

Multi-170 Modular Spreader Beam

Original Instructions for Use

Model: Multi-170

Commercial Name: Multisec Multi-170

Description: Modular Spreader Beam



These instructions are identified as the Original Instructions. If Durham Lifting provides translations, they are also considered Original Instructions.

When a distributor sells the equipment to an EU country and provides the instructions, these must be clearly identified as a "Translation of the Original Instructions," and a copy of the Original Instructions must accompany the translation.

The manufacturer's instructions and declaration should be retained for the entire lifespan of the product.

Manufacturer:

Durham Lifting Ltd, Britannia Testhouse,
Romaldkirk Road, Middlesbrough, TS2 1HB,
United Kingdom.

EU Authorised Representative:

Hold Tech Files Ltd, Dun Iseal House,
Newtown, Gaulsmills, Ferrybank,
Waterford, X91 F638, Ireland.

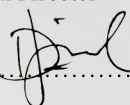
UK/EC Declaration of Conformity

This equipment, if supplied as an assembled spreader beam, will be accompanied with the UK/EC Declaration of Conformity and the relevant UK/EC Declarations of Incorporations for additional components. Individual components supplied will be accompanied with the UK/EC Declaration of Incorporation.

All equipment has been tested or examined for normal use by a competent person in accordance with the LOLER regulations 1998. This equipment complies with Machinery Directive 2006/42/EC and the Supply of machinery (Safety) Regulations 2008 as amended, and EN 13/55: 2003 + A2: 2000 where applicable and are marked accordingly.

If the spreader beam is dismantled and reconfigured other than specified, then a new Declaration of Conformity must be issued following a conformity assessment before the equipment is put into service.

Wan Djawad
Technical Director

Signed




1. System Specifications

• These user instructions are for the standard **Multi-Sec Multi-170**. The **Multi-170** is rated to a maximum vertical load of 170 Tonnes at a maximum span (or length) of 14.5 meters respectively.

• This system is classified as a modular system; thus it may be assembled/reassembled by trained/approved riggers using different strut combinations (additional struts can be provided on order) to achieve a span range from 1.5 meters to 19.5 meters at a lower capacity.

2. Critical Information

• This is a spreader beam and must only be loaded at the two end location through the drop links. Never hang loads from the struts.

• Drop links must hang vertically, towards the load.

• The lower slings must not exceed 6° from vertical during operation.

• STV (sling to vertical) angle must be no more than 45°

• To ensure that the Multi-170 is suitable for the planned lift, refer to Table 1.

• No more than 8 components can be used in an assembly at any given time during the lifting operation.

• The WLL (working load limit) of a single drop link is 85.0 Tonnes (170 Tonnes combined).

Do not exceed this weight at one end of the beam!

• The **Multi-170** uses M20 x 90 Grade 8.8 hex bolts, nuts and washers. The recommended tightening torque is 351Nm. Before use, inspect fixings for damage and wear. If necessary, replace with identical fixings and follow assembly instructions.

• Any personnel using this lifting product must be a trained and competent person and have a clear understanding of safe slinging/lifting procedures.

• The ongoing use of this product must be in accordance with the requirements in LOLER (Lifting Operations and Lifting Equipment Regulations 1998), or equivalent local regulations on other EU countries.

• To allow the calculation of the approximate beam weight please use the self weight information for each standard component (refer Table 2).

3. Assembly Instructions

1 Refer to the lift plan and confirm that you are using the correct beam for your lift requirements.

2 Confirm that each component to be used is from the correct range (identifiable from the manufactures data plate) also ensure that all appropriate documentation is present.

3 Ensure that the mating faces of the components are free from debris before installation.

4 Bolt the system together using the correct fasteners as specified and tighten to the torque values specified.

5 Check and confirm that there is a bolt in every hole.

6 Position the drop link inside the jaw of the end unit so that the larger hole on the drop link lines up with the holes on the end unit.

7 Position your top sling within the top shackle and then lower the shackle into place of the end unit. Once all the holes are aligned, lock in place using the shackle pin. Repeat this process at the other end.

8 Attach the other end of the top slings to the crane hook.

9 The lower slings and shackles can now be connected to the drop link.

10 The final assembly of the spreader beam must be thoroughly inspected by a competent person before moving the beam.

11 Attach the bottom slings to the load and check to ensure that the rigging configuration is in accordance to the lift plan.

4. Slings and Rigging

• The lower slings must not exceed 6° from vertical during operation.

• Ensure that the end fitting for the sling does not clash with the end unit of the **Multi-170**.

• Recommended use of Shackles (refer Table 2).

NB: Remember to include the weight of any additional rigging equipment that is also being used in the lift.

ATTENTION:

Damage, incorrect assembly or improper use may result in serious injuries and/or material damage. Ensure that the instructions for use have been read and fully understood before initial use. Failure to do so may result in serious injuries and/or material damage and eliminates manufacturers warranty.

5. Handling and Storage of Beam Components

All beam components and fully assembled beams must be handled carefully to avoid damage to structural parts or other components. Refer to **Table 2** for Individual component heights and use suitable lifting equipment to assemble heavy components. Ensure a manual handling risk assessment has been completed if components are handled without using lifting equipment.

The following guidelines must be followed for storage:

- Store in dry, covered conditions, away from direct moisture
- Avoid exposing beams to extreme temperatures, corrosion, or mechanical stress.

6. Operating Temperature Range

This is designed to be safely operated within a temperature range of -20°C to 200°C. Operating the equipment outside this temperature range may result in malfunction or damage to the beam or its components.

7. Operation in Special Atmospheres

Operation in special environments must follow these guidelines:

- **High Humidity:** Risk of corrosion and electrical malfunctions. Ensure protective coatings are inspected regularly.
- **Explosive Atmospheres:** Use of the equipment is prohibited unless explicitly certified for explosive environments.
- **Saline/Acid/Alkaline Atmospheres:** Inspect and maintain protective measures to avoid corrosion and chemical damage.

8. Handling of Dangerous Goods

This equipment is not designed for handling dangerous goods such as molten metals, radioactive materials, or explosives. Operation under such conditions is strictly prohibited unless the beam has been specially certified for these uses.

9. Prohibition of Handling Above Persons

It is strictly prohibited to handle loads above persons during operations. All personnel must remain clear of the lifting zone while equipment is in use.

10. Suspension of Lifting Operations

During Thunderstorms, lifting operations must be suspended during thunderstorms or in conditions where lightning is present. Operating lifting equipment during such conditions poses serious safety risks to personnel and equipment.

11. Reconfiguration and CE/UK CA Process

If the unit is supplied with a Declaration of Incorporation (DoI) and reassembly or reconfiguration is necessary, the following steps must be followed:

- The CE/UK CA certification process must be followed.
- The beam must be assembled using the correct fixings and within the limits specified in the Instructions.
- An inspection by a competent person is required after every reconfiguration or assembly.
- When an end user configures a beam, it is their responsibility to provide a plate containing all relevant information and identifying the WLL.
- New Instructions for Use must be provided for the modified configuration.
- A new Declaration of Conformity (DoC) must be issued for the reconfigured machinery.

12. Verifications and Inspections

The following inspections and verifications are necessary:

- **Before Commissioning:** Pre-use inspection and testing to ensure safety.
- **After Repair or Reconfiguration:** Inspection following any repair or reconfiguration.
- **During Equipment Service Life:** Periodic checks for defects or wear and tear that could impact safety and functionality.
- **Defects to Look For:** A clear list of possible defects must be included.

Further Guidance for maintenance can be found in the **Maintenance Guideline For Multi-sec Lifting Equipment.**

13. Digital Instructions Compliance (EU Regulation 2023/1230 Article 10 - 7)

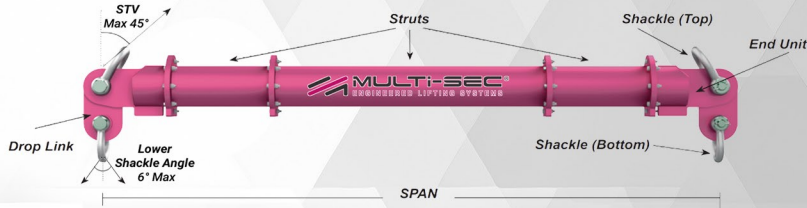
Durham Lifting will provide digital instructions of **Multi-170** Modular Spreader Beam Original Instructions for use that comply with Article 10(7) of the new Machinery Regulation.

- **Digital Format Access:** Instructions will be accessible online during the product's lifetime (at least 10 years) and will allow users to print or save them for future reference.
- **Paper Format Upon Request:** At the request of the purchaser, Durham Lifting will provide a paper format of the instructions, free of charge, within one month.

14. Language Requirements

In accordance with EHSR 4.4.1 and EN 13155, the Instructions will be provided in the official language(s) of the member state where the equipment is supplied.

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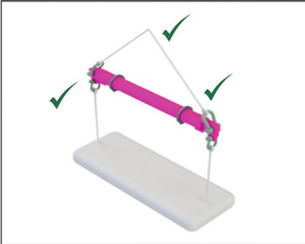


CAPACITY | SPAN | ANGLE

45°STV			30°STV	
SPAN	SWL (Tonnes)	Top Sling Minimum Length (Meters)	SWL (Tonnes)	Top Sling Minimum Length (Meters)
1.50	170	1.1	170	1.5
2.00	170	1.4	170	2.0
2.50	170	1.8	170	2.5
3.00	170	2.1	170	3.0
3.50	170	2.5	170	3.5
4.00	170	2.8	170	4.0
4.50	170	3.2	170	4.5
5.00	170	3.5	170	5.0
5.50	170	3.9	170	5.5
6.00	170	4.2	170	6.0
6.50	170	4.6	170	6.5
7.00	170	4.9	170	7.0
7.50	170	5.3	170	7.5
8.00	170	5.7	170	8.0
8.50	170	6.0	170	8.5
9.00	170	6.4	170	9.0
9.50	170	6.7	170	9.5
10.00	170	7.1	170	10.0
10.50	170	7.4	170	10.5
11.00	170	7.8	170	11.0
11.50	165	8.1	170	11.5
12.00	155	8.5	170	12.0
12.50	144	8.8	170	12.5
13.00	134	9.2	170	13.0
13.50	124	9.5	170	13.5
14.00	115	9.9	170	14.0
14.50	105	10.3	170	14.5
15.00	98	10.6	168	15.0
15.50	90	11.0	155	15.5
16.00	84	11.3	148	16.0
16.50	77	11.7	137	16.5
17.00	70	12.0	130	17.0
17.50	65	12.4	125	17.5
18.00	60	12.7	115	18.0
18.50	55	13.1	106	18.5
19.00	51	13.4	98	19.0
19.50	47	13.8	90	19.5

Table 1

Rigging a Spreader Beam



An example of a correct method of rigging a spreader beam.

COMPONENT SELECTION

Component	Size	Weight (kg)
Strut	0.25m	126
Strut	0.5m	153
Strut	0.75m	180
Strut	1.0m	207
Strut	2.0m	314
Strut	4.0m	529
Strut	6.0m	744
End Unit	0.75m	206
Drop Link	-	64
Shackle (Top) Heavy Duty Bow	120.0t	116
Shackle (Bottom) Standard Bow	85.0t	62

Table 2

ATTENTION: The sling angle (STV) must be determined prior to the lifting operation and is critical to the safe use of the system. This angle will affect the weight of the load that can be safely lifted. If the user is unsure of what sling angle has been determined for your system; or how or why this will affect the use of the multi-beam system, then another competent and trained person **MUST** be consulted before use.

Head Office

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www.multisec.co.uk

Multi-Sec® is a trademark of Durham Lifting Ltd