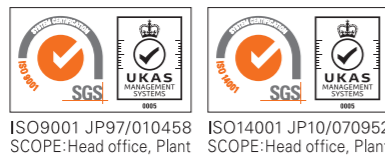
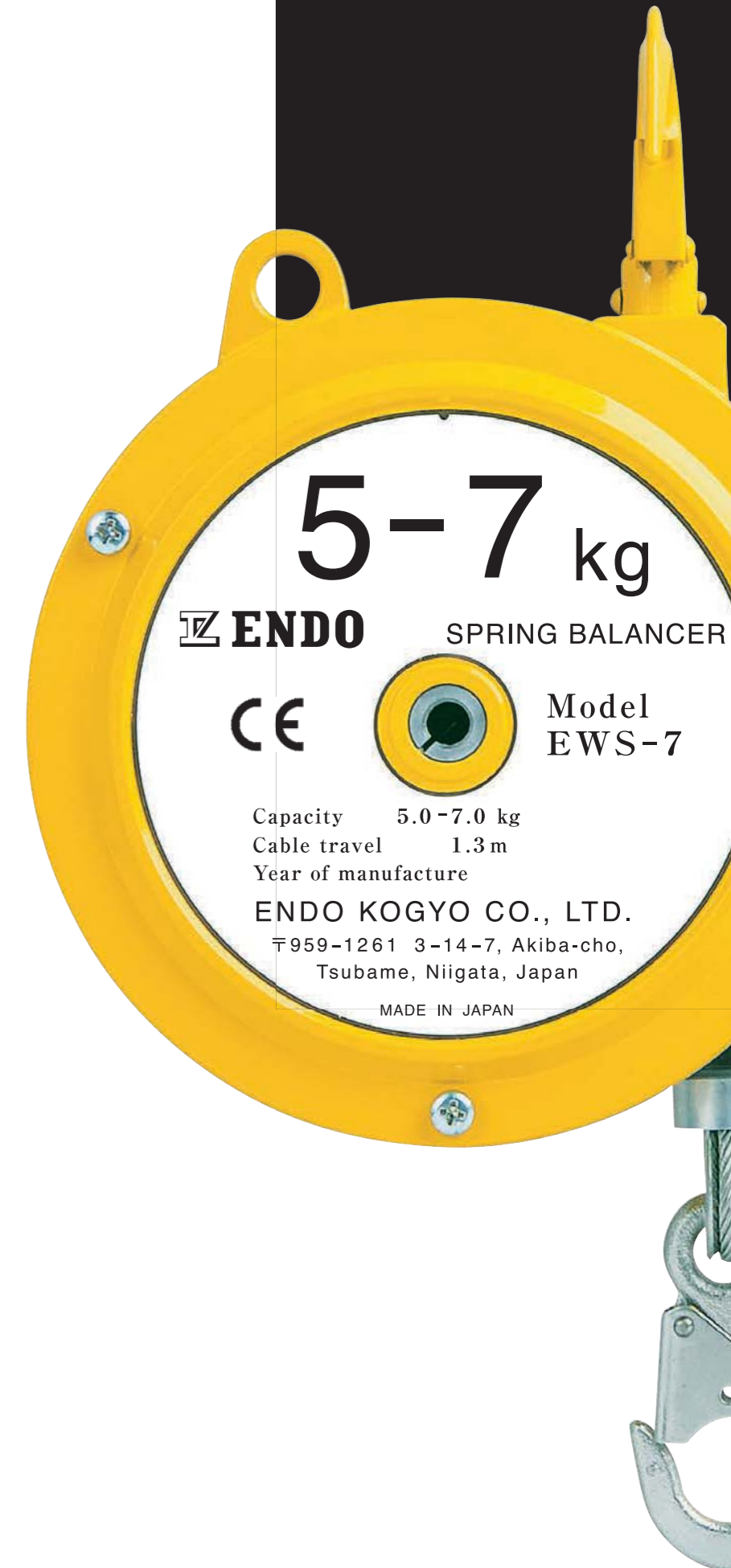


ENDO

SPRING BALANCER

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ISO9001 JP97/010458
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ISO14001 JP10/070952
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SPRING BALANCER

What is the Spring balancer?

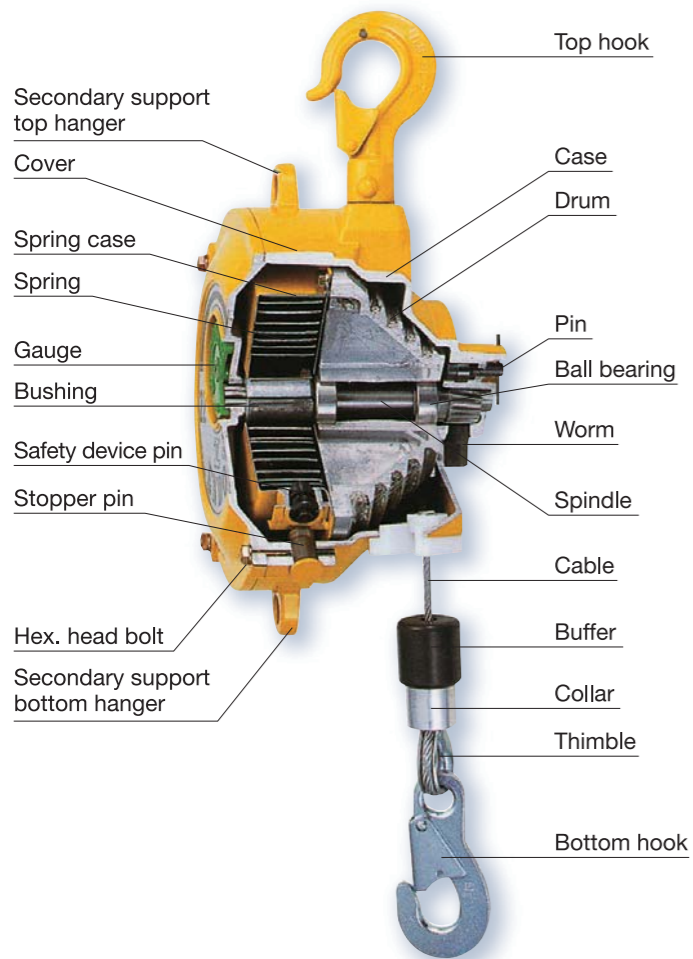
Spring balancers are industrial tools used to suspend products and equipment to reduce the weight burden on workers and allow precise maneuverability of suspended tools and loads.

Applications of the Spring balancer

- For suspending tools
- For suspending welding guns
- For suspending jig or fixtures etc.

Advantages

- The balancers improve working efficiency and reduce worker fatigue.
- The balancers improve tool stability and allow precise maneuverability.
- The balancers help reduce wear and product damage.
- Electric or pneumatic power is not required.
- The balancers help improve workplace safety



How to adjust spring tension

There are three types of tension adjustment systems. The adjustment system depends on the model. (The spring tension has been set at the middle of capacity in advance prior to shipment)

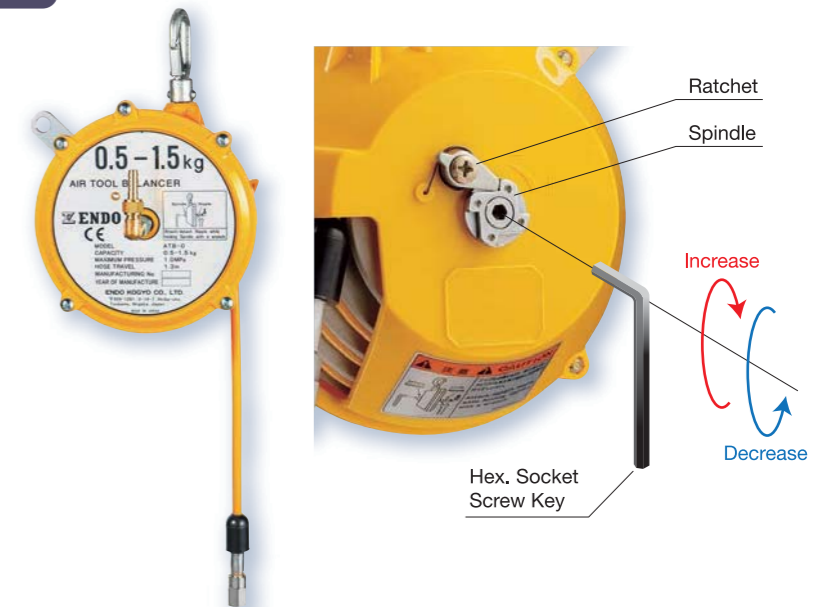
Knob system	ERP model			
Ratchet system	EK model	EW model	SBC model	ATB model
Worm gear system	EWS model	EWF model	ELF model	RSB model
	ETP model	THB model	ATR model	EWA model



Knob system



Ratchet system



Worm gear system



Read the instruction manual carefully for instructions.

SPRING BALANCER

Features

※ All features are not always available on all balancers.



Fall arrest device

If the spring fails the pin is activated and prevents the suspended tools from falling.



Drum lock device

By changing the position of the pin, you can lock the drum and change out the tools or wire rope easily and safely.



Gauge

The gauge indication contributes to worker recognition on tension adjustment.



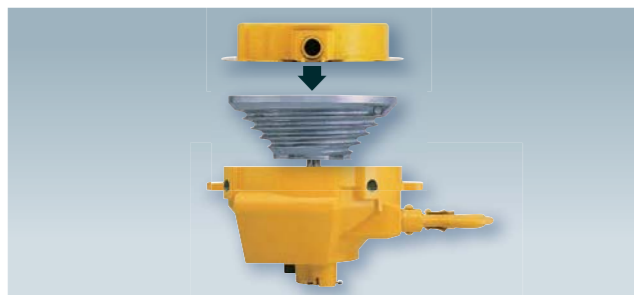
Secondary support hanger

The secondary support hanger is standard on every model.



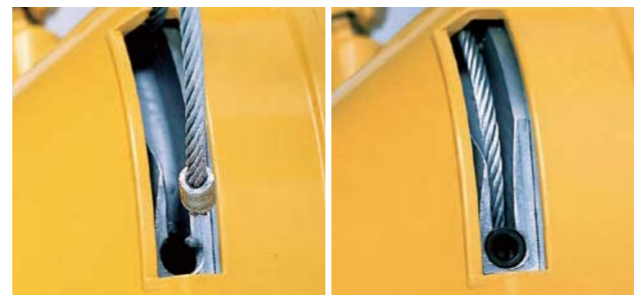
Cartridge spring assembly

Cartridge spring provides easy and safe spring replacement.



Wire rope replacement

The plug fixing system provides the easy cable replacement.



Summary

Type	Model	Capacity(kg)	Travel (m)	Cable dia (φ mm)	Mass (kg)	CE	
Light capacity	EK-00	0.5 - 1.5	0.5	2.0	0.2	✓	Suitable for light weight tools like an electric driver. P.6 ▶
	EK-0	0.5 - 1.5	1.0	3.0	0.5	✓	
	ERP-06E	0.3 - 0.6	1.5	2.0	0.4	✓	
	ERP-1E	0.5 - 1.0	1.5	2.0	0.4	✓	
	ERP-2E	1.0 - 2.0	1.5	2.0	0.4	✓	
Standard	EW-3	1.0 - 3.0	1.3	3.0	1.4	✓	Most popular series for a welding gun, pneumatic tool etc. Many safety features are equipped. P.7~8 ▶
	EW-5	2.5 - 5.0	1.3	3.0	1.5	—	
	EWS-3	1.5 - 3.0	1.3	3.0	1.9	✓	
	EWS-5	3.0 - 5.0	1.3	3.0	2.1	✓	
	EWS-7	5.0 - 7.0	1.3	3.0	2.1	✓	
	EWF-9	4.5 - 9.0	1.3	4.0	3.5	✓	
	EWF-15	9.0 - 15.0	1.3	4.0	3.8	✓	
	EWF-22	15.0 - 22.0	1.5	4.76	7.3	✓	
	EWF-30	22.0 - 30.0	1.5	4.76	7.7	✓	
	EWF-40	30.0 - 40.0	1.5	4.76	9.7	✓	
	EWF-50	40.0 - 50.0	1.5	4.76	10.1	✓	
	EWF-60	50.0 - 60.0	1.5	4.76	11.1	✓	
Large capacity	EWF-70	60.0 - 70.0	1.5	4.76	11.4	✓	Suitable for heavy weight devices like a multiple nut runner. P.8~9 ▶
	EWF-90	70.0 - 90.0	2.0	4.76	21.9	✓	
	EWF-105	85.0 - 105.0	2.0	4.76	24.0	✓	
	EWF-120	100.0 - 120.0	2.0	4.76	27.5	✓	
	ETP-14	120.0 - 140.0	1.2	6.0	24.1	✓	
	ETP-15	140.0 - 170.0	1.2	6.0	28.7	✓	
Long stroke	ETP-16	170.0 - 200.0	1.2	6.0	29.7	✓	Available for high ceiling applications. P.9~10 ▶
	ELF-3	1.5 - 3.0	2.5	3.0	4.6	✓	
	ELF-5	3.0 - 5.0	2.5	3.0	4.8	✓	
	ELF-9	5.0 - 9.0	2.5	3.0	5.4	✓	
	ELF-15	9.0 - 15.0	2.5	4.76	10.0	✓	
	ELF-22	15.0 - 22.0	2.5	4.76	10.2	✓	
	ELF-30	22.0 - 30.0	2.5	4.76	11.0	✓	
	ELF-40	30.0 - 40.0	2.5	4.76	14.0	✓	
	ELF-50	40.0 - 50.0	2.5	4.76	14.5	✓	
	ELF-60	50.0 - 60.0	2.5	4.76	17.1	✓	
With Ratchet	ELF-70	60.0 - 70.0	2.5	4.76	18.0	✓	Available for holding suspend tool on the stroke mechanically. Even if no load is applied, its hook can be held on the stroke. P.10 ▶
	RSB-15	9.0 - 15.0	1.5	5.0	7.4	—	
	RSB-22	15.0 - 22.0	1.5	5.0	7.7	—	
	RSB-30	22.0 - 30.0	1.5	5.0	8.1	—	
	RSB-40	30.0 - 40.0	1.5	5.0	8.5	—	

Summary

Type	Model	Capacity(kg)	Travel (m)	Cable/Hose dia (φ mm)	Mass (kg)	CE	
Retractor	ERM-2	1.0 - 2.0	3.5*	2.5	1.8	✓	Long travel cable is suitable for hanging pendant switch and so on. * Wire rope travel is relative to the setting of the spring tension.
	ERM-4	2.0 - 4.0	3.5*	2.5	2.0	—	
	ERM-6	4.0 - 6.0	2.5*	2.5	2.0	—	
	ERM-8	6.0 - 8.0	2.5*	2.5	2.0	—	
	ERM-4S	2.0 - 4.0	3.5*	2.5	2.0	✓	
	ERM-6S	4.0 - 6.0	2.5*	2.5	2.0	✓	
	ERM-8S	6.0 - 8.0	2.5*	2.5	2.0	✓	
	ERL-3	1.5 - 3.0	4.0*	3.0	3.8	✓	
	ERL-6	3.0 - 6.0	4.0*	3.0	4.4	—	
	ERL-8	5.0 - 8.0	4.0*	3.0	4.8	—	
	ERL-11	8.0 - 11.0	4.0*	3.0	5.1	—	
	ERL-14	11.0 - 14.0	4.0*	3.0	5.1	—	
	ERL-6S	3.0 - 6.0	4.0*	3.0	4.4	✓	
	ERL-8S	5.0 - 8.0	4.0*	3.0	4.8	✓	
With cable snap back prevention device	EWA-15	9.0 - 15.0	1.3	4.0	4.7	✓	Having device to arrest wire rope snap back in case that a wire rope is cut or suspended tool is disengaged. It will save worker from injury or dangerous occurred by such a situation.
	EWA-22	15.0 - 22.0	1.5	4.76	8.9	✓	
	EWA-30	22.0 - 30.0	1.5	4.76	9.3	✓	
	EWA-40	30.0 - 40.0	1.5	4.76	11.9	✓	
	EWA-50	40.0 - 50.0	1.5	4.76	12.3	✓	
	EWA-60	50.0 - 60.0	1.5	4.76	13.3	✓	
	EWA-70	60.0 - 70.0	1.5	4.76	13.6	✓	
With brake system	EWf-3B	1.5 - 3.0	1.3	3.0	4.7	✓	Having one-way clutch lining braking system. Provide speedy and safe work by moving up tools slowly.
	EWf-5B	3.0 - 5.0	1.3	3.0	8.9	✓	
	EWf-7B	5.0 - 7.0	1.3	3.0	9.3	✓	
Tool hose balancer	THB-15A	0.5 - 1.5	1.3	8.5	2.0	✓	Inside diameter of hose is φ8.5mm.(bigger than ATB series) which supplies enough air to operate the suspended air tool or device.
	THB-25A	1.5 - 2.5	1.3	8.5	2.1	✓	
	THB-35A	2.5 - 3.5	1.3	8.5	2.2	✓	
	THB-50A	3.5 - 5.0	1.3	8.5	2.2	✓	
	THB-65A	5.0 - 6.5	1.3	8.5	2.3	✓	
Air tool balancer	ATB-0	0.5 - 1.5	1.3	6.3	1.58	✓	Having two function both hose reel and balancer. Urethane hose is wound and air tools can be easily moved up and down.
	ATB-1	1.5 - 3.0	1.3	6.3	1.66	✓	
	ATB-2	3.0 - 5.0	1.3	3.6	1.73	—	

P.11~12

P.13

P.14

P.16

P.17

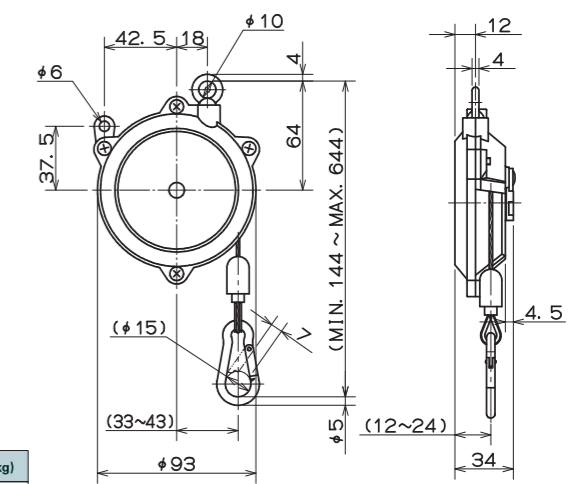
Type	Model	Max tension N {kgf}	Travel (m)	Cable/Hose dia (φ mm)	Mass (kg)	CE	
Air tool reel	ATR-5	4.9 {5.0}	2.0	10.0	3.8	✓	Suitable for retracting hose into the device automatically.
	ATR-5-1	4.9 {5.0}	2.0	10.0	4.2	✓	

P.18

EK-00

FUNCTION

- Ratchet system spring adjustment
- CE Mark available



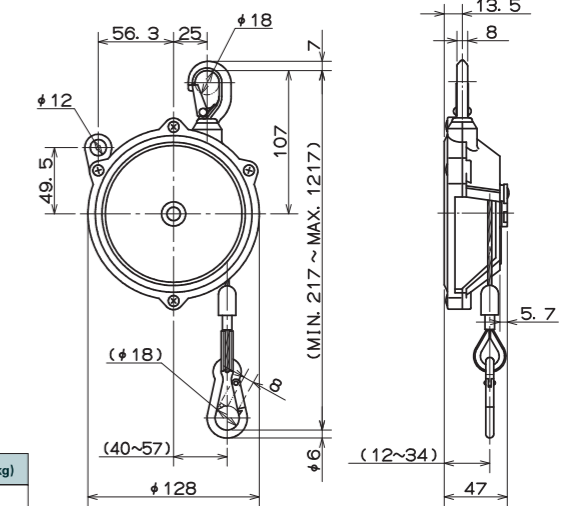
Model	Capacity(kg)	Travel(m)	Cable dia(φmm)	Mass(kg)
EK-00	0.5-1.5	0.5	2.0	0.2

Light capacity

EK-0

FUNCTION

- Ratchet system spring adjustment
- CE Mark available



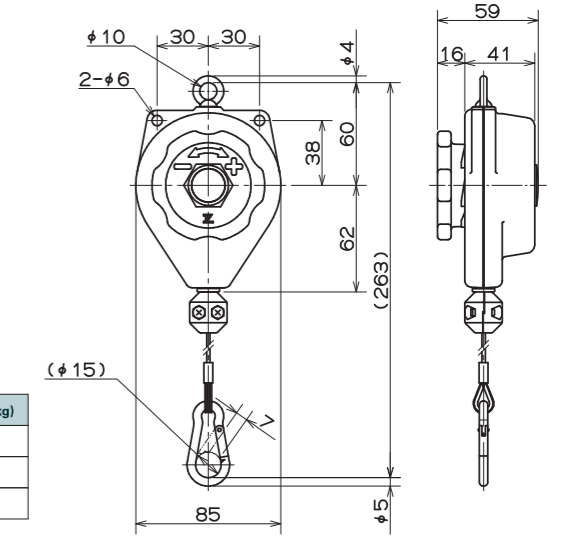
Model	Capacity(kg)	Travel(m)	Cable dia(φmm)	Mass(kg)
EK-0	0.5-1.5	1.0	3.0	0.5

Light capacity

ERP-06E/1E/2E

FUNCTION

- Handle system spring adjustment
- CE Mark available



Model	Capacity(kg)	Travel(m)	Cable dia(φmm)	Mass(kg)
ERP-06E	0.3-0.6	1.5	2.0	0.4
ERP-1E	0.5-1.0	1.5	2.0	0.4
ERP-2E	1.0-2.0	1.5	2.0	0.4

Light capacity

* A nylon rope is employed for CE market instead of a nylon coated cable.

Selection of suitable model

Always use a suitable model meeting the total weight of suspended tool or instrument.
The balancer should be selected considering the weight of the tool and accessories.




Installation

- Install Spring balancers uneven not to hit each other when the balancers are installed in a line.
- Always employ a secondary support chain and leave the slack for smooth swivel.
- Always adjust the spring tension to meet the total weight of tool and the application.

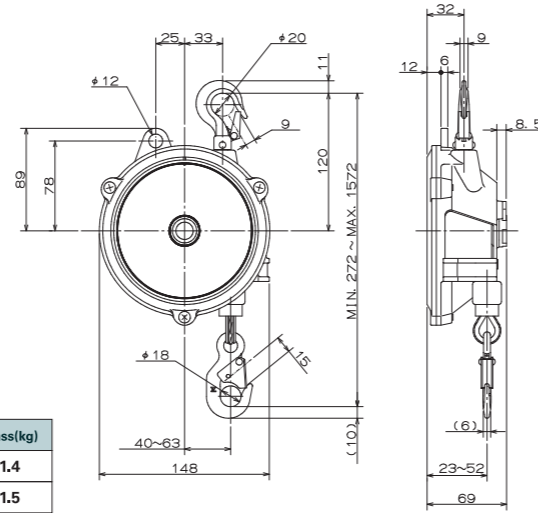
EW-3/5

Standard

FUNCTION

-  Plug type cable set
-  Ratchet system spring adjustment
-  CE Mark available

* Only EW-3 is available for CE Mark



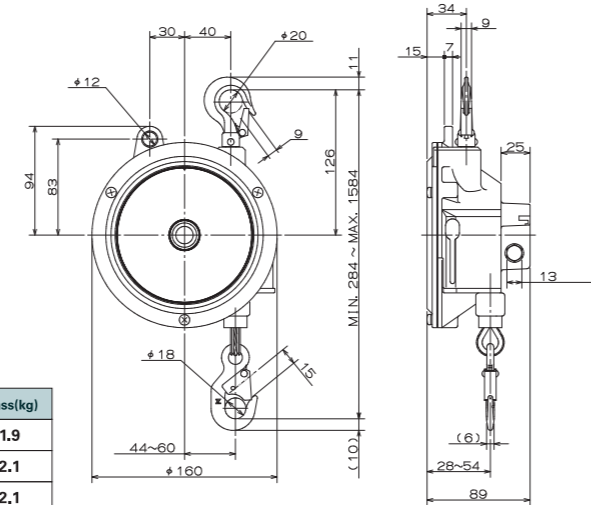
Model	Capacity(kg)	Travel(m)	Cable dia(φmm)	Mass(kg)
EW-3	1.0-3.0	1.3	3.0	1.4
EW-5	2.5-5.0	1.3	3.0	1.5

EWS-3/5/7

Standard

FUNCTION

-  Plug type cable set
-  Fall arrest device
-  Drum lock device
-  Worm gear spring adjustment
-  CE Mark available



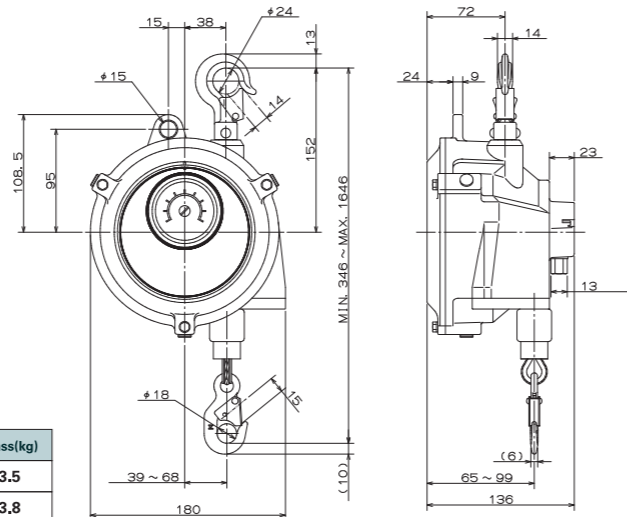
Model	Capacity(kg)	Travel(m)	Cable dia(φmm)	Mass(kg)
EWS-3	1.5-3.0	1.3	3.0	1.9
EWS-5	3.0-5.0	1.3	3.0	2.1
EWS-7	5.0-7.0	1.3	3.0	2.1

EWF-9/15

Standard

FUNCTION

-  Gauge
-  Cartridge spring assembly
-  Plug type cable set
-  Fall arrest device
-  Drum lock device
-  Worm gear spring adjustment
-  CE Mark available



Model	Capacity(kg)	Travel(m)	Cable dia(φmm)	Mass(kg)
EWF-9	4.5- 9.0	1.3	4.0	3.5
EWF-15	9.0-15.0	1.3	4.0	3.8

Selection of suitable model

Always use a suitable model meeting the total weight of suspended tool or instrument. The balancer should be selected considering the weight of the tool and accessories.







Installation

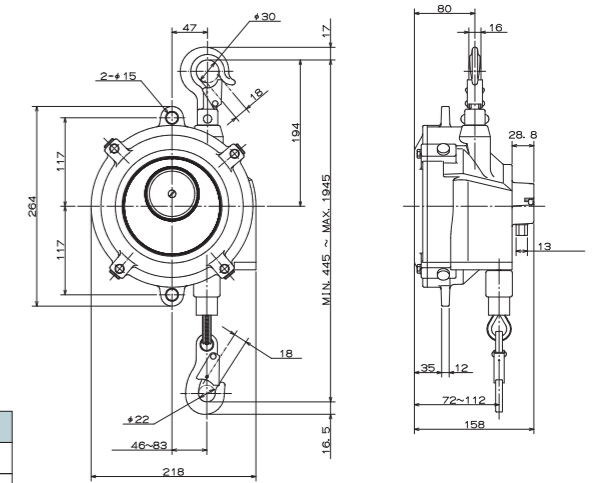
- Install Spring balancers uneven not to hit each other when the balancers are installed in a line.
- Always employ a secondary support chain and leave the slack for smooth swivel.
- Always adjust the spring tension to meet the total weight of tool and the application.

EWF-22/30

Standard

FUNCTION

-  Gauge
-  Cartridge spring assembly
-  Plug type cable set
-  Fall arrest device
-  Drum lock device
-  Worm gear spring adjustment
-  CE Mark available









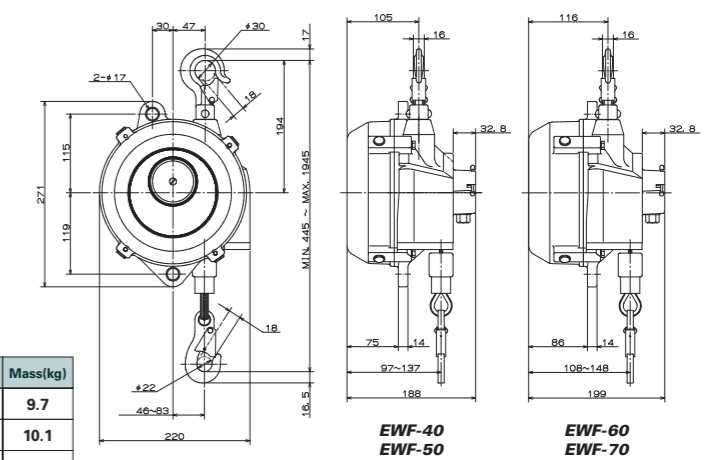
Model	Capacity(kg)	Travel(m)	Cable dia(φmm)	Mass(kg)
EWF-22	15.0-22.0	1.5	4.76	7.3
EWF-30	22.0-30.0	1.5	4.76	7.7

EWF-40/50/60/70

Standard

FUNCTION

-  Gauge
-  Cartridge spring assembly
-  Plug type cable set
-  Fall arrest device
-  Drum lock device
-  Worm gear spring adjustment
-  CE Mark available










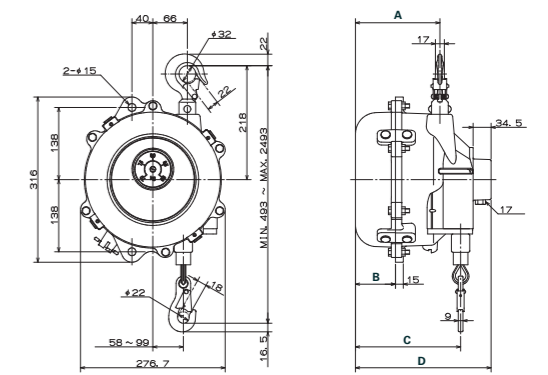
Model	Capacity(kg)	Travel(m)	Cable dia(φmm)	Mass(kg)
EWF-40	30.0-40.0	1.5	4.76	9.7
EWF-50	40.0-50.0	1.5	4.76	10.1
EWF-60	50.0-60.0	1.5	4.76	11.1
EWF-70	60.0-70.0	1.5	4.76	11.4

EWF-90/105/120

Large capacity

FUNCTION

-  Gauge
-  Cartridge spring assembly
-  Plug type cable set
-  Fall arrest device
-  Drum lock device
-  Worm gear spring adjustment
-  CE Mark available



Model	Capacity(kg)	Travel(m)	Cable dia(φmm)	Mass(kg)
EWF-90	70.0- 90.0	2.0	4.76	21.9
EWF-105	85.0-105.0	2.0	4.76	24.0
EWF-120	100.0-120.0	2.0	4.76	27.5

Model	A	B	C	D
EWF-90	161.5	76.5	157-201	259.5
EWF-105	179.5	94.5	175-219	277.5
EWF-120	203.5	118.5	199-243	301.5

Selection of suitable model

Always use a suitable model meeting the total weight of suspended tool or instrument. The balancer should be selected considering the weight of the tool and accessories.

Installation

- Install Spring balancers uneven not to hit each other when the balancers are installed in a line.
- Always employ a secondary support chain and leave the slack for smooth swivel.
- Always adjust the spring tension to meet the total weight of tool and the application.

ETP-14/15/16

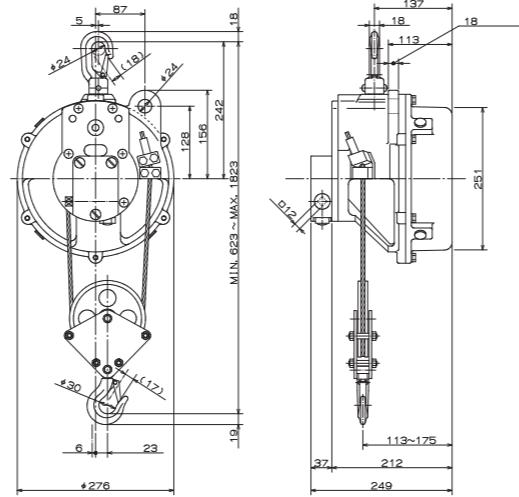
Large capacity

FUNCTION

-  Fall arrest device
-  Worm gear spring adjustment
-  CE Mark available



Model	Capacity(kg)	Travel(m)	Cable dia(φmm)	Mass(kg)
ETP-14	120.0-140.0	1.2	6.0	24.1
ETP-15	140.0-170.0	1.2	6.0	28.7
ETP-16	170.0-200.0	1.2	6.0	29.7



ELF-3/5/9

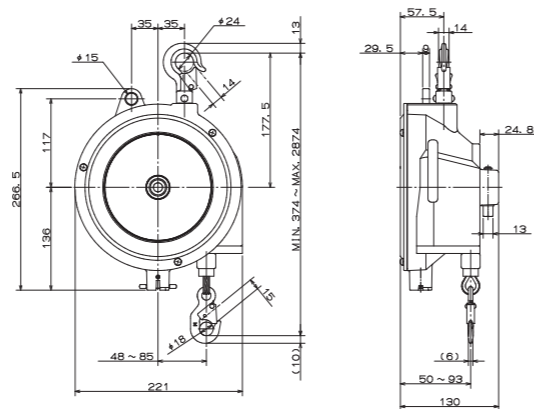
Long stroke

FUNCTION

-  Plug type cable set
-  Fall arrest device
-  Drum lock device
-  Worm gear spring adjustment
-  CE Mark available



Model	Capacity(kg)	Travel(m)	Cable dia(φmm)	Mass(kg)
ELF-3	1.5-3.0	2.5	3.0	4.6
ELF-5	3.0-5.0	2.5	3.0	4.8
ELF-9	5.0-9.0	2.5	3.0	5.4



ELF-15/22/30

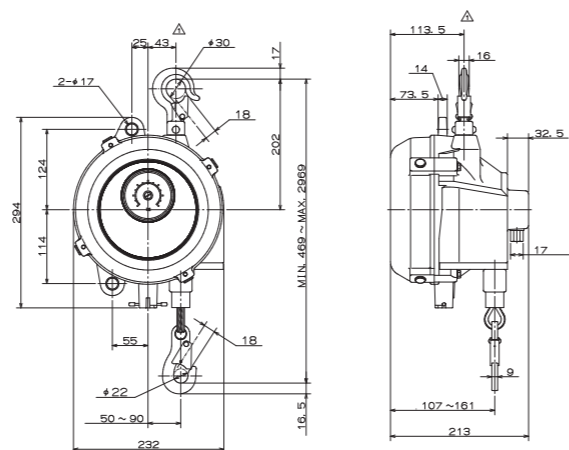
Long stroke

FUNCTION

-  Gauge
-  Cartridge spring assembly
-  Plug type cable set
-  Fall arrest device
-  Drum lock device
-  Worm gear spring adjustment
-  CE Mark available



Model	Capacity(kg)	Travel(m)	Cable dia(φmm)	Mass(kg)
ELF-15	9.0-15.0	2.5	4.76	10.0
ELF-22	15.0-22.0	2.5	4.76	10.2
ELF-30	22.0-30.0	2.5	4.76	11.0



ELF-40/50/60/70

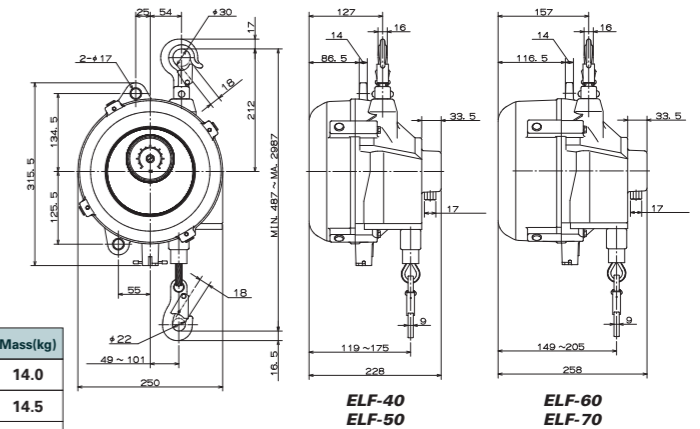
Long stroke

FUNCTION

-  Gauge
-  Cartridge spring assembly
-  Plug type cable set
-  Fall arrest device
-  Drum lock device
-  Worm gear spring adjustment
-  CE Mark available



Model	Capacity(kg)	Travel(m)	Cable dia(φmm)	Mass(kg)
ELF-40	30.0-40.0	2.5	4.76	14.0
ELF-50	40.0-50.0	2.5	4.76	14.5
ELF-60	50.0-60.0	2.5	4.76	17.1
ELF-70	60.0-70.0	2.5	4.76	18.0



RSB-15

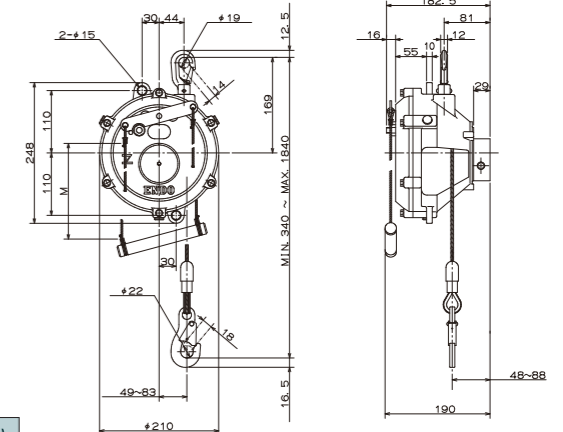
With Ratchet

FUNCTION

-  Ratchet device
-  Fall arrest device
-  Worm gear spring adjustment



Model	Capacity(kg)	Travel(m)	Cable dia(φmm)	Mass(kg)
RSB-15	9.0-15.0	1.5	5.0	7.4



RSB-22/30/40

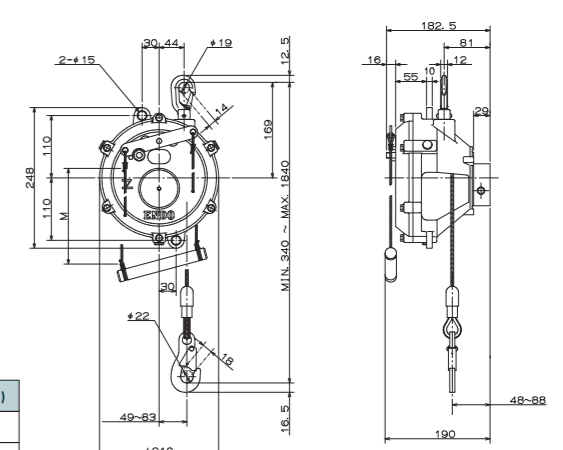
With Ratchet

FUNCTION

-  Gauge
-  Ratchet device
-  Fall arrest device
-  Worm gear spring adjustment



Model	Capacity(kg)	Travel(m)	Cable dia(φmm)	Mass(kg)
RSB-22	15.0-22.0	1.5	5.0	7.7
RSB-30	22.0-30.0	1.5	5.0	8.1
RSB-40	30.0-40.0	1.5	5.0	8.5



Selection of suitable model

Always use a suitable model meeting the total weight of suspended tool or instrument. The balancer should be selected considering the weight of the tool and accessories.

Installation

- Install Spring balancers uneven not to hit each other when the balancers are installed in a line.
- Always employ a secondary support chain and leave the slack for smooth swivel.
- Always adjust the spring tension to meet the total weight of tool and the application.

Selection of suitable model

Always use a suitable model meeting the total weight of suspended tool or instrument. The balancer should be selected considering the weight of the tool and accessories.

Installation

- Install Spring balancers uneven not to hit each other when the balancers are installed in a line.
- Always employ a secondary support chain and leave the slack for smooth swivel.
- Always adjust the spring tension to meet the total weight of tool and the application.

Retractor is a balancer which has longer wire travel.
The spring tension increases as the wire rope is extended.
When the tension is released the suspended tools/equipment return to the original position.

Feature

Ratchet stopper

A ratchet stopper device is equipped. It stops the stroke and locks the suspension position. When you do not need the stopper function, you can turn it off.



FUNCTION



Ratchet device



Fall arrest device is available for ERM-4S/6S/8S and ERL-3/6S/8S/11S/14S

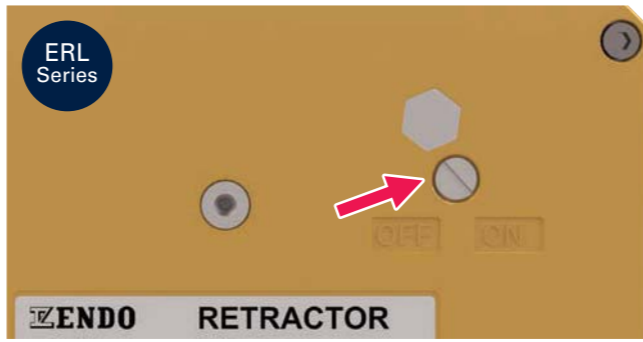


CE Mark is available for ERM-2/4S/6S/8 and ERL-3/6S/8S/11S/14S

ERM Series



ERL Series



You can turn the function on/off with the switch.

Holes for the fixed position and removable hooks

There are various holes for installing the retractor into a fixed position. The top hook and the bottom hook are removable without disassembling the retractor body.

ERM Series



ERL Series



Easy adjustment

It needs only a Hex-key to adjust the spring tension.

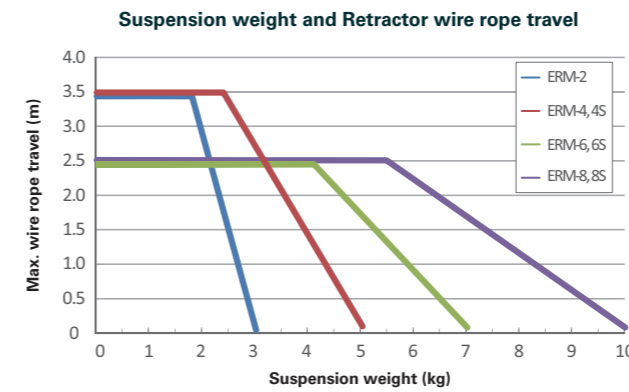
Fall-arrest device

Fall-arrest device is equipped on some models. (See next page)

Retractor ERM series

Model	Fall-arrest device	Capacity(kg)	Wire rope travel* (m)	Mass(kg)	CE
ERM-2	-	1.0-2.0	3.0*	1.8	✓
ERM-4	-	2.0-4.0	3.5*	2.0	-
ERM-6	-	4.0-6.0	2.5*	2.0	-
ERM-8	-	6.0-8.0	2.5*	2.0	-
ERM-4S	✓	2.0-4.0	3.5*	2.0	✓
ERM-6S	✓	4.0-6.0	2.5*	2.0	✓
ERM-8S	✓	6.0-8.0	2.5*	2.0	✓

* Wire rope travel is relative to the setting of the spring tension. (See below)

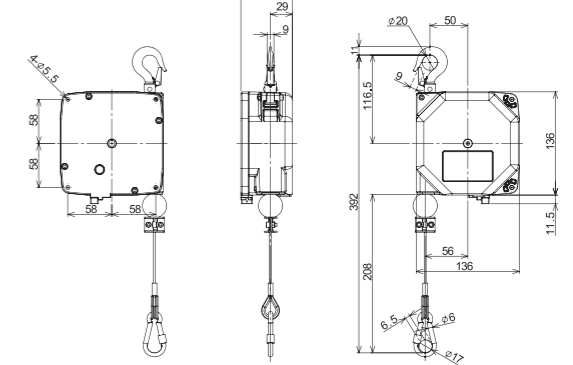


* This graph shows the wire rope travel from the factory set position.

* This graph is a reference for straight up and down operation.



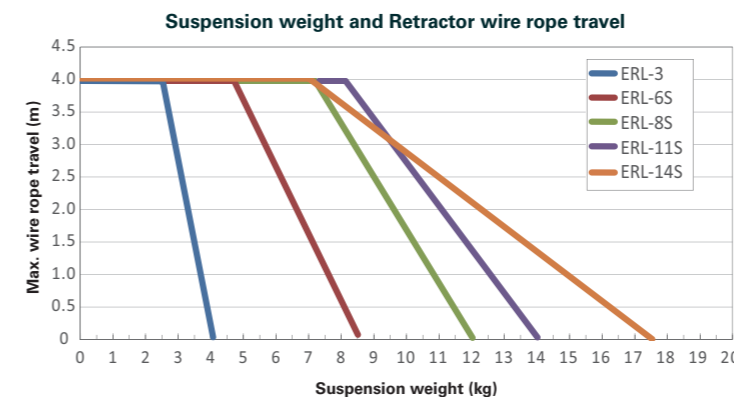
Dimension



Retractor ERL series

Model	Fall-arrest device	Capacity(kg)	Wire rope travel* (m)	Mass(kg)	CE
ERL-3	-	1.5-3.0	4.0*	3.8	✓
ERL-6	-	3.0-6.0	4.0*	4.4	-
ERL-8	-	5.0-8.0	4.0*	4.8	-
ERL-11	-	8.0-11.0	4.0*	5.1	-
ERL-14	-	11.0-14.0	4.0*	5.1	-
ERL-6S	✓	3.0-6.0	4.0*	4.4	✓
ERL-8S	✓	5.0-8.0	4.0*	4.8	✓
ERL-11S	✓	8.0-11.0	4.0*	5.1	✓
ERL-14S	✓	11.0-14.0	4.0*	5.1	✓

* Wire rope travel is relative to the setting of the spring tension. (See below)

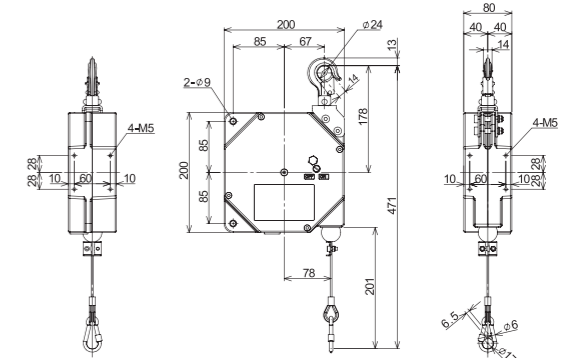


* This graph shows the wire rope travel from the factory set position.

* This graph is a reference for straight up and down operation.



Dimension



Spring balancer with cable snap back prevention device

Features

The EWA special model is equipped with a ratchet device on the spring case that prevents sudden snap back retraction of the wire rope if the wire rope fails, is cut, or if the suspended tool is disengaged.

Description of the device

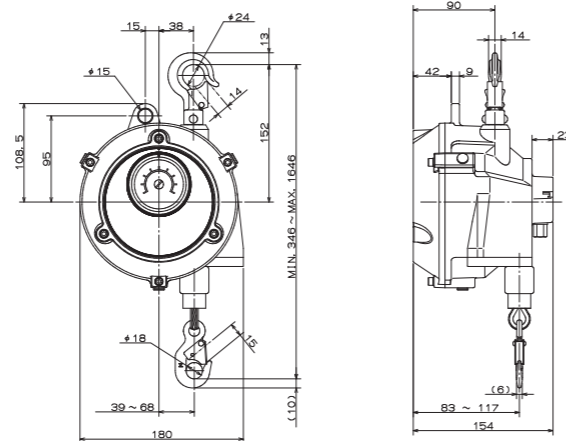
Model	Capacity(kg)	Travel(m)	Cable dia(φmm)	Mass(kg)
EWA-15	9.0-15.0	1.3	4.0	4.7
EWA-22	15.0-22.0	1.5	4.76	8.9
EWA-30	22.0-30.0	1.5	4.76	9.3
EWA-40	30.0-40.0	1.5	4.76	11.9
EWA-50	40.0-50.0	1.5	4.76	12.3
EWA-60	50.0-60.0	1.5	4.76	13.3
EWA-70	60.0-70.0	1.5	4.76	13.6

* The cable snap back protection device for 70kg to 120kg capacity is available on request.

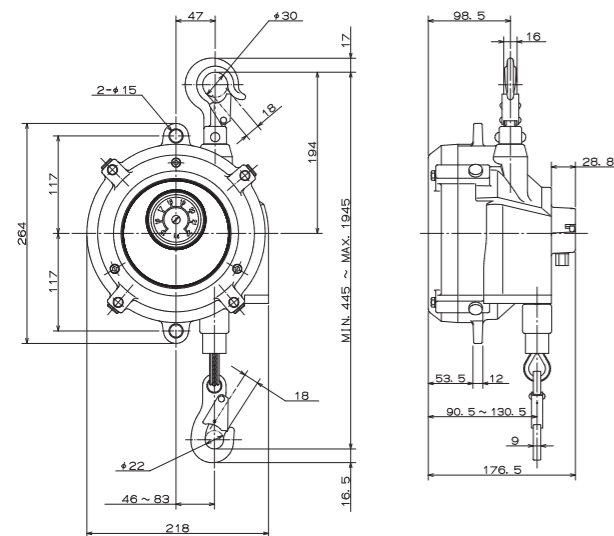
FUNCTION



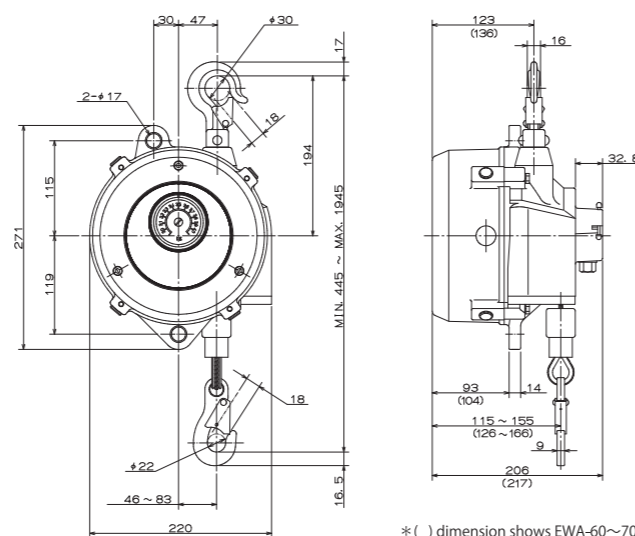
EWA-15



EWA-22/30



EWA-40/50/60/70



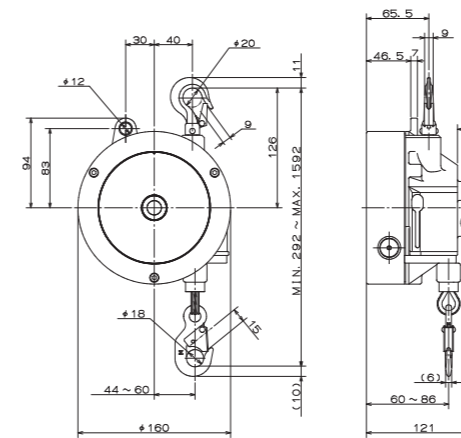
* () dimension shows EWA-60~70.

Spring balancer with brake system

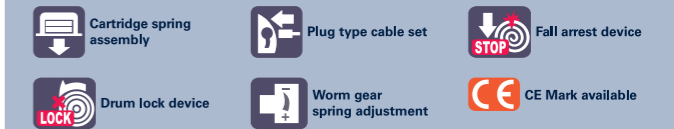
Features

The braking balancer is equipped with a one-way clutch that slows retraction but doesn't interfere with extension. This feature can also be set to off to use the balancer without the brake.

Model	Capacity(kg)	Travel(m)	Cable dia(φmm)	Mass(kg)
EWB-3B	1.5-3.0	1.3	3.0	4.7
EWB-5B	3.0-5.0	1.3	3.0	8.9
EWB-7B	5.0-7.0	1.3	3.0	9.3



FUNCTION



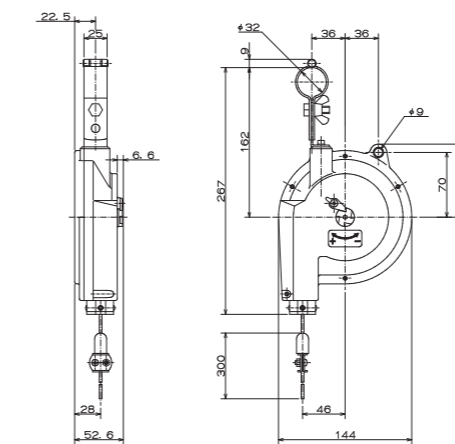
Spring Balancer for clean room

Features

The case of the spring balancer for clean room is conductive allowing it to be grounded. This balancer is also sealed to prevent the dispersion of particles.

Model	Capacity(kg)	Travel(m)	Mass(kg)
SBC-15-D	0.5-1.5	0.9	1.2
SBC-25-D	1.5-2.5	0.9	1.3

* Stainless wire rope is covered with urethane tube.



FUNCTION



Eco Balancer EWF-X

Features

- The world's first "Eco-Friendly" spring balancer
- Synthetic food grade grease (NSF H1 grade)
- High durability
- Flexible adaptability to a wide range of 1-120kg models

Treating Method		
Casing	Unpainted	
Cover	Unpainted	
Upper Hook	Zinc plating	
Rivet	Stainless steel	
Rope	Nylon rope	
	White	EW-3X/5X, EWS-3X to 7X
	Black	EFW-9X/15X
	SUS Wire rope	EFW-22X to 120X
Lower Hook	Stainless steel	
Pin(EWF-9 to 120)	Zinc plating	
Plug	Stainless steel	
Bolts	Stainless steel	
Screws	Stainless steel	
Grease	Food grease(on Spring)	



EWF-C

Features

The plastic drum and the non-painted casing produce less contaminants such as wear debris and chipped paint.

Model	Capacity(kg)	Travel(m)	Wire rope dia.(mm)	Mass(kg)
EWF-3C	1.5-3.0	1.3	φ3	1.7
EWF-5C	3.0-5.0	1.3	φ3	1.9
EWF-7C	5.0-7.0	1.3	φ3	1.9



Features

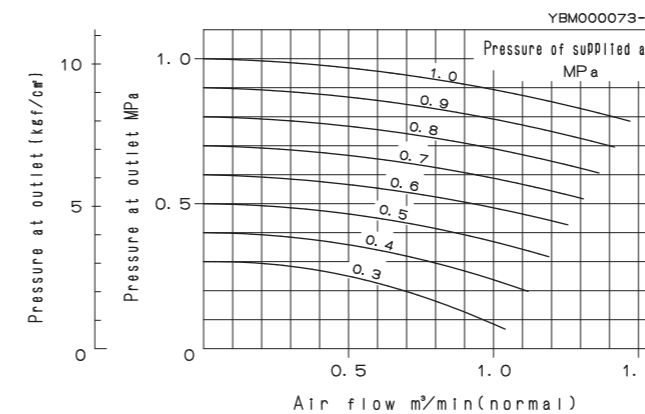
Inplace of the wire rope, the urethane hose is wound and air tools can be easily moved up and down. If the spring fails the fall arrest device activates and prevents the suspended tool from falling. The inside diameter of hose is 8.5mm which supplies enough air to operate the suspended air tool or device.

Working conditions

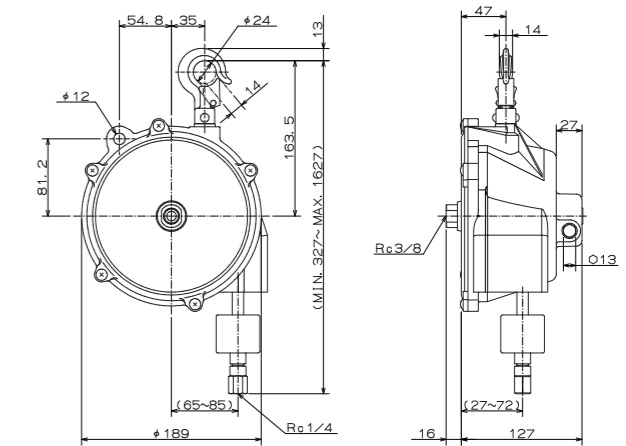
- Application area : Indoor and normal atmospheric conditions
- Temperature rang : -10°C to +40°C
- Application fluid : Air
- Maximum air pressure : 1.0MPa {10kgf/cm²}

Model	Capacity(kg)	Hose travel (m)	Hose inside diameter. (φmm)	Mass(kg)
THB-15A	0.5-1.5	1.3	8.5	2.0
THB-25A	1.5-2.5	1.3	8.5	2.1
THB-35A	2.5-3.5	1.3	8.5	2.2
THB-50A	3.5-5.0	1.3	8.5	2.2
THB-65A	5.0-6.5	1.3	8.5	2.3

Flow characteristics



Dimensions(mm)



FUNCTION

- Worm gear spring adjustment
- Cushion cover available
- Fall arrest device
- CE Mark available

Special accessories

Swivel elbow fitting for air inlet (outer dia 10.5mm)

Parts No. LBP000654

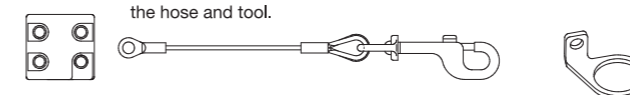
Swivel Joint

Parts No. LBP000659

Protect wire

Parts No. LBP002196

The protect wire prevents accidental dropping and / or disconnection between the hose and tool.



Coupling socket (Outer dia 11.3mm)

Parts No. LBP000784



Adjustable hose stopper

Parts No. LBP001894

Special hose for an extended length (with a swivel joint ;1m)

Parts No. LBP000785 (max. 2m extension)



Features

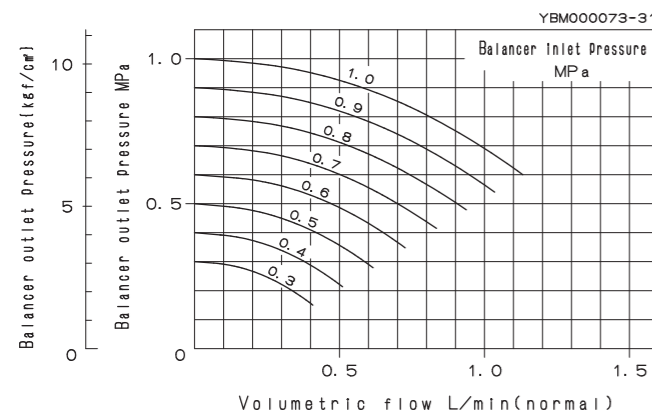
Inplace of the wire rope, the urethane hose is wound and air tools can be easily moved up and down.
The casing and drum are made of acrylonitrile butadiene-styrene resin and are light weight.
The diameter of the hose nipple is 9mm at inlet portion.
And swivel joint size Rc.1/4 at outlet portion.

Working conditions

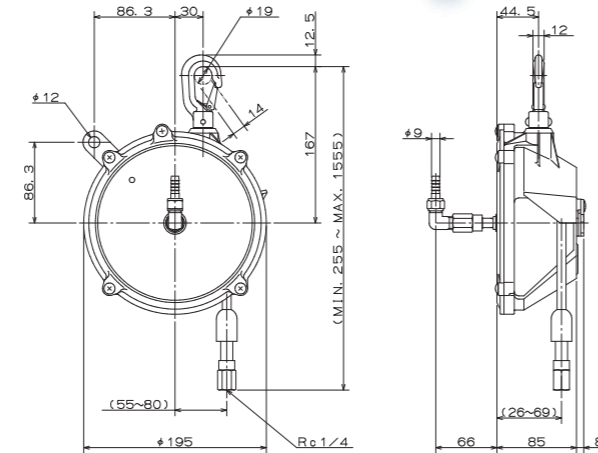
- Application area : Indoor and normal atmospheric conditions
- Temperature rang : -10°C to +40°C
- Application fluid : Air
- Maximum air pressure : 1.0MPa {10kgf/cm²}

Model	Capacity(kg)	Hose travel (m)	Air inlet.(φmm)	Mass(kg)
ATB-0	0.5-1.5	1.3	6.3	1.58
ATB-1	1.5-3.0	1.3	6.3	1.66
ATB-2	3.0-5.0	1.3	6.3	1.73

Flow characteristics



Dimensions(mm)



FUNCTION



Ratchet system spring adjustment



Cushion cover available



CE Mark available

※ATB-2 is not available for CE Mark.

Accessories

Protect wire set

Parts number
LBP000794

The protector is available for tool fall protection caused by unintentionally detaching an air tool from a coupling.



Features

The spring works to retract a hose into the device automatically.
The 10mm inner diameter of the hose allows larger air tools to be operated.

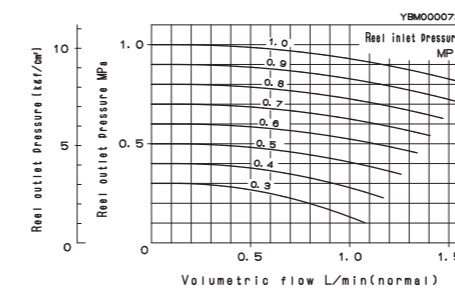
A ratchet system installed to the device can keep a tool suspended at any position on the hose travel length.

- On-off work of ratchet system is available through knob operation.
- The fall preventive system activates if the spring fails.

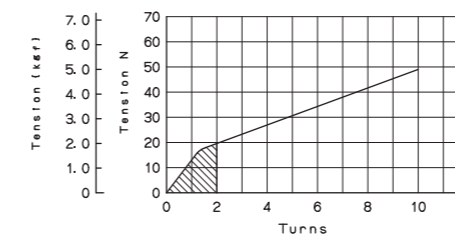
ATR-5 is installed with top hook and ATR-5-1 is installed with bracket.

Model	Max tension N (kgf)	Hose travel (m)	Air inlet.(φmm)	Mass(kg)
ATR-5	4.9 (5.0)	2.0	10.0	3.8
ATR-5-1	4.9 (5.0)	2.0	10.0	4.2

Flow characteristics



Tension curves



Accessories



Special hose for extended length (with a swivel joint)

- 1m Parts No. LBP000659
- 2m Parts No. LBP000664
- 3m Parts No. LBP000665



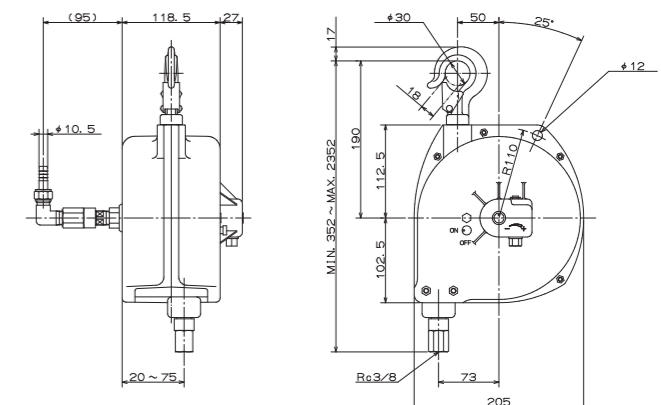
Adjustable hose stopper

Parts No. LRP007933

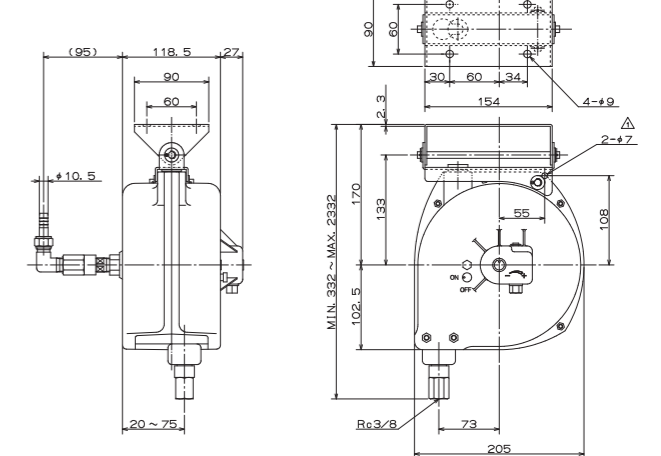


Dimensions(mm)

ATR-5



ATR-5-1



FUNCTION



Worm gear spring adjustment



Ratchet device



Fall arrest device



CE Mark available

Cushion



TYPE-A
EWF-9 to 120
ELF series
EWA series

TYPE-B
ATB series
THB series
ATR series

Insulation Hook



Parts No.	Diameter of cable (φmm)	Applicable model
LBP000145	4.0	EWF-9·15, EWA-15
LBP000146	4.76	EWF-22 to 70, EWA-22 to 70
LBP001185	4.76	EWF-90 to 120
LBP000656	4.76	ELF-15 to 70

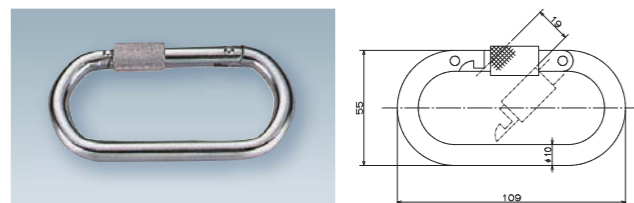
Owing to insulation of holder, it becomes unnecessary to use the insulation made of ceramic (or others) which is casual at present. This composes one set with special cable.



Adjustable cable stopper

Parts No.	Applicable model	Wire rope dia. (mm)	Stopper type
LBP001619	EWF-9 to 120	4.0 - 5.0	
	ELF-15 to 70		
	EWA		
	RSB		
LBP002238	EK-0	3.0	
	EW-3/5		
	EWS		
	ELF-3 to 9		

Karabina



Parts No.	Breaking load
P2S400104	16.7kN {1700kgf}

Swivel hook



The swivel hook enables 360° flexible operation. If you do rotation work, the swivel hook reduce cable damage.

Parts No.	Applicable model
P2B401118	EWF-22 to 70, EWA-22 to 70

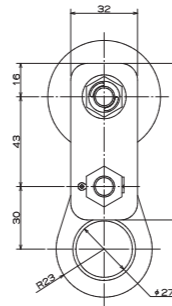
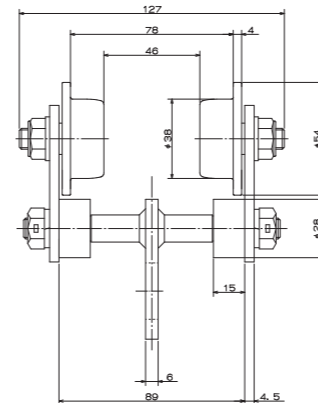
Plain trolley



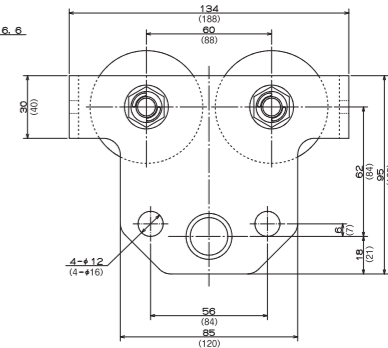
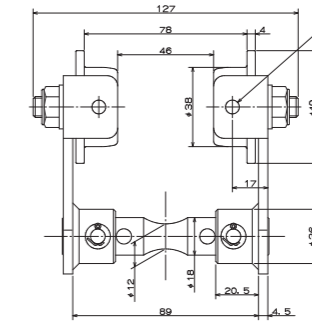
Model	Capacity(kg)	Minimum radius for corner (mm)	Beam widths(B) (mm)	Mass(kg)
PTF-60	60	—	75	0.8
PTF-125	125	600	50/75	1.6
PTF-250	250	900	75/100/125	4.2

Several kind of balancers can not be connected with plain trolleys directly. Please use a Karabina for connection.

PTF-60



PTF-125-250



※ () dimension shows PTF-250.

Corresponding table of Accessories

Parts No.	Name	EK 00	EK 0	EW 3-5	EWS	EWF 9-15	EWF 22 to 70	EWF 90 to 120	EWA 15	EWA 22 to 70	ELF 3 to 9	ELF 15 to 70	ERM ERL	RSB	ATB	THB	ATR
LBP000145	Insulation hook					✓			✓								
LBP000146	Insulation hook						✓			✓							
LBP001185	Insulation hook							✓									
LBP000656	Insulation hook											✓					
P2B401118	Swivel hook						✓										
LBP001619	Stopper					✓	✓	✓	✓	✓		✓		✓			
LBP002238	Stopper		✓	✓	✓						✓						
P2B300789	Cushion						✓			✓	✓						
P2B300799	Cushion														✓	✓	
P2B300934	Cushion							✓									
P2B300948	Cushion																✓
P2B301084	Cushion					✓			✓								
P2S400104	Karabina			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Counter reaction balancer HKC series

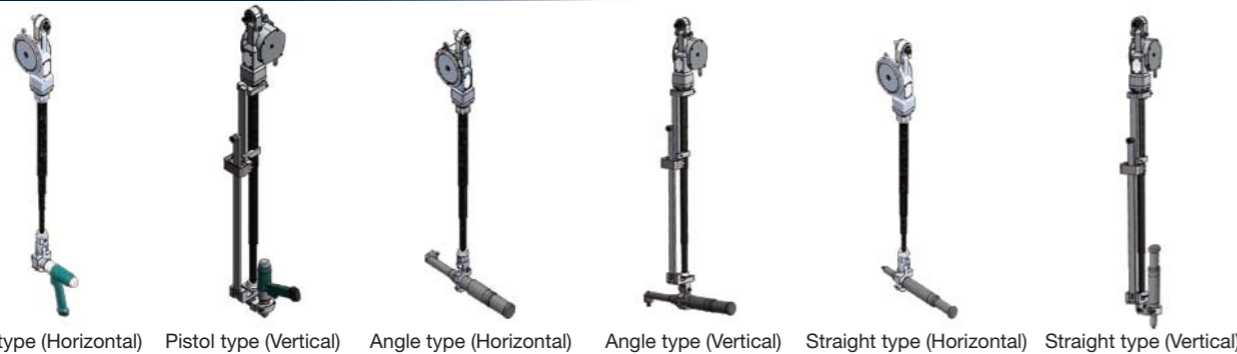
Feature

Carbon telescopic arm can absorb the counter reaction force and built-in balancer supports positioning of the tool.

Model	Max. tightening torque(N·m)	Max. length (mm)	Min. length (mm)	Capacity(kg)	Mass(kg)
HKC30N1800-25	30	1747	877	0.5-2.5	4.9
HKC30N1800-45	30	1747	877	2.5-4.5	5.1
HKC30N1800-65	30	1747	877	4.5-6.5	5.1
HKC60N1800-20	60	1761	761	0.5-2.0	5.3
HKC60N1800-40	60	1761	761	2.0-4.0	5.5
HKC60N1800-60	60	1761	761	4.0-6.0	5.5
HKC60N2500-20	60	2470	1350	0.5-2.0	5.7
HKC60N2500-40	60	2470	1350	2.0-4.0	6.0
HKC60N2500-60	60	2470	1350	4.0-6.0	6.0
HKC120N2300-40	120	2261	1041	2.0-4.0	5.1
HKC120N2300-60	120	2261	1041	4.0-6.0	5.3
HKC120N2300-80	120	2261	1041	6.0-8.0	5.7
HKC200N1800-50	200	1775	775	3.0-5.0	6.0
HKC200N1800-70	200	1775	775	5.0-7.0	6.0
HKC200N2500-50	200	2460	1200	3.0-5.0	6.3
HKC200N2500-70	200	2460	1200	5.0-7.0	6.3



Application with tool type



Counter reaction arm HKA series

Feature

HKA is consisted by only torque arm part. Spring balancer is attached separately, so you can apply wider capacity.

Model	Max. tightening torque(N·m)	Max. length (mm)	Min. length (mm)	Mass(kg)
HKA30N1550	30	1548	678	1.5
HKA60N2050	60	2019	839	1.7
HKA120N2100	120	2092	862	2.3
HKA200N2050	200	2033	853	2.7
HKA300N2500	300	2480	1000	3.2



Counter reaction balancer HKS series

Feature

This product is suitable for small torque tightening activity on the work bench. Square tube absorbs the torque and built-in spring balancer support the positioning of the tool. This unique square shape makes the vertical tightening possible without any extra vertical tightening unit.

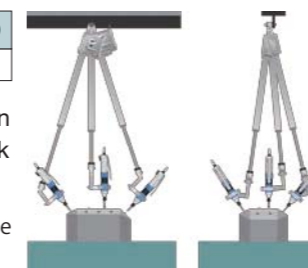
Model	Max. tightening torque(N·m)	Max. length (mm)	Min. length (mm)	Capacity(kg)	Mass(kg)
HKS15N900-20	15	892	592	0.5-2.0	2.9
HKS15N1300-18	15	1292	792	0.5-1.8	3.4

Accessory for HKS series

Parts No.	Name	Mass(kg)
LBP002094	Clamp C	0.33

Clamp C makes the area of motion wider and makes tightening work easier from multiple direction.

※Note: The motion range depends on the condition of the working place.



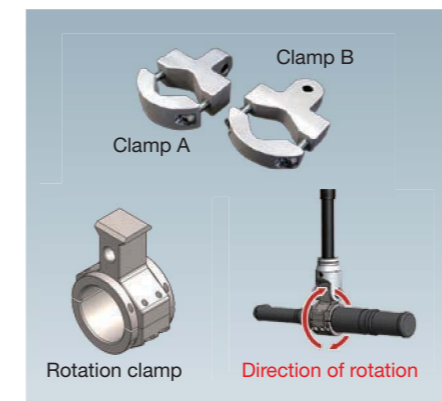
Dimension for Counter reaction balancer/ Counter reaction arm

You can download the DXF data from below link.

→ <http://www.endo-kogyo.co.jp/english/download/index.php>

Accessories

Clamp and Rotation clamp



Parts No.	Name	Applicable model	Range of clamp diameter	Mass(kg)
LBP002183	Clamp A	HKC30N/HKA30N	φ30mm-φ50mm	0.2
LBP002184	Clamp B			0.2
LBP002090	Clamp A	HKC60N/HKA60N	φ32mm-φ52mm	0.4
LBP002091	Clamp B			0.3
LBP002185	Clamp A	HKC120N/HKA120N	φ32mm-φ52mm	0.4
LBP002186	Clamp B			0.4
LBP002092	Clamp A	HKC200N/HKA200N	φ40mm-φ65mm	0.8
LBP002093	Clamp B			0.8
LBP002187	Clamp A	HKA300N	φ48mm-φ73mm	1.1
LBP002188	Clamp B			0.9
LBP002126	Clamp A	HKS15N	φ28mm-φ38mm	0.2
LBP002148	Rotation clamp	HKC60N/HKA60N	φ50mm	1.0
LBP002149	Rotation clamp	HKC200N/HKA200N	φ63mm	1.9

Vertical tightening unit



It allows vertical direction tightening work.

※The stroke will be reduced when you use vertical tightening unit. Please ask us when you would like to know about the detailed specification of this unit.

Parts No.	Name	Applicable model	Mass(kg)
LBP002142	Vertical tightening unit	HKC60N1800	2.5
LBP002164	Vertical tightening unit	HKC60N2500	2.7

We could also offer customized accessories according to customer's request. Feel free to contact our sales team