SPANCO®
Promise to Perform Industries, Inc.

E-SERIES GANTRY CRANE

Assembly and Maintenance Instruction Manual

Adjustable Height

ISO 9001:2015 Registered

Manual 103-0004

Effective October 2022

WARNING

SPANCO GANTRY CRANE CONDITIONS OF USE AND WARNINGS STATEMENT

1. Read, understand, and follow the manual, assembly drawings, and warnings provided with your system **before** beginning installation, use, or disassembly. Follow all instructions carefully.
2. This manual, and any other instructions, must be provided to the user(s) of this equipment. The user(s) must understand the equipment's proper use and limitations.
3. This crane is engineered to accommodate a standard hoist and a standard hoist weight. The standard hoist weight is calculated at 15 percent of the crane's rated capacity. Please inform Spanco if hoist weight exceeds 15 percent of the crane's rated capacity, or if the lifting speed exceeds 50 FPM.
4. "Sidewinder" hoists or low headroom hoists with motors that are parallel to the beam can potentially impart large torques (twisting moments) to the beam that can cause beam twisting and oscillations. Hoist inverter controls are heavily recommended for all "sidewinder" hoists or low headroom hoists with motors that are parallel to the beam installed on beam lengths over 12 feet.

   NOTE: To eliminate any form of beam oscillation, use only an inverter controlled hoist of this type.
5. Power Drive options for motorized gantry travel are available for PF-Series Gantry Cranes only. Review Power Drive installation instructions in the separate Power Drive instruction manual.
6. Motorized trolley travel is permissible for PF-Series and T-Series Gantry Cranes.
7. Each component and system must be employed and maintained in accordance with all OSHA and ANSI standards.
8. Use a hoist with the same or lower capacity rating as the gantry crane. Do not lift more than the rated crane capacity.
9. The rated capacity is displayed on a label on the Spanco system. Exceeding the capacities displayed on this label can result in serious injury or death.
10. There should never be any type of loading past the end stops for any reason.
11. Never apply an off-plumb load to the system.
12. Always check for overhead hazards, such as power lines, trees, equipment, overhead structures, or walls, before using or moving a portable system.
13. Never use this system as fall protection or for lifting, hoisting, or carrying personnel.
14. When moving the gantry under load, keep the load in the center of the beam and as close to the ground as possible.
15. Before moving the gantry under load, remove any obstacles and ensure that the load is not attached to the floor.
16. Spanco Gantry Cranes are designed to be moved manually. Do not push or pull the gantry with a lift truck or other vehicle.
17. When moving a gantry crane under load, push the gantry; do not push or pull the suspended load.
18. Never exceed two people pushing an Aluminum gantry crane.
19. Do not disassemble the gantry or adjust the height, span, or caster frame spread (if applicable) when the gantry is under load.
20. Do not stand under the gantry when it is being adjusted in height, span, or caster frame spread.
21. Do not stand or walk under a suspended load.

WARNING

SPANCO GANTRY CRANE CONDITIONS OF USE AND WARNINGS STATEMENT

22. Caster frame spread must be a minimum of 40 percent of the overall height (T-Series only).
23. Adjustments and repairs must be made in an area that does not interfere with operation.
24. Do not load the gantry on an incline.
25. Do not allow the load to swing or roll against the gantry support members.
26. Do not slam the hoist trolley against the end stops or gantry supports at any time.
27. The system must be tied down if exposed to winds exceeding 30 miles per hour. Spanco considers it an unsafe practice to operate cranes in winds over 15 miles per hour. Although the drive may work in speeds exceeding 15 miles per hour, Spanco does not recommend using any crane in winds over 15 miles per hour for safety reasons. If quoted for a pre-defined wind speed, the drive components have been designed for an approximate wind speed. It is the responsibility of others to generate a risk assessment of wind conditions and part stability, and to generate a lifting plan that accounts for the sail effect of the part being lifted and the length of the cable the part is suspended on. Notify Spanco if the system will be subjected to constant buffeting winds.
28. Although Spanco may provide components that are intended for service in a specific environment, it is the customer's responsibility to confirm that the provided Spanco system and components will work in and are acceptable for their specific application and environment.
29. **Before each use**, inspect the system for bent, broken, cracked, or missing components.
30. Thoroughly inspect the system **annually** per OSHA law.
31. Per OSHA law, load testing must be performed before the system can be placed into service.
32. Engineering of any attachment points must be done by others.
33. Component appearances and dimensions shown are approximate and subject to change without notice. All literature dimensions are developed using standard components for the spans and capacities. Substitution of optional trolleys or other components will affect certain dimensions.
34. Never deviate from the above unless you have written permission and authorization from Spanco.

WARNING

Follow the Inspection Checklists in this manual: review the Before Each Use Inspection Checklist on page 17 before each use and review the Annual Inspection Checklist on page 18 annually.

SYSTEM APPLICATIONS

The Spanco system is used for material handling applications. This material handling system is labeled with a maximum rated capacity and is designated for Class C service as defined by the CMAA; follow all limitations as noted on system labels.

STANDARDS AND COMPLIANCE

Please refer to local, state, and federal (OSHA) requirements governing occupational safety for additional information regarding material handling. The Spanco system meets or exceeds the requirements set forth in OSHA 1910.179, ANSI B30.11, and CMAA 70.

REQUIRED TRAINING

This system is intended to be used by people who are trained in its correct application and use. It is the responsibility of the users and the users' management to ensure that they are familiar with OSHA law and these instructions, and that they are trained in the correct use and care of this equipment. Authorized users must also be aware of the operating characteristics, application limits, and the consequences of improper use, which can result in serious injury or death. All users must read and understand CMAA 79 *Crane Operator's Manual*.

Every material handling application must be OSHA compliant. Safety and training measures may include, but are not limited to:

- Operator certification training
- Operator evaluation program
- Hand signal protocols if required
- Lock-out/Tag-out training

The above list is not a comprehensive list. Specific applications may need to include additional protocols. For more information on how to set up a proper lift plan within your facility, follow CMAA 79 *Crane Operator's Manual.*

TABLE OF CONTENTS

ASSEMBLY INSTRUCTIONS

1. Equipment Needed for Assembly

a) This manual

b) Applicable safety equipment for workers' use during assembly, such as hard hats, steel toe shoes, etc.

c) Lift truck or crane with at least the minimum height and lifting capacity required as determined by the size and weight of the gantry crane.

d) Man lift/cherry picker (minimum height determined by installed system height)

e) Measuring tape

f) Torque wrench

g) Lifting straps

h) Two six-inch by six-inch (or larger) wood blocks

i) Long carpenter's level or laser level

j) Wrench/socket sets up to 7/8 inches.

k) A spacious, level area for assembly (e.g., parking lot)

l) *E-SERIES-ASSEMBLY SHEET 1 OF 2,* hereafter referred to as *E-Series Gantry Crane Assembly Drawing*, included as a separate document.

m) *E-SERIES-ASSEMBLY SHEET 2 OF 2,* hereafter referred to as *E-Series Gantry Crane Label Placement Drawing*, included as a separate document.

2. Inventory

a) Open all bundles and confirm that all components are accounted for: see *Building Materials Description* located in the top right corner of the E-Series Gantry Crane Assembly Drawing. Note that the quantity of components in an assembly are multiplied by the number of the assemblies.

b) Check for damage to components that may have occurred during shipping.

c) Your E-Series Gantry Crane consists of the following components:

1) One Beam

2) One Beam Hardware Kit

3) Two End Frames

4) Two Upright Tubes (Adjustable Models Only)

5) Four Casters

6) One Caster Mounting Hardware Kit

NOTE: Your system may also include optional accessories, such as the Adjustable Span Kit, wheel brakes, and other optional accessories.

3. Attaching the Swivel Locks to the Caster Assemblies

Refer to E-Series Gantry Crane Assembly Drawing for Steps A Through G

a) The swivel lock ships zip tied to the caster assembly for polyurethane casters.

b) Insert the pin on the swivel lock into the groove beneath the caster plate on the caster assembly.

c) Open the pin on the swivel lock by pulling and spinning the ring to fit into the groove at the end of the swivel lock.

d) Using two bolts, washers, and nuts, bolt the swivel lock to the caster plate.

e) Using a wrench and a socket and ratchet, tighten the swivel lock bolts to 257 foot-pounds.

f) Repeat steps **b)** through **e)** to install the remaining swivel locks.

g) Test the swivel locks to ensure they function properly.

4. Attaching the Caster Assemblies to the End Frame Assemblies

Refer to E-Series Gantry Crane Assembly Drawing for Steps A Through K

WARNING: Crane parts are heavy. Use proper rigging and support to secure all parts during assembly, adjustment, and disassembly processes.

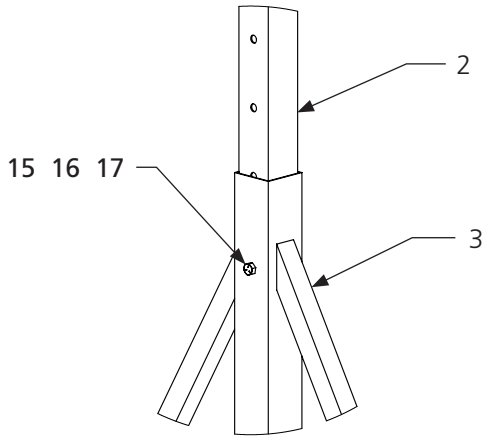
NOTE: Fixed-Height end frames do not include movable upright tubes and do not require additional assembly.

NOTE: Adjustable-Height end frames are shipped from the factory with the upright tubes secured at the lowest position.

a) Select an area under an overhead hoist, or where a lift truck can be used to raise the beam. Be sure there is no machinery or clutter nearby that will hamper free movement. All personnel should be wearing applicable safety gear, such as hard hats, steel toe shoes, and safety glasses.

b) Lay both end frames (3) flat on the floor. For adjustable-height systems, ensure the upright tubes are secured in the lowest position and the hex bolts (15), lock washers (16), and hex nuts (17) are in place and secure, per **Detail "A."**

Detail "A"



ITEM	DESCRIPTION
2	Upright Tube
3	End Frame
15	Hex Bolt
16	Lock Washer
17	Hex Nut

c) For end frames with a studded connection, place a caster assembly on the end frame assembly so that the four studs extend from the end frame through the caster assembly's top plate.

d) Per **Detail "B,"** place a flat washer (6), lock washer (5), and hex nut (7) on each stud so that the lock washer (5) is between the flat washer (6) and hex nut (7). Torque all wheel stud nuts (7) to 23 foot-pounds.

e) Repeat steps **a)** through **c)** to attach the remaining caster assemblies to the end frames.

f) For end frames with a bolted connection, align the holes in the end frame assembly with the holes in the caster assembly's top plate.

g) Per **Detail "B,"** insert a hex bolt (8) through the aligned holes in the end frame and the caster assembly so that the bolts (8) extend from the end frame through the caster assembly's top plate.

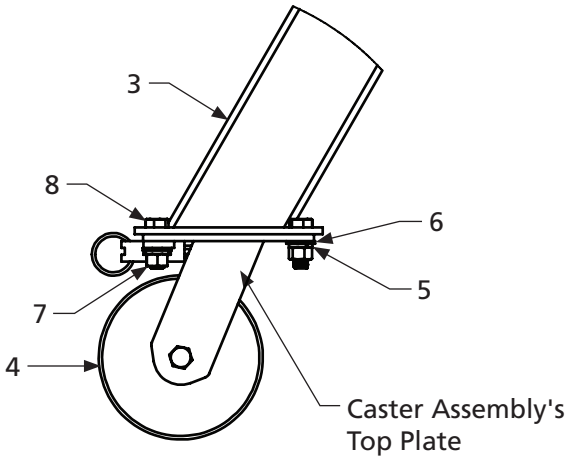
h) Per **Detail "B,"** place a flat washer (6), lock washer (5), and hex nut (7) on each bolt (8) so that the lock washer (5) is between the flat washer (6) and hex nut (7). Torque all nuts (7) to the correct value specified by the torque chart.

i) Repeat steps **e)** through **g)** to attach the remaining caster assemblies to the end frames.

j) Test the caster brakes and swivel locks (if present) to ensure they function properly.

k) Lock the caster wheels in position parallel to the end frame to prevent the frame assembly from rolling away when lifted to the upright position.

Detail "B"



ITEM	DESCRIPTION
3	End Frame Assembly
4	Caster
5	Lock Washer
6	Flat Washer
7	Hex Nut
8	Hex Bolt

NOTE: Torque all wheel stud nuts to 23 foot-pounds only.

5. Fixed-Span Beam Assembly

Refer to E-Series Gantry Crane Assembly Drawing for Steps A Through G

NOTE: Follow steps **a)** through **g)** if your E-Series Gantry Crane is a fixed-span model. If your E-Series Gantry Crane is an adjustable-span model, follow steps a) through i) on the next page. To install the optional Adjustable Span Kit on a fixed-span model, follow steps **a)** through **i)** on page 11 to install the beam.

WARNING: Crane parts are heavy. Use proper rigging and support to secure all parts during assembly, adjustment, and disassembly processes.

a) Using an overhead hoist or lift truck, lift the beam (1) high enough to allow the end frames to fit underneath. Be sure that the holes in the beam flange are on the bottom, and that the capacity label is right-side-up and legible.

b) Install the hoist trolley according to the manufacturer's recommendations onto the lower flange of the beam and secure it in the middle of the span.

c) Lift one end frame assembly (3) into position under one end of the beam. Ensure the end frame is positioned so the head of the height adjustment bolt (15) is facing the inside of the gantry and the lock washer (16) and hex nut (17) are facing the outside of the gantry.

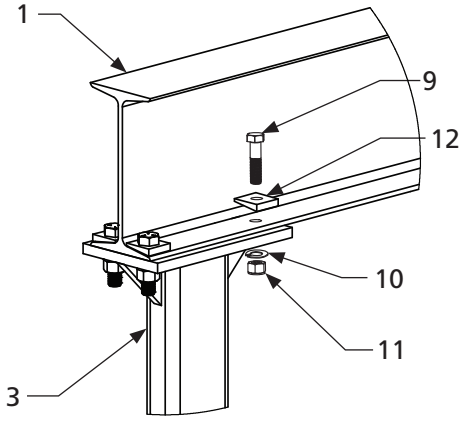
d) Per **Detail "C,"** align the holes in the end frame assembly (3) with the holes in the beam (1).

e) Per **Detail "C,"** insert a hex bolt (9) through the bevel washer (12) and through the aligned holes in the end frame assembly (3) and the beam (1).

f) Per **Detail "C,"** securely tighten a lock washer (10) and hex nut (11) to the bolt (9). Repeat this process for all four holes.

g) Repeat steps **c)** through **f)** to attach the second end frame assembly (3).

Detail "C" (Fixed Span)



ITEM	DESCRIPTION
1	Beam
3	End Frame Assembly
9	Hex Bolt
10	Lock Washer
11	Hex Nut
12	Bevel Washer

6. Adjustable-Span Beam Assembly

Refer to E-Series Gantry Crane Assembly Drawing for Steps A Through I

WARNING: Crane parts are heavy. Use proper rigging and support to secure all parts during assembly, adjustment, and disassembly processes.

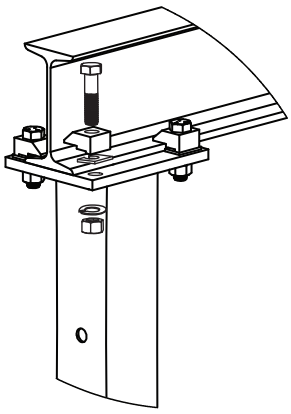
a) Using an overhead hoist or lift truck, lift the beam to the gantry's minimum height. Be sure that the capacity label is right-side-up and legible.

b) Install the hoist trolley according to the manufacturer's recommendations onto the lower flange of the beam and secure it in the middle of the span.

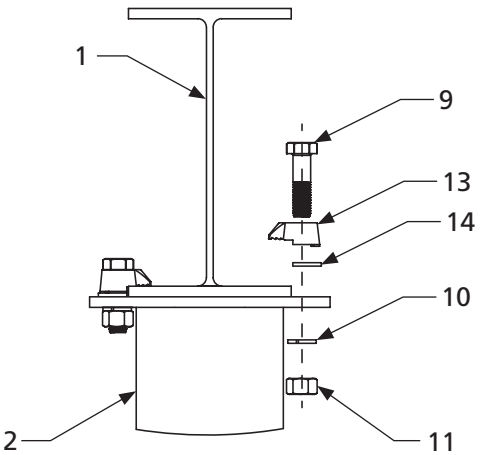
c) Lift one end frame assembly into position under one end of the beam (1).

d) Per **Detail "D,"** insert a bolt (9) through a beam clamp (13) and a clipped washer (14). Ensure that the flat edge of the clipped washer (14) will face away from the beam.

Detail "D" (Adjustable Span)



Detail "E" (Adjustable Span)



ITEM	DESCRIPTION
1	Beam
2	Upright Tube
9	Hex Bolt
10	Lock Washer
11	Hex Nut
13	Beam Clamp
14	Clipped Washer

NOTE: Torque 5/8-inch bolts to 108 foot-pounds. Torque 3/4-inch bolts to 210 foot-pounds.

e) Per **Detail "D,"** insert the bolt (9) with the attached beam clamp (13) and clipped washer (14) through the holes of the welded top plate of the upright tube (2) and position the beam clamp so it holds onto the lower flange of the beam (1).

f) Per **Detail "D,"** securely tighten a lock washer (10) and a hex nut (11) onto the hex bolt (9).

g) Repeat steps **d)** through **f)** for all four holes of the top plate of the upright tube (2). Adjust the beam clamps (13) as needed by tightening or loosening the nuts (11) until the beam clamps sit properly on the lower flange of the beam (1).

h) Repeat steps **c)** through **g)** to attach the second end frame assembly.

i) Ensure that all beam clamps (13) are installed horizontally and level within plus or minus five degrees. Tighten all hex nuts (11) to the correct torque value.

FINAL ASSEMBLY

a) Ensure that the beam is secured properly to the support legs, and that the casters are secured properly to the end frames.

b) Confirm that all of the system's nuts are torqued to the required specifications below prior to removing support rigging (your lift truck or crane).

BOLT DIAMETER	HEX NUT TORQUE	MINIMUM HEX LOCKNUT TORQUE
1/2 Inch	78 Foot-Pounds	51 Foot-Pounds
5/8 Inch	154 Foot-Pounds	93 Foot-Pounds
3/4 Inch	257 Foot-Pounds	151 Foot-Pounds
7/8 Inch	341 Foot-Pounds	224 Foot-Pounds
1 Inch	514 Foot-Pounds	325 Foot-Pounds

NOTE: See torque notes with individual steps for torque values that differ from the values in the above torque chart.

ADJUSTING THE GANTRY HEIGHT (ADJUSTABLE MODELS ONLY)

WARNING: Crane parts are heavy. Use proper rigging and support to secure all parts during adjustment processes. **Never** stand under the system when adjusting the system height or span or while disassembling the system. **Never** adjust the gantry height while it is supporting a load.

a) Secure the trolley and hoist in the center of the beam span.

b) Using an existing overhead crane or lift truck and lifting straps, slightly lift the beam to relieve the weight from the hex bolts (15) in the end frames (3) and upright tubes (2).

c) Remove the hex nut (17) and lock washer (16) from both hex bolts (15) and remove the bolts from the end frames.

d) Operate the overhead crane or lift truck to raise or lower the height of the gantry.

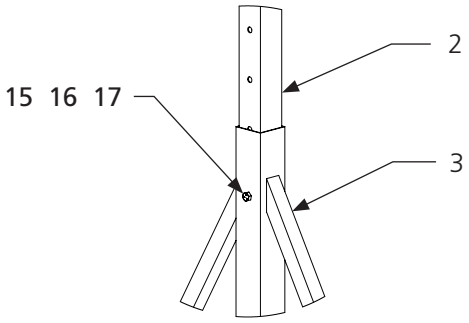
NOTE: Both ends must be raised or lowered at the same time.

e) When the gantry reaches the desired height, insert a hex bolt (15) through each end frame and upright tube from the inside of the gantry out. Securely tighten a lock washer (16) and hex nut (17) onto each bolt (15).

f) Ensure that each support leg has the same number of holes visible in the upright tube and tighten the hex nuts (17) to the correct torque value.

g) After you have tightened the hex nuts (17) to the correct torque value, you can lower the beam and remove the crane or lift truck and lifting straps.

Detail "A"



ITEM	DESCRIPTION
2	Upright Tube
3	End Frame
15	Hex Bolt
16	Lock Washer
17	Hex Nut

ADJUSTING THE GANTRY SPAN

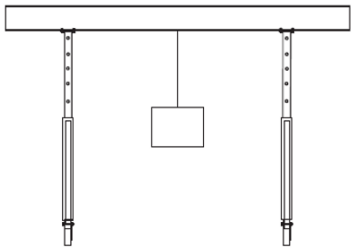
Refer to this section if your E-Series Gantry Crane is an adjustable model or equipped with the optional Adjustable Span Kit.

a) Using an overhead hoist or lift truck, attach lifting straps to the beam to support the crane and adjust the gantry to its lowest position. The beam is clamped in place at each end with four beam clamps (13). Loosen the hex nuts (11) which hold the clamps and move the legs (end frames) to the desired position.

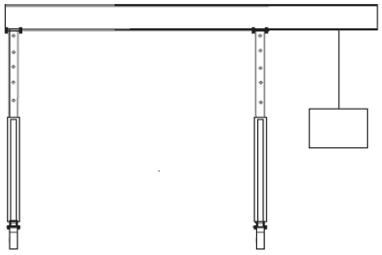
b) Do not move the legs (end frames) inward more than the minimum clear span. The minimum clear span is equal to the distance between the casters (tread width) or one-half the overall beam length—whichever dimension is greater. Refer to the minimum clear span chart for the minimum clear span dimensions for standard Spanco E-Series Gantry Crane models.

c) After adjusting the span as desired, re-tighten all eight hex nuts (11) to the correct torque value. Be sure to move both legs when adjusting the span so one end of the beam does not hang over more than the other end. Do not suspend a trolley or load from the cantilevered ends of the beam.

Correct



Incorrect



Capacity	Overall Span	Model Number	Minimum Clear Span (Feet)	Maximum Clear Span (Feet)
1 TON	11' 6"	1AW1007	4' 0"	10' 6"
		1AW1009	5' 0"	10' 6"
		1AW1010	5' 6"	10' 6"
		1AW1012	6' 6"	10' 6"
		1AW1014	7' 6"	10' 6"
	12' 0"	F2000	6' 0"	10' 11"
2 TON	11' 6"	2AW1007	4' 0"	10' 6"
		2AW1009	5' 0"	10' 6"
		2AW1010	5' 6"	10' 6"
		2AW1012	6' 6"	10' 6"
		2AW1014	7' 6"	10' 5"
	12' 0"	F4000	6' 0"	10' 11"
3 TON	11' 6"	3AW1007	4' 0"	6' 8"
		3AW1009	5' 0"	6' 8"
		3AW1010	5' 6"	6' 8"
		3AW1012	6' 6"	8' 8"
		3AW1014	7' 6"	8' 8"
	12' 0"	F6000	6' 0"	10' 8"
5 TON	12' 0"	F10000	6' 0"	10' 7"

OPTIONAL ACCESSORIES

1. Tagline Assembly

Spanco clamp-on tagline assemblies are designed for universal installation. Clamp-on tagline assemblies include universal weldments, applicable hardware, tagline cable, cable clamps, eyebolts, and pulleys with cable ties. One pulley and cable tie is provided for every five feet of tagline length. Power conductor is supplied by others.

Installation

a) Trim excess rod length to fit socket (if desired).

NOTE: Align each rod so only one end requires trimming.

b) Torque the inner lower rod nuts (9) to 33 foot-pounds. Adjust the inner upper rod nuts (9) to keep the weldments plumb.

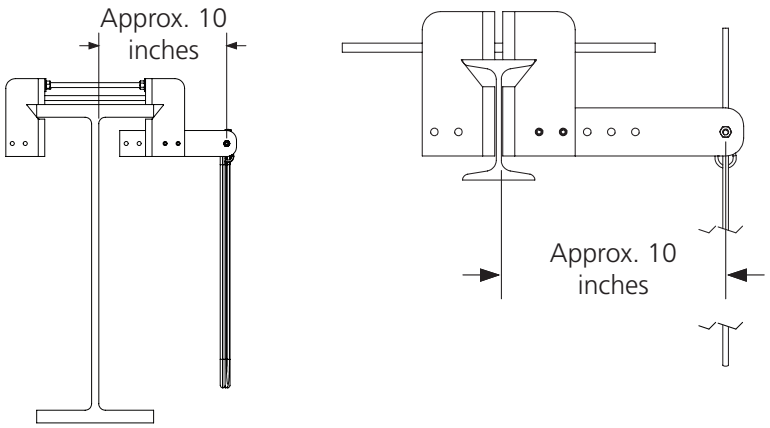
c) Holding the inner lower rod nuts in place with a wrench, torque the outer lower rod nuts (9) to 33 foot-pounds.

d) Holding the inner upper rod nuts in place with a wrench, torque the outer upper rod nuts (9) to 33 foot-pounds.

e) Align the correct holes in the arm plate (11) with the holes in the tagline weldment (7) and insert two hex head bolts (13) through the holes. Align the arm plate to keep the tagline approximately 10 inches from the face of the beam.

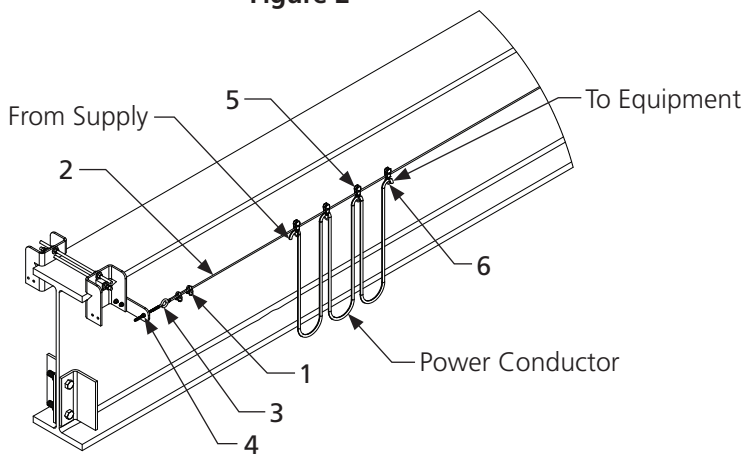
f) Place a lock washer (12) and nut (14) on each bolt (13). Torque the nuts (14) to 10 foot-pounds.

Figure 1



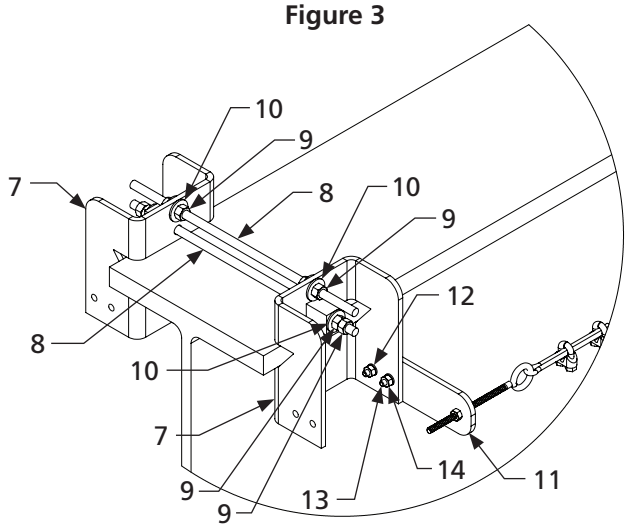
NOTE: Position the arm plate so that the tagline is approximately 10 inches from the face of the beam.

Figure 2



ITEM	DESCRIPTION	QUANTITY
1	Cable Clamp	2
2	Tagline Cable	1
3	Eye Bolt	2
4	1/4-Inch Hex Nut	4
5	Pulley	X
6	Cable Tie	X

Figure 3



ITEM	DESCRIPTION	QUANTITY
7	Tagline Weldment	2
8	3/8-Inch Threaded Rod	2
9	3/8-Inch Hex Nut	8
10	3/8-Inch Flat Washer	6
11	Arm Plate	1
12	1/4-Inch Lock Washer	2
13	1/4-Inch Hex Head Bolt	2
14	1/4-Inch Hex Nut	2

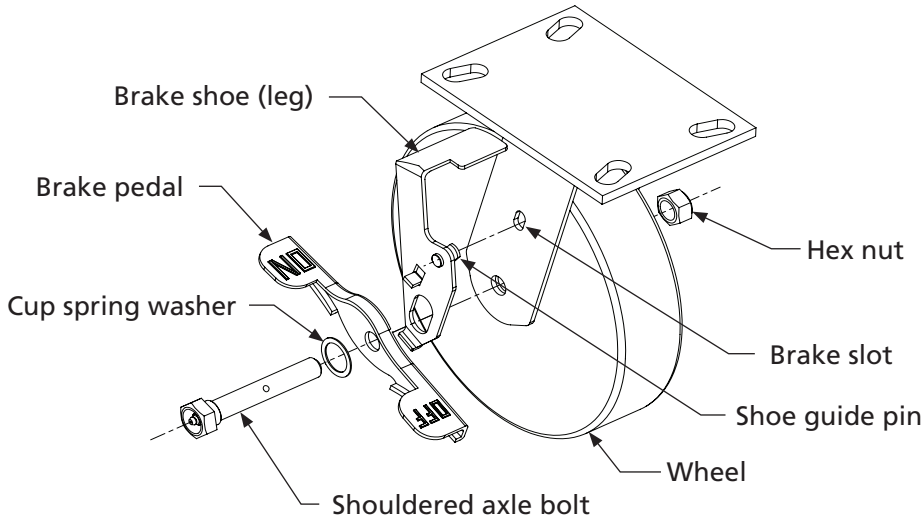
Note: Only one end of the beam is shown. Total quantities are doubled.

2. Top-Lock Wheel Brake Assembly

Some polyurethane casters ship with their wheel brakes already attached. If your wheel brakes were shipped loose, follow steps **a)** through **h)** to attach the wheel brakes.

Refer to the Wheel Brake Assembly Drawing for Steps A Through H

Wheel Brake Assembly Drawing



a) Using a 3/4-inch wrench and 3/4-inch socket and ratchet, unbolt the caster stud and remove the nut, bolt, washer, and caster.

NOTE: If the spacers fall out of the caster, reinsert them into the caster holes.

b) With the top of the brake shoe facing towards the caster assembly, insert the guide pin on the brake shoe into the brake slot on the caster assembly.

c) Using a screwdriver, slightly bend the brake shoe tab so that the brake shoe guide pin and brake shoe tab fit properly.

d) With the brake pedal tabs pointed away from the caster assembly, line up the hole on the brake pedal with the hole on the brake shoe. "On" and "Off" on the brake pedal tabs should be visible when the caster is mounted to the system.

e) Line up the caster holes with the brake shoe hole and brake pedal hole.

f) With the washer on the bolt-side of the caster assembly, reinsert the longer axle bolt through the brake pedal, brake shoe, and caster. Reapply the axle nut at this time.

g) Using a 3/4-inch wrench and 3/4-inch socket and ratchet, securely tighten the caster nut.

h) Repeat steps **a)** through **g)** to install the remaining caster brakes.

3. V-Groove Track Installation

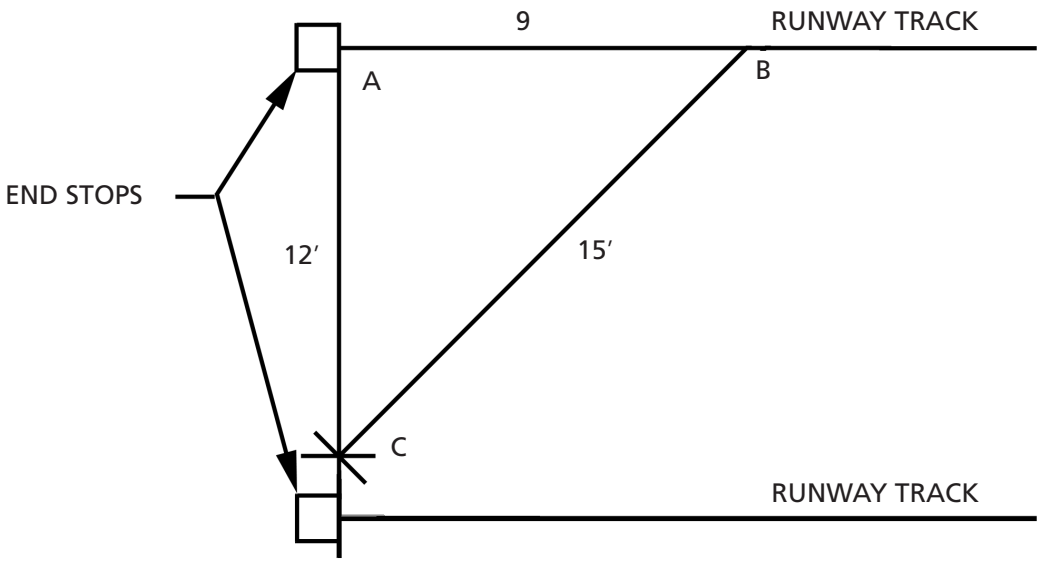
a) The exact span of the crane may vary from the design span. Install the full length of the track on one side, making sure that the track is straight and level. Fasten V-groove track to the floor using 3/8-inch lag bolts and suitable anchors. (For track supplied by Spanco, use a bolt in each hole. Otherwise, space bolts approximately three feet apart on each side of the track in a staggered arrangement.) Use shims or grouting as required to keep the track level and alignment pins at joints to keep the track true. End stops are required at each end of both tracks.

b) Lay one or two sections of the opposite side of the track at the design span, assemble the crane on the tracks following the assembly instructions, and operate the crane back and forth a few times, being careful not to run the crane off the tracks. The loose sections of track will float and set the track to the exact crane span.

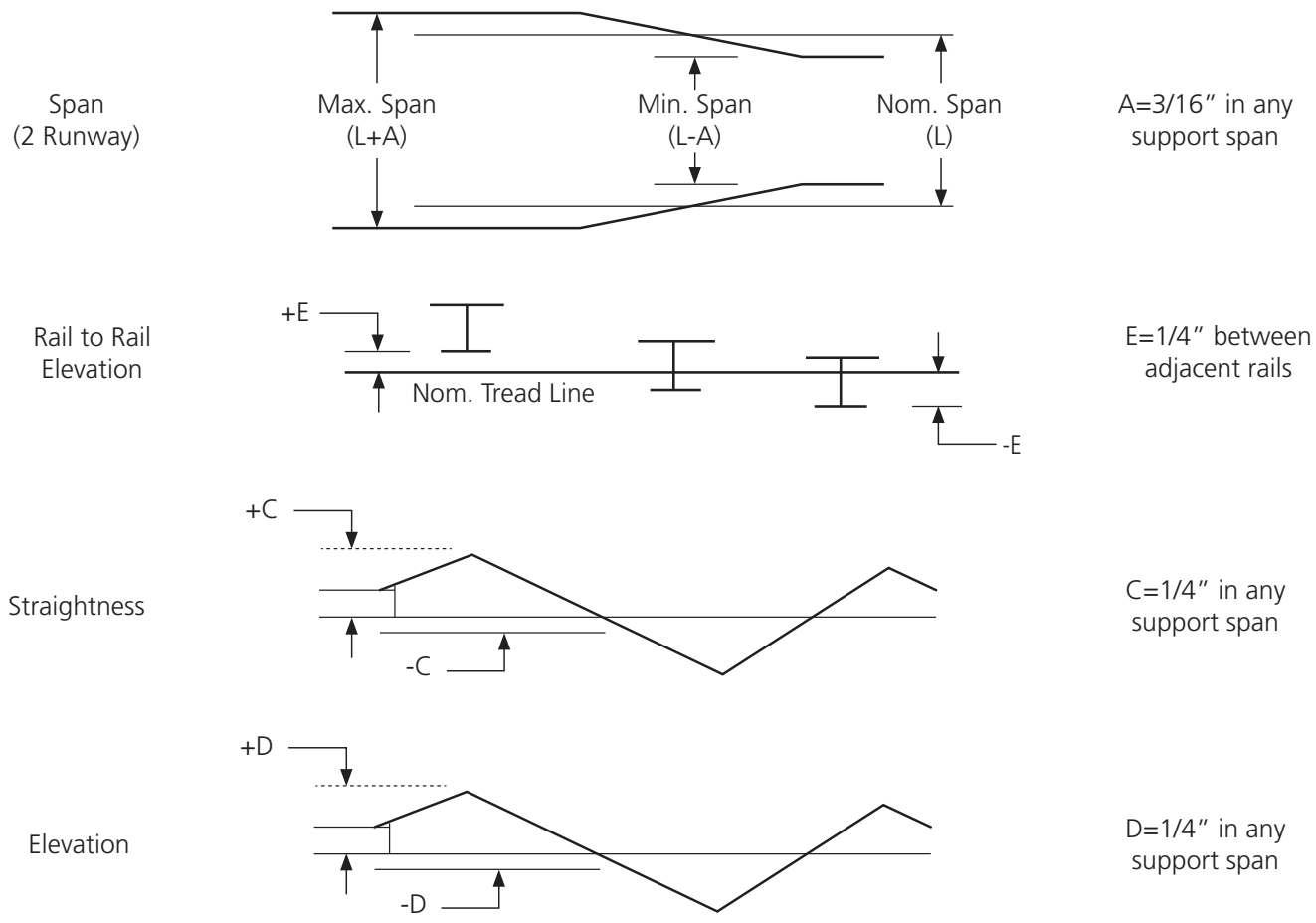
c) After the operating span is determined, attach all the other sections of track to the floor making sure the track is straight, level, parallel, and at the same elevation as the first track. The end stops should be set square with the 3-4-5 right triangle. The sides and the hypotenuse can be multiplied by any convenient number, such as three, used in the example.

d) Set one end stop at point A and measure along the runway track nine feet from point A to point B. With point B as a center and fifteen feet as a radius, draw a circular arc on the floor. With point A as a center and 12 feet as a radius, draw a circular arc on the floor intersecting the other arc at point C. A line running through points A and C is perpendicular, or square, with the runway track.

e) Extend this line to the other runway track to locate the end stop on that runway. Repeat the process at the other end of the runway, or measure along each runway the same distance from these end stops for locating the stops at the other end of the runways.



RUNWAY ALIGNMENT TOLERANCE FOR V-GROOVE TRACK



4. Adjustable Span Kit

Add the Adjustable Span Kit to a fixed-span to adjust the beam span easily without drilling. Refer to page 7 for span adjustment instructions.

Refer to Figure 4 for Steps A Through I

WARNING: Crane parts are heavy. Use proper rigging and support to secure all parts during assembly, adjustment, and disassembly processes.

a) Using an overhead hoist or lift truck, lift the beam to the gantry's minimum height. Be sure that the capacity label is right-side-up and legible.

b) Per **Figure 4**, align the holes in one A-frame assembly (3) with the countersunk holes in one adjustable span plate.

c) Per **Figure 4**, insert a socket head cap screw through the aligned holes in the A-frame assembly (3) and the adjustable span plate.

d) Per **Figure 4**, securely tighten a lock washer and a hex nut to the socket head cap screw.

e) Lift the A-frame assembly (3) with the adjustable span plate attached into position under one end of the beam, ensuring that the lifting lug is on the outside of the A-frame, not facing the beam.

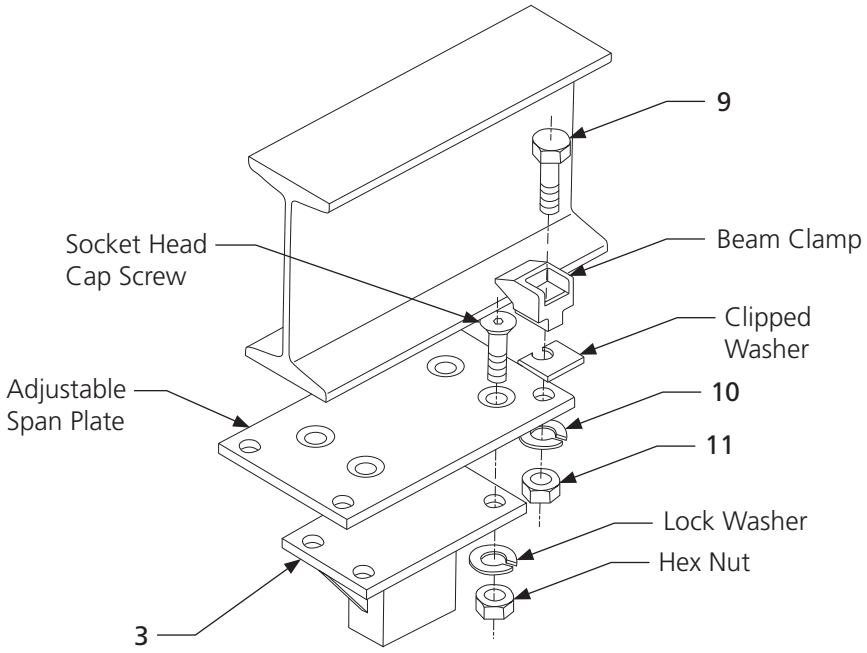
f) Per **Figure 4**, insert a hex bolt (9) thought the beam clamp and clipped washer.

g) Align the beam with the A-frame assembly (3) and the adjustable span plate. Per **Figure 4**, insert the hex bolt (9) through the hole in the adjustable span plate with the beam clamp over the bottom flange of the beam.

h) Per **Figure 4**, securely tighten a lock washer (10) and hex nut (11) to the bolt (9). Repeat this process for all four holes.

i) Repeat steps **b)** through **h)** to attach the second A-frame assembly (3).

Figure 4



ITEM	DESCRIPTION
3	A-Frame Assembly
9	Hex Bolt
10	Lock Washer
11	Hex Nut

NOTE: Torque 5/8-inch bolts to 108 foot-pounds. Torque 3/4-inch bolts to 210 foot-pounds.

NOTE: Clipped Washer quantity varies with gantry model.

MAINTENANCE

1. A system inspection should be performed 30 days after installation. All nuts, bolts, and screws should be checked for tightness. All end stops, cotter pins, and hoist trolleys should be checked for abnormal wear or breakage.
2. A complete inspection of all fasteners and connections should be performed annually or every two thousand (2,000) hours. Heavy conditions of use may require more frequent inspections.
3. Operators should visually inspect the system before each use to note any unusual or abnormal system operations.
4. **If the system fails ANY inspection point on any of the inspection checklists, immediately remove the system from service and call Spanco® at 800-869-2080 for instructions.**
5. Download and print additional blank inspection checklists from the literature tab at Spanco.com.

LOAD TEST

After the E-Series Gantry Crane has been installed, OSHA requires a load test before operating and after any modifications. This equipment is designed and manufactured to the rated capacity marked on the equipment with due allowances for safety factors. Prior to initial use of the Gantry Crane, a person appointed by the owner, under the direction of a qualified technical person, must perform a load test at 125 percent of the rated capacity using certified test weights. See CMAA 78 for periodic load testing requirements. Under no conditions shall the rated capacity be exceeded during regular use or during annual or semi-annual load tests.

DESIGN FACTORS

Nameplate capacities represent the rated load on the hoist hook. The load rating of a hoist shall not exceed the nameplate rating. Spanco's design includes an allowance of 15 percent of nameplate capacity for trolley and hoist deadweight and 25 percent of the nameplate capacity for impact. This design provides a margin to allow for variations in material properties, operating conditions, and design assumptions. **No crane should ever be loaded beyond its rated capacity**.

SERVICE FACTOR

All Spanco gantry cranes are designed for moderate usage (Class C Normal/Industrial service) as defined by CMAA 70:

- System or equipment is used where lifted loads average 50 percent of the rated capacity with five to 10 lifts per hour, averaging 15 feet, not over 50 percent of the lifts at rated capacity.

Applications involving vacuums, magnets, or other high-impact lifters are considered severe usage and require special design considerations. Contact Spanco for special design pricing.

Consult Spanco for usage other than moderate and all instances of high cycle rates or high-impact applications, such as high-speed air or electric hoists, vacuum lifters, or magnets.

DISASSEMBLY

1. Disassembling the Beam

Refer to E-Series Gantry Crane Assembly Drawing for Steps A Through J

WARNING: Crane parts are heavy. Use proper rigging and support to secure all parts during assembly, adjustment, and disassembly processes.

a) Move the assembled E-Series Gantry Crane to an area under an overhead hoist, or where a lift truck can be used to raise the beam. Be sure there is no machinery or clutter nearby that will obstruct free movement. All personnel should be wearing applicable safety gear, such as hard hats, steel toe shoes, and safety glasses.

b) Adjust the gantry height to its lowest position following the instructions on page 6.

c) Secure the hoist trolley in the center of the beam.

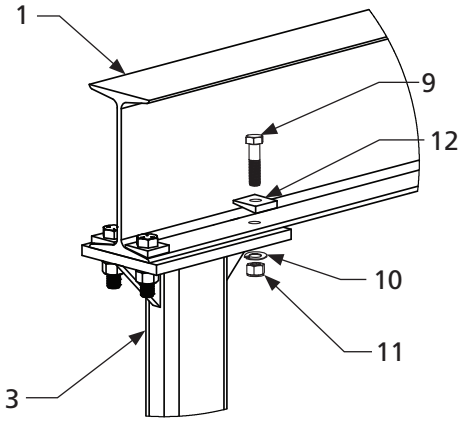
d) Ensure the height adjustment bolt (15) on each end frame assembly is secure.

e) Using an overhead hoist or lift truck, attach the lifting straps to the beam to support the crane during disassembly. Secure the gantry legs to prevent falling.

f) Lock the caster wheels in position parallel to the end frame to prevent the frame from rolling during disassembly.

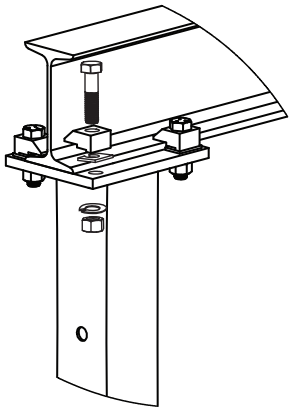
g) Using a wrench and socket, remove the hex nuts (11) and lock washers (10) from the hex bolts (9) that secure the beam to one end frame assembly. For adjustable span gantry cranes, remove the beam clamps (13) and clipped washers (14) with the hex bolts (9).

Detail "C" (Fixed Span)

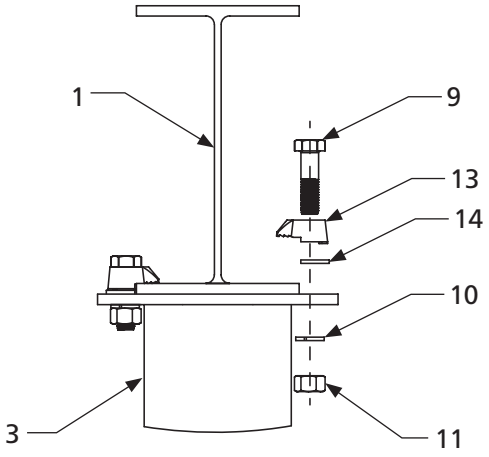


ITEM	DESCRIPTION
1	Beam
3	End Frame Assembly
9	Hex Bolt
10	Lock Washer
11	Hex Nut
12	Bevel Washer

Detail "D" (Adjustable Span)



Detail "E" (Adjustable Span)



ITEM	DESCRIPTION
1	Beam
3	End Frame
9	Hex Bolt
10	Lock Washer
11	Hex Nut
13	Beam Clamp
14	Clipped Washer

h) Remove the end frame and lower it to the ground.

i) Repeat steps **g)** and **h)** to remove the second end frame assembly.

j) Clear the area below the beam, then safely lower the beam to the ground and remove the lifting straps.

2. End Frame Disassembly (Adjustable Height Only)

NOTE: For Fixed-Height E-Series Gantry Cranes, end frames do not require additional disassembly.

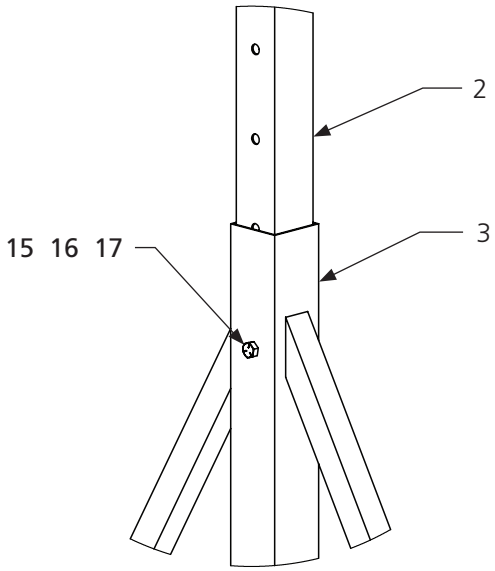
Refer to E-Series Gantry Crane Assembly Drawing for Steps A Through C

a) Remove the hex nut (17) and lock washer (16) from the hex bolt (15) and remove the bolt from the end frame assembly.

b) Slide the upright tube out of the center tube of each end frame or slide the upright tube to the lowest position.

c) Insert the hex bolt (15) through the end frame and place the lock washer (16) and hex nut (17) onto the bolt.

Detail "A"



ITEM	DESCRIPTION
2	Upright Tube
3	End Frame
15	Hex Bolt
16	Lock Washer
17	Hex Nut

3. Removing the Caster Assemblies from the End Frame Assemblies

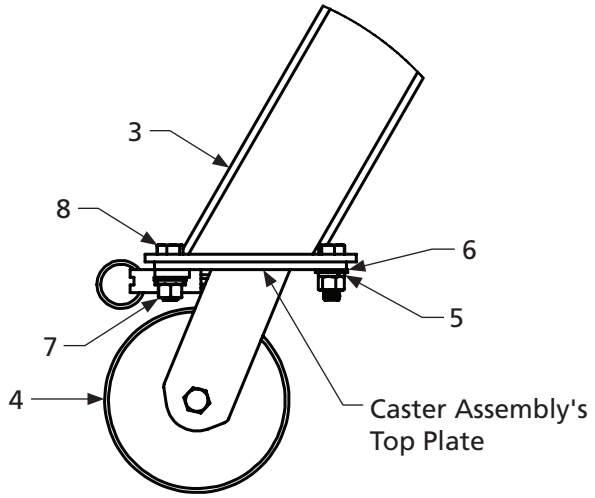
Refer to Detail "B" for Steps A Through C

a) The casters may be removed from the end frame assemblies if desired. To remove the casters, lay each end frame assembly on the ground.

b) For end frames with a studded connection, remove the flat washer (6), lock washer (5), and hex nut (7) from each stud and remove the caster assembly's top plate from the studs.

c) For end frames with a bolted connection, remove the flat washer (6), lock washer (5), and hex nut (7) from each bolt (8) and remove the bolts from the caster assembly's top plate and the aligned holes in the end frame assembly.

Detail "B"



ITEM	DESCRIPTION
3	A-Frame Assembly
4	Caster
5	Lock Washer
6	Flat Washer
7	Hex Nut
8	Hex Bolt

LABELING

The letters correspond to the accompanying labels. All labeling must be legible and attached to the system. If at any time these labels are lost, stolen, removed, or become illegible, contact Spanco. Labels can be ordered by part number as listed below.

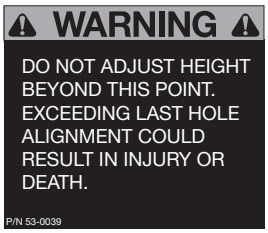
If the system is shipped unpainted or without properly secured labels, proper label placement is the sole responsibility of the end user. Spanco cannot be held liable for any damage or injury resulting from omitted or improper label placement.

"A"

P/N 53-0001

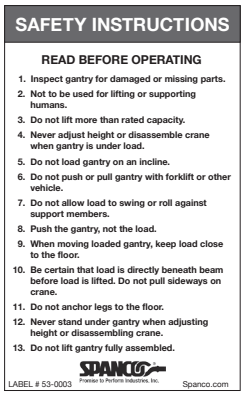
"B"

"C"



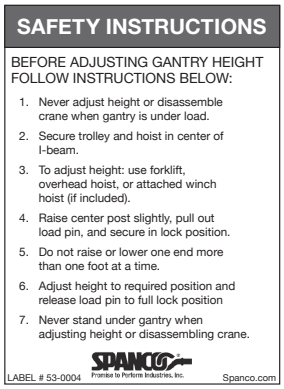
P/N 53-0039

"D"



P/N 53-0003

"E"

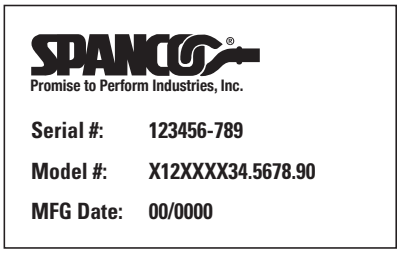


P/N 53-0004

"F"

P/N 53-0589

"G"



Notes on Label Placement Drawing

- Label **53-0001 "A"** should be centered on both sides of the beam.
- Label **53-0023 "B"** should be placed on Label **"A"** and is P/N **53-0010** for one-ton capacity systems, **53-0011** for two-ton capacity systems, **53-0012** for three-ton capacity systems, and **53-0013** for five-ton capacity systems.
- Label **53-0039 "C"** should be placed on both upright tubes above the lowest hole.
- Label **53-0003 "D"** should be placed on both support legs.
- Label **53-0004 "E"** should be placed on both support legs.
- Label **53-0589 "F"** should be placed on both A-frames or upright tubes at eye level (approximately 62 inches from the ground).
- Label **"G"** should be placed on each leg an on label **"A"** inside the outlined area.

Promise to Perform Industries, Inc.

BEFORE EACH USE E-SERIES GANTRY CRANE SYSTEM INSPECTION CHECKLIST

Inspector Name: _____

Date: _____

System Number: _____

Model: _____

	Inspection Result (✓)	
INSPECTION POINTS	**PASS**	**FAIL**
1. Inspect hoist per manufacturer's instructions.		
2. Verify that the trolley can easily and smoothly roll the full length of the beam.		
3. Verify that the caster wheels can easily and smoothly roll along the full length of the surface the gantry operates on.		
4. Check all system welds for cracks.		
5. Check system components for corrosion.		
6. Check system components for bent or damaged areas.		
7. Visually check all bolted assemblies for proper connections and properly secured bolts and nuts.		
Caster Inspection		
1. Inspect casters for visible signs of damage or excessive wear.		
2. Check each caster unit for potentially concealed damage.		
3. Visually check that all caster studs are present and tight.		
4. Ensure that the caster's axles are properly secured.		
5. Ensure that the casters' brakes and swivel locks perform properly.		
6. Ensure that the caster brakes make contact with the caster material for maximum effectiveness.		

ANNUAL GANTRY CRANE SYSTEM INSPECTION CHECKLIST

Inspector Name: _____

Date: _____

System Number: _____

Model: _____

	Inspection Result (✓)	
INSPECTION POINTS	**PASS**	**FAIL**
1. Using a torque wrench, check that all bolts are present and torqued to values shown in the system manual.		
2. Verify that capacity labels are present, attached, and legible.		
3. Check the beam flanges. Beam flanges cannot be bent downward.		
4. Check the beam flange thickness. Beam flange thickness cannot be worn more than 10 percent.		
5. Check all system welds for cracks.		
6. Check system components for corrosion and bent or damaged areas.		
7. Verify that the hoist can traverse the entire length of the beam without snags.		
8. Inspect the hoist per the manufacturer's instructions.		
9. Check system components for loose components.		
10. Check that all wheel studs, if supplied, are torqued to the value shown in the system manual. Note that these 1/2-inch wheel studs have a different torque value than the system's other 1/2-inch bolts.		
11. Check motorization components, if supplied, for improper performance or noncompliance with applicable safety requirements.		
12. Check drive chain sprockets, if supplied, for excessive wear and excessive chain stretch.		
13. Check the electrical apparatus, if supplied, for any deterioration of the controller contactors, limit switches, and push button stations.		
14. Check system for unauthorized modifications. Only Spanco can authorize modifications. Remove system from service if it is modified in anyway.		

PRODUCT WARRANTY COVERAGE

Spanco warrants its products to be free from defects in material and workmanship as follows:

- **Manual Systems & Equipment:** Ten Years
- **Motorized Systems & Equipment and Paint and Finishes for Non-Aluminum Components:** Two Years

Ten-Year Warranty Coverage:

- Defects in equipment material and workmanship of manual systems and equipment
- Only applies to the wearable wheels on workstation bride crane end trucks and hoist trolley

Spanco warrants its manual workstation bridge crane, jib crane, and gantry crane products to be free from defects in material and workmanship for a period of ten (10) years or 20,000 hours, commencing on the date of shipment to the first retail purchaser. This warranty extends to non-wearable parts only, with the exception of the wheels supplied on manually operated workstation end trucks and hoist trolleys.

Two-Year Warranty Coverage:

- Defects in equipment material and workmanship of motorized systems and equipment
- Paint coatings and finishes for non-aluminum components

Spanco warrants motorized equipment to be free from defects in material and workmanship for a period of two (2) years or 4,000 hours, commencing on the date of shipment to the first retail purchaser. Spanco warrants its paint and finishes for a period of two (2) years. Warranty claims related to coatings must be accompanied by documentation of the product's application and environmental conditions from time of delivery to time of claim.

WARRANTY TERMS & CONDITIONS

All warranty claims must be approved by Spanco before any work is performed. Spanco's obligation under this warranty is limited to the replacement or repair of Spanco products at the factory or separate location approved by Spanco. Other than the above mentioned warranty, Spanco will not honor any other warranties—whether expressed, implied, or statutory—and disclaims any warranties of merchantability or fitness for a particular purpose. Spanco has the right to reject any warranty claim due to harsh and/or inappropriate environmental conditions.

Spanco Is Not Liable for:

- Indirect, incidental, or consequential damages including lost profits, operating costs, loss of production, or travel expenses
- Components or accessories not manufactured by Spanco
- Defective equipment or system failure caused by misuse, negligence, and improper installation or maintenance
- Equipment that has been used in excess of its rated capacity or beyond its service factors
- Rework and modification of any equipment that has been altered without Spanco's written authorization
- Freight charges and damage incurred by freight carriers
- Any loss, injury, or damage to persons or property resulting from failure or defective operation of material or equipment
- Any damage to paint coatings and finishes caused by negligence and improper storage, such as temporarily storing an indoor system outdoors

Reimbursement Disclaimer:

- Written notice of any claimed system defect must be given to Spanco within ninety (90) days of shipment.
- All requests for reimbursement must be accompanied by proper documentation.
- Reimbursement is provided in the form of a credit unless otherwise approved by Spanco management.
- Reimbursement for labor will be provided at a maximum rate of $75 per hour.
- All reimbursement is subject to approval by Spanco management.

ABOUT SPANCO®

Our Commitment

Spanco professionals are dedicated to designing and manufacturing a variety of material handling solutions that meet all applicable CMAA, ANSI, OSHA, and MMA guidelines and standards. Our team of engineers and industry experts combine many years of experience in the material handling industry to manufacture material handling solutions that are backed by the best warranty in the industry.

Spanco production facilities are certified under the ISO 9001:2015 Quality Management System to provide superior quality products. And every welder at Spanco is certified to handle steel (D1.1) and aluminum (D1.2) in accordance with the rigorous requirements and lab testing established by the American Welders Society (AWS).

Spanco professionals welcome challenging projects that require custom crane engineering. Spanco also offers hundreds of pre-engineered lifting solutions, including Workstation Bridge Cranes, Jib Cranes, Gantry Cranes, Monorails, and Tractor Drives.

Our Production:

All of our systems are designed and manufactured in the United States of America. We have production facilities in Las Vegas, Nevada, and at our headquarters in Morgantown, Pennsylvania.

Promise to Perform Industries, Inc.

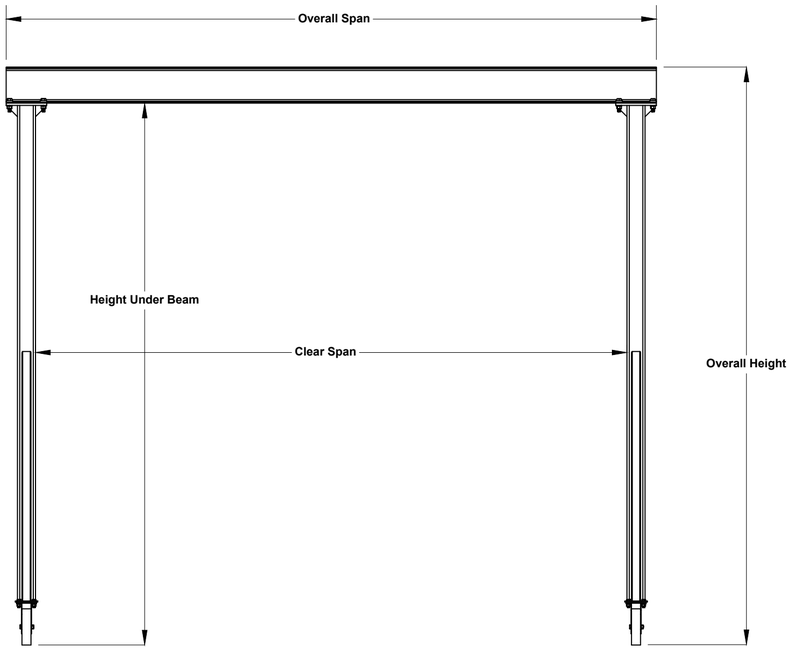
Morgantown, PA | Las Vegas, NV
Toll Free: (800) 869-2080 | Local: (610) 286-7200 | Outside US: 1-610-286-7200 | Fax: (610) 286-0085
Spanco.com | info@Spanco.com

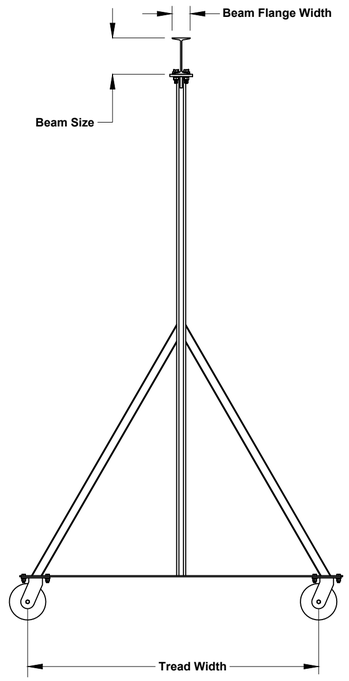
TÜV SÜD ISO 9001

MHI Member Company

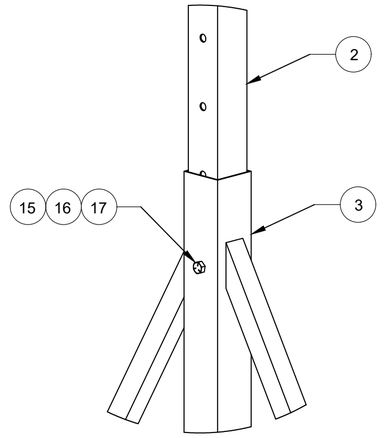
CMAA CRANE MANUFACTURERS ASSOCIATION OF AMERICA, INC.

MMA Monorail Manufacturers Association
Workstation Cranes and Patented Track Systems





Detail "A"



NOTE 1:
Detail **"A"** refers to the optional adjustable height design.

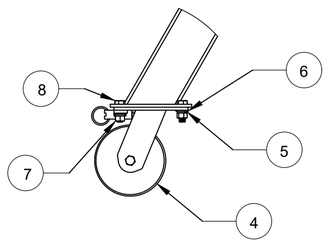
Item	Quantity	Building Materials Description
1	1	Beam
2	2	Upright Tube
3	2	End Frame
4	4	Caster
5	16	Lock Washer
6	16	Flat Washer
7	16	Hex Nut
8	16	Hex Bolt
9	8	Hex Bolt
10	8	Lock Washer
11	8	Hex Nut
12	8	Bevel Washer
13	8	Beam Clamp
14	8	Clipped Washer
15	2	Hex Bolt
16	2	Lock Washer
17	2	Hex Nut

Torque Specifications

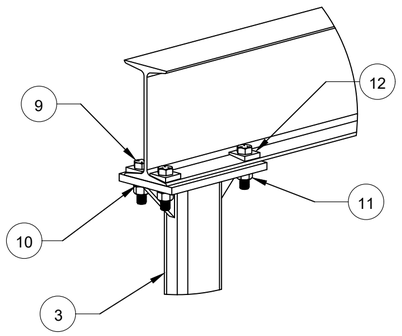
Bolt Diameter	Hex Nut Torque	Minimum Hex Locknut Torque
1/2 Inch	78 Foot-Pounds	51 Foot-Pounds
5/8 Inch	154 Foot-Pounds	93 Foot-Pounds
3/4 Inch	257 Foot-Pounds	151 Foot-Pounds
7/8 Inch	341 Foot-Pounds	224 Foot-Pounds
1 Inch	514 Foot-Pounds	325 Foot-Pounds

See torque with individual steps in the manual for torque values that differ from the values in the above torque chart.

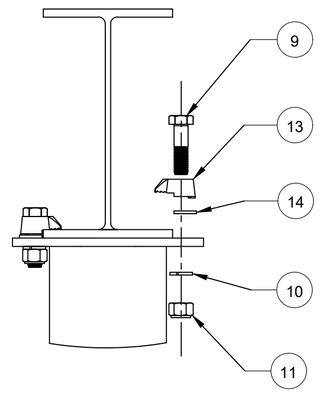
Detail "B" (Caster Assembly)



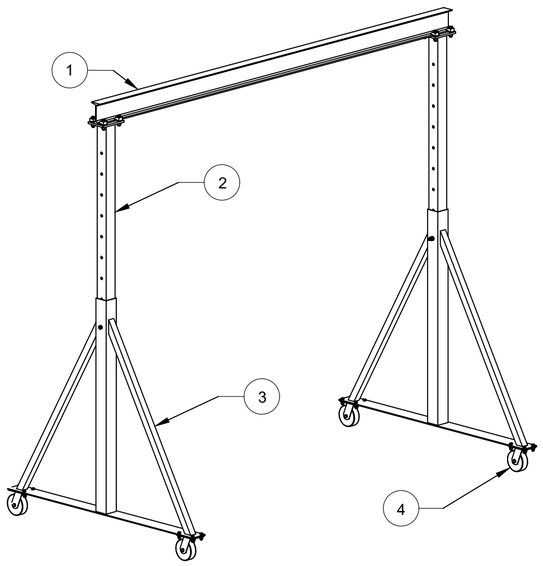
Detail "C"



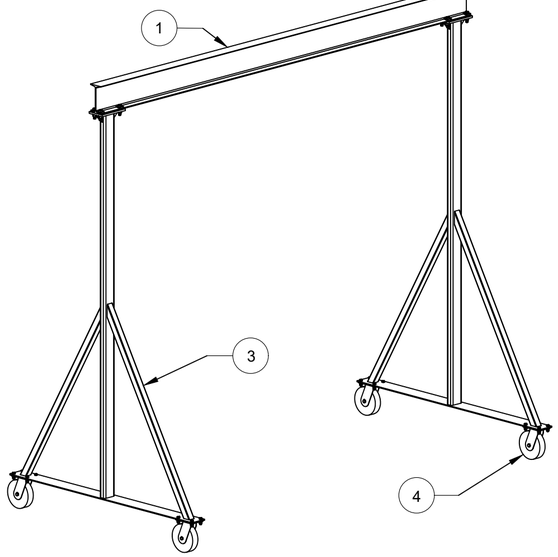
Detail "E"



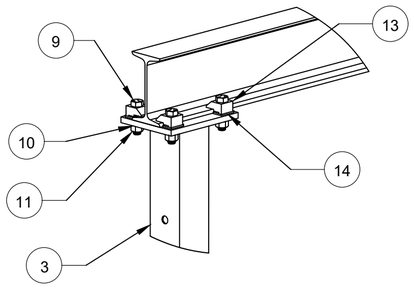
Adjustable Height



Fixed Height



Detail "D"



NOTE 2:
Detail **"D"** refers to the optional Adjustable Span Kit.

SHEET 1 OF 2

REV.	DATE	NAME	REVISION DESCRIPTION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ±1/16" DECIMALS .XX ±.05 .XXX ±.005 .XXXX ±.0005 ANGLES ±1°

CAD GENERATED DRAWING, DO NOT MANUALLY UPDATE, DO NOT SCALE DRAWING

APPROVALS	DATE
DRAWN JRM	01/13/22
CHECKED	
APPVD: JRG	06/23/22
PLOT DATE:	WT. -
PROJECT NO.:	SCALE:

MATERIAL:
FINISH: -
STATUS:

SPANCO® Promise to Perform Industries, Inc.

MATERIAL HANDLING
E-SERIES GANTRY CRANE
ASSEMBLY DRAWING

SIZE C | DWG. NO. E-SERIES-ASSEMBLY | REV. -
CAD FILE: | SHEET 1 OF 2

"A"

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PROUDLY MADE IN THE USA
TON
LABEL # 53-0001

P/N 53-0001
SEE NOTE 1 FOR MORE INFO.

"B"

1

SEE NOTE 2
FOR MORE INFO.

"C"

⚠ WARNING ⚠

DO NOT ADJUST HEIGHT BEYOND THIS POINT. EXCEEDING LAST HOLE ALIGNMENT COULD RESULT IN INJURY OR DEATH.

P/N 53-0039

P/N 53-0039
SEE NOTE 1 FOR MORE INFO.

"D"

SAFETY INSTRUCTIONS

READ BEFORE OPERATING

1. **Inspect gantry for damaged or missing parts.**
2. **Not to be used for lifting or supporting humans.**
3. **Do not lift more than rated capacity.**
4. **Never adjust height or disassemble crane when gantry is under load.**
5. **Do not load gantry on an incline.**
6. **Do not push or pull gantry with forklift or other vehicle.**
7. **Do not allow load to swing or roll against support members.**
8. **Push the gantry, not the load.**
9. **When moving loaded gantry, keep load close to the floor.**
10. **Be certain that load is directly beneath beam before load is lifted. Do not pull sideways on crane.**
11. **Do not anchor legs to the floor.**
12. **Never stand under gantry when adjusting height or disassembling crane.**
13. **Do not lift gantry fully assembled.**

SPANCO® Promise to Perform Industries, Inc.
LABEL # 53-0003 Spanco.com

P/N 53-0003
SEE NOTE 1 FOR MORE INFO.

"E"

SAFETY INSTRUCTIONS

BEFORE ADJUSTING GANTRY HEIGHT FOLLOW INSTRUCTIONS BELOW:

1. Never adjust height or disassemble crane when gantry is under load.
2. Secure trolley and hoist in center of I-beam.
3. To adjust height: use forklift, overhead hoist, or attached winch hoist (if included).
4. Raise center post slightly, pull out load pin, and secure in lock position.
5. Do not raise or lower one end more than one foot at a time.
6. Adjust height to required position and release load pin to full lock position
7. Never stand under gantry when adjusting height or disassembling crane.

SPANCO® Promise to Perform Industries, Inc.
LABEL # 53-0004 Spanco.com

P/N 53-0004
SEE NOTE 1 FOR MORE INFO.

"F"

⚠WARNING

You must read and understand the manual before you assemble, operate, or disassemble this equipment.

Failure to do so may result in serious injury or death.

To download a replacement manual, visit Spanco.com or scan the QR code.

SCAN ME

P/N: 53-0589

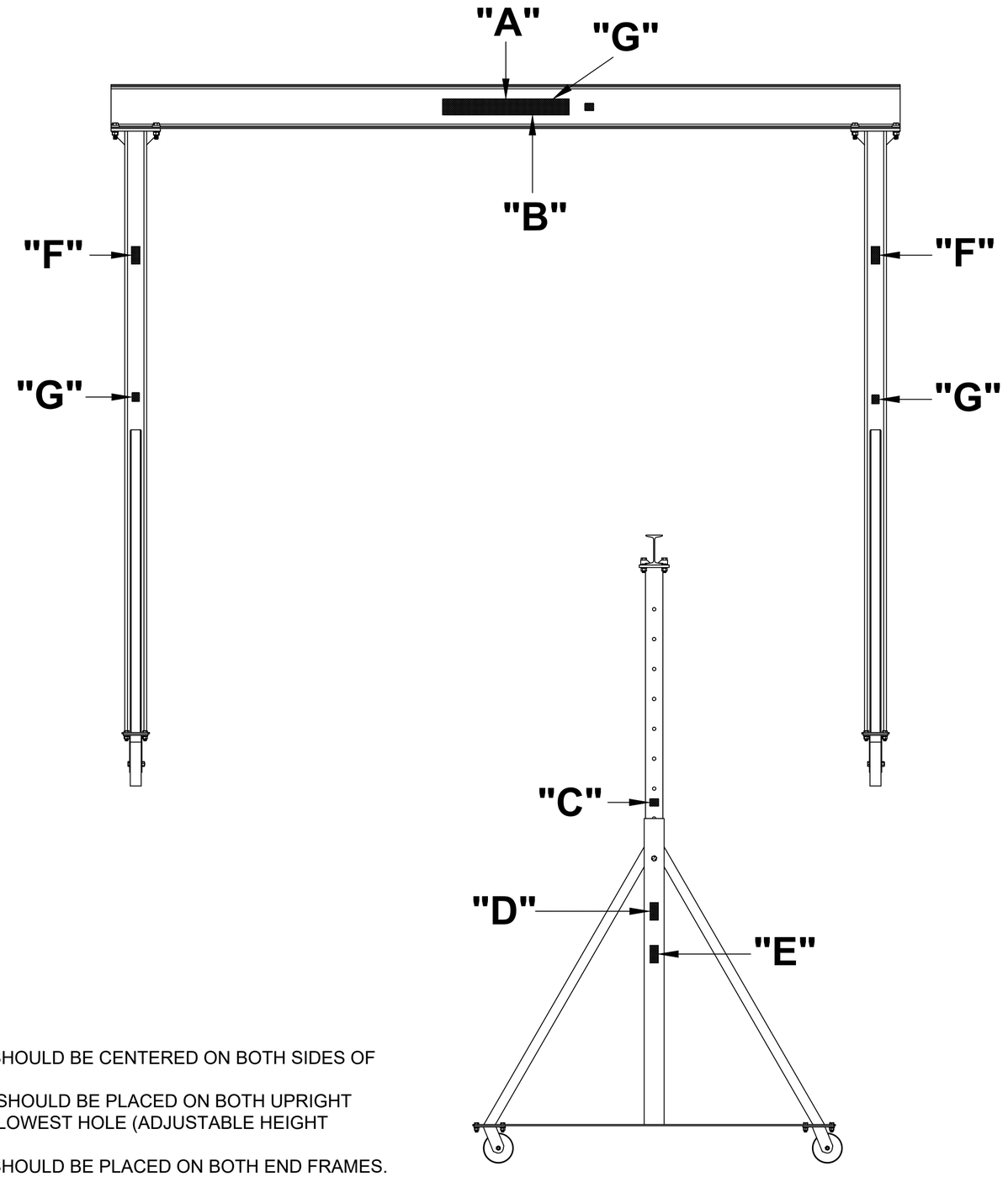
P/N 53-0589
SEE NOTE 1 FOR MORE INFO.

"G"

SPANCO®
Promise to Perform Industries, Inc.

Serial #: 123456-789
Model #: X12XXXX34.5678.90
MFG Date: 00/0000

SEE NOTE 1 FOR MORE INFO.



NOTE 1:
LABEL **53-0001 "A"** SHOULD BE CENTERED ON BOTH SIDES OF THE BEAM.
LABEL **53-0039 "C"** SHOULD BE PLACED ON BOTH UPRIGHT TUBES ABOVE THE LOWEST HOLE (ADJUSTABLE HEIGHT SYSTEMS ONLY).
LABEL **53-0003 "D"** SHOULD BE PLACED ON BOTH END FRAMES.
LABEL **53-0004 "E"** SHOULD BE PLACED ON BOTH END FRAMES.
LABEL **53-0589 "F"** SHOULD BE PLACED ON BOTH A-FRAMES OR UPRIGHT TUBES AT EYE LEVEL (APPROXIMATELY 62 INCHES).
LABEL **"G"** SHOULD BE PLACED ON EACH A-FRAME AND ON LABEL "A" INSIDE THE OUTLINED AREA.

NOTE 2:
LABEL **"B"** SHOULD BE PLACED ON LABEL **"A"** AND IS P/N **53-0010** FOR ONE-TON CAPACITY SYSTEMS, **53-0011** FOR TWO-TON CAPACITY SYSTEMS, **53-0012** FOR THREE-TON SYSTEMS, AND **53-0013** FOR FIVE-TON CAPACITY SYSTEMS.

SHEET 2 OF 2

REV.	DATE	NAME	REVISION DESCRIPTION

CAD GENERATED DRAWING, DO NOT MANUALLY UPDATE, DO NOT SCALE DRAWING

APPROVALS	DATE
DRAWN: JRM	01/13/22
CHECKED:	
APPVD: JRG	06/23/22
PLOT DATE:	WT.
PROJECT NO.:	SCALE:

SPANCO® Promise to Perform Industries, Inc.

MATERIAL HANDLING
E-SERIES GANTRY CRANE
LABEL PLACEMENT DRAWING

SIZE	DWG. NO.	REV.
C	E-SERIES-ASSEMBLY	-

CAD FILE: SHEET 2 OF 2