

Overhead Cranes

Bridge Cranes, Gantry Cranes
Monorails & Custom Engineered Systems



NORTH AMERICAN INDUSTRIES, INC.

*North American Industries is a proud member of:
Material Handling Industry of America & Crane Manufacturers Association of America*

We Don't Just Sell Cranes; We Build Solutions

Table of Contents

What We Can Do For You.....	1
Why Choose North American Industries?.....	2-4
Bridge Cranes.....	5
Types of Bridge Cranes.....	6
Gantry Cranes.....	7-8
Monorails.....	9
Custom Cranes.....	10-11
Runway Structures.....	12
Component Cranes & Kits.....	13
Installation Options.....	14
Low Maintenance Design.....	15
Quality Parts.....	16
Quality Parts & Technology.....	17
Parts Division.....	18
Crane Repair, Inspection, & Safety Partners (CRISP).....	19
Crane Refurbishment.....	20
Industries Served.....	20
Photographs of Our Cranes.....	21

What We Can Do For You

North American Industries is a leading manufacturer of overhead lifting systems. With sales worldwide, service and repair centers nationwide, and experience in a wide variety of industries, we have the expertise to design, produce, install and service the cranes you need.

Capacities Up to 150 Tons and Spans Up to 150 Feet

Bridge Cranes

Gantry Cranes

Monorails

**Custom Engineered
Systems**

North American Industries also offers crane inspections, maintenance, training, repairs, load tests, and lists of recommended spare parts. We can provide replacement parts for cranes from any manufacturer. In short, we can help you with almost any crane need.



We pride ourselves on having a long list of satisfied customers. The large amount of repeat business we receive is a strong indicator of our track record and the level of performance you can expect from North American Industries.

Why Choose North American Industries?

1. Solutions Customized to Your Application & Requirements

North American Industries partners with you in determining the perfect crane type, design, and features for your industry and application. Our engineers provide you with a custom design to meet your individual specifications and dimensional constraints.

You should partner with North American Industries for special lifting needs, to achieve maximum lift, or to overcome difficulties with a minimum clearance.



Regardless of the application, material handling solutions from North American Industries can maximize your efficiency and reduce your overall costs because they are developed to fit your individual needs.

Even if you are looking for a standard crane...

With all our experience fabricating complex custom cranes, North American Industries can easily design most standard configurations at competitive prices. You should also consider that sometimes just a small modification of a standard configuration can make a great improvement on the crane's performance for a particular job.



2. Engineering Capabilities

North American Industries' engineering expertise is well respected in the industry. As a result, we are often chosen for projects that require difficult or unusual crane designs. Our team of mechanical, structural and electrical engineers routinely design to unique specifications, so we are not intimidated by new challenges. For example, we can design cranes for:

- **High Duty Cycles**
- **Tight Dimensional Constraints** (low ceilings or narrow clearances)
- **Precise Placement**
- **Long, Bulky or Awkward loads**
- **Extreme Weather Conditions**
- **Hazardous or Special Environments**
- **Systems with Multiple Cranes Working Together**

Our engineers have experience designing for a wide variety of applications. Industry specific references are available upon request.

*We have over 35 years of experience in the industry.
Each year our factory produces over 500 cranes.*

3. Effortless Communication

If you choose to work with us, we will assign a project manager to your account. This person will be your point of contact to drive your project forward and personally handle all of your needs. From beginning to end, your project manager will carefully oversee the design, fabrication, and installation of your project.

Why Choose North American Industries?

4. What Does Our Membership in the CMAA Mean for Customers?

The CMAA (Crane Manufacturers Association of America) is an independent trade association founded in 1955. Companies striving for admission must undergo a thorough application and review process. Member companies represent leaders in the overhead crane industry.

CMAA member companies are concerned, conscientious manufacturers who meet regularly to review and revise standards for the mechanical, structural and electrical design of overhead cranes. CMAA members also formulate guidelines for the proper use, operation and maintenance of those cranes.

As a member of the CMAA, North American Industries, Inc.:

- meets high standards in engineering design, production, and related operations
- maintains a position of technological advancement



5. A Partnership that Offers You Support

The North American Industries sales team and engineers spend the time to understand your needs. In many cases, North American Industries provides on-site consulting. The sales team and engineers can make recommendations about the most suitable crane type and options for your individual application. For example, you may have to decide between electric chain or wire rope hoists. After understanding your individual situation and crane use, our sales engineers will quote sensible options from which to choose.

North American Industries provides benefits to our customers for as long as your own our cranes...

- warranties
- service and repair centers nationwide
- customer service
- 24/7 toll free phone assistance
- operation manuals
- upgrade and replacement parts

We also offer a vast array of additional services such as inspection, training, maintenance and load tests. These services are explained in more detail under "CRISP (Crane Repair, Inspection, & Safety Partners)."

Why Choose North American Industries?

6. Class “D” Heavy Duty Cranes Designed for Twice As Much Work

Compared to class “C” cranes, your class “D” cranes from North American Industries are designed to perform twice as much work in their lifetimes. We only build cranes with a rating of class “D” or higher. The Crane Manufacturers Association of America code book specifies:

- Class “C” is for Moderate Duty
- Class “D” is for Heavy Duty

There are major design and component differences between the two classes which provide class “D” cranes with longer life. Compared to a class “C” crane of a given lifting capacity, a class “D” crane of the same capacity is designed to:

1. Make twice as many lifts over its lifetime
2. Lift the maximum rated load 30% more often

Typical Double Girder Bridge Crane		
Specification	Moderate Duty Class C	Heavy Duty Class D
Hoist Duty Cycle	H3 or H4	H4 only
Minimum Life Expectancy of Bearings	5,000 hrs	10,000 hrs
Trolley & End Truck Motor On-time/hr.	30 min	30-60 min (we use 60 min)

- North American Industries’ end truck and trolley motors have Class “F” insulation, which allows the motor to run hot and still operate properly. Use of Class “B” insulation would cause the motor to burn out at temperatures that our Class “F” motors can easily withstand.
- The wheels, gears, axles, motors and gear boxes on a Class “D” crane from North American Industries are physically bigger and stronger than those used on Class “C” cranes.



Class C Moderate Service (CMAA Definition) - the crane will handle loads which average 50% of the rated capacity with 5 to 10 lifts per hour, averaging 15 feet, not over 50% of the lifts at rated capacity.

Class D Heavy Service (CMAA Definition) - loads approaching 50% of the rated capacity will be handled constantly during the working period. High speeds are desirable for this type of service with 10 to 20 lifts per hour averaging 15 feet, not over 65% of the lifts at rated capacity.

Quality Parts, Quality Design

Reliability is crucial as a quality material handling system will result in higher efficiency and a good return on investment. It’s important to think long-term. Our cranes will last decades because they are designed to meet Class “D” or Class “E” standards. Even standard jobs require quality parts and engineering.

Superior parts and design also mean that your equipment will be low maintenance, therefore, saving money and reducing downtime. See the “Low Maintenance” and “Quality Parts” pages for more detailed information on the quality construction of our cranes and the features available for them.

Bridge Cranes

This type of crane runs on an elevated runway structure along the length of a factory and provides three axis of hook motion (X, Y, and Z). Both single and double girder bridge designs allow very precise hook positioning and gentle load placement.

Advantages of a Bridge Crane:

- greatest flexibility for hook coverage and control over the load
- fewest number of physical obstructions on your factory floor

Double Girder Versus Single Girder:

Based on the CMAA (Crane Manufacturers Association of America) specifications, both single and double girder cranes are equally rigid, strong, and durable. This is because single girder cranes use much stronger cross girders than double girder cranes, and single girder cranes have lateral bracing. The real difference is that double girder cranes typically provide better hook height because the hoist is positioned between the girders, typically providing an additional 2 to 3 feet of lift.

Comparison to Forklifts:

Less Product Damage - Forklifts often cause more damage to the product than overhead cranes. This occurs especially when forklifts travel over uneven paths and product must be transported relatively long distances.

Cost Effective Use of Space - Forklifts can only stack product as high as the mast will elevate. In comparison, a crane allows for greater hook height and more efficient use of space. Therefore overhead cranes can eliminate costs associated with a larger factory or yard for storage.

Less Labor - One crane system with one operator can replace multiple forklifts proving cranes to be more efficient. Costs are reduced further because fewer personnel are required.

Less Maintenance - Heavy use of a large number of forklifts translates to high maintenance costs. Typically, forklifts need replacing after several years of this type of wear. Class "D" cranes from North American Industries require very little maintenance and are rated for heavy duty usage. Our cranes are also guaranteed for two years and are designed to last for decades.



Types of Bridge Cranes

Top Running:

An ASCE rail or square bar is installed on top of the runway beams. The wheels ride on the rail rather than directly on the runway beam.



Underhung:

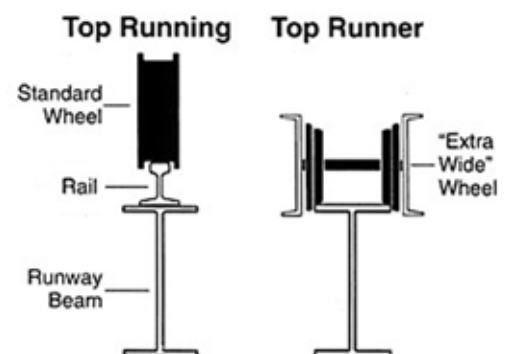
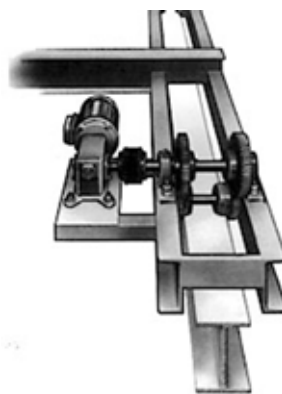
The end trucks of the crane ride on the bottom flange of the runway beam. Typically, an underhung runway is suspended from the roof of the building and is available only on lighter capacities, usually 10 tons or less.



Top Runner:

By incorporating a pair of single flange wheels, the crane can ride directly on top of our runway beam, without using a costly crane rail. A top runner, as opposed to a top running crane can provide substantial savings in eliminating the need for both purchase and installation of the crane rail. Top runner cranes are just as durable and long lasting; they are built to the same CMAA Class D heavy duty standards for decades of use.

Due to the loading applied to the flanges of the runway beam, this design is limited to lighter capacities, typically 10 tons or less.



Gantry Cranes

An Increasingly Popular Alternative to Overhead Bridge Cranes

Gantry cranes have become a widely accepted alternative to overhead bridge cranes. This type of crane is similar to the bridge crane except that it runs on a track at the floor or ground level rather than an elevated runway. The bridge of the gantry is supported by a pair of rigid steel legs which are carried by a pair of end trucks along the floor level runway.

- can be used either indoors or outside
- available in spans to 150 feet and capacities to 150 tons

Benefits of a Gantry

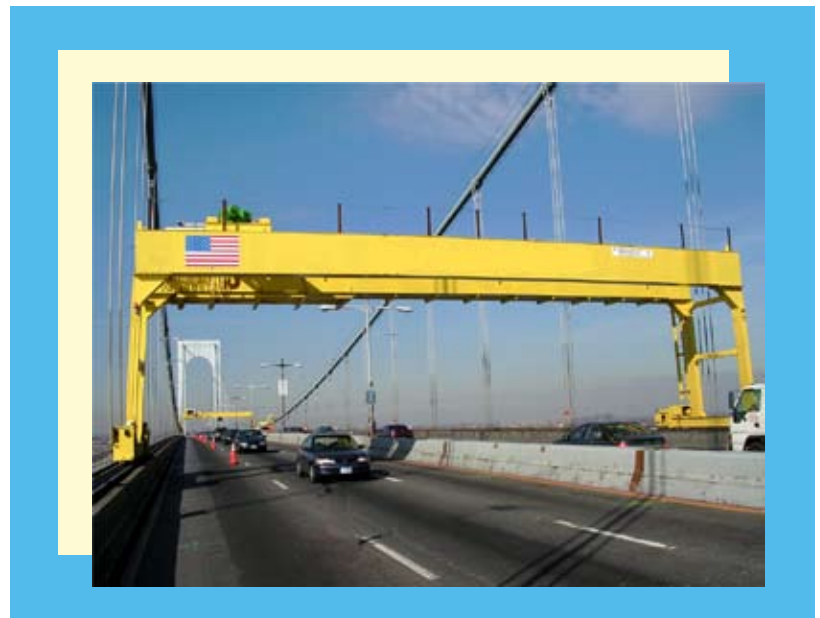
Space Saving - Can operate in a work-zone of limited area occupying less work space

Durable - Built to heavy duty Class D specifications, which meet the demands of high duty cycles

Adaptive - Can be custom-engineered to power through and navigate inclines

Less Expensive - May cost less than a bridge crane

Proven Effectiveness - Have proven themselves in applications ranging from New York City's major bridge projects to the tunnel-laying of Baltimore's subway system



North American Industries Specialized Gantries:

Single-Leg Gantry

A combination of the bridge crane and gantry crane. One leg rides on the floor, while the other side's end truck rides on an elevated runway beam.

Unique Trackless Gantry

Unlike most gantry cranes, which run on ASCE rails or an inverted angle iron, North American Industries offers gantry cranes that are specially designed to allow one leg to ride directly on a smooth concrete floor. Thus, the cost and travel barriers normally associated with gantry tracks are eliminated. For applications where a smooth, clean floor is not possible, or in high capacities, our gantry cranes can ride on a leveled, 1/2" high steel plate. This floor-mounted plate provides an alternative to a 4" high rail track and still permits unobstructed access to the cranes' work area by forklifts, work carts and personnel.



Gantry Cranes

A Gantry Crane May Save You Money

Because gantry cranes ride on the ground rather than on overhead runways, they don't require a runway structure and they may not require concrete foundations. A typical gantry crane installation is relatively fast and simple.

Depending on the environment and application, gantry cranes can sometimes provide the same material handling capabilities as a comparable bridge crane system, but with a significant cost savings.

For a 10 ton 60' span Single Girder crane with a 200' Runway 25' high:		
	Bridge Crane	Gantry Crane
Crane	\$29,280	\$40,240
Runway	\$29,110	N/A
Installation	\$22,915	\$19,100
Crane Rail	ASCE Rail: \$2,900	Track: \$6,880
TOTAL:	\$84,205	\$66,220
Cost Difference:	\$17,985	

This chart shows a typical example of the cost savings in purchasing a gantry crane instead of an overhead bridge crane. Please note that this price workup is only meant to be a demonstrative example of one instance where a gantry crane is advantageous for the customer. Contact our sales department for more information on whether a gantry crane is the best option for your specific needs.

However, not all Gantry Cranes cost less than their bridge crane counterparts. A gantry crane is a more cost-effective alternative if:

1. You are currently in a leased facility and do not want to make a major investment in a bridge crane runway structure.
2. You may be planning to move the crane in the near future and want to take your entire investment with you.
3. You require a crane system that moves loads between the interior and exterior of your building.
4. You need long runway structures of over 150 feet where the runway steel and foundation costs are very high.



Cost Effective Alternative to Lattice Boom and Hydraulic Cranes

Where once highway and heavy construction contractors would almost exclusively use towers and crawlers for job site lifts, they are now increasingly turning to overhead cranes for bridge, subway, and tunnel construction and repair. Gantry cranes....

- can be resold for a high return or converted for the next application
- weigh less, placing smaller loads on soil and structures in the work area
- can operate on an active bridge deck
- can be powered by diesel generators and manipulated by radio control, requiring fewer operators and laborers across an extended workday, resulting in lower operational costs and safer material handling



Monorails

With a monorail system, the hoist and trolley run on a stationary beam. Because of their inherent speed and efficiency, monorail systems are an effective method of moving and positioning loads to specific locations. They are available in capacities up to 150 tons.

Types of Monorails:

Our engineering staff can design complex monorail systems including curved tracks, multiple switches and interlocks which permit monorails to interface with other material handling systems. Highly automated monorail systems, controlled by computers or programmable logic controllers, are also available.

We design and build supporting structures — both ceiling-suspended and floor-mounted self-supporting. This allows us to provide you with the most cost-competitive monorail system for your facility.



Common Applications:

Monorails are often used for repetitive production jobs, such as paint booths and water treatment plants. Monorails are best used in applications where materials are to be transported from one fixed point to another fixed location, or through a process; e.g., painting, blasting, delivering hot metal from the furnace to a fixed pouring location. The monorail allows two axes of hook movement: up/down and forward/back along the monorail beam. There is no lateral motion under the monorail beam.

If you need more freedom of movement than a monorail can provide, you may want to consider a bridge crane, gantry crane, or custom crane. North American Industries sales engineers can help you determine the most appropriate crane type for your application.



Custom Cranes

Sometimes a Standard Crane Isn't the Best Solution

Don't settle for a standard crane if it doesn't fit your application. At North American Industries, our engineers take great pride in their ability to provide customers with the crane that best meets the requirements of their industry and purpose. North American Industries builds all cranes to the customer's specifications. Sometimes those specifications result in a rather standard configuration, but other times, we create an innovative and unusual design to best suit the needs of the customer.

When you request a crane quote, we always ask your application because at North American Industries, it is standard practice to make sure you get the most appropriate and cost effective crane type and features for your individual needs.

Our Qualifications for Building Customized Cranes

We have hands-on experience in very demanding environments requiring special material handling. For example, we can design cranes for

- high duty cycles
- tight dimensional constraints
- precise placement
- long, bulky, or awkward loads
- extreme weather conditions
- maximizing lift height
- hazardous or special environments
- systems with multiple cranes working together

In addition, we have met the unique specifications of government and federal agencies.



If you have a basic idea or concept but don't know who can finalize it...

Many customers come to us with a basic concept for their handling system: they know what they need and how it should work, but not how to make it happen. Our designs provide the structural, mechanical and electrical calculations required to transform their concepts into a finished product. We can do the same for you, whether it's troubleshooting a design or fabricating and installing a custom crane system.

If you want a highly specialized, efficient system dedicated to one task...

Many of our customers use specially designed cranes to perform repetitive, high-duty-cycle tasks in the manufacturing process. If you have a production application which requires a crane to perform one function very efficiently, very fast, and with a high degree of automation, call us to discuss your application. This is where our custom designed cranes can make a difference in your business.

Even if you are looking for a standard crane...

Many times it takes only a small modification of a standard configuration to make a great improvement on the crane's utility for a particular job.

To request a quote, please call [800-847-8470](tel:800-847-8470) or email info@naicranes.com.

Custom Cranes

Example: Radial Crane

North American Industries' engineers designed a 5 ton custom radial crane for one of our customers with one side riding on rail around a center pole and the other side riding on a circular runway. Because the existing building was circular, the customer wanted a lifting system with a hoist that could cover the cylindrical area of their facility, and lift loads up to 30 feet high.

A standard bridge or gantry crane would not have been able to meet the needs of the customer, so North American Industries designed a custom solution.



Example: Cranes for Bridge Work & Construction

North American Industries has experience designing custom cranes to fit on bridges and elevated highways to handle the materials necessary for repairs and construction projects.

North American Industries has designed and built cranes for work on the following bridges in NY: Bronx Whitestone Bridge, the Queens Boulevard Bridge, the Williamsburg Bridge, and the Triborough Bridge. North American Industries also designed and manufactured a portable crane for work on several bridges on the Ohio River, and the crane for the I-81 work in Harrisburg, PA.

There was a large amount of customizing involved in the crane designs for each of these projects. Standard cranes and "off the shelf" material handling equipment certainly would not suffice. In designing, North American Industries had to consider weather conditions, inclines, power source, and limited area among other things.



To request a quote, please call 800-847-8470
or email info@naicranes.com.

Runway Structures

The Runway Design

North American Industries customers receive the industries' most cost effective runway structures because we understand both cranes and runways. We know the crane and runway must both work properly in conjunction to ensure smooth operation of the lifting system. Some crane companies don't have the engineering capabilities to design runways. At North American Industries, we believe that it's logical that the engineers who design your crane also design your runway structure. We take into consideration building structural analysis, seismic calculations, foundation design, and dimensional constraints. Our structural and mechanical engineers utilize CAD systems to create your runway designs in strict accordance with:

- CMAA (Crane Manufacturers Association of America)
- AISC (American Institute of Steel Construction)
- UBC (Uniform Building Code)

Fabrication

The same rugged quality that goes into our cranes is applied to our runway structures. In many cases, the same craftsman and welders who fabricate your crane also produce your runway structure.

Installation

A correctly installed runway structure insures you a smooth running crane system. Our installers are runway experts. Their vast experience has been established over many years and thousands of installations. They have developed unique skills and special tools that make installations quick and easy.



Technical Tip - Runways Without Foundations

Problem: install new runway system in a working factory, without causing major impact on ongoing operations.

North American Industries Solution: We studied the design of large load-bearing concrete foundations under many runways. After careful engineering analysis, we developed a system that distributes loads of the crane without having to dig up the factory floor, move machinery, and disrupt workflow. This is achieved by changing the runway design to distribute loads placed on the floor.

Capacity	Column Height	Foundation
10 Tons	25 Feet	None
15 Tons	22 Feet	None
20 Tons	20 Feet	None

*Exact calculations are done by North American Industries for an accurate assessment of each facility. In some cases, however, floors or system designs cannot meet all code requirements without installing foundations.

If you have the skill to fabricate and install the runway structure, we can supply you:

runway design, fabrication drawings, foundation sizes, and assembly instructions. All of our designs are available with the engineering calculations required to obtain local building permits or professional engineer certification.

If you require a long runway... we suggest you also evaluate a gantry crane - it may be a less expensive and more appropriate solution.

Component Cranes & Kits

1. Complete Crane

This option is just as it sounds. We build the whole crane.

It typically consists of hoist, trolley, end trucks, electrification systems, controls, and cross girder(s). We fully assemble, wire, and test the crane's bridge assembly and its electrical components in our factory. (The crane may be disassembled for shipping purposes.)

2. Component Crane

The hoist, trolley, end trucks, electrification systems, and controls are shipped fully assembled, tested, and painted. Trolleys and underhung end trucks are preset to your exact flange adjustment. We provide most of the assembly required to build a crane when you purchase a component package. All you provide is the structural steel for the cross girder(s) and a few inexpensive small angles and steel plates. Our component crane includes all the remaining parts needed for assembly. We can also provide:

- Detailed Assembly Instructions
- Cross Girder Specifications so you can purchase the correct beam from a local steel supplier
- Detailed Runway Design Drawings and specifications to allow you or a local contractor to fabricate and install your runways
- Comprehensive Installation Instructions in easy to follow steps
- 24/7 Toll Free Help Line so your North American Industries project manager can provide quick responses to your assembly or installation questions. We are available after hours if you need to discuss your project with us right away. We understand the importance of effortless communication and excellent customer relationships.

You will need to understand basic crane installation concepts if you choose the component crane option. You should be able to follow our assembly instructions if you have basic electrical and metal fabrication skills, such as welding or bolting parts together. If questions do arise, you can reach your North American Industries project manager on our 24/7 toll free help line.

You save on shipping costs as well as final assembly costs.



3. The Kit Crane

This option reduces your costs even further if you want to do more of the assembly. You get the end trucks and trolley in parts form—such as wheels, axles, bearings, gears, and motors. We provide all machined parts, all control panels fully wired, and all purchased components, except the simple structural steel shapes. You need experience in simple machine assembly, and you will need the machinery to cut, burn, and drill steel. As with the Component crane, North American Industries provides complete drawings, detailed instructions, and toll-free telephone support to make your work easier. You can reduce your costs and still get a high quality crane.

Installation Options

North American Industries normally performs load tests prior to start up, tuning the crane for peak operating efficiency, conducting operator training and providing instruction on basic maintenance procedures.

1. We Do a Turnkey Installation

Our expert staff does everything. We have the tools and experience to make the job completely hassle-free. Note: Typically, we do not provide test weights, but arrangements can usually be made for special requests.

2. You Provide Some or All of the Manpower

This option will reduce your costs as compared to a turnkey installation.

We provide a working supervisor, who brings all the major equipment needed (*the customer typically provides their own employees with personal hand tools*). The working supervisor works alongside your employees, directing them as his helpers to install your crane. North American Industries takes complete charge of the process and ensures a smooth installation. Best of all, if you choose to provide some helpers, they are sure to learn a great deal about crane operation and maintenance.

Possible customer savings: \$5675 (from the example in the cost comparison chart below)

3. You Provide Some or All of the Equipment

If you have the necessary welding apparatus, forklifts, and man-lifts, you can save money by letting us use your equipment. Our people still do all the work, and bring our specialized tools to you.

Possible customer savings: \$6765 (from the example in the cost comparison chart below)

4. You Provide Manpower and Equipment

Of all the choices, this option provides the most savings. In the example below, costs are reduced by more than 65%. With this option, North American Industries still takes complete charge of the process and ensures a smooth installation, but you save even more money. We provide a working supervisor who directs your employees to use your welding apparatus, forklifts, and man-lifts.

Possible customer savings: \$12,445 (from the example in the cost comparison chart below)

Review and Start-up Service

If you choose to install your crane yourself, you can also hire our installation specialists to review your installation, and make sure that your crane operates safely, reliably and meets all codes. These services are available on a daily rate basis.

Cost Comparison Chart

For a 10 ton crane with a 60 foot span	
Installation Option	Price
Turnkey Installation and Delivery (we do it all)	\$19,100
Installation and Delivery with "borrowed helpers" (you provide some labor)	\$13,425
Installation and Delivery with "borrowed equipment" (you provide some equipment)	\$12,335
Installation and Delivery with "borrowed helpers and borrowed equipment"	\$6,655

Note: These prices are only meant for the purpose of demonstrating the example.



North American Industries has installed cranes around the world, and we are continually investing in state-of-the-art laser alignment instrumentation, custom-built rail jigs, adjustable runway tie-backs, and other specialized tools designed to provide clean, accurate, and quick installations.

Low Maintenance Design

1. Reliable Braking System

North American Industries uses mechanical brakes that typically never need adjusting or replacing. Our mechanical brakes prevent the following problem that can occur with electric motor brakes:

Crane Travels Too Far Before Stopping?

If your crane coasts more than a few feet, then it is likely that it uses electric motor brakes and that the brake pads haven't been replaced (they require replacing or adjusting every 1-2 years). If they are not changed, the crane rolls 10 to 20 feet before stopping. The operator, in turn, learns to reverse the crane to stop it. This "Reverse Plug" will damage the gearbox.

In contrast to electric motor brakes, North American Industries' mechanical brakes provide a gentle, consistent coasting stop that does not vary over time. For cranes that travel over 100 FPM or require quick stopping, we suggest considering the soft-stop feature of a variable speed inverter.

2. Bearings Won't Wear Out Quickly

We use a minimum of 2 bearings / wheel. All bearings have a minimum life expectancy of 10,000 hours, which is double the Class "C" rating. Cranes built by North American Industries use bearings that are sealed-for-life and never need lubricating.

3. Automatically Resetting Overloads

Our cranes use automatically resetting thermal overloads, instead of fuses that would need to be replaced. These overloads are placed inside all 3 motor windings to assure the most accurate measurements.

4. Durable Pendant and Pendant Cable

The pendant is constructed of nearly indestructible, lightweight composite thermoplastic material with 2 steel wires built into the cable jacket for permanent strain relief. North American Industries understands that the pendant cable needs to be durable enough for every day use with all kinds of demanding applications. Our cables are able to handle the strain. For added protection against breakage, the wires in the cable all lay straight, and are never spiral wrapped.

5. Contactors Never Need Replacing

Our contactors, rated for 20,000,000 stop / start cycles if used in conjunction with inverters or electronic soft start features, should never need replacing under normal operating conditions.

6. Protection Against Wire Breakage

You receive approximately 15% spare conductors for our bridge electrification cable and our pendant cable. If a wire breaks, you don't have to replace the cable, just connect the spare conductor.

7. Gearbox Oil Never Needs Changing

Gearbox operates in a totally enclosed system with high grade synthetic oil that never needs changing.

8. Easy Access for Inspection or Repair

Our cranes are designed to allow for quick inspection or repairs when needed. Our wheels can be removed from above; you do not have to lift the crane off the runway rails. Our electrical panels are not crowded, and the wiring diagram is mounted inside the panel.



Quality Parts

Hoists (Wire Rope & Electric Chain)

- H-4 heavy-duty hoists
(Duty ratings are a better indicator of hoist durability than hoist type. Both use similar motors, brakes and controls.)
- Wide selection - many hoist manufacturers from which to choose
- The features you want; 100% duty cycle, multiple lifting speeds, true vertical lift

Chain hoists...

- lift by pulling the chain through sprockets and depositing the chain into a chain container
- require less maintenance
- are less expensive
- are more common for applications below 7.5 tons

Wire rope hoists...

- lift by wrapping cable around a grooved drum
- offer very fast lifting speeds
- can be rated H-5 (severe duty)
- dominate the market at 10 tons and above

Trolleys

- Top running or for more compact cranes, "ultra low headroom" trolleys that ride between the cross girders, not on top of them
- Featuring heavy plate steel and channel construction with diaphragm stiffness for added strength
- Smooth operation using 100% duty cycle motors and heavy duty drive wheels

Drive Motors

- Continuous-duty, fan-cooled motors with thermal overload protection are available
- Capable of 60 minutes/hour operation, 24 hours a day, 365 days/year

Bridge Girders

- Conservative design produces 5 to 1 safety factor
- Box beam fabrication of high-technology extended-capacity steel (A36 or A544) which minimizes vertical and lateral deflection

Wheels

- Ductile iron wheels available in hardness up to 600 BHN
- Long life, oversized wheels conforming to Class D specifications are standard
- Double flanged wheels ride smoothly and accommodate some rail misalignment

End Trucks

- Engineered to form a single structural box which remains square and resists torsional forces throughout the crane's life
- Close tolerance fabrication utilizes custom designed welding jigs to achieve precise alignment

End Truck to Bridge Beam Connection

- Notched interlocking connection minimizes torsional movement of beam and keeps crane compact
- Fault-proof right angle alignment is achieved using zero tolerance body bolts

NOTE: A wide range of specifications and capabilities are described above. *Your* overhead crane from North American Industries will have specific features that have been matched to your application by our crane system engineers. If you would like a specific feature or upgrade, please ask for it in your individual quote.



Quality Parts & Technology

Operator Pushbutton Pendant

- Compact design for one-hand operation, allowing operator to direct the load with free hand
- With an Independent Traveling Push-button Pendant, the pendant travels independently of the trolley to allow operator to stand away from large and dangerous loads. We use flat cable incorporating spare conductors.



Wireless Radio Remote Controls

- Ideal for when the operator needs to stand away from the load or where access is poor
- Operator can stand anywhere while running the crane (some models have a range up to 500 feet)
- Heavy duty & lightweight (remote controls weigh between 5 and 11 ounces and are made from durable, shock resistant fiber reinforced nylon)
- Easy to use, programmable
- 1 or 2 step buttons rated at 2 million cycles
- Safe security coded operation
- Affordable state of the art technology

Ask for wireless radio remote controls in your new crane quote or upgrade to wireless remote controls on an existing crane.

Variable Frequency Drives - Any Speed You Desire!

You can use a simple and inexpensive 2 or 3 speed push-button and obtain hundreds of different speeds effortlessly on your crane. The internal microprocessor intelligently locks in any speed to which the crane operator accelerates or decelerates. One button acts as an ACCELERATION or DECELERATION command and another button becomes the HOLD THAT SPEED command.

- Reduces need for crane maintenance by ensuring proper acceleration and deceleration
- Increases the life of crane parts such as brakes, bearings, and drive trains because variable frequency drives do not allow the operator to reverse plug or jog the crane
- Increases productivity and safety by providing more control
- State of the art technology that reduces your overall costs

Ask for variable frequency drives in your new crane quote or upgrade to variable frequency drives on an existing crane.

NOTE: A wide range of specifications and capabilities are described above. *Your* overhead crane from North American Industries will have specific features that have been matched to your application by our crane system engineers. If you would like a specific feature or upgrade, please ask for it in your individual quote.

Please call **800-847-8470** or email info@naicranes.com for Crane Quotes or for Parts.

Parts Division

Parts Availability & Service

North American Industries has a wide selection of replacement parts in stock to meet any demand. We supply parts for all our cranes as well as parts from all major hoist manufacturers.

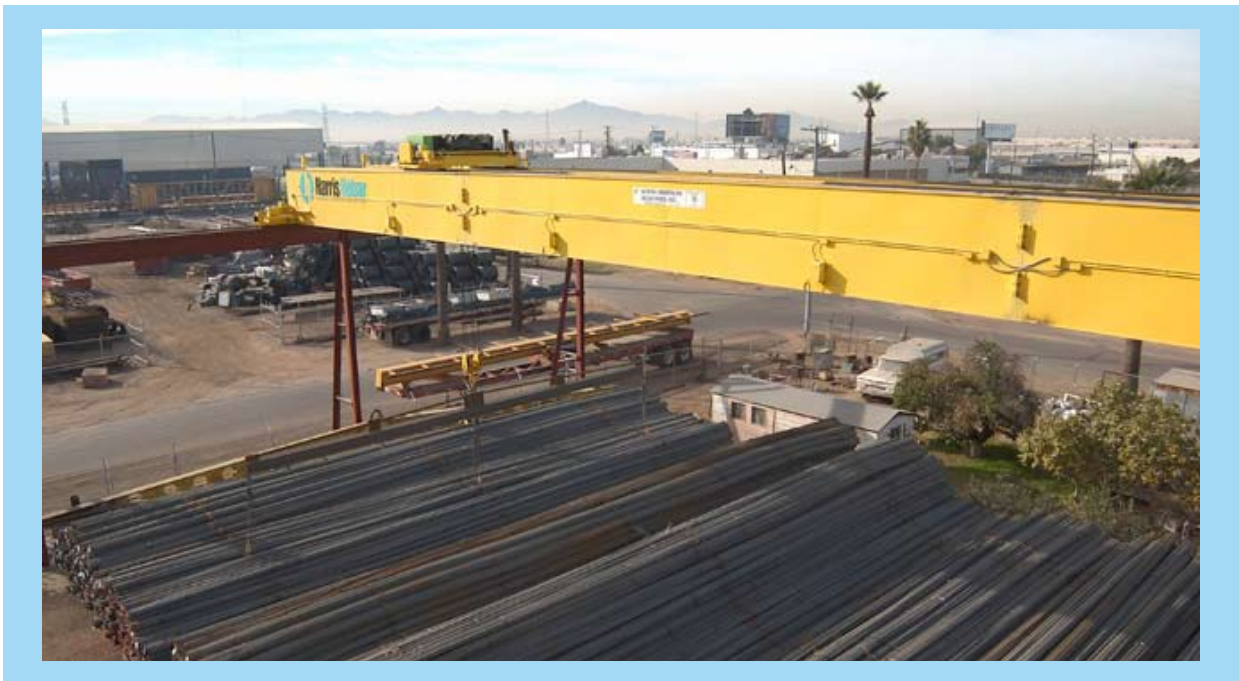
No matter who the original crane manufacturer was, North American Industries can supply parts that are compatible.

Our Parts Department understands your needs and is available 24 hours/day, 7 days a week on our customer service hotline to supply you with replacement parts as fast as possible.

Vendor Managed Inventory (VMI)

Vendor Managed Inventory is part of North American Industries' efforts to provide convenience and speedy service to customers. North American Industries' parts department sends customers a Recommended Parts List at the beginning of the warranty period (or you can request a Recommended Spare Parts List at any time). The customer can buy the recommended parts to keep on their shelf. If a part fails, it can be replaced immediately with the part on hand. If the customer does not have the capability of swapping parts, North American Industries can demonstrate during a CRISP inspection or a service company can be called in without delay.

Meanwhile, the customer calls North American Industries for an RMA (Return Materials Authorization), sends the part back for evaluation and if it is covered under warranty, we send a replacement part at no charge. This process eliminates the problem of a customer's operation being immobilized while waiting for a new part to be shipped. North American Industries offers VMI because it can be invaluable in minimizing costly downtime for the customer.



For assistance, please call our Parts Department at 800-847-8470 ext. 104. To reach our after-hours service hotline, call 781-932-5215.

Crane Repair, Inspection, & Safety Partners (CRISP)

North American Industries offers **CRISP**, a unique partnership tailored to optimize the safe, reliable operation of your crane(s). **CRISP** services include any or all of the following:

- Periodic Safety and Performance Inspection
- Preventative Maintenance
- Repairs
- Operator Training
- Classroom Training
- Load Tests
- Proper Record Keeping
- 24/7 Hotline
- Recommended Spare Parts
- Written Record of Our Findings for Your Files



CRISP has been developed utilizing North American Industries' vast experience in crane engineering, manufacturing, safety and service. **CRISP services are also based on OSHA regulations and CMAA recommendations.**

CRISP emphasizes North American Industries' commitment to keeping you safe, productive, and satisfied with your overhead crane(s).

Benefits of CRISP

You will address OSHA regulations, save time, and decrease costs. North American Industries knows the importance of having a safe, well-maintained and inspected crane. Regular inspection and maintenance will:

- Prevent accidents and maintain safe operation of your crane through inspections and operator training
- Avoid unnecessary interruptions in production
- Ensure peak efficiency throughout your crane's long life
- Address potential problems before they become more costly or inconvenient
- Reduce overhead costs associated with parts, lubricants and tools
- Reduce downtime by scheduling when production will not be interrupted

What Does a Safety Inspection Include?

Depending on your crane's duty cycle and environment, North American Industries can provide periodic and/or frequent safety inspection and maintenance visits. A typical inspection includes the following:

- A complete inspection of all major components
- Full lubrication of all required components
- Inspection of bolted and welded connections
- Minor adjustments to both electrical and mechanical components, including but not limited to: limit switches, control systems, brakes and trolley flange
- Operational tests through full range of functions
- 24/7 Customer Service Hotline
- Detailed inspection report along with a summary of issues to be addressed
- Written recommendations for repairs, spare parts inventory, and additional maintenance requirements

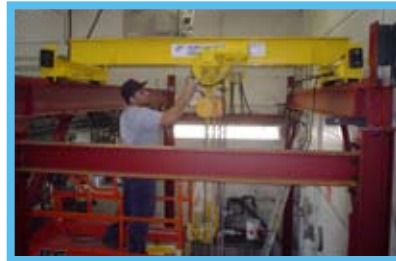
Request a CRISP Proposal

Please ask your sales engineer about a customized proposal that will complement your crane safety and reliability needs or contact our **CRISP** Director at 800-847-8470 ext. 131. **CRISP** is available in the USA and territories.

Crane Refurbishment

North American Industries has the engineering expertise to refurbish your cranes, extending their lives and productivity. North American Industries can provide:

1. A site visit that yields a comprehensive proposal of the parts that should be replaced or restored
2. A total overhaul replacing or rebuilding worn, damaged, or defective components such as:
 - end trucks
 - motors
 - hoists
 - wheels
 - electrical controls
 - drives
3. Functional tests and a total quality check
4. Repainting, rewiring, and most other repairs
5. Reinstallation



No matter who the original crane manufacturer was, we can use our components to rebuild your existing crane so that it functions just as well as it would if it were brand new. This option is particularly appropriate for DC-operated cranes or older cranes, where maintenance parts are expensive and often not readily available.

Industries Served

Military and Government
Precast Concrete
Construction
Equipment Maintenance
Injection Molding
Rebar
Stone, Marble, & Granite
Aerospace
Railroad
Steel Fabrication
Metal & Chemical Processing
Steel Service Centers
Shipbuilding
Design Build Firms
General Contractors
Modular Home Manufacturing
Hot Metal
Water Treatment Plants

These are only some of the many applications for our overhead cranes. Because we customize all our designs, we have the capabilities to create a material handling solution for almost any industry.



Every order placed at North American Industries is designed in strict compliance with the latest industry standards—including CMAA, ANSI, AISC and OSHA.





A common misconception is that double girder bridge cranes are more durable.

Based on the CMAA (Crane Manufacturers Association of America) specifications, both single and double girder cranes are equally rigid, strong, and durable. This is because single girder cranes use much stronger cross girders than double girder cranes, and single girder cranes have lateral bracing.

The Difference is in the Hook Height

The principle difference between single and double girder cranes is hook height (how far above the floor your hoist will lift). Double girder cranes provide better hook height. Double girders typically allow 18-36 inches higher lift.

Double girder cranes can provide more lift, because the hoist is placed between the cross girders rather than under them. Therefore, the depth of the cross girder is gained in switching to double girders.

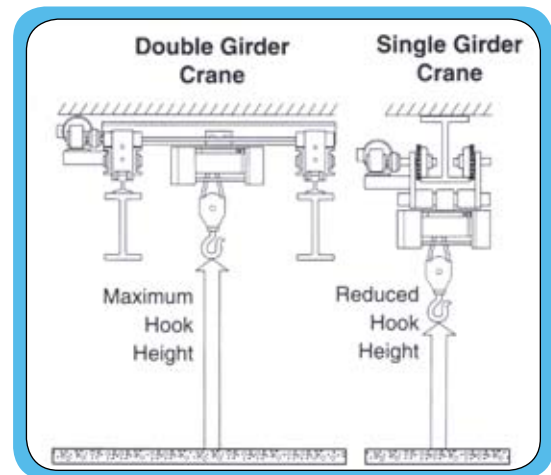
Cost Considerations

Single girder cranes may cost less for several reasons:

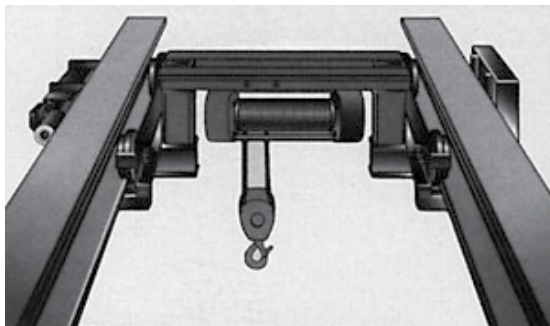
- Only one cross girder is required
- The trolley is simpler
- Freight expenses are reduced
- Installation is faster
- Runway beams are lighter

However, not all cranes should be designed with a single girder...

Single girder cranes have been built in spans over 100 feet and capacities of over 100 tons but typically cost effective engineering dictates that single girder cranes be considered as per the chart.



Cost Effective Single Girder Cranes	
Capacity (Tons)	Max. Span (Feet)
0-7.5	80
10	75
15	65
20	60
25	55
30	50
35	45



Ultra Low Headroom (ULH) trolleys

Double girder cranes typically have the hoist and trolley riding on top of the cross girders. As an option, we can provide a trolley that rides between the cross girders.

This may be appropriate if:

- maximum hook height is required
- your cross girders, as well as your hoist, must be the maximum height above the floor
- you must minimize the distance above your runway beam
- you need the crane to be more compact



Electric Chain or Wire Rope Hoist?

Consider your application and requirements (such as speed, cost, and precise placement) before choosing a hoist type.

The technology for hoists is always improving. Chain hoists have become more durable, and new hoists are designed with lower headrooms. Currently, both electric chain and wire rope hoists are appropriate for typical factory applications in capacities to 7.5 tons.

Chain hoists...

- lift by the chain passing over a lift-wheel and depositing the chain into a chain container
- require less maintenance
- tolerate greater levels of abuse
- provide more allowance for “side pulling”
- are less expensive
- provide true vertical lift
- are more common for applications below 7.5 tons

Wire rope hoists...

- lift by wrapping cable around a grooved drum
- offer very fast lifting speeds
- offer a wide array of options
- can be rated H-5 (severe duty)
- dominate the market at 10 tons and above

Consider an electric chain hoist up to 7.5 ton capacity for the following:

- 8-10 hours per day use
- 10-20 lifts per hour
- Less than 30 minutes motor on time/hour
- High percentage of lifts at full capacity
- True vertical lift at no extra cost
- High durability at low cost



Both chain and wire rope hoists are rated H-4 (heavy duty) or H-3 (moderate duty). Duty ratings are a better indicator of hoist durability than hoist type (chain or wire rope). Both types of hoist use similar motors, brakes and controls. The main difference between electric chain hoists and wire rope hoists is in the design of the lifting mechanism. Be sure to request an H-4 rating on either hoist type to ensure long life and low maintenance.

What is True Vertical Lift?

“True Vertical Lift” refers to lack of any lateral hook drift as the hook moves vertically throughout the full range of motion. Many wire rope hoists are designed with a single part of cable coming off of the hoist drum, which then is reeved through upper and lower sheaves until it dead ends back on the hoist body. As the hook is raised, the cable spools across the drum causing slight lateral movement of the hook, generally in the range of 1/4” lateral movement for every 12” of vertical movement. In most applications, this lateral drift is no problem, however, in a few applications; this lateral movement can result in damage to product, or worse, damage to valuable tools and fixtures. Wire rope hoists are available in both single reeved and double reeved (true vertical lift) configurations. In the lower capacities (below 30 tons) you will often pay a premium for true vertical lift so it is important to understand if you really need this feature. As an alternative to wire rope hoists, all chain hoists provide true vertical lift by the nature of their design, i.e. a chain passing over a lift wheel rather than spooling across a rope drum. Chain hoists are generally available in capacities up to 20 tons and may represent an economically attractive alternative to wire rope hoists. *Your sales engineer at North American Industries can advise on the best hoist for your application.*



Self Assembly Crane Components

Purchasing in component form is an alternative that can reduce costs for customers with basic fabrication skills.

All of our bridge and gantry cranes can be purchased in cost saving component form. The component package includes all the same top quality Class “D” equipment as our complete cranes. The only difference is that with a component package, you purchase the structural steel cross girders from a local supplier and perform some final assembly labor.

We provide:

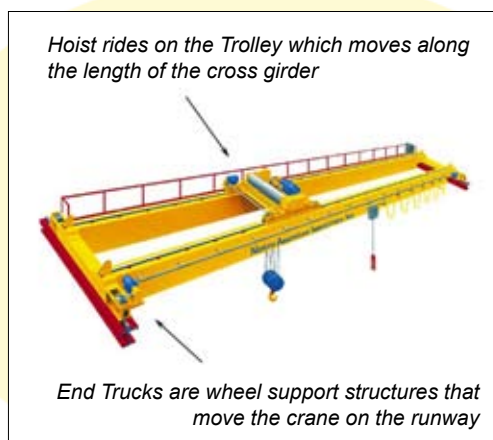
1. Hoist
2. Trolley
3. End Trucks
4. Bridge Electrification
5. Runway Electrification

You provide:

Cross Girder, which is a single or double structural steel beam from which the hoist and trolley hang

Customer Benefits

- Final assembly costs are reduced
- Shipping costs are reduced
- Reduced time between order and delivery



The hoist, trolley, end trucks, electrification systems, and controls are already tested, and painted when you receive them. Trolleys and underhung end trucks are preset to your exact flange adjustment. When you purchase a component package, we provide most of the assembly required to build a crane. The only parts the customer must obtain independently are the structural steel for the cross girder(s) and a few inexpensive small angles and steel plates. Our component crane includes all the remaining parts needed for assembly. We can also provide:

- Detailed Assembly Instructions
- Cross Girder Specifications so you can purchase the correct beam from a local steel supplier
- Detailed Runway Design Drawings and specifications to allow you or a local contractor to fabricate and install your runways
- Comprehensive Installation Instructions in easy to follow steps
- Toll Free Help Line so you can discuss your assembly or installation questions with your North American Industries project manager, or our engineers and fabricators if necessary

You should be able to follow our assembly instructions if you have basic electrical and metal fabrication skills, such as welding or bolting parts together. If questions do arise, our toll free help line is available 24 hours a day, 7 days a week.



The superior durability of a Class “D” crane provides a longer operational life and lower maintenance costs.

The Crane Manufacturers Association of America (CMAA) has issued over 150 pages of specifications detailing how to design and build cranes of differing classifications. An extensive list of more than 50 components (wheels, bearings, motors, axles, contactors, etc.) are upsized for each successive crane class, which means that parts on a Class “D” crane are physically bigger and stronger than parts on a Class “C” crane. Crane designs are strictly regulated by the CMAA and must be documented by engineering calculations.

Compared to a Class “C” crane of equal lifting capacity, CMAA specifications dictate that a Class “D” crane is designed to:

1. Make twice as many lifts over its lifetime
2. Lift the maximum rated load with 30% greater frequency

Typical Double Girder Bridge Crane		
Specification	Moderate Duty Class C	Heavy Duty Class D
Hoist Duty Cycle	H3 or H4	H4 only
Minimum Life Expectancy of Bearings	5,000 hrs	10,000 hrs
Trolley & End Truck Motor On-time/hr.	30 min	30-60 min (we use 60 min)

Class C Moderate Service (CMAA Definition) - the crane will handle loads which average 50% of the rated capacity with 5 to 10 lifts per hour, averaging 15 feet, not over 50% of the lifts at rated capacity.

Class D Heavy Service (CMAA Definition) - loads approaching 50% of the rated capacity will be handled constantly during the working period. High speeds are desirable for this type of service with 10 to 20 lifts per hour averaging 15 feet, not over 65% of the lifts at rated capacity.

What Are Some “Heavy Duty” Applications?

- Precast Concrete
- Stone, Marble, and Granite Fabrication
- Shipbuilding
- Steel Fabrication
- Metal Stamping
- Bridge Construction
- Foundries
- Steel Service Centers



Why Choose Class “D” Heavy Duty?

While there are six classifications ranging from Class “A” (standby) to Class “F” (continuous severe), the majority of industrial crane applications call for either Class “C” or Class “D”. Class “C” cranes are designed for moderate duty applications and Class “D” cranes are designed for heavy duty applications. However, *Class “C” applications can be accommodated with either a Class “C” or a Class “D” crane.* There are several important benefits to using a Class “D” crane for what might be considered a Class “C” application...

Purchasing a Class “D” crane for a Class “C” application will extend the crane’s operational life (lasting up to 40 years), minimize maintenance, reduce down time, and significantly improve margins of safety. Many customers find that the Class “D” crane is often the more cost effective choice.

NORTH AMERICAN INDUSTRIES, INC.

80 Holton Street, Woburn MA 01801

(800) 847-8470

(781) 897-4100

Fax: (781) 729-3343

info@naicranes.com

www.naicranes.com

**Cranes developed with your application in mind will
maximize your efficiency and minimize your overall costs.**

*North American Industries is a proud member of:
Material Handling Industry of America & Crane Manufacturers Association of America*