

OPERATION MANUAL

NEEDLES

OH400



Kattsafe needles are a mobile rope access system providing safe access to building façades in multiple configurations.



Product brochure
Needles



Operation manual
Needles

Find all related products and resources on our website
kattsafe.com.au

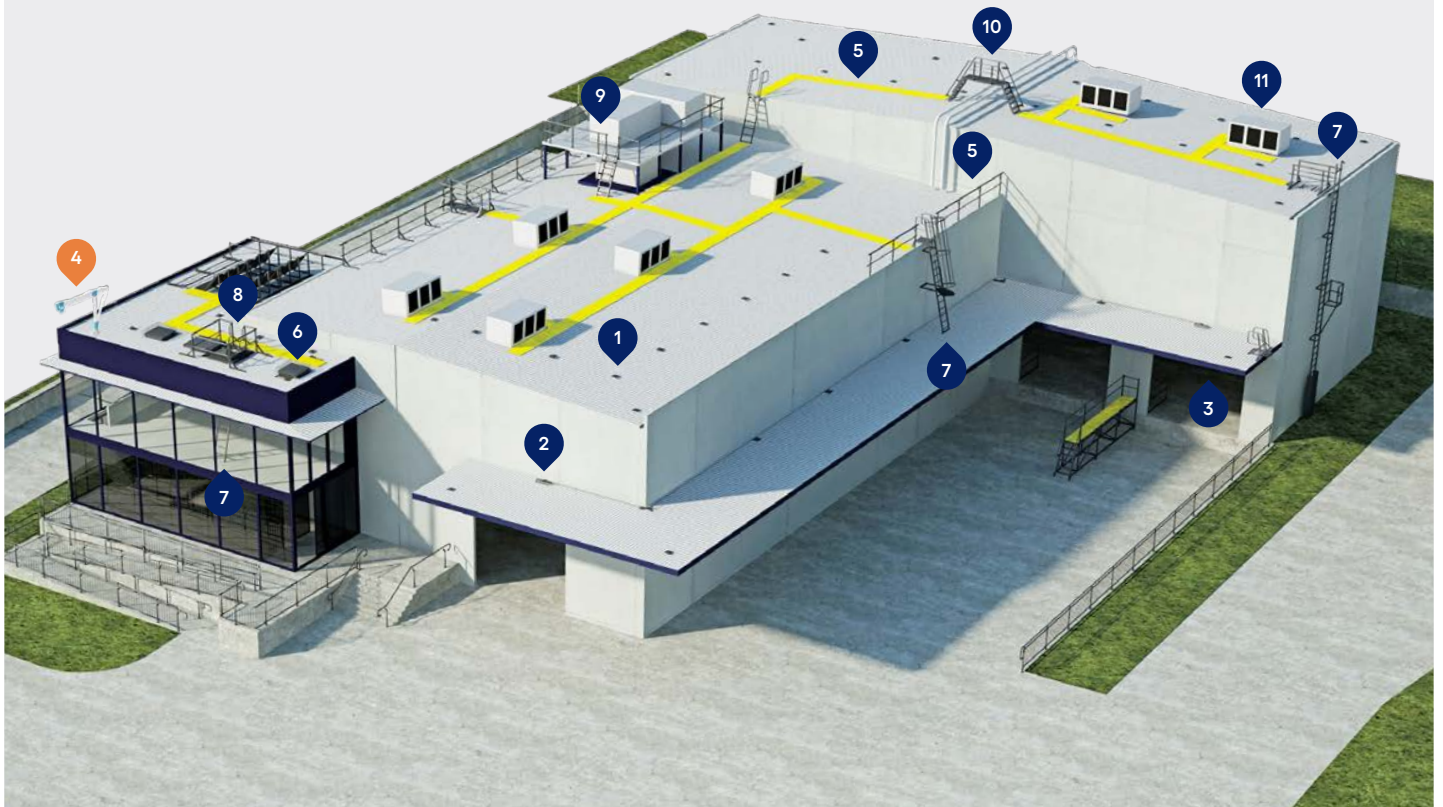
Commercial building height access and fall protection requirements

Kattsafe leads the industry in the design, installation and management of access and fall protection safety systems.

The in-action model demonstrates access and fall protection requirements for a commercial building design. Kattsafe recommendations fulfill current workplace requirements for the safety of building maintenance subcontractors, employees and the general public.

For more information please contact Kattsafe.
kattsafe.com.au

- 1 Anchor points
- 2 Static lines
- 3 Rigid rail
- 4 Davits and needles
- 5 Guardrail and walkway
- 6 Skylight protectors
- 7 Rung ladders
- 8 Access hatches
- 9 Platforms and stairs
- 10 Step ladders
- 11 HVAC platforms



NEEDLE SYSTEM

Needles are a proprietary system designed for rope access loads (12kN) and a serviceability load of 400kg per needle.



Telescopic boom

The telescopic boom allows an additional 500mm of boom extension where extra reach is required providing a total cantilevered reach of 1800mm.



Reduces roof loads

The extended design of the needle spreads out the load put on the roof when in use.



Lightweight

Manufactured from structural aluminium, Kattsafe needles are easy to handle, transport and install.



Modular design

The fully modular design allows the needle to be used for access in all requirements, with adjustable components to suit.



Multiple configurations

With reaches between 1200 - 1800mm, and heights of 400 - 1200mm Kattsafe needles can fit over most parapet sizes for rope access.



Mounting options

The needle can be mounted to various different solutions including concrete mount, metal deck mount and swivel mount using a rigid rail.

NEEDLE CONFIGURATIONS

OH404 Needle 400mm a-frame

- Suited for parapet heights of 300mm
- Available in 1200 or 1500mm extensions



OH408 Needle 800mm a-frame

- Suited for parapet heights of 700mm
- Available in 1200, 1500 or 1800mm extensions

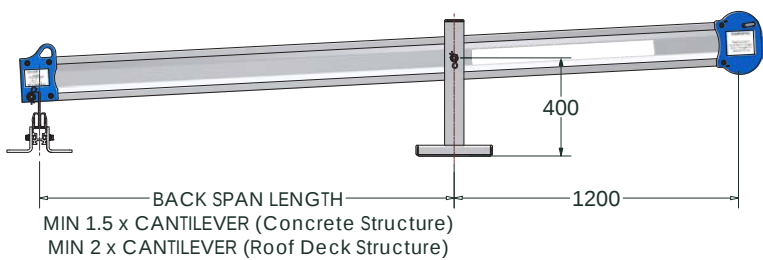


OH412 Needle 1200mm a-frame

- Suited for parapet heights up to 1100mm
- Available in 1200, 1500 or 1800mm extensions

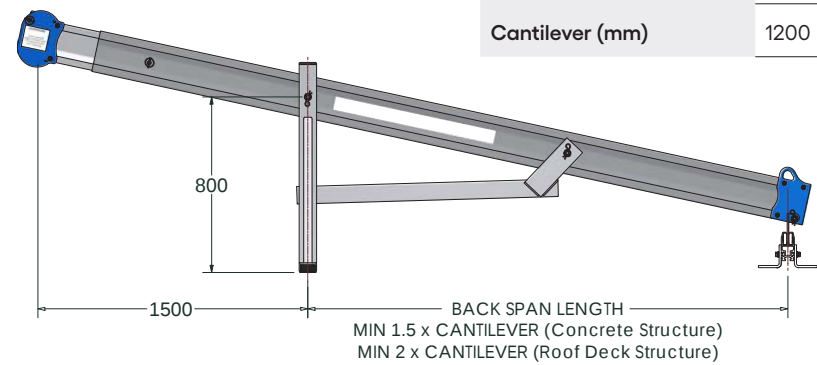


OH404



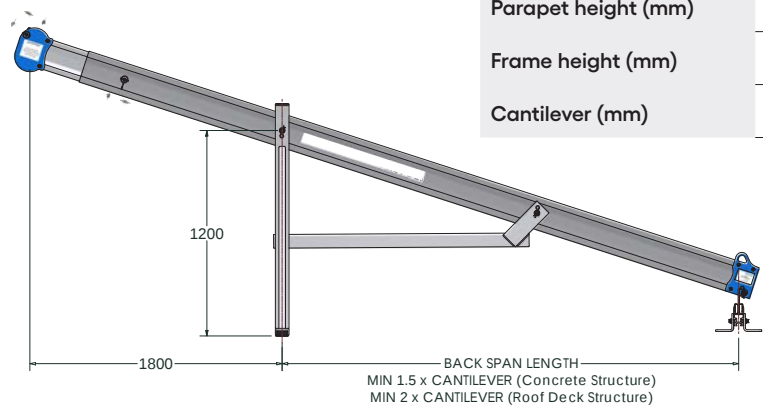
Details	OH404.1200	OH404.1500
Parapet height (mm)	300	300
Frame height (mm)	400	400
Cantilever (mm)	1200	1500

OH408



Details	OH408.1200	OH408.1500	OH408.1800
Parapet height (mm)	700	700	700
Frame height (mm)	800	800	800
Cantilever (mm)	1200	1500	1800

OH412

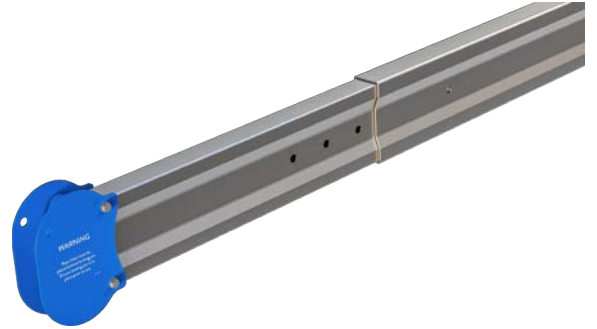


Details	OH412.1200	OH412.1500	OH412.1800
Parapet height (mm)	1100	1100	1100
Frame height (mm)	1200	1200	1200
Cantilever (mm)	1200	1500	1800

NEEDLE COMPONENTS

Needle boom

- The needle boom is designed to reach up to 1800mm depending on the needle model.
- The rope guide, manufactured from stainless steel and powder coated, provides a smooth, safe surface for the rope line to be protected over the rope guide end cap when under load.



Needle brace

- The needle brace provides the structural connection between the needle boom and the needle a-frame.
- The brace is connected via 2 x high tensile structural bolts with locking pin.
- The needle brace size is determined by the size of the needle used.



Needle a-frame

- Available in 400, 800 and 1200mm widths
- The a-frame elevates the needle boom above the parapet or curtain wall.
- The higher the parapet, the higher the a-frame will need to be.
- The height of the a-frame will depend on the parapet height. A minimum of 800mm is recommended for ease of use and setup of the ropes.
- A rubber strip is attached to the underside of the a-frame to protect the roof surface.



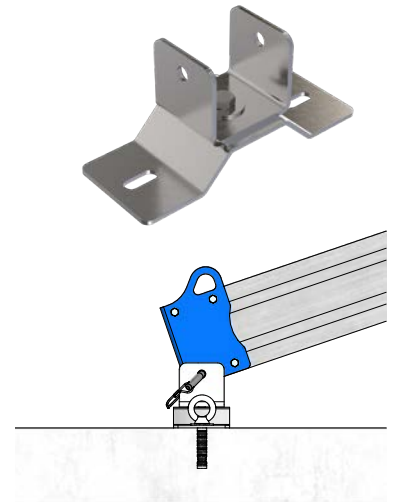
MOUNTING OPTIONS

OH443 Needle connection bracket - concrete mount

- Needle mounted to a single connection bracket on a concrete slab application.
- Needle requires manual relocation between consecutive attachment points.
- An attachment bracket fixed to a concrete slab requires 2 insert anchors with removable eyelet to allow for easy attachment of the needle.



Integrity and suitability of the structure must be approved by a structural engineer.



OH444 Needle connection bracket - metal deck mount

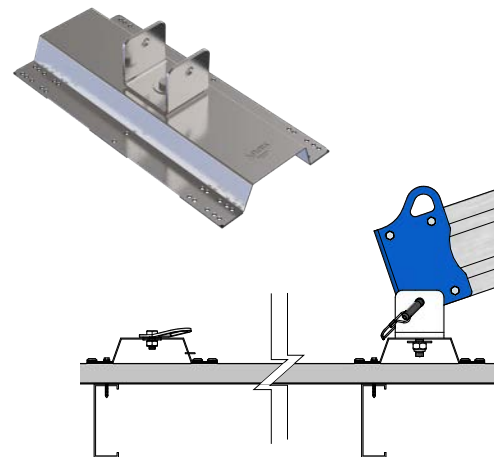
- Needle mounted to rigid rail on a metal deck roof application.
- The rail mount system allows for safe and rapid transverse of needle when re-positioning.
- The rigid rail attaches to an OH253 metal deck mount plate at 3.0m spacing.
- OH253 metal deck plate fixed to roof deck using 8mm bulb type rivets and 14g roof screws into the metal purlin structure.



Integrity and suitability of the structure must be approved by a structural engineer. In order to provide a secondary back up should the needle anchorage fail, a secondary or safety rope line must be connected to a secondary connection on the trolley.



In order to provide a secondary back up should the needle anchorage fail, a secondary anchor rated for rope access must be installed within close proximity of the needle to allow easy back up connection for the operator.



OH445A Needle trolley - swivel mount

- Needle mounted to a single trolley on a rigid rail.
- The trolley allows for the needle to swivel, giving more access to the building façade.
- The needle requires manual relocation between consecutive rigid 80 and 130 rail sections.



Integrity and suitability of the structure must be approved by a structural engineer.



OPERATION REQUIREMENTS

Must be read prior to use

1. Prior to use, ensure all operating procedures have been read and understood.
2. This rope access system is only to be used by competent persons who have experience and training in the safe use of the system and associated equipment.
3. Ensure all WHS requirements are identified and understood. A risk assessment with a safe work method procedure must be completed and approved by management prior to work commencing.
4. This system requires periodic inspection and maintenance by a qualified rope access inspector. The system MUST NOT be used if the service date is overdue.
5. A rescue plan must be devised and be ready to be implemented prior to usage of a rope access system.
6. Authorisation to enter any risk area must be obtained from the workplace manager prior to accessing.
7. Only approved rope access harness, gear and equipment certified to Australian and New Zealand Standard AS/NZS 1891.1, to be used with this system.
8. Visually inspect the system for damage prior to use. System must not be used if there is any deterioration or deformation of any components or structure to which the system is attached.
9. If the rope access system is damaged or has arrested a fall, discontinue use until it has been fully inspected and recertified by a competent height safety equipment inspector.
10. Ensure all fixings, fittings and components are securely attached. Any tightening, adjustment or replacement of components must be carried out by a competent height safety inspector.
11. Rope protectors are required wherever rope lines pass over or come into contact with rough or sharp surfaces.
12. Where rope lines will potentially damage an edge, then an edge protection device will be required to spread rope access loads during operation.
13. Persons must not be allowed to work alone during rope access operations in case emergency rescue assistance or first aid is required.
14. All applicable Australian Standards, WHS Acts and Regulations, and Codes of Practice and Guidelines must be read and obeyed when using this safety system.
15. This operation manual does not in any way, replace the need for completion of a recognised rope access training course by a Registered Training Organisation (RTO).



Failure to follow all warnings, operation and maintenance instructions may result in serious injury or death.

SYSTEM LIMITATIONS

Must be read prior to use

1. The needle is suitable for single (1) person use and rescue in the case of a fall incident or rope access incident.
2. This system is rated to 12kN with a maximum safe working load of 400kg.
3. Harness gear is susceptible to deterioration when exposed to chemicals or hazardous environments and must be approved by the manufacturer for use in these applications.
4. This system is not suitable for glass lifting and replacement unless designed and approved by the manufacturer in writing.
5. Needles in excess of 25kg are recommended to be lifted by two people.
6. Do not tamper with system components.
7. This system is not to be used for tethering or lifting machinery or equipment.
8. The safety system must be recertified by a qualified rope access inspector as recommended:
 - Non corrosive/mild environment - 12 monthly
 - Corrosive/harsh environment - 6 monthly (more frequent inspection may be required)
9. This equipment is only to be used by a trained and qualified rope access technician.



Failure to follow all warnings, operation and maintenance instructions may result in serious injury or death.

NEEDLE ASSEMBLY PROCEDURE

Step 1

Ensure needle boom, a-frame and brace with attachment fasteners are in place ready to assemble.



Step 2

Lift needle boom into a-frame support and insert M16 bolt fastener through a-frame and boom.



Step 3

Secure boom fastener with washer, nut and locking pin.
NOTE: Hand tighten nut only.



Step 4

Attach support brace into a-frame by inserting M16 bolt fastener through frame and brace support.



Step 5

Secure brace fastener with washer, nut and locking pin.

NOTE: Hand tighten only.



Step 6

Secure brace to boom by inserting M16 fastener through brace and boom.



Step 7

Secure brace fastener with washer, nut and locking pin.

NOTE: Hand tighten nut only.



CONCRETE MOUNTED NEEDLE INSTALLATION PROCEDURE

Step 1

Attach relocatable needle anchor plate to concrete structure by inserting the 2 removable eyebolts through the anchor plate into the concrete mounted ferrules.

NOTE: Eyebolt correct penetration depth requires 20mm embedment or 10 full turns. Hand tighten eyebolt only.



Step 2

- Ensure both eyebolts are inserted through anchor plate into concrete mounted ferrules.
- Align eyebolts parallel with needle to minimise torsion load on eyebolt from rope lines.



Step 3

Place boom into U bracket and insert locking pin through anchor plate and needle rear attachment and secure with safety pin.



Step 4

Ensure safety pin is locked off properly (spring engaged).



TROLLEY MOUNTED NEEDLE INSTALLATION PROCEDURE

Step 1

Place boom into trolley plate and insert locking pin.



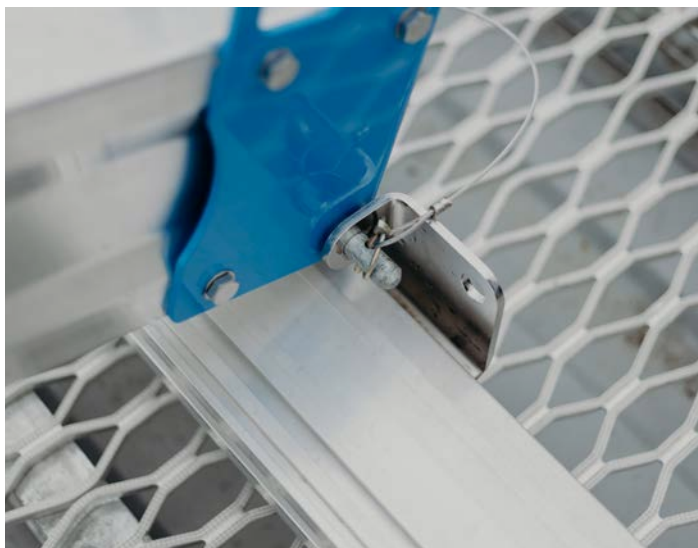
Step 2

Lock pin with secure safety pin.



Step 3

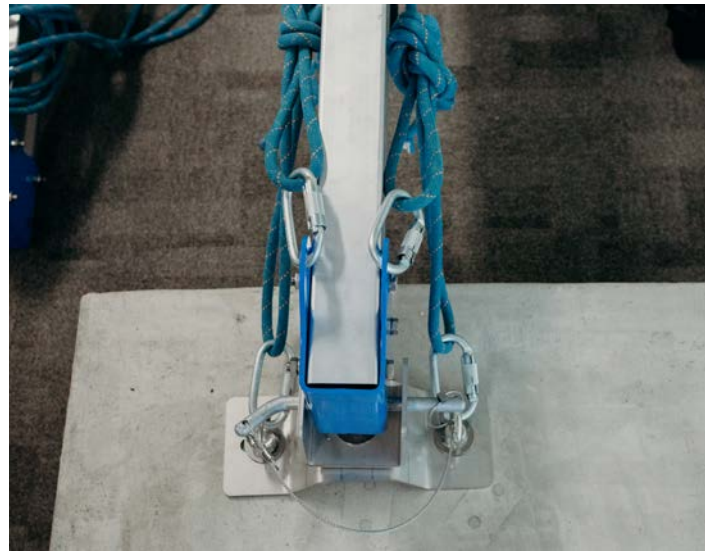
Ensure safety pin is locked off properly (spring engaged).



ROPE SETUP PROCEDURE

Step 1

Set up working rope line and back up rope line with double figure 8 knot type. Ensure even loading on all anchorage by attaching to the needle rear anchor as the primary anchorage (blue plate) and the two removable eyebolts as the back up anchorages as shown.



Step 2

Ensure both working and back up rope lines are placed over the rope guide with rope locking pin inserted and secured using safety clip.



NEEDLE RIGGING PROCEDURE

Step 1

Insert telescopic boom into needle and select required boom extension position.



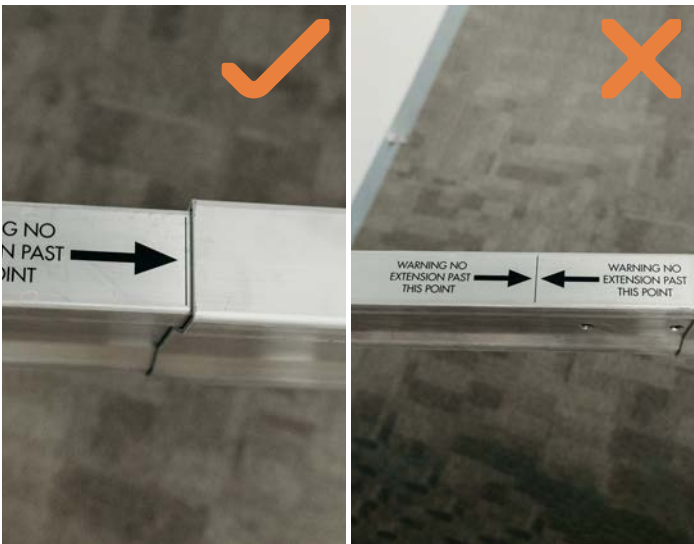
Step 2

Secure telescopic boom by inserting locking pin through boom and secure by inserting safety clip through locking pin.



NOTE

When setting the telescopic boom to maximum extension, ensure the boom is not overextended as indicated by the limitation label.

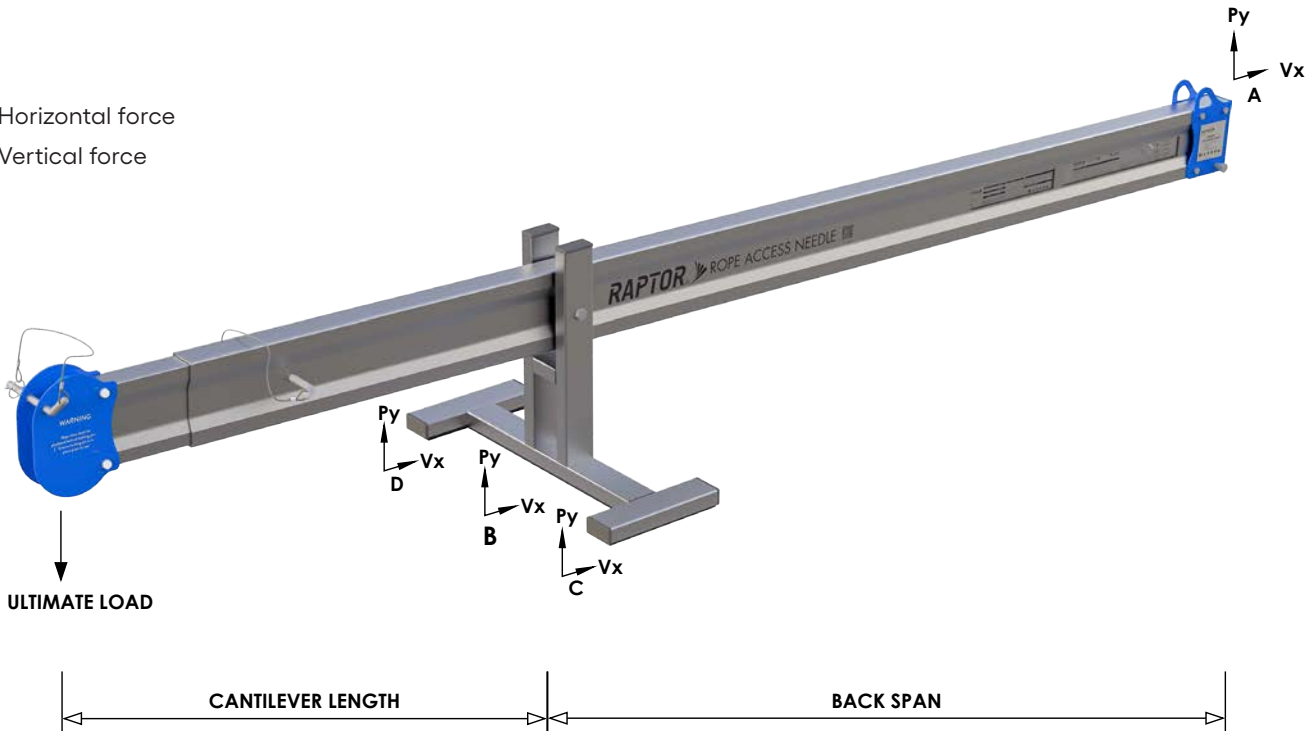


NEEDLE LOADS & LIMITS

OH404 Needle 400mm a-frame

Key

- Vx: Horizontal force
- Py: Vertical force

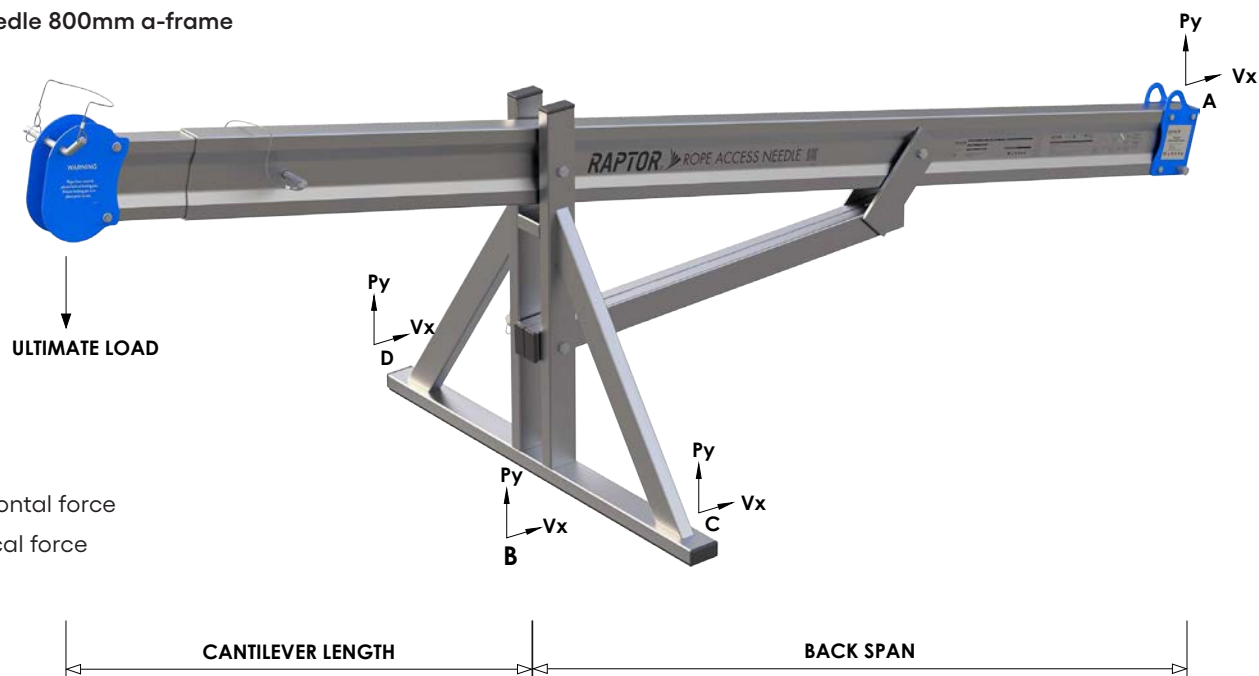


Code	Frame height (mm)	Cantilever length (mm)	Back span (mm)	UTL Load (kN)	A: Py (kN)	B: Py (kN)	C: Py (kN)
OH404.1200	400	1200	2400	12	-5.90	17.50	0.40
OH404.1500	400	1500	3000	12	-6.00	17.30	0.40

Note

- Forces are positive in direction of arrows.
- No wind load has been considered in above calculations.
- Any change in the dimensions of the needle components should be confirmed with engineer.
- This drawing is not a shop drawing and is not drawn to scale.
- Loads are dependant on site conditions and final anchor placement.
- These loads provide a guide only for design purposes.

OH408 Needle 800mm α-frame



Key

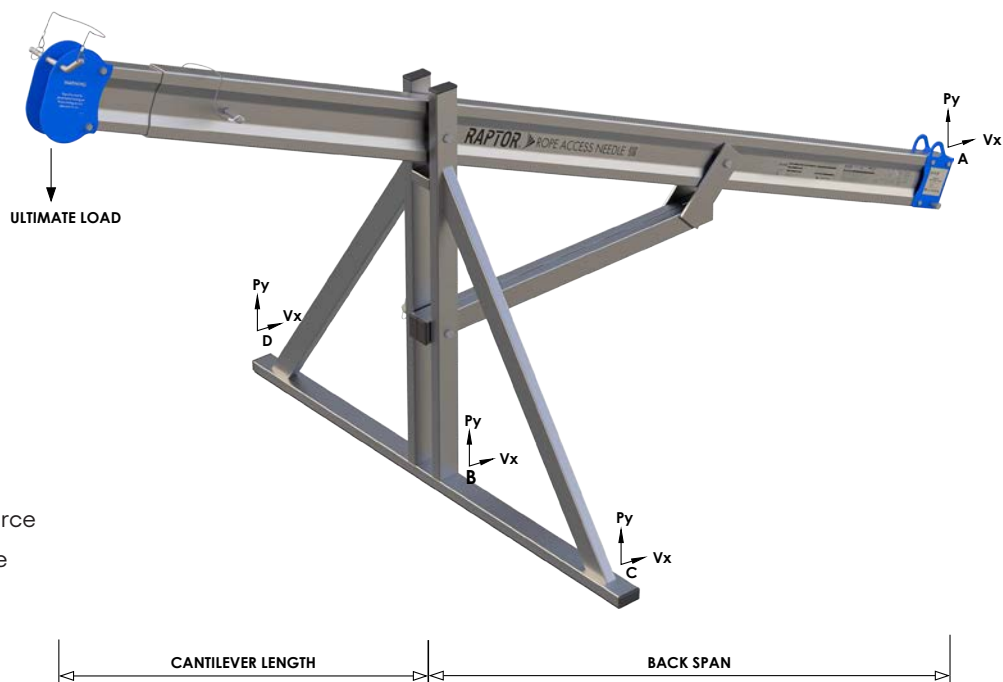
- V_x : Horizontal force
- P_y : Vertical force

Code	Frame height (mm)	Cantilever length (mm)	Back span (mm)	UTL Load (kN)	A: P_y (kN)	B: P_y (kN)	C: P_y (kN)
OH408.1200	800	1200	1800	12	-7.20	17.50	1.00
			2400	12	-5.30	15.90	0.90
			3000	12	-4.10	14.90	0.90
OH408.1500	800	1500	2250	12	-7.10	17.60	1.00
			3000	12	-5.30	16.10	0.90
			3700	12	-4.10	15.10	0.90
OH408.1800	800	1800	2700	12	-7.10	17.60	1.00
			3600	12	-5.10	15.80	0.90
			4500	12	-3.90	14.80	0.90

Note

- Forces are positive in direction of arrows.
- No wind load has been considered in above calculations.
- Any change in the dimensions of the needle components should be confirmed with engineer.
- This drawing is not a shop drawing and is not drawn to scale.
- Loads are dependant on site conditions and final anchor placement.
- These loads provide a guide only for design purposes.

OH412 Needle 1200mm a-frame



Key

- Vx: Horizontal force
- Py: Vertical force

Code	Frame height (mm)	Cantilever length (mm)	Back span (mm)	UTL Load (kN)	A: Py (kN)	B: Py (kN)	C: Py (kN)
OH412.1200	1200	1200	1800	12	-6.20	17.00	0.90
			2400	12	-4.70	15.50	0.90
			3000	12	-3.70	14.60	0.80
OH412.1500	1200	1500	2250	12	-7.00	17.80	0.90
			3000	12	-5.40	16.30	0.90
			3700	12	-4.30	15.40	0.80
OH412.1800	1200	1800	2700	12	-7.60	18.40	1.00
			3600	12	-5.60	16.50	0.90
			4500	12	-4.30	15.40	0.90

Note

- Forces are positive in direction of arrows.
- No wind load has been considered in above calculations.
- Any change in the dimensions of the needle components should be confirmed with engineer.
- This drawing is not a shop drawing and is not drawn to scale.
- Loads are dependant on site conditions and final anchor placement.
- These loads provide a guide only for design purposes.

SYSTEM MAINTENANCE

Must be read prior to checklist

1. The needle needs to be checked and recertified by a qualified rope access inspector every 12 months for non-corrosive environments or 6 monthly for corrosive or harsh environments. (To be determined by competent person depending on severity of surrounding conditions.)
2. Never clean using acids or other chemicals that could damage the system components.
3. Fixing and support structure suitability must be checked for damage or deterioration by a competent person.
4. Any signs of distortion or excessive load to the system must be inspected and reported by competent person.
5. The identification label must be completed confirming certification, maintenance and recertification of the system.
6. Maintenance inspections must be clearly documented, including the following:
 - Date of inspection
 - Details of person on carrying out inspection
 - Site location
 - Photo confirmation of specific check criteria
 - Detailed inspection report with findings
 - Clear non conformance items with detailed action plan.

MAINTENANCE CHECKLIST

The checklist below outlines key checking criteria required to ensure the safe use of this system. Any item of concern not shown on the checklist must be noted on the maintenance report and brought to the attention of the workplace manager.

Items ticked PASS - YES means they conform with the required checking criteria and are suitable for normal use until the next recertification date. System data plates must be updated showing current check date and next check date.

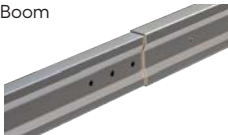
Item ticked PASS - NO means they do not conform to the required checking criteria. These items must be clearly tagged 'Do Not Use' and the required corrective actions put in place. The maintenance report must clearly document all non-conforming criteria.

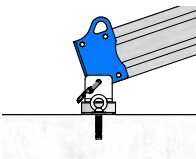
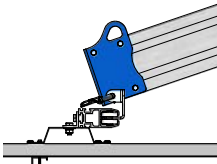
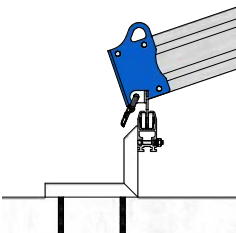


This system must be maintained by a competent height safety inspector trained in the safe use and maintenance of this system.



Installation must be in accordance with the checklist provided.

Component	Inspection criteria	Pass Y/N	Corrective action	Completion date
	Inspect all components for any sign of deformation damage as a result of overload.			
	Inspect all pins and bolts for any sign of deformation damage as a result of overload.			
	Inspect rigging attachment points for any sign of deformation damage as a result of overload.			
	Inspect rope guide end cap for any signs of damage or wear that could cause rigging damage.			
	Inspect welded components and ensure no cracks or weld deterioration.			
	Inspect locking pin and location holes for signs of overload.			
	Inspect welded components and ensure no cracks or weld deterioration.			
	Inspect locking pin and location holes for sign of overload.			
	Inspect for any signs of deformation damage as a result of overload.			
	Inspect locking pin and location holes for signs of overload.			
	Inspect for any signs of deformation damage as a result of overload.			
	Inspect welded components and ensure no cracks or weld deterioration.			
	Inspect locking pin and location holes for signs of overload.			
	Inspect for any signs of deformation damage as a result of overload.			
	Inspect rigging anchors for any signs of deformation damage as a result of overload.			
	Inspect needle structural anchorage for signs of damage as a result of overload.			

Component	Inspection criteria	Pass Y/N	Corrective action	Completion date
Locking pins 	Inspect locking pins for signs of deformation damage as a result of overload.			
	Inspect locking pin attachment lanyard and ensure fixing to frame and pin secure.			
Concrete mount needle 	Inspect slab mount bracket for deformation damage as a result of overload.			
	Epoxy adhesive fixed slab anchors to be load tested to 7.5kN for 2 min. Cast-in slab anchors do not require load testing.			
Metal deck mount needle 	Inspect roof mount bracket for deformation damage as a result of overload.			
	Inspect roof mount anchor fixings for damage or deterioration.			
	Check rail system for deformation damage as a result of overload.			
Side mount needle 	Inspect slab mount bracket for deformation damage as a result of overload.			
	Inspect side mount bracket welds for cracks or deterioration.			
	Inspect for deformation damage as a result of overload.			
	Epoxy adhesive fixed slab anchors to be load tested to 7.5kN for 2 min. Cast-in slab anchors do not require load testing.			
Data label 	Ensure all text on plate is clearly visible.			
	Ensure installer details and install date is recorded.			
	Ensure recertification details and any system limitations are clearly visible.			

TECHNICAL SPECIFICATION

Needles

OH400

Industrial use, aluminium construction, needles by Kattsafe provide access over non load-bearing areas for window cleaning and facade maintenance. System design, supply, layout, installation and certification by a Kattsafe approved installer, as per the manufacturer's installation instructions and current standards.

Materials

- Boom and a-frame: manufactured from high grade structural aluminium.
- Connection brackets, end caps, supports: powder coated stainless steel
- Locking pins: galvanised coated steel, 16mm.

Rating

- 12kN single person use plus rescue
- 15kN fall arrest
- 400kg safe working load

Code	A-frame height (mm)	Cantilever length (mm)	Back span (mm)
OH404.1200	400	1200	1800
OH404.1500	400	1500	2400
OH408.1200	800	1200	1800
OH408.1500	800	1500	2250
OH408.1800	800	1800	2700
OH412.1200	1200	1200	1800
OH412.1500	1200	1500	2250
OH412.1800	1200	1800	2700

Compliance

Kattsafe needles are designed to conform with requirements of the Australian and New Zealand Standards AS/NZS 5532:2013, AS/NZS/ISO22846, AS/NZS1891 and relevant codes of practices and guidelines.

Testing

Testing and performance based on requirements of Australian and New Zealand Standards AS/NZS 1891 and AS/NZS 5532.

- Dynamic load test - 15kN
- Static load test - 12kN

Product warranty

- 10 Years from date of purchase subject to correct installation. Use and maintenance to be in accordance with manufacturer's specifications and recommendations. (This excludes wearing parts).
- 15 year design life.

Inspection and maintenance

Inspection and certification required every 12 months by competent person in accordance with manufacturer's specifications and requirements of Australian and New Zealand Standards AS/NZS 1891 and AS/NZS 5532.

Important note

- Failure to supply and/or install proprietary product in accordance with above standards and codes, specifications and instructions voids complete system certification and/or warranty.
- Needle connection details and loading to structure must be verified by a structural engineer prior to installation.

WARRANTY INFORMATION

Warranty period on this system:
10 years from date of purchase

Should you have a warranty claim as a result of a defect the following procedure must be followed:

Identify the following information:

- The product/system name and code number.
- The date of purchase/installation.
- Installation company details.
- The installation identification number.
- The name of the company using this system.
- A description of the defect/warranty claim.
- The periodic system maintenance report.

Forward the above information to sales@kattsafe.com.au or contact technical helpline, 1300 301 755.

Terms and conditions

All warranty claims must be made in writing within 14 days of the appearance of the defect.

Incorrect installation or work done by a non accredited Kattsafe system installer will void all warranty rights.

Systems that have been installed using non proprietary equipment will void all warranties.

System roof/cladding and concrete penetration seals are not covered in this warranty.

Systems/components that have not been maintained in accordance with manufacturer's/legislative requirements will void warranty.

Systems used by incompetent persons or use with non compatible accessories ie. harness gear, lanyards, travellers, fall arrestors etc. will void warranty.

Systems/components used for purposes other than their intended use will void warranty.

General wear and tear is expected and will depend on the frequency of use and is not covered by warranty.



Product brochure
Needles



Operation manual
Needles



QMS Certification
ISO 9001:2015

Find all related products and resources on our website.
kattsafe.com.au

Kattsafe

Height access
and fall protection

1029 Mountain Highway
Boronia Victoria 3155
Australia

1300 301 755
sales@kattsafe.com.au
kattsafe.com.au