

HUTCHENS INDUSTRIES INC.

ENGINEERING STANDARDS (HES)

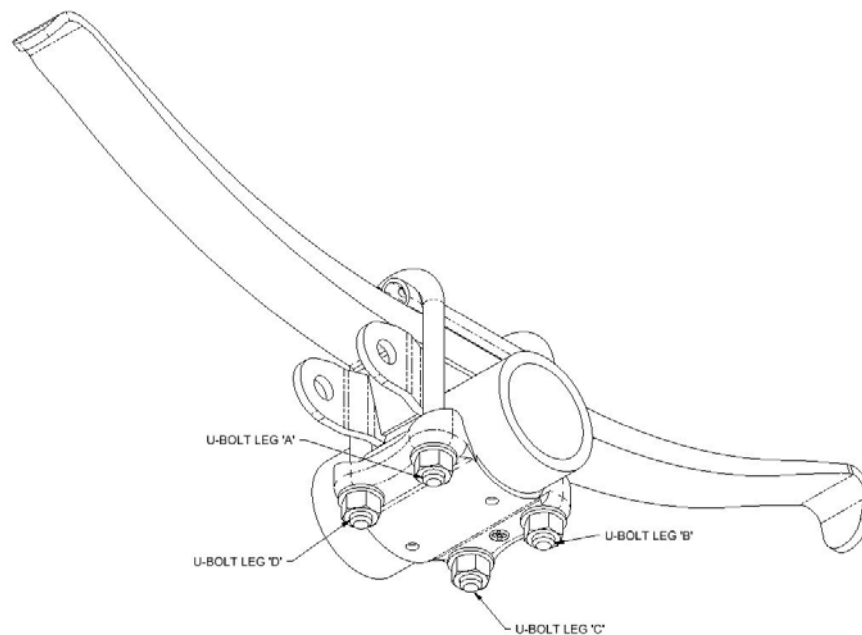
20000.9.2 U-BOLT INSTALLATION PRACTICES

To assure the proper installation of all U-Bolt connections assembled in production the following practices will be observed. (This applies to U-Bolts that are installed in groups of two (four legs/nuts) to attach axles to the springs of any suspension, as well as the U-bolts used to assemble the center trunnion groups of the single point suspensions.)

Note: Always install one of the supplied washers directly under each nut.

1. All U-Bolts should be installed with lubricated threads. If the threads appear dry or if uniform lubrication cannot be detected the male threads will be lightly coated with Bostik® Never-Seez Regular Grade (preferred) or medium weight oil. (Note: Some U-bolts are purchased with a black ProtecTorque® coating. Consult the engineering drawings for information specific to each part number. U-Bolts with this coating should be considered lubricated without the addition of a secondary coating.)
2. Using the installation tool of choice the tooling will be calibrated when applicable and the nuts will be progressively tightened. If using a manual torque wrench to tighten the fastener move the tool with slow smooth movements until the wrench indicates the desired torque level. The four (4) nuts of the U-Bolt will be tightened incrementally using a minimum of three passes in a diagonal "X" pattern as shown below until the prescribed lubricated torque specification for the fastener is obtained. Consult the applicable decal or drawing for the proper torque requirements and to develop an approximate torque for the progressive steps of the installation.

Note: Although this sketch only shows a typical installation of an H9700 overslung axle clamp group, the recommended tightening procedure applies to ALL U-bolt clamp groups.



U-BOLT TORQUE SEQUENCE				
	FIRST LEG	SECOND LEG	THIRD LEG	FOURTH LEG
PASS 1: 33% OF FINAL TORQUE	A	C	D	B
PASS 2: 66% OF FINAL TORQUE	C	A	B	D
PASS 3: 100% OF FINAL TORQUE	B	D	C	A

HUTCHENS ENGINEERING STANDARDS
(HES)
FASTENER INSTALLATION

ER:
99139

PROJ:
99-0500

REV: AH

DATE: 01-03-20

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2019200

SHEET
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DRAWING NO.
20000.9

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3. To check the installation torque on the fastener, forward (tightening) torque will be reapplied to the nut with the calibrated manual torque wrench until the nut first begins to move. Apply force to the torque wrench with a slow even movement and avoid jerking the wrench. The torque level required to first turn the nut will be observed.
4. The observed torque level on all four nuts must be within -0% / $+20\%$ of the specified torque for the U-Bolt.
5. At a minimum, the quality record that will be retained indefinitely will include the part number and serial number of the sellable assembly, final installation torques on all U-bolt nuts, as well as the operator's name, date, and time.
 - A. In the case of an assembled slider or single point, the s/n recorded on the 1139303 name-plate for the sellable assembly will be used for record keeping.
 - B. For any other u-bolt assembled items that are sold and ship loose but may not normally have an individual name-plate (i.e. loose axles with springs attached), a 24327-01 will be attached to each assembly and a s/n created for tracking. The name-plate will be attached directly to the axle when possible. Note: It will not be necessary to attach individual nameplates to axles that are consumed in a subsequent assembly such as a slider.

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