

TRSG ASSEMBLY
INSTRUCTION MANUAL

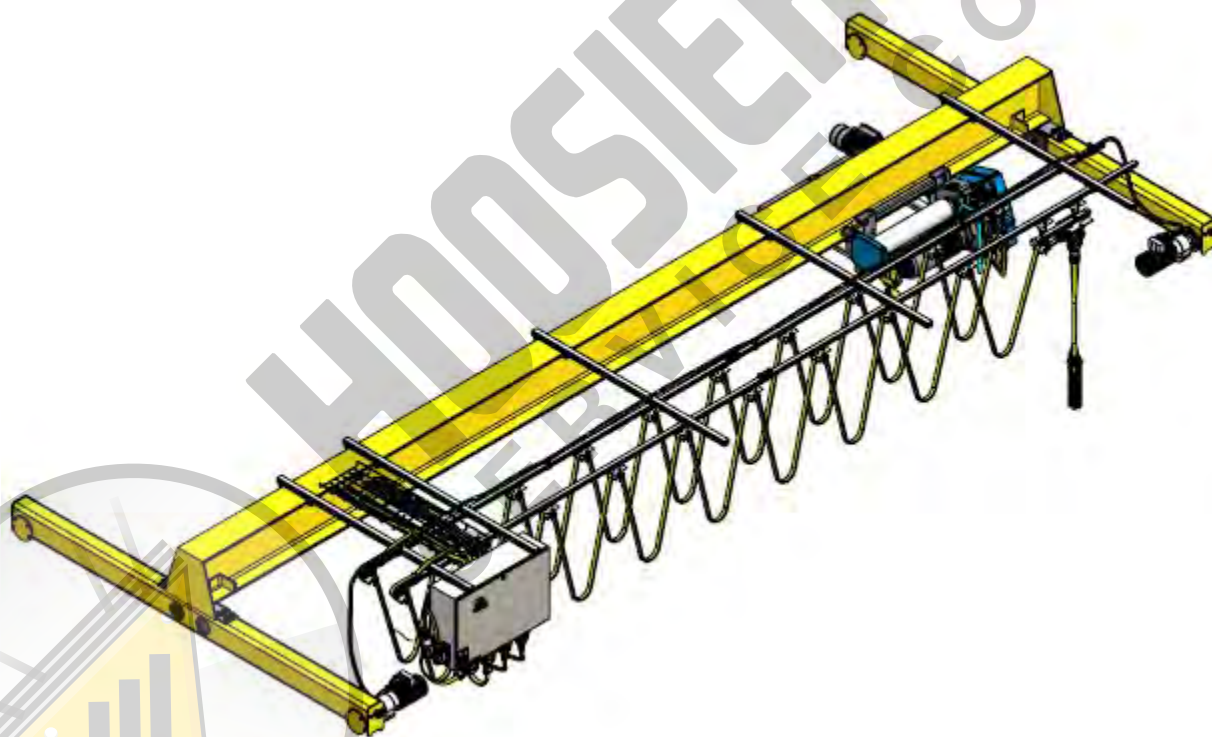
P/N: C11746308



SHAW-BOX®

YK™ & SK™

CRANE KIT ASSEMBLY INSTRUCTION MANUAL



C/MCO
COLUMBUS MCKINNON

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P/N: C11746308 REV. AA April 2020



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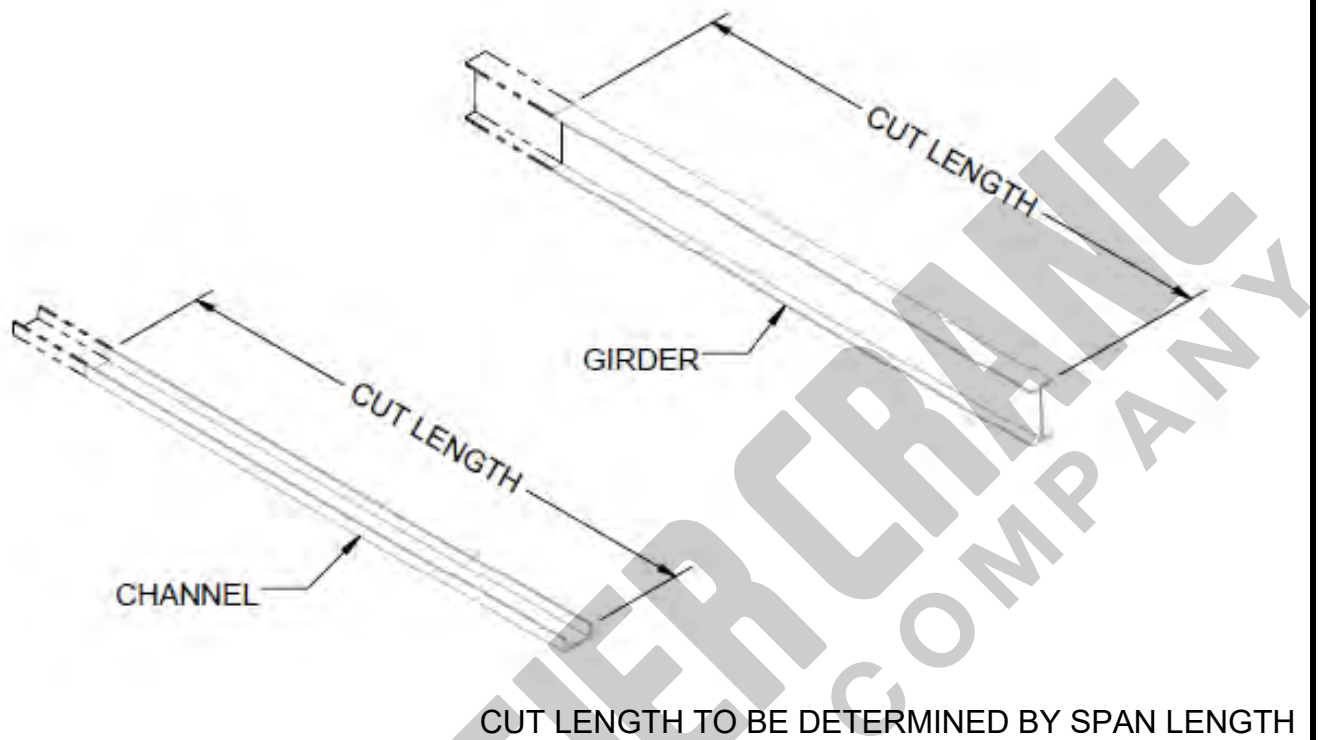


CHAPTER 1

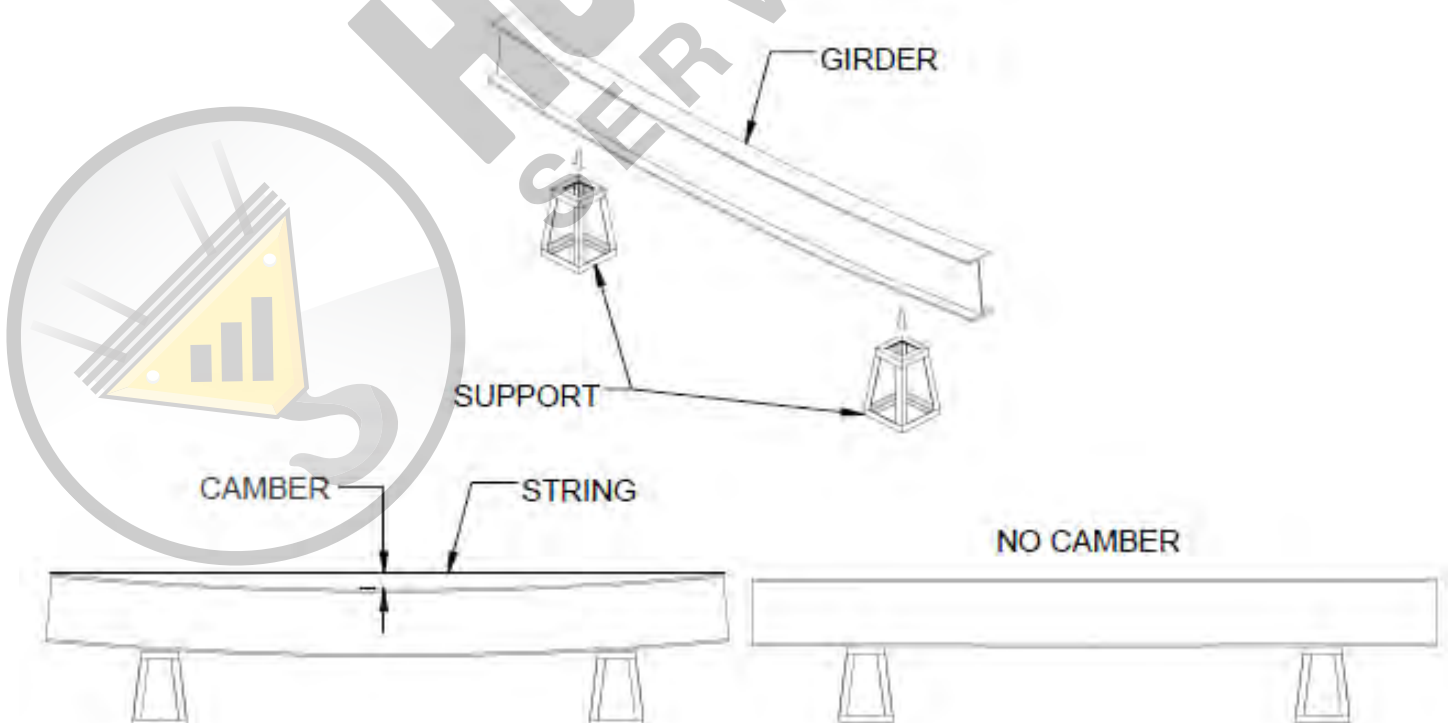
FABRICATION OF GIRDER(S) FOR BRIDGE BEAM WITH CAPPING CHANNEL (AS REQUIRED)



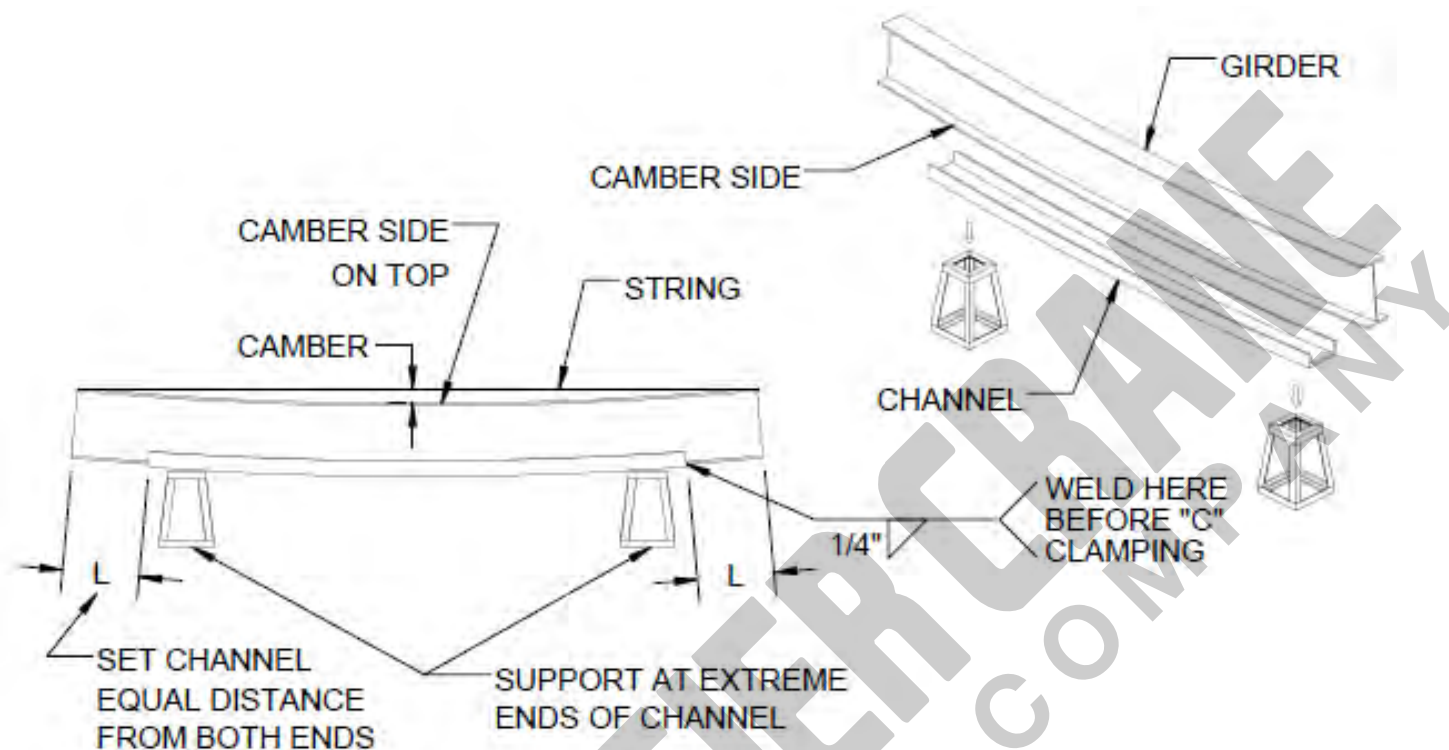
STEP:1 CUT GIRDER AND C CHANNEL (AS REQUIRED)



STEP:2 CHECK CAMBER (AS REQUIRED)

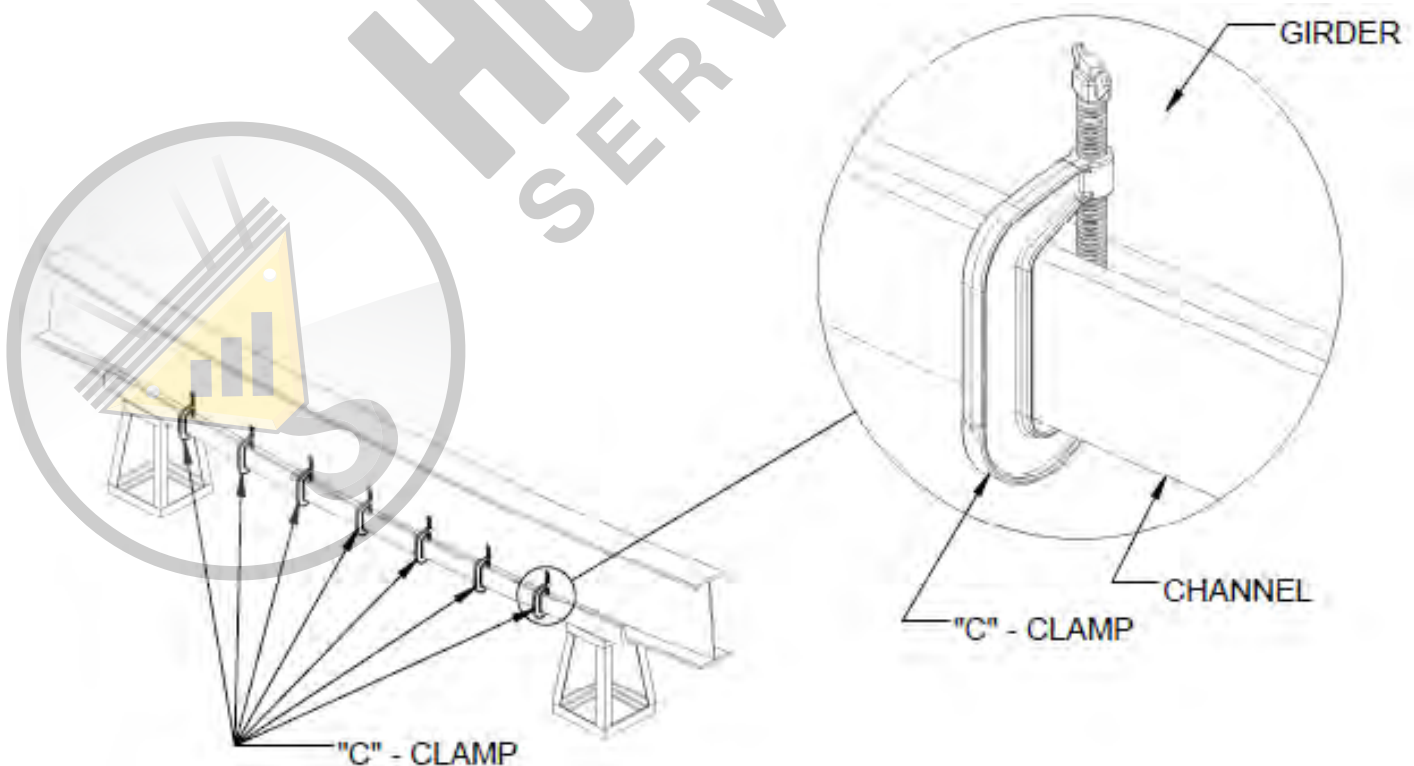


STEP:3 GIRDER AND C CHANNEL WELDING AT END (AS REQUIRED)

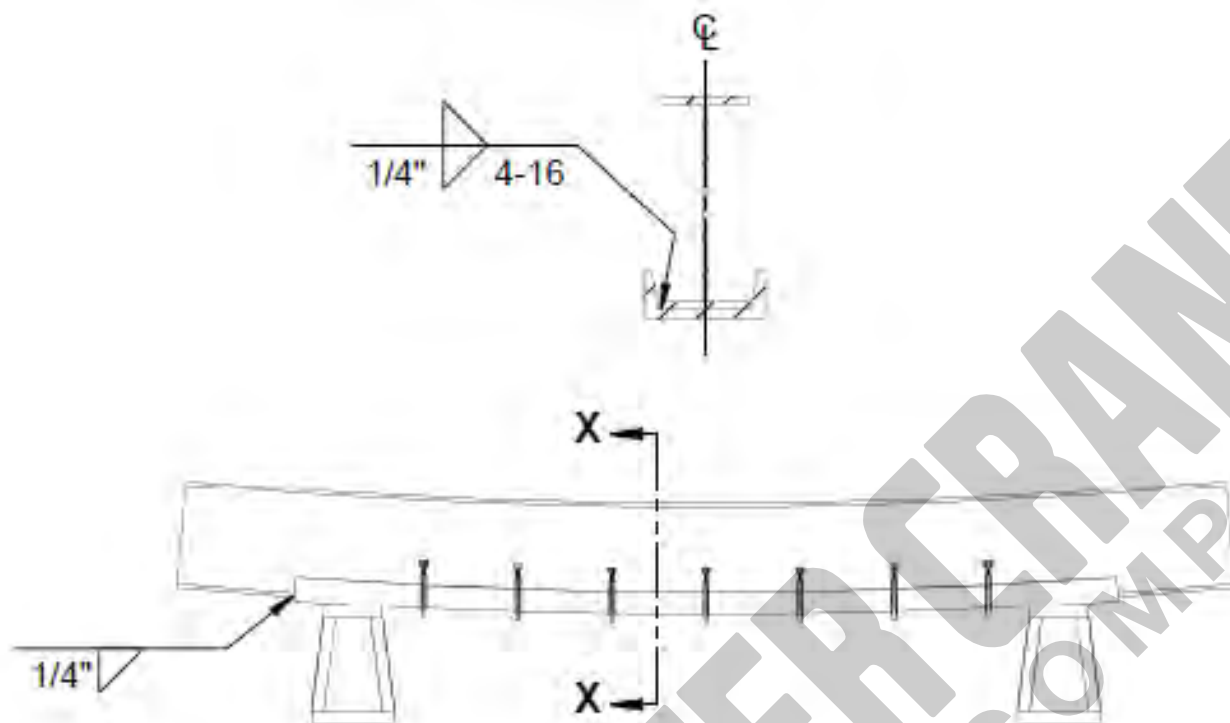


ALL WELD IS TO BE AWS CLASS E-70XX OR EQUIVALENT

STEP:4 CLAMPING GIRDER AND C CHANNEL (AS REQUIRED)

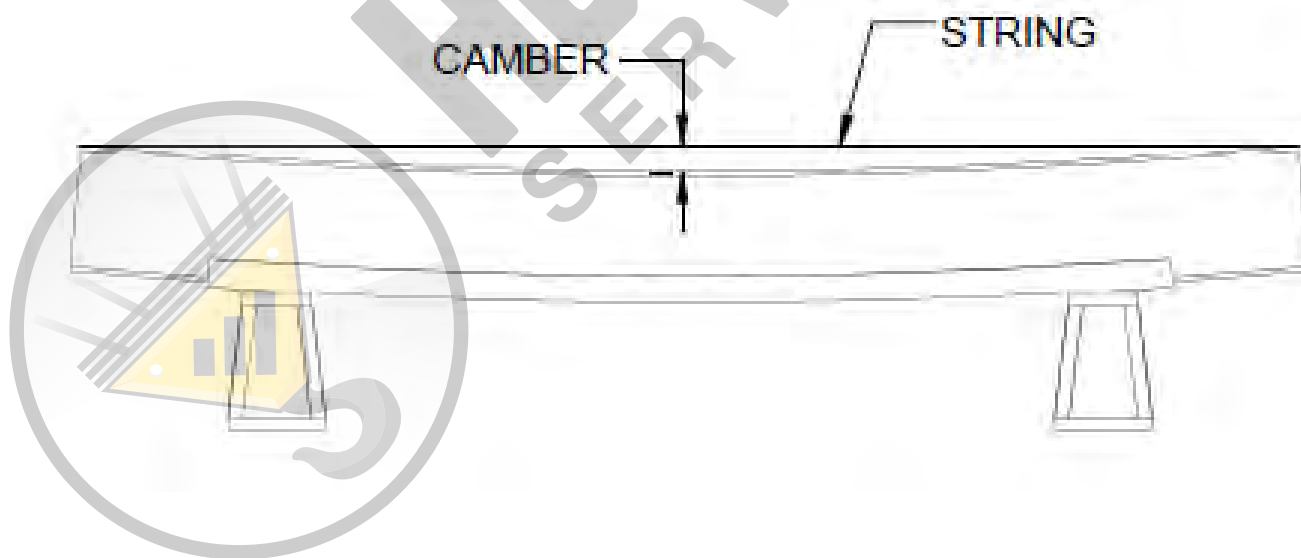


STEP:5 GIRDER AND C CHANNEL WELDING (AS REQUIRED)



ALL WELD IS TO BE AWS CLASS E-70XX OR EQUIVALENT

STEP:6 CHECK CAMBER AFTER WELDING (AS REQUIRED)



$$\text{CAMBER} \leq \{ \text{DEFLECTION OF GIRDER AT DEAD LOAD} + 1/2 * \text{DEFLECTION OF GIRDER AT LIVE LOAD} \}$$



CHAPTER 2

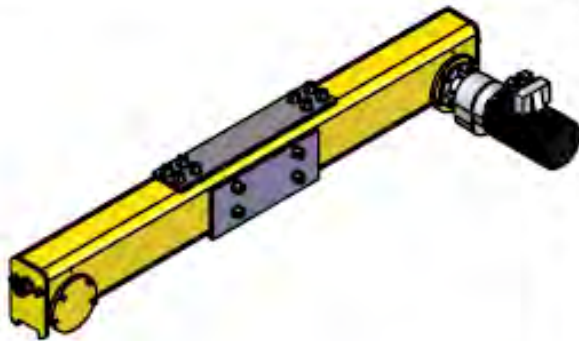
ASSEMBLING BRIDGE GIRDER TO END TRUCKS (SINGLE GIRDER)



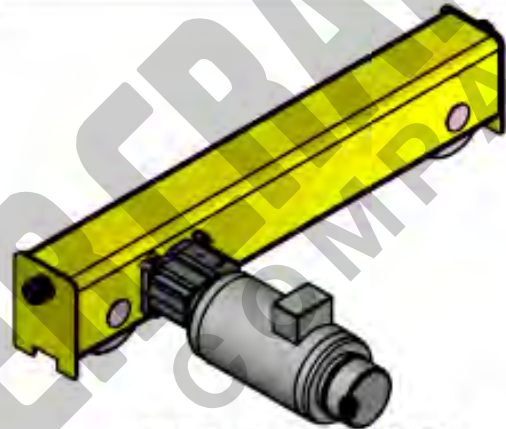
HOOVER CRANE
SERVICE COMPANY



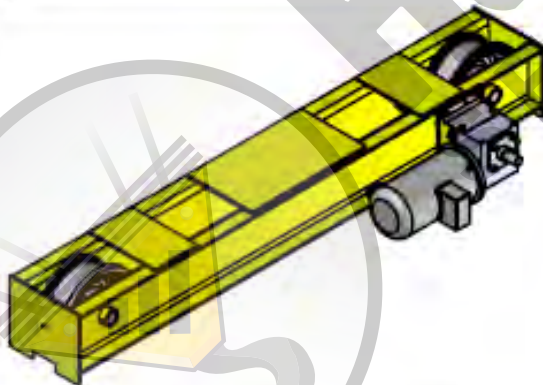
2.A TRSG END TRUCK TYPES



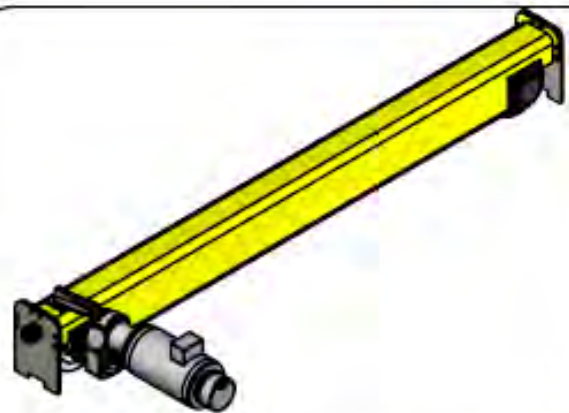
INTEGRAL-AXLE TUBE-FRAME END TRUCK



FIXED AXLE END TRUCK



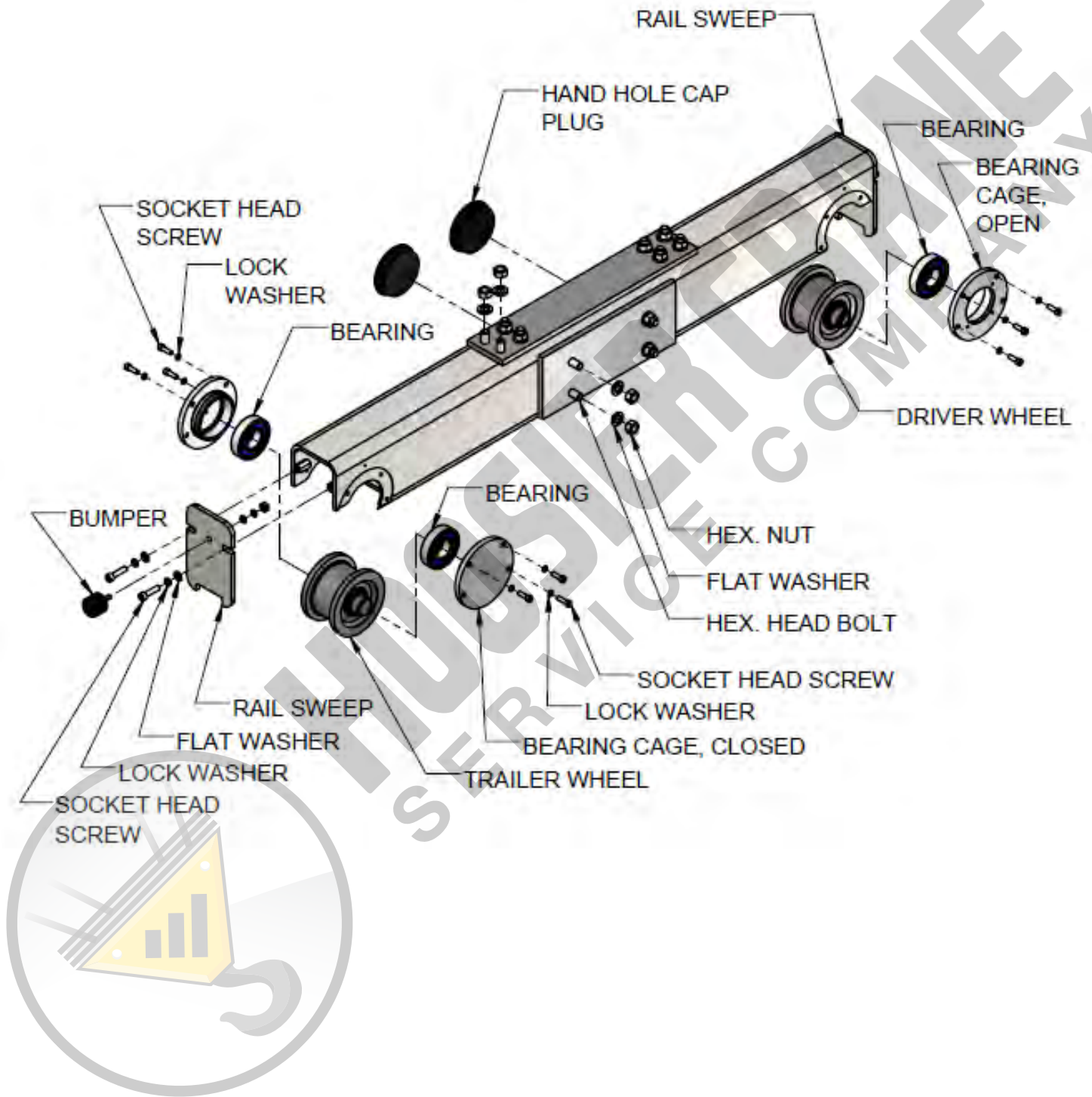
CHANNEL TYPE END TRUCK



ROTATING AXLE TOP RUNNING END TRUCK

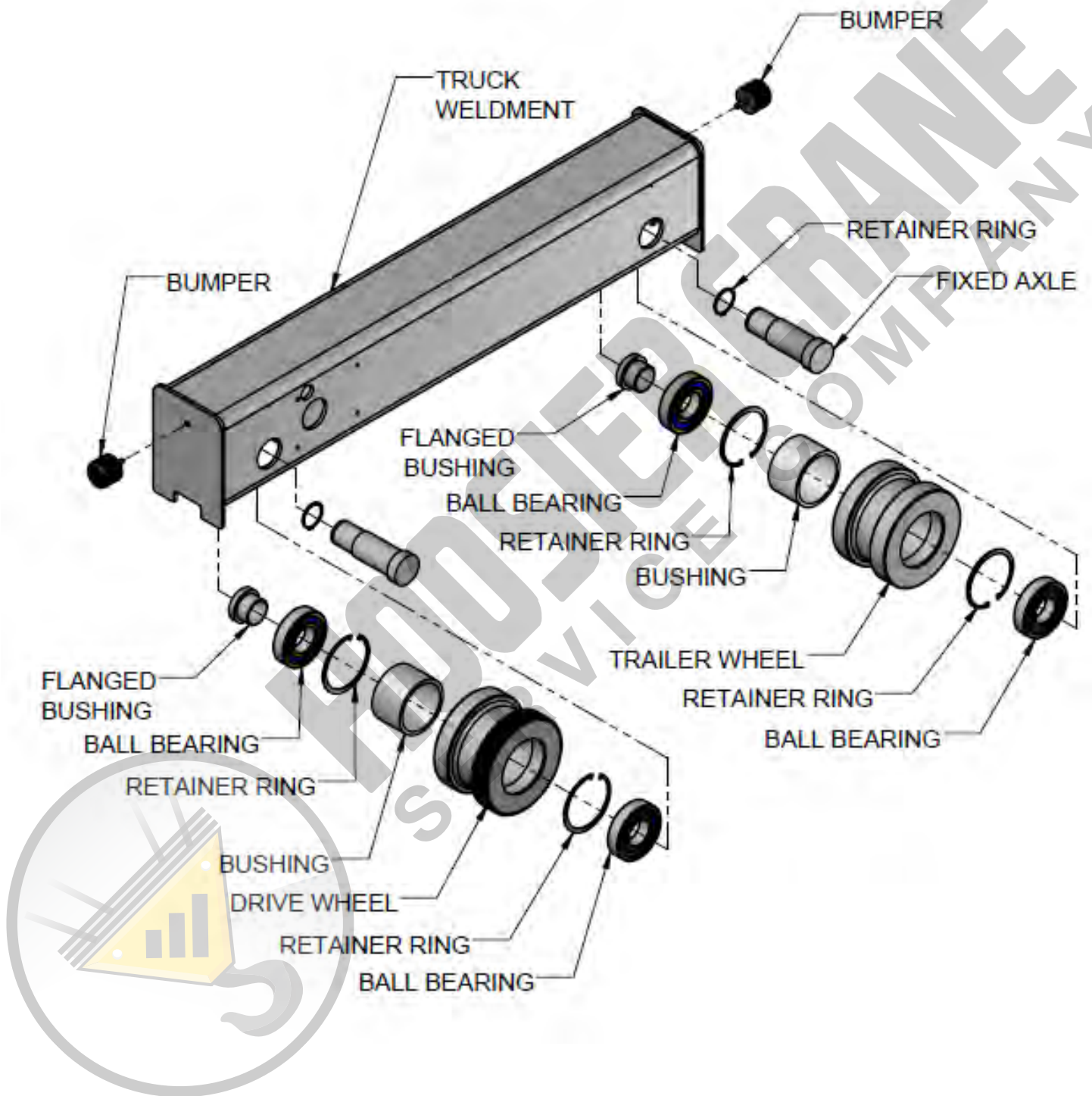


2.B INTEGRAL-AXLE TUBE-FRAME END TRUCK



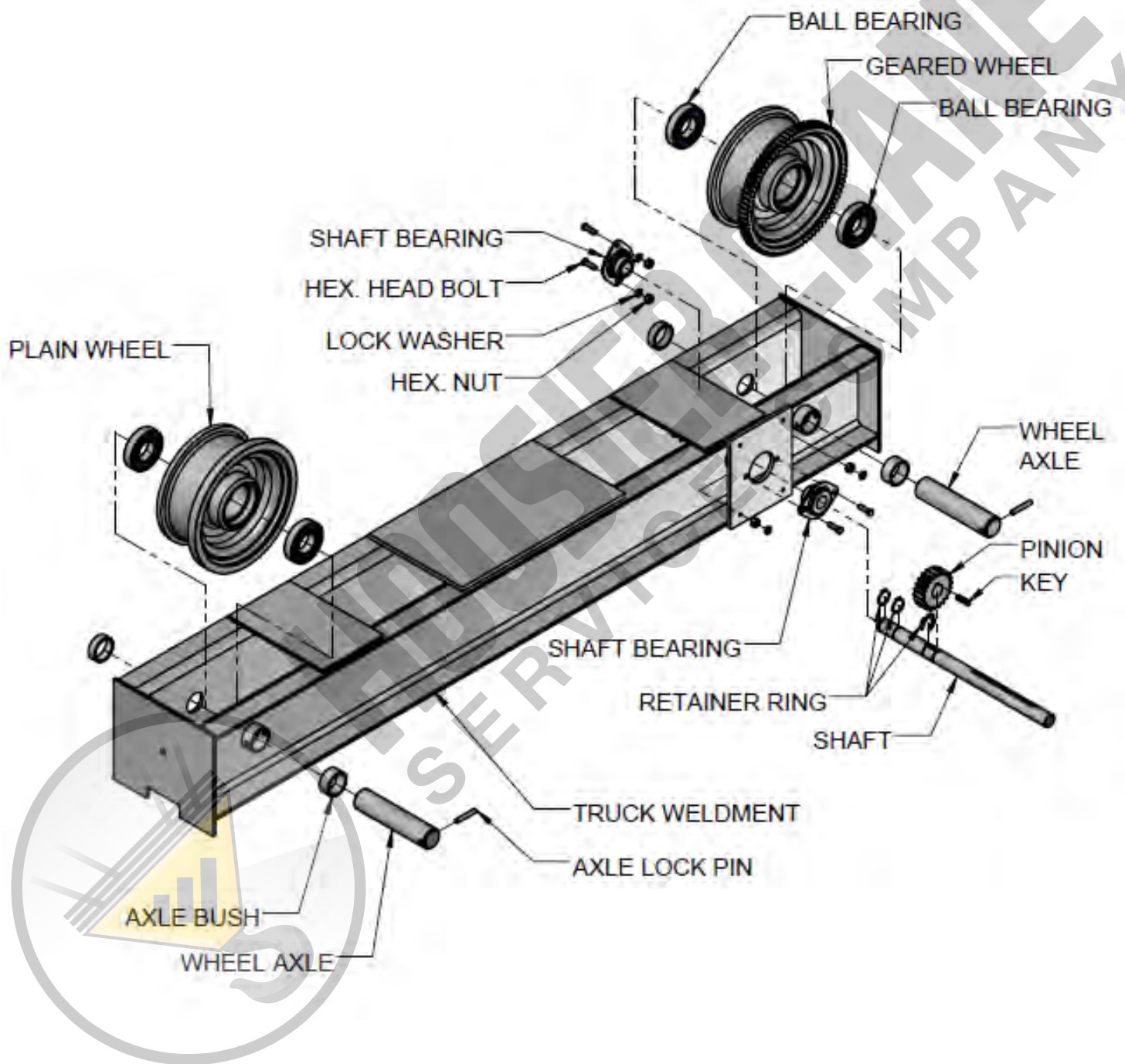


2.C FIXED AXLE END TRUCK



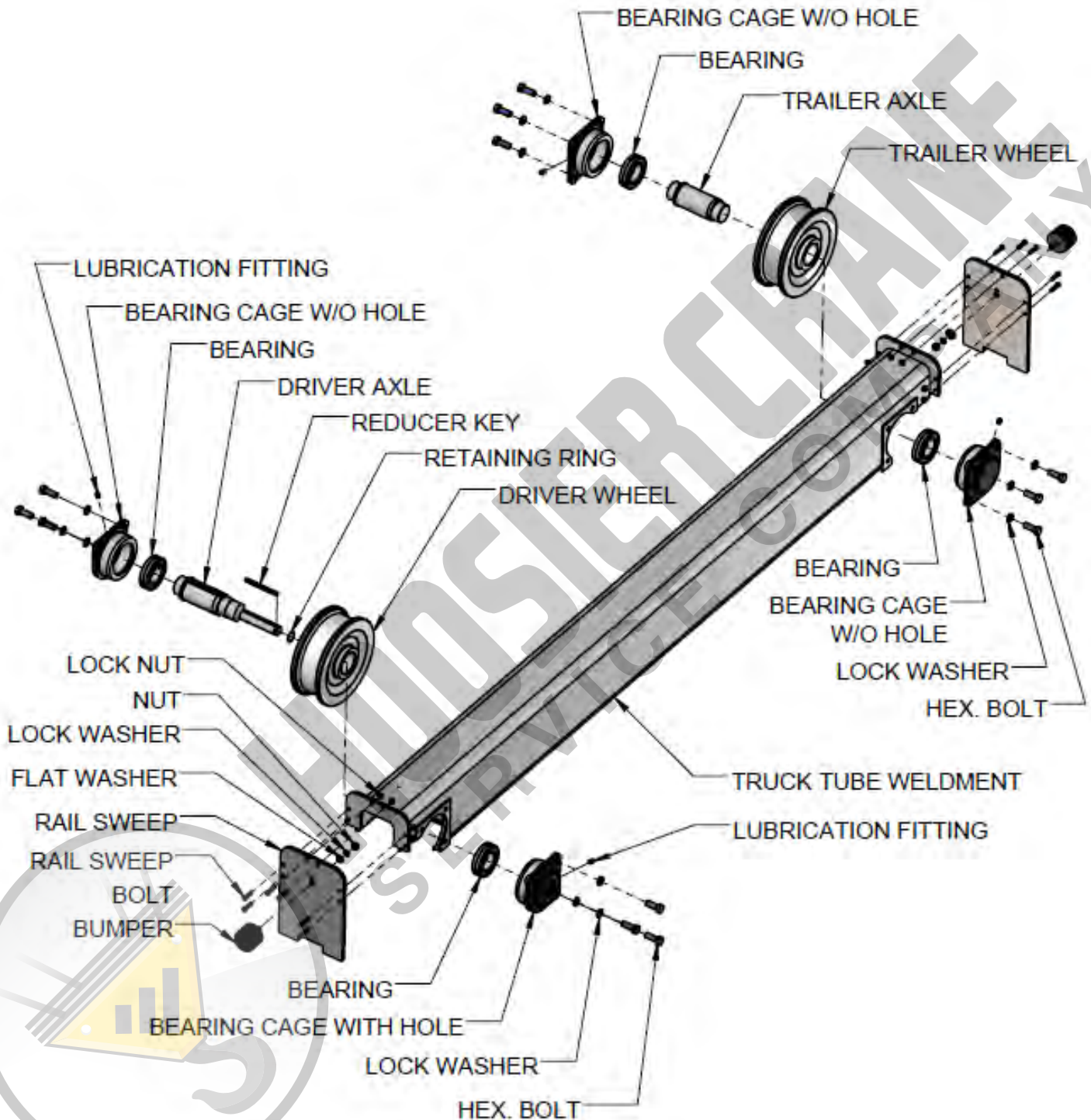


2.D CHANNEL TYPE END TRUCK

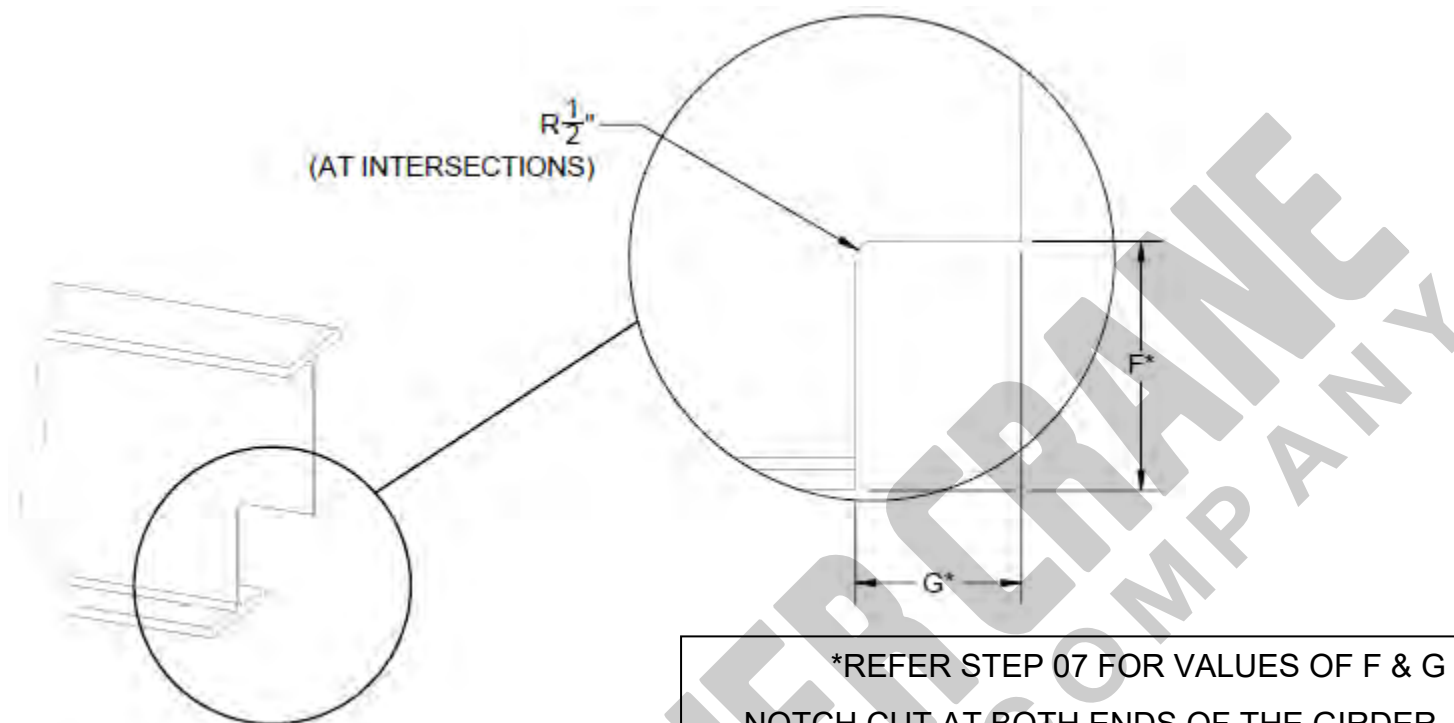




2.E ROTATING AXLE TOP RUNNING END TRUCK



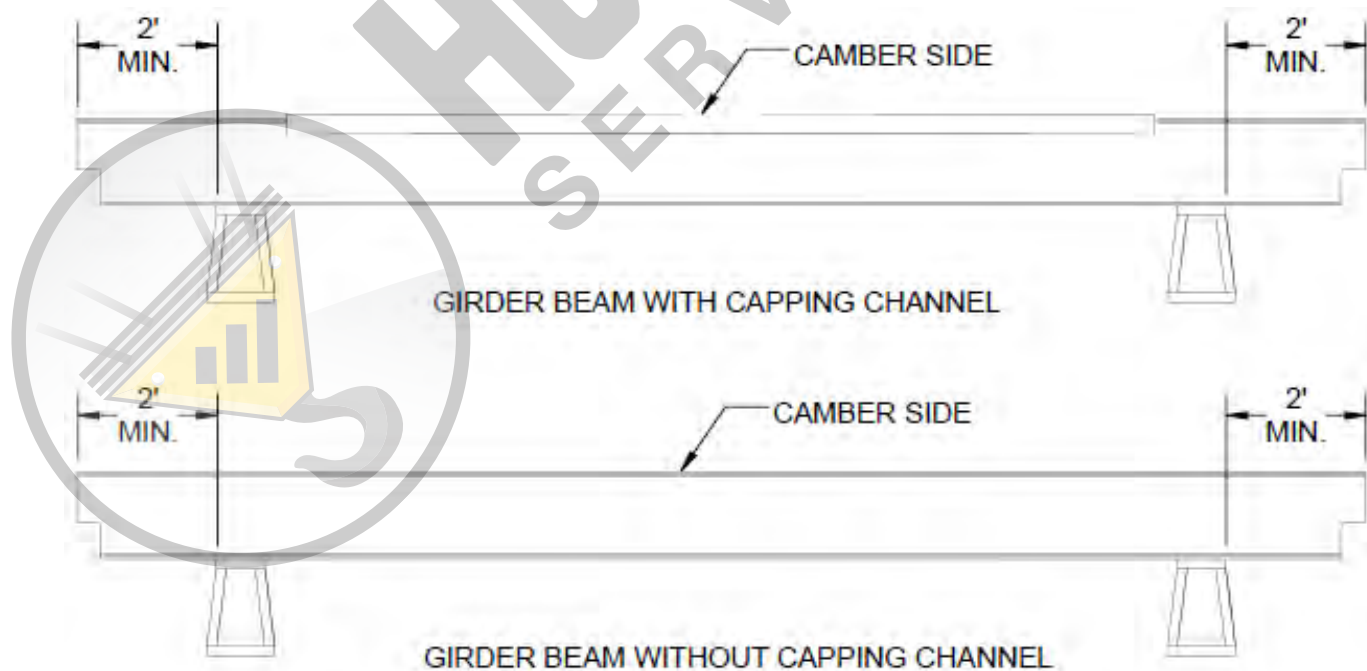
STEP:1 NOTCHING GIRDER AT ENDS (AS REQUIRED)



*REFER STEP 07 FOR VALUES OF F & G
NOTCH CUT AT BOTH ENDS OF THE GIRDER,
USING TORCH OR PLASMA BURNER AND
SMOOTH THE BURNED AREA BY GRINDING.

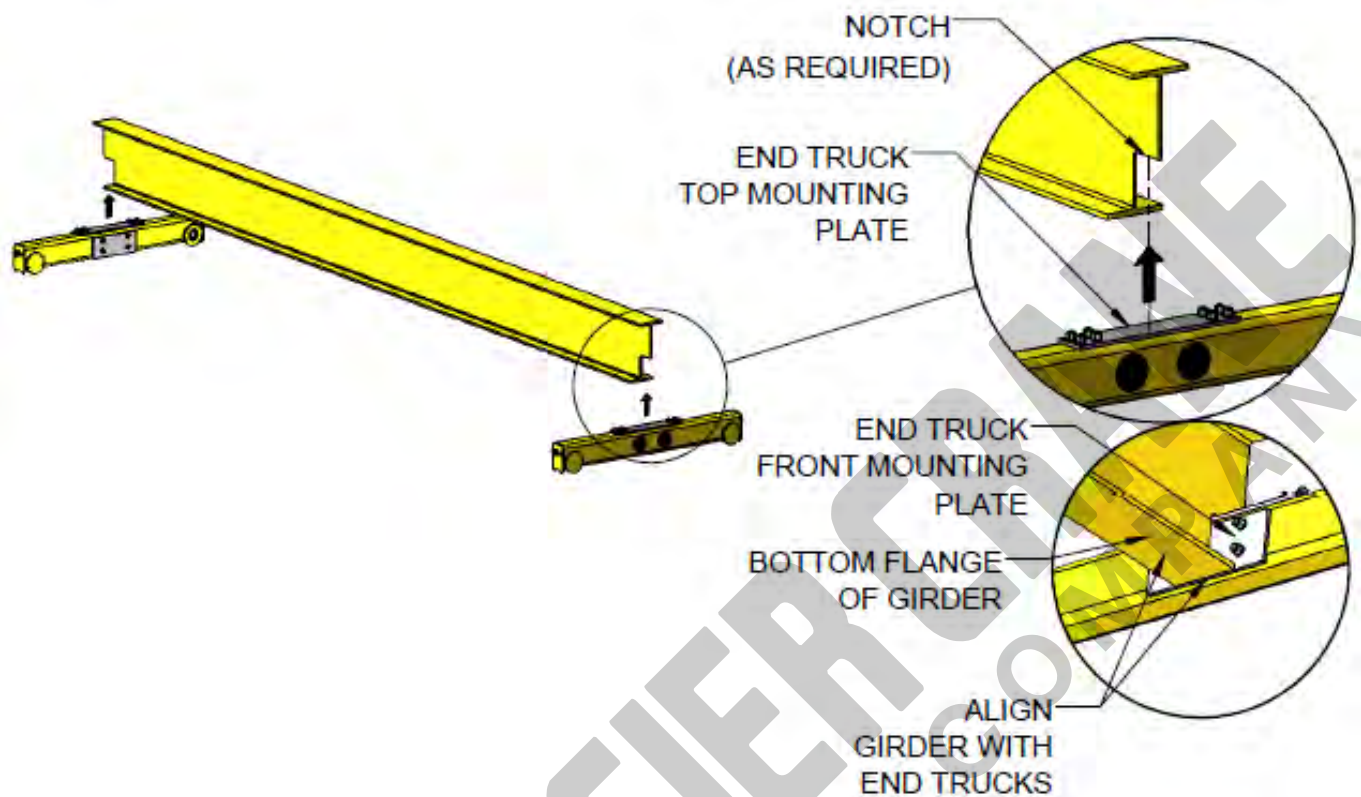
A COPED GIRDER CONNECTION IS SHOWN FOR ILLUSTRATION PURPOSES ONLY.
ACTUAL GIRDER CONNECTION ARRANGEMENT MAY DIFFER BY APPLICATION.

STEP:2 MOUNTING GIRDER ON SUPPORT (AS REQUIRED)



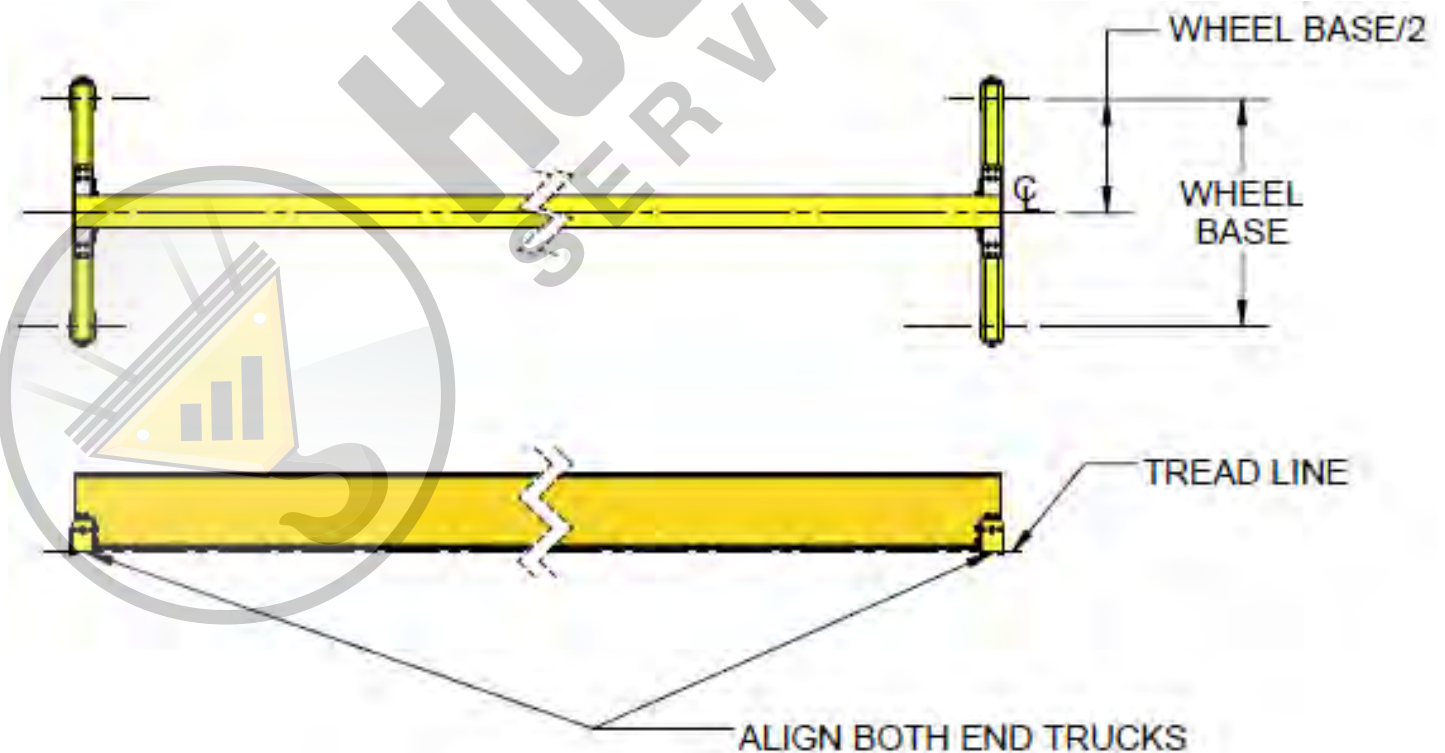
A COPED GIRDER CONNECTION IS SHOWN FOR ILLUSTRATION PURPOSES ONLY.
ACTUAL GIRDER CONNECTION ARRANGEMENT MAY DIFFER BY APPLICATION.

STEP:3 LOCATE & ALIGN END TRUCKS



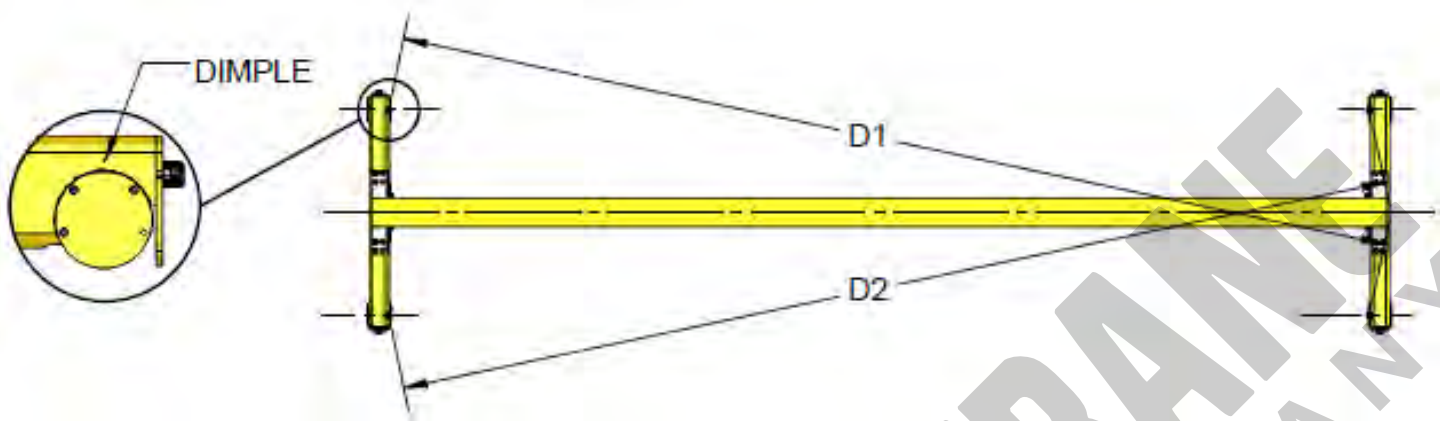
A COPED GIRDER CONNECTION IS SHOWN FOR ILLUSTRATION PURPOSES ONLY.
ACTUAL GIRDER CONNECTION ARRANGEMENT MAY DIFFER BY APPLICATION.

STEP:4 POSITION END TRUCKS



A COPED GIRDER CONNECTION IS SHOWN FOR ILLUSTRATION PURPOSES ONLY.
ACTUAL GIRDER CONNECTION ARRANGEMENT MAY DIFFER BY APPLICATION.

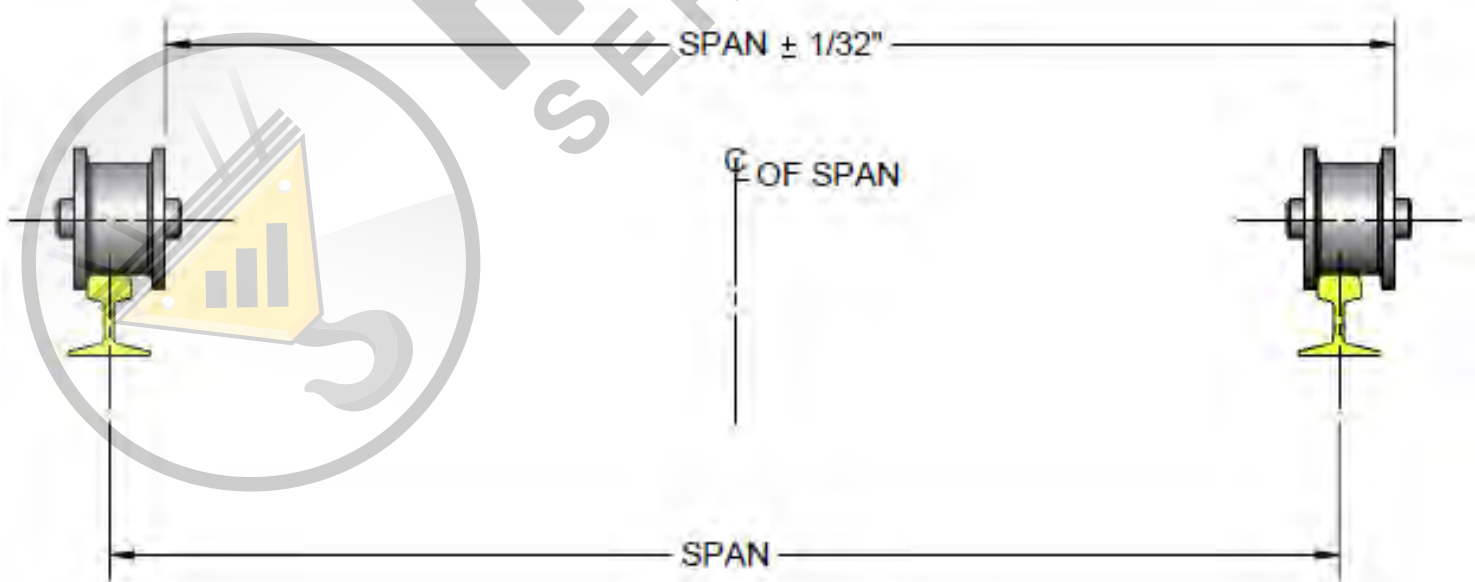
STEP:5 CHECK SQUARENESS BETWEEN END TRUCKS



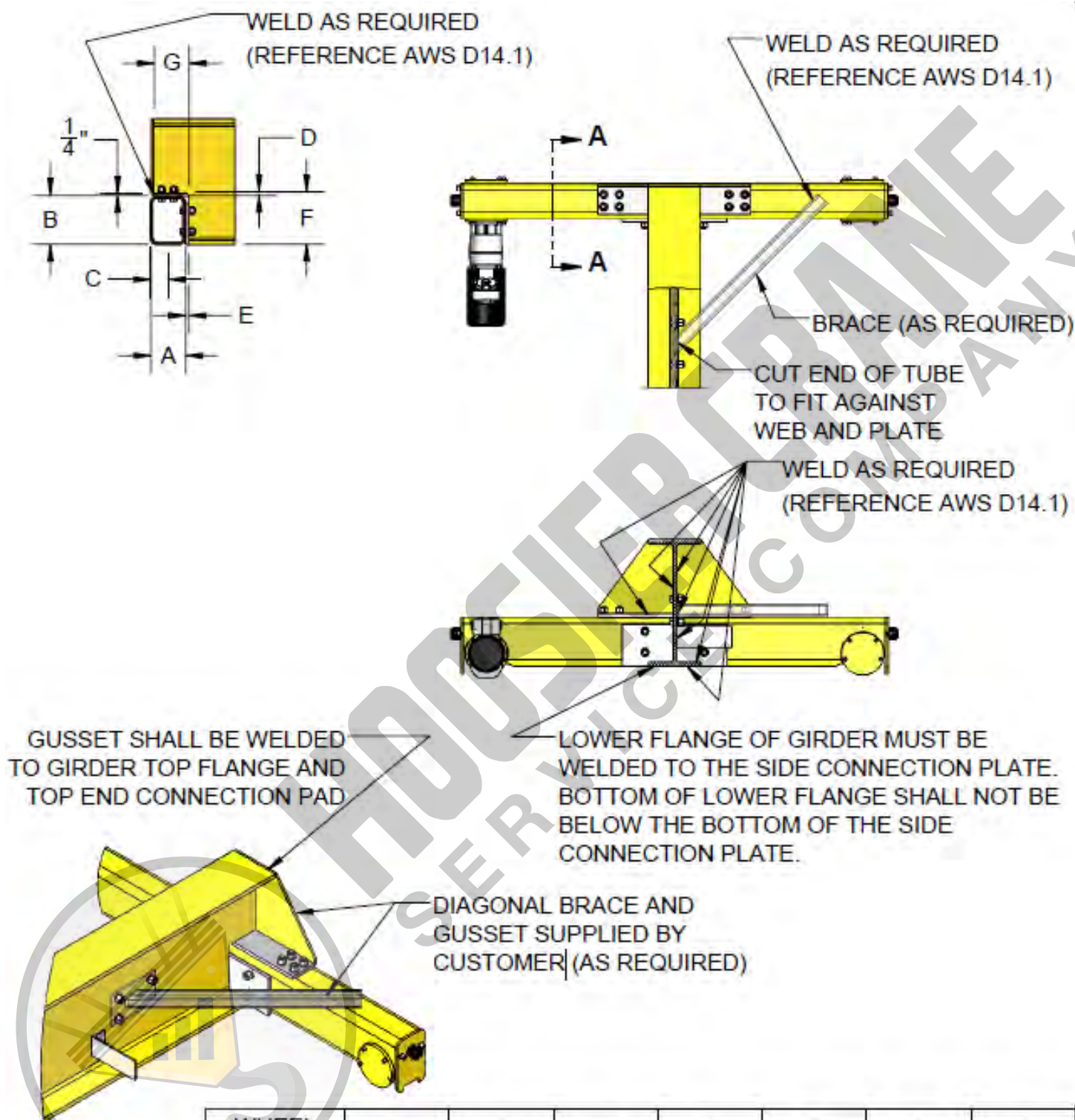
FOR SQUARENESS BETWEEN END TRUCKS: $(D1 \sim D2) \leq 1/16"$

D1 & D2 - DIAGONAL MEASUREMENTS

STEP:6 CHECK SPAN DISTANCE BETWEEN END TRUCKS



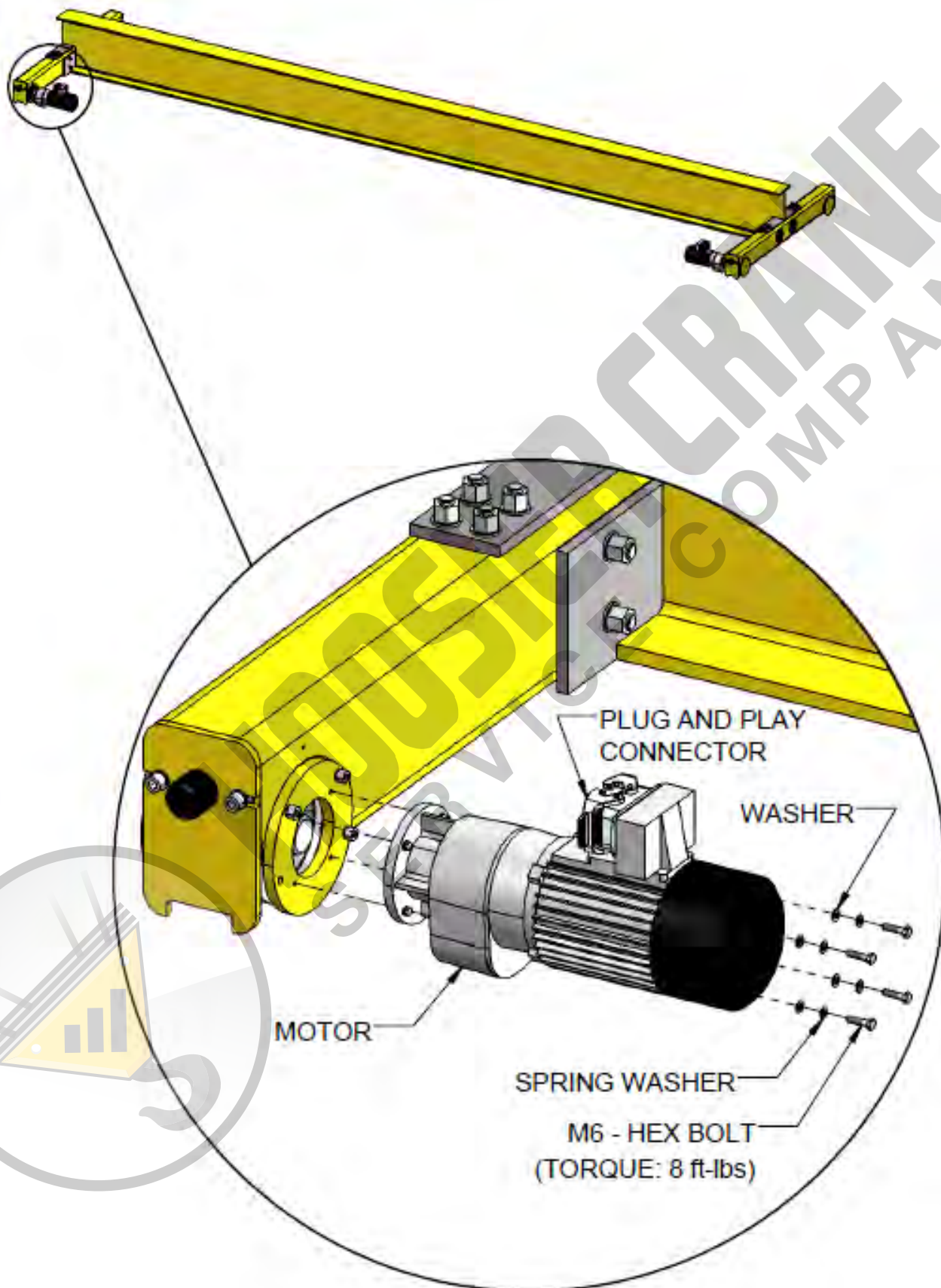
STEP:7 WELDING END TRUCKS WITH GIRDER



WHEEL DIAMETER	A	B	C	D	E	F	G
Ø115mm	5"	7"	2 1/2"	1/2"	1/2"	7"	5"
Ø160mm	6"	8"	3"	1/2"	1/2"	7 1/2"	5 1/2"
Ø200mm	8"	10"	4"	1/2"	1/2"	9 1/2"	7 1/2"
Ø260mm	8"	12"	4"	3/4"	3/4"	11 3/4"	7 3/4"
Ø305mm	8"	12"	4"	3/4"	3/4"	11 3/4"	7 3/4"

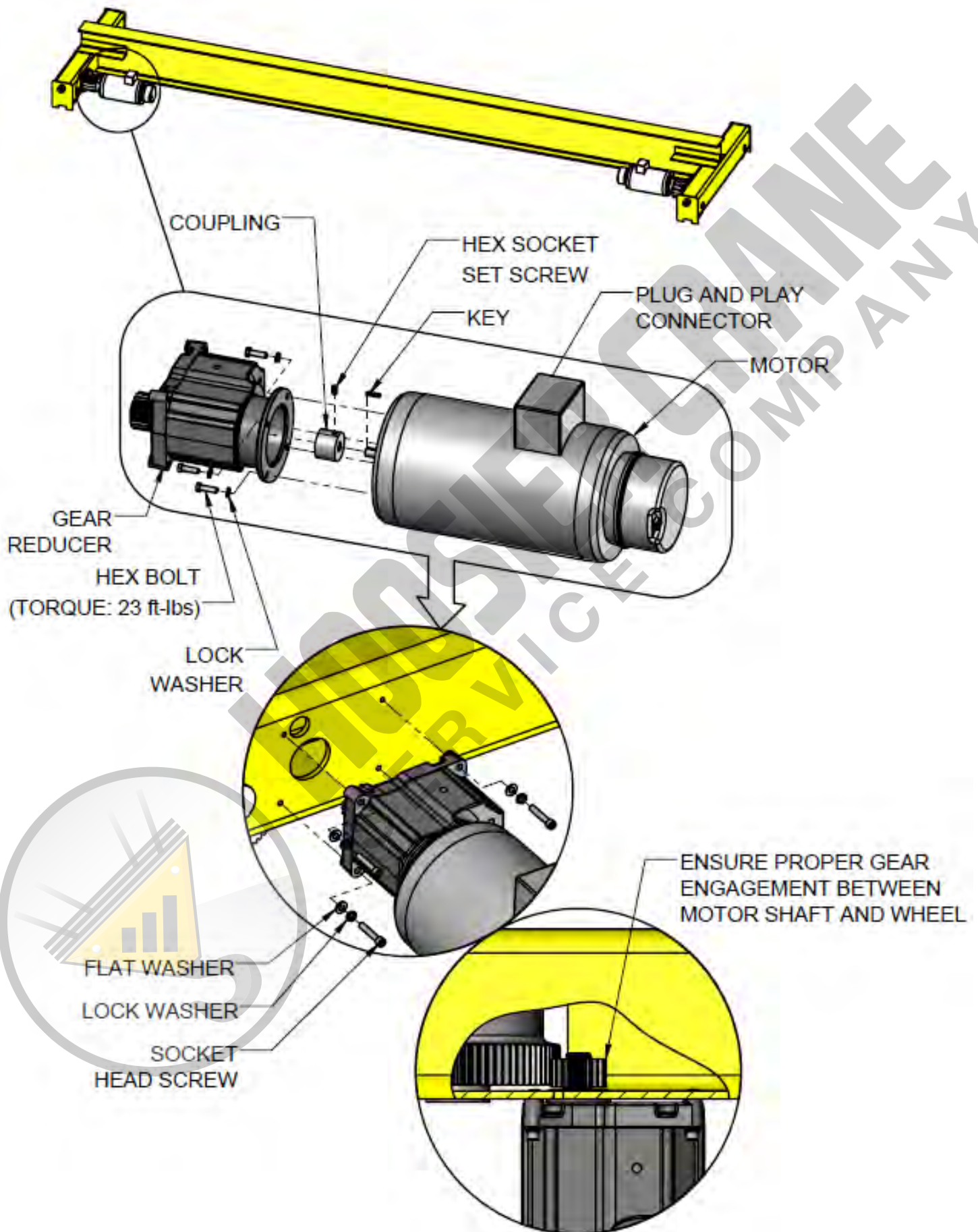
A COPED GIRDER CONNECTION IS SHOWN FOR ILLUSTRATION PURPOSES ONLY. ACTUAL GIRDER CONNECTION ARRANGEMENT MAY DIFFER BY APPLICATION.

STEP:8 TRIA METRIC END TRUCK DRIVE INSTALLATION

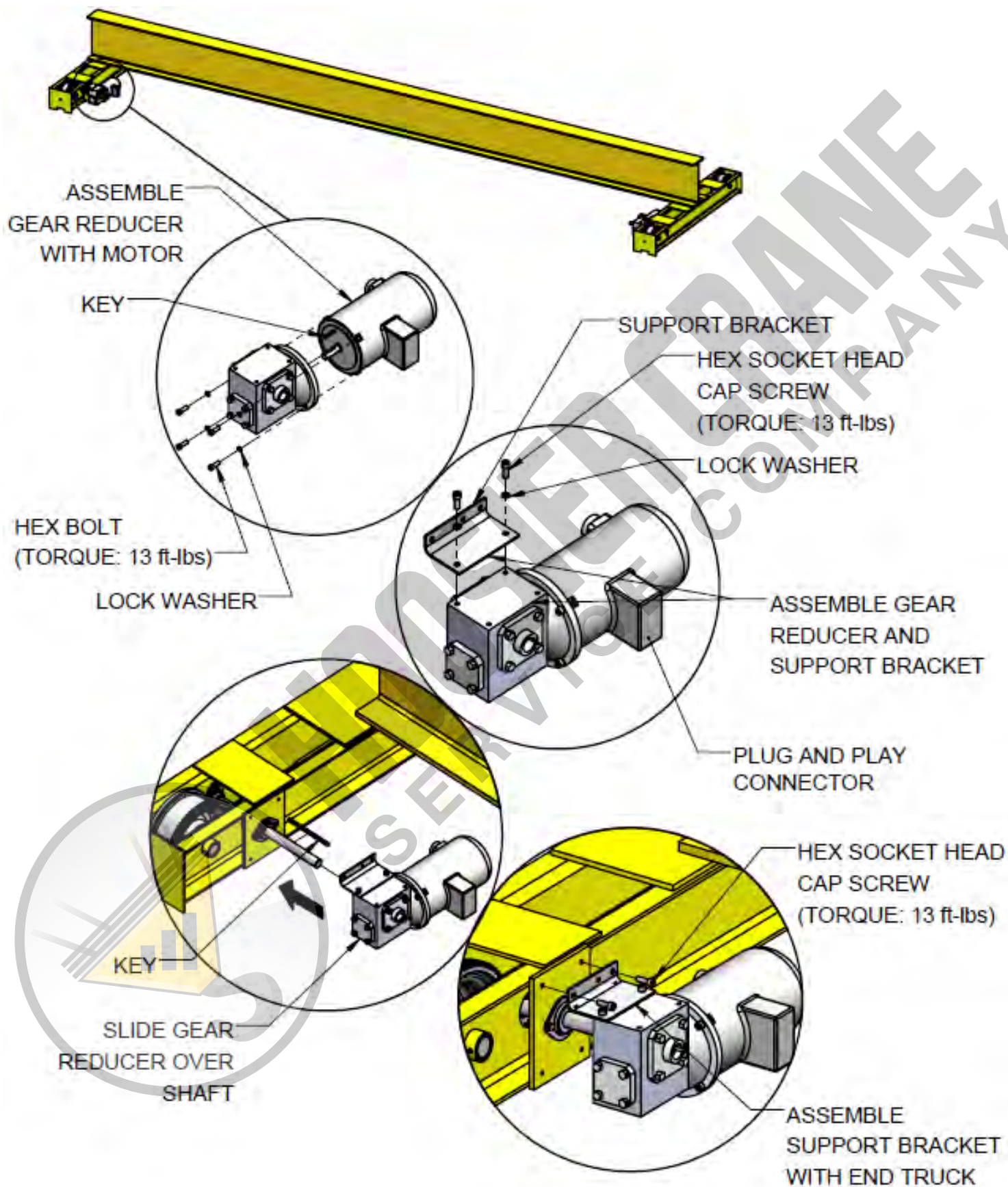


A COPED GIRDER CONNECTION IS SHOWN FOR ILLUSTRATION PURPOSES ONLY.
ACTUAL GIRDER CONNECTION ARRANGEMENT MAY DIFFER BY APPLICATION.

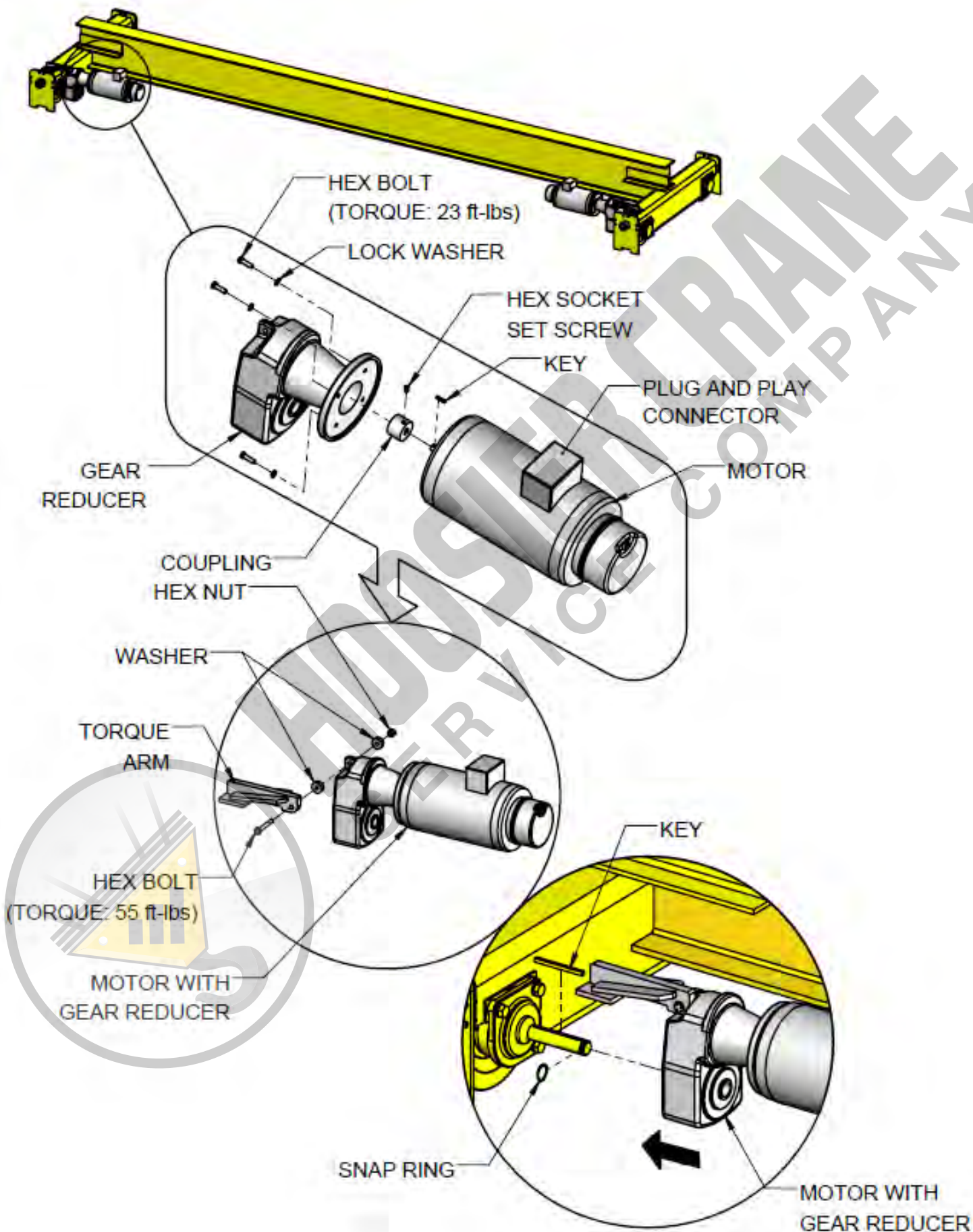
STEP:8A TRFA END TRUCK A4 DRIVE INSTALLATION



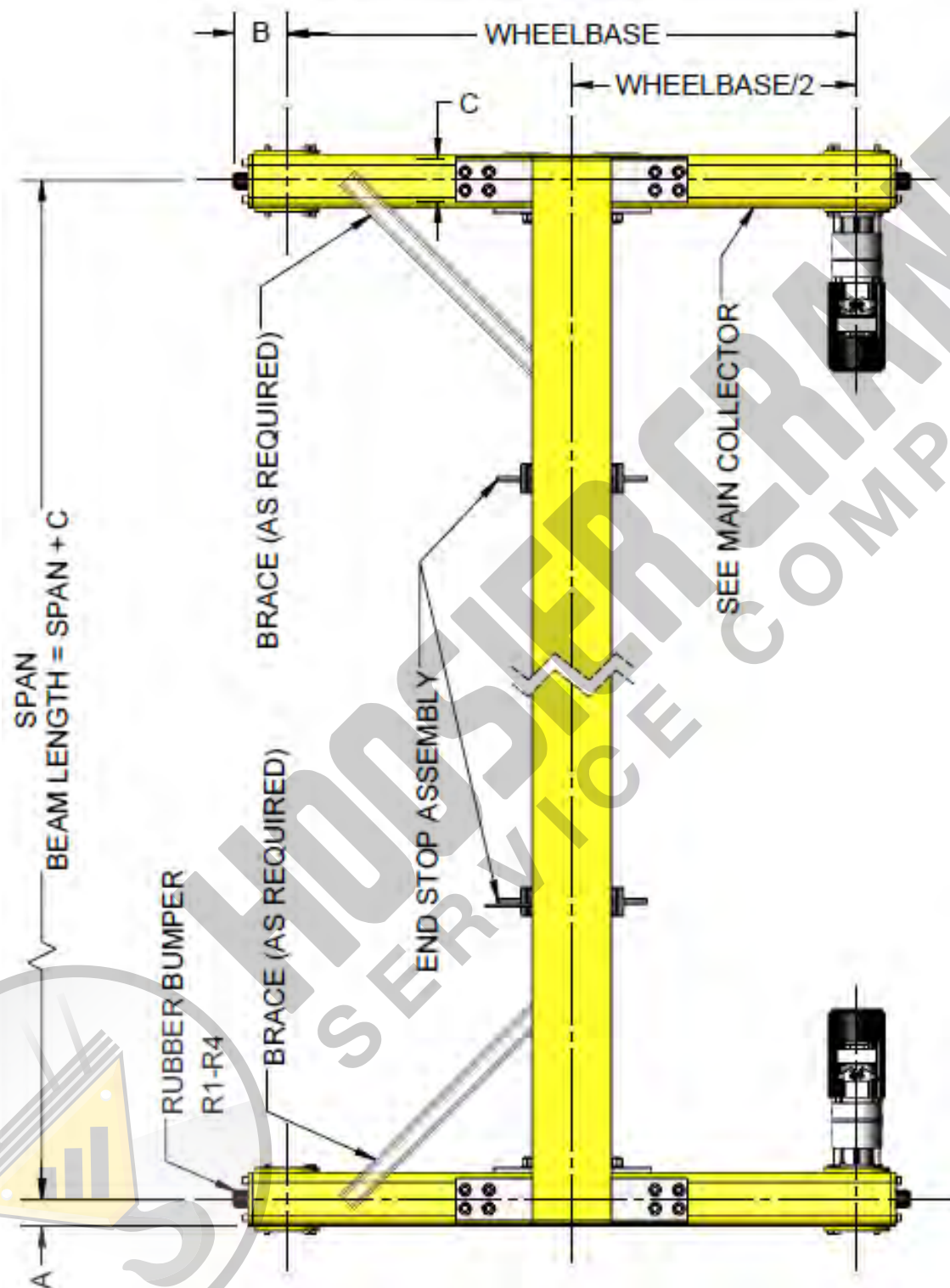
STEP:8B TRFC END TRUCK DRIVE INSTALLATION



STEP:8C TRRA END TRUCK DRIVE INSTALLATION



STEP:9 BRIDGE BOLTED PLATE END CONNECTION SINGLE GIRDER



WHEEL DIAMETER	A	B						C
		R1	R2	R3	R4	R5	R6	
Ø115mm	2 1/2"	5"	5 5/16"	5 3/4"	-	-	-	4"
Ø160mm	3"	5 3/4"	6 1/16"	6 1/2"	-	-	-	4"
Ø200mm	4"	-	7 1/16"	7 1/2"	8"	-	-	6"
Ø260mm	4"	-	-	8 7/8"	9 3/8"	10 1/8"	-	6"
Ø305mm	4"	-	-	-	9 3/8"	11 1/4"	12 3/64"	6"

A COPED GIRDER CONNECTION IS SHOWN FOR ILLUSTRATION PURPOSES ONLY.
ACTUAL GIRDER CONNECTION ARRANGEMENT MAY DIFFER BY APPLICATION.



CHAPTER 3

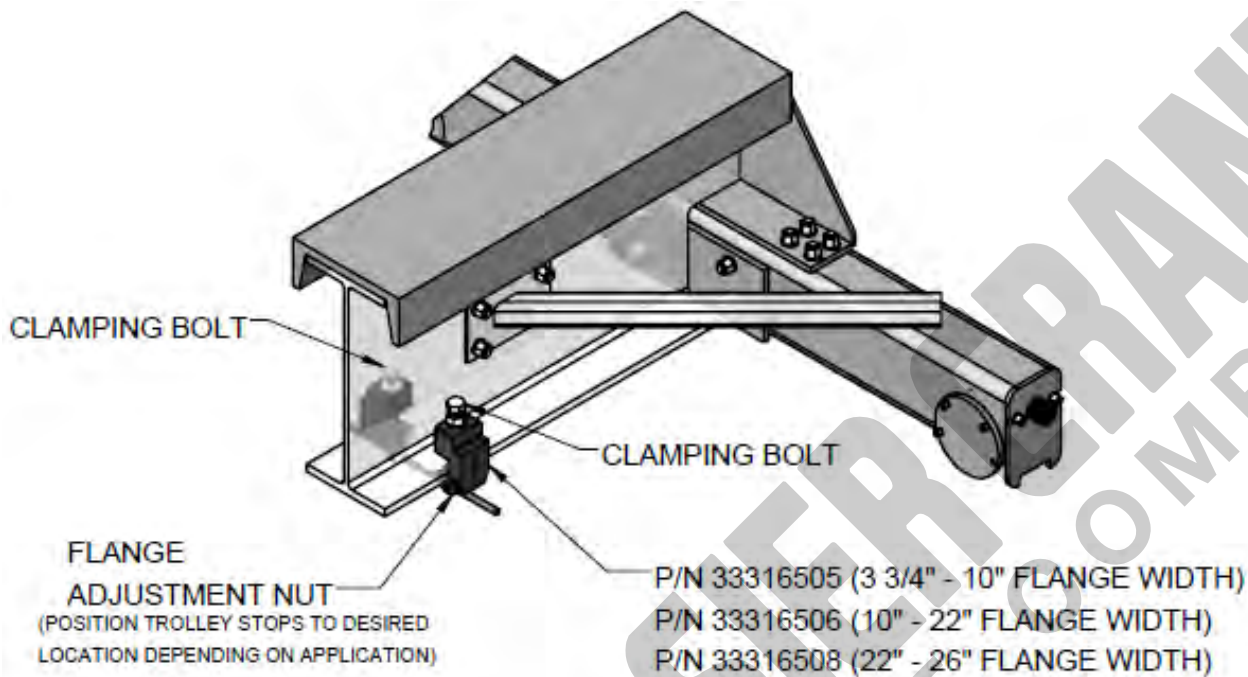
END STOPS & TROLLEY STOPS



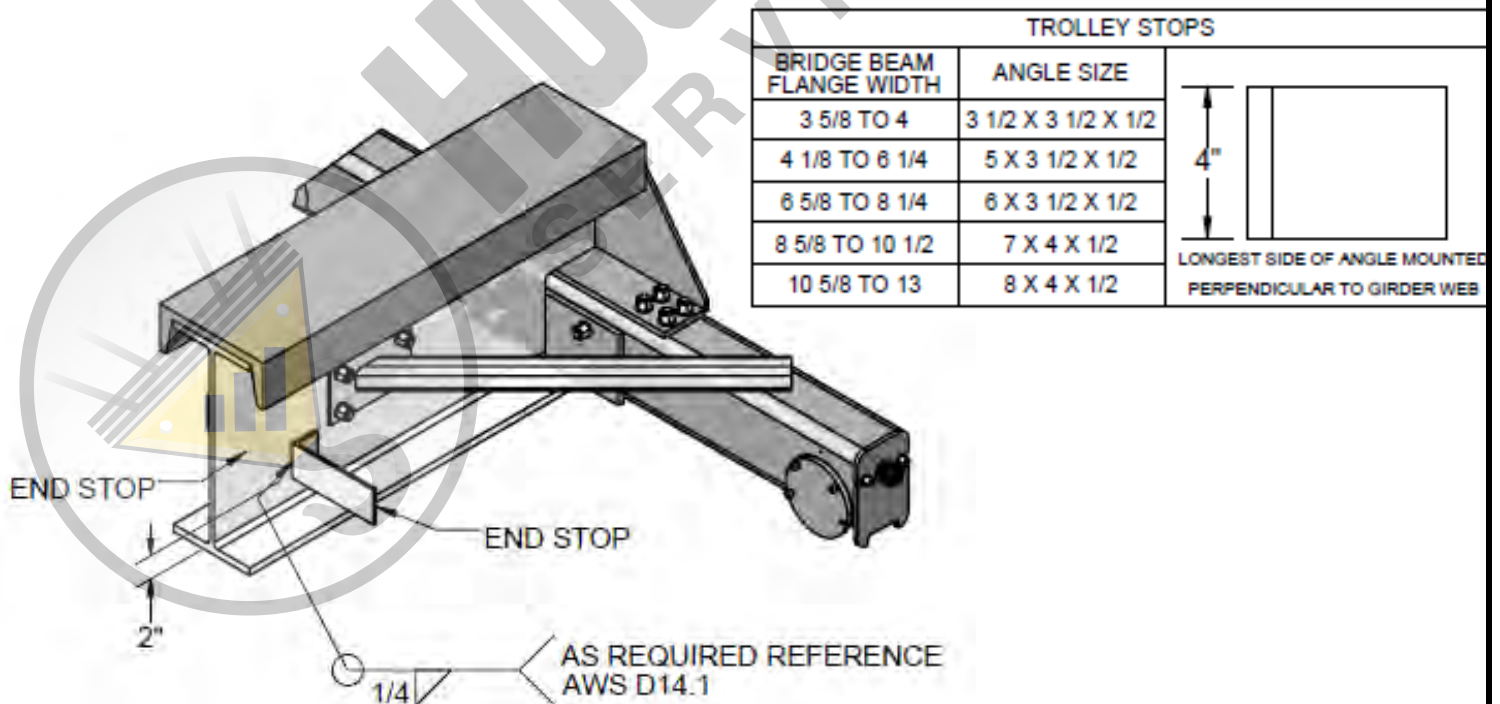
HOOVER CRANE
SERVICE COMPANY

3.A END STOP ASSEMBLY

NOT FOR USE ON PATENTED TRACK,
FLANGE WIDTHS LESS THAN 3 3/4", OR
GREATER THAN 26"



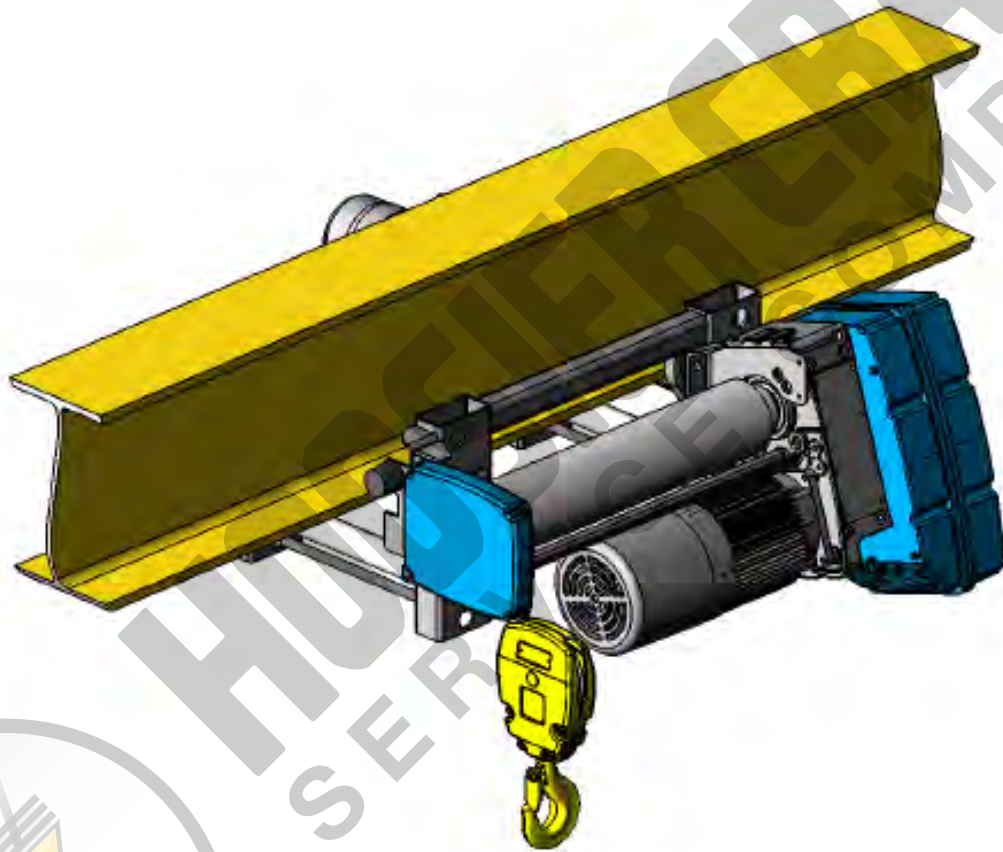
3.B TROLLEY STOPS SUPPLIED BY CUSTOMER



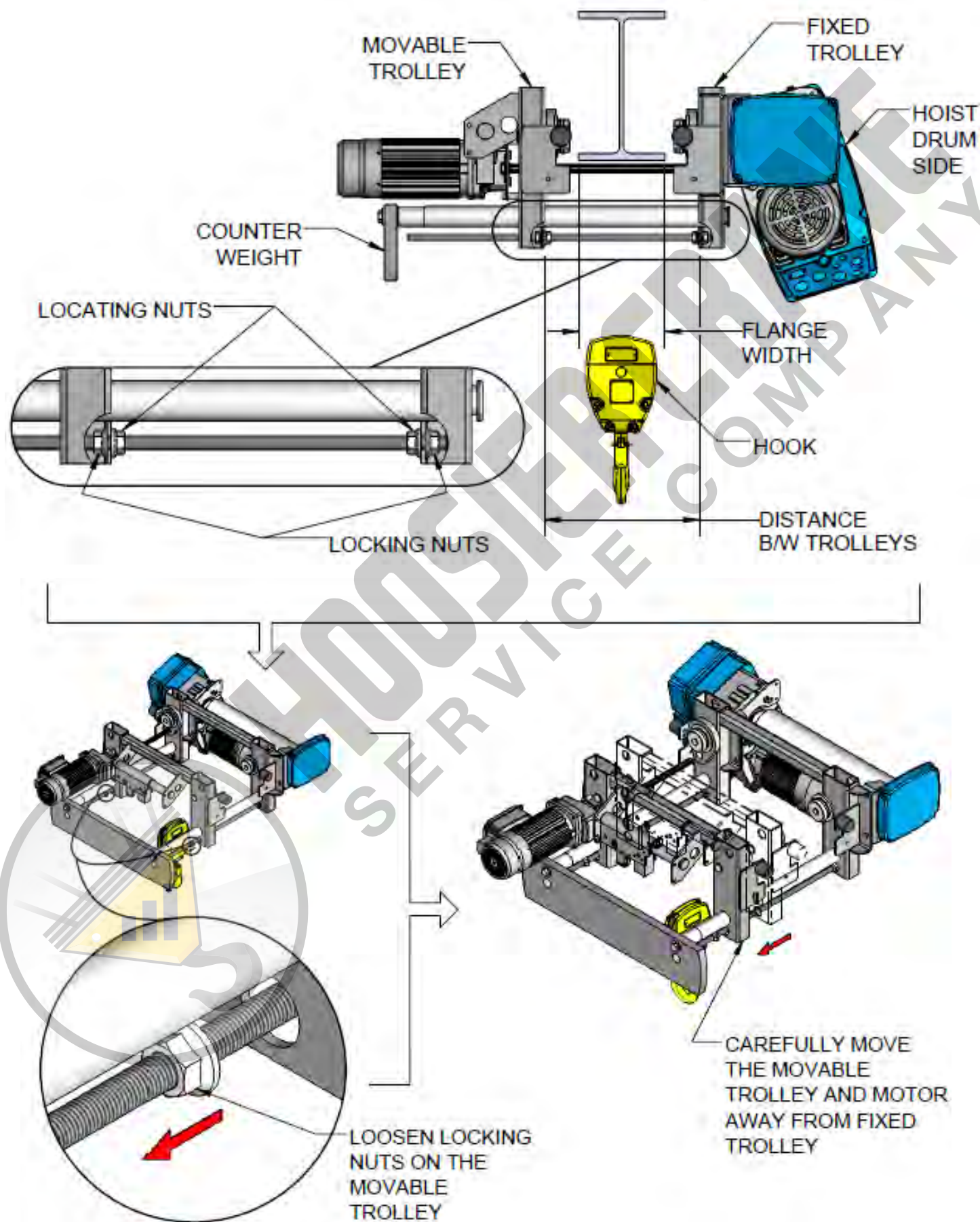
A COPED GIRDER CONNECTION IS SHOWN FOR ILLUSTRATION PURPOSES ONLY.
ACTUAL GIRDER CONNECTION ARRANGEMENT MAY DIFFER BY APPLICATION.



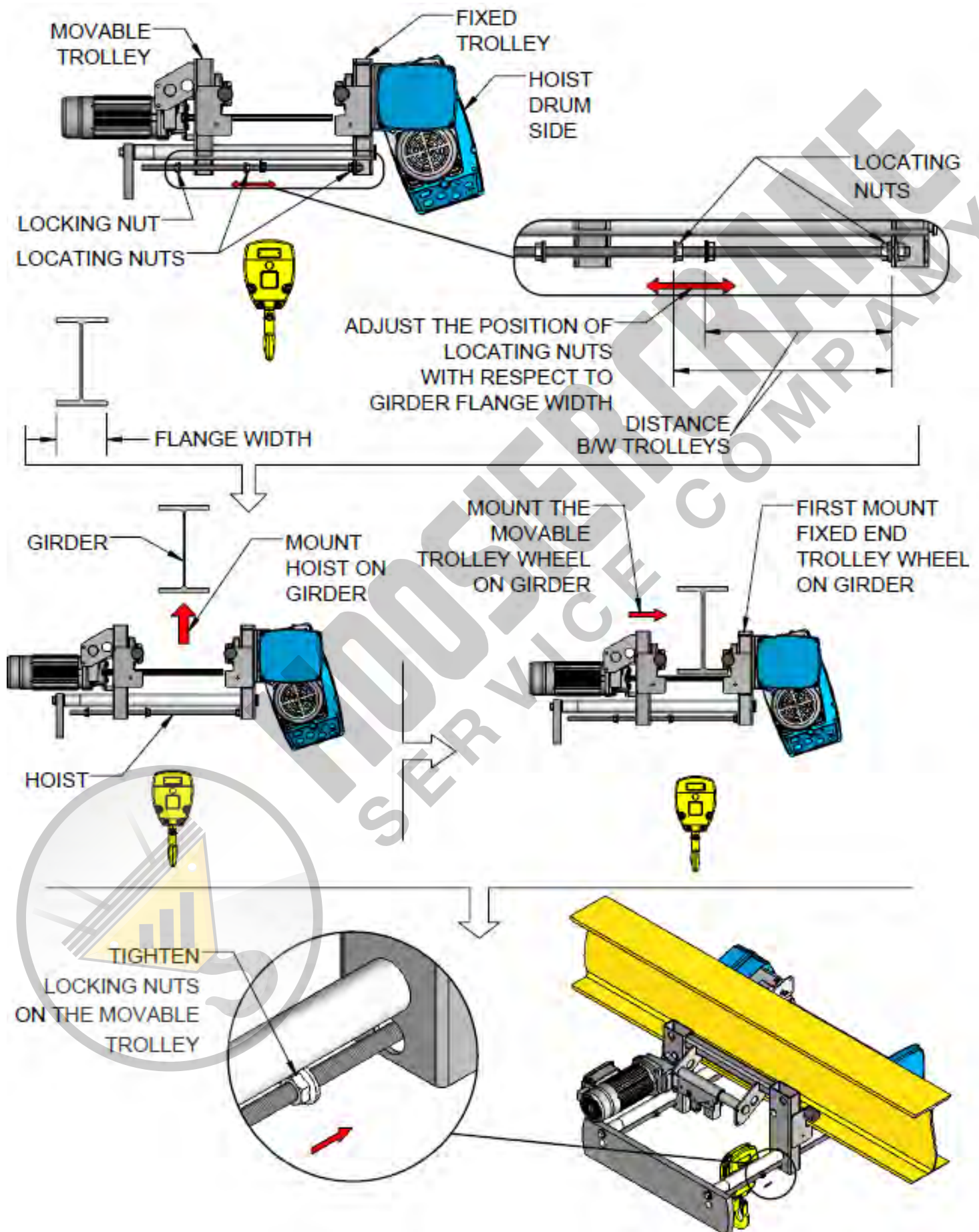
CHAPTER 4 **MOUNTING HOIST** **ON** **GIRDER**



STEP:1 PREPARATION FOR MOUNTING HOIST ON GIRDER



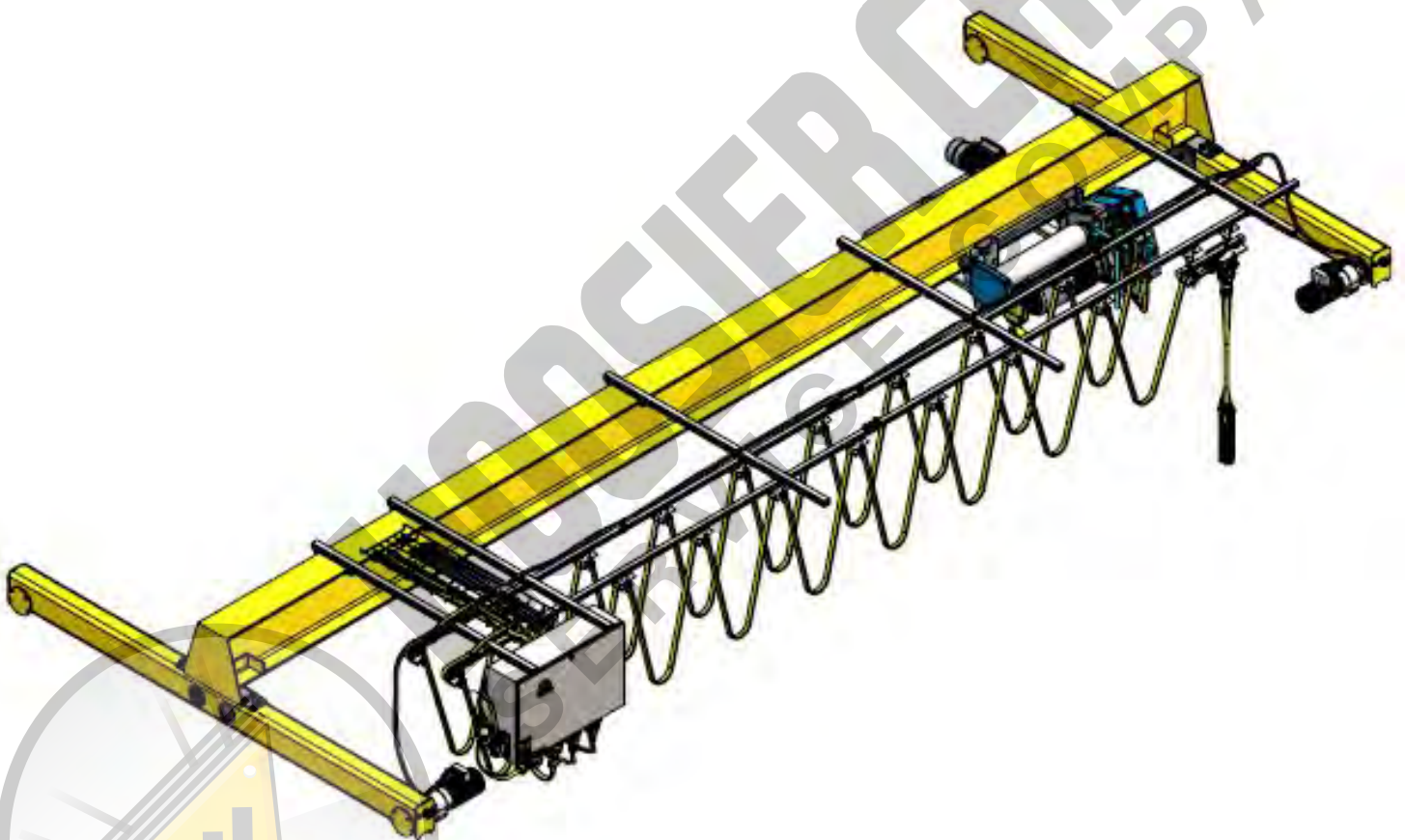
STEP:2 MOUNTING HOIST ON GIRDER

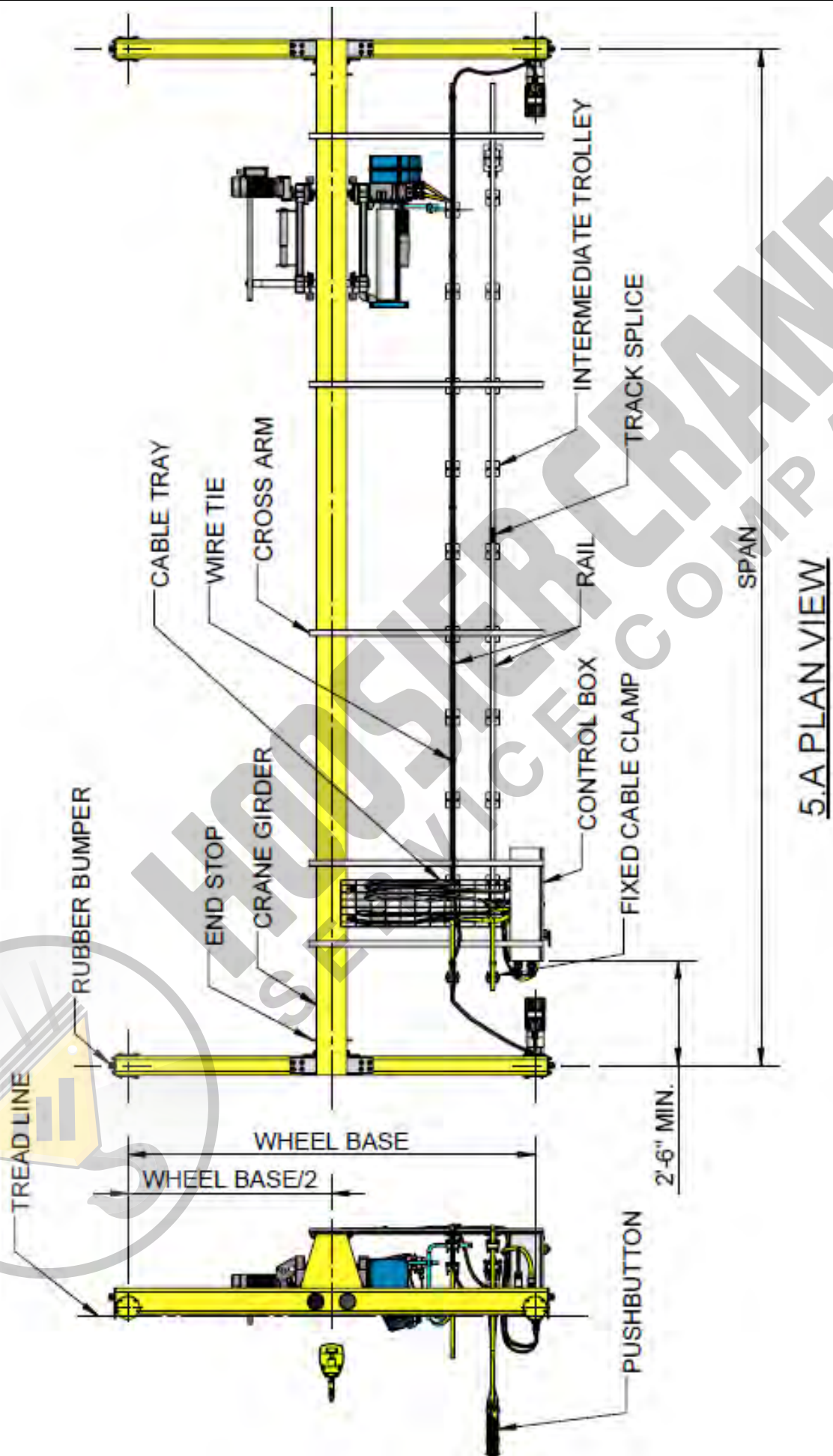




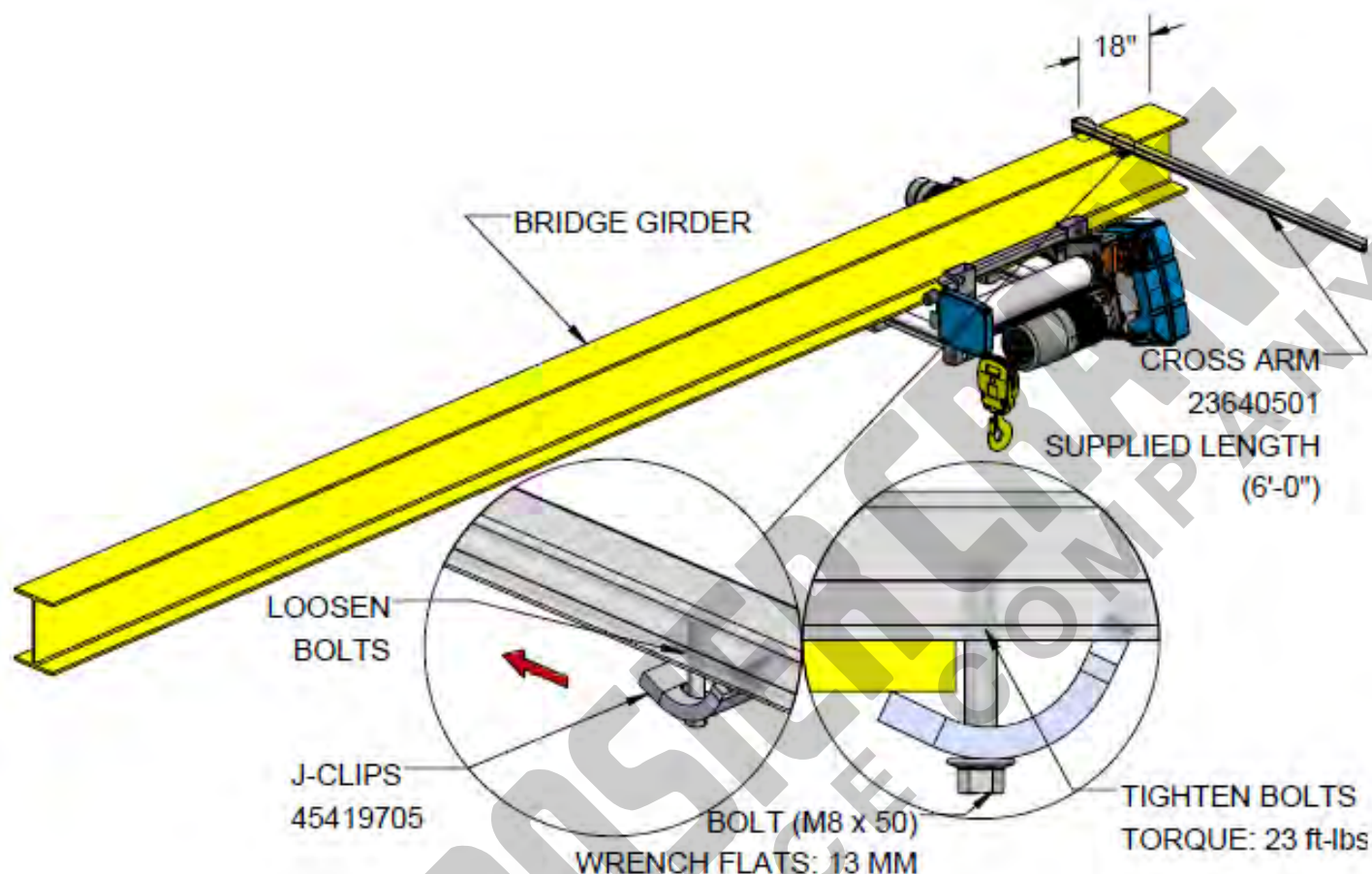
CHAPTER 5

FESTOON SYSTEM INSTALLATION

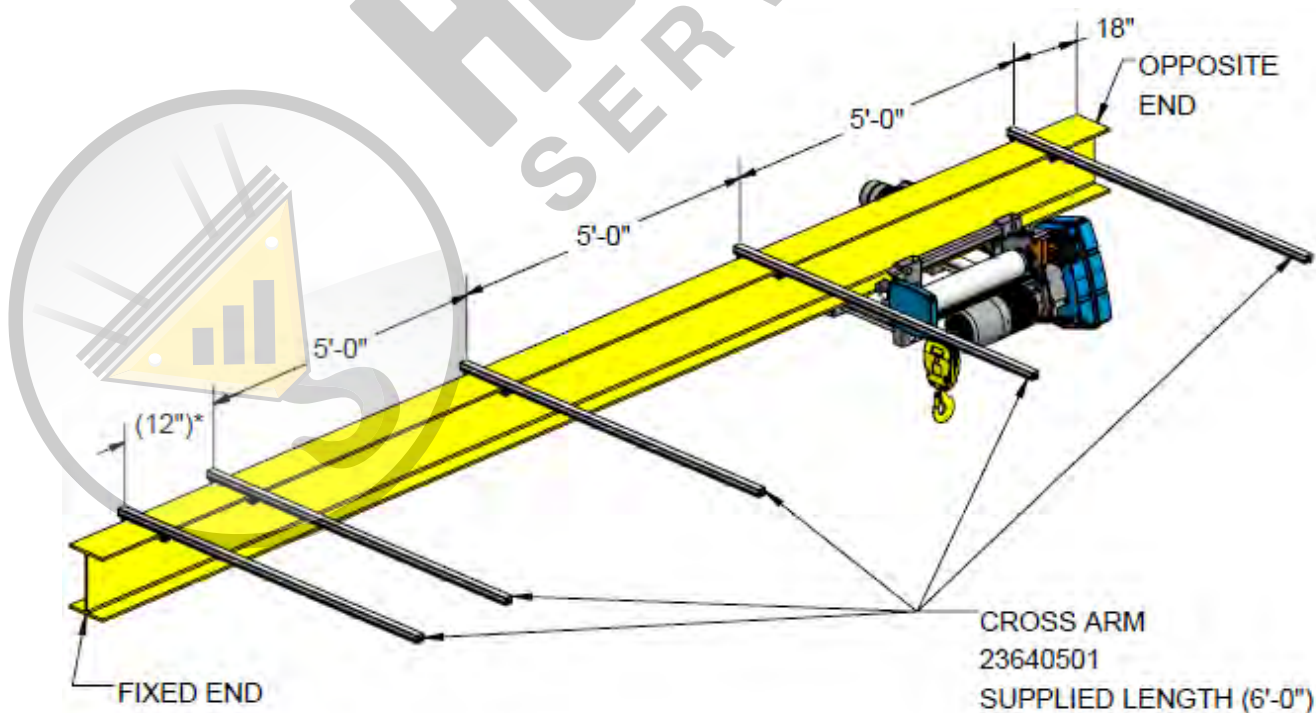




STEP:1 CLAMPING CROSS ARM & CONTROL BOX SUPPORT RAILS

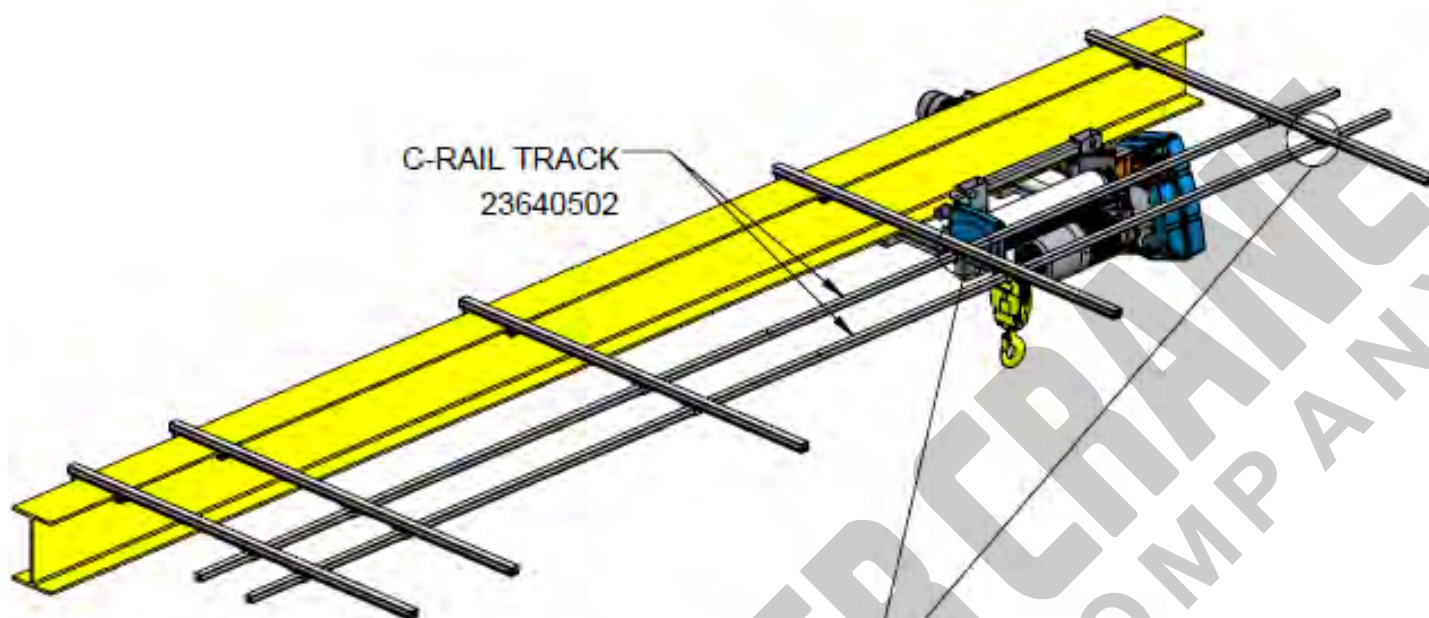


STEP:2 SPACING FOR CROSS ARMS/ SUPPORT RAILS

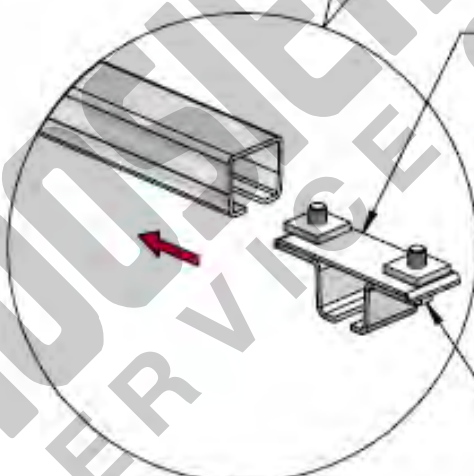


NOTE: MARK THE LOCATIONS OF THE CROSS ARM ON BRIDGE GIRDER BEFORE MOUNTING AS PER THE ABOVE DIMENSIONS.
* DIMENSION TO SUIT CONTROL BOX.

STEP:3 C-RAIL MOUNTING

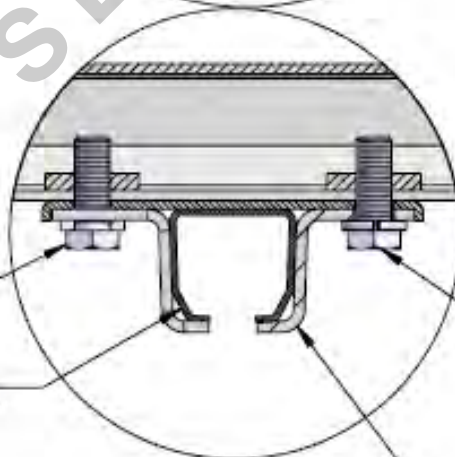
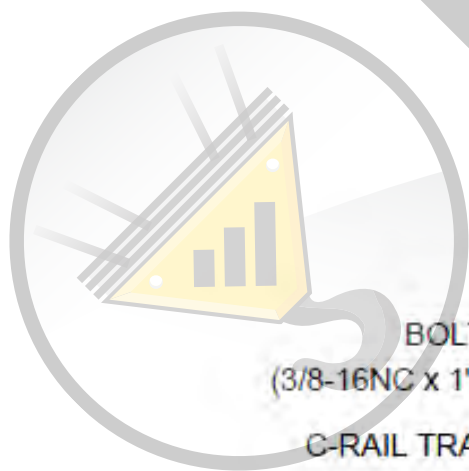


C-RAIL TRACK
23640502



CROSS ARM
SUPPORT
BRACKET
23640506

LOOSEN
BOLTS



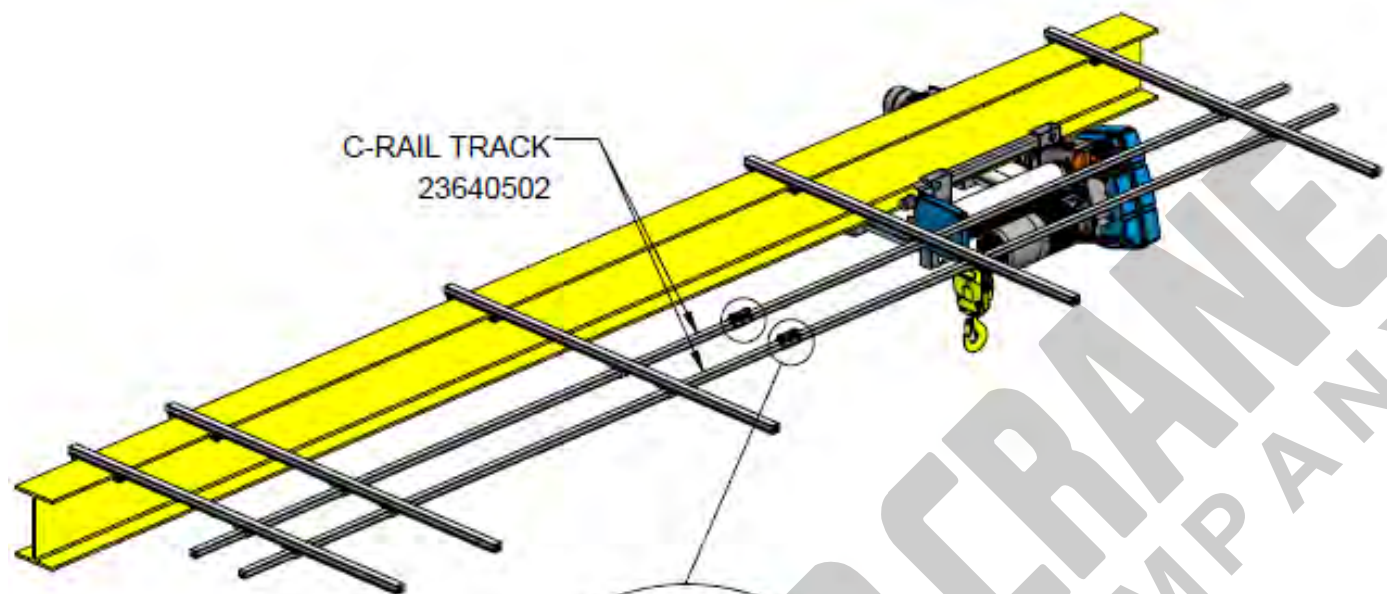
BOLT
(3/8-16NC x 1")

C-RAIL TRACK

TIGHTEN BOLTS
TORQUE: 23 ft-lbs
WRENCH FLATS: 9/16"

BRACKET SUPPORT

STEP:4 C-RAIL JOINT ASSEMBLY



LOOSEN
BOLTS

BOLT
(3/8-16NC x 1")

INSERT "C-RAIL" TRACK
FROM ONE END

C-RAIL JOINT ASSEMBLY
23640507

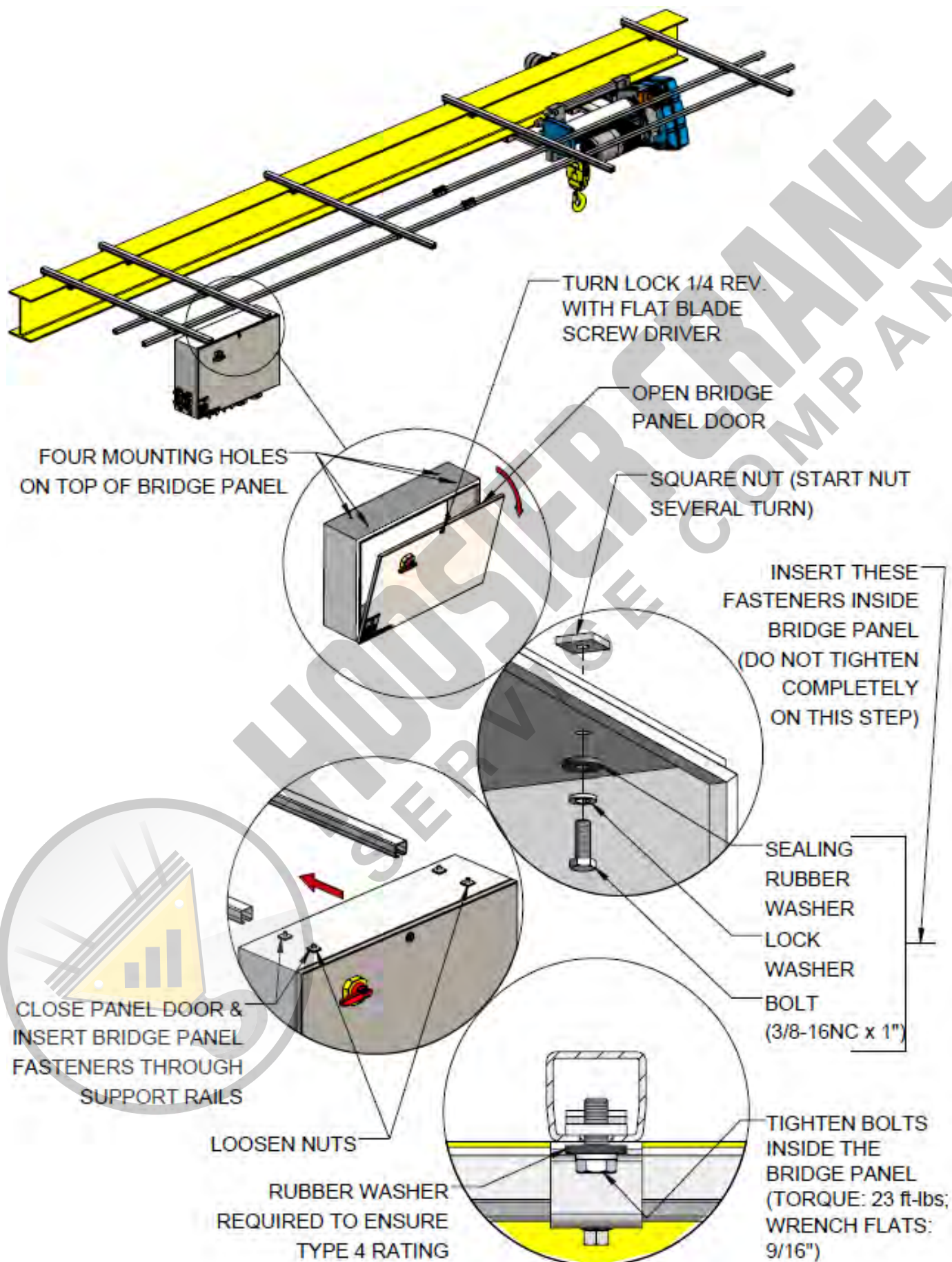
INSERT "C-RAIL" TRACK
FROM OTHER END

HAND TIGHTEN BOLT
AT THIS END

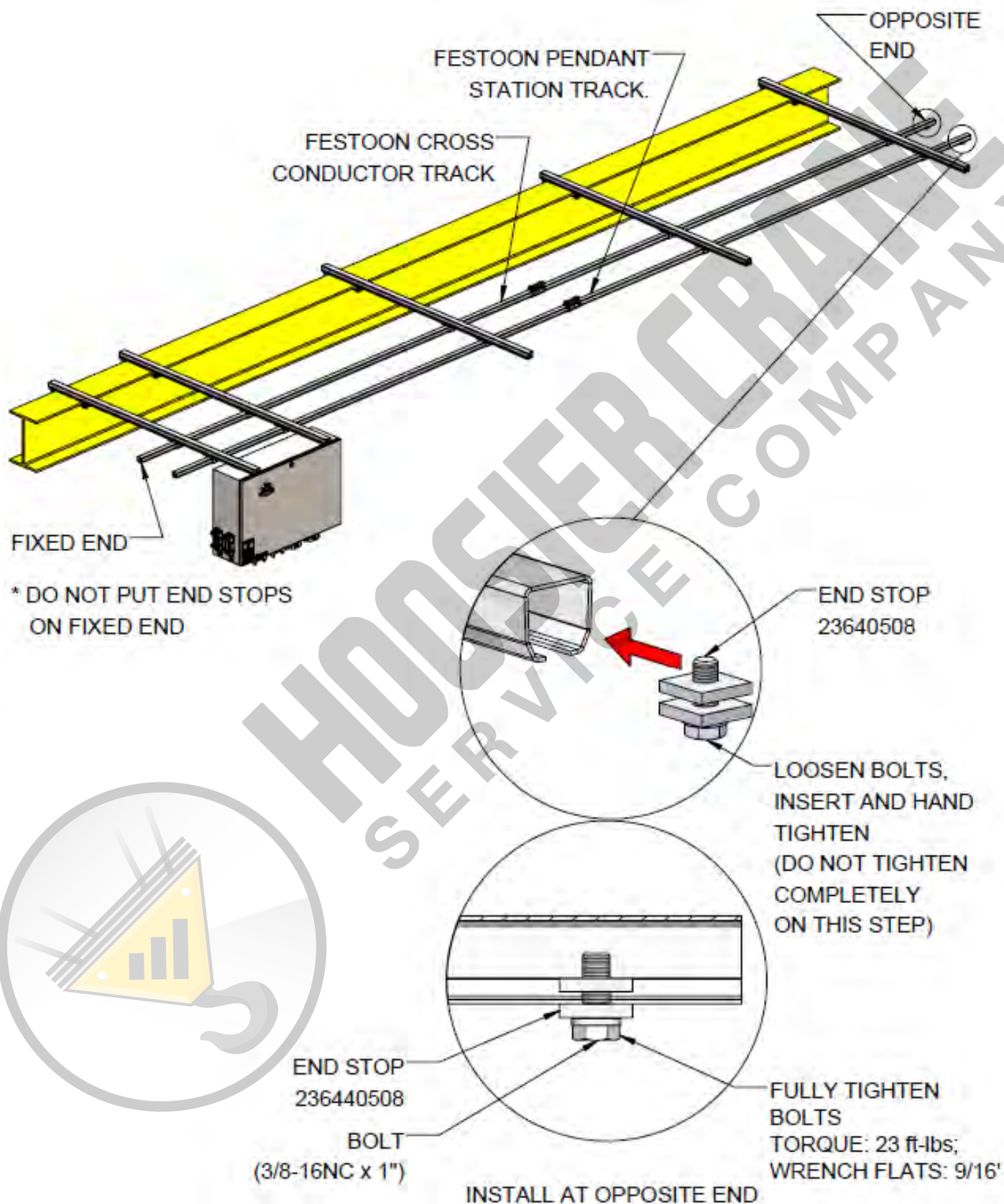
EQUALLY TIGHTEN
BOTH THE BOLTS
(TORQUE: 23 ft-lbs;
WRENCH FLATS: 9/16")

NO GAP BETWEEN C-TRACKS
AT "PEEP" HOLE

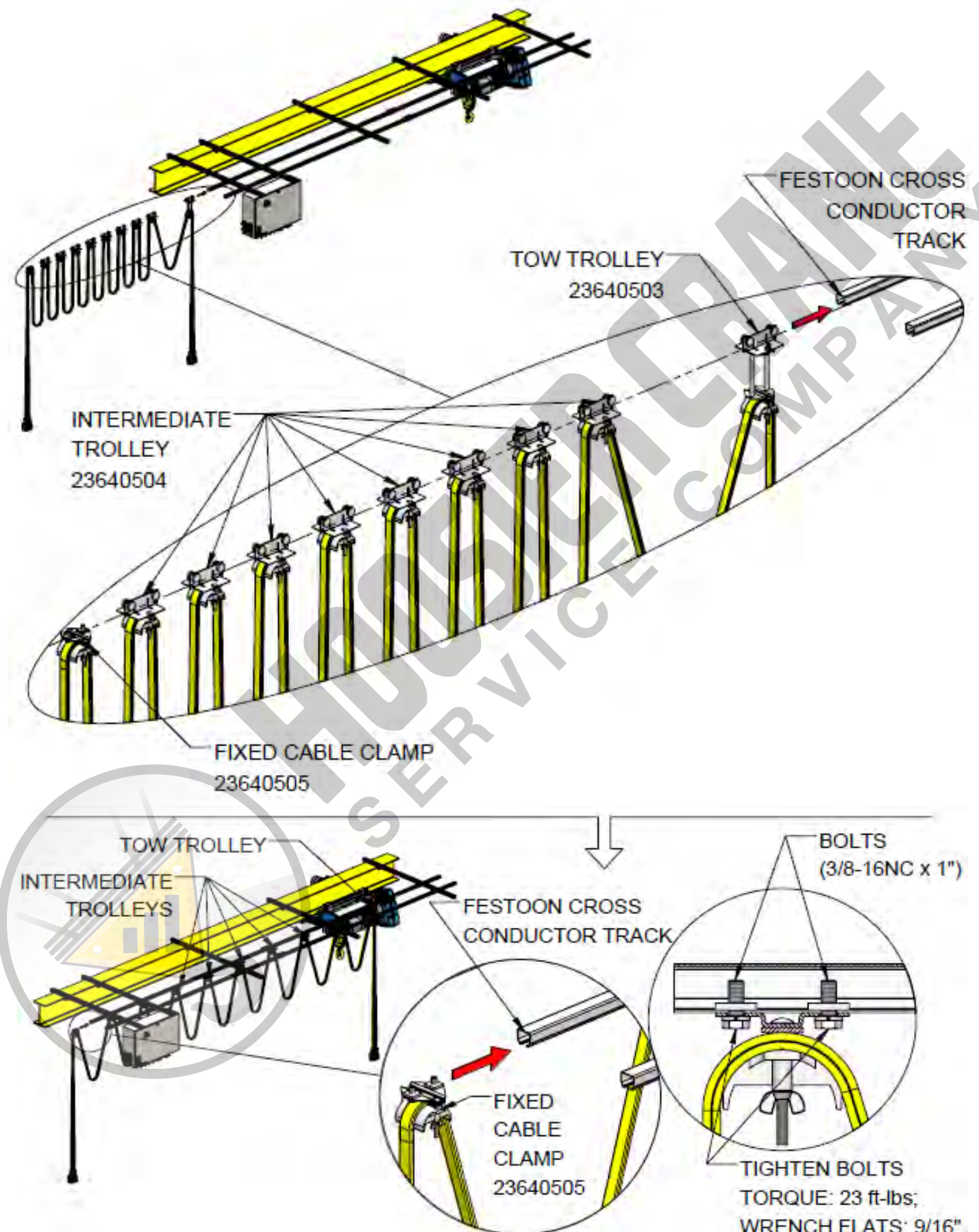
STEP:5 MOUNTING BRIDGE PANEL



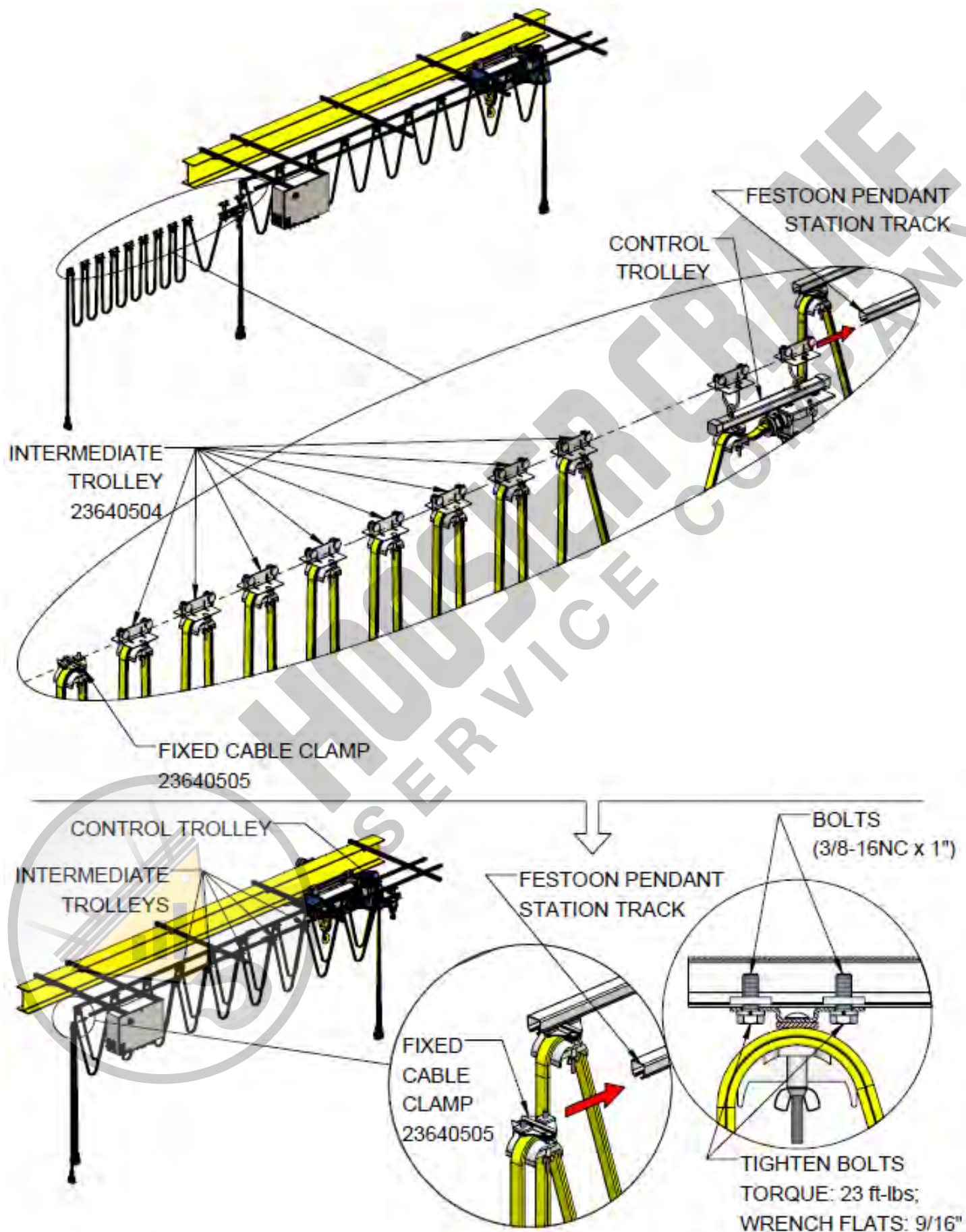
STEP:6 END STOP ASSEMBLY



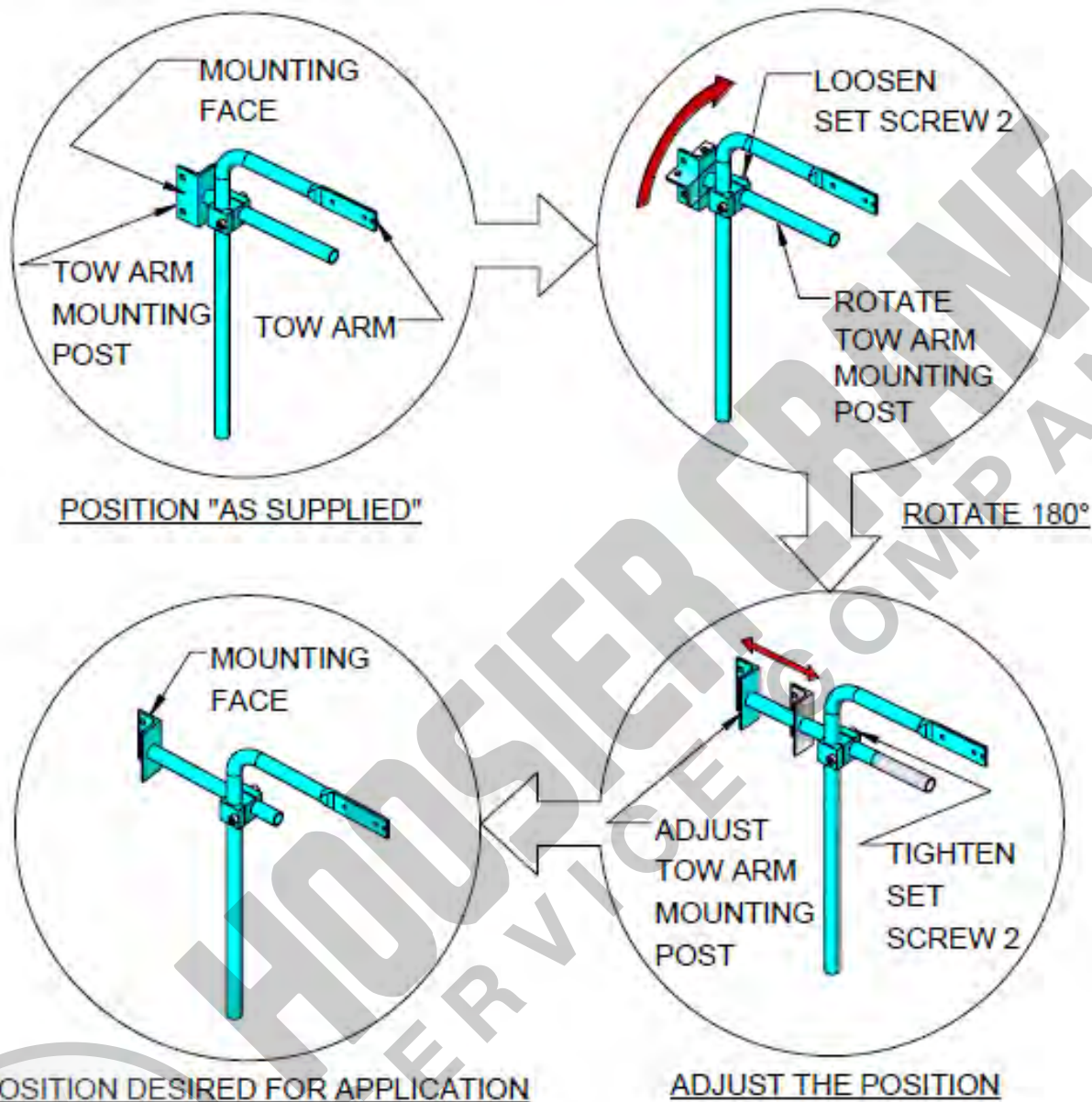
STEP:7 HOIST CABLE ASSEMBLY



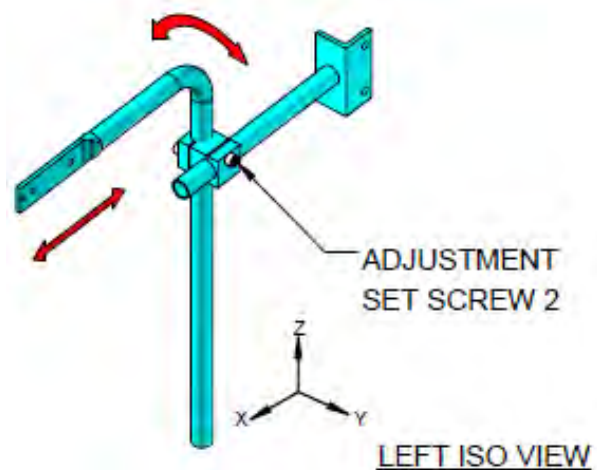
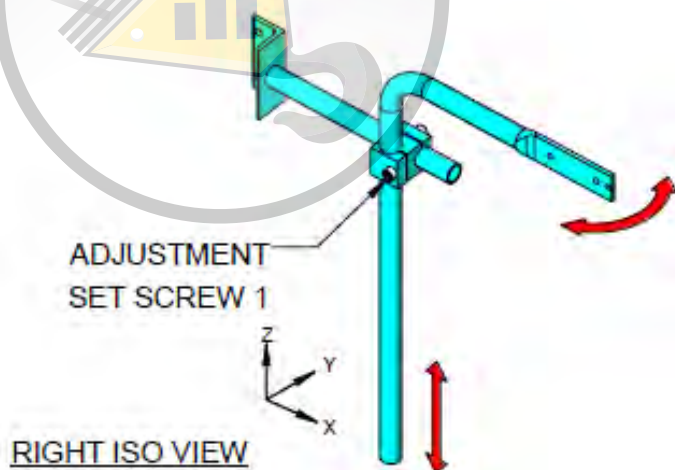
STEP:8 CONTROL PENDANT CABLE ASSEMBLY



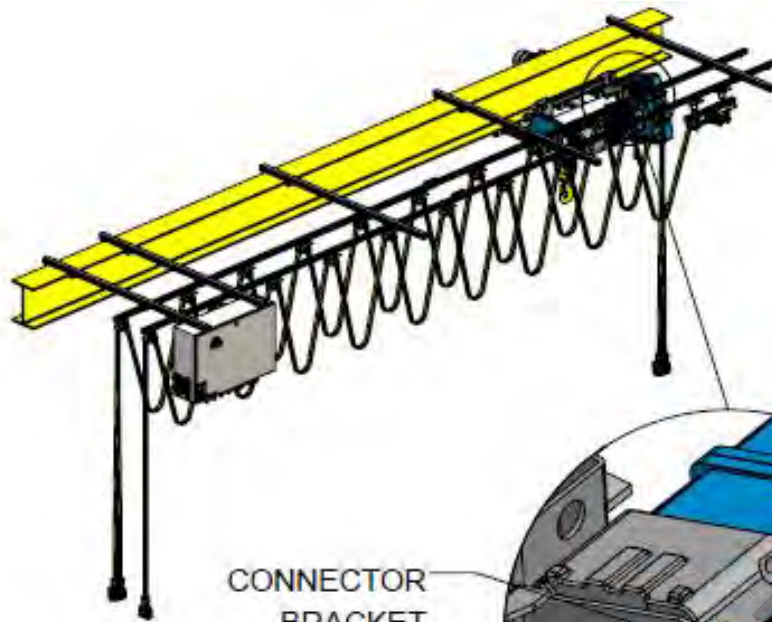
STEP:9 TOW ARM KIT PREPARATION



TOW ARM ADJUSTMENTS

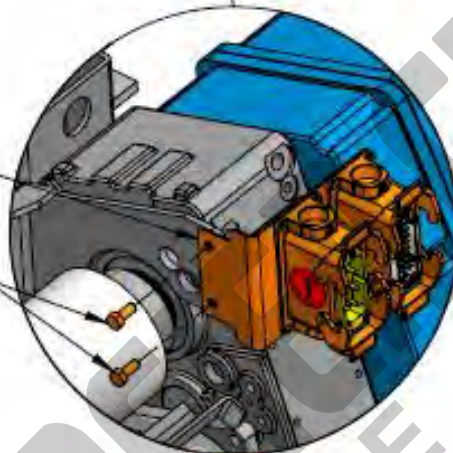


STEP:10 TOW ARM KIT INSTALLATION



CONNECTOR
BRACKET

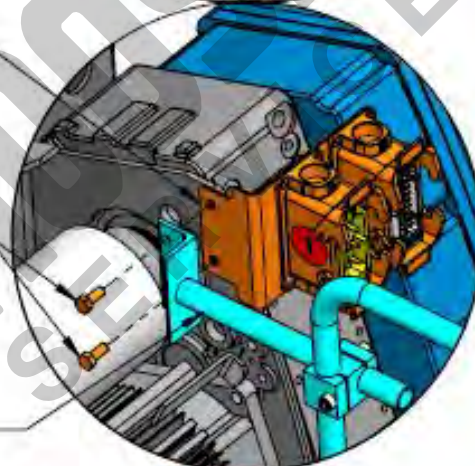
REMOVE HEX BOLTS
(M8 x 25)
WRENCH FLATS: 13 MM



CONNECTOR
BRACKET

ASSEMBLE TOW ARM
USING HEX BOLTS (M8 x 25)
WRENCH FLATS: 13 MM
(TORQUE: 23 ft-lbs)

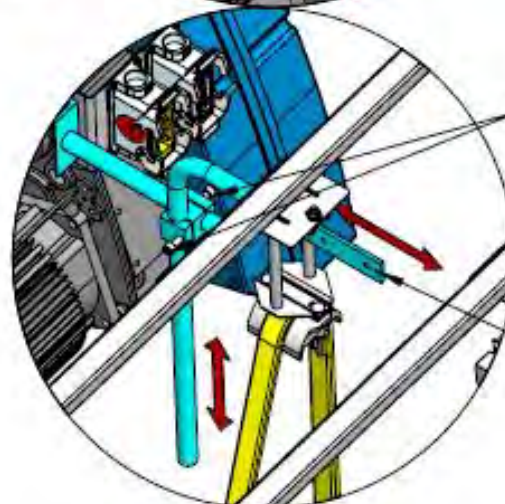
TOW ARM MOUNTING POST



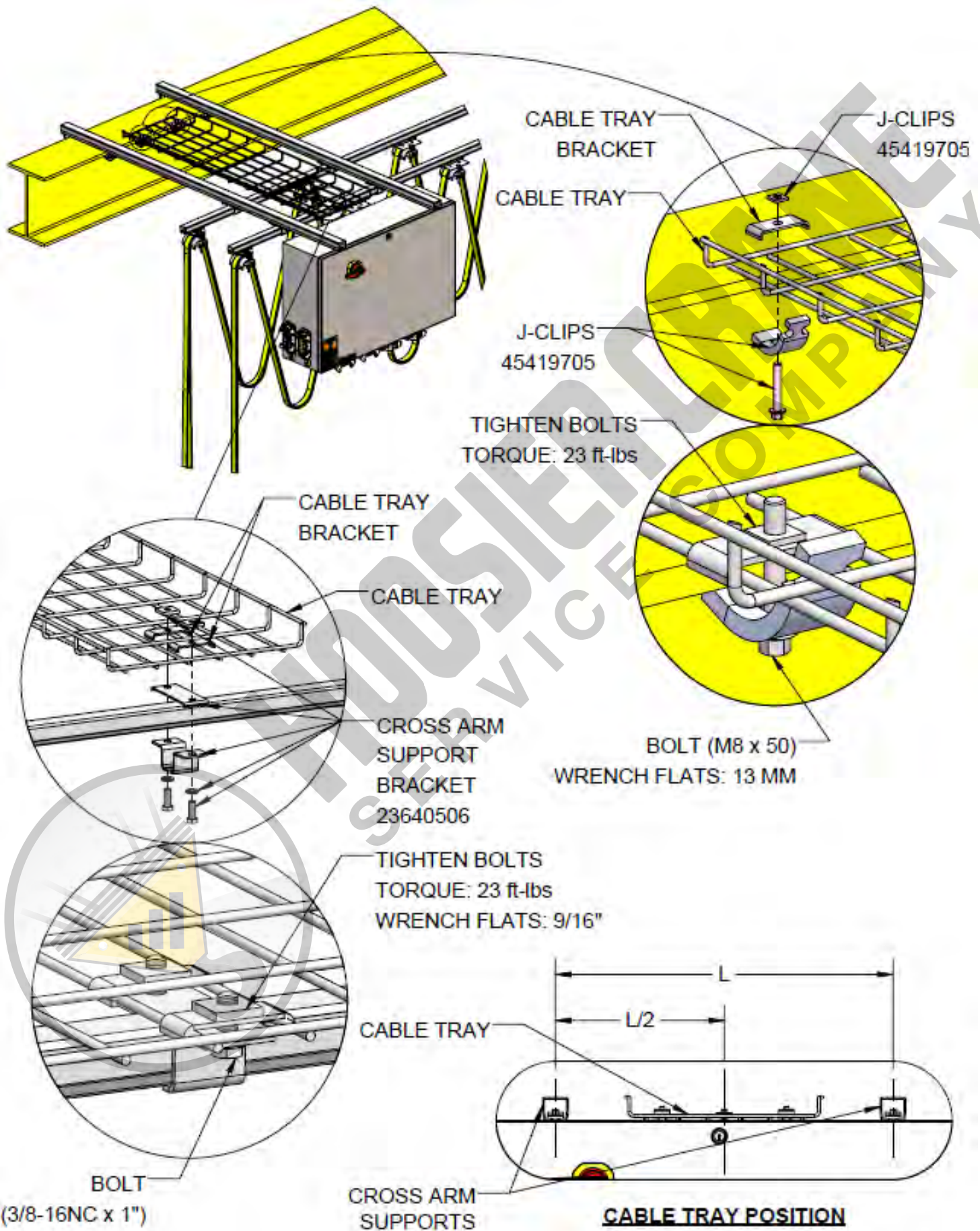
THREADLOCKER
(RECOMMENDED)

LOOSEN BOTH
THE SET SCREWS
& ADJUST TOW ARM
TO FIT TOW TROLLEY

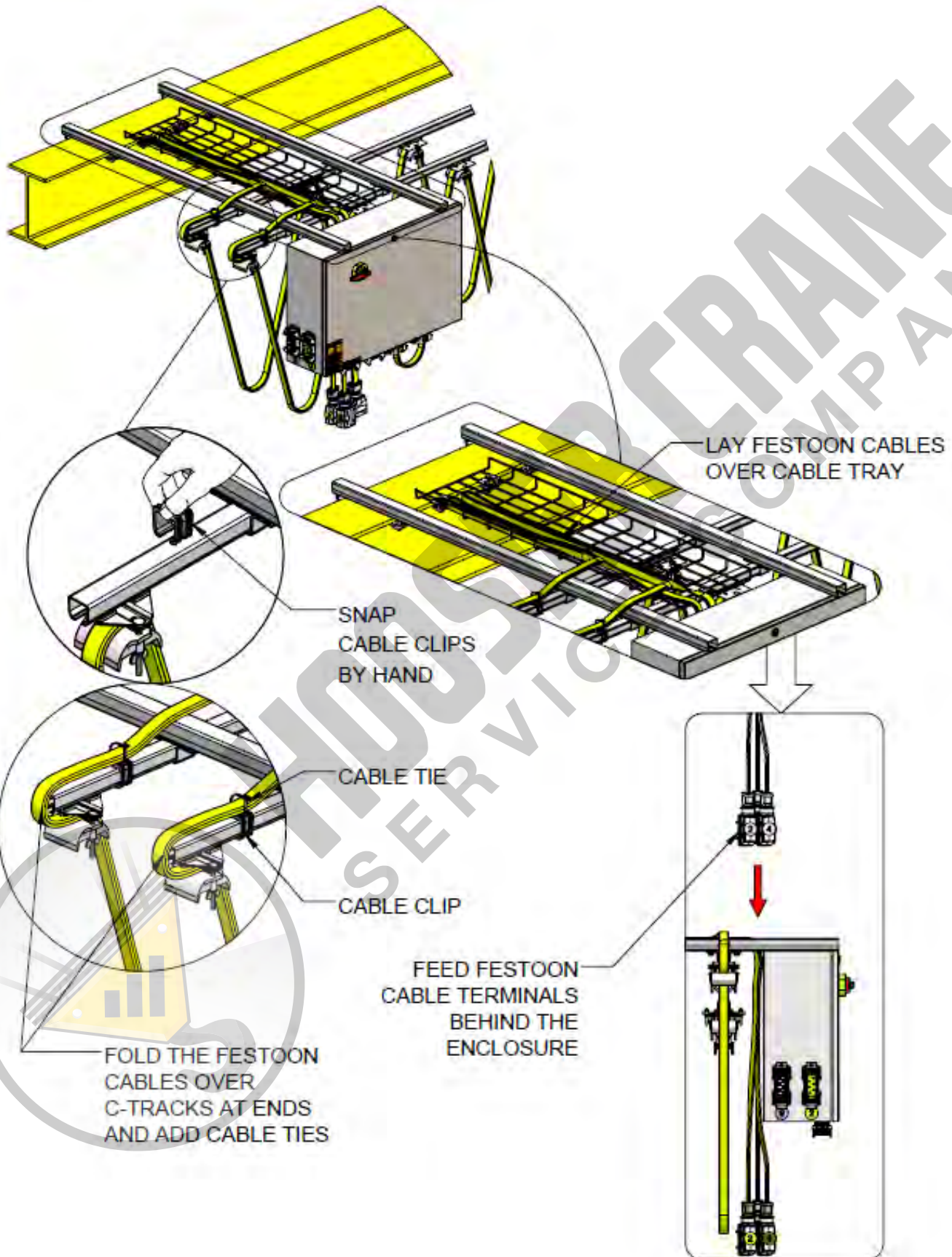
TOW ARM



STEP:11 CABLE TRAY INSTALLATION



STEP:12 PLACING FESTOON CABLES ON CABLE TRAY



STEP:13 FESTOON CABLE CONNECTION

CONNECTOR #3
16 PIN CONNECTION

CONNECTOR #1
4 OR 6 PIN CONNECTION

CONNECTOR #2
4 OR 6 PIN CONNECTION

CONNECTORS #4 & #6
16 PIN CONNECTION

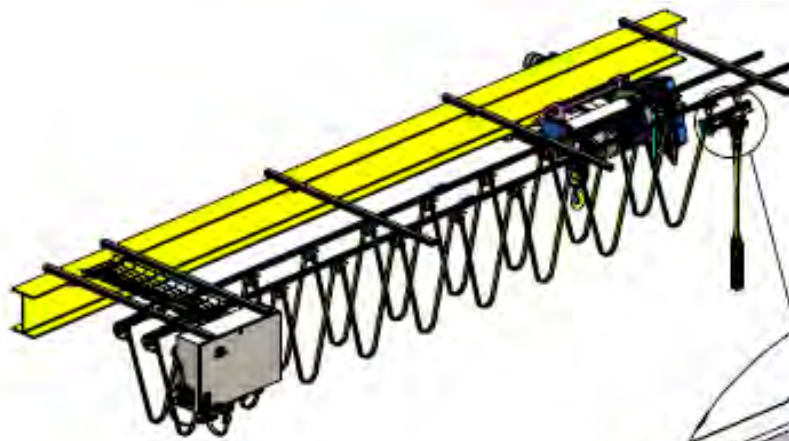
LOCKING CONNECTORS

AFTER INSERTING
CABLE CONNECTORS
ROTATE THE LATCHES
BY HAND AND
LOCK SECURELY

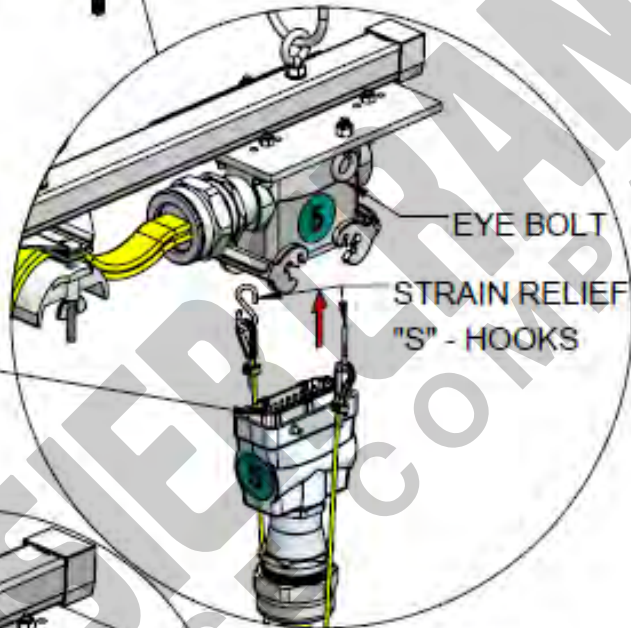
CONNECTOR LATCHES IN
LOCKED CONDITION

BOTTOM SIDE OF
BRIDGE PANEL

STEP:14 PUSH BUTTON PENDANT ASSEMBLY

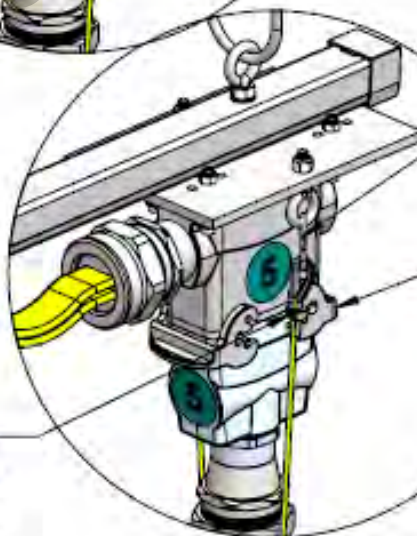
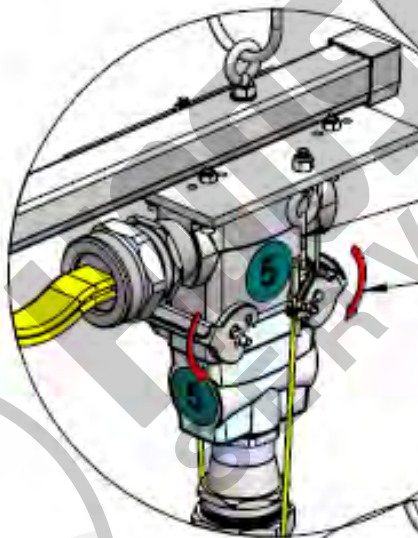


CONNECTOR #5
16 PIN CONNECTION



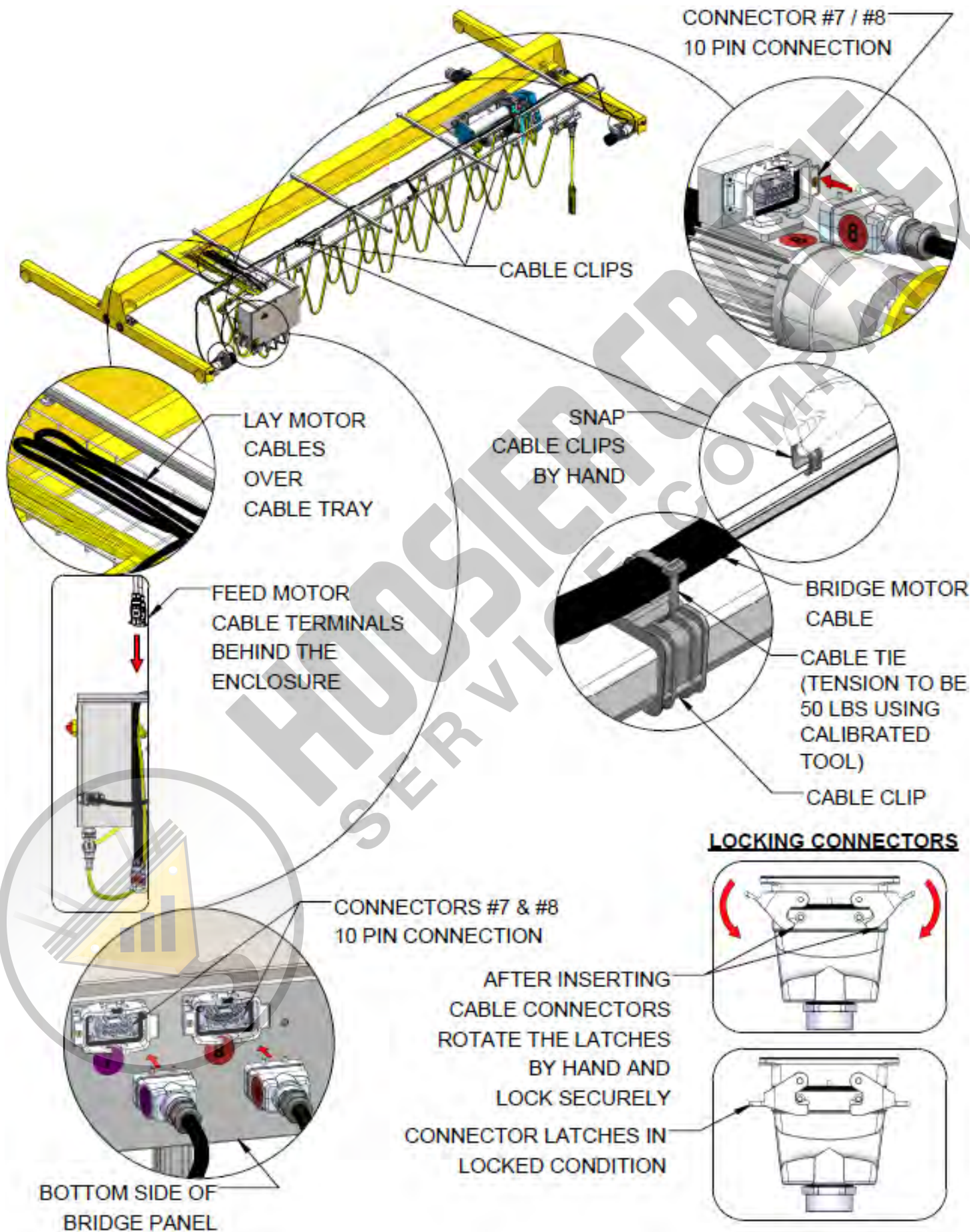
HANG "S" - HOOKS
ON EYE BOLTS

AFTER INSERTING THE
PENDANT CONNECTOR
ROTATE THE LATCHES
BY HAND TO SECURELY
LOCK THE CONNECTOR

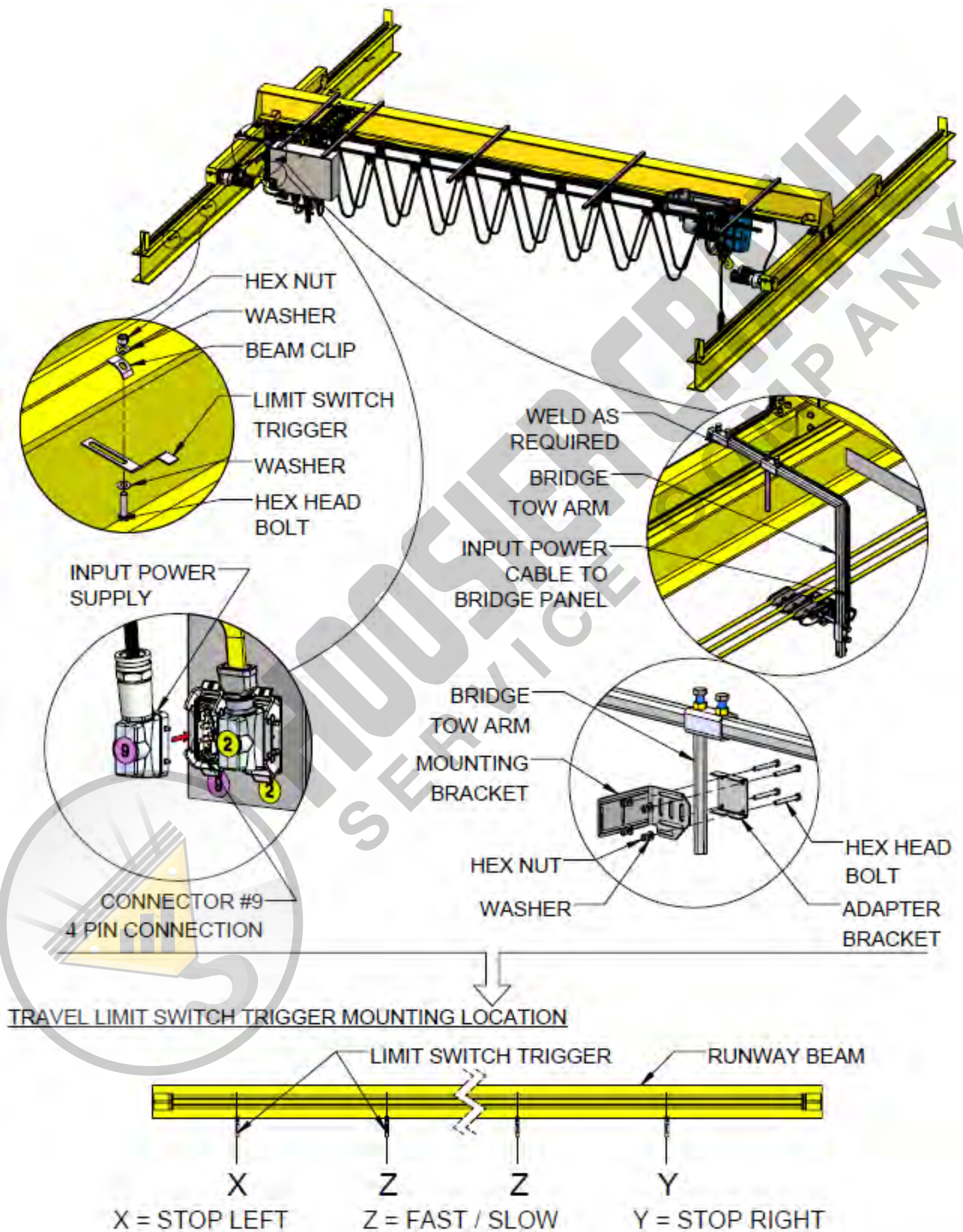


IF NECESSARY
LOOSEN STRAIN RELIEF SCREW
TO REMOVE EXCESS SLACK FOR
PENDANT CABLE

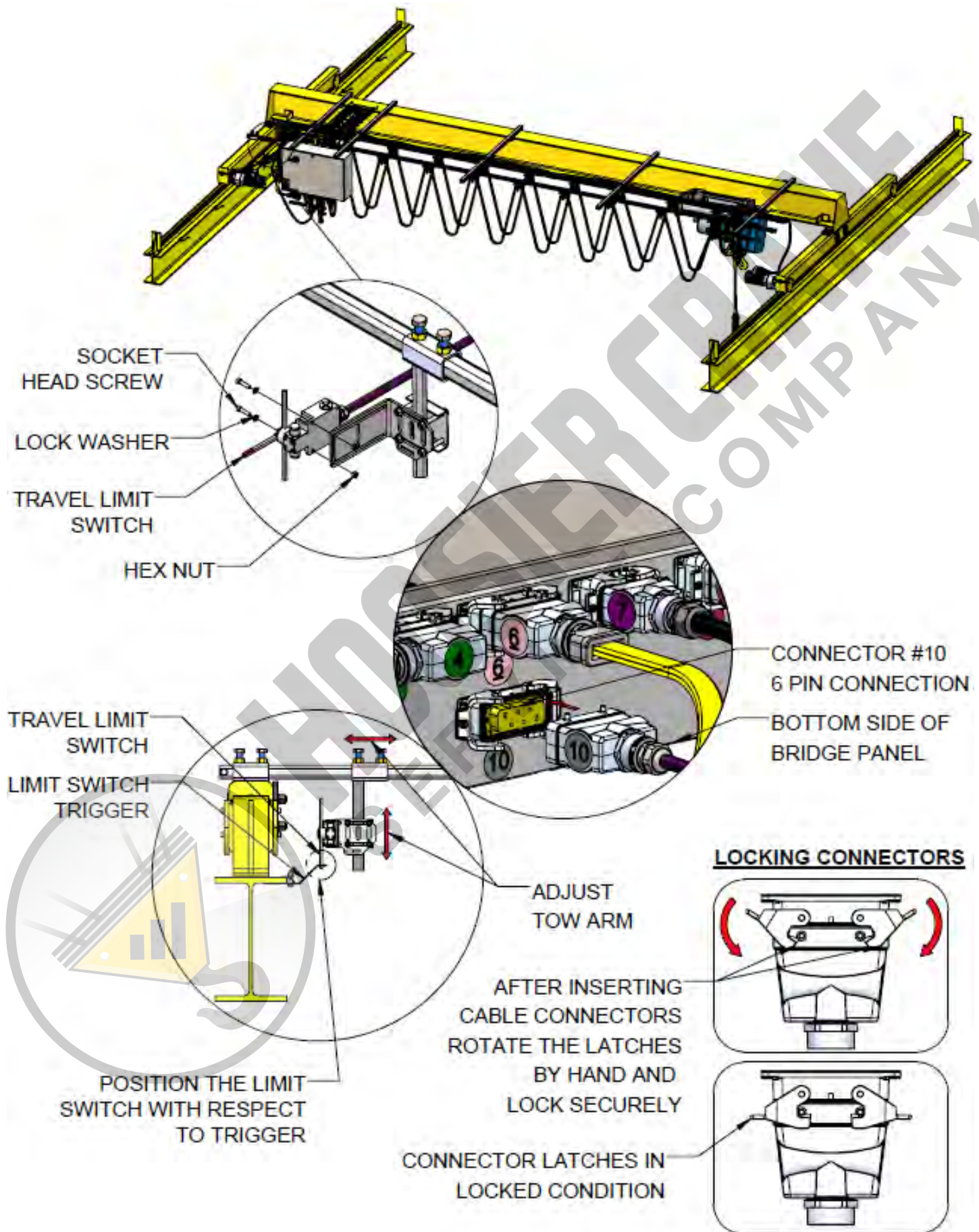
STEP:15 BRIDGE MOTOR CABLE CONNECTION



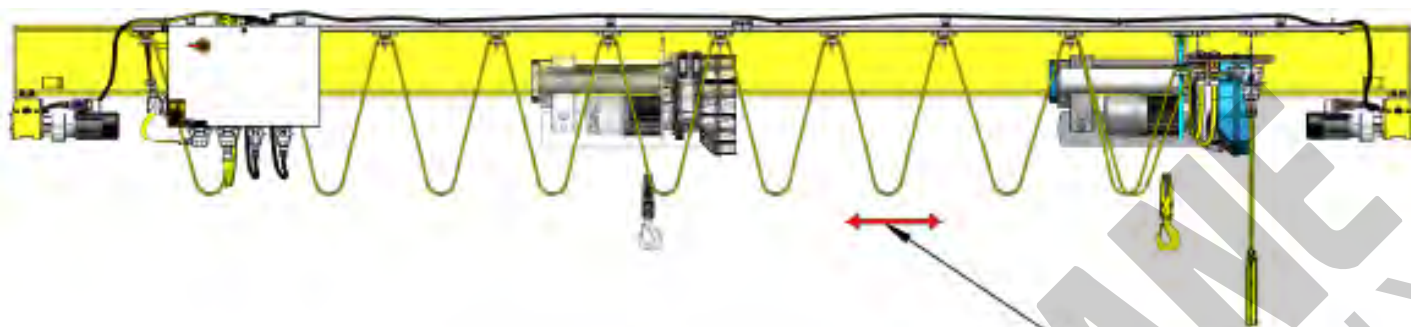
STEP:16 BRIDGE TOW ARM INSTALLATION



STEP:17 BRIDGE TRAVEL LIMIT SWITCH INSTALLATION

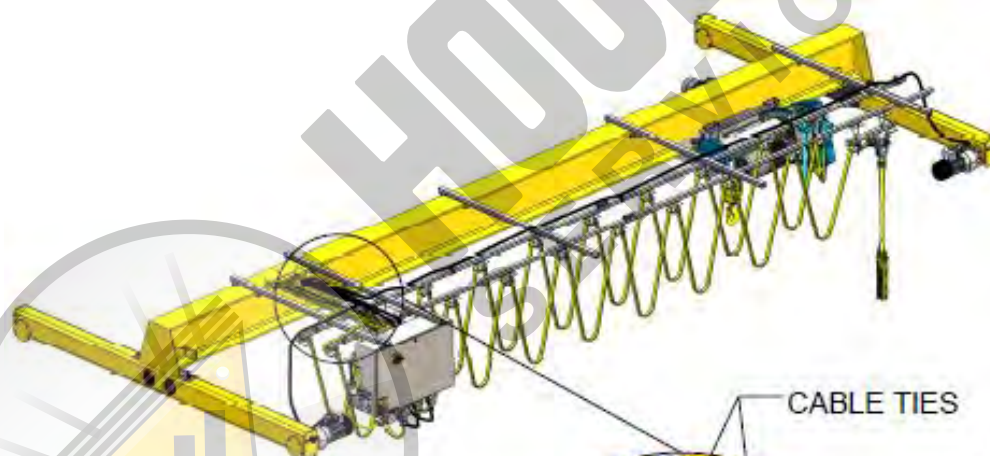


STEP:18 FESTOON RUNWAY CHECKING



SLOWLY RUN HOIST THROUGH ENTIRE LENGTH OF TRAVEL.
CHECK FOR BINDING IN THE TOW TROLLEY OPENING OR
OBSTRUCTION TO TOW ARM

STEP:19 ADDING CABLE TIES



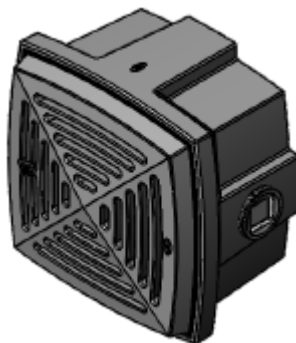
CABLE TIES

CABLE TIES

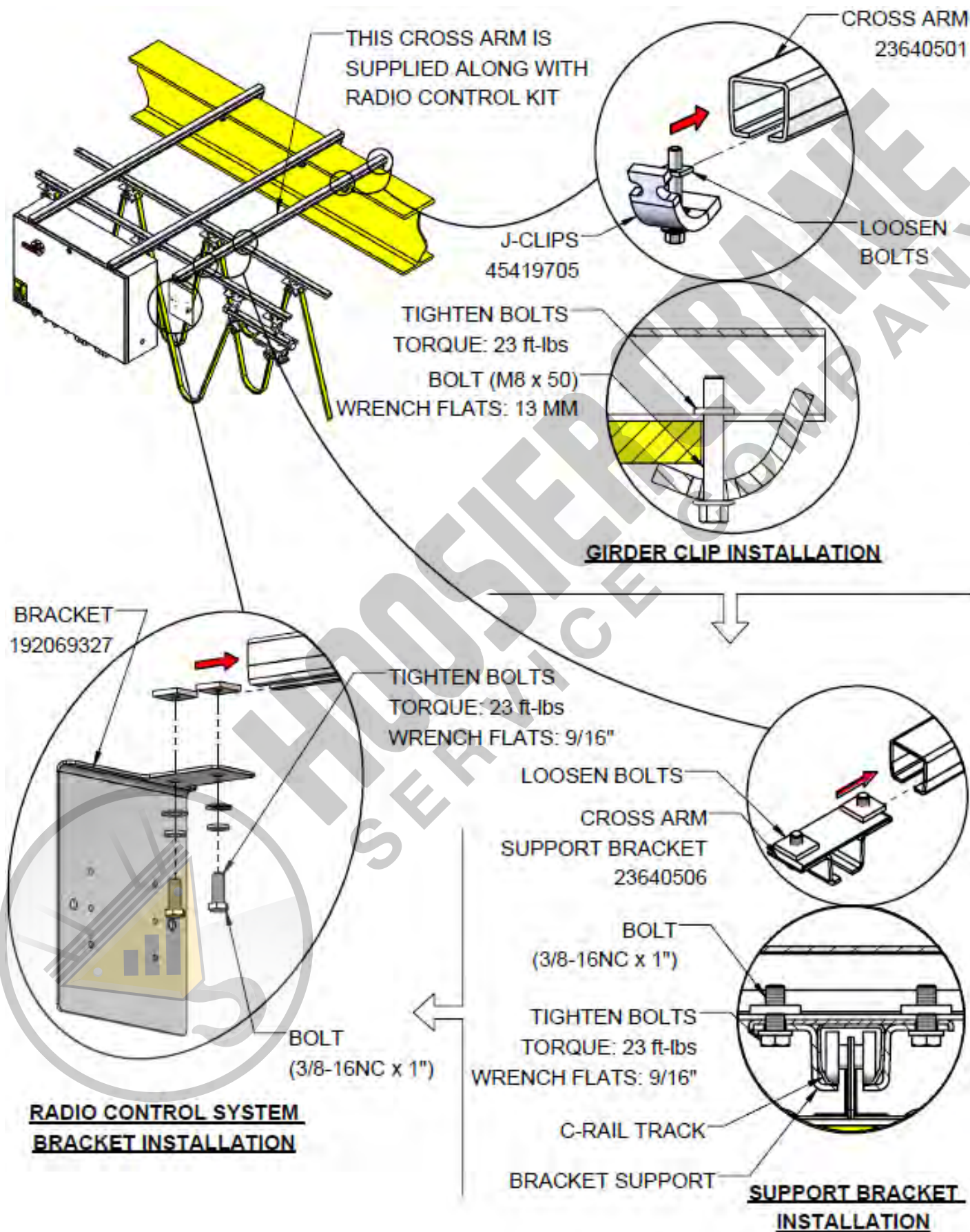


CHAPTER 6

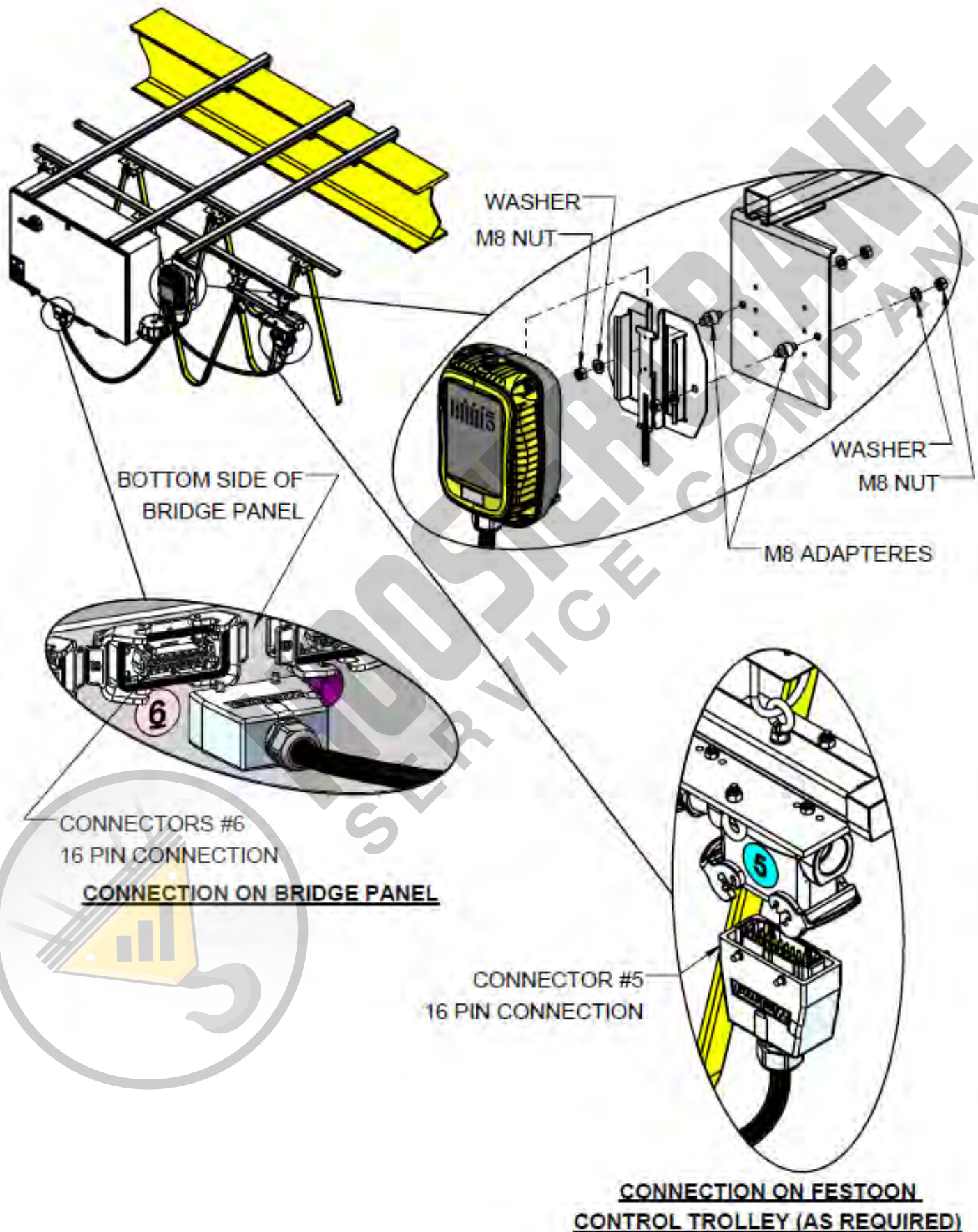
RADIO CONTROL & HORN INSTALLATION FOR FESTOON SYSTEM



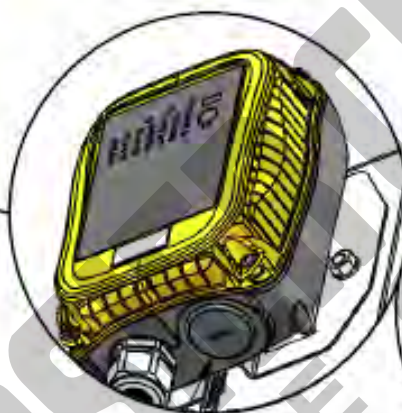
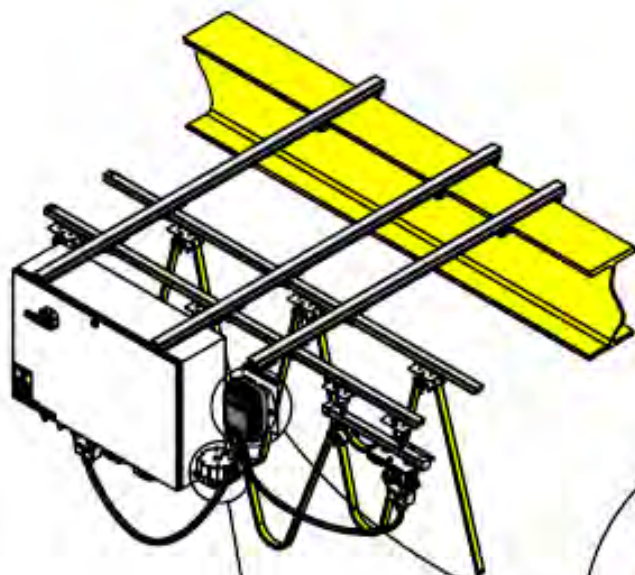
STEP:1 CROSS ARM & BRACKET INSTALLATION FOR RADIO CONTROL



STEP:2 RADIO CONTROL SYSTEM INSTALLATION



STEP:3 HORN INSTALLATION (INTERNAL/EXTERNAL)



REMOVE DUMMY PLUG

INSTALL RADIO CONTROL HORN

INTERNAL HORN INSTALLATION

SEALING RING FOR 3/4" NPT

3/4" CHASE NIPPLE

EXTERNAL HORN INSTALLATION

NOTES:

HOOSIER CRANE
SERVICE COMPANY



WARRANTY

LIMITATION OF WARRANTIES, REMEDIES, AND DAMAGES

INDEMNIFICATION AND SAFE OPERATION

Buyer shall comply with and require its employees to comply with directions set forth in instructions and manuals furnished by Seller and shall use and require its employees to follow such instructions and manuals and to use reasonable care in the use and maintenance of the Goods and any Replacement Parts. Buyer shall not remove or permit anyone to remove any warning or instruction signs on the Goods or Replacement Parts. In the event of personal injury or damage to property or business arising from the use of the Goods or Replacement Parts, Buyer shall within 48 hours thereafter give Seller written notice of such injury or damage. Buyer shall cooperate with Seller in investigating any such injury or damage and in the defense of any claims arising therefrom.

If Buyer fails to comply with this section or if any injury or damage is caused, in whole or in part, by Buyer's failure to comply with applicable federal or state laws, rules or regulations safety requirements, Buyer shall indemnify and hold Seller harmless against any claims, loss or expense for injury or damage arising from the use of the Goods and/or Replacement Parts.

CMCO Warranty (HOISTS)

A. Columbus McKinnon Corporation ("Seller") warrants to the original end-user ("Buyer") that, for a period of one (1) year from the date of Seller's delivery of the goods (collectively, the "Goods") to the carrier, the Goods will be free from defects in workmanship and materials... In addition, Seller warrants to Buyer that, for a period of one (1) year from the date of their delivery by Seller to the carrier, any aftermarket or replacement parts, accessories or components purchased by Buyer with respect to any Goods (collectively, "Replacement Parts") will be free from defects in workmanship and materials.

B. IN THE EVENT OF ANY BREACH OF ANY SUCH WARRANTY, SELLER'S SOLE OBLIGATION SHALL BE EXCLUSIVELY LIMITED TO, AT THE OPTION OF SELLER, REPAIR OR REPLACEMENT, F.O.B. SELLER'S POINT OF SHIPMENT, OF ANY GOODS OR REPLACEMENT PARTS THAT SELLER DETERMINES TO HAVE BEEN DEFECTIVE OR, IF SELLER DETERMINES THAT SUCH REPAIR OR REPLACEMENT IS NOT FEASIBLE, TO A REFUND OF THE PURCHASE PRICE UPON RETURN OF THE OR REPLACEMENT PARTS TO SELLER. NO CLAIM AGAINST SELLER FOR ANY BREACH OF (i) SUCH WARRANTY WITH RESPECT TO THE ELECTRICAL COMPONENTS OF ANY GOOD OR ANY REPLACEMENT PARTS, SHALL BE VALID OR ENFORCEABLE UNLESS BUYER'S WRITTEN NOTICE THEREOF IS RECEIVED BY SELLER WITHIN ONE (1) YEAR FROM THE DATE OF SELLER'S DELIVERY TO THE CARRIER AND (ii) SUCH WARRANTY WITH RESPECT TO THE MECHANICAL COMPONENTS OF ANY GOOD SHALL BE VALID OR ENFORCEABLE UNLESS BUYER'S WRITTEN NOTICE THEREOF IS RECEIVED BY SELLER WITHIN ONE (1) YEAR FROM THE DATE ANY ALLEGED CLAIM ACCRUES. EXCEPT FOR THE WARRANTIES SET FORTH ABOVE, SELLER MAKES NO OTHER WARRANTIES WITH RESPECT TO THE GOODS OR ANY REPLACEMENT PARTS, WHETHER EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, QUALITY AND/OR THOSE ARISING BY STATUTE OR OTHERWISE BY LAW OR FROM ANY COURSE OF DEALING OR USE OF TRADE, ALL OF WHICH ARE HEREBY EXPRESSLY DISCLAIMED.

C. IN NO EVENT SHALL SELLER BE LIABLE TO BUYER OR ANY THIRD PARTY WITH RESPECT TO ANY GOOD OR REPLACEMENT PART, WHETHER, IN CONTRACT, TORT OR OTHER THEORY OF LAW, FOR LOSS OF PROFITS OR LOSS OF USE, OR FOR ANY INCIDENTAL, CONSEQUENTIAL, SPECIAL, DIRECT OR INDIRECT DAMAGES, HOWSOEVER CAUSED. SELLER'S MAXIMUM LIABILITY TO BUYER WITH RESPECT TO THE GOODS OR ANY REPLACEMENT PART SHALL IN NO EVENT EXCEED THE PRICE PAID BY BUYER FOR THE GOODS OR REPLACEMENT PART THAT ARE THE SUBJECT OF THE APPLICABLE CLAIM.

D. Seller shall not be liable for any damage, injury or loss arising out of the use of the Goods or any Replacement Part if, prior to such damage, injury or loss, such Goods or Replacement Parts are: (1) damaged or misused following Seller's delivery to the carrier; (2) not maintained, inspected, or used in compliance with applicable law and Seller's written instructions and recommendations; or (3) installed, repaired, altered or modified (a) with any part or accessory other than those supplied by Seller or (b) without compliance with such laws, instructions or recommendations.

E. This warranty is limited and provided only to the original end-user. Each Good and Replacement Part must be registered within sixty (60) days of receipt of each product to establish eligibility. Please register at www.cmworks.com/hoist-warranty-registration or submit a registration card via US mail.

F. Any action against Seller for breach of warranty, negligence or otherwise in connection with the electrical components of any Good must be commenced by Buyer within one (1) year after (a) the date any alleged claim accrues; or (b) the date of delivery of the Goods to Buyer, whichever is earlier. Any action against Seller for breach of warranty, negligence or otherwise in connection with the mechanical components of any Good must be commenced by Buyer within one (1) year after the date any alleged claim accrues... Any action against Seller for breach of warranty, negligence or otherwise in connection with any Replacement Part must be commenced by Buyer within one (1) year after (y) the date any alleged claim accrues; or (z) the date of delivery of the Replacement Part to Buyer, whichever is earlier.

G. This warranty is contingent upon Buyer's proper maintenance and care of the Goods and/or Replacement Parts, and does not extend to normal wear and tear. Seller reserves the right, at its option, to void this warranty in the event of Buyer's use with the Goods and/or Replacement Parts of parts or accessories other than those supplied by Seller.



Alterations or modifications of equipment and use of non-Seller replacement parts can lead to dangerous operation and injury.

TO AVOID INJURY:

- Do not alter or modify equipment.
- Do use only replacement parts manufactured by Seller.



FAMILY OF BRANDS



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