TECHNICAL CRANE REPORT

NORTH AMERICAN INDUSTRIES, INC.

Class "C" vs. Class "D" Is there really a difference?

Class "D" Cranes provide a much longer operational life, lower maintenance costs and greatly reduced down time. The initial expense of upgrading from a Class "C" to a Class "D" crane is quickly recouped.

CMAA sets the standards

The Crane Manufacturer Association of America (CMAA) has issued over 150 pages of specifications detailing how to design and build cranes of differing classes. An extensive list of more than 50 crane components (wheels, bearings, motors, axles, contactors, etc.) are "upsized" for each successive crane class. Crane duty classifications are strictly regulated by the CMAA and must be documented by engineering calculations. The perception that crane classifications are merely a marketing gimmick is false.

Class "C" for moderate duty Class "D" for heavy duty

While there are six classifications ranging from standby Class "A" to continuous severe Class "F," the majority of industrial crane applications call for either Class "C" or Class "D". Nearly all cranes sold are Class "C." It is industry practice to quote Class "C" equipment unless the user specifies differently.

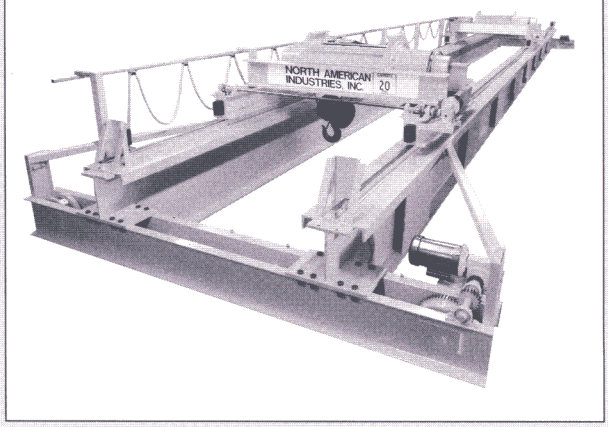
What is a "Heavy Duty" application?

Class "C" applications

- Light metal fabrication
- General machine shops
- Loading/unloading machine tools

Class "D" applications

- Metal foundries
- Heavy steel fabrication
- Steel warehouses



Heavy duty class "D" cranes provide more cost effective operation and longer life than class "C" cranes in similar applications.

Class "C" applications can be accommodated with either a Class "C" or a Class "D" crane. Buying a Class "D" crane for a class "C" application will extend the crane's operational life (lasting up to 40 years), result in minimized maintenance, virtually no down time, and will significantly improve margins of safety.

Consider what the CMAA specifications dictate for cranes of equal lifting capacity but different classifications. Class "D" Cranes, as compared to Class "C" cranes, are designed to:

- Make twice as many lifts over their lifetime
- Lift the maximum rated load with 30% greater frequency

It is easy to see why Class "D" Cranes are more durable than Class "C" Cranes.

Specification	Moderate Duty Class "C"	Heavy Duty Class "D"
Hoist Duty Cycle	H-3 or H-4	H-4 only
Wheel Size, Bridge	12"	14"
Wheel Size, Trolley	10"	12"
Wheel Hardness	180 BHN	220 BHN
Bridge Motor, Horsepower	Two ¾ HP	Two 1 HP
Trolley Motor, Horsepower	One ½ HP	One ¾ HP
Average Bearing Life	25,000 hrs.	50,000 hrs.
Motor On-time/hr.	30 min.	30-60 min.
Axle Diameter	2 ¾"	3"
Gear Face Thickness	1 ½"	1 ¾"
Drive Shaft Diameter	1 ½"	1 ¾"

NORTH AMERICAN INDUSTRIES, INC. 80 HOLTON STREET, WOBURN, MA 01801 USA