



Read this Owner's Manual thoroughly before operating the equipment. Keep it with the equipment at all times. Replacements are available from Thern, Inc., PO Box 347, Winona, MN 55987, 507-454-2996. www.thern.com

IMPORTANT: Please record product information on page 2. This information is required when calling the factory for service.



Owner's Manual

For
5122 Series
Portable Davit Cranes

Two-Year Limited Warranty

Please record the following:

Date Purchased: _____

Crane Model No.: _____

Crane Serial No.: _____

If sold with a winch:

Winch Model No.: _____

Winch Serial No.: _____

This information is required when calling the factory for service.

Thern, Inc. warrants its products against defects in material or workmanship for two years from the date of purchase by the original using buyer, or if this date cannot be established, the date the product was sold by Thern, Inc. to the dealer. To make a claim under this warranty, contact the factory for an RGA number. The product must be returned, prepaid, directly to Thern, Inc., 5712 Industrial Park Road, Winona, Minnesota 55987. The following information must accompany the product: the RGA number, the date of purchase, the description of the claimed defect, and a complete explanation of the circumstances involved. If the product is found to be defective, it will be repaired or replaced free of charge, and Thern, Inc. will reimburse the shipping cost within the contiguous USA.

This warranty does not cover any damage due to accident, misuse, abuse, or negligence. Any alteration, repair or modification of the product outside the Thern, Inc. factory shall void this warranty. This warranty does not cover any costs for removal of our product, downtime, or any other incidental or consequential costs or damages resulting from the claimed defects. This warranty does not cover brake discs, wire rope or other wear components, as their life is subject to use conditions which vary between applications.

FACTORY AUTHORIZED REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY TO THE CONSUMER. THERN, INC. SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY ON THIS PRODUCT. EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ON THIS PRODUCT IS LIMITED IN DURATION TO THE DURATION OF THIS WARRANTY.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or allow limitations on how long an implied warranty lasts, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Note: Thern, Inc. reserves the right to change the design or discontinue the production of any product without prior notice.

About This Manual

The Occupational Safety and Health Act of 1970 states that it is the employer's responsibility to provide a workplace free of hazard. To this end, all equipment should be installed, operated, and maintained in compliance with applicable trade, industrial, federal, state, and local regulations. It is the equipment owner's responsibility to obtain copies of these regulations and to determine the suitability of the equipment to its intended use.

This Owner's Manual, and warning labels attached to the equipment, are to serve as guidelines for hazard-free installation, operation, and maintenance. They should not be understood to prepare you for every possible situation.

The information contained in this manual is applicable only to the Thern 5122 Series PorTable Davit Cranes. Do not use this manual as a source of information for any other equipment.

The following symbols are used for emphasis throughout this manual:

▲WARNING

Failure to follow 'WARNING!' instructions may result in equipment damage, property damage, and/or serious personal injury.

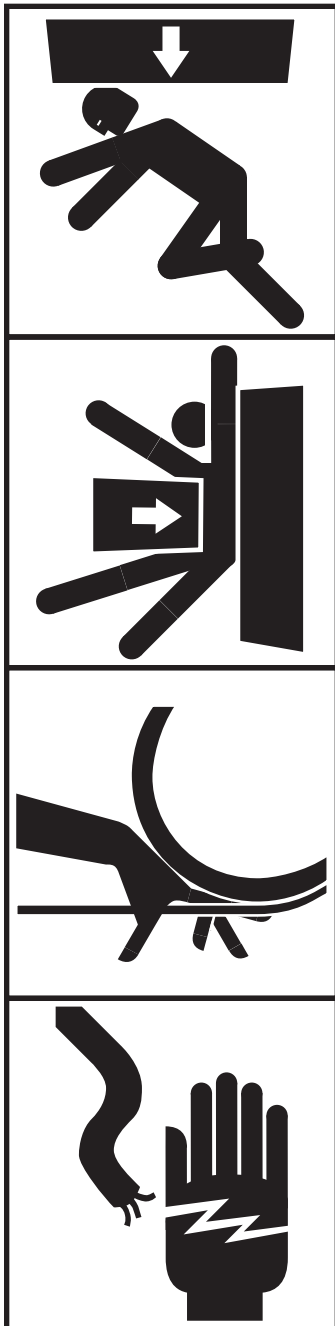
▲CAUTION

Failure to follow 'CAUTION!' instructions may result in equipment damage, property damage, and/or minor personal injury.

Important!

Failure to follow 'important!' instructions may result in poor performance of the equipment.

Suggestions for Safe Operation



⚠WARNING

DO the following:

Read and comply with the guidelines set forth in this Owner's Manual. Keep this manual, and all labels attached to the crane, readable and with the equipment at all times. Contact Thern, Inc. for replacements.

Check lubrication before use.

Install the wire rope securely to the winch drum.

Keep at least 4 wraps of wire rope wound on the drum at all times, to serve as anchor wraps. With less than 4 wraps on the drum the wire rope could come loose, causing the load to escape.

Keep hands away from sheaves, gears, wire rope, and other moving parts of the equipment.

Disconnect the power before servicing the equipment.

Keep all unnecessary personnel away from the crane while in operation. Keep out of the path of the load, and out of the path of a broken wire rope that might snap back and cause injury.

DO NOT do the following:

Do not lift people, or things over people. Do not walk or work under a load or in the line of force of any load.

Do not exceed the load rating of the crane or any other component in the system.

Do not use more than one crane to move a load that exceeds the load rating of a single crane. A shift in load weight could overload the equipment.

Do not use damaged or malfunctioning equipment. To do so could result in failure of the equipment.

Do not modify the equipment in any way. To do so could cause equipment failure.

Do not wrap the wire rope around the load. This damages the wire rope and could cause the load to escape. Use a sling or other approved lifting device.

Do not operate the crane with guards removed or improperly installed.

Do not divert your attention from the operation. Stay alert to the possibility of accidents, and try to prevent them from happening.

Do not jerk or swing the load. Avoid shock loads by starting and stopping the load smoothly. Shock loads overload the equipment and may cause damage.

Do not remove the winch or other components from the crane, and do not use these components for any use other than for their original intended function.

Do not use the crane to drag or pull loads. This will create side pulls which could damage the equipment or cause the load to tip.

Do not leave a suspended load unattended. Place the load on the ground if it must be left unattended.

Do not adjust the winch brake with the load suspended.

1.1 Installing the Crane

Important!

- A qualified professional should inspect or design the foundation to insure that it will provide adequate support.
- Locate the crane so it will be visible during the entire operation.

⚠WARNING

Do not install the crane in an area defined as hazardous by the National Electric Code, unless installation in such an area has been thoroughly approved.

Do not install the crane near corrosive chemicals, flammable materials, explosives, or other elements that may damage the crane or injure the operator. Adequately protect the crane and the operator from such elements.

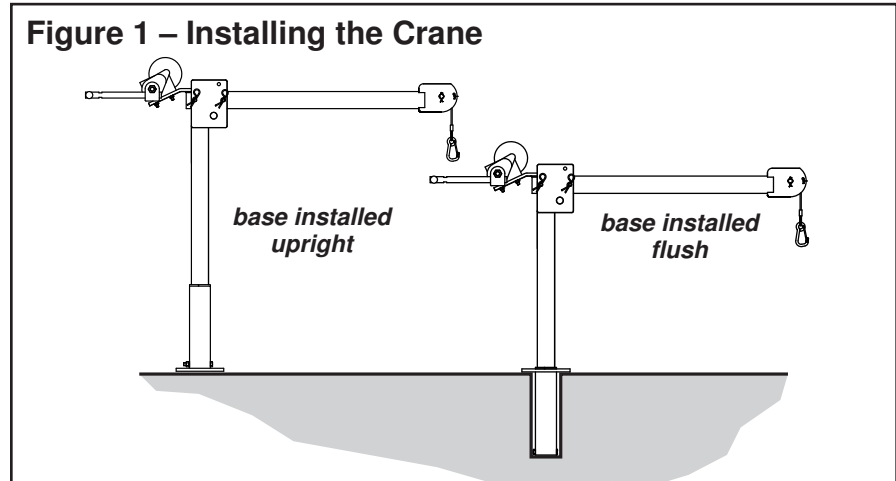
Position the crane so the operator can stand clear of the load, and out of the path of a broken wire rope that could snap back and cause injury.

Attach the crane to a rigid and level foundation that will support the crane and its load under all load conditions, including shock loading.

- 1.1.1 CONSULT APPLICABLE CODES AND REGULATIONS for specific rules on installing the equipment.
- 1.1.2 LOCATE THE CRANE in an area clear of traffic and obstacles that could interfere with operation. Make sure the crane is accessible for maintenance and operation.
- 1.1.3 INSTALL THE CRANE on a level surface. **An unlevel surface may cause the boom to rotate in the direction the mast is leaning.**
- 1.1.4 FASTEN THE BASE securely to the foundation to withstand applicable overturning moments and mounting bolt reaction. See Table 1.
 - a FOR STANDARD PRODUCTS referred to in this manual, use 3/8 inch coarse thread fasteners, grade 5 or better. Torque for grade 5 fasteners without lubrication is 30 ft lbs. Make sure mounting holes are secured to a solid foundation able to support the crane and the load under all conditions with design factors based on accepted engineering practices.

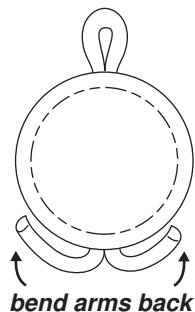
Crane Model	Mast Moment	Suggested Bolt Size	Pedestal Base Only	Wall-Mount Base Only	
			Axial Force ¹	Axial Force ¹ Per Bolt	Shear Force Per Bolt
5122	21,800 in-lb	3/8 inch	2,210 lb	1,370 lb	1,150 lb

¹ Force in tension
² Disclaimer: This information may change without prior notice. It is the responsibility of the installer and/or the end-user to ensure that the most current information is used.



Important!

- Inspect the crane during assembly according to the Instructions for Periodic Inspection. This will give you a record of the condition of the crane with which to compare future inspections.
- Save all boxes and crates that the crane was shipped in, use them again if you need to repackage the crane.
- Contact the factory immediately if any parts are missing or damaged.
- Do not overtighten fasteners, this may strip threads or cause damage to other parts.

Figure 2 – Cotter Pins

- b NON-STANDARD PRODUCTS that vary from the original design may have different fastening requirements. Contact a structural engineer or Thern, Inc. for this information.

TO COMPLY WITH LOCAL CODES, CONTACT A QUALIFIED PROFESSIONAL TO OBTAIN PROPER STRUCTURE OR FOUNDATION SPECIFICATIONS FOR THE MOUNTING OF THERN PRODUCTS.

1.2 Assembling the Crane

- 1.2.1 STUDY PARTS DRAWINGS to understand how the crane is assembled. See pages 16 through 18.
- 1.2.2 LUBRICATE PINS and other components prior to assembly. Refer to Section 3.2 Lubricating the Crane.
- 1.2.3 INSTALL THE BASE and insert the mast in the base and assemble the crane in the following order.
 - a FOR 522 SERIES BASES, the rollers should be installed in the lowest point of the base allowing the mast to rotate freely in the base mount.
 - b FOR MODEL 514 secure the mast in place using the fasteners provided. **Make sure the capscrew passes through the mast to prevent the mast from rotating in the base.** On 514 models the mast should not rotate in base, the base is designed to have the load centered between base legs. **Allowing the mast to rotate in the base may cause the crane to tip.**
- 1.2.4 FASTEN THE BOOM to the mast using the clevis pins provided. Do not rest the boom on top of the front clevis pin, this may cause it to bend under load. Both clevis pins must be installed through the boom. See Figure 3. **Make sure the boom is positioned correctly.**
- 1.2.5 POSITION THE SHEAVE between the ears on the boom extension, and fasten in place with the clevis pin and cotter pin provided.
 - a INSTALL THE CLEVIS PIN in the holes located by the sheave at the end of the boom. Secure in place with the hair cotter pin provided.
- 1.2.6 FASTEN THE WINCH to the mounting plate on the boom using fasteners provided. On some models you will need to use the winch adapter plate and fasteners provided to fasten the winch to the crane. **Make sure the winch is positioned correctly with the winch drum facing forward toward the boom.**
- 1.2.7 INSTALL THE WINCH HANDLE according to instructions in the Winch Owner's Manual.
- 1.2.8 INSTALL THE WIRE ROPE. **Use wire rope assemblies in the length specified on page 19.**
 - a PASS THE WIRE ROPE over the sheave at the end of the boom.
 - b ANCHOR THE WIRE ROPE to the winch drum and wind 4 wraps of wire rope onto the drum to act as anchor wraps. Refer to the instructions in the Winch Owner's Manual.
- 1.2.9 COMPLETE ASSEMBLY.
 - a MAKE SURE ALL FASTENERS are tightened, and cotter pins properly bent to secure them in place, see Figure 2.
 - b LUBRICATE THE ENTIRE CRANE. See Section 3.2 Lubricating the Crane.

2.1 General Theory of Operation

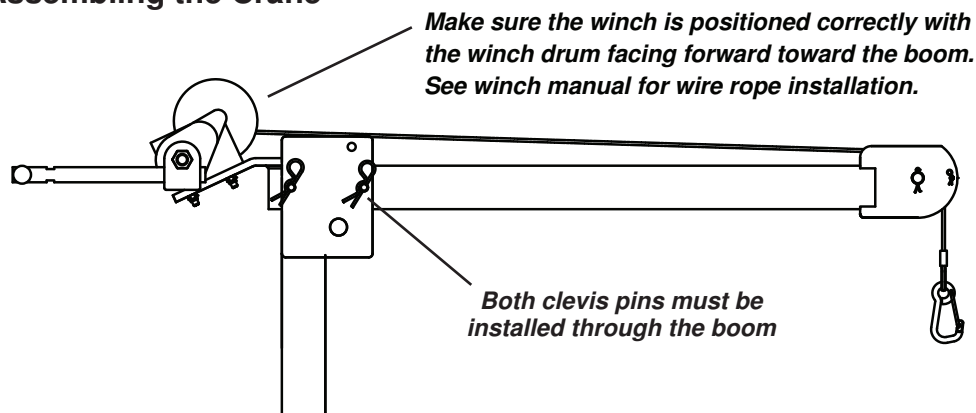
Important!

- Limit nonuniform winding by keeping tension on the wire rope.
- It is your responsibility to detect and account for different factors affecting the condition and performance of the equipment.

- 2.1.1 THE PULL REQUIRED to move the load must not exceed the load rating of the crane. Consider the total force required to move the load, not the weight of the load.
- 2.1.2 THIS EQUIPMENT CAN develop forces that will exceed the load rating. It is the responsibility of the equipment user to limit the size of the load. Inspect the equipment regularly for damage according to the instructions contained in this manual.
- 2.1.3 PERFORMANCE RATINGS of the equipment are affected by the position of the boom, and the amount of wire rope you use. See the Performance Characteristics Tables on page 19.
- a LOAD RATING represents the maximum pull that can be placed on new equipment. Load ratings are assigned values for specific boom positions and wire rope lengths.
- b LIFT varies with the position of the boom and the length of the wire rope.
- c REACH varies with the position of the boom.
- 2.1.4 DUTY RATINGS refer to the type of use the equipment is subject to. Consider the following when determining duty rating.
- a ENVIRONMENT: harsh environments include hot, cold, dirty, wet, corrosive, or explosive surroundings. **Protect the equipment from harsh environments when possible.**
- b MAINTENANCE: poor maintenance, meaning poor cleaning, lubrication, or inspection, leads to poor operation and possible damage of the equipment. **Minimize poor maintenance by carefully following the instructions contained in this manual.**
- c LOADING: severe loading includes shock loading and moving loads that exceed the load rating of the equipment. **Avoid shock loads, and do not exceed the load rating of the equipment.**
- d FREQUENCY OF OPERATION: frequent or lengthy operations increase wear and shorten the life span of gears, bearings, sheaves, and other components. **Increase maintenance of the equipment if used in frequent operations.**

CONTACT THE FACTORY FOR MORE INFORMATION.

Figure 3 – Assembling the Crane

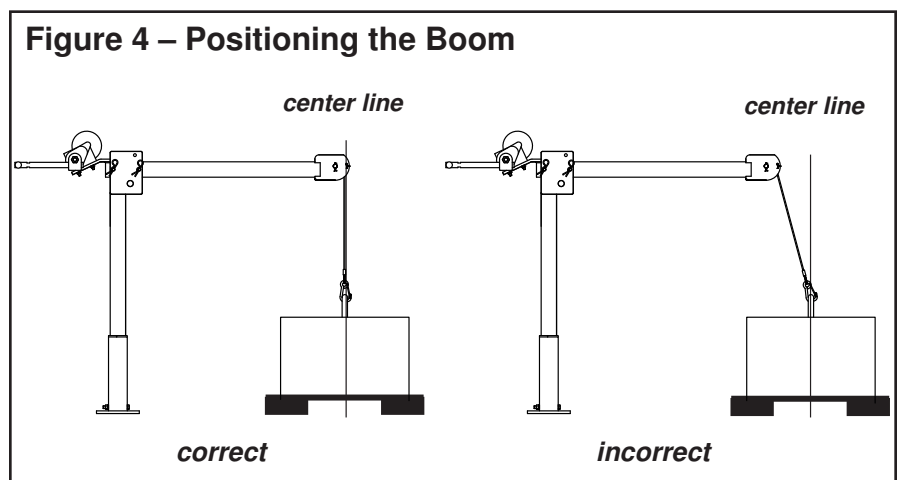


2.2 Preparing for Operation

Important!

- When determining whether the load will exceed the load rating, consider the total force required to move the load.

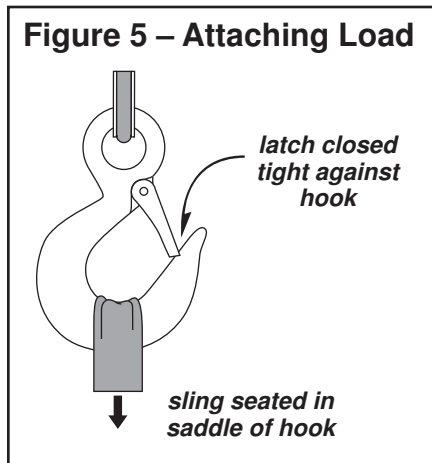
- 2.2.1 CONSIDER THE OPERATION. Do not begin until you are sure you can perform the entire operation without hazard.
- 2.2.2 INSPECT ALL COMPONENTS of the system.
- a INSPECT THE CRANE and other equipment according to the Instructions for Frequent Inspection.
 - b INSPECT THE WINCH according to the instructions in the Winch Owner's Manual.
 - c OPERATORS must be in good health, alert, thoroughly trained in operating the equipment, and properly clothed (hard hat, safety shoes and safety glasses, no loose clothing).
 - d THE LOAD must be clear of other objects and free to move. Make sure the load will not tip, spin, roll away, or in any way move uncontrollably.
- 2.2.3 KNOW YOUR LOAD and make sure you do not exceed the load rating of the crane or any other equipment in the system.
- 2.2.4 POSITION THE BOOM so the load hook is centered over the load. **Avoid side pulls which could damage the crane or cause the load to tip. See Figure 4.**
- 2.2.5 ADJUST THE BOOM ANGLE by repositioning the clevis pin on the mast. **Do not reposition the boom while the crane is under load. See page 19 to view different boom positions, A and B.**



2.3 Attaching the Load

⚠️WARNING

Do not wrap the wire rope around the load. This damages the wire rope and could cause the load to escape. Use a sling or other approved lifting device.



- 2.4.1 CLEAR OBJECTS from the path of the load so you can move it freely and observe it at all times during the operation.
- 2.4.2 MAKE SURE THE WIRE ROPE is not twisted. A twisted wire rope could cause the load to spin when it is raised off the ground.
- 2.4.3 ATTACH THE LOAD using a nylon sling, or other approved lifting device. Follow the recommendations of the sling manufacturer.
- a SEAT THE SLING in the saddle of the hook with the hook latch completely closed. See Figure 5.
 - b CENTER THE LOAD on the hook so it will remain balanced and not tip or rotate to one side.

2.4 Moving the Load

Important!

- Obey a stop signal from anyone.
- Maintain tension on the wire rope to keep it tightly and evenly wound on the drum.
- If the crane and load are not visible during the entire operation, get help from another person.
- Appoint a supervisor if more than one person is involved in the operation. This will reduce confusion and increase safety.
- When lifting a load, use a tag line to keep the load from swinging or twisting, while keeping yourself away from the load.

- 2.4.1 MOVE THE LOAD slowly and smoothly, only a small distance at first. Make sure the load is balanced and securely attached before continuing.
- 2.4.2 OPERATE THE WINCH to raise or lower the load. Refer to the instructions in the Winch Owner's Manual.
- 2.4.3 OBSERVE THE WIRE ROPE as it winds onto the drum. If it becomes loose, uneven, or overlapped, stop the operation and rewind the wire rope before continuing. **Continued operation with overlapped or uneven wire rope can damage the wire rope and shorten its life.**
- 2.4.4 ROTATE THE BOOM to move the load side-to-side.
- a ROTATE THE BOOM slowly and smoothly to avoid swinging the load or causing shock loads. **Do not jam the boom against other objects.**
 - b PUSH AGAINST THE BOOM at the midpoint between the mast and the end of the boom. **Do not push or pull the load, wire rope, or any other part of the crane other than the boom.**

3.1 Cleaning the Crane

Important!

Increase the frequency of maintenance procedures if the crane is:

- Operated for long periods.
- Used to lift heavy loads.
- Operated in wet, dirty, hot, or cold surroundings.

Clean the crane to remove dirt and help prevent rust and corrosion.

- 3.1.1 CLEAN THE CRANE every six months or whenever it is dirty.
- a WIPE ALL EQUIPMENT to remove dirt and grease.
 - b LEAVE A LIGHT FILM of oil on all surfaces to protect against rust and corrosion.
 - c WIPE OFF excessive amounts of oil to avoid the accumulation of dirt.
- 3.1.2 REMOVE UNNECESSARY OBJECTS from the area surrounding the crane.

3.2 Lubricating the Crane

Important!

- Make sure lubricant has a temperature rating appropriate for the ambient temperatures of the operation.

Lubricate the crane properly to help protect it from wear and rust. Read the following instructions carefully.

- 3.2.1 LUBRICATE THE ROLLER ASSEMBLY on the 522 base at least every 3 months. Use a grease brush to apply a light film of NLGI #2 grease to the rollers and capscrew.
- 3.2.2 LUBRICATE THE WHEELS on the 514 base at least every 3 months. Use a grease brush to apply a light film of NLGI #2 grease to the roller bearings on the rear caster wheels. Apply 2 to 3 drops of 150 grade gear oil to the shafts on all wheels. Rotate the wheels to allow oil to penetrate, and wipe off excess oil to avoid accumulation of dirt.
- 3.2.3 LUBRICATE ALL PINS at least every 3 months. Use a grease brush to apply a light film of NLGI #2 grease to all pins.
- 3.2.4 LUBRICATE THE WINCH. Refer to the Winch Owner's Manual for instructions.
- 3.2.5 LUBRICATE THE WIRE ROPE and other equipment by following the manufacturer's recommendations.

3.3 Inspecting the Equipment

Important!

- Start an inspection program as soon as you put the crane into use.
- Appoint a qualified person to be responsible for regularly inspecting the equipment.
- Keep written records of inspection. This allows comparison with comments from previous inspections so you can see changes in condition or performance.

Perform frequent inspections:

- Before each operation.
- Every 3 hours during operation.
- Whenever you notice signs of damage or poor operation.

Frequent Wire Rope Inspection:

- Use ASME B30.7 as a guideline for rope inspection, replacement and maintenance.
- Check the wire rope, end connections and end fittings for corrosion, kinking, bending, crushing, birdcaging or other signs of damage.
- Check the number, distribution and type of visible broken wires. See paragraph 3.3.4 b and Figure 6.
- Check the wire rope for reduction of rope diameter from loss of core support, or wear of outside wires. See Figure 8.
- Take extra care when inspecting sections of rapid deterioration such as sections in contact with saddles, sheaves, repetitive pickup points, crossover points and end

⚠WARNING

Do not use damaged or malfunctioning equipment. Place an “OUT OF ORDER” sign on the crane. Do not use the crane until the sign is removed by a qualified maintenance person who has completely corrected the problem.

Inspect the crane to detect signs of damage or poor operation before they become hazardous. See Table 2 - Inspection Checklist.

3.3.1 CONSULT APPLICABLE CODES AND REGULATIONS for specific rules on inspecting the crane and other equipment.

3.3.2 REFER TO THE WINCH OWNER’S MANUAL for information regarding winch inspection.

3.3.3 Instructions for Frequent Inspection

a VISUALLY INSPECT the entire crane and all other equipment involved in the operation.

- Check all equipment for cracks, dents, bending, rust, wear, corrosion and other damage.
- Make sure the wire rope is installed correctly and anchored securely to the drum.
- Make sure the entire crane is properly lubricated.
- Make sure all fasteners are tight and secure.
- Make sure mounting fasteners are tightened securely.
- Make sure the foundation is in good condition, and capable of supporting the crane and its load under all load conditions.

b TEST CRANE PERFORMANCE by operating the crane with a load not exceeding the load rating.

- Listen for unusual noises, and look for signs of damage as you operate the crane.
- Make sure the wire rope winds evenly and tightly onto the drum. If it is loose or uneven, rewind it before continuing.
- Make sure the load moves smoothly, without hesitation or strain, and that the winch handle rotates freely in both directions.
- On hand operated models, make sure the winch handle rotates freely in both directions.
- On power operated models, make sure the winch responds to the control device. It must rotate as shown on the control labels and it must turn off when you release the control.
- Make sure the boom rotates freely when you push it, and remains stationary when you release it.
- Check the brake. Raise the load, then lower it and stop it a few feet off the ground. If the load continues to coast or creep under normal operating conditions, the brake may be worn and in need of repair or replacement. Contact the factory.

Completely correct all problems before continuing. Use the Troubleshooting Chart to help determine the cause of certain problems. See Table 3.

3.3.4 **Instructions for Periodic Inspection. See Table 2.**

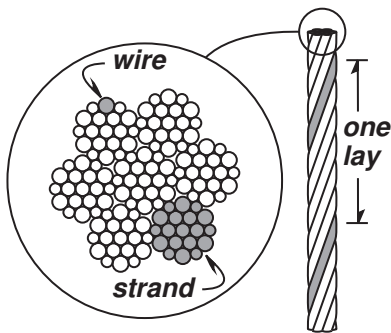
- a VISUALLY INSPECT the crane and all other equipment.
 - Disassembly may be required in order to properly inspect individual components. Contact factory for assembly/disassembly instructions. Disassembly of the winch or crane before contacting Thern, Inc voids all warranties.
 - Check the finish for wear, flaking, or other damage.
 - Check all equipment for cracks, dents, bending, rust, wear, corrosion and other damage. If the equipment was overloaded, or if you notice cracks or other signs of overloading and damage, promptly remove equipment from use and have it repaired or replaced. **DO NOT CONTINUE TO USE DAMAGED OR OVERLOADED EQUIPMENT OR WIRE ROPE.**
 - Check all fasteners for stripped threads, wear, bending, and other damage.
 - Make sure the entire crane is properly lubricated.
 - Make sure the wheels on the 514 base rotate freely.
 - Make sure all labels and plates are readable, firmly attached, free of damage and clean. Replacements are available from the factory.

Table 2 – Inspection Checklist		<i>checked boxes indicate damage or problem in need of repair</i>
	damages	problems
general	<input type="checkbox"/> finish weathered, flaking, otherwise damaged <input type="checkbox"/> parts cracked, bent, rusted, worn, otherwise damaged	<input type="checkbox"/> equipment not properly lubricated <input type="checkbox"/> unusual noises, other signs of malfunction
foundation	<input type="checkbox"/> loose, unstable, otherwise damaged	<input type="checkbox"/> not level - boom swerves
fasteners	<input type="checkbox"/> stripped threads, bent, worn, otherwise damaged	<input type="checkbox"/> loose, not tightened to the proper torque
boom assembly	<input type="checkbox"/> holes worn, distorted, or otherwise damaged	<input type="checkbox"/> does not rotate freely
winch assembly	<input type="checkbox"/> gears, bearings, and other parts worn, otherwise damaged <input type="checkbox"/> brake corroded, cracked, worn, otherwise damaged	<input type="checkbox"/> winch jerks or hesitates under load <input type="checkbox"/> brake does not operate properly
sheaves	<input type="checkbox"/> holes worn, distorted, or otherwise damaged	<input type="checkbox"/> does not rotate freely
wire rope	<input type="checkbox"/> bent, crushed, otherwise damaged <input type="checkbox"/> broken wires, see Figure 6 replace if more than 6 wires in one lay, or 3 wires in one strand in one lay, are broken <input type="checkbox"/> diameter reduced, see Figure 8 replace if diameter is excessively worn	<input type="checkbox"/> wire rope loosely or unevenly wound number per strand = _____ number per lay = _____ diameter = _____
end connections	<input type="checkbox"/> corroded, rusted, worn, otherwise damaged	<input type="checkbox"/> not securely attached
load hook	<input type="checkbox"/> twisted, bent, worn, otherwise damaged, see Figure 7 replace if twist is 10 degrees or more replace if throat width is 15% larger than nominal replace if thickness is 10% less than nominal	<input type="checkbox"/> hook latch fails to close when released twist = _____ throat width = _____ thickness = _____
labels and plates	<input type="checkbox"/> dirty, illegible, otherwise damaged	<input type="checkbox"/> loosely attached or missing
comments:		

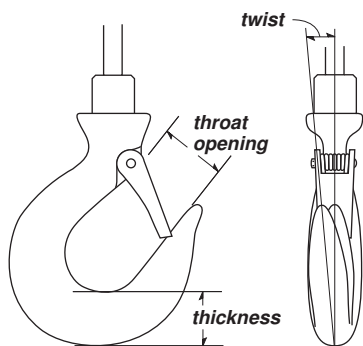
authorized signature: _____ date _____		

Perform periodic inspections:

- Every 6 months.
- Whenever you return the crane to service from storage.
- Whenever you notice damage or poor operation in a frequent inspection.
- Whenever you have, or think you may have, overloaded or shock loaded the crane.

Figure 6 – Broken Wires

Wire rope assembly must be replaced if more than 6 wires are broken in one lay, or if more than 3 wires are broken in one strand in one lay.

Figure 7 – Load Hook Inspection

The wire rope assembly must be replaced if the throat opening is 15% wider than nominal, if the thickness is 10% less than nominal, or if the hook is twisted 10° or more.

- INSPECT THE WIRE ROPE according to the wire rope manufacturer's recommendation, or follow accepted industry standards for wire rope inspection.
 - Always wear protective clothing when handling wire rope.
 - Check the entire length of wire rope for bent wires, crushed areas, broken or cut wires, corrosion, and other damage. Carefully inspect areas that pass over sheaves or through roller guides.
 - Note the location and concentration of broken wires. Replace wire rope if more than 6 wires are broken in one lay, or more than 3 wires are broken in one strand in one lay. See Figure 6.
 - Make sure the load hook or other device is securely attached to the wire rope, and the wire rope where it is attached is not frayed, corroded, broken, or otherwise damaged.
 - Measure the throat opening, thickness, and twist of the hook. Replace the hook if it shows signs of damage. See Figure 7.
 - Make sure hook latch opens without binding and closes when released.
 - Check the anchor holes in the drum and the surrounding area for signs of wear or distortion.
- PLACE enough weight to keep the wire rope straight and tightly drawn.
 - Measure the diameter of the wire rope, especially in areas where wear is noticeable. Replace the wire rope if the diameter measures below the minimum diameter at any point. See Figure 8.
- REMOVE THE WINCH and inspect it by following the instructions in the Winch Owner's Manual.
- DISASSEMBLE THE CRANE, and inspect each part for damage.
- REMOVE THE CRANE BASE from the foundation.
 - Check fasteners for stripped threads, wear, bending, and other damage.
 - Check the foundation for cracks, corrosion, and other damage.
- FASTEN THE CRANE BASE securely to the foundation.
- REASSEMBLE THE CRANE.
- TEST CRANE PERFORMANCE by operating the crane with a load equal to the load rating.
 - Listen for unusual noises, and look for signs of damage as you operate the crane.
 - Make sure the wire rope winds evenly and tightly onto the drum. If it is loose or uneven, rewind it before continuing.
 - Make sure the load moves smoothly, without hesitation or strain, and that the winch handle rotates freely in both directions.
 - On hand operated models, make sure the winch handle rotates freely in both directions.

Figure 8 – Rope Diameter

The wire rope assembly must be replaced if the diameter measures less than the minimum diameter at any point.

wire rope diameter	minimum diameter
1/8 in	7/64 in (.1094 in)
3/16 in	11/64 in (.1719 in)

- On power operated models, make sure the winch responds to the control device. It must rotate as shown on the control labels and it must turn off when you release the control.
- Make sure the boom rotates freely when you push it, and remains stationary when you release it.
- Check the brake. Raise the load, then lower it and stop it a few feet off the ground. If the load continues to coast or creep under normal operating conditions, the brake may be worn and in need of repair or replacement. Contact the factory.

Completely correct all problems before continuing. Use the Troubleshooting Chart to help determine the cause of certain problems. See Table 3.

Table 3 – Troubleshooting Chart

Contact the factory for detailed instructions if you are required to disassemble the crane or winch for any reason. Disassembly of the crane or winch before contacting Thern, Inc. voids all warranties.

problem	cause	correction
overheating	<ul style="list-style-type: none"> • operated too long without rest. • load too heavy • poor lubrication. • bearing seized up 	<ul style="list-style-type: none"> allow to cool lighten load inspect and lubricate as necessary inspect and replace as necessary
boom bounces up and down	<ul style="list-style-type: none"> • load too heavy • mounting bolts loose • sheave worn or damaged. • foundation loose or unlevel • winch gears worn or damaged 	<ul style="list-style-type: none"> lighten load tighten mounting bolts to proper torque inspect and replace as necessary inspect and repair as necessary inspect and repair as necessary
boom does not rotate	<ul style="list-style-type: none"> • rotation points contaminated or worn • flange bearing broken or locked. 	<ul style="list-style-type: none"> inspect and repair as necessary inspect and replace as necessary
boom rotates on its own	<ul style="list-style-type: none"> • foundation loose or unlevel • mast bent, distorted, or leaning. 	<ul style="list-style-type: none"> inspect and repair as necessary inspect and repair as necessary
unusual noises		
high pitched squeak	• poor lubrication.	lubricate entire crane properly
grinding noise	• contaminated lubricant at rotation points	clean and lubricate rotation points
rattling noise	• loose bolts, set screws or other fasteners	tighten all bolts and other fasteners

Refer to the Winch Owner's Manual for possible problems with the winch and brake.

3.4 Repairing the Crane

Important!

- It is your responsibility to determine when to replace parts. When considering whether to continue using a part or to replace it, remember that replacing it is the best way to avoid further equipment damage.
- Appoint a qualified person to be responsible for all repairs to the equipment.

- 3.4.1 GET FACTORY AUTHORIZATION for all repairs. Unauthorized repairs will void the warranty, and may lead to damage or failure of the crane.
- 3.4.2 REPLACE DAMAGED OR POORLY OPERATING PARTS with Thern repair parts.
- 3.4.3 REFINISH AREAS where the paint is worn or flaking. A good finish helps to protect against corrosion and weather damage.
- REMOVE THE FINISH from damaged areas, down to the bare metal.
 - CLEAN THE AREA thoroughly.
 - REPAINT with a high quality primer and finishing coat.
- 3.4.4 TO ORDER REPAIR PARTS, contact your local dealer. Include the following information when ordering:
- model number
 - **serial number** (or code number)
 - part number
 - date purchased, and from whom
 - description of what happened, or what is wrong
 - your name and return address

4.1 Transporting the Crane

Important!

- Keep a record of what you ship, and when you send it.

- 4.1.1 REMOVE THE WIRE ROPE from the crane if necessary, by disconnecting it from the winch drum.
- 4.1.2 FOLD THE BOOM DOWN by removing the rear pin and lowering the boom until it rests against the mast. Replace the pin to avoid losing it.
- 4.1.3 PACK THE CRANE for transport, using the original packaging materials, if appropriate.
- 4.1.4 INSPECT THE CRANE according to Section 3.3.3 Instructions for Frequent Inspection before installing it for operation.

4.2 Storing the Crane

- 4.2.1 REMOVE THE WIRE ROPE from the crane if necessary, by disconnecting it from the winch drum.
- 4.2.2 FOLD THE BOOM DOWN, or remove the boom from the mast.
- 4.2.3 STORE THE CRANE in a cool clean place away from corrosive chemicals and moisture.
- 4.2.4 SEAL THE CRANE in plastic with a desiccant to help protect it from rust, corrosion, and other damage.
- 4.2.5 INSPECT THE CRANE according to Section 3.3.4 Instructions for Periodic Inspection before installing it for operation.

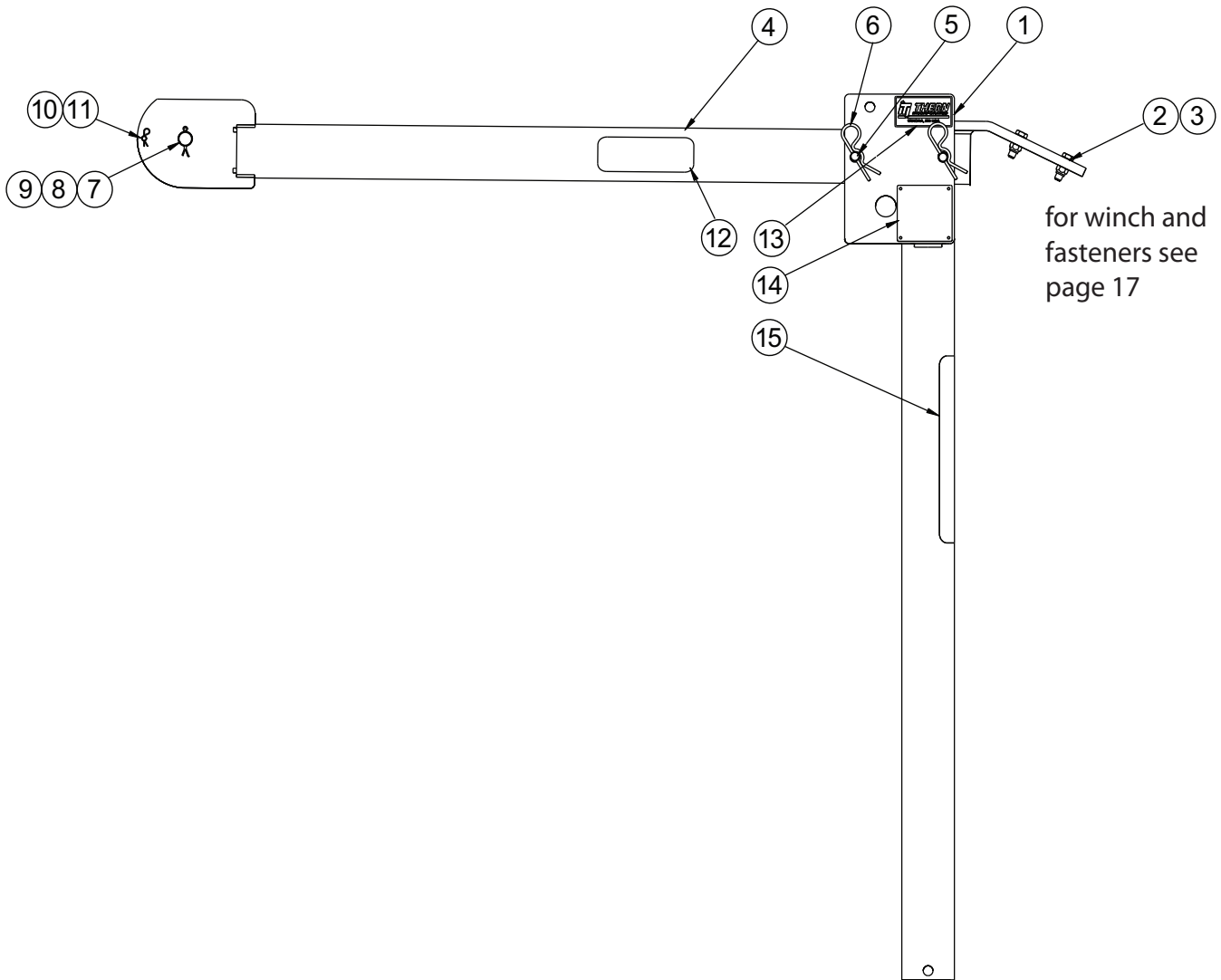
Table 4a – Winch Weight Chart

Crane	Winch	Component Weight	
		LB	KG
5122M1 / 5122M1GAL / 5122M1SS	M4022PB-K	15.00	6.81
5122M3 / 5122M3GAL / 5122M3SS	M4042PBSS-K	23.00	10.44

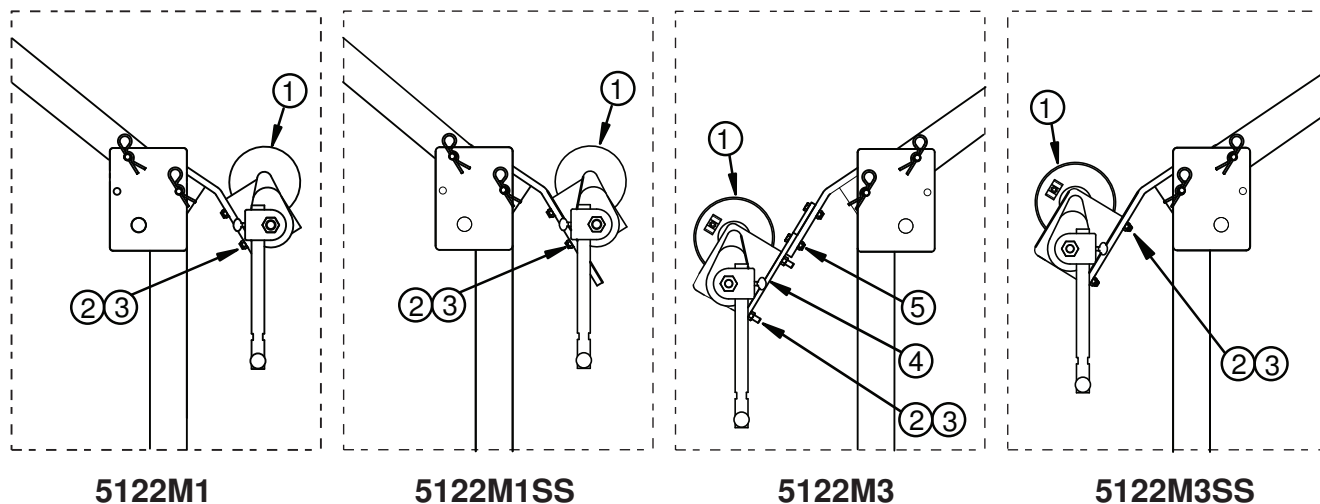
Table 4b – Crane Weight Chart

Model 5122M1 / 5122M1GAL					
Part Numbers		Component Weight		Assembly/Disassembly Weight (with pins)	
Component	Standard / Galvanized	LB	KG	LB	KG
Mast	B1483 / B1483GAL	25	11.34	-	-
Boom	C4372 / C4372GAL	27	12.25	-	-
TOTAL		52.00	23.59	53.25	24.16
Model 5122M1SS					
Part Numbers		Component Weight		Assembly/Disassembly Weight (with pins)	
Component	Stainless	LB	KG	LB	KG
Mast	B2467	26	11.80	-	-
Boom	C4375	30	13.61	-	-
TOTAL		56.00	25.41	57.25	25.97
Model 5122M3 / 5122M3GAL					
Part Numbers		Component Weight		Assembly/Disassembly Weight (with pins)	
Component	Standard / Galvanized	LB	KG	LB	KG
Mast	B1483 / B1483GAL	25	11.34	-	-
Boom	C4372 / C4372GAL	27	12.25	-	-
Adapter Plate	SB6013	4	1.82	-	-
TOTAL		56.00	25.41	57.50	26.09
Model 5122M3SS					
Part Numbers		Component Weight		Assembly/Disassembly Weight (with pins)	
Component	Stainless	LB	KG	LB	KG
Mast	B2467	26	11.80	-	-
Boom	C4375	30	13.61	-	-
Adapter Plate	SB6013	4	1.82	-	-
TOTAL		60.00	27.43	61.50	27.9

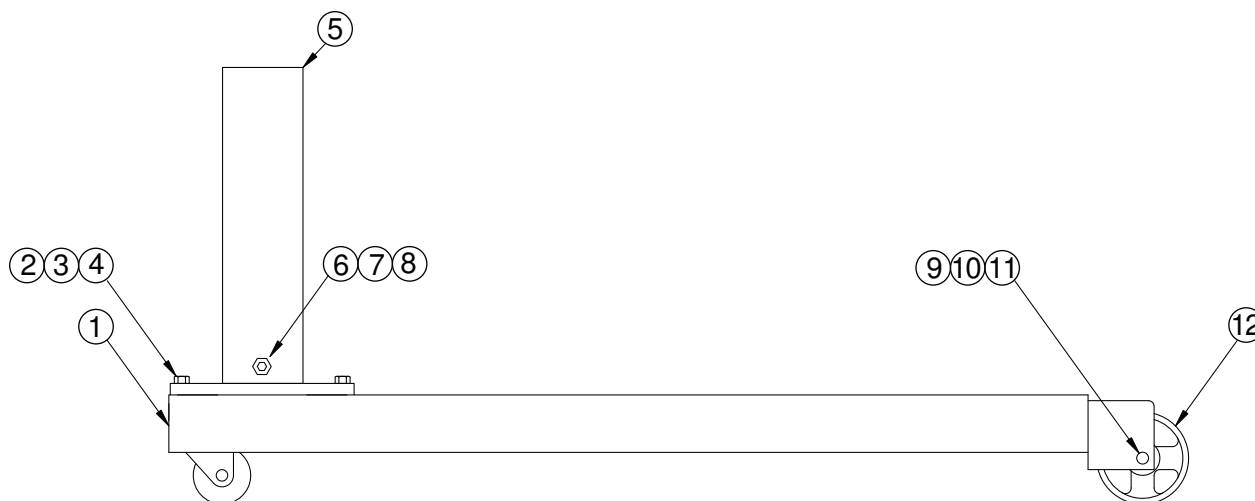
5122 Series PorTable Davit Cranes		5122 Series Red Fusibond		5122GAL Series Galvanized Finish		5122SS Series Stainless Steel	
item	description	part number	qty.	part number	qty.	part number	qty.
1	MAST WELDMENT	B1483RED	1	B1483GAL	1	B2467	1
2	CAPSCR HEXHD .375-16NCx1.250 SST	A4180	2	A4180	2	A4180	3
3	NUT HEX NYLK .375-16NC SST	A4325	2	A4325	2	A4325	3
4	BOOM WELDMENT	C4372RED	1	C4372GAL	1	C4375	1
5	CLEVIS PIN	A2840	2	A2840	2	A2840	2
6	PIN HAIR COTTER .188/.250x.042 DIA SST	A2838	2	A2838	2	A2838	2
7	PIN CLEVIS .750x1.765 EFF LENGTH SST	A4438	1	A4438	1	A4438	1
8	PIN COTTER .125x1.250 SST	A4305	1	A4305	1	A4305	1
9	SHEAVE ASSEMBLY	B2462	1	B2462	1	B2462	1
10	PIN CLEVIS .250x1.734 EFF LENGTH SST	A6905	1	A6905	1	A6905	1
11	PIN HAIR COTTER .188/.250x.042 DIA SST	A6452	1	A6452	1	A6452	1
12	LOAD RATING LABEL	A7559	2	A7559	2	A7559	2
13	THERN LOGO	A6889	1	A6889	1	A6889	1
14	NAMEPLATE SST	A1976	1	A1976	1	A1976	1
15	WARNING LABEL	A1961	1	A1961	1	A1961	1



5122 Series Winch		5122M1		5122M1SS		5122M3		5122M3SS	
item	description	part number	qty.	part number	qty.	part number	qty.	part number	qty.
1	HAND WINCH	M4022PB-K	1	M4022PB-K	1	M4042PBSS-K	1	M4042PBSS-K	1
2	CAPSCR HEXHD .375-16NCx1.250 SST	A4180	2	A4180	2	A4180	3	A4180	3
3	NUT HEX NYLK .375-16NC SST	A4325	2	A4325	2	A4325	5	A4325	3
4	ADAPTER PLATE	—	—	—	—	SB6013	1	—	—
5	CAPSCR HEXHD .375-16NCx1.500 SST	—	—	—	—	A3884	2	—	—



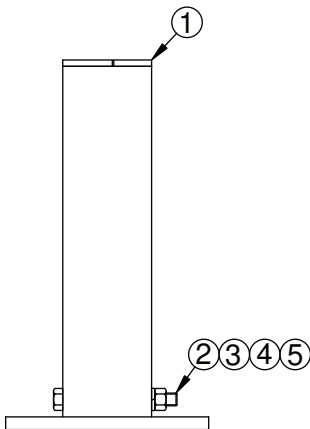
514 Wheel Base			
item	description	part number	qty.
1	BASE	C1252	1
2	CAPSCR HEXHD .375-16NC X 2.500 ZNPL GR5	A3518	4
3	NUT HEX .375-16NC ZNPL GR5	A3231	4
4	WASHER HELSPRLK .375 X .683 X .094 ZNPL	A2926	4
5	SOCKET BASE	C1254	1
6	CAPSCR HEXHD .500-13NC X 4.500 ZNPL GR5	A3135	1
7	NUT HEX .500-13NC ZNPL GR2	A3227	1
8	WASHER HELSPRLK .500 X .873 X .125 ZNPL	A2930	1
9	PIN CLEVIS .500 X 2.266 EFF LENGTH STL	A2024	2
10	WASHER FLT SAE .500 X 1.062 X .095 ZNPL	A2932	2
11	PIN COTTER .125 X 1.000 STL ZNPL	A3179	2
12	WHEEL	A2023	2



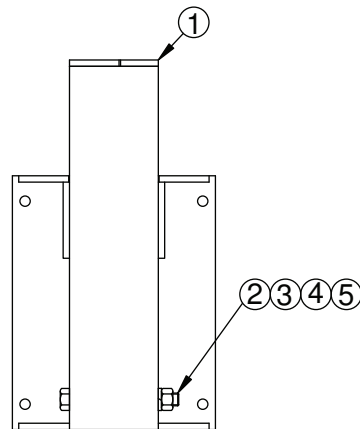
514 Wheel Base

522 Series Pedestal/Socket Base		522		522GAL		522SS	
item	description	part number	qty	part number	qty	part number	qty
1	BASE	C1250	1	C1250	1	C2560	1
2	CAPSCREW HEXHD .500-13NC X 4.500 SST	A4198	1	A4198	1	A4198	1
3	WASHER HELSPRLK .500 X .879 X .125 SST	A3937	1	A3937	1	A3937	1
4	HEX NUT .500-13NC SST	A4717	1	A4717	1	A4717	1
5	ROLLER	A6791	2	A6791	2	A6791	2
6	FLANGE BEARING 2.890ID X 3.50OD X 2.25 522	B1914	1	B1914	1	B1914	1

522W Series Wall Base		522W		522WGAL		522SSW	
item	description	part number	qty	part number	qty	part number	qty
1	BASE	C3082	1	C3082	1	C3116	1
2	CAPSCREW HEXHD .500-13NC X 4.500 SST	A4198	1	A4198	1	A4198	1
3	WASHER HELSPRLK .500 X .879 X .125 SST	A3937	1	A3937	1	A3937	1
4	HEX NUT .500-13NC SST	A4717	1	A4717	1	A4717	1
5	ROLLER	A6791	2	A6791	2	A6791	2
6	FLANGE BEARING 2.890ID X 3.50OD X 2.25	B1914	1	B1914	1	B1914	1



522 Series Pedestal/Socket Base



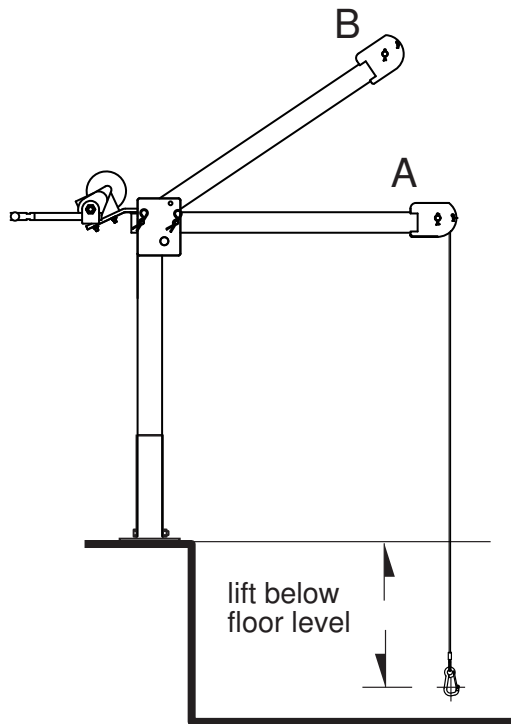
522W Series Wall Base

5122 Series Performance Characteristics²

wire rope dia.	wire rope length	5122 Series with M1 winch		5122 Series with M3 winch		lift below floor level (min – max) ¹
		load rating position A	load rating position B	load rating position A	load rating position B	
3/16 in	20 ft	500 lb	500 lb	500 lb	500 lb	9 – 10 ft
3/16 in	28 ft	500 lb	500 lb	500 lb	500 lb	17 – 18 ft
3/16 in	36 ft	500 lb	500 lb	500 lb	500 lb	25 – 26 ft
3/16 in	45 ft	500 lb	500 lb	500 lb	500 lb	34 – 35 ft
3/16 in	60 ft	–	–	500 lb	500 lb	49 – 50 ft
3/16 in	75 ft	–	–	500 lb	500 lb	64 – 65 ft

¹ Lift below floor level varies depending on boom position and base configuration. For longer lifts, please contact factory.

² Performance Characteristics are for standard products referred to in this manual. Non-standard products may vary from the original design. Contact Thern, Inc. for this information.





THERN

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