

INSTALLATION MANUAL

FOLD DOWN LADDERS

LD460



The Kattsafe fold down ladder is designed for ultimate user safety with a pneumatic soft close design for access to ceiling spaces and areas requiring maintenance to plant and equipment.



Product brochure
Fold down ladders



Installation manual
Fold down ladders



Operation manual
Fold down ladders

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

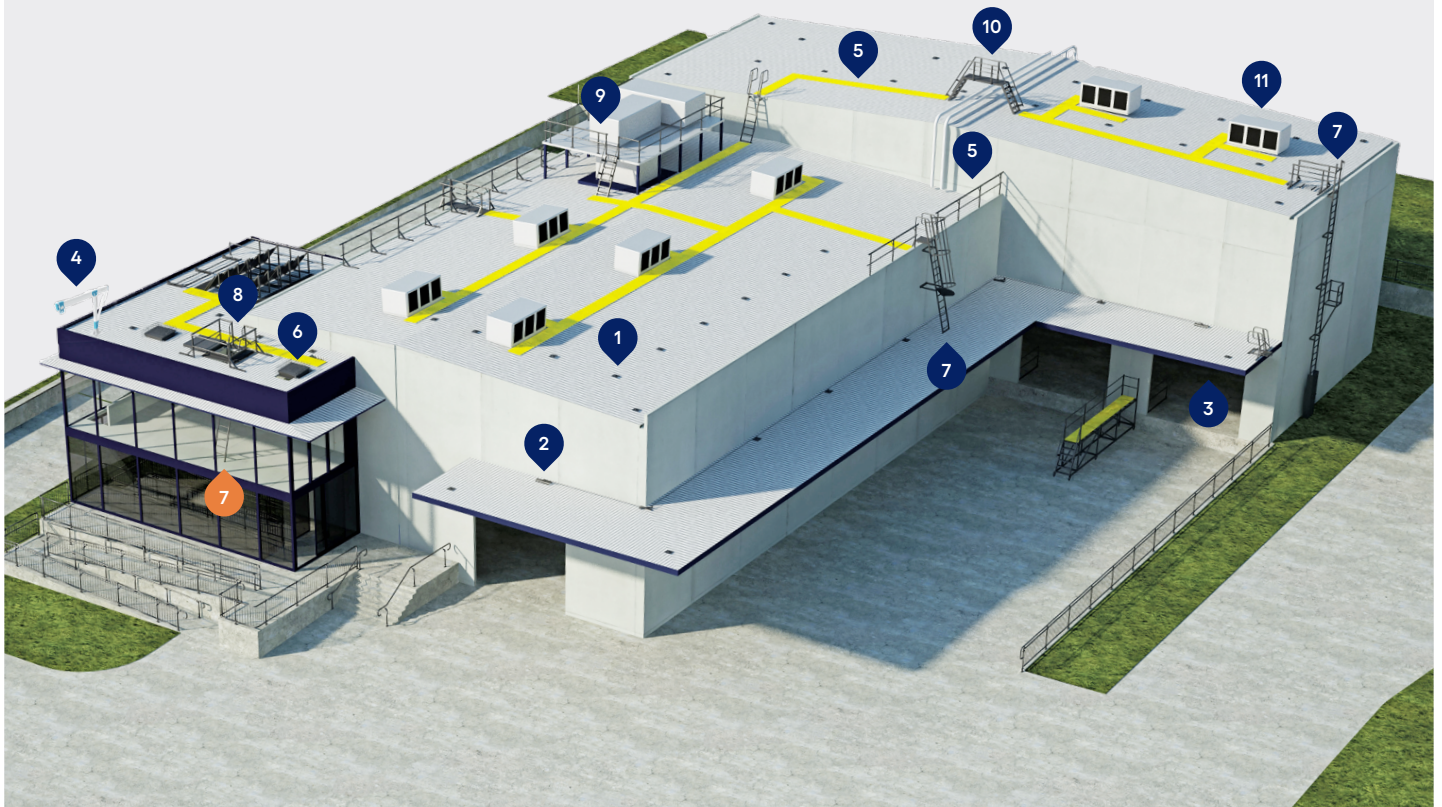
Commercial building height access and fall protection requirements

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



FOLD DOWN LADDERS

Easy access for maintenance personnel minimising risk of injury and encouraging quality preventative maintenance.



Aluminium support frame

Heavy duty pre-finished aluminum frame.



Soft close door

Soft close gas strut assisted mechanism.



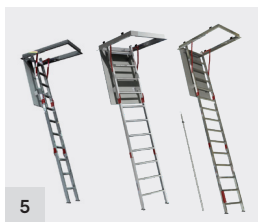
Melamine laminate door

Pre-finished white door with heavy duty hinges.



Industrial rated

150kg rated design with non-slip profiled rung for a high strength and sturdy access solution.



Multiple sizes

Supplied in either 3.2m or 4.3m heights to suit varying roof and ceiling spaces.



Adjustable feet

Adjustable feet inserts to suit final floor level.



TOOLS & EQUIPMENT

Cordless drill



8mm metal drill bit



3/8 nut setter



Drop saw



13mm spanner



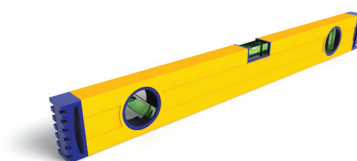
Tape measure



Marking pen



Spirit level



INSTALLATION REQUIREMENTS

Must be read prior to installation

1. This system must only be installed by competent persons trained in the selection, use and maintenance of access systems who hold a current Kattsafe approved installer certificate.
2. Persons installing this system are required to have a comprehensive knowledge of the Australian Standards, codes of practice and industry guidelines that relate to the selection, use and maintenance of access and fall protection systems and equipment.
3. Integrity and suitability of the structure to which this system is attached must be approved by a structural engineer unless it is clear to a competent person as to the suitability of connection to structure.
4. Read installation and operating instructions carefully before commencing any work. Consent to deviate from the installation guide must be obtained in writing from the manufacturer.
5. Conduct an initial work/risk assessment, and take all reasonable precautions to eliminate or control potential hazards and risks during the installation of this product.
6. Complete all necessary OH&S documentation, including a Job Safety Analysis and Work Method Statement and obtain consent from responsible person in workplace prior to commencement of work.
7. Do not modify or remove any element of the support structure without prior authorisation by a qualified engineer.
8. Decorative coatings and coverings must be removed to ensure correct evaluation of structure prior to attachment of system
9. Any re-routing of electrical and/or other services must be carried out by qualified or authorised personnel.
10. Appropriate temporary access and safety equipment must be used during installation, such as platform ladders or scaffolding and fall protection anchorage points.
11. In case of emergency access and fall protection systems must be installed by a minimum of two persons.
12. Do not tamper with, modify or remove any part this system unless authorised by the manufacturer in writing.
13. Appropriate labels or markings must be attached to each system and include the following:
 - Service entry date
 - Next examination/service due date
 - Maximum designed load ratings
 - Installer/Certifier contact details
14. Documentation confirming correct use and maintenance of the system and equipment must be provided to the workplace manager on completion of installation. (See operation manual.)



Kattsafe instructions and recommendations, drawings and diagrams, and all other documentation are copyright, errors and omissions excepted, and must be carefully read and implemented. Any assistance or guidance given is without prejudice, and Kattsafe cannot be held responsible for any inaccuracy or misinterpretation whatever. Failure to follow site installation requirements and warnings, may result in serious injury or death.

Kattsafe accepts no direct or indirect responsibility and/or consequential liability whatever, for any products and systems incorrectly installed or certified. Kattsafe cannot warrant the integrity or suitability of the structure to which the products may be attached. Prior assessment must be made by a qualified structural engineer, unless the structure is authorised or approved by a competent person.

SYSTEM LIMITATIONS

Must be read prior to installation

1. Minimum structural requirements for attachment of fold down ladders:
 - Steel purlin: 100 x 1.5mm base metal thickness
 - Timber truss: 90 x 35mm F7 structural grade timber
2. Minimum concrete fixing requirements:
 - 2 x 10/12mm x 75mm Screwbolt or
 - 2 x 12mm x 75mm Trubolt per bracket (Standard concrete edge distances and thicknesses apply)
3. The structure must be designed to support 200kg load.
4. Kattsafe fold down ladders are for single person use only rated to 150kg.
5. This system, under normal use and environment, has a life expectancy of up to 10 years. This will depend on location, usage and scheduled maintenance as per manufacturer and legislative requirements.
6. Do not tamper with or make alterations to system components without manufacturer's consent.
7. This system is not to be used for tethering or lifting machinery or equipment.
8. Kattsafe fold down ladders must not be used in the following environments:
 - External areas exposed to the elements
 - Moist or damp areas
 - Corrosive/harsh environments



Kattsafe recommends that persons using fall arrest systems do not work alone in case of an emergency and help is required.

Should any part of the system/equipment have been subjected to abnormal loading, use must be discontinued until replaced/recertified by a competent height safety inspector.

DIMENSIONS & LAYOUT

Key

- A: Ceiling height
- B: Distance from back of fold down ladder to front of ladder (folded out)
- C: Internal ceiling height
- D: Distance between purlin hangers
- E: Distance from purlin hanger to back of ladder frame

* All measurements are in millimetres (mm) and approximate only.

Note:

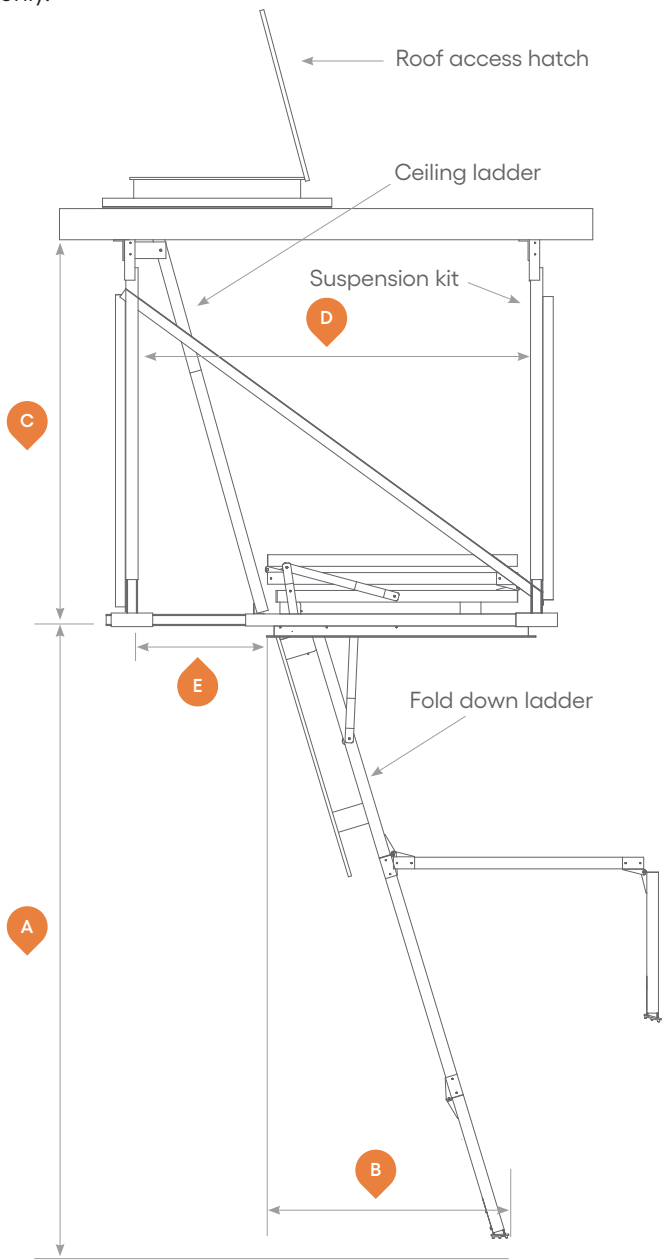
- On ceiling ladder, additional ladder cage recommended (in ceiling space) where total height of ladder system exceeds 3.5m.
- It is critical that the offset between the fold down ladder and roof hatch (see dimensions) is complied with to maintain continuous/correct ladder angle.

LD461

A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
2400	900	400	1500	280
2500	930	800	1610	390
2600	960	1200	1720	500
2700	990	1600	1830	600
2800	1010	2000	1940	710
2900	1040	2400	2050	820
3000	1070	2800	2160	940
3100	1100	3000	2210	970
3200	1130			

LD463

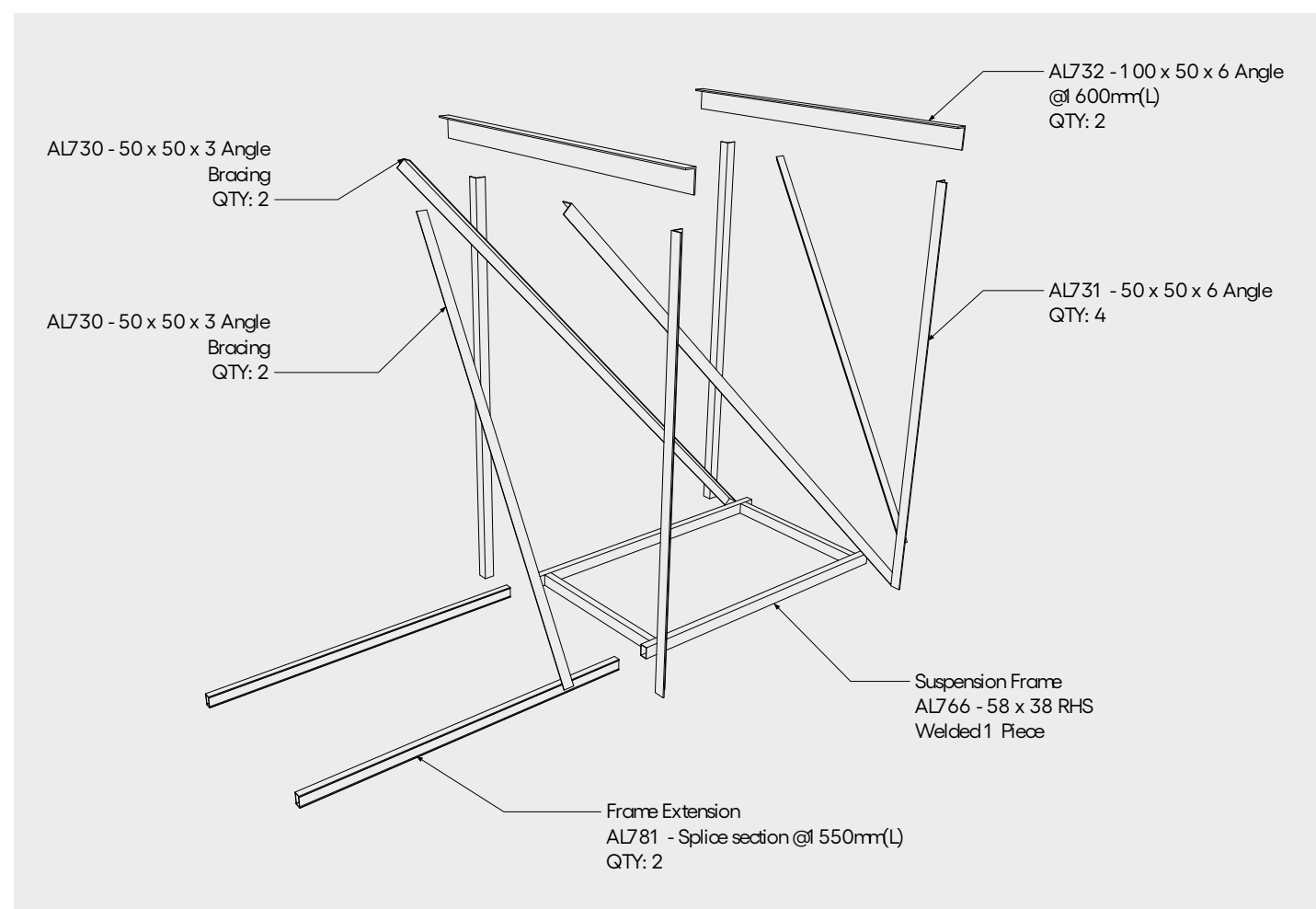
A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
3300	1180	400	1500	280
3400	1210	800	1610	390
3500	1240	1200	1720	500
3600	1270	1600	1830	600
3700	1300	2000	1940	710
3800	1330	2400	2050	820
3900	1360	2800	2160	940
4000	1290	3000	2210	970
4100	1420			
4200	1450			
4300	1480			



SUSPENSION KIT COMPONENTS

Components	Qty
Ladder support frame	1
Suspension hangers	4
Purlin hangers - 1600mm (100 x 50 x 6mm angle)	2
Side mount brace - 3000mm (50 x 50 x 3mm angle)	2
Front/rear braces - 2400mm (50 x 50 x 3mm angle)	2
Frame extensions - 1200mm (standard splice section)	2
Fixing pack	1

Fixings	Qty
M12/30mm purlin bolt sets	4
12g/30mm series 500 tek screws	12
12g/20mm self drilling tek screws	50



SUSPENSION KIT INSTALLATION PROCEDURE

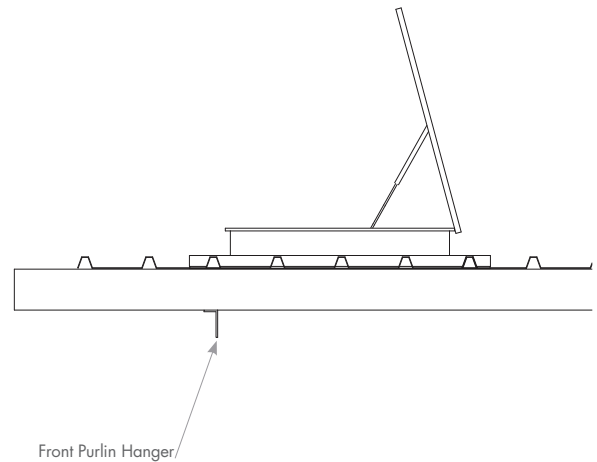
Step 1

- Mount front purlin hanger ± 50 mm from front face of roof hatch.
- Fix temporarily with (2) 12g/30mm tek screws.
- Once finally aligned and positioned, drill (2) 12mm holes through purlin hanger and purlin.
- Insert (2) M12/30mm purlin bolts, tighten securely.

Refer to the table on page 8 for calculating mounting position of ladder in relation to hatch.

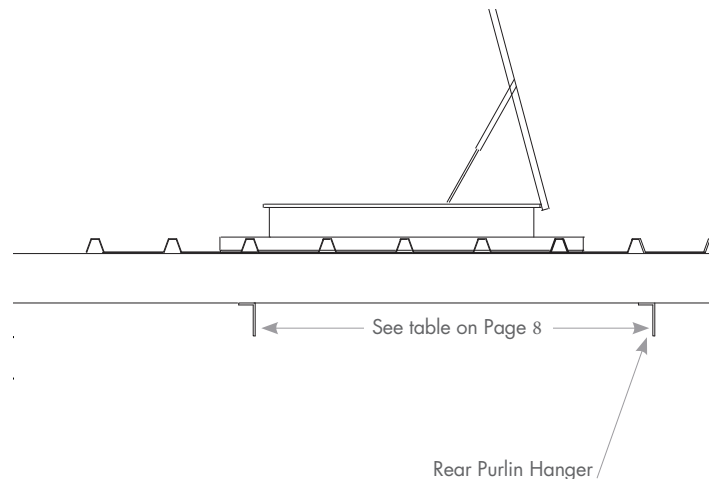


Determine direction of fold down ladder in relation to direction of purlins. If not in line with purlins, see page 11.



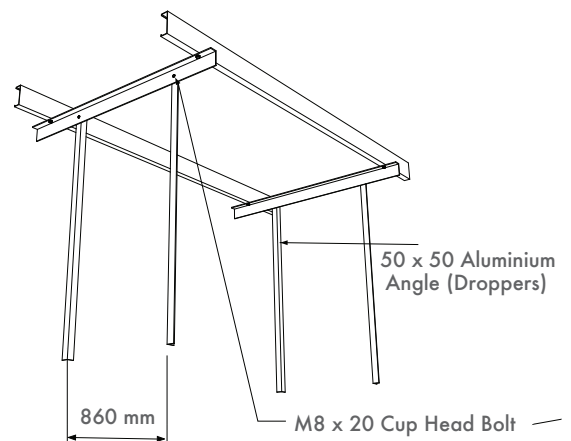
Step 2

- Determine correct mounting position of rear purlin hanger.
- Mount and fix rear purlin hanger as per step 1.



Step 3

- Attach the angle 'droppers' to the main support angle with 1 M8 x 20mm cup head bolt. Space droppers at 860mm apart.
- Angle will need to be cut to suit length required.

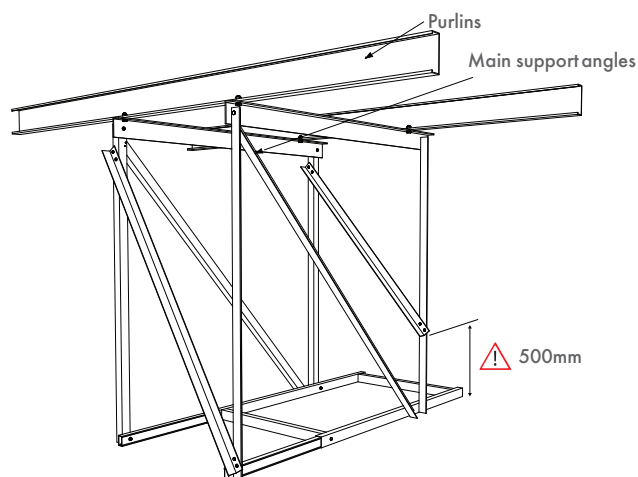


Step 3 - Across purlin installation

- Should the purlins run in the direction as shown, the main support angles will need to change direction.
- It may be possible to suspend the 'droppers' directly from the purlins without having to use the main support angles.

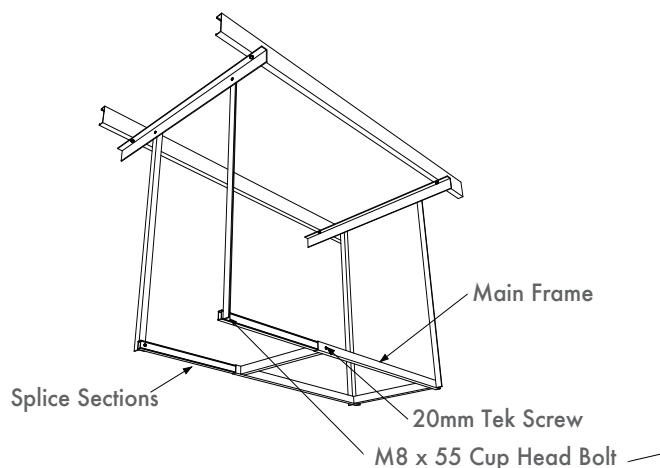


Rear bracing to be fixed at least 500mm from bottom of suspension hanger to allow for ladder assembly clearance when closed.



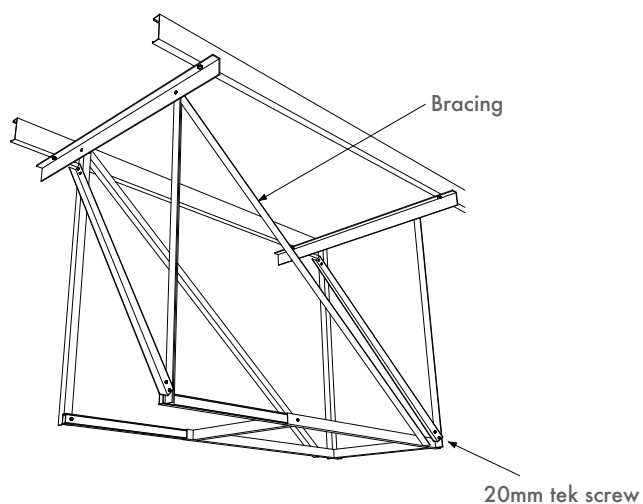
Step 4

- Slide the splice sections into the ladder support frame.
- Then bolt the splice sections and the frame to the 'droppers'.
- Fix with 1 M8 x 55 cup head bolts.
- Fasten a 20mm tek screw through the frame, into the splice section to lock in position.



Step 5

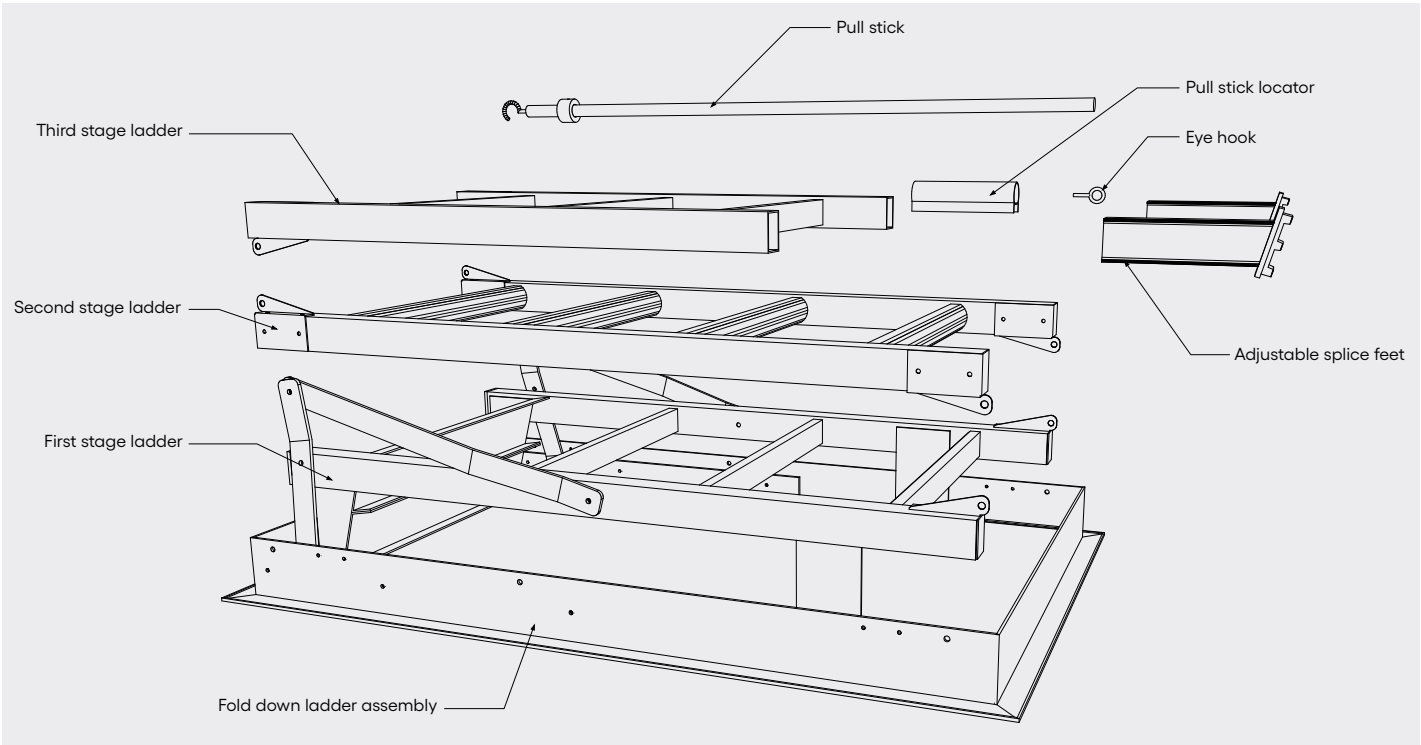
Secure bracing to all four sides using 2 x 20mm tek screws for each connection.



FOLD DOWN LADDER COMPONENTS

Components	Qty
Fold down ladder assembly	1
Ladder body (2nd stage)	1
Ladder body (3rd stage)	1
Adjustable splice feet	2
Pull stick	1
Eye hook	1
Fixing pack	1

Fixings	Qty
M8/75 mm Setscrew sets	6
M10 /20mm Bolt & nyloc nut sets	4
M10 Washers	12
12g/20mm Self drilling tek screws	4

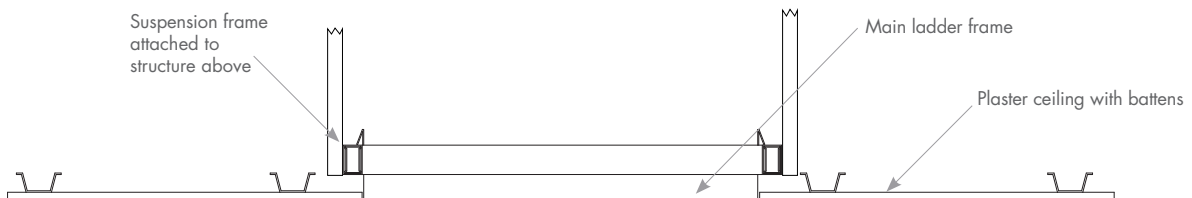


FOLD DOWN LADDER INSTALLATION PROCEDURE

Option 1: Tee - bar suspension ceiling system



Option 2: Plaster ceiling with battens



Option 3: Plaster ceiling with rafters



Step 1

- Determine suitable location, ensuring all structure or services are relocated or disconnected appropriately (by authorised/qualified personnel).
- Mark out and cut opening in ceiling.
 - LD461: 1230 x 785mm
 - LD462: 1230 x 570mm
 - LD463: 1630 x 785mm



The above ceiling cut out dimensions allow for frame clearance including a 30mm cover on all four sides provided by the main frame extrusion.

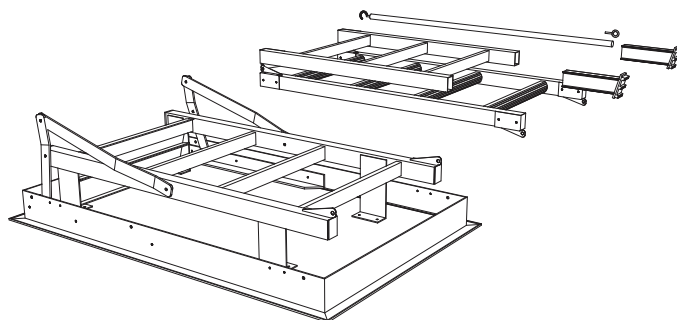
Step 2

- Remove complete assembly from box



Be careful not to scratch pre-finished surface of fold down ladder frame and door. Use packing box as a protective surface.

- Remove any packaging material, and place second and third ladder sections of the ladder assembly aside.



Step 3a (If suspension kit is not used)

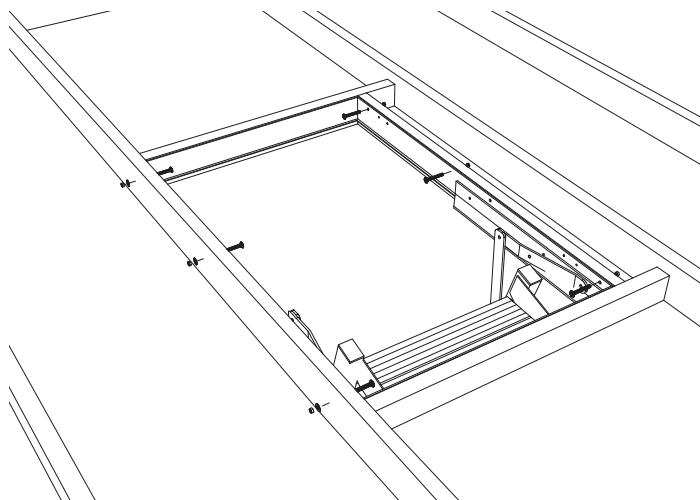
- Lift main ladder frame into position.
- Fix unit to support structure (rafter/battens) utilising pre drilled holes with (6) M8 x 75mm set screws or 14G type 17 timber fixing (3 screws per side).



Ensure ladder is facing the correct direction.



Support frame must be square. Failure to do so will cause ladder door closure difficulties.

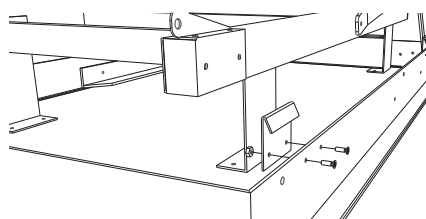
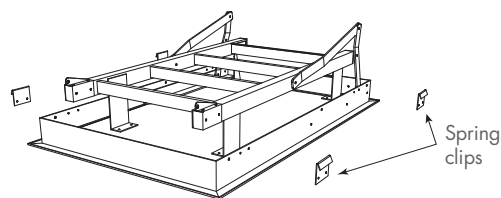


Step 3b (If suspension kit is used)

- Fix (4) 'spring clips' to fold down ladder frame with (8) M5 x 12mm countersunk bolts (2 bolts per clip).



'Spring clips' are not required, during installation if fold down ladder can be supported by any other device. ie 'duct lifter'. Spring clips are a temporary holding device until structurally secured.



Step 4

- Lift complete assembly into position - ensuring the ladder folds down in the correct direction.

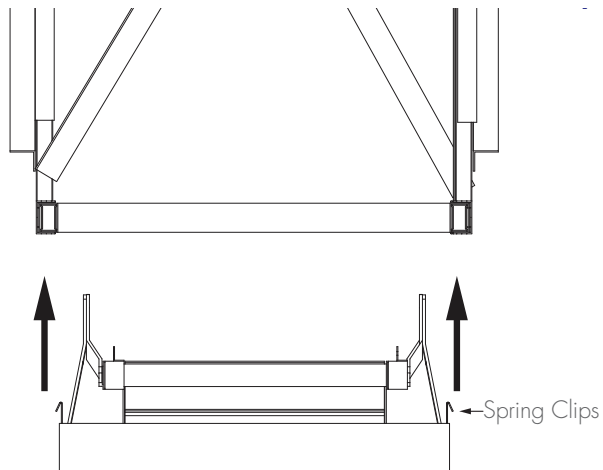


Two person lift recommended.

- Firmly push assembly until it 'clicks' into position. (Clips will hold assembly in position until structurally fixed.)



Do not attempt to climb ladder until installation is complete.

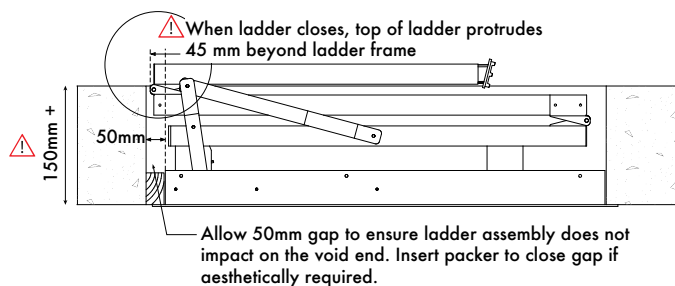
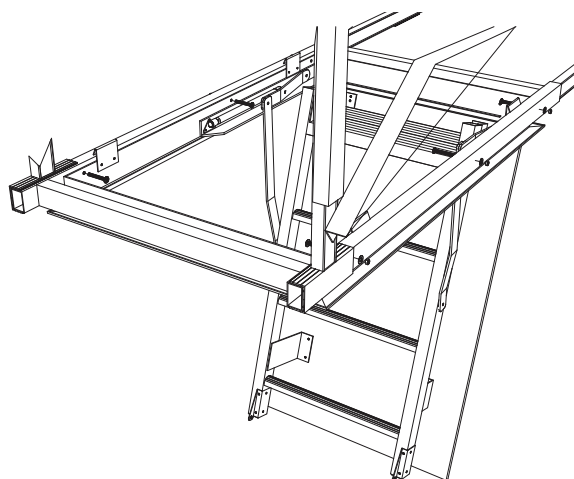


Step 5

- Unfold first stage ladder section.
- Check final position, and make necessary adjustments.
- Fix ladder to the suspension frame with (4) M8 x 75mm set screws utilising pre drilled holes (3 set screws per side.)

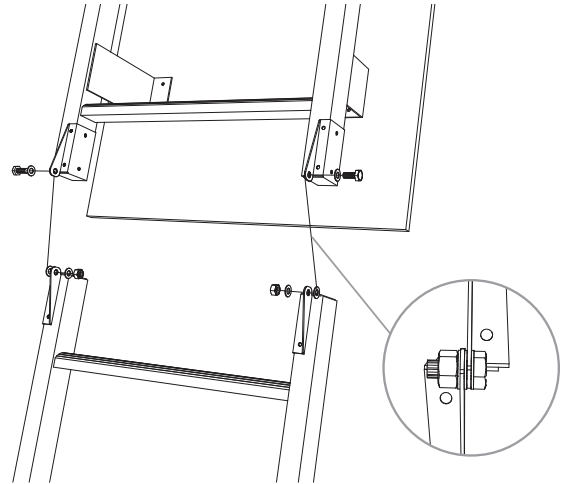


If ceiling opening is a boxed out design greater than 150mm thick (such as a concrete or trimmed out opening), a 50mm gap is required at the head of the ladder to allow clearance for the protruding ladder assembly when stowed away.



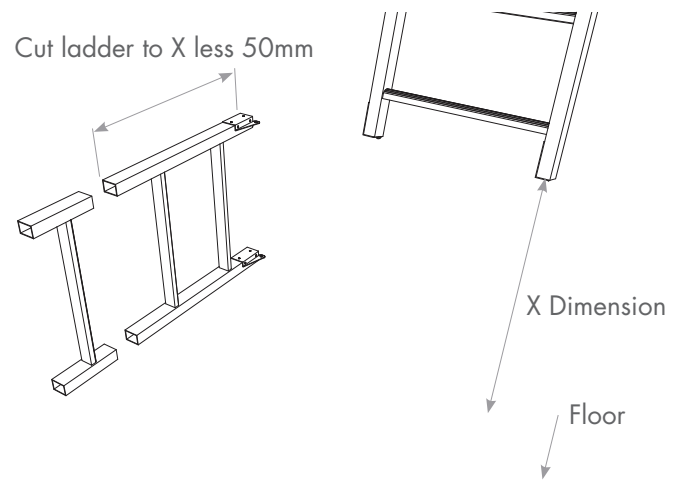
Step 6

- Align first and second stage ladder sections.
- Insert (2) M10 x 20mm bolts through hinges - ensure (3) washers are in place.
- Tighten bolts sufficiently. Ensure hinges still move freely.



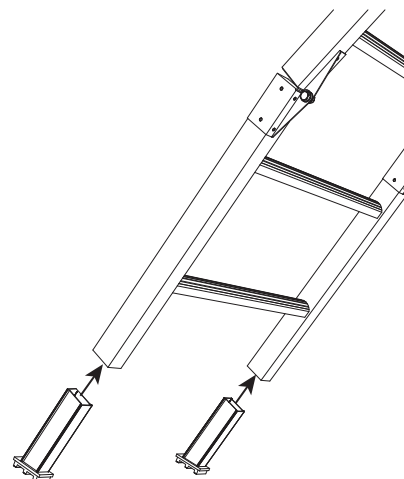
Step 5

- Measure distance from bottom of second stage ladder section and floor and then subtract 50mm for adjustable feet insertion.
- Cut third stage ladder section to suit required height.
- Install third stage ladder section as per step 6.



Step 8

- Insert (2) adjustable feet into third stage ladder section.
- Fold out complete ladder - ensure all sections are fully unfolded.

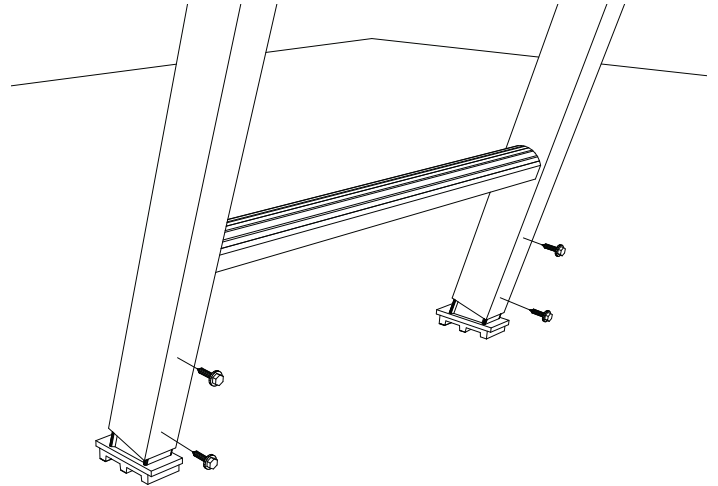


Step 9

- Adjust feet to suit floor level.
- Once adjusted correctly, fix in place using (2) 12g x 20mm tek screws per foot.

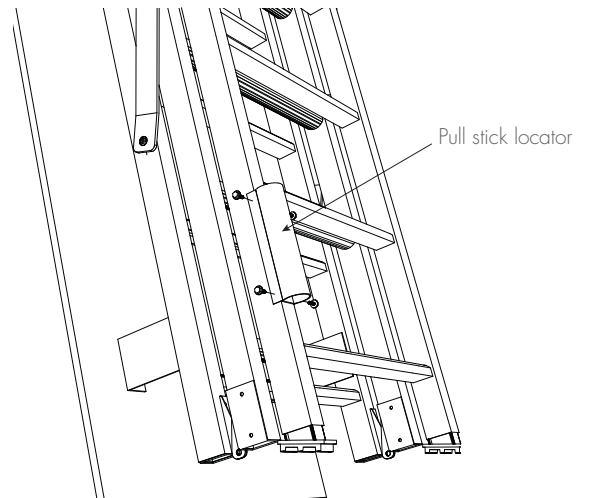


Ladder feet must be positioned to ensure 150kg working load is fully supported.



Step 10

- Position the pull stick locator in between the last 2 rungs of the third stage ladder section.
- Fix in place with (4) 20mm tek screws.
- Close ladder system and check all ladder sections, door and components close correctly.



CEILING LADDER COMPONENTS

Components	Qty
Ceiling ladder (1200mm or 2400mm)	1
Fixing angles	2
Fixing pack	1

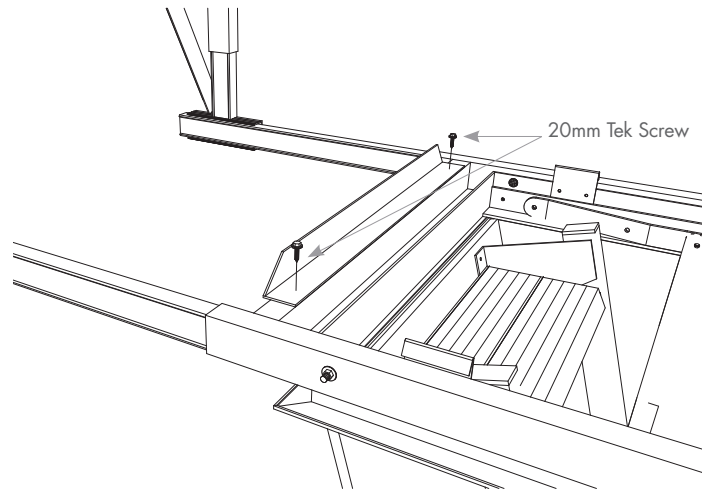
Fixings	Qty
M8/75mm Cup bolt sets	2
M8/55mm Cup bolt sets	4
RHS Plastic end caps	2



CEILING LADDER INSTALLATION PROCEDURE

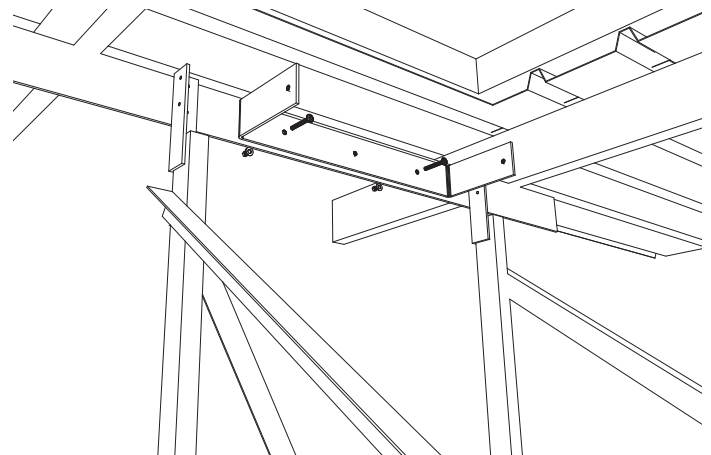
Step 1

Fix ladder support angles to top of ladder support frame using (2)12g x 20mm tek screws.(1 per bracket)



Step 2

Fix ladder fixing bracket to front purlin hanger, or to purlin trimmers, using (2)M8 x 25mm cup bolt sets.



Step 3

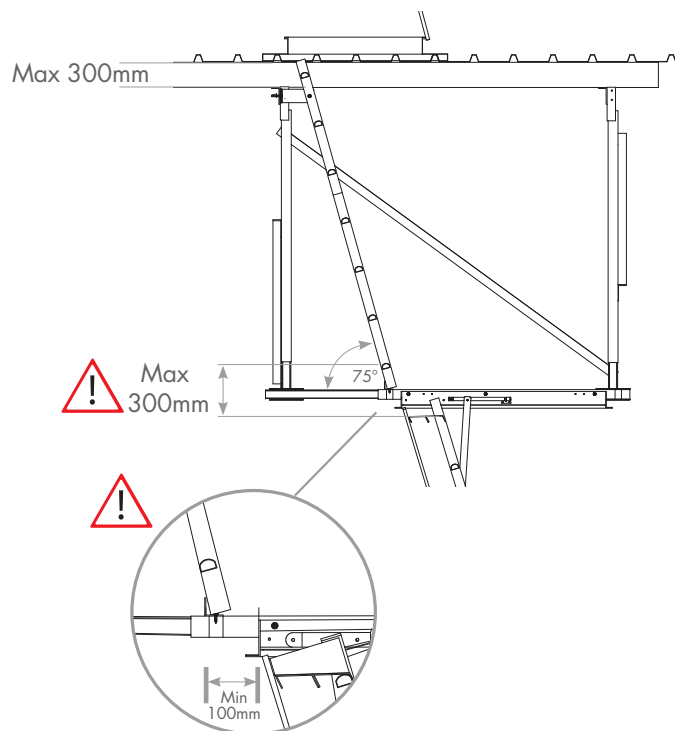
- Determine correct length of ceiling ladder at preferred angle of 75°, cut to suit.
- Insert RHS end caps into top of stiles.



Distance from top of bottom rung of ceiling ladder to top of fold down ladder must not exceed 300mm.

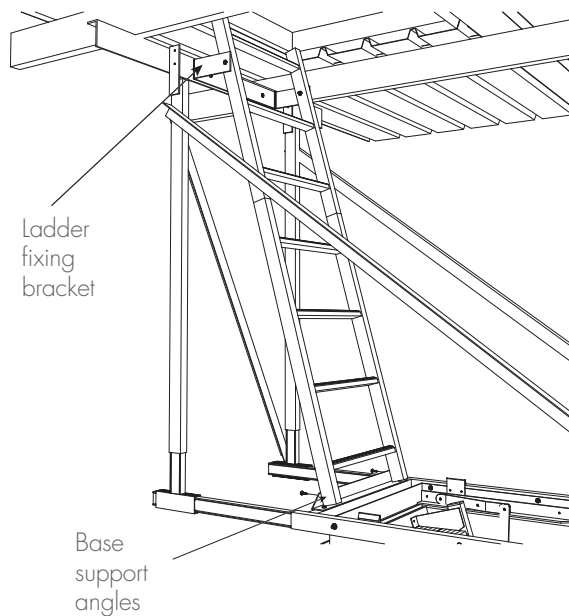


Distance from back of ceiling ladder to front of fold down ladder must be not less than 100mm.

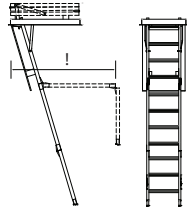

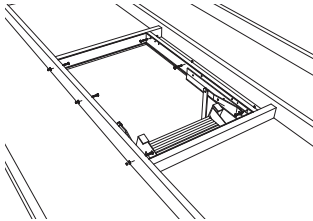
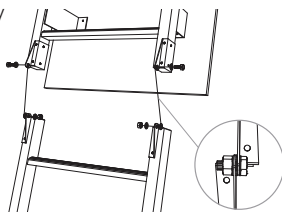
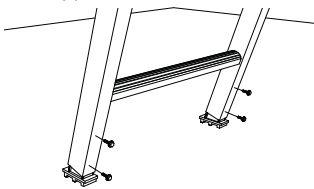


Step 4

- Position ceiling ladder and drill appropriate fixing holes through ladder fixing bracket and ladder stiles.
- Insert (2) M8 x 55mm cup bolts through holes, tighten securely.
- Fix ceiling ladder to base support angle using (2) M8 x 55mm cup bolts. (1 per bracket)



INSTALLATION CRITERIA

Component	Installation criteria
Ladder location 	<p>Ensure sufficient clearance for ladder to fold out correctly.</p> <p>See page 8 for diagram.</p>
Structure stability 	<p>Ensure structure to which ladder is attached is suitable for required loadings.</p> <p>Non load bearing ceilings will require a suspension kit attached to roof structure above.</p>
Fixing to structure 	<p>Ensure minimum (4) M8 bolt sets or (6) 14G screws securing ladder frame to structure.</p>
Ladder body assembly 	<p>Ensure ladder bodies are joined correctly using (2) M10 x 20mm bolts with 3 washers provided.</p> <p>Hinge bolt to be tightened but still allowing hinge to function correctly.</p>
Adjustable feet correctly positioned 	<p>Ensure adjustable feet have been positioned correctly to fully support working load of 150kg.</p>

SYSTEM MAINTENANCE

Must be read prior to checklist


1. The fold down ladder needs to be checked and recertified by a competent height safety 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. Any deterioration or damage to the system or equipment must be reported to the person in control of the workplace and relevant corrective action undertaken.
4. Fixing and support structure attachment and suitability must be checked by competent person.
5. Any signs of distortion or excessive load to the fold down ladder system must be inspected and recertified by competent person.
6. The identification label must be completed confirming certification, maintenance and recertification of the system.
7. Maintenance inspections must be clearly documented. Any non-conformance must be clearly identified and tagged 'Do Not Use' until corrective action by a competent person has been completed.


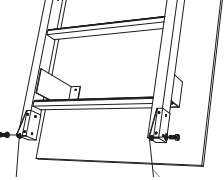


MAINTENANCE CHECKLIST

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.**

Component	Inspection criteria	Pass Y/N	Corrective action	Completion date
Structure 	Check for any visible damage to the ladder which could cause failure or injury to operator.			
	Check fixing bolts to structure are secure			
	Check structure to which ladder is attached is suitable for the required loads - 150kg.			
Door 	Check door mount fixings to primary ladder body are secure.			
	Check door hinge bolts are secure.			
Ladder body 	Check fixing bolts of strut arms to ladder are secure. (These must be firm but still allow hinge to function correctly.)			
	Check all ladder body hinge bolts are secure. (These must be firm but still allow hinge to function correctly.)			
Splice feet 	Check fixings into splice feet are secure and feet positioned correctly to support ladder.			

TECHNICAL SPECIFICATION

Fold down ladders

LD460

Kattsafe fold down ladders with gas strut soft-close function, typically installed into suspended ceiling spaces designed for internal access for maintenance to plant and equipment. System design, supply, layout, installation and certification by a Kattsafe approved installer, as per the manufacturer's installation instructions and current standards.

Materials

All components and accessories manufactured from high grade structural aluminium with options for powder coating.

Dimensions

LD461

- Standard or suspended ceiling type
- Floor to ceiling height: 2200mm to 3200mm
- Ceiling opening required: 1230mm x 785mm

LD462

- Timber truss with plaster ceilings
- Floor to ceiling height: 2200mm x 3200mm
- Ceiling opening required: 1230mm x 570mm

LD463

- Standard or suspended ceiling type
- Floor to ceiling height: 2200mm to 4300mm
- Ceiling opening required: 1630mm x 785mm

Weight (excludes accessory items)

- LD461: 40kg
- LD462: 32kg
- LD463: 50kg

Fixings (refer to installation manual)

- Metal fixing: M8 bolt set into support structure
- Concrete fixing: M10 mechanical concrete anchor
- Metal purlin fixing: M8 bolt

Rating

- Recommended for single person use – 150kg rated.
- Industrial rated, suited to high frequency usage.
- Support structure integrity, suitability and fixing method to be assessed and determined by a engineer unless it is clear to a competent person prior to installation.

Compliance

- Kattsafe fold down ladders are designed to comply with requirements of Australian Standard AS1657:2018 and relevant statutory OHS Codes of Practice/Guidelines.
- Fold down ladders are not specifically detailed in the AS1657:2018 Standard.

Testing

Testing and performance based on requirements for fixed rung ladders of Australian Standard AS1657:2018.

Product warranty

3 years from date of purchase subject to correct installation, use and maintenance in accordance with manufacturer's specifications and recommendations.

Inspection and maintenance

Inspection and certification required every 12 months by competent person in accordance with manufacturer's specifications and requirements of Australian Standards AS/NZS 1891 and AS/NZS 5532. (Refer installation manual)

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

WARRANTY INFORMATION

Warranty period on this system:
3 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
Fold down ladders



Installation manual
Fold down ladders



Operations manual
Fold down ladders



QMS Certification
ISO 9001:2015

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

Kattsafe

Height access
and fall protection

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