

# PRODUCT USER GUIDE

## JC40 BRACING STRUT

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### Introduction

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Mabey Hire offer a wide range of proprietary bracing struts which can be used either on their own propping or in combination with double-acting hydraulic bracing frames for the strutting of excavations.

All the struts are modular with mechanical screw adjustment, so they are not at risk of hydraulic failure.

The prop bodies for standard mechanical struts consist of square sections as opposed to circular sections for safer handling and storage on site and during transportation - the square section bodies minimize the risk of rolling.

The JC40 Bracing Strut is intended for use as a strut with Mabey Hire's Shaftbrace and Multibrace waling systems.

This User Guide provides basic information about the JC40 Bracing Strut only and should be read in conjunction with the User Guide for the Shaftbrace or Multibrace waling system.

The struts are not intended for other applications.  
Refer to Appendix A for details of our site demonstrator service.

### IMPORTANT NOTES

All excavation work must be thoroughly planned before work commences on site to identify hazards and assess risk.

No information on design is included in this booklet. Clients are strongly advised to ensure that a competent engineer is employed to provide a suitable design for excavation schemes requiring the use of JC40 Bracing Struts.

Mabey Hire Ltd Pty., offer a design service and can on request also provide information on the strength capacities of JC40 Bracing Struts for clients undertaking their own designs.

All hire for this equipment will usually accompanied by a general arrangement or scheme specific drawing. This must be read in conjunction with these instructions.

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### 1. General Guidance notes

#### Safe System of Work

Assuming that the appropriate equipment has been selected for use, the Health and Safety at Work Act requires that a safe system of work is adopted to carry out the works on site.

These guidance notes are intended to draw the client's attention to practical aspects of Mabey Hire Pty. range of JC40 components during use and basic maintenance which need to be considered when completing method statements for a safe system of work.

#### Access, Hard standing Areas and Site Storage

- Suitable firm, level, dry areas should be made available on site for storage and pre-assembly work.
- Suitable lifting equipment of adequate capacity should be provided for off-loading, pre-assembly work, installation, and dismantling.
- Slings should always be carried out by suitably experienced and competent personnel.
- The weights of components and assemblies are given in this guide.
- Return pre-assembled struts as supplied from Mabey Hire's Depot.
- Stack assembled struts side by side **ONLY ONE** layer high.
- Smaller components should be stored in skips/bins.

#### Personnel

The Management of Health and Safety at Work Regulations require that personnel deployed are suitably trained, experienced, and supervised by a competent person.

The main activities associated with JC40 Struts use are:

- Unloading and loading the delivery vehicle.
- Pinning components together.
- Slings and lifting the JC40 Struts into and out of the trench.

#### Small Plant, Tools, and Lifting Chains

- Lifting Chains of suitable length and capacity complete with current certification.

#### Access & Egress and Edge Protection

- Install the edge protection as soon as possible before entry into the excavation.
- A competent person should inspect the means of access and egress regularly.

#### Transportation

- Ensure struts are fully retracted.
- Ensure all equipment is loaded to the satisfaction of the lorry driver and securely restrained to the vehicle bed.

#### During Installation Works

- Check that all bolted connections remain tight.
- Avoid striking the struts or laterally loading them by storing materials on them or by hanging or propping from them.
- Protect the screw units from concrete spillage etc., by wrapping in polythene.

#### During Installation Works

- The Strut incorporates a mechanical screw for length adjustment which is designed to extend under conditions of no load and retract under conditions of no or low loading: e.g., as when first installed or as they become redundant after backfilling the excavation.
- Once they are sustaining significant loads, adjustment of the struts is inadvisable and unlikely to be possible. Methods of working should therefore avoid the need for strut adjustment whilst heavily loaded.

#### After Installation Works

Each excavation must be inspected daily before personnel begin work.

#### Return of Equipment Off-Hire

Clients should ensure that on removal, the equipment is returned clean and assembled as supplied.

Ensure all equipment is loaded to the satisfaction of the vehicle driver and is securely restrained to the vehicle bed.

2. Component Identification



**400mm Extension**  
Size: 170 dia x 400  
Weight: 21.0 Kg



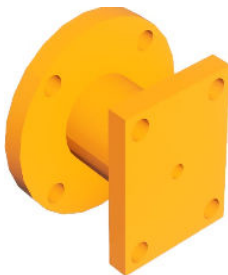
**800mm Extension**  
Size: 170 dia x 800  
Weight: 40.0 Kg



**Right Hand Strut**  
Weight: 25.0 Kg



**Left Hand Strut**  
Weight: 25.0 Kg



**'0' Strut Adaptor**  
Weight: 10.0 Kg



**Clamp Plate for 254x254 U  
(Multibrace Waling)**  
Size: 250 x 115 x 20 Thk  
Spacer Block Thickness 20mm  
Weight: 5.2 Kg



**Connector Plate**  
Size: 240 x 350 x 20 Thk  
Weight: 13.0 Kg

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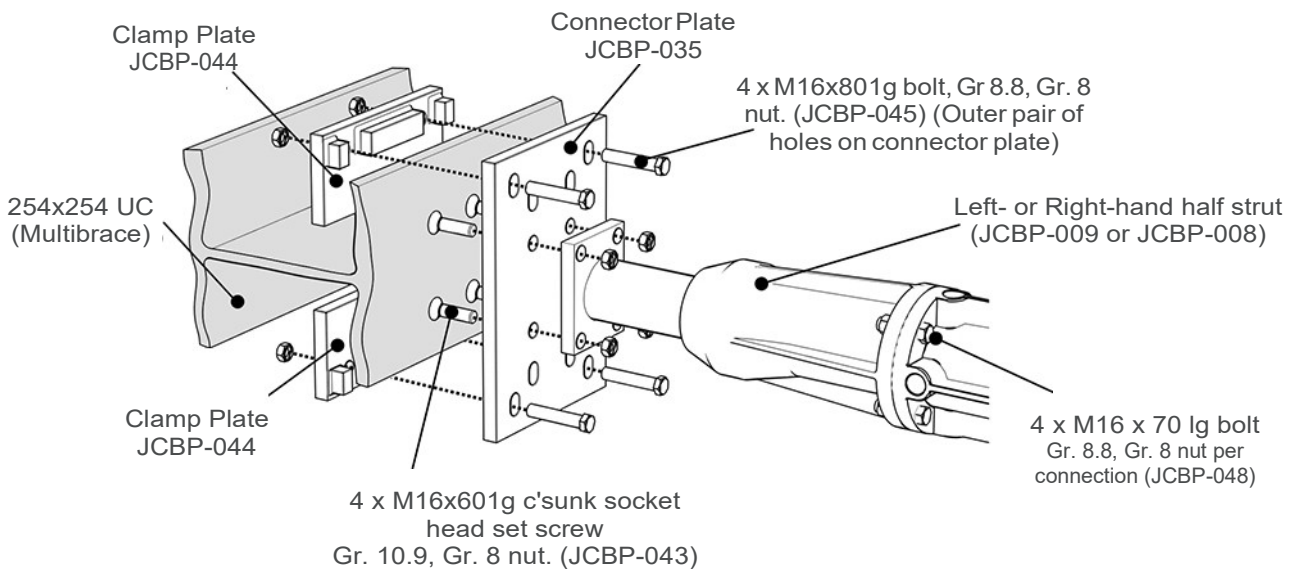


### 3. Table of Strut Assemblies



| Code No.<br>(Shaftbrace) | Code No.<br>(Multibrace) | Strut Assembly<br>(Excl. connector plates and clamp Plates) | Overall Strut Length 'L'<br>Between Walings |          | Weight<br>(kg) |
|--------------------------|--------------------------|---|---|----------|----------------|
|                          |                          |   | Min.(m<br>m)                                | Max.(mm) |                |
| SJC-00                   | MWS-00                   | JCBP-009 + JCBP-024   | 490   | 710      | 73             |
| SJC-01                   | MWS-01                   | JCBP-009 + JCBP-008   | 710   | 1150     | 84             |
| SJC-02                   | MWS-02                   | JCBP-009 + JCBP-006 + JCBP-008                              | 1110  | 1550     | 109            |
| SJC-03                   | MWS-03                   | JCBP-009 + JCBP-007 + JCBP-008                              | 1510  | 1950     | 124            |
| SJC-04                   | MWS-04                   | JCBP-009 + JCBP-006 + JCBP-007 + JCBP-008                   | 1910  | 2350     | 145            |
| SJC-05                   | MWS-05                   | JCBP-009 + (2 x JCBP-007) + JCBP-008                        | 2310  | 2750     | 160            |
| SJC-06                   | MWS-06                   | JCBP-009 + JCBP-006 + (2 x JCBP-007) + JCBP-008             | 2710  | 3150     | 180            |
| SJC-07                   | MWS-07                   | JCBP-009 + (3 x JCBP-007) + JCBP-008                        | 3110  | 3550     | 195            |
| SJC-08                   | MWS-08                   | JCBP-009 + JCBP-006 + (3 x JCBP-007) + JCBP-008             | 3510  | 3950     | 216            |

### 4. Strut to waler connection details



NOTE : Always fit 2 No. clamp plates (one top and one bottom) at each waling connection.

### 5. Assembly

The Bracing Strut is made to the correct length range where possible prior to delivery - with the clamp plates supplied separately. If the strut has to be altered to another range on site, always use 4 No. M16 x 70 long galv. Gr. 8.8 bolts for each intermediate connection.

### 6. Installation

- Ensure walings have been set to the required dimensions and pressurised if necessary before installing the struts.
- Measure the dimension between the walings.
- Ensure operatives have adequate access to the strut in its final position. Adjust the strut screw units equally to achieve the required dimension over the connector plates.
- Fit the top clamp plates, leaving the bolts slightly slack.
- Sling and lift the strut into position so that the top clamp plates are correctly located over the flanges of the walings. Check that the strut is square to the walings and that the strut is in line with the webs of the walings.
- Adjust the screw units so that the connector plates are tight against the walings.
- Fit the bottom clamp plates.
- Tighten all the bolts to the clamp plates.
- Release the lifting chains.

### 7. Removal

- Avoid removing under load.
- Ensure operatives have adequate access to the strut.
- Support the struts from below, or sling with a suitable crane before attempting to release the screw units.
- Release the strut by screwing in the screw units using the Tommy Bar (JCBP-027).
- Once the strut is released, remove the lower clamp plates only and lift the strut clear of the excavation.

Since our policy is one of continual improvement, components may vary in detail from the descriptions given in this publication.

While information in this Guide is correct at time of printing, product specifications and product availability are subject to change without further notice. Please visit our website for the most up to date information. Job site photos are strictly intended for general product illustration only and may not comply with all applicable safety standards or site requirements. Specification data has been taken from manufacturers' serialised specific tabulated data.

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