

## FE-55 Robotic Elevation Unit



Part No. V4127-0001

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Original Instructions: English

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We are making every effort to ensure that our manuals are updated on a regular basis to reflect changes to product specifications and features. Should this manual not contain information on the core functionality of your product, please let us know. You may be able to access the latest revision of this manual from our website.

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<b>Safety</b> .....	<b>2</b>	Powering Up .....	21
<b>About this User Guide</b> .....	<b>4</b>	<b>Operation</b> .....	<b>22</b>
<b>Components and Connections</b> .....	<b>5</b>	Operating the FE-55 - Safety Precautions .....	22
FE-55 Rear View .....	5	Moving the FE-55 or Adjusting the Payload .....	22
FE-55 Front View .....	6	Leaving the FE-55 Unattended .....	23
FE-55 Leg Assembly .....	6	Using the Emergency Stop Button .....	24
FE-55 Connection Panel .....	7	Using the Column Release Knob .....	25
Box Contents .....	8	Indicator LEDs .....	26
Optional Accessories .....	9	<b>Maintenance</b> .....	<b>27</b>
Tools Required .....	9	Routine Maintenance .....	27
<b>Installation</b> .....	<b>10</b>	Cleaning .....	27
Unpacking the FE-55 .....	10	Changing the Fuse .....	27
Assembling the FE-55 .....	10	Fitting the Leg Assemblies .....	28
Fitting the Cable Management Net Accessory .....	10	<b>Troubleshooting</b> .....	<b>30</b>
Adjusting the Cable Guards .....	11	<b>Technical Specification</b> .....	<b>31</b>
Operating the Wheel Brakes .....	12	<b>General Notices</b> .....	<b>32</b>
Installing the Payload .....	12		
Payload Assessment .....	12		
Fitting the Robotic Head .....	13		
Fitting the Camera and Accessories .....	15		
Fitting the Accessory Mounting Bracket (optional) .....	16		
Connecting the FE-55 .....	18		
System Connections .....	18		
Power Connections .....	19		
Cable Management .....	20		

**Important information on the safe installation and operation of this product. Read this information before operating the product. For your personal safety, read these instructions. Do not operate the product if you do not understand how to use it safely. Save these instructions for future reference.**

## Warning Symbols Used in these Instructions

Safety cautions are included in these instructions. These safety instructions must be followed to avoid possible personal injury and avoid possible damage to the product.



### **WARNING!**

Where there is a risk of personal injury or injury to others, comments appear supported by the warning triangle symbol. Where there is a risk of damage to the product, associated equipment, process or surroundings, comments appear supported by the word '**Caution**'.



### **ELECTRIC SHOCK**

Where there is a risk of electric shock, comments appear supported by the hazardous voltage warning triangle.

## Intended Use

The FE-55 robotic elevation unit is designed to support a robotic head and camera together with ancillary equipment weighing up to 25 kg (55 lb).

Camera operators can remotely control the height axis using Vinten control systems.

The FE-55 is designed for use in TV studios and other applications including houses of worship, conference facilities and auditoriums. It can also be used on outside broadcasts (OB) when protected from weather by a suitable waterproof cover.

## Electrical Connection



**WARNING! Risk of electric shock.** Always disconnect and isolate the product from the power supply before attempting any servicing or removing the covers.



**WARNING! Risk of electric shock.** Always check cables for signs of damage. Damaged cables can cause personal injury and/or damage the equipment.



**WARNING!** It is the responsibility of the local organisation to ensure that the product is periodically checked for electrical safety in accordance with local regulations.



**CAUTION!** This product must be connected to a power supply of the same voltage (V) and current (A) as indicated on the product. Refer to the technical specifications for the product.



**CAUTION!** Limit the primary AC supply cable (floor cable) current to a maximum of 16A (via the AC wall socket or fused connection).



**CAUTION!** All connections to other devices must be made using shielded cables.



**CAUTION!** Using alternative power sources will invalidate the system EMC liability.



**CAUTION!** Do not exceed the current output limit of the product when powering auxiliary devices.



**CAUTION!** Always use a fuse of the correct type and rating for the product. Refer to the Technical Specifications for the product.



**CAUTION!** The product must be connected to the AC supply using a 30 mA RCD unit.

## Basic Electrical Insulation (Class 1 Equipment)



**WARNING!** This product is Class 1 equipment. For safe operation this equipment must be connected to a power supply that has a protective earth connection (US: ground).

## Health and Safety



**WARNING! Risk of personal injury or injury to others.** All personnel must be fully trained and adhere to correct manual handling techniques and Health & Safety regulations. It is the responsibility of the local organisation to enforce safe working practices at all times.



**WARNING!** 48.6 kg/107.1 lb LIFTING ASSISTANCE REQUIRED. Do not lift this product without the assistance of another person or a lifting hoist capable of safely lifting the product.

## Mounting and Installation



**WARNING!** Before fitting, adjusting, or removing the payload, the elevation column must be lowered to a safe working height and all four wheel brakes must be applied.



**WARNING!** An abnormal or unbalanced payload can cause the product to become unstable. Strictly adhere to the payload guidelines and mounting instructions presented in this user guide.



**WARNING!** When mounting the payload, sufficient clearance must be provided below the mounting platform to prevent the risk of collisions or trapping injuries when the column is lowered.



**WARNING!** Always ensure that all power and auxiliary communications cables are routed so that they do not present any danger to personnel. Take care when routing cables in areas where robotic equipment is in use.

## Operation



**WARNING!** An emergency stop button is located on the product for safety. All personnel working with, or within the operating area of the product must be made aware of the location and function of the button.



**WARNING!** The product has been designed for mounting a payload consisting of camera support equipment only. Under no circumstances should the product be used for the transportation or support of personnel.



**WARNING!** Risk of product instability when moving the product with the elevation column fully extended. Reduce the height of the elevation column to a safe lower level before attempting to move the product.



**WARNING!** The product must only be operated on a smooth and level surface.



**WARNING!** The product must always be secured (all four wheel brakes applied) when left unattended. Do not leave the product unattended on a sloping surface.



**CAUTION!** Do not exceed the payload limit for the product of 25 kg (55 lb).



**CAUTION!** The product must only be operated with a minimum payload of 10 kg (22 lb) to pre-load the column correctly.

## Water, Moisture and Dust



**WARNING!** Protect the product from water, moisture and dust. The presence of electricity near water can be dangerous.

## Ventilation



**CAUTION!** Slots and openings are intended for ventilation purposes to ensure reliable operation of the product and protect it from overheating. Do not block or cover any slots and openings.

## Operating Environment



**CAUTION!** The product should not be used outside the operating temperature limits. Refer to the product technical specifications for the operating limits for the product.

## Cleaning



**WARNING! Risk of electric shock.** Always disconnect and isolate the product from the power supply before cleaning.



**CAUTION!** Do not use abrasives or wire brushes to clean the product. Clean with a soft dry cloth.

## Maintenance



**WARNING!** This product is fitted with a pressurised gas vessel. The removal of any covers, and the undertaking of any servicing or repair work must only be carried out by approved and qualified service engineers.



**WARNING!** The fitting of non-approved parts or accessories, or the carrying out of non-approved alterations or servicing can be dangerous and could affect the safety of the product. It may also invalidate the terms and conditions of the product warranty.

## Safety when Working with Robotic Equipment

In normal operation remote-controlled equipment can move suddenly and without warning. Since audible warnings are not suitable for use within the studio environment, it is recommended that only trained personnel be allowed to work in the active areas where remote-controlled robotic equipment is located.

The safe operating zone is a minimum of 1 m (3 ft).

## Safety Notes for Operators

Operators must familiarise themselves with the working footprint of the robotic equipment, including all installed payload items (lens, zoom and focus controls, viewfinder, prompter, etc.) to prevent inadvertent collisions or injury to personnel.

If personnel are too close to robotic equipment that is about to move, the operator should prevent the motion from starting or stop the motion if it has started.

We strongly recommend that the operator verifies visually that the active area is clear of hazards and personnel, both before and during remote operation.

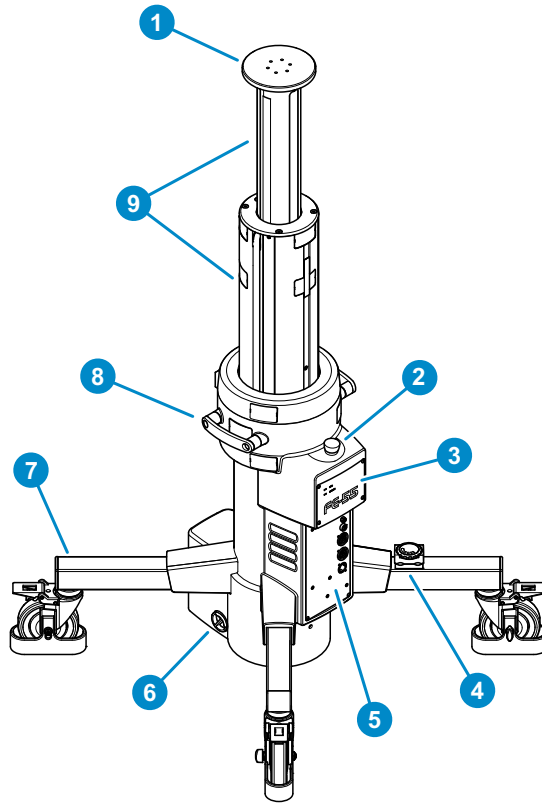
## About this User Guide

The Vinten FE-55 robotic elevation unit has been designed to integrate with compatible robotic pan and tilt heads and controllers to form part of a robotic camera support system installation.

The FE-55 is designed for use with the FHR-35 robotic pan and tilt head, and can be operated by a CP4 control panel as part of a basic robotic system.

This user guide covers the installation, configuration and operation of the FE-55.

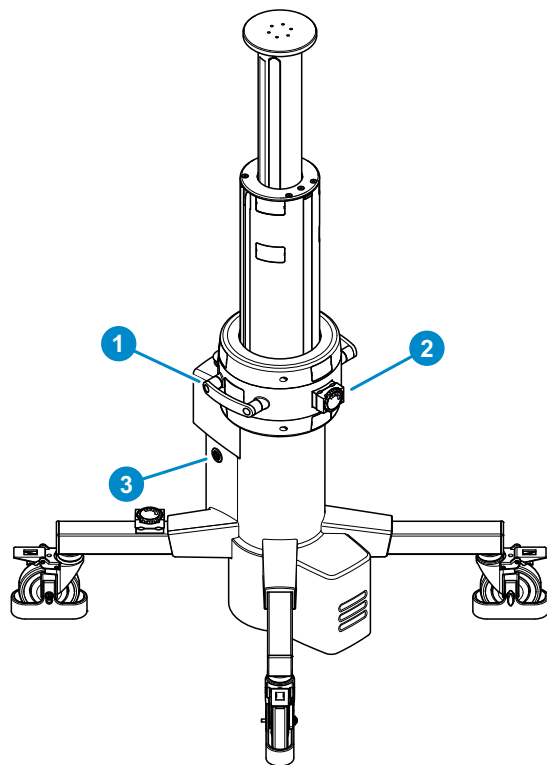
## FE-55 Rear View



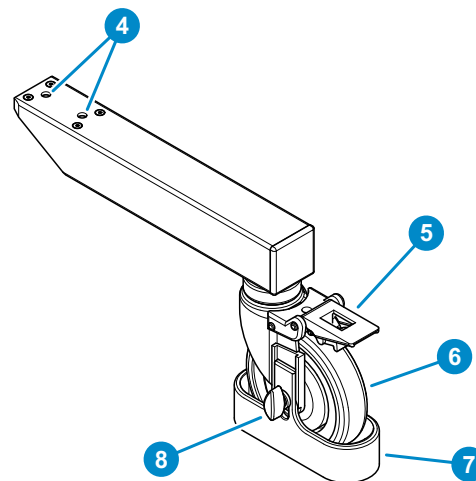
1	Head mounting plate
2	Emergency stop button
3	Indicator LEDs and data connection panel
4	Leg cable clamp
5	Power connection panel
6	Column release knob
7	Leg assembly (x4)
8	Grab handle (left side)
9	Elevation column moving sections

# Components and Connections

## FE-55 Front View



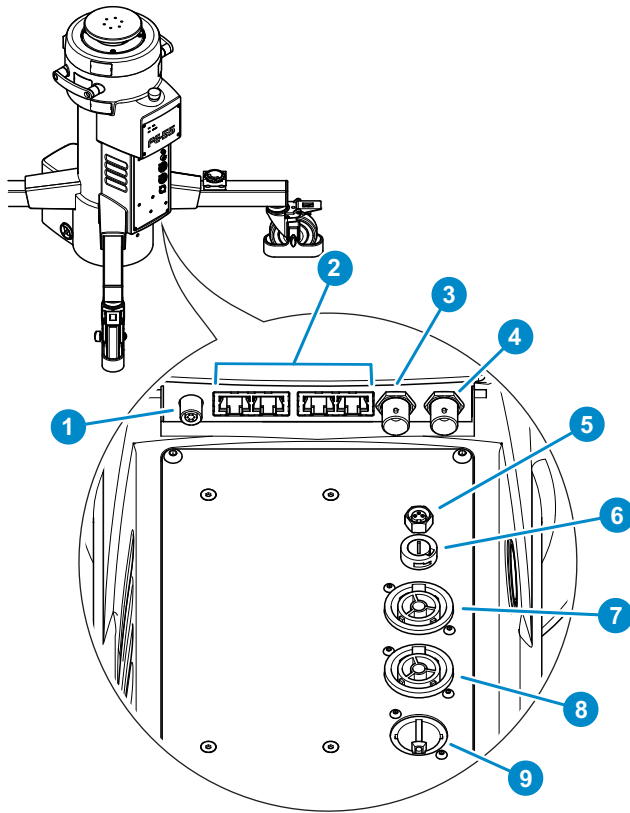
## FE-55 Leg Assembly



1	Grab handle (right side)
2	Main body cable clamp
3	Power switch
4	Fixing holes
5	Wheel brake
6	Swivel wheel
7	Cable guard
8	Cable guard adjustment clamp knob



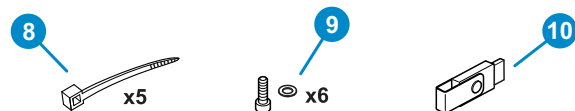
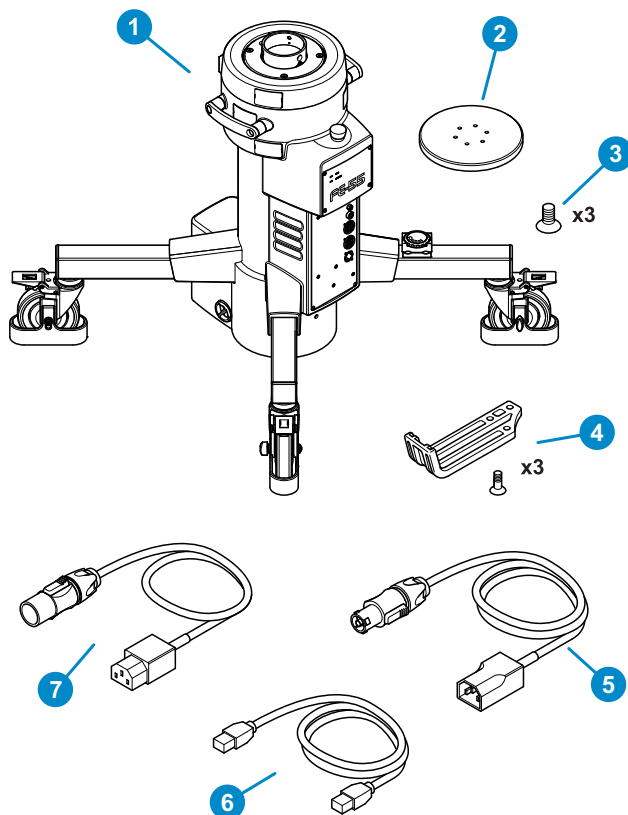
## FE-55 Connection Panel



1	Connector currently not used
2	Ethernet ports (x4)
3	Genlock IN connector
4	Genlock OUT connector
5	48 VDC OUT connector (currently not used)
6	Fuse holder
7	AC power OUT connector, switched
8	AC power OUT connector, switched
9	AC power IN connector

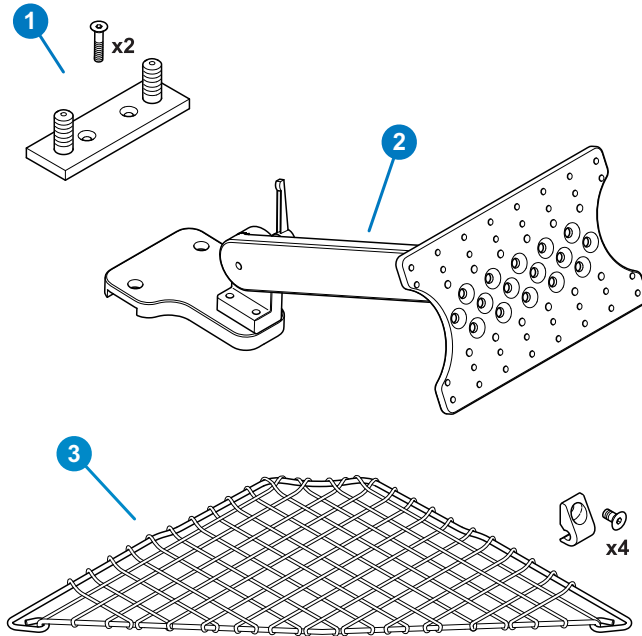
# Components and Connections

## Box Contents



1	FE-55 main assembly
2	Head mounting plate
3	Head mounting plate fixing screws, x3
4	Cable management bracket and fixing screws
5	AC power cable, 3 metres
6	Network cable, 3 metres
7	AC head power cable, 1 metre
8	Cable ties, x5
9	Head fixing screws and washers, x 6
10	USB stick containing software and documentation

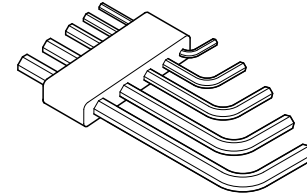
## Optional Accessories



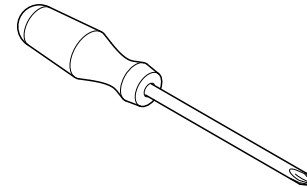
1	Accessory mounting bracket
2	Autoscript Universal On-Air Mounting Bracket (part no. MT-OA-UNI)
3	Accessory cable management net

## Tools Required

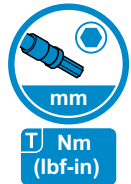
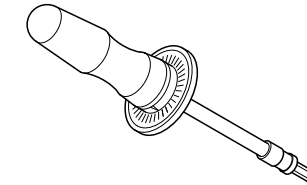
Metric Allen key set.



Pozidriv® PZ-1 screwdriver.



Torque screwdriver with metric hex bits.



# Installation

## Unpacking the FE-55



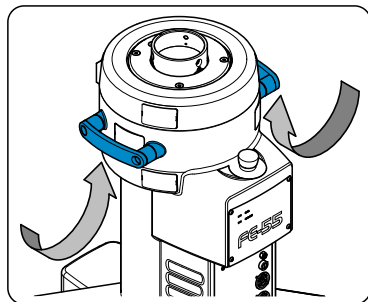
**WARNING! Risk of personal injury or injury to others.**

1. DO NOT lift the elevation unit unaided. This product weighs up to 48.6 kg (107.1 lb).
2. DO NOT lift the product by the camera mounting plate.



**WARNING!** If the FE-55 has been received or subsequently transported with the legs removed, these must be fitted before any other installation work can be carried out. See the section **Fitting the Leg Assemblies** on page 28.

1. With the assistance of another person, use the two grab handles on the sides of the FE-55 to carefully lift it from the transportation box.



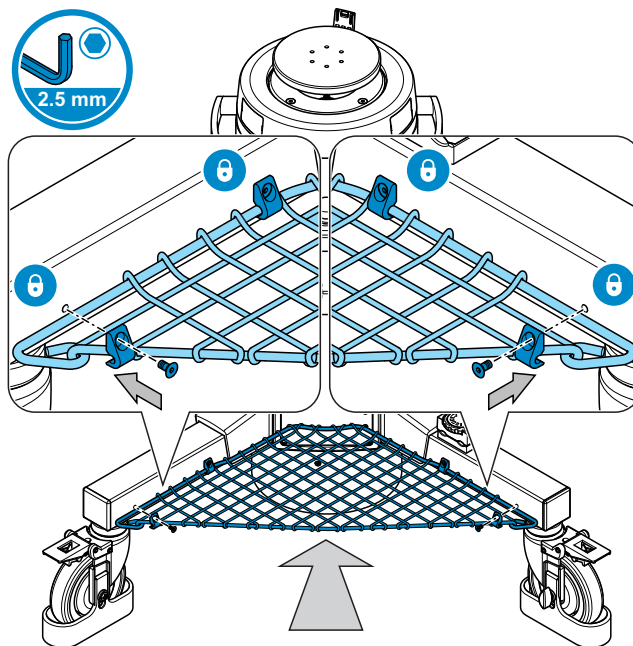
2. Remove all the other product components from the transportation box.
3. Ensure that all transportation packaging material and retaining fixings are removed from the product components.

## Assembling the FE-55

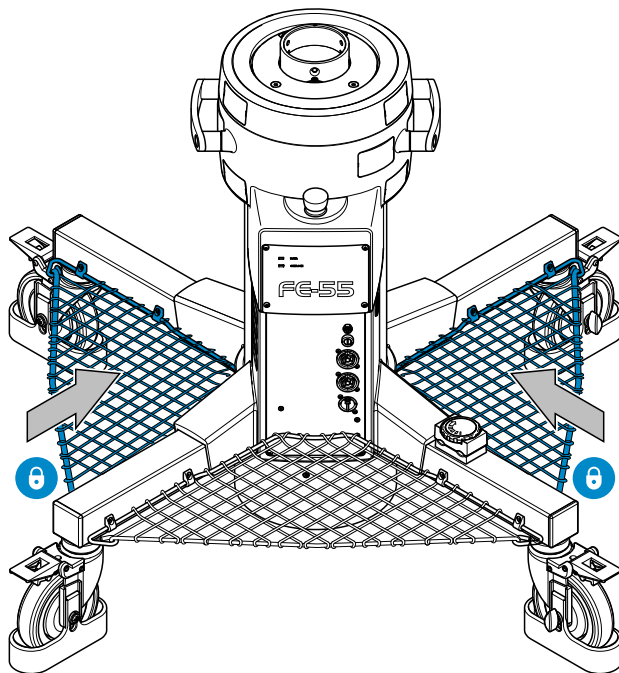
### Fitting the Cable Management Net Accessory

The cable management net can be installed on the FE-55 to provide stowage of additional cables or management of excessive cable lengths and bundles.

1. Fit the cable management net between the two rear legs of the FE-55, securing in position with the four screws provided.



2. A further two cable management nets can be fitted to the sides of the FE-55, if this is a requirement of the installation.



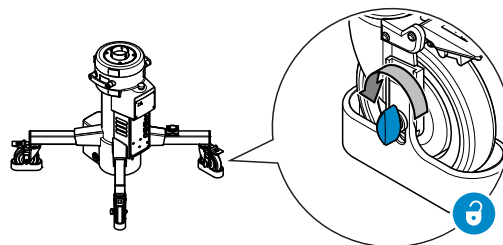
## Adjusting the Cable Guards

Each of the four castor wheels is fitted with a cable guard. These are height adjustable and should be set as required for the installation.

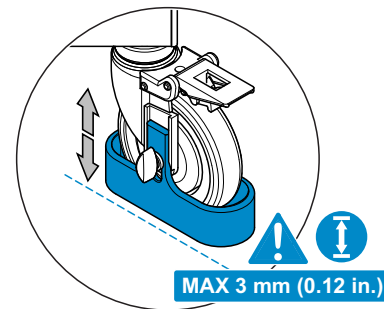


**WARNING!** To avoid the risk of wheel collision with smaller cables, all four cable guards must be set to a maximum height clearance of 3 mm (0.12 in.) above the floor level.

1. Loosen the locking knob on the side of the cable guard.



2. Slide the cable guard to the required height level and secure in position by re-tightening the locking knob.



3. Adjust the other three cable guards to the same level requirement.

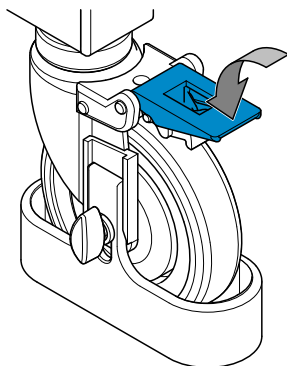
# Installation

## Operating the Wheel Brakes

The wheels on the FE-55 are fitted with foot operated wheel brakes. All four wheel brakes must be applied to ensure the unit is stable and held firmly in position.

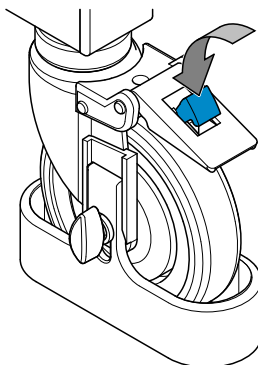
### Applying the Wheel Brakes

Press down firmly on the top of the lever to latch the brake into the locked position.



### Releasing the Wheel Brakes

To release, press down firmly on the centre 'pop-up' lever which is raised when the brake is on.



## Installing the Payload



**CAUTION! Risk of product damage.** The product must only be operated with a minimum payload of **10 kg (22 lb)**. Do not exceed the payload limit for the product of **25 kg (55 lb)**. Ensure that the payload has been correctly assessed.

### Payload Assessment

It is critical for the correct and safe operation of the FE-55 that the payload to be installed is assessed to meet the following criteria:

1. Accurately calculate the total weight of the payload to be fitted to the elevation unit. The total weight must be at least **10 kg (22 lb)** but not exceed **25 kg (55 lb)**.

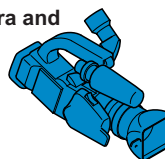
FHR-35



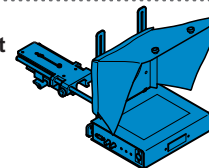
8 kg (18 lb)



Camera and lens

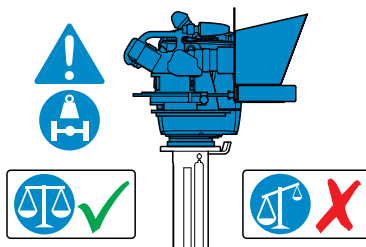


Ancillary equipment

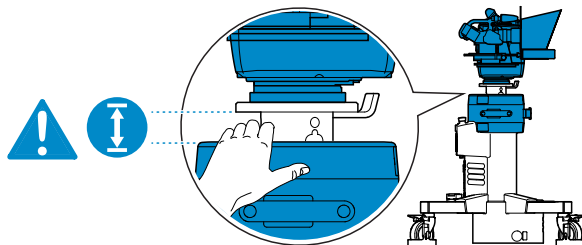


$\leq 25$  kg (55 lb)

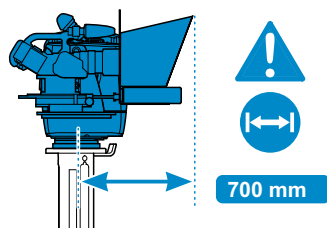
2. Ensure that the camera, lens and any other equipment can be centrally balanced on the robotic head (i.e. the mounting plate of the elevation column).



3. Ensure that provision is given for sufficient clearance below the mounting platform to prevent the risk of collisions or trapping injuries when the column is lowered.



4. Measure to check that the overall length of the payload will not exceed 700 mm (27.5 in.) from the centre of the mounting plate in any direction.



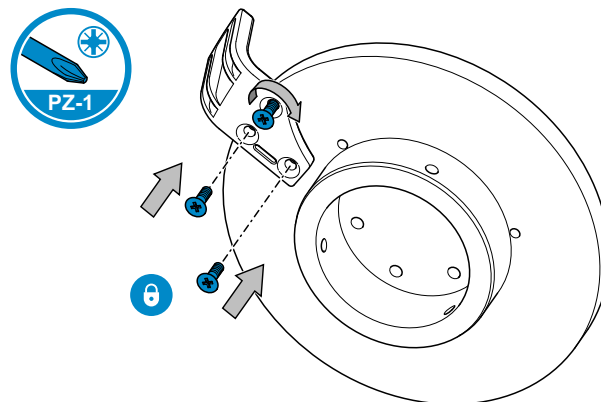
## Fitting the Robotic Head



**WARNING!** Before fitting, adjusting, or removing the payload, the elevation column must be lowered to a safe working height and all four wheel brakes must be applied. Do not attempt to install the robotic head with the camera or any payload attached.

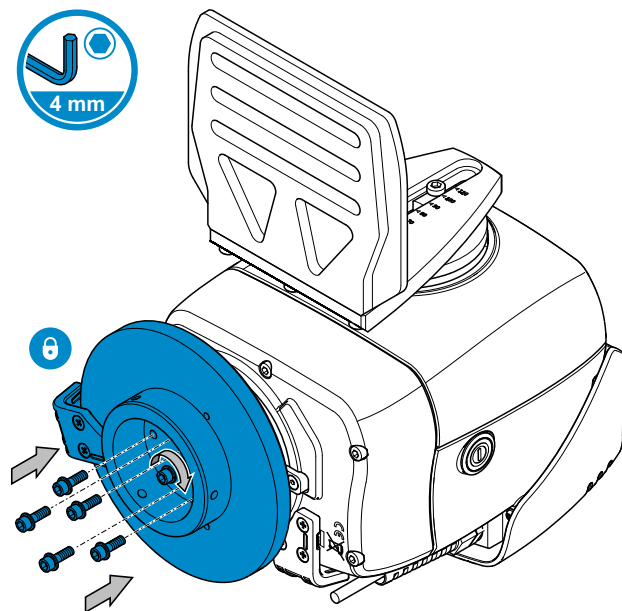
The robotic head (FHR-35) is fitted to the FE-55 using a head mounting plate.

1. If required in this installation, attach the cable management bracket to the underside of the head mounting plate. Secure the bracket in position with the three screws provided.

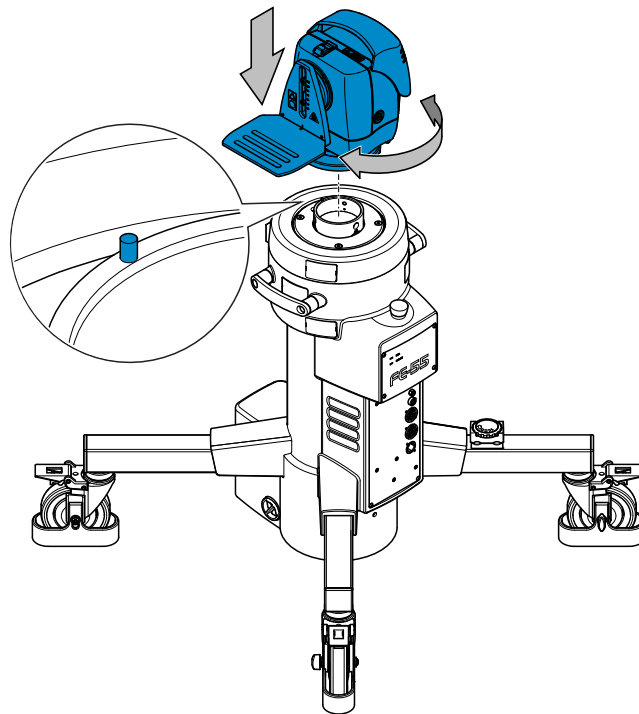


# Installation

2. Fit the head mounting plate to the pan base of the FHR-35. Secure the plate in position with the six screws and washers supplied with the FHR-35.

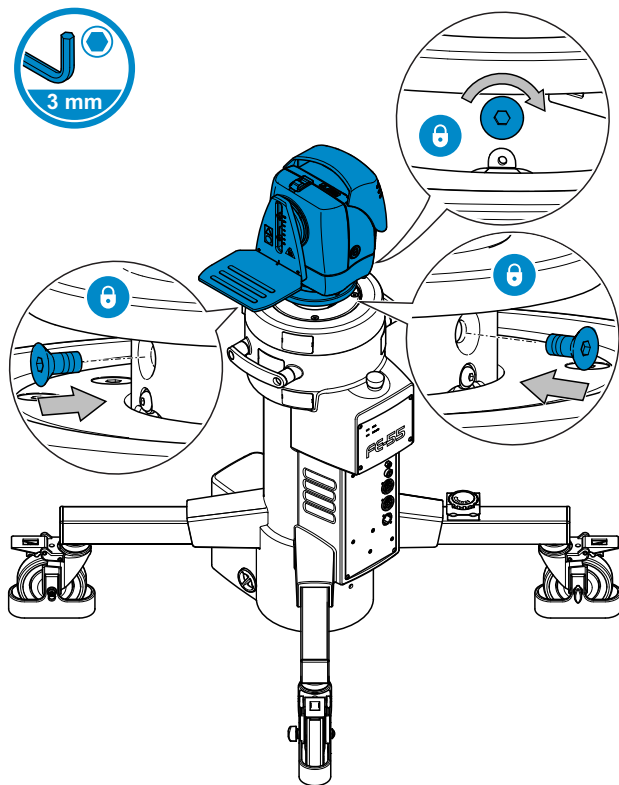


3. Carefully lower the FHR-35 onto the FE-55, inserting the head mounting plate base into the top column tube section. To correctly seat the plate, rotate the FHR-35 so that a locating hole in the head mounting plate aligns with the dowel pin on the column.





4. Fit the three countersink screws provided through the mounting holes in the side of the column. Tighten the screws fully to secure the FHR-35 in position.



## Fitting the Camera and Accessories

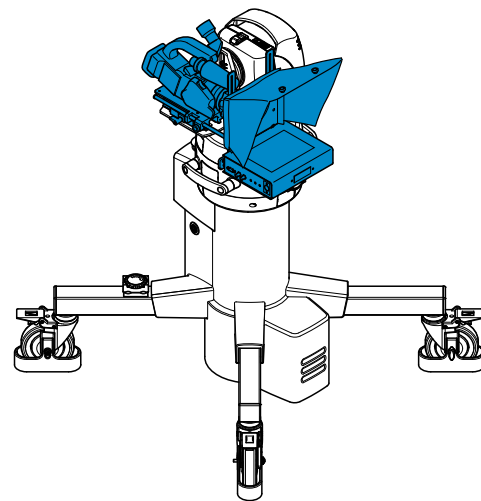


**WARNING!** Before fitting equipment, refer to the installation instructions supplied with the robotic head, camera and any accessories. To ensure safe operation, the payload must be correctly balanced following installation.

When the robotic head has been secured to the FE-55, the camera, lens and any other accessories such as a prompter can be fitted.



**WARNING!** Ensure that all equipment being fitted has been correctly assessed. See the section **Payload Assessment** on page 12.

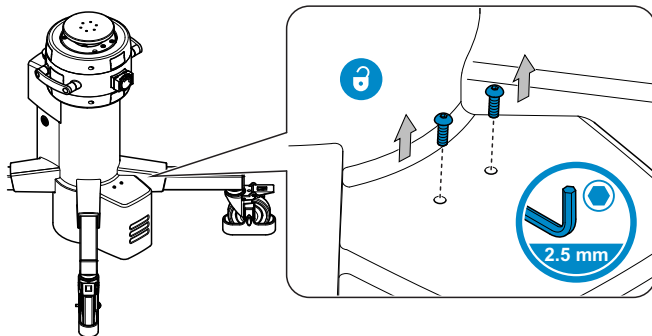


# Installation

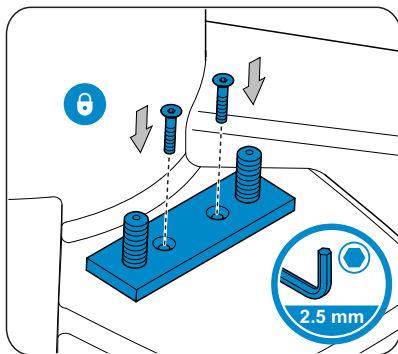
## Fitting the Accessory Mounting Bracket (optional)

The optional accessory mounting bracket can be fitted so that a monitor can be mounted to the FE-55. The bracket is designed for use with the Autoscript Universal On-Air Mounting Bracket (p/no. MT-OA-UNI).

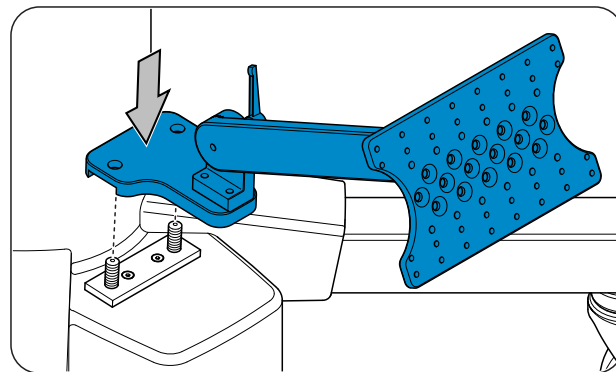
1. Remove the two capping screws from the front body of the FE-55.



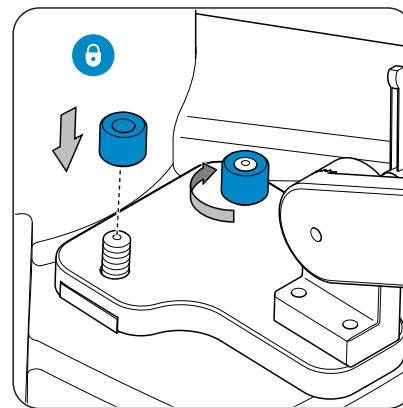
2. Align the accessory mounting plate with the two holes and secure in position with the countersink screws provided.



3. Lower the monitor mounting arm into position on the mounting plate, aligning the two holes with the mounting studs.



4. Fit the two threaded bosses supplied with the arm onto the mounting studs to secure in position.



5. Attach the monitor to the monitor mounting arm.



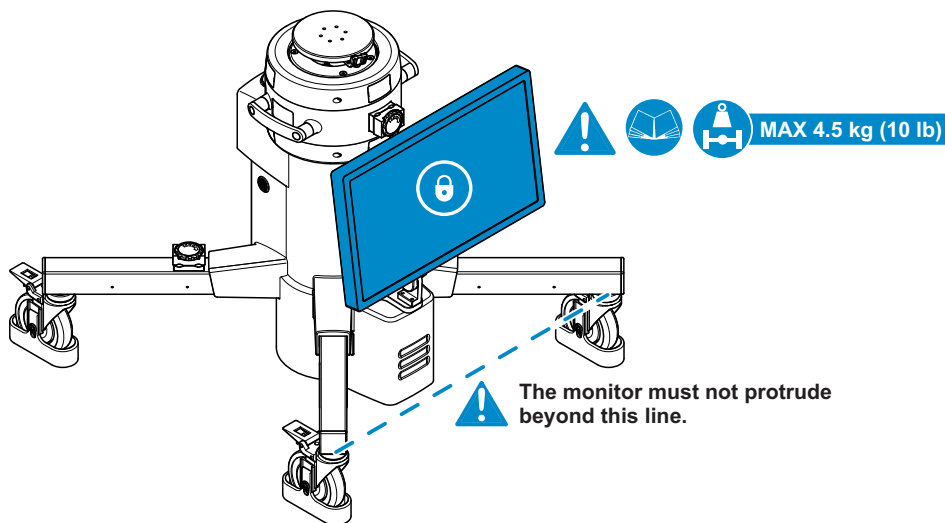
**WARNING!** Ensure that the weight of the monitor does not exceed 4.5 kg (10 lb)



**WARNING!** When mounted and adjusted, ensure that the monitor does not protrude beyond the pivot points of the wheels.



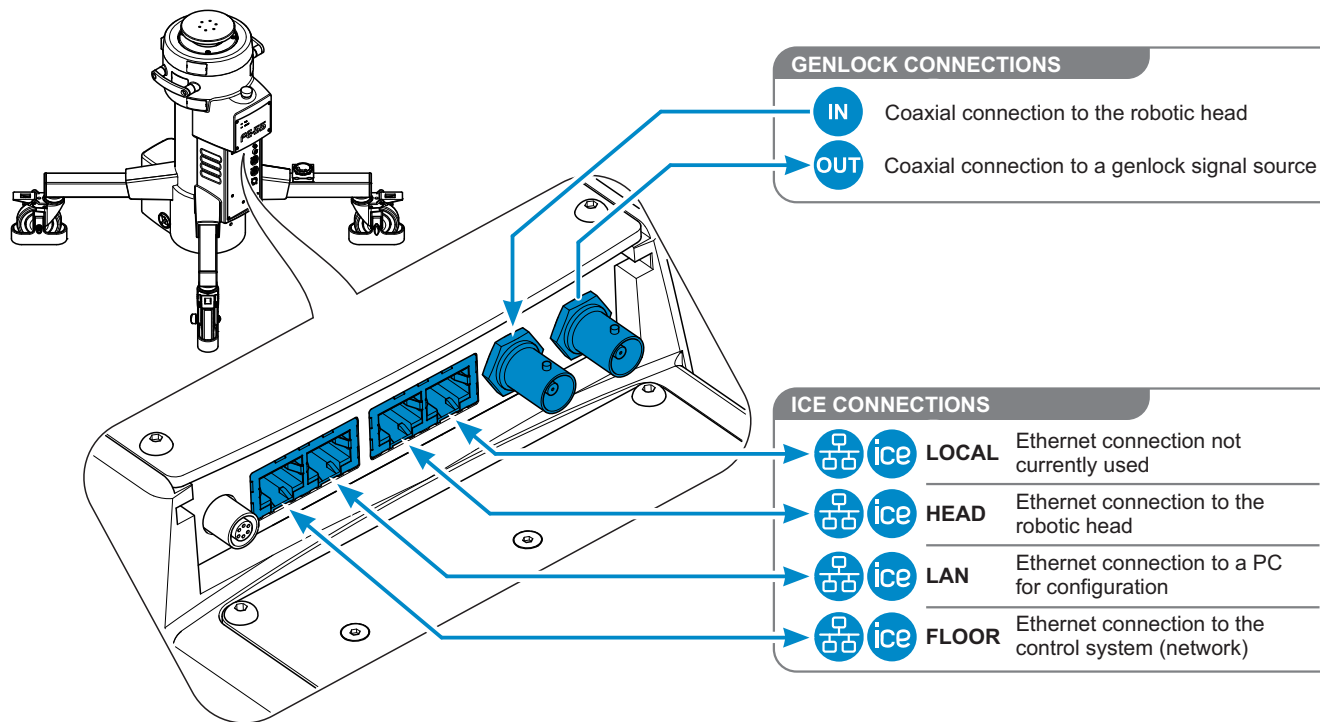
**WARNING!** Only use recommended fixings that are capable of safely and securely holding the monitor in position. Refer to the user documentation supplied with the product.



# Installation

## Connecting the FE-55

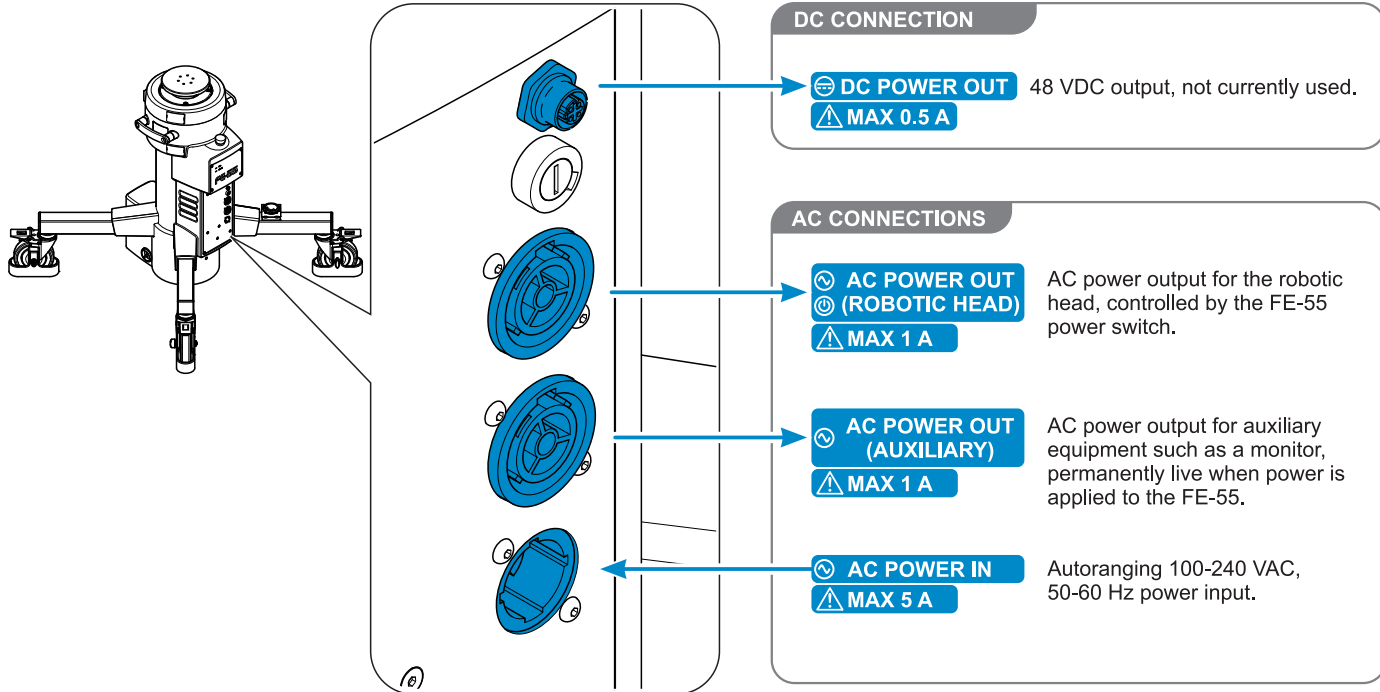
### System Connections



## Power Connections



**WARNING!** Only use the power supply cable supplied with the product. Do not exceed the current output limit of the product when powering auxiliary equipment.



## Cable Management

Following the completion of connections to the FE-55 and all the installed equipment, the associated cabling must be dressed into position and secured for safety. This is achieved by making use of the cable clamps and management brackets provided on the FE-55 and the robotic head. Cabling can be neatly secured, providing strain relief for the connectors and reducing the risk of cables becoming trapped or damaged.

### 1 Robotic Head to Mounting Plate

If the optional cable management bracket has been fitted to the head mounting plate, attach all cabling as shown using cable ties. Provide a sufficient loop of slack in the cables so the robotic head can freely rotate through 360 degrees.

### 2 Column Top to FE-55 Body

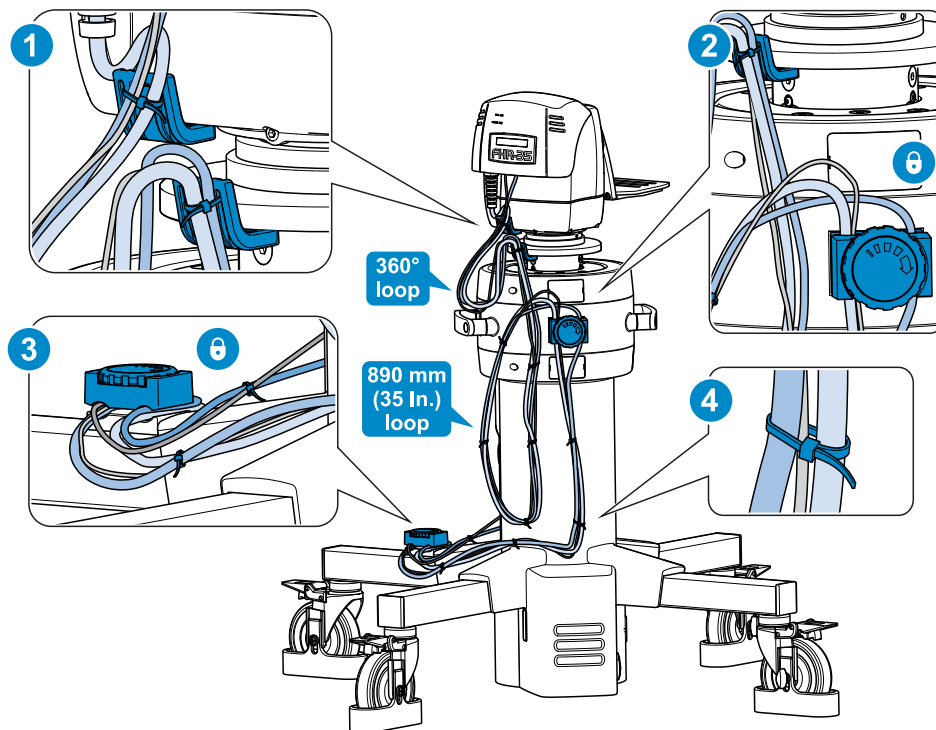
Loosen the main body cable clamp knob sufficiently to feed the cabling from the head into the channels in the clamp block. To permit unrestricted and safe movement of the elevation column through its full stroke range, provide a minimum slack loop in the cabling between the head mounting plate and the main body clamp of **890 mm (35 in.)**. Do not over-tighten the cable clamp knob when securing the cabling.

### 3 FE-55 Body to Leg Clamp

Route the cabling through the leg clamp using the same method shown in step 2. Also route any additional cabling from the FE-55 connectors through the leg clamp.

### 4 Cable Dressing

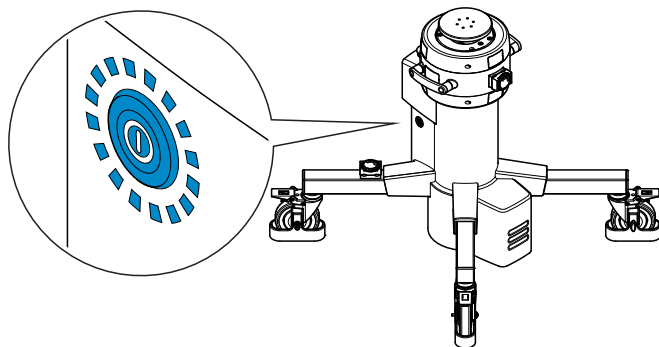
Use additional cable ties to neatly bundle the cables together on long runs.



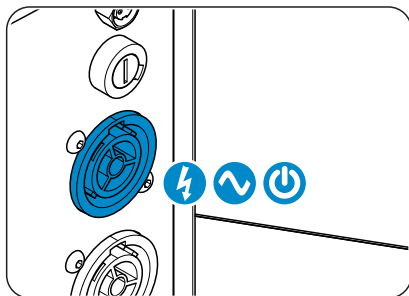
## Powering Up

Before powering up the head, ensure that all external cable connections have been secured correctly.

To power up, press the power switch located on the side of the FE-55. The power switch will illuminate indicating the AC input power is present.



Power will also be present on the robotic head, supplied from the AC power out (robotic head) socket.



# Operation

## Operating the FE-55 - Safety Precautions



**WARNING! Risk of personal injury or injury to others.**

When operating the product, strictly adhere to the safety precautions outlined in this section and the Safety section in the front of the user guide.



**WARNING!** Ensure that all personnel working with, or within the working area of the product, are fully trained and aware of all safety precautions associated with the product.

The FE-55 has been designed to incorporate important safety features such as the emergency stop button, column release knob and wheel brakes. Using these safety features correctly will reduce the risk of any potential safety hazards to an absolute minimum.

It is critical that all operators are trained in the handling and moving of the FE-55 to prevent the risk of the product toppling over when the elevation column is extended with a payload fitted.

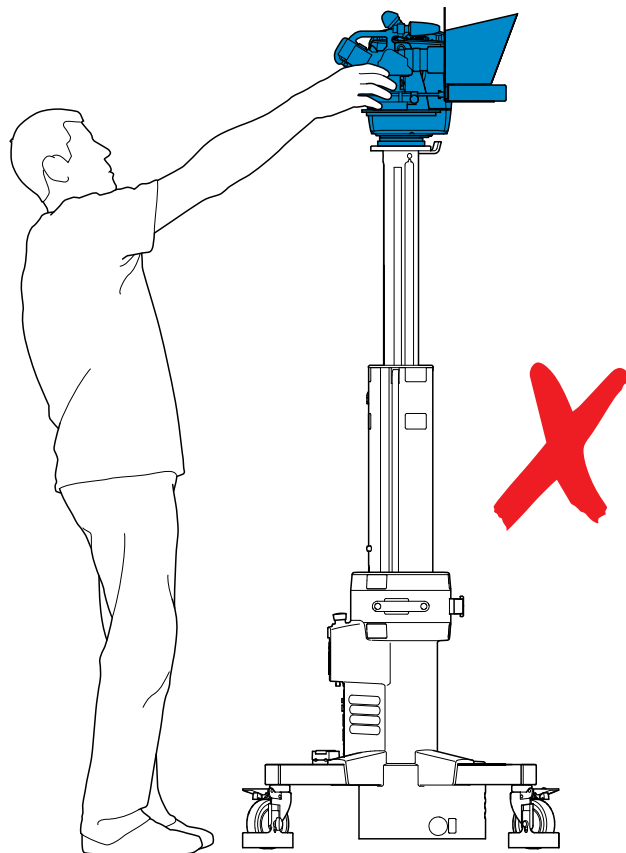
### Moving the FE-55 or Adjusting the Payload



**WARNING!** Risk of product instability when moving the product with the elevation column fully extended. Reduce the height of the column before attempting to move the product.



**WARNING!** Before fitting, adjusting, or removing the payload, the elevation column must be lowered to a safe working height and the safety brakes must be applied.



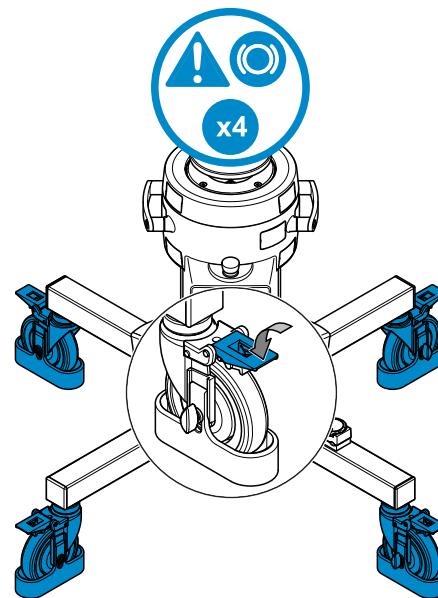
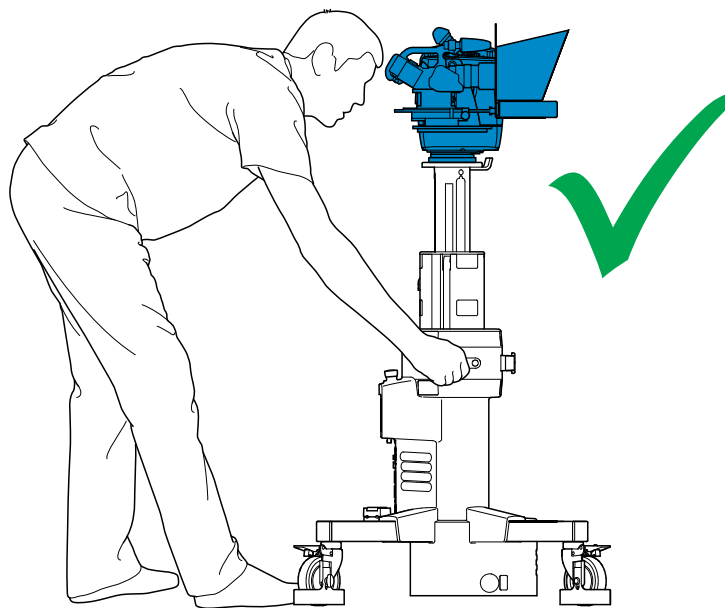


## Leaving the FE-55 Unattended



**WARNING!** The product must always be secured (all four wheel brakes applied) when left unattended. Do not leave the product unattended on a sloping surface.

For more information see the section **Operating the Wheel Brakes** on page 12.



## Using the Emergency Stop Button

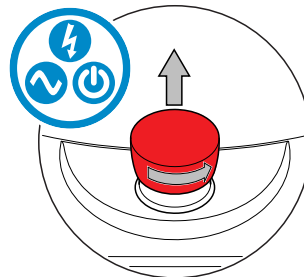
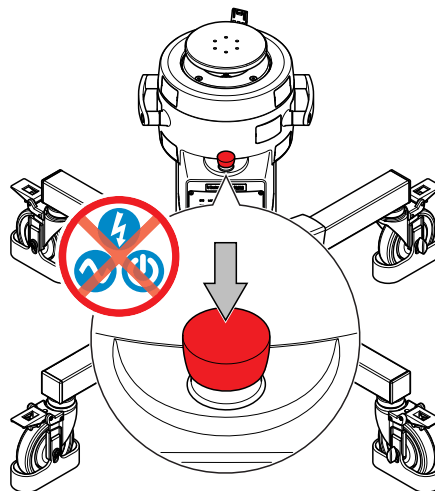


**WARNING!** All personnel working with, or within the working area of the product must be made aware of the location and function of the emergency stop button.

The emergency stop button is located above the indicator LEDs and connections panel.

If the emergency stop button is pressed, power to the FE-55 is immediately disconnected. This loss of power will also affect the robotic head connected to the AC power out (robotic head) socket.

To reset the emergency stop, twist and lift the stop button. Power will immediately be reinstated, but the FE-55 will need to be reset using the control system.



## Using the Column Release Knob

In the unlikely event of power loss or other modes of failure, coinciding with the elevation column being stuck in an extended position, the column release knob can be operated. This has the effect of disengaging the robotic drive and allowing the elevation column to be safely lowered, so that the FE-55 can be moved or the payload accessed.

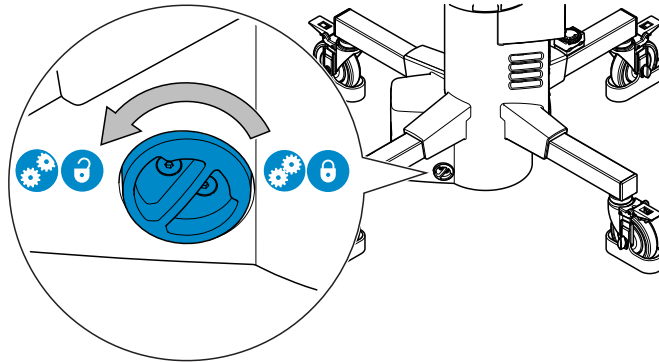


**WARNING!** Isolate the FE-55 from the AC supply before operating the column release knob. Ensure that all four wheel brakes are applied.

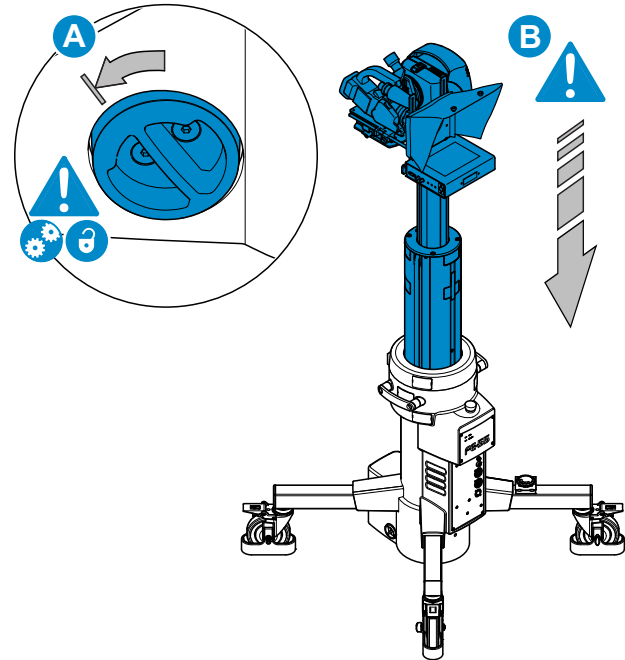


**WARNING!** Two person operation. Do not attempt to lower the payload using the column release knob without the presence and assistance of another person.

1. Turn and hold the column release knob fully anti-clockwise to disengage the robotic drive.



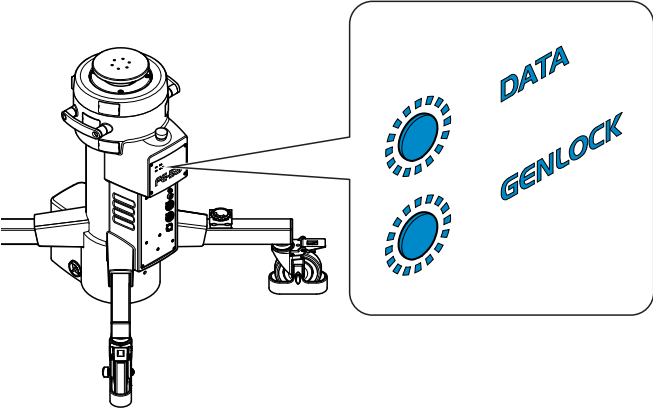
2. With the column release knob being held in the release mode position (A), the payload can be carefully lowered (B). Heavier payloads may slowly lower without the need for assistance.






3. When the payload has been lowered to a safe working height, let go of the column release knob to automatically re-engage the robotic drive.

## Indicator LEDs









When the FE-55 is powered up, the indicator LEDs located at the top of the connections panel show whether data communications (green LED) or a genlock signal (amber LED) are present.



The indicator LEDs are also used to convey information about the current operational status of the FE-55, by displaying different solid or flashing colours.

	<b>Solid colours</b>
	<b>Flashing colours</b>
	<b>Bi-flashing colours</b>

The following table shows the indicator LED states which are displayed during operation of the FE-55.

Data LED	Genlock LED	Status	Description
		<b>System Up</b>	The FE-55 is powered up and receiving data.
		<b>Robot Active</b>	The FE-55 and connected head are enabling or moving.
		<b>Identity</b>	The FE-55 has been selected by the control system and 'Identify' mode has been toggled on.
		<b>Genlock Connected</b>	A genlock signal is connected and active.

## Additional Indication Status

The indicator LEDs can also display error and warning status. Refer to the section **Troubleshooting** on page 30 for more information.

## Routine Maintenance

The FE-55 requires minimal routine maintenance, apart from checking the connections and overall operation periodically.

### Routine checks

During use, check the following:

- Check that the payload is balanced and fully secured.
- Check cables for signs of wear or damage. Replace as necessary.
- Check that all cables are connected properly.

## Cleaning



**WARNING!** Disconnect and isolate the product from the power supply before cleaning.



**CAUTION!** Do NOT use oil or grease on any exposed part of the elevation column. This is unnecessary and traps dirt which acts as an abrasive.

During normal use the only cleaning required should be a regular wipe over with a dry, lint-free cloth. Dirt accumulated during storage or periods of disuse may be removed with a vacuum cleaner. Particular attention should be paid to all connection ports on the FE-55.

## Changing the Fuse

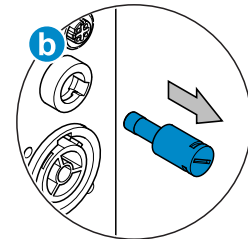
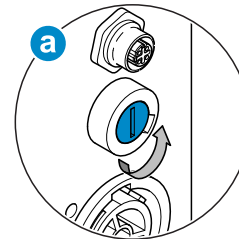


**WARNING! Risk of electric shock.** Disconnect the power cable. Fuses must only be changed by a trained and competent person.

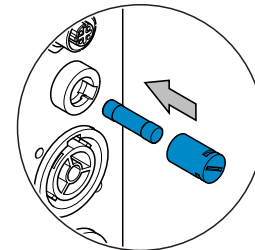


**CAUTION!** The replacement fuse must be the correct type and rating: Type T5AH, 250V.

1. Switch OFF and disconnect the AC power source.
2. Using a flat-blade screwdriver or coin, rotate the fuse holder (a) anticlockwise and remove (b).



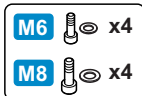
3. Replace the fuse and reinstall the fuse holder.



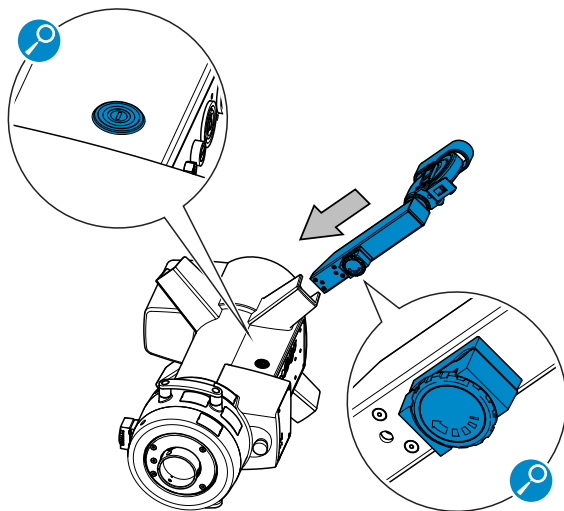
## Fitting the Leg Assemblies



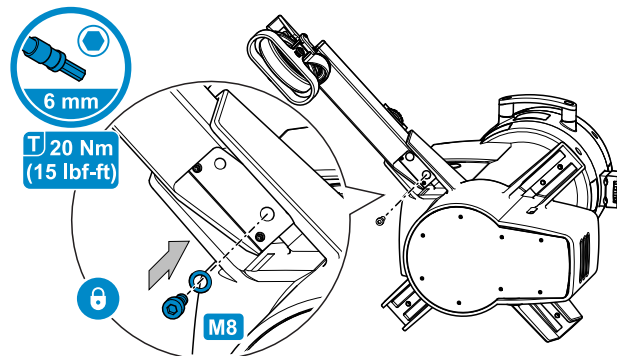
**WARNING!** Only use the leg fixing screws and washers provided with the FE-55. Apply the torque settings shown when tightening the fixing screws.



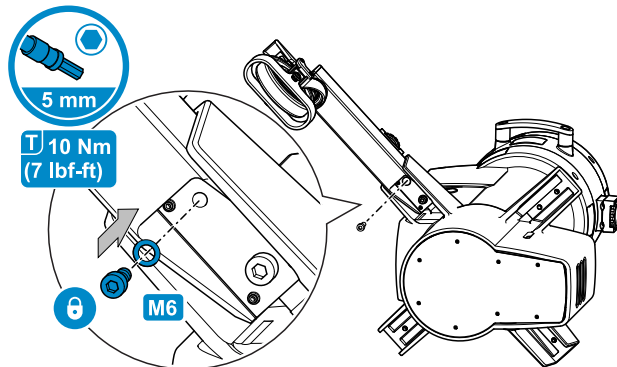
1. Tilt the FE-55 on it's side with the power switch facing upwards. Slide the leg assembly with the cable clamp into the leg housing closest to the power switch panel.



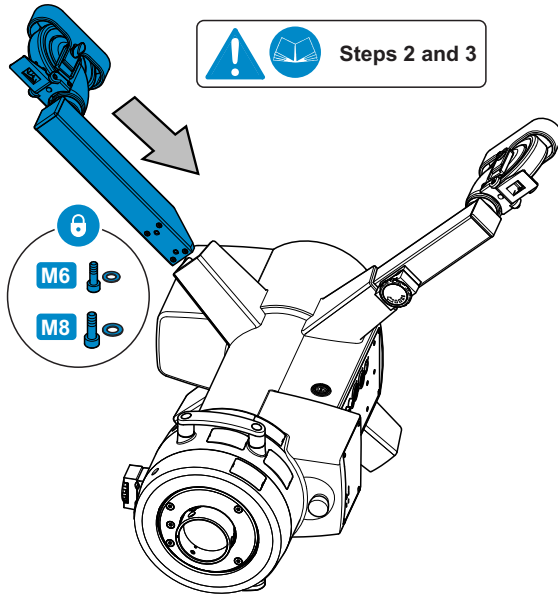
2. With the mounting holes aligned, fit one of the supplied M8 screws and washers as shown and tighten to the correct torque setting.



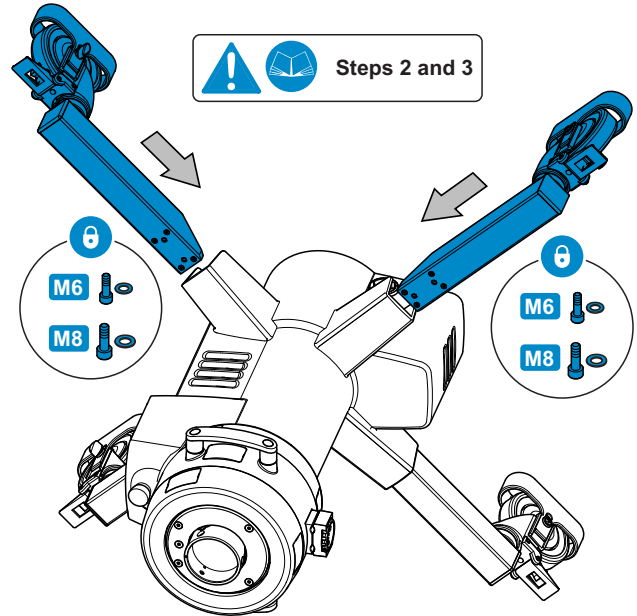
3. Fit one of the M6 screws and washers as shown and tighten to the correct torque setting.



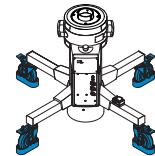
4. With the FE-55 still tilted on the same side, fit one of the remaining three leg assemblies into the empty leg housing position. Secure the leg in position using the procedure shown in steps 2 and 3.



5. Carefully tilt the FE-55 over onto the two fitted leg assemblies. Fit the remaining two leg assemblies into the leg housings and secure them in position using the procedure shown in steps 2 and 3.







6. Carefully tilt the FE-55 back upright to rest on all four castor wheels.



# Troubleshooting

Fault	Check	Comments
The FE-55 is not operating.	Check that the power switch is ON and illuminated.	See the section <b>Powering Up</b> on page 21.
	Check that the AC power source is connected and secured.	See the section <b>Power Connections</b> on page 19.
	Check that a network connection has been made with the Ethernet cable.	See the section <b>System Connections</b> on page 18.
The FE-55 is connected to the AC power source and switched on, but not operating and the power switch is not illuminated.	Check the fuse and replace as necessary with the correct type and rating.	See the section <b>Changing the Fuse</b> on page 27.
Intermittent or no communications with the FE-55.	Check the Ethernet cable. Check the Ethernet cable is CAT5E FTP.	If possible, try using another Ethernet cable.
The AC power source has failed or is unavailable and the elevation column is stuck in an elevated position.	Operate the column release knob to enable the elevation column to be safely lowered.	See the section <b>Using the Column Release Knob</b> on page 25.

## LED Indicators

Data LED	Genlock LED	Status	Comments
		<b>Factory Reset</b>	The FE-55 is currently being reset by the control system.
		<b>Error Detection</b>	<p>The emergency stop button may have been activated. See the section <b>Using the Column Release Knob</b> on page 25.</p> <p>The FE-55 has detected an error. Try power cycling the FE-55 and resetting using the control system.</p>



## Physical Data



**Minimum height**  
741 mm (29.2 in.)



**Width**  
800 mm (31.5 in.)



**Maximum height**  
1431 mm (56.3 in.)



**Length**  
800 mm (31.5 in.)



**Maximum payload**  
25 kg (55 lb)



**Ground clearance**  
25 mm (1 in.)



**Weight**  
50 kg (110.2 lb)



**Minimum door width**  
800 mm (31.5 in.)

## Operating Data



**On-shot stroke**  
690 mm (27.2 in.)



**Maximum column speed**  
100 mm/s (3.9 in./s)



**Minimum column speed**  
0.1 mm/s (0.004 in./s)



**Resolution**  
<0.014 mm (0.0005 in.)

## Electrical Data



**Supply voltage**  
Auto-ranging 100–240 VAC, 5 A, 50/60 Hz



**Power output socket (head)**  
100–240 VAC (supply voltage), 1 A



**Power output socket (auxiliary)**  
100–240 VAC (supply voltage), 1 A



**Fuse Type**  
T5AH 250 V

## Environmental Data



**Operating temperature range**  
+5°C to +40°C (41°F to +104°F)



**Storage temperature range**  
-20°C to +60°C (-4°F to +140°F)

# General Notices

## ETL Certification



## FCC Certification



## FCC Notice

This product complies with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on. The user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for assistance.

## FCC Warning

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## FCC Declaration of Conformity

This product complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This product may not cause harmful interference.
2. This product must accept any interference received, including interference that may cause undesired operations.

## Declaration of Conformity



Videndum Limited declares that this product has been manufactured in accordance with BS EN ISO 9001:2008 and is in compliance with the essential requirements and other relevant provisions of the Machinery Directive 2006/42/EC. A copy of the Declaration of Conformity is available upon request.

## Environmental considerations

### European Union Waste of Electrical and Electronic Equipment (WEEE) Directive (2002/96/EC)



This symbol marked on the product or its packaging indicates that this product must not be disposed of with general household waste. In some countries or European Community regions separate collection systems have been set up to handle the recycling of electrical and electronic waste products. By ensuring this product is disposed of correctly, you will help prevent potentially negative consequences for the environment and human health. The recycling of materials helps conserve natural resources.

Visit our website for information on how to safely dispose of this product and its packaging.

### In countries outside the EU:

Dispose of this product at a collection point for the recycling of electrical and electronic equipment according to your local government regulations.

## Pollution statement

This equipment is designed for operation in Pollution Degree 2 environments.









