NORTH AMERICAN INDUSTRIES, INC.

Class C vs. Class D

TECHNICAL CRANE REPORT

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.