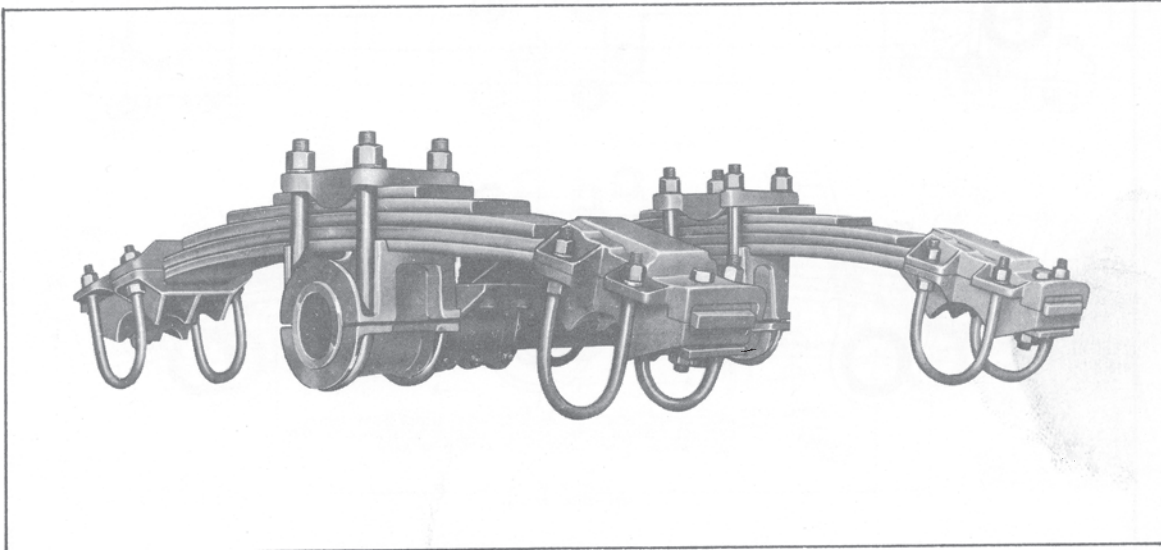


# 'HUTCH' H-800A MODEL SINGLE POINT TRAILER SUSPENSION



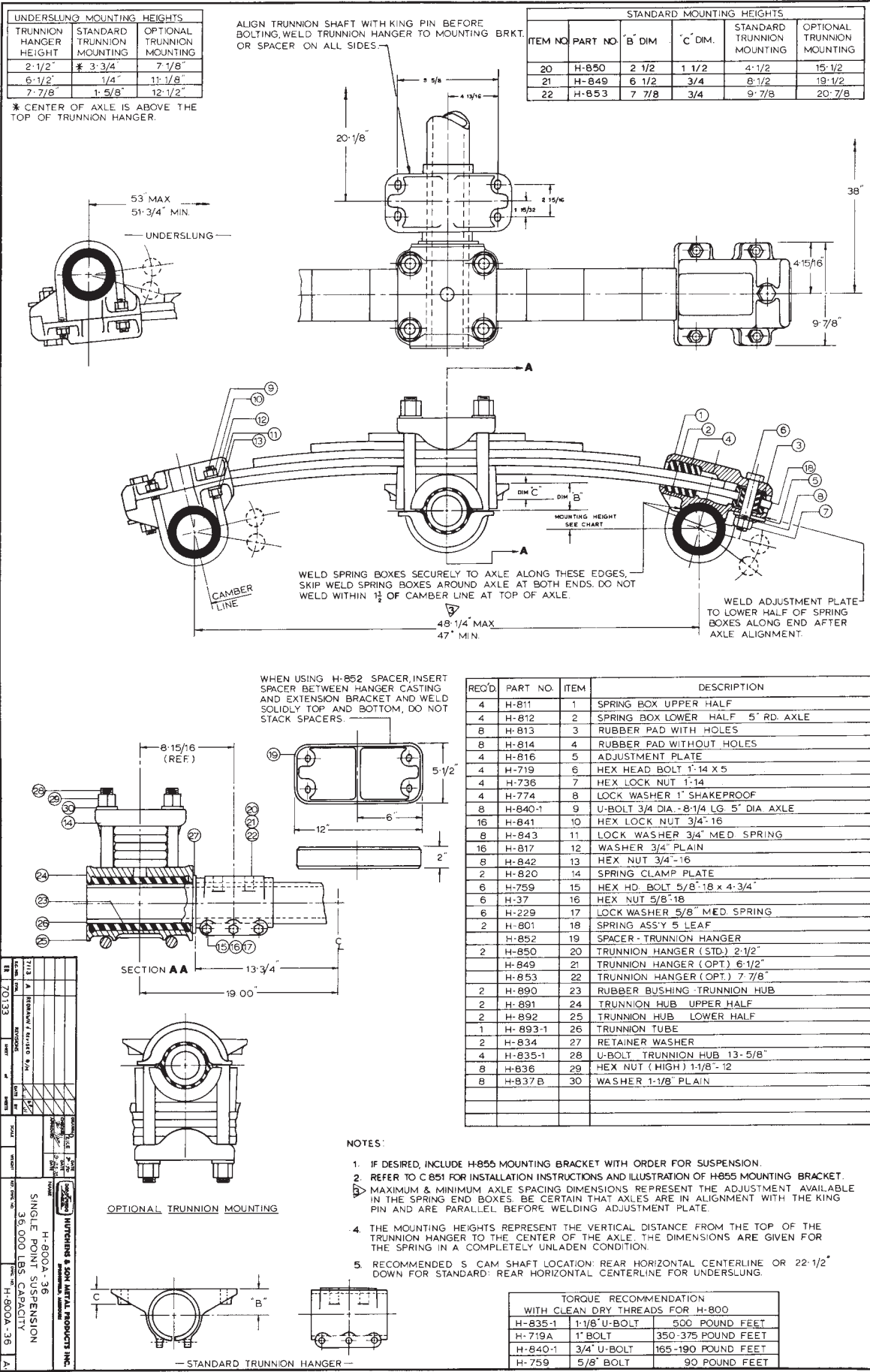
## FEATURES OF THIS MODEL

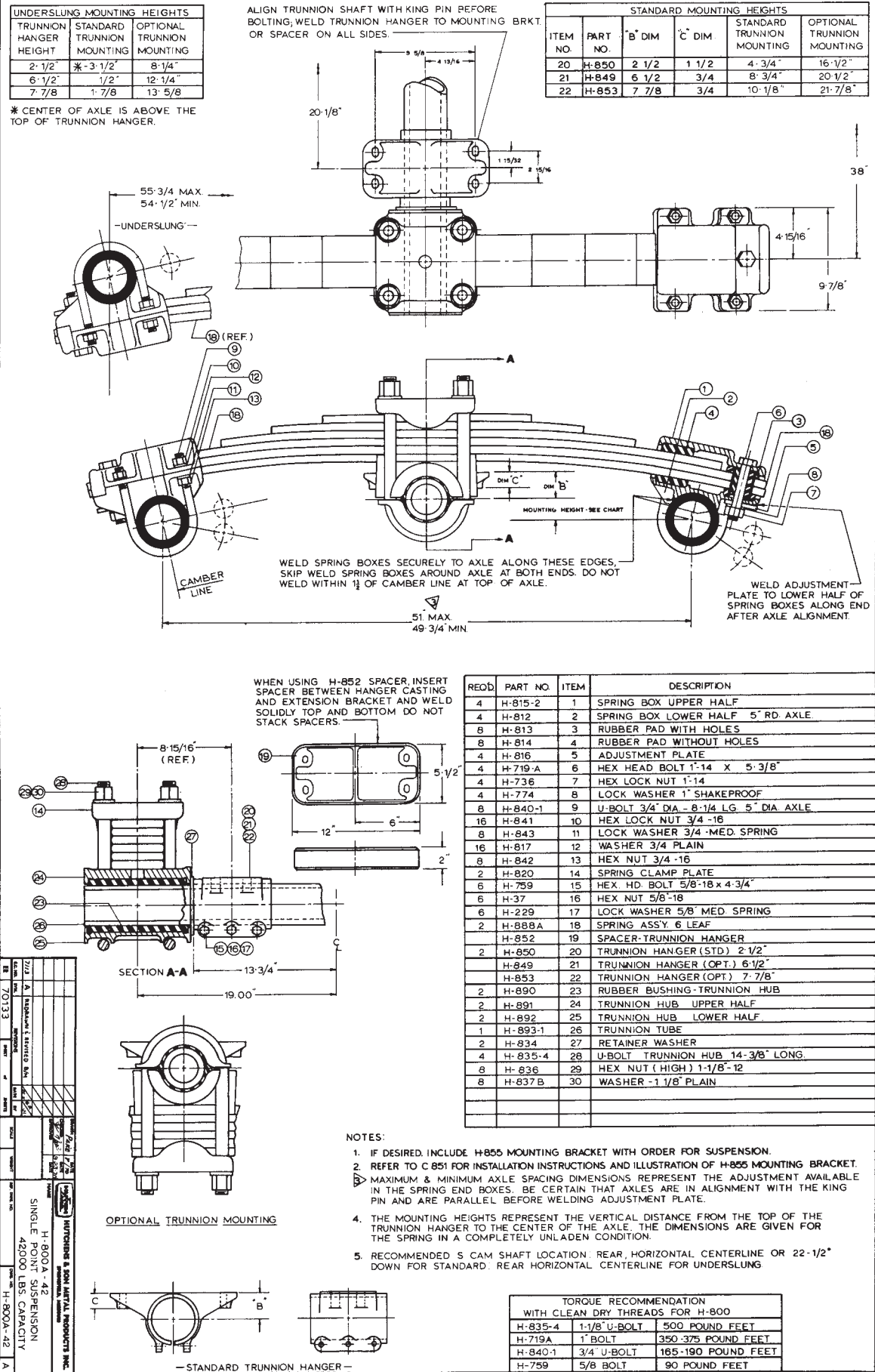
1. A heavy duty suspension specially designed for off road operations, such as logging or dump.
2. Available in a broad range of variations to suit almost any mounting requirement. The standard trunnion mounting is shown, with optional (spring underslung) trunnion mounting available.
3. A broad range of load capacities are available. H-800A-36 for up to 36,000 pound capacity, H-800A-42 for 42,000 pound capacity, H-800A-50 for 50,000 pound capacity and H-800A-60 for up to 60,000 pound loads.
4. The industry's first single point suspension with adjustable alignment of axles. When alignment is completed, the adjustment plate is simply welded in place, to prevent future misalignment.
5. The trunnion rubber bushing is 100% rubber and is pre-loaded at assembly to insure live action of the rubber. Greater flexibility, easier ride and reduced wear are the results of this feature.
6. Maintenance and replacement of the trunnion bushing is performed by the use of a split trunnion casting.
7. The unit is completely rubber bushed, with the use of rubber pads, above and below the spring leaves in the "spring end boxes." A bonded bushing is utilized where the 1" diameter retainer bolt is used in the spring and spring end box connection. This feature reduces wear, noise, and prolongs the life of all components.
8. Heavy duty components are used throughout, from the use of heavy 5" wide springs to the 1-1/8" diameter U-bolts for the trunnion hub. Other components are heavy duty cast steel, that have been "shot peened" to relieve casting stresses. This unit is prime painted ready for installation.
9. Springs are kept in alignment by the use of spring guides both in the trunnion casting and the top plate.
10. Optional 2" thick spacers, trunnion hangers in three heights, and heavy duty mounting brackets are available.
11. Spring end boxes have a built-in bump out area for maximum oscillation protection.

## CONTENTS OF THIS SECTION

1. MODEL FEATURES AND PHOTO OF UNIT
2. H-800A-36 SINGLE POINT
3. H-800A-42 SINGLE POINT
4. H-800A-50 SINGLE POINT
5. H-800A-60 SINGLE POINT
6. INSTALLATION INSTRUCTIONS ALL MODELS
7. UNIT PRICES AND WEIGHTS







REQD.	PART NO.	ITEM	DESCRIPTION
4	H-815-2	1	SPRING BOX UPPER HALF
4	H-812	2	SPRING BOX LOWER HALF 5" RD AXLE
8	H-813	3	RUBBER PAD WITH HOLES
8	H-814	4	RUBBER PAD WITHOUT HOLES
4	H-816	5	ADJUSTMENT PLATE
4	H-719-A	6	HEX HEAD BOLT 1-14 X 5-3/8"
4	H-736	7	HEX LOCK NUT 1-14
4	H-774	8	LOCK WASHER 1" SHAKEPROOF
8	H-840-1	9	U-BOLT 3/4" DIA - 8-1/4 LG 5" DIA AXLE
16	H-841	10	HEX LOCK NUT 3/4 -16
8	H-843	11	LOCK WASHER 3/4 -MED. SPRING
16	H-817	12	WASHER 3/4 PLAIN
8	H-842	13	HEX NUT 3/4 -16
2	H-820	14	SPRING CLAMP PLATE
6	H-759	15	HEX. HD. BOLT 5/8-18 x 4-3/4"
6	H-37	16	HEX NUT 5/8-18
6	H-229	17	LOCK WASHER 5/8 MED SPRING
2	H-888A	18	SPRING ASSY 6 LEAF
2	H-852	19	SPACER-TRUNNION HANGER
2	H-850	20	TRUNNION HANGER (STD) 2-1/2"
2	H-849	21	TRUNNION HANGER (OPT.) 6-1/2"
2	H-853	22	TRUNNION HANGER (OPT.) 7-7/8"
2	H-890	23	RUBBER BUSHING-TRUNNION HUB
2	H-891	24	TRUNNION HUB UPPER HALF
2	H-892	25	TRUNNION HUB LOWER HALF
1	H-893-1	26	TRUNNION TUBE
2	H-834	27	RETAINER WASHER
4	H-835-4	28	U-BOLT TRUNNION HUB 14-3/8" LONG.
8	H-836	29	HEX NUT (HIGH) 1-1/8-12
8	H-837 B	30	WASHER -1 1/8" PLAIN

- NOTES:
- IF DESIRED, INCLUDE H-855 MOUNTING BRACKET WITH ORDER FOR SUSPENSION.
  - REFER TO C 851 FOR INSTALLATION INSTRUCTIONS AND ILLUSTRATION OF H-855 MOUNTING BRACKET.
  - MAXIMUM & MINIMUM AXLE SPACING DIMENSIONS REPRESENT THE ADJUSTMENT AVAILABLE IN THE SPRING END BOXES. BE CERTAIN THAT AXLES ARE IN ALIGNMENT WITH THE KING PIN AND ARE PARALLEL BEFORE WELDING ADJUSTMENT PLATE.
  - THE MOUNTING HEIGHTS REPRESENT THE VERTICAL DISTANCE FROM THE TOP OF THE TRUNNION HANGER TO THE CENTER OF THE AXLE. THE DIMENSIONS ARE GIVEN FOR THE SPRING IN A COMPLETELY UNLADEN CONDITION.
  - RECOMMENDED S CAM SHAFT LOCATION: REAR HORIZONTAL CENTERLINE OR 22-1/2" DOWN FOR STANDARD; REAR HORIZONTAL CENTERLINE FOR UNDERSLUNG

TORQUE RECOMMENDATION WITH CLEAN DRY THREADS FOR H-800		
H-835-4	1-1/8" U-BOLT	500 POUND FEET
H-719A	1" BOLT	350-375 POUND FEET
H-840-1	3/4" U-BOLT	165-190 POUND FEET
H-759	5/8" BOLT	90 POUND FEET

7/12 A INTERNATIONAL TRUNNION HANGER  
70133

H-800A-42  
SINGLE POINT SUSPENSION  
42000 LBS. CAPACITY

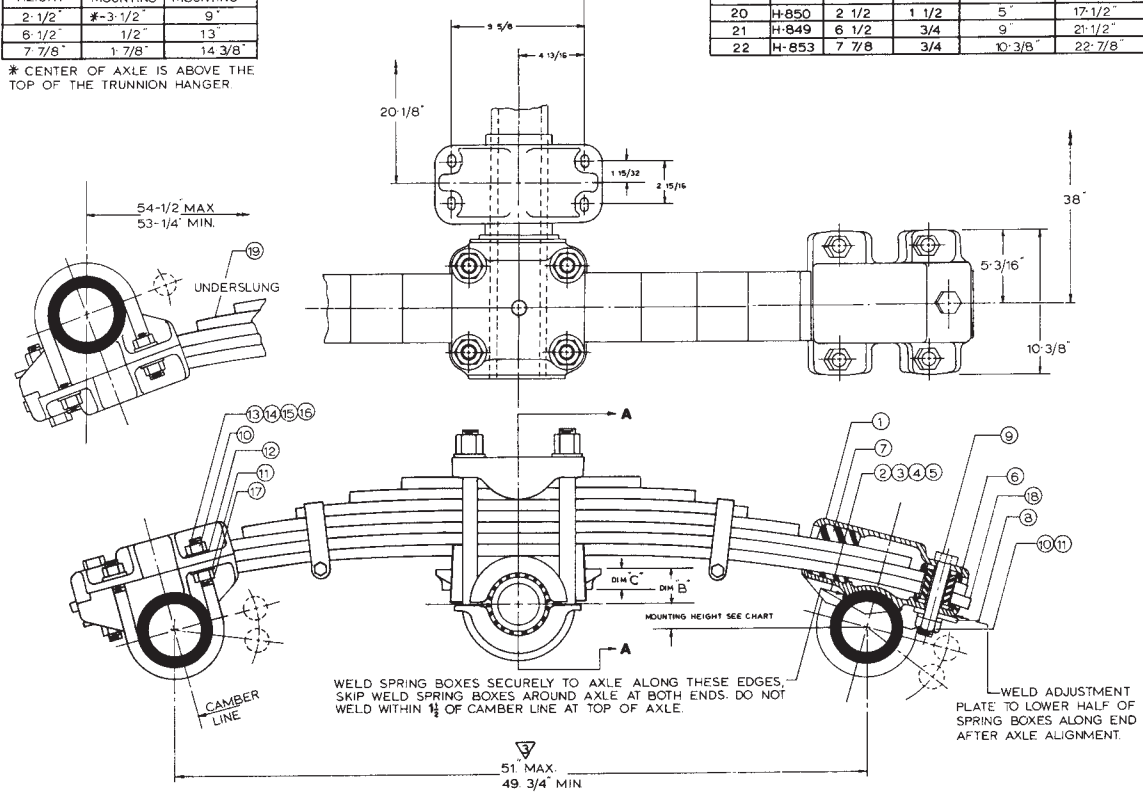
HATCHER & SON METAL PRODUCTS INC.  
INTERNATIONAL TRUNNION HANGER  
7/12 A

UNDERSLUNG MOUNTING HEIGHTS		
TRUNNION HANGER HEIGHT	STANDARD TRUNNION MOUNTING	OPTIONAL TRUNNION MOUNTING
2-1/2"	#-3-1/2"	9"
6-1/2"	1-1/2"	13"
7-7/8"	1-7/8"	14-3/8"

\* CENTER OF AXLE IS ABOVE THE TOP OF THE TRUNNION HANGER

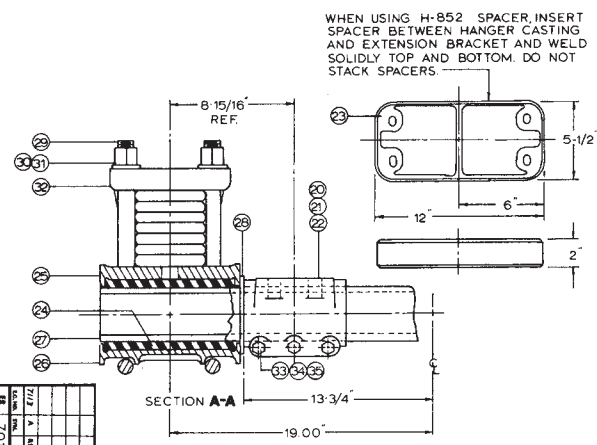
ALIGN TRUNNION SHAFT WITH KING PIN BEFORE BOLTING, WELD TRUNNION HANGER TO MOUNTING BRKT. OR SPACER ON ALL SIDES.

STANDARD MOUNTING HEIGHTS					
ITEM NO	PART NO	"B" DIM	"C" DIM	STANDARD TRUNNION MOUNTING	OPTIONAL TRUNNION MOUNTING
20	H-850	2 1/2	1 1/2	5"	17-1/2"
21	H-849	6 1/2	3/4	9"	21-1/2"
22	H-853	7 7/8	3/4	10-3/8"	22-7/8"



WELD SPRING BOXES SECURELY TO AXLE ALONG THESE EDGES. SKIP WELD SPRING BOXES AROUND AXLE AT BOTH ENDS. DO NOT WELD WITHIN 1/4 OF CAMBER LINE AT TOP OF AXLE.

WELD ADJUSTMENT PLATE TO LOWER HALF OF SPRING BOXES ALONG END AFTER AXLE ALIGNMENT.

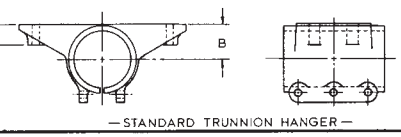
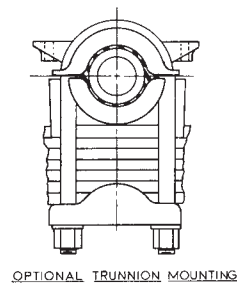


WHEN USING H-852 SPACER INSERT SPACER BETWEEN HANGER CASTING AND EXTENSION BRACKET AND WELD SOLIDLY TOP AND BOTTOM. DO NOT STACK SPACERS.

REQ'D	PART NO	ITEM	DESCRIPTION
4	H-805	1	SPRING BOX-UPPER HALF
	H-807-5	2	SPRING BOX-LOWER HALF- 5" RD AXLE
4	H-807-55	3	SPRING BOX-LOWER HALF-5-1/2" RD AXLE
	H-807-57	4	SPRING BOX-LOWER HALF-5-3/4" RD AXLE
	H-807-6	5	SPRING BOX-LOWER HALF-6" RD AXLE
8	H-813	6	RUBBER PAD-WITH HOLE
8	H-814	7	RUBBER PAD-WITHOUT HOLE
4	H-816	8	ADJUSTMENT PLATE
4	H-719A	9	HEX HEAD BOLT 1-14 x 5-3/8"
20	H-736	10	HEX LOCK NUT 1-14
12	H-774	11	LOCKWASHER 1 SHAKEPROOF
16	H-774A	12	WASHER 1" PLAIN
	H-840-1	13	U-BOLT 3/4" DIA. 5" RD AXLE 8-1/4" LG
8	H-840-2	14	U-BOLT 1" DIA. 5-1/2" RD AXLE 9-1/16" LG
	H-840-3	15	U-BOLT 1" DIA. 5-3/4" RD AXLE 9-5/16" LG
	H-840-4	16	U-BOLT 1" DIA. 6" RD AXLE 9-9/16" LG
8	H-870	17	HEX NUT 1-14
2	H-847	18	SPRING ASSEMBLY - 7 LEAF STD.
	H-872	19	SPRING ASSEMBLY - 7 LEAF FOR UNDERSLUNG
2	H-850	20	TRUNNION HANGER - 2-1/2" HIGH
	H-849	21	TRUNNION HANGER - 6-1/2" HIGH
	H-853	22	TRUNNION HANGER - 7-7/8" HIGH
	H-852	23	SPACER - TRUNNION HANGER - 2"
2	H-890	24	RUBBER BUSHING - TRUNNION HUB
2	H-891	25	TRUNNION HUB - UPPER HALF
2	H-892	26	TRUNNION HUB - LOWER HALF
1	H-893-1	27	TRUNNION TUBE
2	H-834	28	RETAINER WASHER
4	H-835-2	29	U-BOLT TRUNNION HUB 15-1/8" LG
8	H-836	30	HEX NUT ( HIGH ) 1-7/8-12
8	H-837B	31	WASHER 1-1/8" PLAIN
2	H-820	32	SPRING CLAMP PLATE
6	H-759	33	HEX HEAD BOLT 5/8-16 x 4-3/4"
6	H-37	34	HEX NUT 5/8-16
6	H-229	35	LOCKWASHER 5/8" MED. SPRING

NOTES:

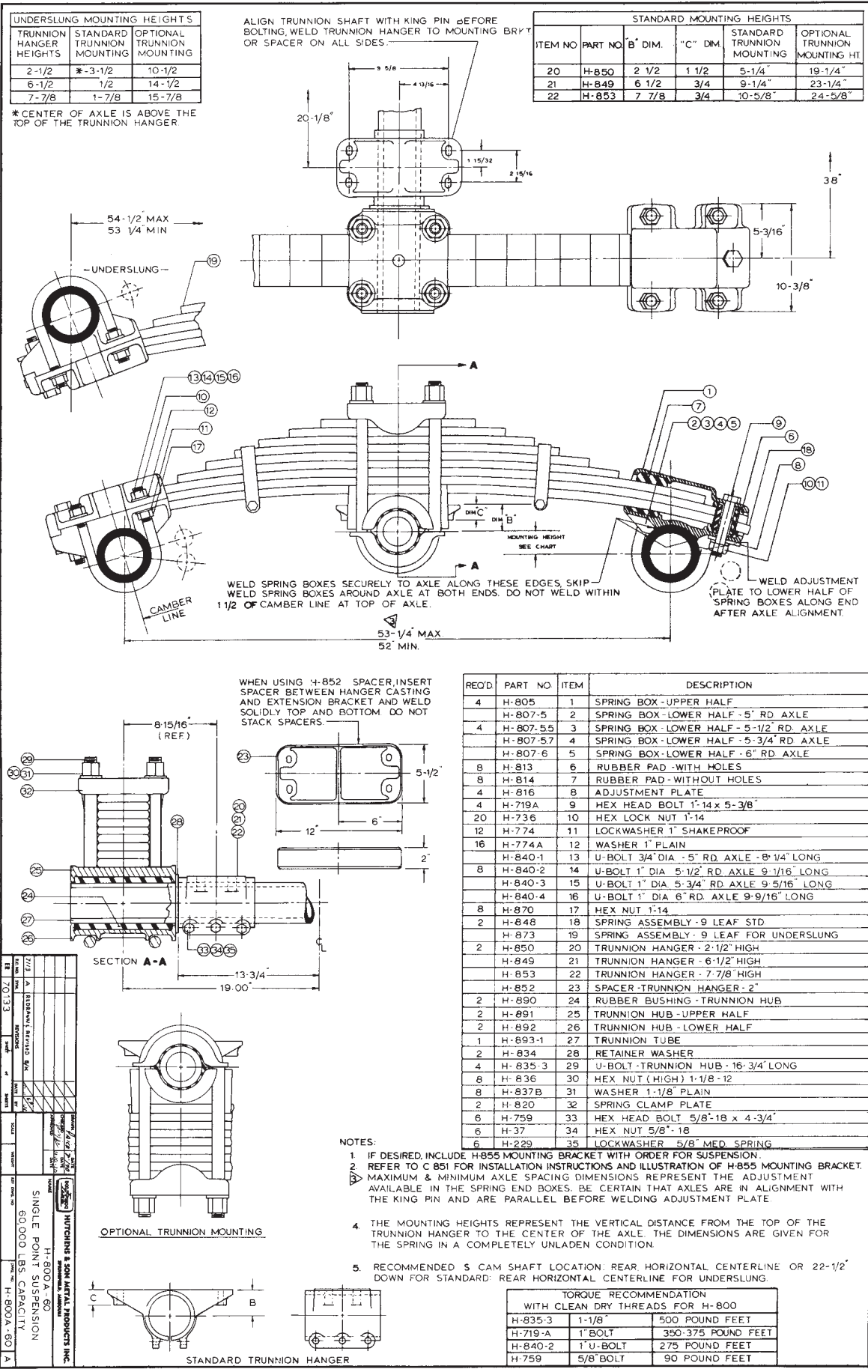
- IF DESIRED, INCLUDE H-855 MOUNTING BRACKET WITH ORDER FOR SUSPENSION.
- REFER TO C 851 FOR INSTALLATION INSTRUCTIONS AND ILLUSTRATION OF H-855 MOUNTING BRACKET. MAXIMUM & MINIMUM AXLE SPACING DIMENSIONS REPRESENT THE ADJUSTMENT AVAILABLE IN THE SPRING END BOXES. BE CERTAIN THAT AXLE ARE IN ALIGNMENT WITH THE KING PIN AND ARE PARALLEL BEFORE WELDING ADJUSTMENT PLATE.
- THE MOUNTING HEIGHTS REPRESENT THE VERTICAL DISTANCE FROM THE TOP OF THE TRUNNION HANGER TO THE CENTER OF THE AXLE. THE DIMENSIONS ARE GIVEN FOR THE SPRING IN A COMPLETELY UNLADEN CONDITION.
- RECOMMENDED S CAM SHAFT LOCATION: REAR, HORIZONTAL CENTERLINE OR 22-1/2" DOWN FROM STANDARD; REAR HORIZONTAL CENTERLINE FOR UNDERSLUNG.

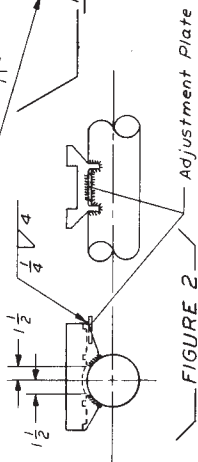
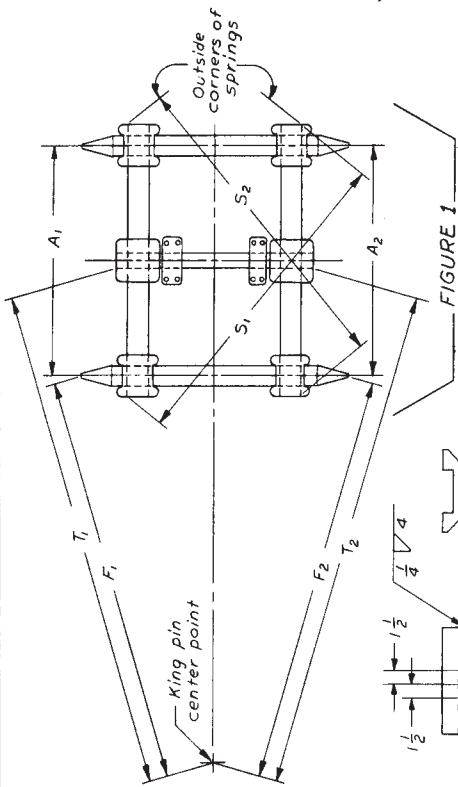


TORQUE RECOMMENDATION WITH CLEAN DRY THREADS FOR H-800		
H-835-2	1-1/8" U-BOLT	500 POUND FEET
H-719A	1" BOLT	350-375 POUND FEET
H-840-2	1" U-BOLT	275 POUND FEET
H-759	5/8" BOLT	90 POUND FEET

H-800-A-50  
 SINGLE POINT SUSPENSION  
 50,000 LBS. CAPACITY  
 HUTCHINGS & SON METAL PRODUCTS INC.  
 70133







1. Refer to assembly drawings H-800A-36, H-800A-42, H-800A-50 and H-800A-60 for detail component information, unit capacity, mounting height, and mounting dimensions.

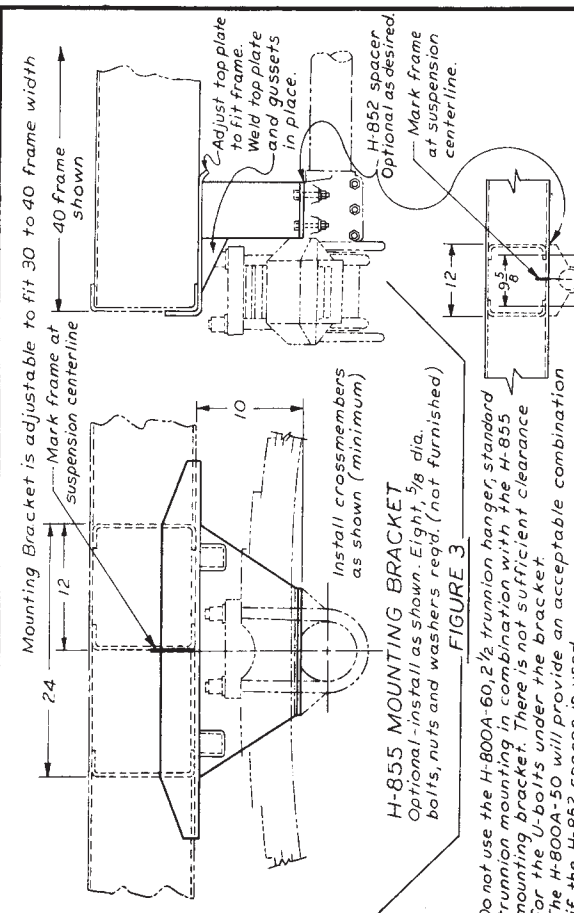
Before ordering suspension, it should be determined that there will be no interference between the desired H-800A suspension components and axle or brake components. See the proper assembly drawing for recommended camshaft location. Unless otherwise specified, springs will be pre-assembled on the trunnion tube at 38" spring centers.

2. Inspect suspension assembly to be certain that the spring alignment has not been destroyed during shipment.

Disassemble the spring end boxes and measure the distance between the full length leaves at each end. To be certain that the springs are perpendicular to the trunnion tube, dimensions  $S_1$  and  $S_2$  (Fig. 1) must be equal. If spring alignment must be corrected, loosen trunnion hub section by backing off the nuts on the trunnion hub U-bolts approximately 2 revolutions. It may be necessary to use a hydraulic jack to reposition springs. With springs properly aligned, torque the trunnion hub U-bolts to 500 pound feet.

3. Locate axle centerline making sure that axle camber is up. The center of the axle may be located by measuring between the brake flanges and marking the center mid-way between. Place spring end boxes (lower half) on axle equi-distant from centerpoint, with the same spacing as the suspension springs. To check this spacing, all spring end boxes should measure the same distance from adjacent brake flanges. Rack spring boxes in place on axles and check with level to insure that boxes are parallel. Weld spring boxes to axle using procedure outlined in figure 2.

4. Determine suspension location on trailer frame and measure from king pin to outside of frame on each side for proper alignment and mark frame for suspension centerline. Minimum frame reinforcement



recommendations are illustrated in figs. 3 and 4. Install mounting bracket if used and or prepare frame for bolting trunnion hanger. Refer to assembly drawing for bolting pattern. Frame mounting bolts are to be furnished by installer.

Bolt trunnion hanger to mounting bracket or trailer frame. Do not tighten bolts. Align trunnion tube with king pin, see fig. 1 dimension  $T_1$  and  $T_2$  must be equal. Tighten 5/8" trunnion hanger bolts to 90 pound feet and re-check trunnion tube alignment. Weld trunnion hanger securely to mounting bracket or trailer frame. When using H-852 spacer weld solid both to trunnion hanger and frame member. **DO NOT STACK SPACERS.**

5. Assemble spring end boxes to springs and axles. Tightening fasteners only enough to hold components in place. If specific axle spacing is desired, position front axle so that its distance from the centerline of the trunnion tube is one-half the desired axle spacing. Align the front axle with the king pin so that  $F_1 = F_2$ , see fig. 1. If the spring box fasteners are loose the axle may be moved forward or back at either end to accomplish alignment. Tighten the 1" diameter bolt and U-bolts sufficiently to prevent accidental mis-alignment. Align the rear axle with the front axle so that  $A_1 = A_2$ , see fig. 1. Re-check alignment of both axles and if true alignment has been accomplished torque fasteners per chart on assembly drawing. Weld adjustment

plate to the spring end box, see fig. 2. 6. Maximum allowable oscillation at trunnion hub should not exceed 15° above or below horizontal. Spring boxes are designed to accept bump-outs or stops which the installer should provide to assure tire clearance or to limit oscillation whichever becomes critical first. Check all fasteners to be certain that they are torqued to the recommended level as shown on the assembly drawing. Fastener torque should be checked after initial service and periodically thereafter.

For applications or situations not covered in this section, contact HUTCHENS & SON METAL PRODUCTS INC., ENGINEERING DEPARTMENT.

REVISE				REVISIONS				DATE BY			
REV.	NO.	BY	DATE	REV.	NO.	BY	DATE	REV.	NO.	BY	DATE

NO. REV.:	5-17-71	DATE:	5-17-71	CHECKED BY:	BJ	DRAWN BY:	BJ	MATERIAL:		
SHOW ALL BORES AND SHARP CORNERS THAT AFFECT APPEARANCE OR OPERATION										
HUTCHENS & SON METAL PRODUCTS INC. SPRINGFIELD, ARIZONA										
INSTALLATION INSTRUCTIONS H-800A										
SCALE:	AS SHOWN	WEIGHT:		SHEET:	1	OF:	1	REF. DWG. NO.:		