

# Star Swivel-Arm Hoist

## Installation and Operating Instructions

**Conveying & Hoisting Solutions P/L**  
**ABN 78 163 744**

### 1. Purpose of Equipment

Star Swivel-Arm Hoists are intended for the transport of materials. Star Hoists are **not** intended for the carriage of humans or animals.

### 2. Safety

#### 2.1 Warnings

- Read and understand these instructions first before setting up or operating this equipment
- Keep these instructions accessible near the Hoist.
- Before beginning work, one should become familiar with the working environment.
- No changes, additions or modifications may be made to the Hoist or associated equipment.
- Do not modify, remove, bypass or override the safety devices.
- Do not use this Hoist if there is any damage or unusual performance. Isolate the Hoist as described in Chapter 6.1 Emergency Shutdown.
- Do not operate the Hoist if there is a risk of people being endangered by the load or load carrying devices. Have the area around the Hoist barricaded off and post warning notices.
- Observe National Plant Regulations and Occupational Health and Safety Regulations.
- Do not set-up, operate or allow loads into the NO GO Zone for power lines.

#### 2.2 Hazard Assessment

**Hazard Checklist: Please note that this checklist is indicative only. Users must perform their own Risk Assessment subject to the intended siting and use of the equipment.**

Hazard	Risk	Control
Crushing or Striking by the Hoist tipping or collapsing	Moderate	<ul style="list-style-type: none"> <li>• Ensure the lifting wire rope is in good order and wrapped neatly on the winch drum. Poorly wrapped rope can lead to rope failure causing the load to fall, resulting in death or injury.</li> <li>• Ensure the supporting structure is adequate.</li> <li>• Check the Hoist has been correctly installed and that all locking pins and keepers are in place.</li> <li>• Check the Upper Travel Limit Switch operates correctly (refer Fig. 4).</li> <li>• Do not overload the Hoist.</li> <li>• Keep personnel clear of the Hoist when in use.</li> <li>• Use control methods to avoid the load or hook catching or snagging during use, leading to possible component failure or structural collapse.</li> <li>• Do not use the wire rope as a sling – attach to the hook only.</li> </ul>
Crushing or striking by material falling from the Hoist.	Moderate	<ul style="list-style-type: none"> <li>• Have the area under the Hoist barricaded and prevent personnel entering the area.</li> <li>• Do not overfill attachments.</li> <li>• Ensure attachments are of adequate design, strength and correctly applied.</li> <li>• Check attachments are correctly attached to the hook.</li> <li>• Do not use where wind speeds are greater than 70km/hr.</li> </ul>
Entanglement during use or maintenance	Low	<ul style="list-style-type: none"> <li>• Ensure body parts, clothing or other materials are kept clear of the winch drum.</li> </ul>
Cutting, stabbing or puncturing from the lifting wire rope	Low	<ul style="list-style-type: none"> <li>• Use gloves when checking wire rope condition.</li> </ul>
Slipping, tripping or falling	Low	<ul style="list-style-type: none"> <li>• Place barricading at the edge of the structure and wear height safety equipment to prevent a fall.</li> <li>• Adopt safe working practices when installing, maintaining or using the Hoist.</li> <li>• Place power leads so they do not become a tripping hazard.</li> </ul>
Electrocution	Moderate	<ul style="list-style-type: none"> <li>• Use an E.L.C.B., an R.C.D. or other “safety switch” in the power supply.</li> </ul>

		<ul style="list-style-type: none"> <li>Do not allow the Hoist or load to enter the NO GO Zone for Power Lines.</li> <li>Prevent moisture from coming into contact with leads and plugs.</li> <li>Do not alter or tamper with electrical parts.</li> </ul>
Explosion	Low	<ul style="list-style-type: none"> <li>Before use, ensure there are no explosive substances present near the Hoist.</li> </ul>

## 2.3 Certification

Certification to operate this equipment is not required. The person with control or management of the workplace must ensure that:

- the Operator is at least 18 years old
- the Operator is competent to operate the equipment
- a Dogman or Rigger is used to load the hoist if slinging practices are required.

## 2.4 Incident Notification

The employer, as defined by the Regulations referred to below, who has management or control of the workplace must be aware that they may have an obligation to notify WorkCover of any incidents involving this equipment. Refer to the Occupational Health and Safety Act and the Occupational Health & Safety (Incident Notification) Regulation(s) applicable to your State.

## 2.5 Inspections

Before the start of each work period, the person operating the Hoist should:

- Ensure the work area is clean and well arranged.
- Check the electric cable and plug for damage.
- Check the wire rope for damage and wear. Run the hook down to the ground and then, using gloves, pull out the wire rope while pressing the DOWN button. Once all the rope has been withdrawn, inspect the rope looking for kinks, bends, twists flattened areas or other defects. Do not use the Hoist if the wire rope is damaged. Rewind the wire rope onto the winch drum, keeping tension on the wire rope so that it wraps tightly and neatly. Ensure kinks or bends are not put into the wire rope during this process. Untidy loosely wrapped wire rope can lead to damage or failure of the wire rope.
- Check the hook and safety latch. Ensure the latch closes properly below the hook tip.
- Inspect the mounting of the Hoist and ensure all fittings are tight and/or secured. Ensure the locking pin on the mounting Yoke is in place and locked.
- Inspect the load carrying devices and ensure they are undamaged.
- Check the operation of the Upper Travel Limit Switch.
- Ensure barricading and signage is present and legible.

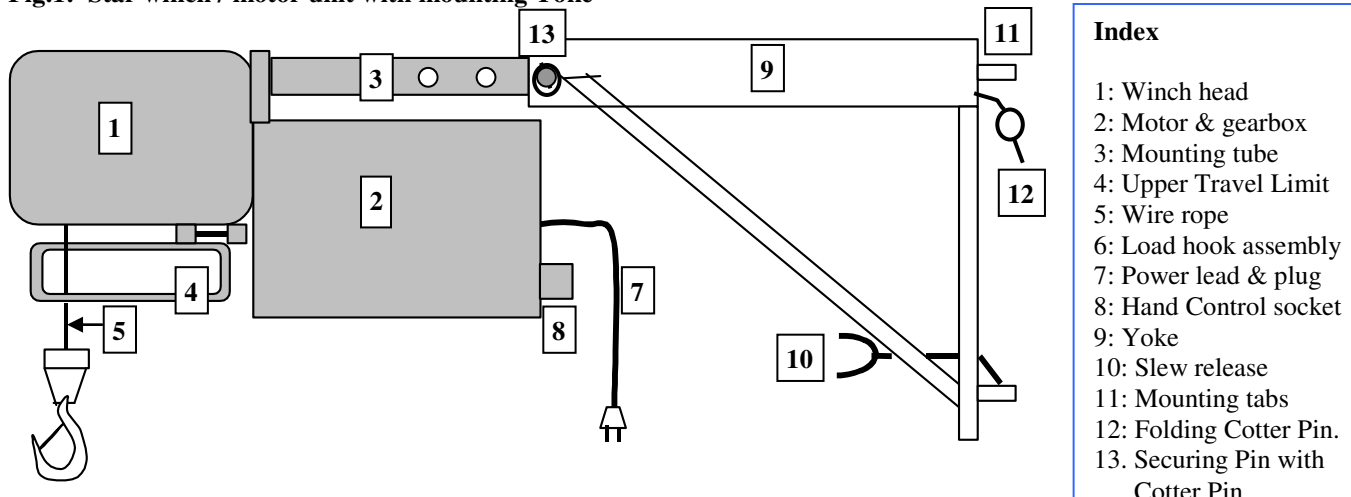
## 3. Specifications

Item	Units	Specification
Power	V, Hz	240, 50
Drive Rating	kW	1.0 at 2800rpm
Operating Time (Duty Cycle)	ED%	60
Wire Rope size, construction, minimum breaking strain	mm, -, kN	5, 18x7 non rotating, 12.1
Lifting speed	m/min	32
Mass basic unit, scaffold clamp, floor to ceiling prop, tripod frame, window frame	kg	52, 16, 60, 95, 31
Outreach from pivot point	mm	800 to 1050
Minimum Headroom	mm	410
Noise emission	DB (A)	80.0

## 4. Description

### 4.1 General View

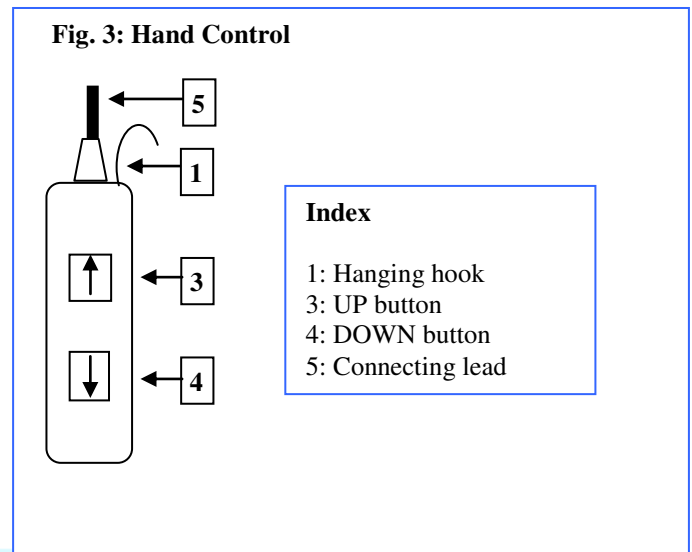
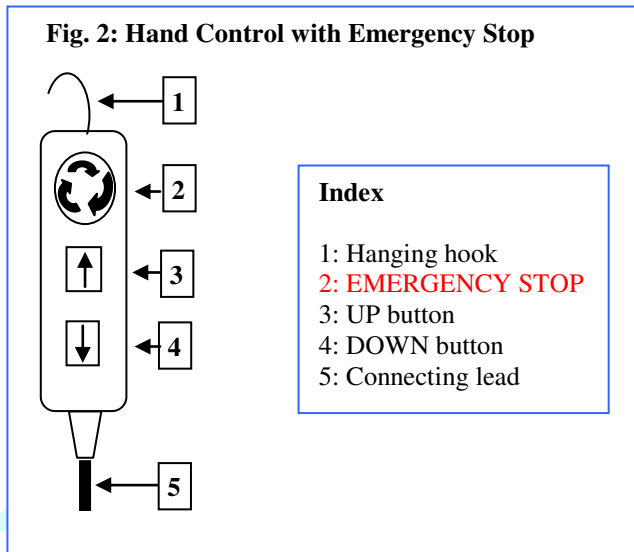
Fig.1: Star winch / motor unit with mounting Yoke



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- Winch head
- Motor & gearbox
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- Upper Travel Limit
- Wire rope
- Load hook assembly
- Power lead & plug
- Hand Control socket
- Yoke
- Slew release
- Mounting tabs
- Folding Cotter Pin.
- Securing Pin with Cotter Pin

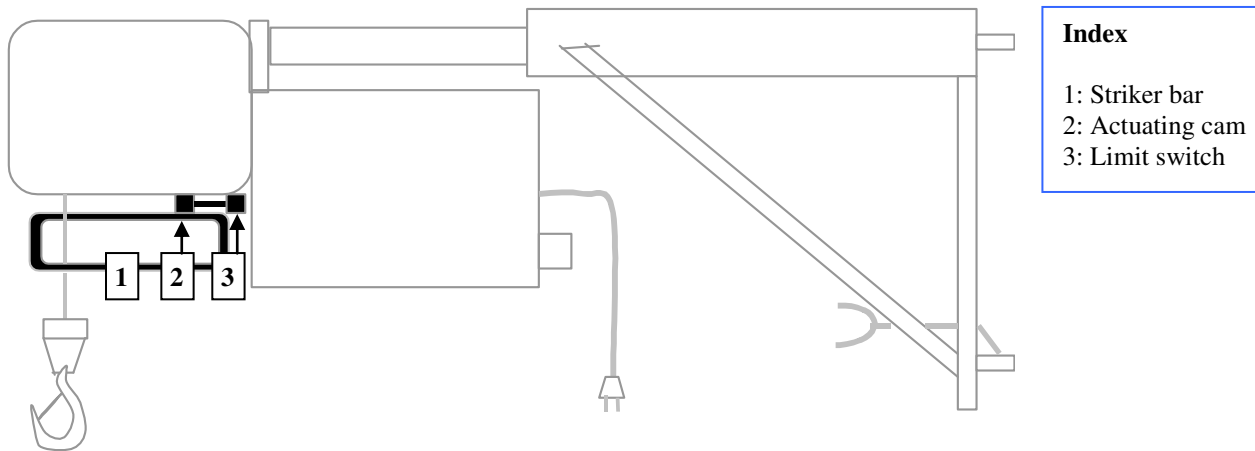
## 4.2 Controls



## 4.3 Upper Travel Limit Switch

**Fig 4: Upper Travel Limit Switch**

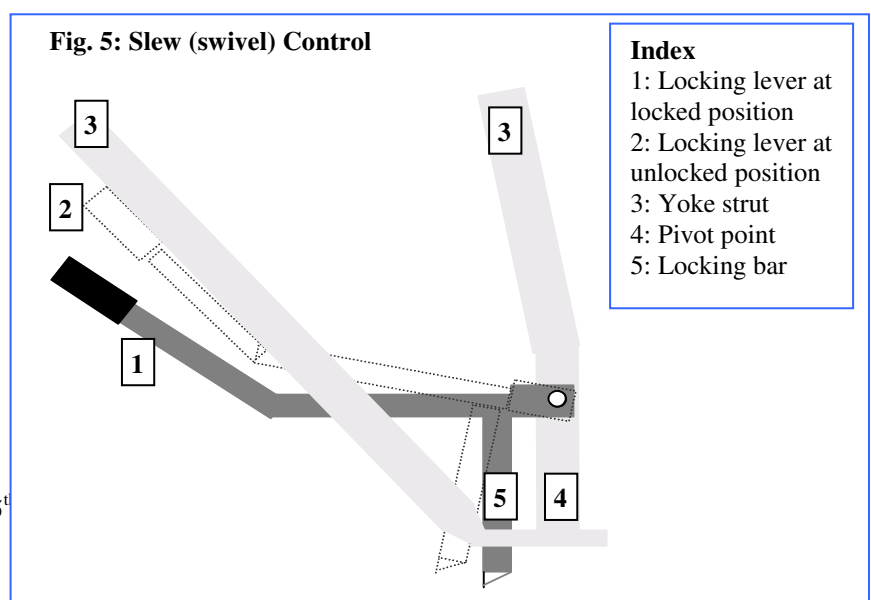
Up motion may be stopped by the hook assembly striking the bar and operating the limit switch.



## 4.4 Slew Locking Lever

To slew or swivel the Hoist:

- With one hand, grip the locking lever (1) and move the lever up until the lever is at (2). The locking bar (5) will disengage from the mounting system.
- With the other hand, grip a part of the Yoke (3) and slew or swivel the Hoist and yoke around the pivot point (4), until the desired point is reached.
- Lock the Hoist in the new position by moving the locking lever (1) back to it's



original position, where the locking bar (5) will engage with the mounting system.

## 5. Operation

### 5.1 Pre-operation

- Read, understand the warning notices given in Chapter 2.1 above before operating the Hoist.
- Undertake and implement a Job Safety Assessment as outlined in Chapter 2.2 above before operating the Hoist.
- Always secure the Hoist against unauthorised use. Do not leave the hand control lying around at the end of work periods.
- Never leave the Hoist loaded. Unload before leaving unattended.
- Always watch the suspended load from the operating point.
- Do not stand or work under a suspended load.
- Do not operate in wind speeds more than 70km/hr
- Wear personal safety equipment
- Do not stand on load carrying devices
- Do not transport people

### 5.2 Switching On and Off

- Refer to Chapter 4.2: Controls
  - Hold the control with the Hanging Hook (1) uppermost.
1. Unlock the emergency stop switch (2), where fitted, by turning the knob in the direction of the arrows.
  2. **Move upwards:** press the UP button (3).
  3. **Move downwards:** press the DOWN button (4).
  4. **Switch Off or Stop:** Release the UP (3) or DOWN (4) button or press the **EMERGENCY-OFF** button (2).

### 5.3 Lifting a Load

1. Slew the Hoist so that it is able to lift over a clear space. Refer to Chapter 4.4 Slew Locking Lever.
2. Press and hold the DOWN button until the hook reaches the pick-up point. Refer to Chapter 5.2 Switching On and Off.  
**Caution: do not allow the hook to land and the wire rope to become loose on the drum.** See Chapter 2.2 Risk Assessment for the hazards involved and chapter 2.5 Inspections for corrective action.
3. Attach the load as required. Refer to Chapter 2.3 Certification.
4. Press and hold the UP button to raise the load to the required height. Refer to Chapter 5.2 Switching On and Off.
5. Slew the Hoist so that the load may be set down at the new level. Refer to Chapter 4.4 Slew Locking Lever.
6. Land the load at this new level by pressing the DOWN button until the load lands. Release the DOWN button immediately and do not allow the wire rope to become slack.

### 5.4 Lower a Load

Lowering a load is the reverse of the instructions given in Chapter 5.3 Lifting a Load

## 6. Operator Maintenance

### 6.1 Daily Maintenance

The Operator should carry out the instructions given in Chapter 2.5 Inspections

### 6.2 Weekly Maintenance

In addition to the instructions given in Chapter 2.5 Instructions, the Operator should oil the pivot point of the mounting Yoke.

## 7. Shut-down Procedure

### 7.1 Emergency Shut-down

- Stop operation of the Hoist by either:
  1. releasing the UP or DOWN buttons (see Figures 2 & 3)
  2. pressing the **EMERGENCY-OFF** button, if fitted (see Figure 2)
  3. pulling out the hand control from the socket on the winch/motor unit (see Figure 1)
  4. turning off the power supply.
- Remove the hand control and power supply from the hoist.
- Secure the load hook and/or load against uncontrolled movement (wind etc).
- Erect a sign stating “DO NOT USE – HOIST UNDER REPAIR” and fix to the hoist.
- Inform management or management’s agent of the situation.

## 7.2 End of Work Period/Hire Shut-down

- Unload the Hoist and raise the hook up to the Upper Travel Limit Switch.
- Remove the hand control and the power supply.
- Secure the winch/motor against unwanted movement by engaging the Slew Locking Lever on the mounting Yoke.
- Clean any dirt or grease from the Hoist.

## 8. Installation

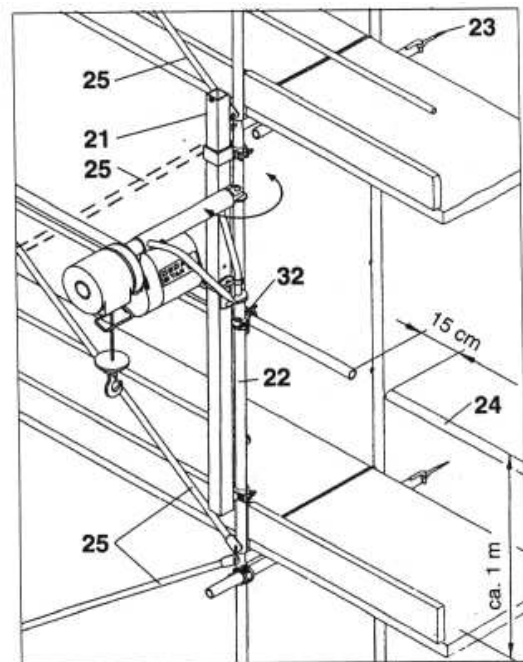
### 8.1 Preparation

When installing the Hoist, ensure that:

- Read and understand all instructions before installation, particularly Chapter 2 (Safety) and Chapter 5 (Operation).
- Ensure that placement of the equipment conforms to the “No Go Zones for plant near overhead powerlines” rules.
- The mounting position is firm, stable and capable of withstanding the forces of the Hoist, its load and its operation.
- An inspection has been carried out on the equipment before installation, as described in Chapter 2.5 above.
- Unauthorised personnel are prevented from entering the mounting area during installation.
- Personal safety equipment is worn.
- The winch/motor unit is exactly horizontal, to ensure correct wire rope wrapping.
- When using the window clamp, ensure the brickwork is of sufficient strength to support the loading imposed and that the brickwork extends above and over the window opening.
- With hollow block brickwork, use load distributing bearers between clamp arms and wall.

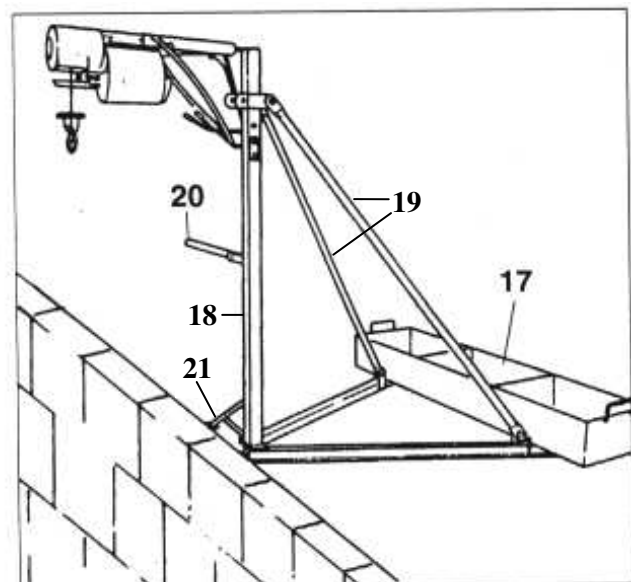
### 8.2 Scaffold Bracket

1. The scaffold clamp (21) is fastened to the scaffolding with the scaffold coupling.
2. To prevent falls, fit handrail tubes each screwed to two vertical frames with 90 degree couplings (32).
3. In addition to the normal scaffold anchorage, anchor the vertical frame (22), to which the swivel arm hoist is fastened, at the top and bottom to the building (23) (anchor tensile and compressive strength, minimum 1.5kN) and brace sufficiently (25).
4. Hang swivel arm and secure with folding cotter pin.



### 8.3 Counterweight Frame

1. Assemble the tripod away from an edge due to the danger of a fall during assembly.
2. Lay out both U section rails (16) on level ground in a triangle.
3. Fit on the ballast box (17) or counterweight frame. Fit standpipe (18) and struts (19). The standpipe can be turned 180° on axis according to the direction the swivel arm is to be swung in.
4. Tighten down strut (19) fixing bolts at both ends. Tighten standpipe (18) fixing bolt and adjust Stabiliser (21) so that it rests against the floor.
5. Hang swivel arm hoist and secure with folding cotter pin.
6. Slide complete tripod with swivel arm hoist and ballast box or counterweight frame (17) carefully



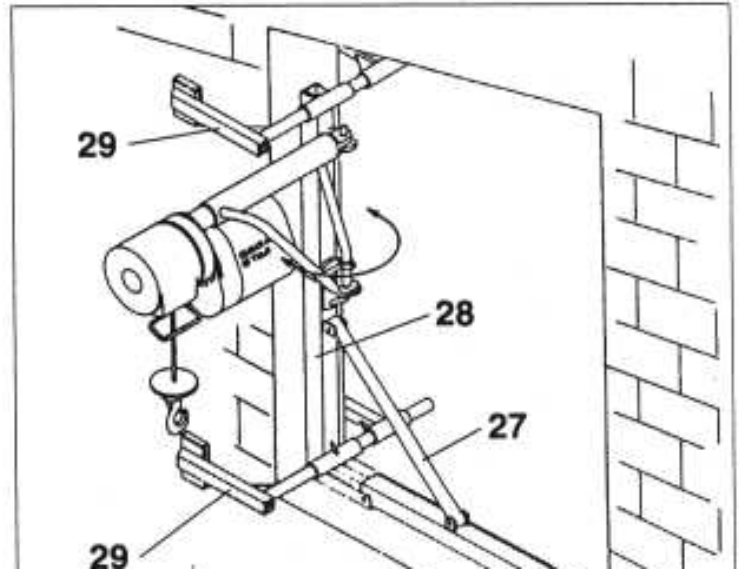


to the work edge.

7. Mount all 18 counterweights, or load the ballast box with 400kg of solid material.
8. **The hoist is always to be operated from behind the side protection.**

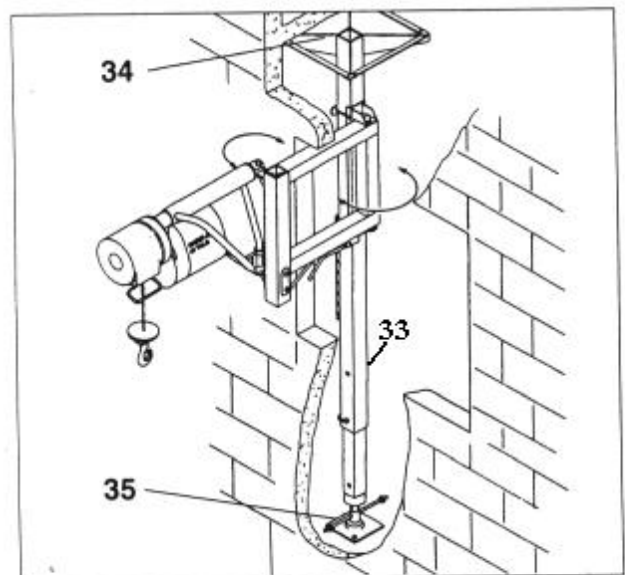
#### 8.4 Window Clamp

- **Application:** Wall widths 240 to 500mm with window minimum opening width 950mm and minimum opening height 1200mm
1. Open out window clamp (26), insert pin through strut (27) and secure.
  2. Position vertical tube (28) in window opening at either left or right side as shown.
  3. Fit clamp tube through socket, ensuring fixed clamp plate (29) is located against the outside wall, and secure with pin.
  4. Fit clamp plates with spindles to opposite ends of clamp tubes and lock into position with pins. Tighten against outside wall.
  5. **Attention:** with hollow block brickwork, use load distributing bearers between clamp plates and wall
  6. Hang swivel arm and secure with folding cotter pin.



#### 8.5 Floor to Ceiling Prop

- Load can be swung in with window opening widths from 700mm onwards
  - Telescopic from 2300 to 3250mm.
  - **Attention:** when used on balconies etc, the balcony must not be overloaded by the hoist.
1. Install the floor to ceiling tie (33) by screwing out the lower spindle (35) between the ceiling and floor with the large end plate (34) at the top and set up in such a way that the boom is stopped in the swung out position.
  2. Hang the swivel arm hoist and secure with folding cotter pin.



#### 8.6 Hanging the Swivel Arm

Refer to Fig. 1 Star winch / motor unit with mounting Yoke.

1. Fit the mounting Yoke to the fixing attachment by pacing the Tabs (11) over the appropriate spigots.
2. Secure the Yoke at the top Tab with the attached folding Cotter Pin (12).
3. Slew the Yoke so that it is over the landing, as described in Chapter 4.4 Slew Locking Lever.
4. Slide the winch/motor unit mounting Tube (3) inside the larger diameter tube on the mounting Yoke.
5. Secure with the Securing Pin and Cotter Pin (13).
6. Attach the Hand Control plug to the Hand Control socket (8).
7. Attach the power lead and plug (7) to an appropriate outlet. If extension leads are required, do not allow more than 30m of 3-core 2.5mm<sup>2</sup> of lead to be attached.

## 9. Removal

- Have the work area cordoned off and warning signs erected.
- Disassembly of the hoist is carried out in reverse order to the installation.

