

MODULAR NORHOIST / TROLLEY (TECHNICAL SPECIFICATIONS)

ACECO  **American
CRANE**
& EQUIPMENT CORPORATION



Powerful INNOVATION | **Proven** EXPERIENCE

LEADING MANUFACTURER OF CRANES, HOISTS
AND OTHER MATERIAL HANDLING EQUIPMENT

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The American Crane & Equipment Corporation Modular NorHoist / Trolley

The modular NorHoist is engineered for safety, reliability, and flexibility. The hoist can be precisely adapted to meet your application requirements – the various application types, ranging from foot mounted hoists, monorail hoists, and double rail trolleys can be configured to meet specific customer requirements.

As a standard, the hoist is rated for the (HMI) Hoist Manufacturers Institute Class H-4 and (CMAA) Crane Manufacturers Association of America Class D duty. The standard control configuration for the NorHoist is the inverter drive, in conjunction with an inverter duty motor. Two speed hoist and trolley control is also available.

NorHoist Electric Wire Rope Hoists – The Technology

Our NorHoist electric wire rope hoists are engineered for safety, reliability, and flexibility.

- Designed and developed utilizing sophisticated FEA and 3D CAD, in compliance with HMI and CMAA Specification No. 70/74 standards.
- Manufactured and tested ensuring high levels of quality



10 Ton NorHoist
(as shown in photo above)
1-15 Ton Capacities Available

Summary of Design Characteristics

Hoist Component	Design	Manufacture
Hoist Motor	<ul style="list-style-type: none"> • Modular AC Brakemotor • Low inertia squirrel cage design • Continuous duty, TEFC, 1.15 SF @ constant speed • NEMA MG1 Premium Efficiency • IEC 60034-30-1 Compliant • Constant Torque with VFD – 10-60 Hertz – 1.0 SF • Double sealed or shielded anti-friction bearings lubricated for life • Voltage spike resistant – 1600V at 0.1 microsecond or larger rise time • Thermostats provided for use with VFD control • Class F insulation 	<ul style="list-style-type: none"> • Manufactured with phase insulators and slot liners. • Wire sleeves to protect wiring entering conduit box • Dip primer, acrylic top coat • Forced fan cooling available • FKM seals available
Hoist Motor Encoder	<ul style="list-style-type: none"> • Encoders standard for hoist motion *Optional resolver type encoder for use in radiation environment 	
Hoist Motor Brake	<ul style="list-style-type: none"> • DC Electromagnetic failsafe brake • Minimum 150% static brake torque based on rated load • Thermal capacity for CMAA Specification No. 70 Class D service • Manual release – deadman style • Rapid response time – set / release • Brake rectifier designed specifically for the brake 	<ul style="list-style-type: none"> • Factory integrated to the motor • Encapsulated winding • Brake release can be positioned for ease of access • Can be assembled / disassembled without impacting motor

Hoist Component	Design	Manufacture
Hoist Gearing	<ul style="list-style-type: none"> ▪ Helical high efficiency gearing – 97% per stage ▪ Case hardened – 58-62 Rc ▪ High strength aluminum housing for light weight ▪ DIN 5480 splined output ▪ Designed for hoisting application ▪ Fully enclosed splash oil lubricated 	<ul style="list-style-type: none"> ▪ Finished ground or shaved ▪ Captured keys
Wire Rope Drum	<ul style="list-style-type: none"> ▪ CMAA Class D requirements including groove depth, groove pitch, crushing, bending, shear, and buckling stresses. ▪ D/d ratio – 20:1 or greater ▪ Minimum of 2 anchor wraps ▪ Wire rope anchorage safety factor equivalent to wire rope safety factor. ▪ DIN 5480 splined drive connection 	<ul style="list-style-type: none"> ▪ Fabricated from rolled / formed steel and CNC machined for tight tolerances and concentricity. ▪ Continuously welded and inspected in conformance with AWS D14.1
Wire Rope	<ul style="list-style-type: none"> ▪ Minimum safety factor of 5:1 based on Nominal breaking strength and rated load. ▪ 6x37 classification, Improved Plow Steel, Independent Wire Rope Construction ▪ Angle of loading considered in Safety Factor ▪ Fleet angles limited to CMAA Specification No. 70 allowables 	<ul style="list-style-type: none"> ▪ Utilizes conventional end fittings – special connections not required
Rope Guide	<ul style="list-style-type: none"> ▪ Provided to ensure proper winding of the wire rope onto the drum, maximizing wire rope life. 	<ul style="list-style-type: none"> ▪ Manufactured from rolled steel with Nylatron guide rollers for smooth, quiet operation
Drum Bearing	<ul style="list-style-type: none"> ▪ Anti-friction designed for CMAA Specification No. 70 – 10,000 hours of AFBMA L₁₀ life ▪ Flange mounted with hoist frame machining to ensure proper alignment 	
Hoist Frame	<ul style="list-style-type: none"> ▪ Designed to CMAA Specification No. 70 allowable stresses for Class D service ▪ Designed to minimize deformation under load and maintain proper machinery alignments ▪ Modular design allows for quick assembly / disassembly 	<ul style="list-style-type: none"> ▪ Fabricated from rolled / formed steel and machined for tight tolerances and alignment.
Sheaves	<ul style="list-style-type: none"> ▪ Designed to CMAA Specification No. 70 for Class D service ▪ D/d ratio – 20:1 or greater ▪ 60 degree included groove angle for improved rope life ▪ Provided with anti-friction bearings designed for CMAA Specification No. 70 – 10,000 hours of AFBMA L₁₀ life 	<ul style="list-style-type: none"> ▪ Manufactured from rolled steel ▪ Induction / Flame hardened ▪ CNC machined to tight tolerance for parallelism and concentricity
Lower Block	<ul style="list-style-type: none"> ▪ Designed to CMAA Specification No. 70 for Class D service ▪ Sheaves provided with guarding for safety ▪ Upper guards are Nylatron to preclude wire rope damage from inadvertent contact with wire rope ▪ Provided with anti-friction thrust bearing for easy rotation under load ▪ Modular design for easy assembly / disassembly 	<ul style="list-style-type: none"> ▪ CNC machined to tight tolerances
Hook	<ul style="list-style-type: none"> ▪ Designed to CMAA Specification No. 70 for Class D service ▪ Minimum factor of safety of 5 	<ul style="list-style-type: none"> ▪ CNC machined to tight tolerances

Hoist Component	Design	Manufacture
Upper Block	<ul style="list-style-type: none"> Designed to CMAA Specification No. 70 for Class D service Modular design for easy assembly / disassembly 	<ul style="list-style-type: none"> CNC machined to tight tolerances
Trolley Frame	<ul style="list-style-type: none"> Designed to CMAA Specification No. 70 allowable stresses for Class D service Designed to minimize deformation under load and maintain proper machinery / wheel alignments Modular design allows for quick assembly / disassembly Fully adjustable to accommodate various beam flange widths Counterweighted to provide balance and smooth operation at all load magnitudes 	<ul style="list-style-type: none"> Fabricated from rolled / formed steel and machined for tight tolerances and alignment. Welded and inspected in conformance with AWS D14.1
Trolley Wheels	<ul style="list-style-type: none"> Designed to CMAA Specification No. 74 for Class D service and FEM 1.001. Integrated gear rim for direct / efficient transfer of drive forces / moments One wheel on each side of beam is driven to ensure consistent trolley motion and prevent skewing due to eccentric drive forces Anti-friction bearings designed for 10,000 hours of AFBMA L10 life Wheel tread / gearing – 230 Bhn minimum and designed for long life and interface with rolled steel supporting structure 	<ul style="list-style-type: none"> CNC machined for tight tolerances and concentricity of gear rim / wheel tread / support axle
Trolley Motor	<ul style="list-style-type: none"> Modular AC Brakemotor Low inertia squirrel cage design Continuous duty, TEFC, 1.15 SF @ constant speed NEMA MG1 Premium Efficiency IEC 60034-30-1 Compliant Constant Torque with VFD – 10-60 Hertz – 1.0 SF Double sealed or shielded anti-friction bearings lubricated for life Voltage spike resistant – 1600V at 0.1 microsecond or larger rise time for use with VFD control Thermostats provided for use with VFD control Class F insulation 	<ul style="list-style-type: none"> Manufactured with phase insulators and slot liners. Wire sleeves to protect wiring entering conduit box Dip primer, acrylic top coat Forced fan cooling available FKM seals available
Trolley Motor Brake	<ul style="list-style-type: none"> DC Electromagnetic failsafe brake Minimum 100% static brake torque based on rated motor torque Thermal capacity for CMAA Specification No. 70 Class D service Manual release – deadman style Rapid response time – set / release Brake rectifier designed specifically for the brake 	<ul style="list-style-type: none"> Factory integrated to the motor Encapsulated winding Brake release can be positioned for ease of access Can be assembled / disassembled without impacting motor
Trolley Drive Gearing	<ul style="list-style-type: none"> Helical high efficiency gearing – 97% per stage Case hardened – 58-62 Rc High strength housing for light weight Designed for traversing application Fully enclosed, splash oil lubricated 	<ul style="list-style-type: none"> Finished ground or shaved Captured keys
Trolley Bumpers	<ul style="list-style-type: none"> Designed to CMAA Specification No. 70 for trolley operation Energy absorbing capacity for fully loaded trolley at 50% velocity per CMAA 	
Rail Sweeps	<ul style="list-style-type: none"> Provided in accordance with CMAA Specification No. 74 including provisions to limit a drop due to axle failure to less than 1” 	<ul style="list-style-type: none"> Manufactured from rolled steel Welded and inspected in conformance with AWS D14.1