

Things to Consider When Purchasing an Overhead Crane

We've put together a few key questions you should ask of your prospective overhead crane provider, along with a brief explanation of their meaning and possible impacts on the usage of your crane. If you have any questions about these criteria or would like some further explanation, please do not hesitate to contact us.

1. Is the crane designed to CMAA specifications? If so, to what Class?

The Crane Manufacturers Association of America (CMAA) has established six service classes to enable the purchaser to specify the most economical class of crane for a particular installation. It is uneconomical to either under specify or over specify when choosing a service class. Specifying a crane with too light a service class will reduce cost

but may result in excessive maintenance. A crane with too high a service class may decrease maintenance costs but at an excessive initial investment.

Class A - standby or infrequent service

Class B - light service

Class C - moderate service

Class D - heavy service

Class E - severe service

Class F - mill duty

2. What is the deflection of the bridge girders?

CMAA specifies that the maximum vertical deflection of the bridge girders shall not exceed 0.02" per foot of span. **Munck** cranes are built to this specification.

3. Are the bridge girders of box or beam construction?

A box girder is the most desirable girder design used in overhead traveling cranes because of their design efficiency. Single web beams find their greatest use in building construction where girders are fixed rather than moving and loads are usually distributed over short spans. Crane bridge girders carry live, highly concentrated loads, usually over long spans. Box girders are easily adapted to the conditions encountered in crane design because it is possible to select cover plate width, web depth, diaphragm arrangement and material thickness to meet the exact requirements of each crane. **Munck** cranes utilize box girders exclusively.

4. What is the wheel diameter?

The CMAA provides a guide to determine the relationship between the maximum static wheel load (MSWL) of the crane, the crane wheel diameter and hardness and required runway rail size.

5. What is the wheel material?

Rolled or forged steel is recommended for crane wheels. **Munck** uses C1045 forged steel.

6. What is the wheel hardness?

Untreated wheels having a tread hardness of approximately 262 BHN are recommended for Classes A, B and C. **Munck** uses a wheel hardness of 360 BHN.

7. What is the wheel bearing life? What types of bearings are used?

Antifriction bearings are selected to give a minimum life expectancy based on full load rated speed as follows.

Class A 3,000 hours

Class B 3,000 hours

Class C 5,000 hours

Class D 15,000 hours

Class E 25,000 hours

8. What is the duty cycle of the motors?

Munck bridge and trolley travel motors are rated for continuous duty.

9. What is the design factor of the hoist motor?

The design factor of the hoist motor provides a basis for motor horsepower rating based on usage. **Munck** hoist motors are rated ED40 for CMAA Class C.

10. How is the hoist drum driven?

What is the location of the hoist motor? How is motor power translated into drum rotation? A hoist motor located inside the hoist drum can be difficult to remove or replace and can require lengthy service visits should a problem occur. **Munck** hoists are designed with the motor and gearbox on opposite ends of the hoisting unit and are easily removed, replaced or serviced. Power is transmitted through a spline shaft running through the center of the drum. Some hoist manufacturers use a pinion and ring gear drive which can prove unreliable and costly to repair and maintain.

11. What is the ratio of the wire rope diameter to the wire rope sheaves and hoist drum? What is the rope diameter?

A ratio which is too small will result in increase wire rope and sheave wear. **Munck** hoists are designed to maximize wire rope and sheave life.

12. What is the general construction and serviceability of the hoist and trolley?

Stamped steel and plastic or heavy machined plates? Is the trolley frame fabricated from structural shapes and plates or is it cast? **Munck** hoists are constructed using machined steel plates with bolt on gearboxes and motors which are easily serviced. Our trolley designs use structural shapes and are more easily serviced than a cast trolley frame design