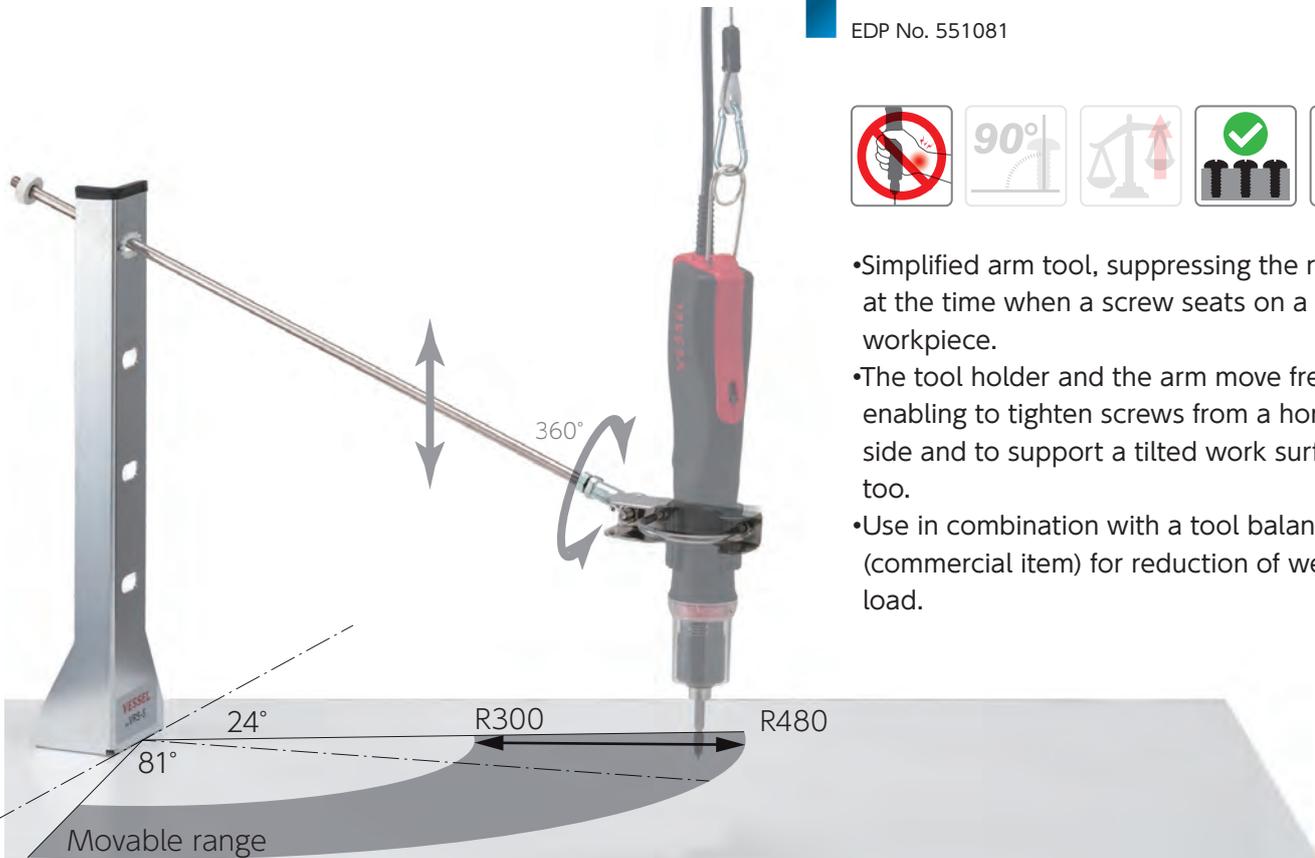
# Reaction suppression stand VRS-5

Made in Japan

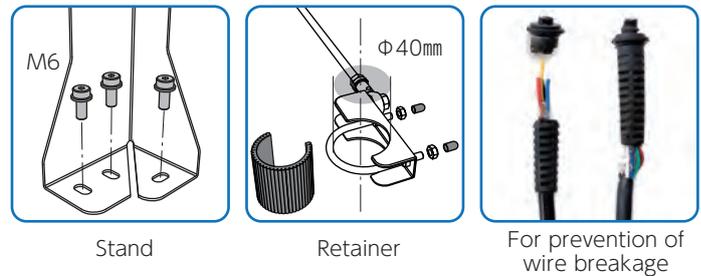
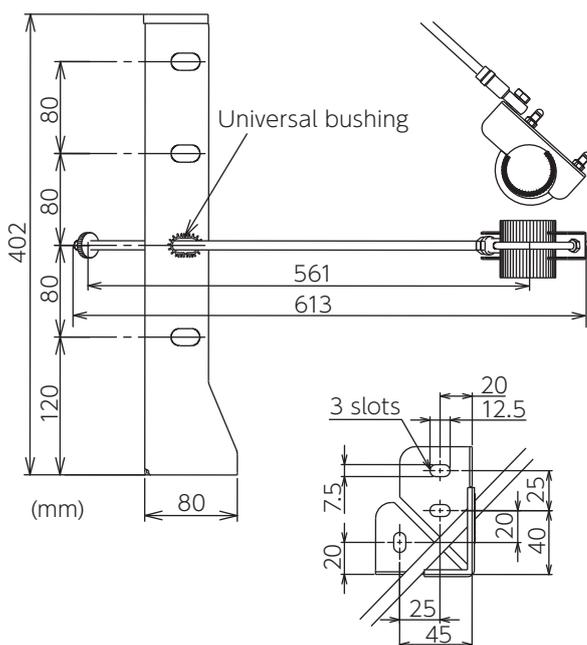
EDP No. 551081



- Simplified arm tool, suppressing the reaction at the time when a screw seats on a workpiece.
- The tool holder and the arm move freely, enabling to tighten screws from a horizontal side and to support a tilted work surface, too.
- Use in combination with a tool balancer (commercial item) for reduction of weight load.



## No.VRS-5



Model No.	VRS-5
Maximum reaction force (N·m)	4.5
Maximum load (kg)	1.1
Mounted tool outer diameter (mm)	40
Shaft length (mm)	561
Movable range (mm)	R300~480
Weight (kg)	0.85
Accessories	Universal bushing (with 1 spare bushing), Rubber covered bushing
Operating temperature/humidity	0~40°C / 10~80%RH
Installation location	Indoor
Material	Steel (stand/shaft), SUS (retainer)
Applicable models	VE-6000 (P, SOP), VE-5000 (P, SOP)

\* Recommended mounting thread diameter: M6

Thoroughly  
Functional and  
Maintenance  
Free

VE Series

# 10 Reasons Why the VE series is Chosen.

**Ergonomically  
designed  
Elastomer Grip**  
Enables to hold securely.

**Wide Output  
Torque Range!**



Extend the warranty period from 1 year to  
**3 years** by User Registration.

\* The 3-year warranty covers the electric screwdriver only.

**Hard to disconnect!**

Reinforced fibers protect  
the wires.

**Power cable and  
body are integrated.**

No concern about disconnection.

Forward/Reverse Switch is  
**Magnetic and  
Long-Life!**

No loose connection.

**Slotless Brushless  
Motor**

Maintenance-free!

**Anti-fatigue Gel Pad**

No need to grab.  
Little force is enough to hold.

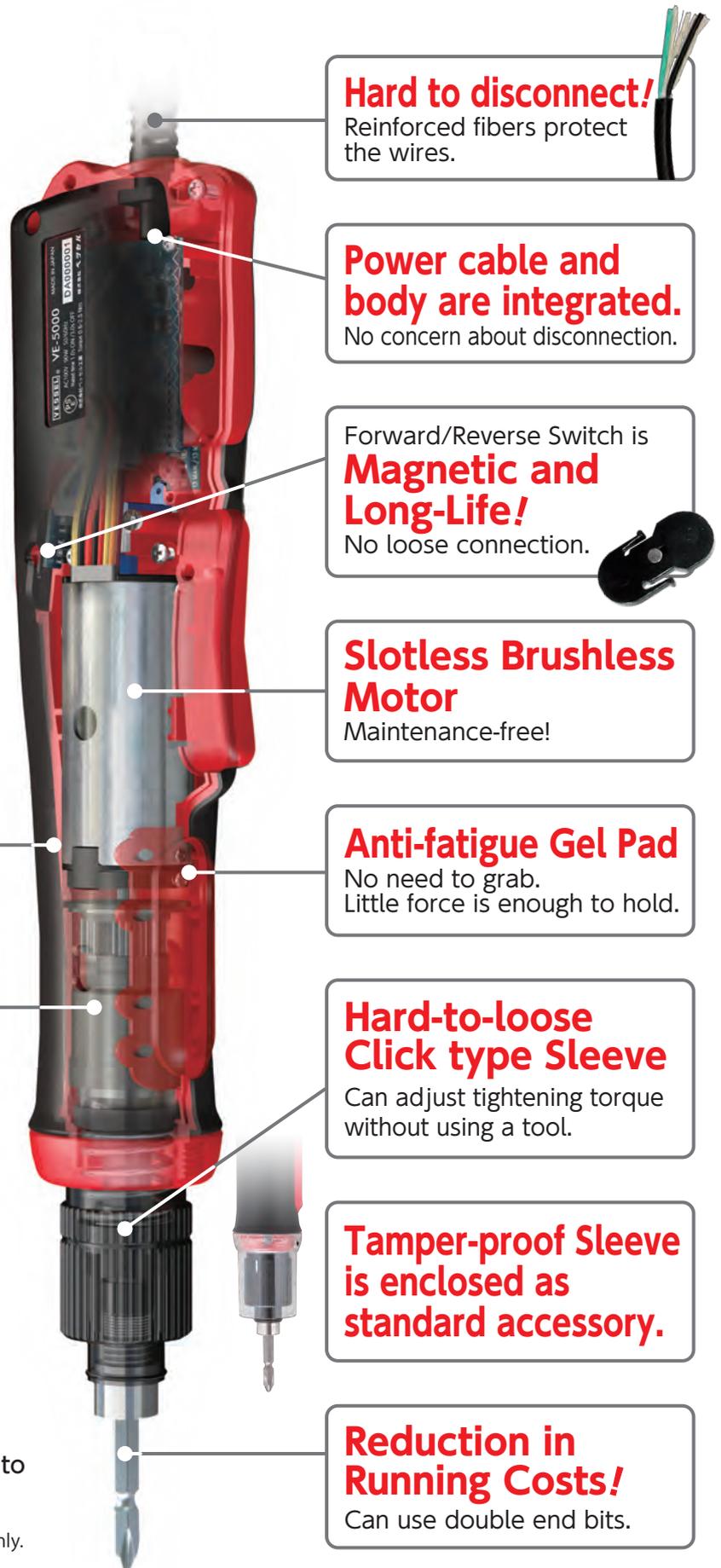
**Hard-to-loose  
Click type Sleeve**

Can adjust tightening torque  
without using a tool.

**Tamper-proof Sleeve  
is enclosed as  
standard accessory.**

**Reduction in  
Running Costs!**

Can use double end bits.



Visit VESSEL homepage for more information <http://www.vessel.co.jp/english/>

## IoT of Electric Screwdriver

### Process visualized / Wireless management

**Industries:** •Automobile, Assembly, Cell-production line...

### Customer wants to

1. Record screw tightening process;
2. Prevent defective products improperly fastened, from going to the next manufacturing process;
3. Improve efficiency in assembly line, where the actual situations are not easily communicated or updated;
4. Build up a system.

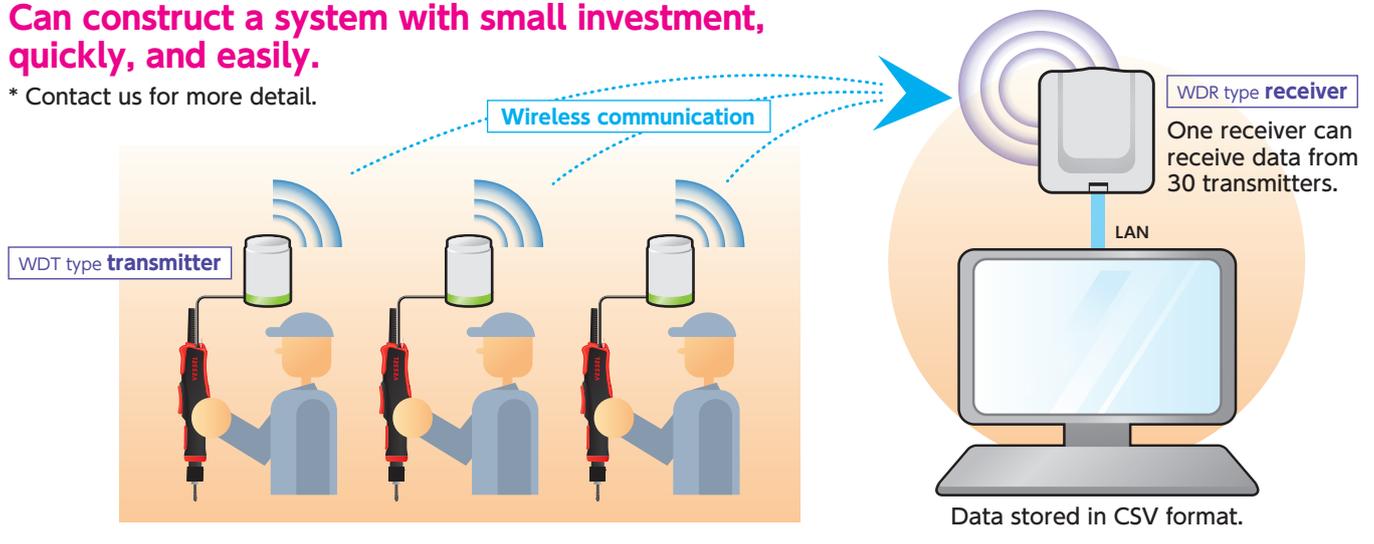
### Our Proposals with [Electric S/D VE-SOP] + [AirGRID WD Series]

1. Automatic record of number of screws tightened (by torque-up signal output)
2. Automatic record of reverse operation of the electric screwdriver  
(by reverse operation switch signal output and start signal output)
3. Automatic record of number of operation times and of operation order of multiple electric screwdrivers installed in one cell table  
(can allocate a name on each electric screwdriver, relating it to a mac address of WD transmitter)
4. Unified management of all electric screwdrivers in the office.  
(by csv log of WD)

Connect the product detectors such as reinit switch or approximate sensor to a vacant terminal on the WD, the factory productivity can be analyzed through cycle time of each process and operation in detail of electric screwdriver.

### Can construct a system with small investment, quickly, and easily.

\* Contact us for more detail.



●Before mounting an electric screwdriver, make sure that it is a supported model. ●Using an incorrectly mounted electric screwdriver could cause an equipment failure or personal injury. ●Unplug the electric screwdriver before mounting. ●Do not use a C-clamp to install the tool arm. ●Do not mount inapplicable products on the tool arm.

## VESSEL Co., Inc.

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 E-mail : export@vessel.co.jp URL : <http://www.vessel.co.jp/english/>

Please purchase from the vendor below.