



KNIGHT
ISO9001:2000 / ISO14001:2004 Certified

Global
Ergonomic Handling Solutions

Quality Management System certified to:

- **ISO 9001-2000**
- *Ford Motor Company Q-1 2002*

Environmental Management System certified to:

- **ISO14001**

All rail systems and lifting devices are designed and manufactured to (as applicable):

- **ASME B30.20** - *Below the Hook Lifting Devices*
- **ASME BTH-1** - *Design of Below the Hook Lifting Devices*
- **ASME B30.10** - *Hooks*
- **ASME B30.11** - *Monorails and Underhung Cranes*
- **ASME B30.16** - *Overhead Hoists (Underhung)*
- **ASME B30.26** - *Safety Standard for Rigging Hardware*
- **ANSI MH 27.2** - *Enclosed Track Underhung Crane and Monorail Systems*
- **ANSI MH29.1** – *Safety Requirements for Industrial Scissors Lifts*
- **OSHA CFR Part 1910.179** - *Overhead and Gantry Cranes*
- **SAE M-110.2** – *Reliability and Maintainability Guideline for Manufacturing Machinery and Equipment*
- **CSA B167-96** – *Safety Standard for Maintenance. and Inspection of Overhead Cranes, Gantry Cranes Monorails, Hoists and Trolleys (Reaffirmed 2002)*
- **CSA C22.2 No.33-M1984** – *Construction and Test of Electric Cranes and Hoists (Reaffirmed 2004)*

All load and ergonomic testing is conducted using equipment complying with the requirements of:

- **ASTM E4** - *Force Verification Testing Machines*

All welders and welding processes are certified to:

- **ANSI/AWS D1.1** - *Structural Welding Code - Steel*
- **ANSI/AWS D1.6** - *Structural Welding Code - Stainless Steel*
- **AWS D1.2/D1.2M** - *Structural Welding Code - Aluminum*

All Magnetic Particle (**ASTM E109-08**) and Fluorescent Penetrant (**ASTM E165-02**) inspectors are certified to the requirements of:

- **ASNT Recommended Practice No. SNT TC-1A**

Knight Industries follows Material Handling Industry standards in determining the capacity ratings for enclosed track overhead rail systems. Each component (e.g., rail, hangers, trolleys, etc.) is individually tested to establish its ultimate failure point. From this number, a safe working load (based on a 5:1 safety factor) is then assigned to the component. Each rail span length is then tested to determine the maximum *single point* load required to achieve a predetermined deflection based on a 1:350 ratio (1" of deflection for each 350" of length). The recommended rated capacity chart is based upon single point loading for the listed spans.

In addition, Knight Industries has available to its designers, estimators and sales force a series of rail system planning aids such as general capacity charts and the Knight Industries Rail System Algorithms[®] for:

- monorail systems
- single bridge and runway systems
- dual bridge and runway systems
- telescoping rail and bridge systems
- floor-mounted structural steel bridge and runway systems
- free-standing jib cranes

Acronyms:

ANSI – American National Standards Institute
ASNT – American Society for Nondestructive Testing
AWS – American Welding Society
SAE – Society of Automotive Engineers

ASME – American Society of Mechanical Engineers
ASTM – American Society for Testing and Materials
OSHA – Occupational Safety and Health Administration
CSA – Canadian Standards Association