



**Lifting Equipment Engineers Association**

## **Guide to Documentation and Marking – Part 3 Lifting Machine Support Structures**

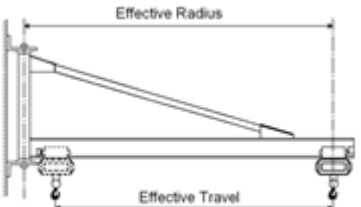
**Document reference LEEA 059-3 version 1 dated 31.07.14**

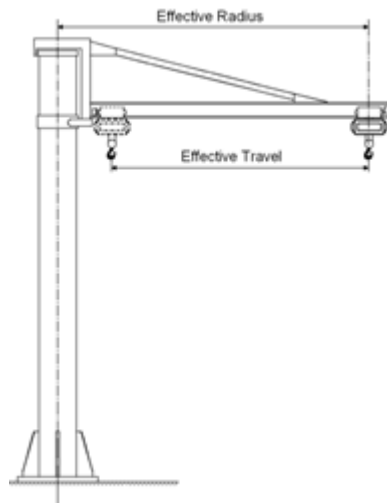
### **Introduction.**

This guide is aimed at manufacturers, distributors and users of lifting equipment within the European Economic Area. It has been developed as a quick reference guide to ensure that lifting equipment is supplied with the correct documentation and marking as required by current legislation, standards and best practice guidance.

LEEA 059-3 is one of a series of guides related to documentation and marking of a range of generic forms of lifting equipment as listed below:

- Part 1 – Manual Lifting Machines
- Part 2 – Powered Lifting Machines
- Part 3 – Lifting Machine Supporting Structures
- Part 4 – Lifting Accessories, Non-fixed load lifting attachments.
- Part 5 – Lifting Accessories, Slings
- Part 6 – General accessories and Components for slings.

<b>Item &amp; Standard</b>	<b>Required Information</b>
<p><b>Manual slewing Jib</b></p> <p>Designed for use where a full overhead crane may be impractical. Only becomes a crane when fitted with a suitable block, block and trolley or similar lifting appliance. Jibs can be pillar or wall mounted types.</p>  <p><b>Wall mounted Jib</b></p>	<p><b>Documents to be supplied in accordance with the relevant legislation &amp; relevant standard:</b></p> <ul style="list-style-type: none"> <li>- <b>Test certificate (guidance clause 5.4 BS 7333:1990)</b></li> <li>- <b>Manufacturer's instructions for use. (guidance LEEA SI.18.3)</b></li> </ul> <p><i>Note 1: if supplied without a hoist unit, as above documentation, the jib crane will have to be thoroughly examined following installation &amp; the fitting of a hoist. A report of thorough examination have to be issued for the assembly, refer to LEEA 080.2 for guidance.</i></p> <p><i>Note 2: if supplied complete with hoist unit, trolley &amp; electrics, then an EC Declaration of Conformity should be issued for the complete assembly along with instructions for use.</i></p> <p><i>Note 3: if the jib crane has a powered slew, then an EC declaration of Conformity should be issued for the jib. This is regardless of whether a hoist is fitted or not.</i></p> <p><b>Marking requirements:</b></p> <ul style="list-style-type: none"> <li>- <b>Business name and address of the manufacturer</b></li> <li>- <b>Identification number.</b></li> <li>- <b>Standard number and date, i.e. BS 7333:1990</b></li> <li>- <b>Classification designation.</b></li> <li>- <b>Year of manufacture</b></li> <li>- <b>Safe working load (marked on both sides of the jib)</b></li> </ul> <p><b>Information Which Should Be Exchanged Between The User &amp; Designer Or Supplier</b></p> <p>As the variation of design is wide and jib cranes can be made to suit the application within a broad range</p>



**Pillar Jib**

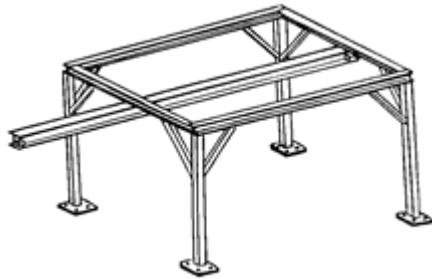
***BS 7333:1990 Slewing Jib  
Cranes***

***LEEA COPSULE – Section 9***

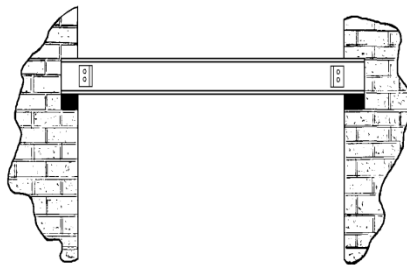
of standard components, the exchange of information should be as detailed as possible. Wherever possible, a detailed drawing of the intended location, showing any existing installations and possible obstructions such as trunking, ducting and suspended lighting, should be provided by the user. A visit by the supplier to survey the site should always be considered as this will minimise the necessary information exchange and reduce the chance of incorrect selection. The information exchange should therefore include the following:

1. Type and style of jib crane required ie wall/column mounted or free standing, overbraced or underbraced.
2. Details of the load to be lifted or SWL.
3. Type of lifting appliance to be used.
4. Effective radius and minimum radius, thereby giving the effective travel.
5. Height to underside of arm or effective height required.
6. Total headroom available for the installation.
7. Slewing angle required.
8. Classification of the crane. (See note 2)
9. If electric power feed equipment is to be supplied, the type required. This should be accompanied with details of the power supply available, including voltage, phase(s) and frequency.
10. If pneumatic power feed equipment is to be supplied, the type required. This should be accompanied with details of the air supply available, including pressure and rate of delivery.
11. If free standing jib crane:
  - (a) Size of support column.
  - (b) Fixing details, bolt type, grade and size and PCD.
  - (c) Minimum foundation size (length, breadth and depth).
  - (d) Downward reaction.
  - (e) Turning moment acting on foundation at effective radius.
12. If wall or column mounting jib crane:
  - (a) Type of bracket and fixing details.
  - (b) Maximum reaction on top bracket.
  - (c) Maximum reaction on bottom bracket.
13. Environmental conditions, eg indoor or outdoor, use within corrosive atmosphere, use in hazardous areas, use with dangerous loads etc.
14. Details of finish, eg any special paint or protective finish required, taking cognisance of BS 466 with

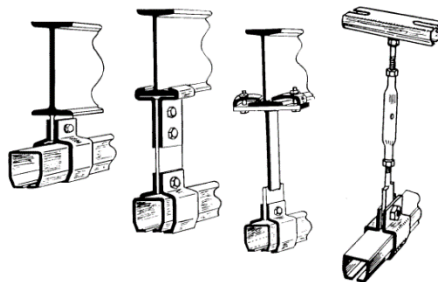
	<p>regard to the use of distinctive colours.</p> <p>15. Any special conditions or technical requirements, eg flame proofed.</p> <p>16. Full installation and maintenance instructions.</p> <p><b>Notes:</b></p> <p>1. Items 11 and 12 are given by the supplier to enable the qualified engineer referred to in 10.4.2(1) and (2) to confirm the suitability of fixings and complete the foundation details.</p> <p>2. BS 7333 contains a classification system. If the classification is not known, then sufficient information must be given for the supplier to determine the classification. The following is required:</p> <p>(1) Utilization</p> <p>(a) Number of lifts per hour.</p> <p>(b) Operating hours per day.</p> <p>(c) Operating hours per month.</p> <p>(2) Loadings</p> <p>(a) Number of lifts at full load.</p> <p>(b) Number of lifts at 75% of full load.</p> <p>(c) Number of lifts at 50% of full load.</p> <p>(d) Number of lifts at 25% of full load.</p> <p>(3) Weight of lifting appliance if known.</p> <p>(4) Intended design life in years.</p> <p>Where insufficient detailed information is available, the user should seek the suppliers advice and recommendations as to the most suitable crane. Any restrictions or recommendations on the use must be adhered to.</p>
<p><b>Runways</b></p> <p>Generally manufactured from rolled steel sections or special track section systems. Designed to provide a track upon which a lifting appliance is fitted to</p>	<p><b>Documents to be supplied in accordance with the relevant legislation &amp; relevant standard:</b></p> <ul style="list-style-type: none"> <li>- <b>Certificate of test &amp; Thorough Examination. (guidance see below, LOLER 1998 and BS 2853:2011 clause 10.1)</b></li> <li>- <b>Manufacturer's instructions for use. (Guidance LEEA SI.19.3)</b></li> </ul> <p><b>Certificate of test and thorough examination.</b></p> <p>The certificate of test and through examination should contain the following minimal information:</p>



**Free Standing Structure**



**Building Supported Runway**



**Special Runway Sections**

- The date on which the proof load was applied and the thorough examination made.
- Date of the report.
- Report number.
- Name and address of employer for whom the thorough examination was made.
- Address of the premises at which the examination was made.
- Description and identification of the equipment which must include its distinguishing number or mark and grades of steel, its size and length.
- The position and magnitude of the deflections obtained during the traversing of the test at SWL and the proof load.
- The maximum safe working load.
- That the runway beam conforms in all respects to BS 2853:2011
- Date of manufacture.
- Reason for the examination, i.e. after first installation and before being used for the first time.
- Particulars of any defect found during the examination and affecting the maximum safe working load and the particulars of the steps taken to remedy such defect.
- A statement stating that the equipment is safe to operate or not
- A statement indicating clearly that it applies to the runway beam only and not to any trolley or lifting appliance that may be fitted.
- Date of next thorough examination.
- Name, signature and qualifications of the person making the report.
- Name and signature of person authenticating the report
- Name and address of the employer of persons making and authenticating this report.


#### **Marking requirements:**

- **Business name and address of the manufacturer.**
- **Identification Number**
- **Safe working load, including any limiting conditions such as reduced SWL on cantilever.**
- **Year of manufacture.**
- **Maximum hoisting speed for powered hoists or else the words 'Manual Hoist Only'**

#### **Information Which Should Be Exchanged Between The User & Designer Or Supplier**

In the case of a dedicated runway, the exchange of information should be as detailed as possible. Where the runway is to be used for miscellaneous lifting duties, precise details of the load to be lifted are not always available. In these circumstances, only a general specification can be given & this should include

<p><b>BS EN 1993-1-6:2007</b></p> <p><b>BS 2853:2011</b></p> <p><b>LEEA COPSULE – Section 10</b></p>	<p>the following information:</p> <ol style="list-style-type: none"> <li>1. Type &amp; style of runway, eg free standing, built into the building or suspended from the building structure, including the track section, suspension &amp; fixing details &amp; details of any cantilevered jib sections. Normally a layout drawing will be provided.</li> <li>2. Type of appliance &amp; trolley to be used, eg manual or power operated, including the lifting medium, eg wire rope or chain. In the case of power operated equipment, this should include details of the power source, isolation &amp; supply system etc &amp; voltage, phase(s) &amp; frequency or pressure &amp; delivery rate. If more than one appliance is to be fitted, details of the number permitted in a single span or the minimum load centres at which they are to operate.</li> <li>3. SWL or maximum load to be lifted. In the case of a dedicated runway, full details of the load including weight &amp; dimensions &amp; the slinging method to be used.</li> <li>4. Details of the supporting structure &amp;/or building to which the runway is to be installed. This should include details of any obstructions which may affect the design or operation of the runway.</li> <li>5. If the runway is to be attached to the building or an existing structure, details of attachment brackets &amp; any additional supporting gantries, columns etc that may be necessary &amp; the position of any stiffening brace members. This should include details of the resultant loads at the attachment points &amp; column bases.</li> <li>6. If the runway is to be free standing, details of the supporting structure, including the size &amp; position of supporting gantries, columns &amp; foundation base plates etc. This should include details of the loads imposed on the building floor or foundation.</li> <li>7. Minimum headroom required or height to underside of runway. In the case of free standing structures, the overall height should also be given.</li> <li>8. Effective lifting height of the appliance.</li> <li>9. Environmental conditions, eg indoor or outdoor, use within corrosive atmosphere, use in hazardous area, use with dangerous loads etc.</li> <li>10. Details of finish, eg special painted or protective finish.</li> <li>11. Any special conditions or technical requirements, eg flame proofed.</li> <li>12. Details of access to the location of the proposed runway for erection &amp; testing purposes. Full installation &amp; maintenance instructions.</li> </ol> <p>This usually calls for an initial site visit by the supplier to survey the area &amp; assess the practicality of the</p>
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	<p>project. In the majority of cases, this type of installation will be carried out by the supplier who will require the structural engineer's confirmation of the acceptability of the proposed attachment &amp;/or foundation details. The information exchanged should therefore include sufficient details to enable full loading calculations to be made.</p>
<p><b>Mobile Gantries</b></p> <p>Generally designed as a temporary runway structure and used in conjunction with a hand or powered lifting appliance. Not generally intended for movement under load.</p>  <p><b>Fixed frame mobile gantry</b></p>	<p><b>Documents to be supplied in accordance with the relevant legislation &amp; relevant standard:</b></p> <ul style="list-style-type: none"> <li>- <b>Certificate of test &amp; Thorough Examination. (guidance see below and LOLER 1998 and BS 2853:2011 clause 10.1)</b></li> <li>- <b>Manufacturer's instructions for use. (Guidance LEEA SI.20.3)</b></li> </ul> <p><b>Certificate of test and thorough examination.</b></p> <p>The certificate of test and thorough examination should contain the following minimal information:</p> <ul style="list-style-type: none"> <li>- The date on which the proof load was applied and the thorough examination made.</li> <li>- Date of the report.</li> <li>- Report number.</li> <li>- Name and address of employer for whom the thorough examination was made.</li> <li>- Address of the premises at which the examination was made.</li> <li>- Description and identification of the equipment which must include its distinguishing number or mark and grades of steel, its size and length.</li> <li>- The position and magnitude of the deflections obtained during the traversing of the test at SWL and the proof load.</li> <li>- The maximum safe working load.</li> <li>- That the runway beam conforms in all respects to BS 2853:2011</li> <li>- Date of manufacture.</li> <li>- Reason for the examination, i.e. after first installation and before being used for the first time.</li> <li>- Particulars of any defect found during the examination and affecting the maximum safe working load and the particulars of the steps taken to remedy such defect.</li> <li>- A statement stating that the equipment is safe to operate or not</li> <li>- A statement indicating clearly that it applies to the runway beam only and not to any trolley or lifting appliance that may be fitted.</li> </ul>



**Adjustable Height Mobile  
gantry**

**BS EN 1993-6  
BS 2853:2011**

**LEEA COPSULE – Section 11**

**BS EN 1993-6  
BS 2853:2011**

**LEEA COPSULE – Section 11**

- Date of next thorough examination.
- Name, signature and qualifications of the person making the report.
- Name and signature of person authenticating the report
- Name and address of the employer of persons making and authenticating this report.

**Marking requirements:**

- **Business name and address of the manufacturer.**
- **Serial number.**
- **Safe working load, including any limiting conditions.**
- **Year of manufacture.**
- **Maximum hoisting speed for powered hoists or else the words ‘Manual Hoist Only’**

*Although not required by legislation, new Gantries will usually be issued with a manufacturer’s record of proof load testing in addition to, although possibly combined with, the manufacturers certificate. This document forms an important part of the record of the clamp. It should be retained & cross referenced to the gantry’s historical records for inspection by the Competent Person or HSE.*

**Information Which Should Be Exchanged Between The User & Designer Or Supplier**

Mobile gantries are readily available in a wide range of designs, sizes & duty classifications, & may of course be purpose built to suit a particular application or include various special features. The exchange of information should be as detailed as possible. As by their nature mobile gantries are often moved from site to site & used to handle a wide variety of loads, precise details are not always available. In these cases, only a general specification can be

given. In many cases, the requirements will be basic & the information easily exchanged. Where special site conditions apply or where special circumstances exist, a visit by the supplier to survey the site should be considered as this will minimize the necessary exchange of information. In all cases, the following minimum information should be exchanged.

1. Safe working load. Where possible, full details of the load to be lifted, including dimensions & weight.



	<ol style="list-style-type: none"> <li>2. Type of mobile gantry, (eg goalpost, adjustable, self-erecting), including maximum wheel &amp;/or jack loadings.</li> <li>3. Duty type, ie heavy duty or light duty.</li> <li>4. Details of working dimensions, eg height, span, effective length etc, including any necessary clearances. This information should also include the details of any obstructions which may affect the design of the structure. Outline drawings may be used for this purpose.</li> <li>5. Details of bracing, eg internal.</li> <li>6. Type of lifting appliance to be used, including its connecting device.</li> <li>7. If electric power feed equipment is to be supplied, the type required, which must include provision of earth leads. This should be accompanied by details of the power supply available, including voltage, phase(s), frequency &amp; details of the method of connection to the power source.</li> <li>8. If pneumatic power feed equipment is to be supplied, the type required. This should be accompanied with details of the air supply available, including pressure, rate of delivery &amp; method of connection to the air supply.</li> <li>9. Type of castors, including details of the floor conditions &amp; any other factors affecting the choice of type.</li> <li>10. If jacks are required, the type &amp; details of permissible loading duties.</li> <li>11. If wheel brakes &amp; /or rotational locks are required, the type.</li> <li>12. Environmental conditions, eg indoor or outdoor use, use with corrosive atmosphere, use in hazardous areas, use with dangerous loads.</li> <li>13. Details of finish, including any special paint or protective finish required taking account of BS 466 with regard to the use of distinctive colours.</li> <li>14. Weight of the structure.</li> <li>15. Any special features or technical requirements, including if the gantry is to be moved under load.</li> <li>16. Full erection, operational and maintenance instructions.</li> </ol>
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