

## 7.1m Drag Box Safety and Operating Procedures

### Preamble

The 7.1m Drag Box is designed for a ground pressure of 20 kN/m<sup>2</sup>. If in doubt about the generated ground pressure in the excavation consult a qualified soil engineer.

### Unloading (Method to be determined by Risk Assessment on Site)

#### Assembled

##### 1)By forklift/telehandler

Ensure the forklift/telehandler has sufficient capacity and adequate fork length to lift the equipment safely. (See capacity table).

Ensure all pins in the drag box are fully connected and secured by “R” clips before lifting.

Ensure that each lift occurs at the centre of gravity. Lift only one item at a time. When lifting the drag box position the forks in the centre underside of the upper panel. Never lift from the lower panel.

##### 2)By crane/excavator

Ensure the crane/excavator has sufficient capacity and adequate chains to lift the equipment safely. (See capacity table). Use good slinging practice at all times.

Ensure all pins in the drag box are fully connected and secured by “R” clips before lifting.

Ensure the chain(s) are connected to the four lifting points on the upper panel of the drag box (two on each side of the panel) Lift only one box at a time.

#### Disassembled

##### 1)By forklift/telehandler

Ensure the forklift/telehandler has sufficient capacity and adequate fork length to lift the equipment safely. (See capacity table).

Ensure that each lift occurs at the centre of gravity. Lift only one item at a time.

##### 2)By crane/excavator

Ensure the crane/excavator has sufficient capacity and adequate chains to lift the equipment safely. (See capacity table). Use good slinging practice at all times.

Ensure the chain(s) are connected to the four lifting points on the panel (two beneath the driving caps on each side of the panel and two on the bottom of the panel). Lift only one item at a time.

### How to assemble a Drag Box with Telescopic Struts

Position the first panel so that pockets are uppermost and level. Set the struts to the minimum width. Insert the struts into the pockets and pin through securing with “R” clips ensuring the heads of the pins are pointing into the drag box working area. Position the second panel so that the pockets are lower most and it is in a level plane. (By using a forklift/Telehandler or suspended on chains by the lifting points). Lower the second panel onto upraised struts. To safely access to the pin position on the upper panel it may be necessary to use staging or scaffolding. When the struts are located; pin through and secure with “R” clips. The drag box is now assembled. With the upper panel still supported by a forklift/Telehandler or suspended on chains by the lifting points remove the strut pin and raise the upper panel until the correct strut length is achieved then insert the pins as previous. To stand the drag box upright attach chain(s) to the four top lifting points under lift and lift drag box upright.

<b>Address</b>	<b>Telephone</b>	<b>Email</b>	<b>Registered Office</b>	<b>Company Registration</b>
Jayville Engineering Ltd Halesfield 24 Telford Shropshire TF7 4NS	+44 (0)1952 583 041	enquiries@jayville.co.uk	Heslop Halesfield 24 Telford TF7 4NS	1225895
	<b>Fax</b>	<b>Web</b>		<b>VAT Registration</b>
	+44(0)1952 586 342	www.jayville.co.uk		101 6148 21

## Storage/Stacking (To be determined by Risk Assessment on Site)

Ensure the storage area is flat and firm. When storing drag boxes ensure they are stable either by “lying down” boxes that are less than 1500mm wide or supported between one metre cube concrete blocks or installed in shallow trenches. Depending on site conditions drag boxes wider than 1500mm may be more safely stored in an upright position with or without support or installation. In all cases risk assessment should be undertaken to ensure site safety. Do not store drag boxes by stacking them on top of each other.

## How to install a drag box.

**The method of installation should be determined by Risk Assessment.**

### Installation

Drag boxes do not support the side walls of the excavation, therefore the drag box acts as a safety shield it is therefore critical that there is a gap between the side of the drag box and the side walls of the excavation. Using a drag box may be inappropriate in certain ground conditions where there is risk of movement, where reinstatement is critical or if the excavation is subject to surcharge.

Excavate the trench to the required width and depth using a bucket that will fit inside the drag box. Ensure the trench is long enough to accept the drag box. Batter the front and rear of the excavation to the angle of repose for the soil type (to prevent the end walls of the excavation collapsing into the working area). Alternatively install trench sheeting and walers at each end of the excavation.

Lift the drag box into trench. Ensure that 150mm of the drag box remains above the trench to prevent any ground falling into the excavation. If this requires a top box; it may be fitted as detailed in **How to add a top box**.

Batter back the unsupported ends of the trench or install trench sheeting and walers to support.

Do not enter excavation until installation is complete and declared safe.

The first pipe may now be laid.

When the first pipe has been laid the trench should be evacuated.

The excavator digs in front of the drag box. Ensure the trench is wide enough to accept the drag box and that the walls of the trench are free of obstructions to the drag box, also ensure that sufficient material is removed between the wall and the floor of the trench otherwise the drag box will “ride” up. When a sufficient area has been excavated the excavator pulls the drag box into this space by “crowding” the bucket around the pulling beams in the base box and smoothly pulling the drag box into position. Again ensure the end of the excavation is either battered back or supported by walers and trench sheets.

Do not enter excavation until installation is complete and declared safe.

The second pipe may now be laid. Repeat for subsequent pipes.

### Compaction

Over time the walls of the excavation may close in on the drag box, it is therefore recommended to ease the drag box by slightly lifting it prior to compaction to prevent compaction causing the drag box becoming stuck. Never compact more than one third up the face of the drag box then raise it before continuing.

Always be aware that compaction may damage the inner faces of the trench box.

<b>Address</b>	<b>Telephone</b>	<b>Email</b>	<b>Registered Office</b>	<b>Company Registration</b>
Jayville Engineering Ltd Halesfield 24 Telford Shropshire TF7 4NS	+44 (0)1952 583 041	enquiries@jayville.co.uk	Heslop Halesfield 24 Telford TF7 4NS	1225895
	<b>Fax</b>	<b>Web</b>		<b>VAT Registration</b>
	+44(0)1952 586 342	www.jayville.co.uk		101 6148 21

## Extraction

### The method of extraction should be determined by Risk Assessment.

Due to consolidation it may be more difficult to extract the drag box than installing it. Use only the extraction/lifting points located on the top of the panel. Ensure that the chain sling is strong enough to undertake this operation. Be aware that chains may snap if improperly used and cause severe injury, therefore never allow personnel in the vicinity of the lift.

Methods of extraction (listed in increasing difficulty of extraction)

#### 1) Straight pull

Attach the chain sling to the two extraction/lifting points on each panel and lift the drag box using four legs of the chain sling.

#### 2) Single pull

Attach a single leg of chain sling to an extraction/lifting point and raise the corner of each panel in turn, when the drag box moves freely remove by method 1).

### How to add a top box

#### The method of adding a top box should be determined by Risk Assessment.

1) If adding a top box whilst the base is outside the excavation, ensure the drag box is adequately supported by using concrete blocks or digging a shallow trench.

2) Fit the panel connectors to the bottom connector points on the top box.

3) Lift the top box so that the panel connectors hang down.

4) Locate the panel connectors in the pockets at the top of the lower panel.

5) Pin through the panel connectors and the panel pocket on the lower panel. Ensure the pins are secured with "R" clips, the box is now ready for use.

6) If adding a top box whilst the base is in the excavation, ensure enough of the base is above the trench to enable the insertion of securing pins without the need to enter the trench unless the end walls are battered back or supported. Undertake 2) to 4) above.

### Other Hazards

- 1.0) Never use bent or damaged struts or panels
- 2.0) Never attempt remove/adjust struts whilst the drag box is in the excavation.
- 3.0) Never attempt to lift the drag box using the struts.
- 4.0) Never climb in or out of the trench using the struts. Always use a ladder.
- 5.0) Never move a drag box with personnel inside.
- 6.0) Never enter an unsupported part of the trench.
- 7.0) Never apply side loads to struts
- 8.0) Never exceed the load capacity of the drag box.
- 9.0) Be aware of overhead power lines.

### Always practise good site safety practice

<b>Address</b>	<b>Telephone</b>	<b>Email</b>	<b>Registered Office</b>	<b>Company Registration</b>
Jayville Engineering Ltd Halesfield 24 Telford Shropshire TF7 4NS	+44 (0)1952 583 041	enquiries@jayville.co.uk	Heslop Halesfield 24 Telford TF7 4NS	1225895
	<b>Fax</b>	<b>Web</b>		<b>VAT Registration</b>
	+44(0)1952 586 342	www.jayville.co.uk		101 6148 21



## Telescopic Strut

Approx	Outer Approx	Inner Approx	Total
Type A0 800 – 1000 internal (100mm pitch)	60 kg each	44 kg each	104 kg each
Type A1 980 – 1280 internal (150mm pitch)	72 kg each	56 kg each	128 kg each
Type A 1200 – 1500 internal (150mm pitch)	91 kg each	70 kg each	161 kg each
Type B 1500 – 2100 internal (150mm pitch)	118 kg each	91 kg each	209 kg each
Type C 2100 – 3000 internal (150mm pitch)	172 kg each	134 kg each	306 kg each
Type D 3000 – 5100 internal (150mm pitch)	275 kg each	196 kg each	471 kg each

7.1m Drag Box Lower (800 – 1000 int)	Approx 4680 kg each
7.1m Drag Box Lower (980 – 1280 int)	Approx 4776 kg each
7.1m Drag Box Lower (1200 – 1500 int)	Approx 4908 kg each
7.1m Drag Box Lower (1500 – 2100 int)	Approx 5100 kg each
7.1m Drag Box Lower (2100 - 3300 int)	Approx 5488 kg each
7.1m Drag Box Lower (3000 – 5100 int)	Approx 6148 kg each

### Address

Jayville Engineering Ltd  
Halesfield 24  
Telford  
Shropshire  
TF7 4NS

### Telephone

+44 (0)1952 583 041  
**Fax**  
+44(0)1952 586 342

### Email

enquiries@jayville.co.uk  
**Web**  
www.jayville.co.uk

### Registered Office Company Registration

Heslop  
Halesfield 24  
Telford  
TF7 4NS

1225895

### VAT Registration

101 6148 21