

Section 11000 – Equipment (or 14600 – Hoists and Cranes)

Part 1 – General

- 1.1 Experience: manufacturer shall have a minimum of 5 years experience producing substantially similar equipment.
- 1.2 Quality Assurance: manufacturer shall be registered ISO 9001:2000 compliant with an independent certification agency approved by the International Organization for Standardization.

Part 2 – Products

2.1 Davit Crane

- 2.1.1 Manufacturer: davit crane shall be as manufactured by Thern, Inc., Series 5122.
- 2.1.2 Design Factor: designed with an ultimate design factor greater than 3:1 for all components including the lifting winch and base.
- 2.1.3 Lift Capacity: davit crane shall have a fixed lift capacity of 500 pounds at all boom positions.
- 2.1.4 Hook Reach: boom when horizontal shall have a minimum hook reach of 42 inches measured from mast center to hook center.
- 2.1.5 Hook Height: hook height shall be adjustable to two positions, one at horizontal and the other at 45 degrees from vertical, with a minimum of 22 inches between the lowest position and the highest position.
- 2.1.6 Boom Sheave: wire rope shall pass over a sheave at the end of the boom.
- 2.1.7 Clearance: minimum height of the boom shall be 24 inches between mounting surface and the underside of the boom in all base configurations.
- 2.1.8 Rotation: mast and boom shall rotate 360 degrees in the base.
- 2.1.9 Fastening Pins: crane components shall be fastened together using stainless steel clevis style pins.
- 2.1.10 Portability: davit crane shall fold down or break down into portable components, with total crane weight not to exceed 78 pounds.
- 2.1.11 Winch Location: lifting winches shall be located such that the center point of the drive shaft is behind the centerline of the mast.
- 2.1.12 Nametag: davit crane shall be labeled with a non-corrosive metal identification plate labeled or imprinted with the manufacturer's name, model number, serial number, capacity rating, and other essential information.

2.2 Crane Base

- 2.2.1 Manufacturer: crane base shall be as manufactured by Thern, Inc., Series 522.
- 2.2.2 Interface: crane base shall allow for removal of the mast.
- 2.2.3 Bearings: crane base shall have a Nylatron GSM bearing sleeve to support the mast at the top of the base.

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FOR 514 WHEEL BASE

- 2.2.4 Leg Width: wheel base width shall be less than 30 inches measured from outside edge to outside edge.
- 2.2.5 Leg Length: wheel base length shall be less than 45 inches measured front to back from the outside edges.
- 2.2.6 Non-Rotation: bolt through base shall secure mast and prevent rotation.
- 2.2.7 Wheels: wheel base shall have 4 inch diameter wheels in front and 2.5 inch diameter caster wheels in the rear.

2.3 Crane and Base Finish

FOR STANDARD MODELS

- 2.3.1 Material: crane boom, mast and base shall be fabricated from steel meeting ASTM standards.
- 2.3.2 Finish: crane boom, mast and base shall have a corrosion resistant finish.

FOR GALVANIZED MODELS ENDING WITH GAL

- 2.3.1 Material: crane boom, mast and base shall be fabricated from steel meeting ASTM standards.
- 2.3.2 Finish: crane boom, mast and base shall be hot-dipped galvanized.

FOR STAINLESS STEEL MODELS ENDING WITH SS

- 2.3.1 Material: crane boom, mast and base shall be fabricated from AISI 304/304L/316 stainless steel, with electro-polish finish.

2.4 Lifting Winch

FOR M4022PB-K OR CRANE MODELS ENDING IN M1

- 2.4.1 Lifting Winch: winch shall have machine cut gears, an adjustable handle that mounts securely to the drive shaft, bronze bearings, and a positive load holding Weston style brake able to stop and hold the load automatically if the winch handle is released.
- 2.4.2 Cable Anchor: lifting winch shall include the Thern Quick Disconnect feature allowing quick attachment and detachment of wire rope equipped with a swaged ball anchor.
- 2.4.3 Finish: lifting winch shall have a zinc and iridescent dichromate plated corrosion resistant finish.

FOR M4042PBSS-K OR CRANE MODELS ENDING IN M3

- 2.4.1 Lifting Winch: winch shall have machine cut gears, an adjustable handle that mounts securely to the drive shaft, bronze bearings, and a positive load holding Weston style brake able to stop and hold the load automatically if the winch handle is released.



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- 2.4.2 Cable Anchor: lifting winch shall include the Thern Quick Disconnect feature allowing quick attachment and detachment of wire rope equipped with a swaged ball anchor.
- 2.4.3 Material: lifting winch shall be fabricated from type 304/17-4 stainless steel minimum, with electro-polish finish.

2.5 Wire Rope

- 2.5.1 Wire Rope: wire rope construction shall be 7 x 19 type 304 stainless steel cable.
- 2.5.2 Hooks: latch type hooks shall be used and shall be either non-rotating eye type or swivel type to allow 360 degree rotation under all load conditions. Hooks shall be heat treated drop forged type 304/316 stainless steel.

5110 Series Specifications



Section 11000 – Equipment (or 14600 – Hoists and Cranes)

Part 1 – General

- 1.1 Experience: manufacturer shall have a minimum of 5 years experience producing substantially similar equipment.
- 1.2 Quality Assurance: manufacturer shall be registered ISO 9001:2000 compliant with an independent certification agency approved by the International Organization for Standardization.

Part 2 – Products

2.1 Davit Crane

- 2.1.1 Manufacturer: davit crane shall be as manufactured by Thern, Inc., Series 5110.
- 2.1.2 Design Factor: designed with an ultimate design factor greater than 3:1 for all components including the lifting winch and base.
- 2.1.3 Lift Capacity: davit crane shall have a variable lift capacity based on boom length, to vary between 1000 pounds lift capacity with the boom in the shortest length, and 500 pounds with the boom fully extended.
- 2.1.4 Hook Reach: boom shall telescope up to 4 different lengths allowing a maximum hook reach of at least 66 inches measured from mast center to hook center.
- 2.1.5 Hook Height: hook height shall be adjustable by moving the boom up or down between horizontal and 45 degrees from vertical, with a minimum of 44 inches between the lowest position and the highest position with the boom fully extended.
- 2.1.6 Boom Angle: boom angle shall be adjustable at all times, including when under full rated load, with a hand operated screw jack acting to raise or lower the boom between horizontal and 45 degrees from vertical.
- 2.1.7 Boom Sheave: wire rope shall pass over a sheave at the end of the boom. Sheave shall have a bronze bearing.
- 2.1.8 Clearance: minimum height of the boom shall be 42 inches between mounting surface and the underside of the boom in all base configurations.
- 2.1.9 Rotation: mast and boom shall rotate 360 degrees in the base on pin bearing and bearing sleeve, with a rotational handle attached to mast to facilitate rotation.
- 2.1.10 Fastening Pins: crane components shall be fastened together using stainless steel clevis style pins, secured with lynch pins with lanyards fastening the lynch pins to primary structural components.
- 2.1.11 Portability: davit crane shall break down into portable components with no single component weighing more than 100 pounds. Carrying handles shall be welded to mast and boom.
- 2.1.12 Winch Location: lifting winches shall be located such that the center point of the drive shaft is behind the centerline of the mast.
- 2.1.13 Nametag: davit crane shall be labeled with a non-corrosive metal identification plate labeled or imprinted with the manufacturer's name, model number, serial number, capacity rating, and other essential information.

2.2 Crane Base

- 2.2.1 Manufacturer: crane base shall be as manufactured by Thern, Inc., Series 510.
- 2.2.2 Interface: crane base shall allow for removal of the mast.
- 2.2.3 Bearings: crane base shall have a pin bearing to support the end of the mast and a Nylatron GSM bearing sleeve to support the mast at the top of the base.

FOR 510R WHEEL BASE

- 2.2.4 Leg Width: wheel base width shall be adjustable with a maximum 36 inch outside width with the legs in, and a minimum 42 inch inside width with the legs out.
- 2.2.5 Leg Length: legs shall telescope to 4 different lengths.
- 2.2.6 Non-Rotation: bolt through base shall secure mast and prevent rotation.
- 2.2.7 Wheels: wheel base shall have spark resistant 6 inch diameter wheels in front and 3 inch diameter caster wheels in the rear.

2.3 Crane and Base Finish

FOR STANDARD MODELS

- 2.3.1 Material: crane boom, mast and base shall be fabricated from steel meeting ASTM standards.
- 2.3.2 Finish: crane boom, mast and base shall have a corrosion resistant finish.

FOR GALVANIZED MODELS ENDING WITH GAL

- 2.3.1 Material: crane boom, mast and base shall be fabricated from steel meeting ASTM standards.
- 2.3.2 Finish: crane boom, mast and base shall be hot-dipped galvanized.

FOR STAINLESS STEEL MODELS ENDING WITH SS

- 2.3.1 Material: crane boom, mast and base shall be fabricated from AISI 304/304L stainless steel minimum, with electro-polish finish. Screw-jack with galvanized finish.

2.4 Lifting Winch

FOR M4312PB-K OR CRANE MODELS ENDING IN M1

- 2.4.1 Lifting Winch: winch shall have machine cut gears, an adjustable handle that mounts securely to the drive shaft, bronze and radial ball bearings, and a positive load holding Weston style brake able to stop and hold the load automatically if the winch handle is released.
- 2.4.2 Cable Anchor: lifting winch shall include the Thern Quick Disconnect feature allowing quick attachment and detachment of wire rope equipped with a swaged ball anchor.
- 2.4.3 Finish: lifting winch shall have a zinc and iridescent dichromate plated corrosion resistant finish.

FOR M4312PBSS-K OR CRANE MODELS ENDING IN M3

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- 2.4.1 Lifting Winch: winch shall have machine cut gears, an adjustable handle that mounts securely to the drive shaft, bronze and radial ball bearings, stainless steel fasteners, and a positive load holding Weston style brake able to stop and hold the load automatically if the winch handle is released.
- 2.4.2 Cable Anchor: lifting winch shall include the Thern Quick Disconnect feature allowing quick attachment and detachment of wire rope equipped with a swaged ball anchor.
- 2.4.3 Material: lifting winch shall be fabricated from type 304/17-4 stainless steel minimum, with electro-polish finish.

FOR 4WM2-K OR CRANE MODELS ENDING IN M2

- 2.4.1 Lifting Winch: winch shall have machine cut worm gears operating in an enclosed oil bath, cast aluminum gear case and drum construction, an adjustable handle that mounts securely to the drive shaft for manual operation, bronze and radial ball bearings, pressure plate, and a positive load holding mechanical brake able to stop and hold the load automatically if the winch handle is released.
- 2.4.2 Cable Anchor: lifting winch shall include the Thern Quick Disconnect feature allowing quick attachment and detachment of wire rope equipped with a swaged ball anchor.
- 2.4.3 Drill Operation: lifting winch shall be equipped with a hex drive input to allow drill drive operation with a maximum rated drill speed of 400 rpm.

FOR 4WP2-K OR 4777-K FOR CRANE MODELS ENDING IN E2 OR E4

- 2.4.1 Lifting Winch: winch shall have machine cut worm gearing operating in an enclosed oil bath, cast aluminum gear case construction, bronze and radial ball bearings, pressure plate, and a positive load holding mechanical brake able to stop and hold the load automatically if winch operation is halted.
- 2.4.2 Motor: motor shall be totally enclosed non-ventilated, or fan cooled, with anti-friction bearings and Class B insulation minimum. Motor shall be reversible with torque characteristics suitable for the hoist service and capable of operating at specified loads, with a NEMA 4 pendant control on a minimum 6 foot control cord. Motor at rated frequency shall be capable of operating within 10% of rated motor voltage.
- 2.4.3 Cable Anchor: lifting winch shall include the Thern Quick Disconnect feature allowing quick attachment and detachment of wire rope equipped with a swaged end fitting.

2.5 Wire Rope

- 2.5.1 Wire Rope: wire rope construction shall be 7 x 19 type 304 stainless steel cable.
- 2.5.2 Hooks: latch type hooks shall be used and shall be either non-rotating eye type or swivel type to allow 360 degree rotation under all load conditions. Hooks shall be heat treated drop forged type 304/316 stainless steel.

Section 11000 – Equipment (or 14600 – Hoists and Cranes)

Part 1 – General

- 1.1 Experience: manufacturer shall have a minimum of 5 years experience producing substantially similar equipment.
- 1.2 Quality Assurance: manufacturer shall be registered ISO 9001:2000 compliant with an independent certification agency approved by the International Organization for Standardization.

Part 2 – Products

2.1 Davit Crane

- 2.1.1 Manufacturer: davit crane shall be as manufactured by Thern, Inc., Series 5124.
- 2.1.2 Design Factor: designed with an ultimate design factor greater than 3:1 for all components including the lifting winch and base.
- 2.1.3 Lift Capacity: davit crane shall have a variable lift capacity based on boom length, to vary between 2000 pounds lift capacity with the boom in the shortest length, and 1000 pounds with the boom fully extended.
- 2.1.4 Hook Reach: boom shall telescope up to 4 different lengths allowing a maximum hook reach of at least 81 inches measured from mast center to hook center.
- 2.1.5 Hook Height: hook height shall be adjustable by moving the boom up or down between 5 degrees above horizontal and 45 degrees from vertical, with a minimum of 48 inches between the lowest position and the highest position with the boom fully extended.
- 2.1.6 Boom Angle: boom angle shall be adjustable at all times, including when under full rated load, with a hand operated screw jack acting to raise or lower the boom between 5 degrees above horizontal and 45 degrees from vertical.
- 2.1.7 Boom Sheave: wire rope shall pass over a sheave at the end of the boom. Sheave shall have a bronze bearing.
- 2.1.8 Clearance: minimum height of the boom shall be 36 inches between mounting surface and the underside of the boom in all base configurations.
- 2.1.9 Rotation: mast and boom shall rotate 360 degrees in the base on pin bearing and bearing sleeve, with a rotational handle attached to mast to facilitate rotation.
- 2.1.10 Fastening Pins: crane components shall be fastened together using stainless steel clevis style pins, secured with lynch pins with lanyards fastening the lynch pins to primary structural components.
- 2.1.11 Portability: davit crane shall break down into portable components with no single component weighing more than 100 pounds. Carrying handles shall be welded to mast and boom.
- 2.1.12 Winch Location: lifting winches shall be located such that the center point of the drive shaft is behind the centerline of the mast.
- 2.1.13 Nametag: davit crane shall be labeled with a non-corrosive metal identification plate labeled or imprinted with the manufacturer's name, model number, serial number, capacity rating, and other essential information.

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2.2 Crane Base

- 2.2.1 Manufacturer: crane base shall be as manufactured by Thern, Inc., Series 524.
- 2.2.2 Interface: crane base shall allow for removal of the mast.
- 2.2.3 Bearings: crane base shall have a pin bearing to support the end of the mast and a Nyloil MDX bearing sleeve to support the mast at the top of the base.

FOR 524R WHEEL BASE

- 2.2.4 Leg Width: wheel base width shall be adjustable with a maximum 35 inch outside width with the legs in, and a minimum 40 inch inside width with the legs out.
- 2.2.5 Leg Length: legs shall telescope to 4 different lengths.
- 2.2.6 Non-Rotation: bolt through base shall secure mast and prevent rotation.
- 2.2.7 Wheels: wheel base shall have spark resistant 6 inch diameter wheels in front and 4 inch diameter caster wheels in the rear.

2.3 Crane and Base Finish

FOR STANDARD MODELS

- 2.3.1 Material: crane boom, mast and base shall be fabricated from steel meeting ASTM standards.
- 2.3.2 Finish: crane boom, mast and base shall have a corrosion resistant finish.

FOR GALVANIZED MODELS ENDING WITH GAL

- 2.3.1 Material: crane boom, mast and base shall be fabricated from steel meeting ASTM standards.
- 2.3.2 Finish: crane boom, mast and base shall be hot-dipped galvanized.

FOR STAINLESS STEEL MODELS ENDING WITH SS

- 2.3.1 Material: crane boom, mast and base shall be fabricated from AISI 304/304L stainless steel minimum, with electro-polish finish. Screw-jack with galvanized finish.

2.4 Lifting Winch

FOR M4312PB-K OR CRANE MODELS ENDING IN M1

- 2.4.1 Lifting Winch: winch shall have machine cut gears, an adjustable handle that mounts securely to the drive shaft, bronze and radial ball bearings, and a positive load holding Weston style brake able to stop and hold the load automatically if the winch handle is released.
- 2.4.2 Cable Anchor: lifting winch shall include the Thern Quick Disconnect feature allowing quick attachment and detachment of wire rope equipped with a swaged ball anchor.
- 2.4.3 Finish: lifting winch shall have a zinc and iridescent dichromate plated corrosion resistant finish.

FOR M4312PBSS-K OR CRANE MODELS ENDING IN M3

- 2.4.1 Lifting Winch: winch shall have machine cut gears, an adjustable handle that mounts securely to the drive shaft, bronze and radial ball bearings, stainless steel

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- fasteners, and a positive load holding Weston style brake able to stop and hold the load automatically if the winch handle is released.
- 2.4.2 Cable Anchor: lifting winch shall include the Thern Quick Disconnect feature allowing quick attachment and detachment of wire rope equipped with a swaged ball anchor.
 - 2.4.3 Material: lifting winch shall be fabricated from type 304/17-4 stainless steel minimum, with electro-polish finish.

FOR 4WM2-K OR CRANE MODELS ENDING IN M2

- 2.4.1 Lifting Winch: winch shall have machine cut worm gears operating in an enclosed oil bath, cast aluminum gear case and drum construction, an adjustable handle that mounts securely to the drive shaft for manual operation, bronze and radial ball bearings, pressure plate, and a positive load holding mechanical brake able to stop and hold the load automatically if the winch handle is released.
- 2.4.2 Cable Anchor: lifting winch shall include the Thern Quick Disconnect feature allowing quick attachment and detachment of wire rope equipped with a swaged ball anchor.
- 2.4.3 Drill Operation: lifting winch shall be equipped with a hex drive input to allow drill drive operation with a maximum rated drill speed of 400 rpm.

FOR 4WP2-K OR 4777-K FOR CRANE MODELS ENDING IN E2 OR E4

- 2.4.1 Lifting Winch: winch shall have machine cut worm gearing operating in an enclosed oil bath, cast aluminum gear case construction, bronze and radial ball bearings, pressure plate, and a positive load holding mechanical brake able to stop and hold the load automatically if winch operation is halted.
- 2.4.2 Motor: motor shall be totally enclosed non-ventilated, or fan cooled, with anti-friction bearings and Class B insulation minimum. Motor shall be reversible with torque characteristics suitable for the hoist service and capable of operating at specified loads, with a NEMA 4 pendant control on a minimum 6 foot control cord. Motor at rated frequency shall be capable of operating within 10% of rated motor voltage.
- 2.4.3 Cable Anchor: lifting winch shall include the Thern Quick Disconnect feature allowing quick attachment and detachment of wire rope equipped with a swaged end fitting.

2.5 Wire Rope

- 2.5.1 Wire Rope: wire rope construction shall be 7 x 19 type 304 stainless steel cable.
- 2.5.2 Hooks: latch type hooks shall be used and shall be either non-rotating eye type or swivel type to allow 360 degree rotation under all load conditions. Hooks shall be heat treated drop forged type 304/316 stainless steel.

Section 11000 – Equipment (or 14600 – Hoists and Cranes)

Part 1 – General

- 1.1 Experience: manufacturer shall have a minimum of 5 years experience producing substantially similar equipment.
- 1.2 Quality Assurance: manufacturer shall be registered ISO 9001:2000 compliant with an independent certification agency approved by the International Organization for Standardization.

Part 2 – Products

2.1 Davit Crane

- 2.1.1 Manufacturer: davit crane shall be as manufactured by Thern, Inc., Series 5PT30.
- 2.1.2 Design Factor: designed with an ultimate design factor greater than 2.6:1 for all components including the lifting winch and base.
- 2.1.3 Portability: davit crane shall break down into transportable components.
- 2.1.4 Lift Capacity: davit crane shall have a variable lift capacity based on boom length, to vary between 3000 pounds lift capacity with the boom in the shortest length, and 2400 pounds with the boom fully extended.
- 2.1.5 Hook Reach: boom shall telescope up to 5 different lengths allowing a maximum hook reach of at least 112 inches measured from mast center to hook center when boom is horizontal.
- 2.1.6 Hook Height: hook height shall be fixed or adjustable by moving the boom up or down between 0 and 40 degrees above horizontal, with a minimum of 87 inches between the lowest position and the highest position with the boom fully extended.
- 2.1.7 Boom Angle: boom angle shall be fixed or adjustable with a hand operated screw jack acting to raise or lower the boom between 0 and 40 degrees above horizontal.
- 2.1.8 Boom Sheave: wire rope shall pass over a sheave at the end of the boom. Sheave shall have a bronze bearing.
- 2.1.9 Clearance: minimum height of the boom shall be 62 inches between mounting surface and the underside of the boom in all base configurations.
- 2.1.10 Rotation: boom and outer mast shall rotate 360 degrees on tapered roller bearings and needle bearings, with a rotational handle attached to outer mast to facilitate rotation. Outer mast shall lock in one of 30 degree incremental positions with locking pin. Rotational stop option shall limit rotation in 30 degree increments.
- 2.1.11 Fastening Pins: crane components shall be fastened together using stainless steel clevis style pins.
- 2.1.12 Nametag: davit crane shall be labeled with a non-corrosive metal identification plate labeled or imprinted with the manufacturer's name, model number, serial number, capacity rating, and other essential information.

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2.2 Crane Base

2.2.1 Manufacturer: crane base shall be as manufactured by Thern, Inc.

2.2.2 Interface: crane base shall allow for removal of the mast.

2.3 Crane and Base Finish

FOR STANDARD MODELS

2.3.1 Material: crane boom, mast and base shall be fabricated from steel meeting ASTM standards.

2.3.2 Finish: crane boom, mast and base shall have a corrosion resistant enamel finish.

FOR EPOXY FINISH

2.3.3 Finish: crane shall have a 3 step epoxy finish consisting of a primer, an epoxy coat, and a top coat of polyurethane.

2.4 Lifting Winch

FOR M452B-K FOR CRANE MODELS ENDING IN M1

2.4.1 Lifting Winch: winch shall have machine cut gears, an adjustable handle that mounts securely to the drive shaft, bronze and radial ball bearings, and a positive load holding Weston style brake able to stop and hold the load automatically if the winch handle is released.

FOR 4WS3M6-K1 FOR CRANE MODELS ENDING IN E5

2.4.1 Lifting Winch: winch shall have worm gearing operating in an enclosed oil bath, spur gearing, and a positive load holding spring set electrically released motor brake able to stop and hold the load automatically if winch operation is halted.

2.4.2 Motor: motor shall be totally enclosed non-ventilated or fan cooled, with anti-friction bearings and Class B insulation minimum. Motor shall be reversible with torque characteristics suitable for the hoist service and capable of operating at specified loads. Motor at rated frequency shall be capable of operating within 10% of rated motor voltage.

2.5 Wire Rope

2.5.1 Wire Rope: wire rope construction shall be 7 x 19 type 304 stainless steel cable.

2.5.2 Hooks: latch type hooks shall be used and shall be either non-rotating eye type or swivel type to allow 360 degree rotation under all load conditions. Hooks shall be heat treated drop forged type 304/316 stainless steel.

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Part 1 – General

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Part 2 – Products

2.1 Davit Crane

- 2.1.1 Manufacturer: davit crane shall be as manufactured by Thern, Inc., Series 571.
- 2.1.2 Design Factor: designed with an ultimate design factor greater than 3:1 for all components including the lifting winch and base.
- 2.1.3 Lift Capacity: davit crane shall have a variable lift capacity based on boom position, to vary between 1200 pounds with the boom horizontal and 1500 pounds with the boom at 45 degrees from vertical.
- 2.1.4 Hook Reach: boom shall have a maximum hook reach of at least 87 inches measured from mast center to hook center when the boom is horizontal.
- 2.1.5 Hook Height: hook height shall be adjustable by moving the boom up or down between horizontal and 45 degrees from vertical, with a minimum of 62 inches between the lowest position and the highest position.
- 2.1.6 Boom Angle: boom angle shall be fixed or adjustable with a hand operated screw jack acting to raise or lower the boom between horizontal and 45 degrees from vertical.
- 2.1.7 Boom Sheave: wire rope shall pass over a sheave at the end of the boom. Sheave shall have a bronze bearing.
- 2.1.8 Clearance: minimum height of the boom shall be 62 inches between mounting surface and the underside of the boom.
- 2.1.9 Rotation: mast and boom shall rotate 360 degrees in the base on roller and tapered roller bearings, with a rotational handle attached to mast to facilitate rotation.
- 2.1.10 Fastening Pins: crane components shall be fastened together using solid steel pins.
- 2.1.11 Winch Location: lifting winches shall be located such that the center point of the drive shaft is no more than 18 inches in front of the centerline of the mast.
- 2.1.12 Nametag: davit crane shall be labeled with a non-corrosive metal identification plate labeled or imprinted with the manufacturer's name, model number, serial number, capacity rating, and other essential information.

2.2 Crane Finish

FOR STANDARD MODELS

- 2.2.1 Material: crane boom, mast and base shall be fabricated from steel meeting ASTM standards.
- 2.2.2 Finish: crane boom, mast and base shall have a corrosion resistant finish.

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FOR EPOXY FINISH

- 2.2.1 Finish: crane shall have a 3 step epoxy finish consisting of a primer, an epoxy coat, and a top coat of polyurethane.

2.3 Lifting Winch

FOR M4312PB-K OR CRANE MODELS ENDING IN M1

- 2.3.1 Lifting Winch: winch shall have machine cut gears, an adjustable handle that mounts securely to the drive shaft, bronze and radial ball bearings, and a positive load holding Weston style brake able to stop and hold the load automatically if the winch handle is released.
- 2.3.2 Cable Anchor: lifting winch shall include the Thern Quick Disconnect feature allowing quick attachment and detachment of wire rope equipped with a swaged ball anchor.
- 2.3.3 Finish: lifting winch shall have a zinc and iridescent dichromate plated corrosion resistant finish.

FOR 4WM2V-K OR CRANE MODELS ENDING IN M2

- 2.3.1 Lifting Winch: winch shall have machine cut worm gears operating in an enclosed oil bath, cast aluminum gear case and drum construction, an adjustable handle that mounts securely to the drive shaft for manual operation, bronze and radial ball bearings, pressure plate, and a positive load holding mechanical brake able to stop and hold the load automatically if the winch handle is released.
- 2.3.2 Cable Anchor: lifting winch shall include the Thern Quick Disconnect feature allowing quick attachment and detachment of wire rope equipped with a swaged ball anchor.
- 2.3.3 Drill Operation: lifting winch shall be equipped with a hex drive input to allow drill drive operation with a maximum rated drill speed of 400 rpm.

FOR 4WP2-K OR 4777-K FOR CRANE MODELS ENDING IN E2 OR E4

- 2.3.1 Lifting Winch: winch shall have machine cut worm gearing operating in an enclosed oil bath, cast aluminum gear case construction, bronze and radial ball bearings, pressure plate, and a positive load holding mechanical brake able to stop and hold the load automatically if winch operation is halted.
- 2.3.2 Motor: motor shall be totally enclosed non-ventilated, or fan cooled, with anti-friction bearings and Class B insulation minimum. Motor shall be reversible with torque characteristics suitable for the hoist service and capable of operating at specified loads, with a NEMA 4 pendant control on a minimum 6 foot control cord. Motor at rated frequency shall be capable of operating within 10% of rated motor voltage.
- 2.3.3 Cable Anchor: lifting winch shall include the Thern Quick Disconnect feature allowing quick attachment and detachment of wire rope equipped with a swaged end fitting.

2.4 Wire Rope

- 2.4.1 Wire Rope: wire rope construction shall be 7 x 19 type 304 stainless steel cable.

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- 2.4.2 Hooks: latch type hooks shall be used and shall be either non-rotating eye type or swivel type to allow 360 degree rotation under all load conditions. Hooks shall be heat treated drop forged type 304/316 stainless steel.

572 Series Specifications



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- 1.2 Quality Assurance: manufacturer shall be registered ISO 9001:2000 compliant with an independent certification agency approved by the International Organization for Standardization.

Part 2 – Products

2.1 Davit Crane

- 2.1.1 Manufacturer: davit crane shall be as manufactured by Thern, Inc., Series 572.
- 2.1.2 Design Factor: designed with an ultimate design factor greater than 3:1 for all components including the lifting winch and base.
- 2.1.3 Lift Capacity: davit crane shall have a variable lift capacity based on boom position, to vary between 1700 pounds with the boom horizontal and 2200 pounds with the boom at 45 degrees from vertical.
- 2.1.4 Hook Reach: boom shall have a maximum hook reach of at least 106 inches measured from mast center to hook center when the boom is horizontal.
- 2.1.5 Hook Height: hook height shall be adjustable by moving the boom up or down between horizontal and 45 degrees from vertical, with a minimum of 76 inches between the lowest position and the highest position.
- 2.1.6 Boom Angle: boom angle shall be fixed or adjustable with a hand operated screw jack acting to raise or lower the boom between horizontal and 45 degrees from vertical.
- 2.1.7 Boom Sheave: wire rope shall pass over a sheave at the end of the boom. Sheave shall have a needle bearing.
- 2.1.8 Clearance: minimum height of the boom shall be 68 inches between mounting surface and the underside of the boom.
- 2.1.9 Rotation: mast and boom shall rotate 360 degrees in the base on roller and tapered roller bearings, with a rotational handle attached to mast to facilitate rotation.
- 2.1.10 Fastening Pins: crane components shall be fastened together using solid steel pins.
- 2.1.11 Winch Location: lifting winches shall be located such that the center point of the drive shaft is no more than 18 inches in front of the centerline of the mast.
- 2.1.12 Nametag: davit crane shall be labeled with a non-corrosive metal identification plate labeled or imprinted with the manufacturer's name, model number, serial number, capacity rating, and other essential information.

2.2 Crane Finish

FOR STANDARD MODELS

- 2.2.1 Material: crane boom, mast and base shall be fabricated from steel meeting ASTM standards.
- 2.2.2 Finish: crane boom, mast and base shall have a corrosion resistant finish.

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FOR EPOXY FINISH

- 2.2.1 Finish: crane shall have a 3 step epoxy finish consisting of a primer, an epoxy coat, and a top coat of polyurethane.

2.3 Lifting Winch

FOR M452B-K OR CRANE MODELS ENDING IN M1

- 2.3.1 Lifting Winch: winch shall have machine cut gears, an adjustable handle that mounts securely to the drive shaft, bronze and radial ball bearings, and a positive load holding Weston style brake able to stop and hold the load automatically if the winch handle is released.

FOR 4771-K FOR CRANE MODELS ENDING IN E3

- 2.3.1 Lifting Winch: winch shall have machine cut worm gearing operating in an enclosed oil bath, cast aluminum gear case and drum construction, radial ball bearings, pressure plate, and a positive load holding mechanical brake able to stop and hold the load automatically if winch operation is halted.
- 2.3.2 Motor: motor shall be totally enclosed non-ventilated or fan cooled, with anti-friction bearings and Class B insulation minimum. Motor shall be reversible with torque characteristics suitable for the hoist service and capable of operating at specified loads. Motor at rated frequency shall be capable of operating within 10% of rated motor voltage.
- 2.3.3 Cable Anchor: lifting winch shall include the Thern Quick Disconnect feature allowing quick attachment and detachment of wire rope equipped with a swaged end fitting.

FOR 4WS3M6-K FOR CRANE MODELS ENDING IN E5

- 2.3.1 Lifting Winch: winch shall have worm gearing operating in an enclosed oil bath, spur gearing, and a positive load holding spring set electrically released motor brake able to stop and hold the load automatically if winch operation is halted.
- 2.3.2 Motor: motor shall be totally enclosed non-ventilated or fan cooled, with anti-friction bearings and Class B insulation minimum. Motor shall be reversible with torque characteristics suitable for the hoist service and capable of operating at specified loads. Motor at rated frequency shall be capable of operating within 10% of rated motor voltage.

2.4 Wire Rope

- 2.4.1 Wire Rope: wire rope construction shall be 7 x 19 type 304 stainless steel cable.
- 2.4.2 Hooks: latch type hooks shall be used and shall be either non-rotating eye type or swivel type to allow 360 degree rotation under all load conditions. Hooks shall be heat treated drop forged type 304/316 stainless steel.