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AGSE-E166-G02

Trent 900 All Purpose Stand

For Air Transport in B747 Freighter

ORIGINAL MANUAL DATED.....01/14/2010

LATEST MANUAL REVISION LEVEL.....9/1/2023 (REV V)

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- Substitution of AGSE-supplied parts, including hardware, with an alternate source or supplier
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NOTE

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Unauthorized modifications void AGSE's and the OEM's (Engine and/ or Airframer) approval and authority to use the product for its intended application.

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1.0 – Revisions

PAGE	REV	DESCRIPTION OF CHANGE	DATE
5.1	V	Updated Figure 5.1-1	9/1/2023
8.10	V	Updated Item 14 & 16 Part Numbers	9/1/2023
8.31	V	Updated Item 5, 6, 7 & 8 Part Numbers	9/1/2023

2.0 Illustrations

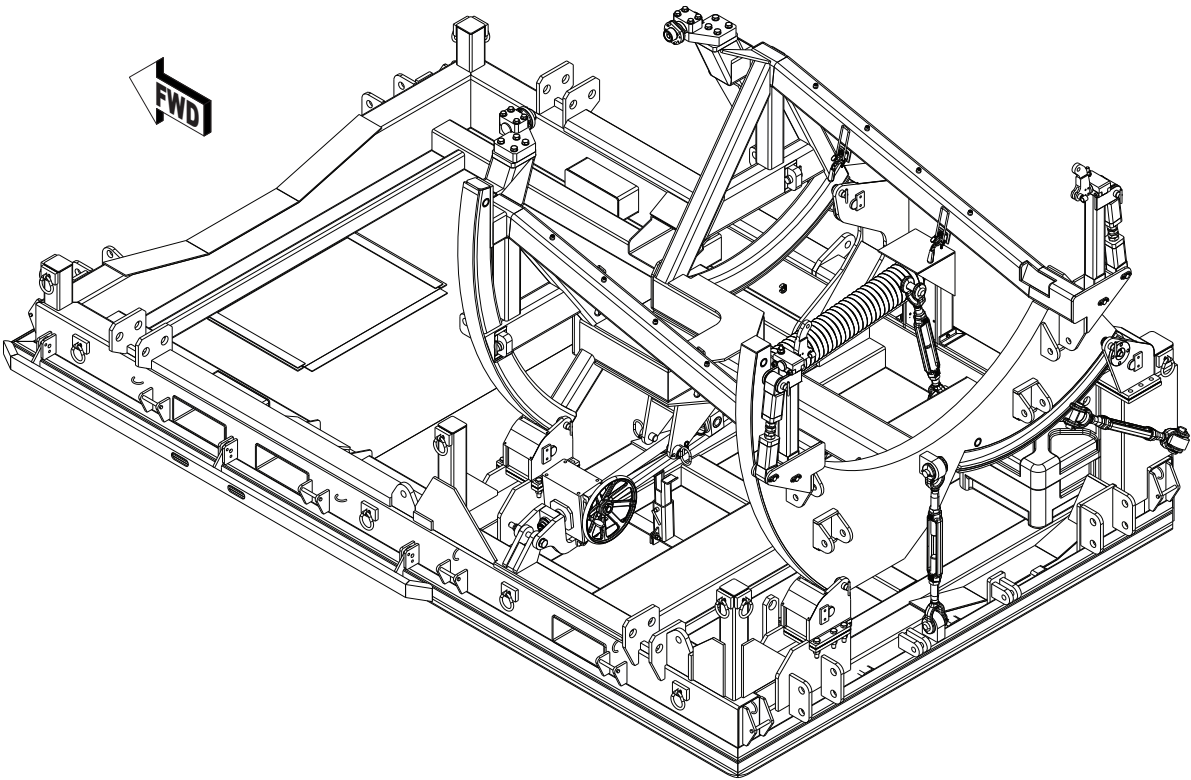


Figure 2.0-1 AGSE-E166-G02 Stand - Basic Configuration - View AFT Looking FWD

2.0 Illustrations (Continued)

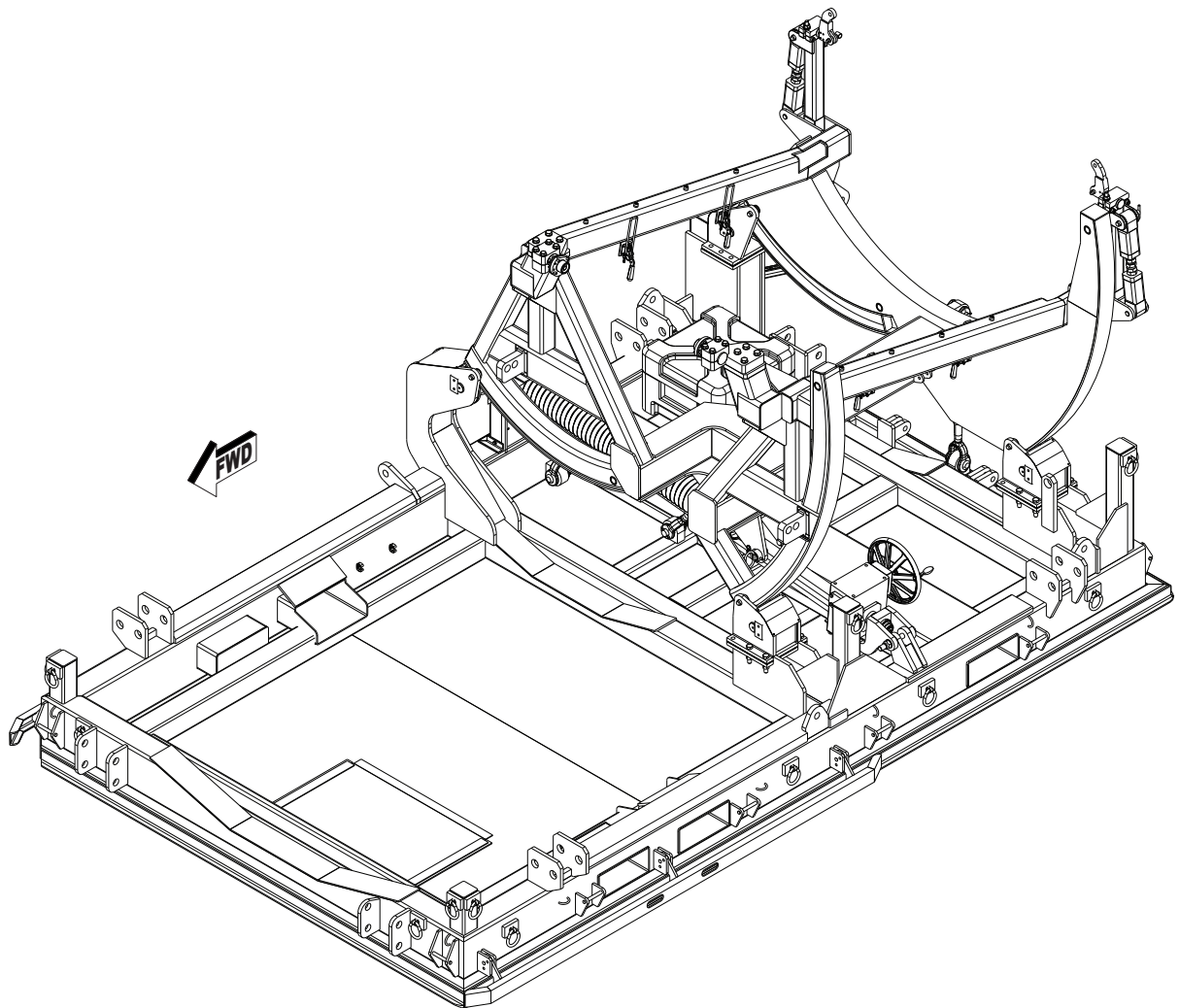


Figure 2.0-2 AGSE-E166-G02 Stand - Basic Configuration - View FWD Looking AFT

2.0 Illustrations (Continued)

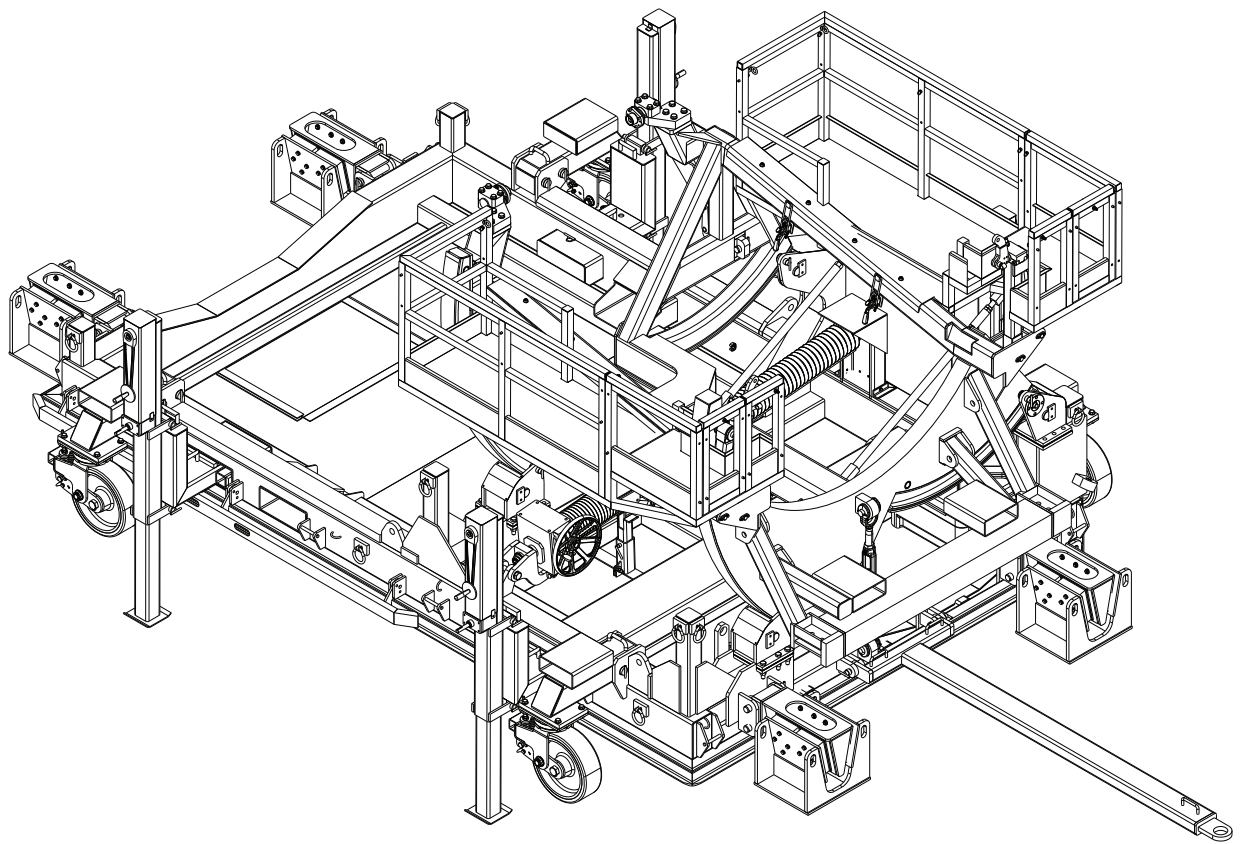


Figure 2.0-3 AGSE-E166-G02 Stand with All Optional Components

2.0 Illustrations (Continued)

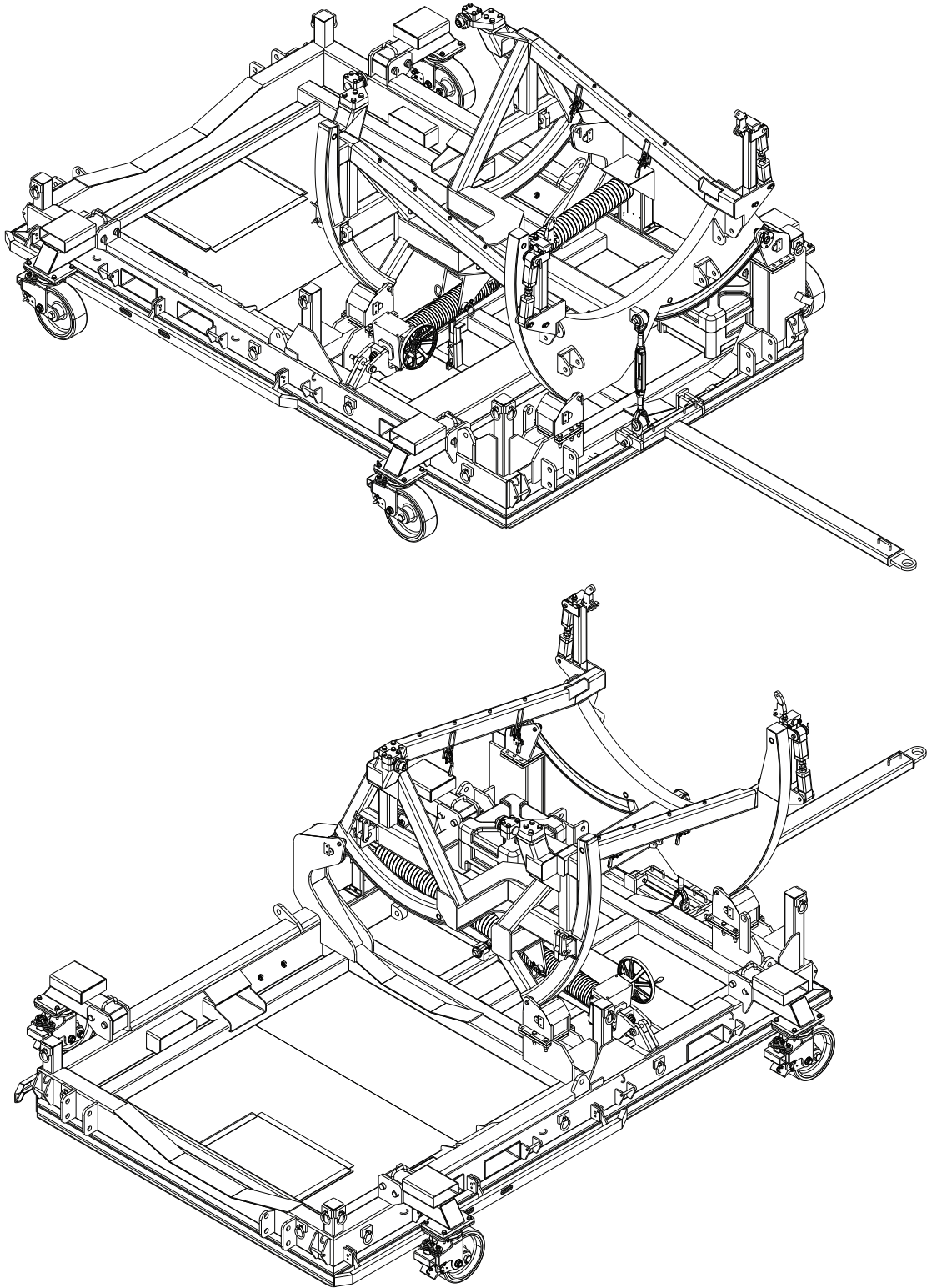


Figure 2.0-4 AGSE-E166-G02 Stand with Caster and Tow Bar Option

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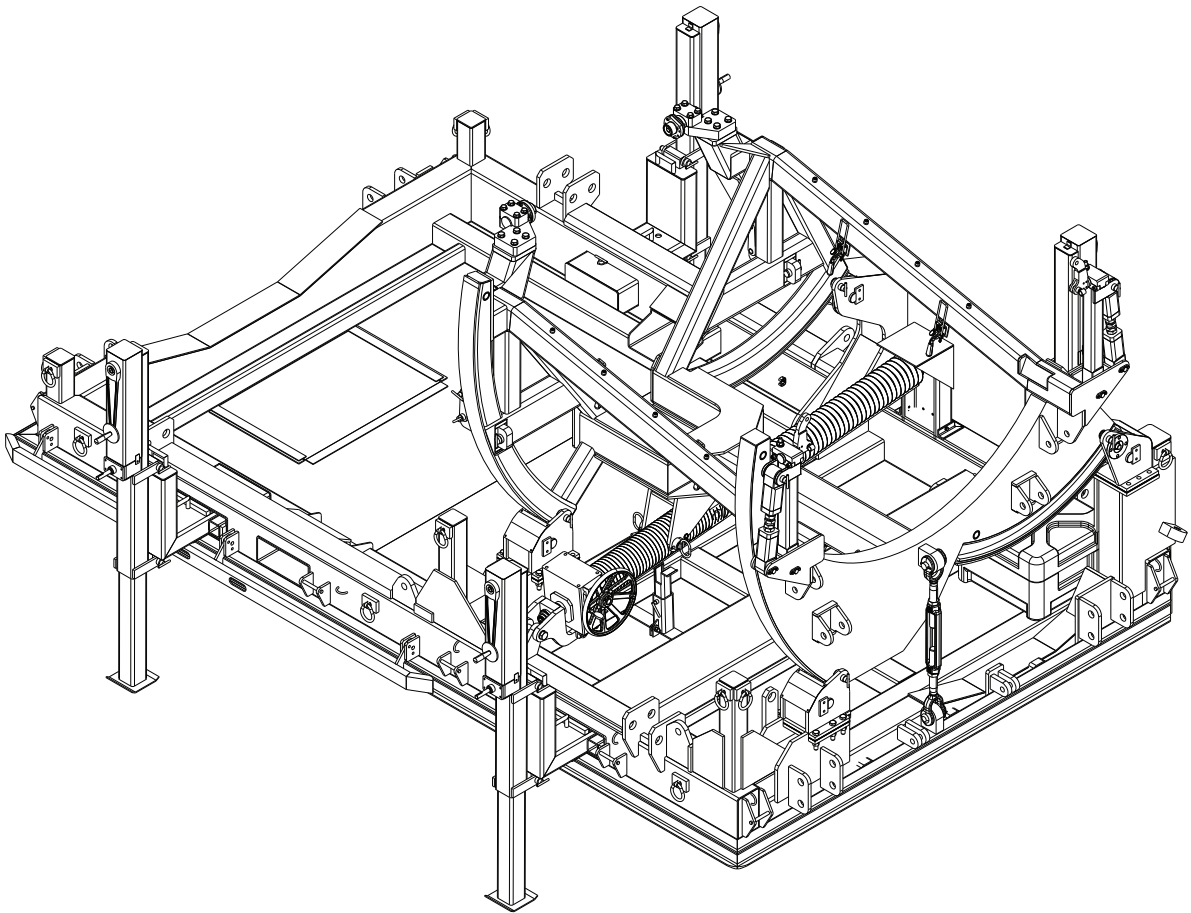


Figure 2.0-5 AGSE-E166-G02 Stand with Jacking Leg Option

2.0 Illustrations (Continued)

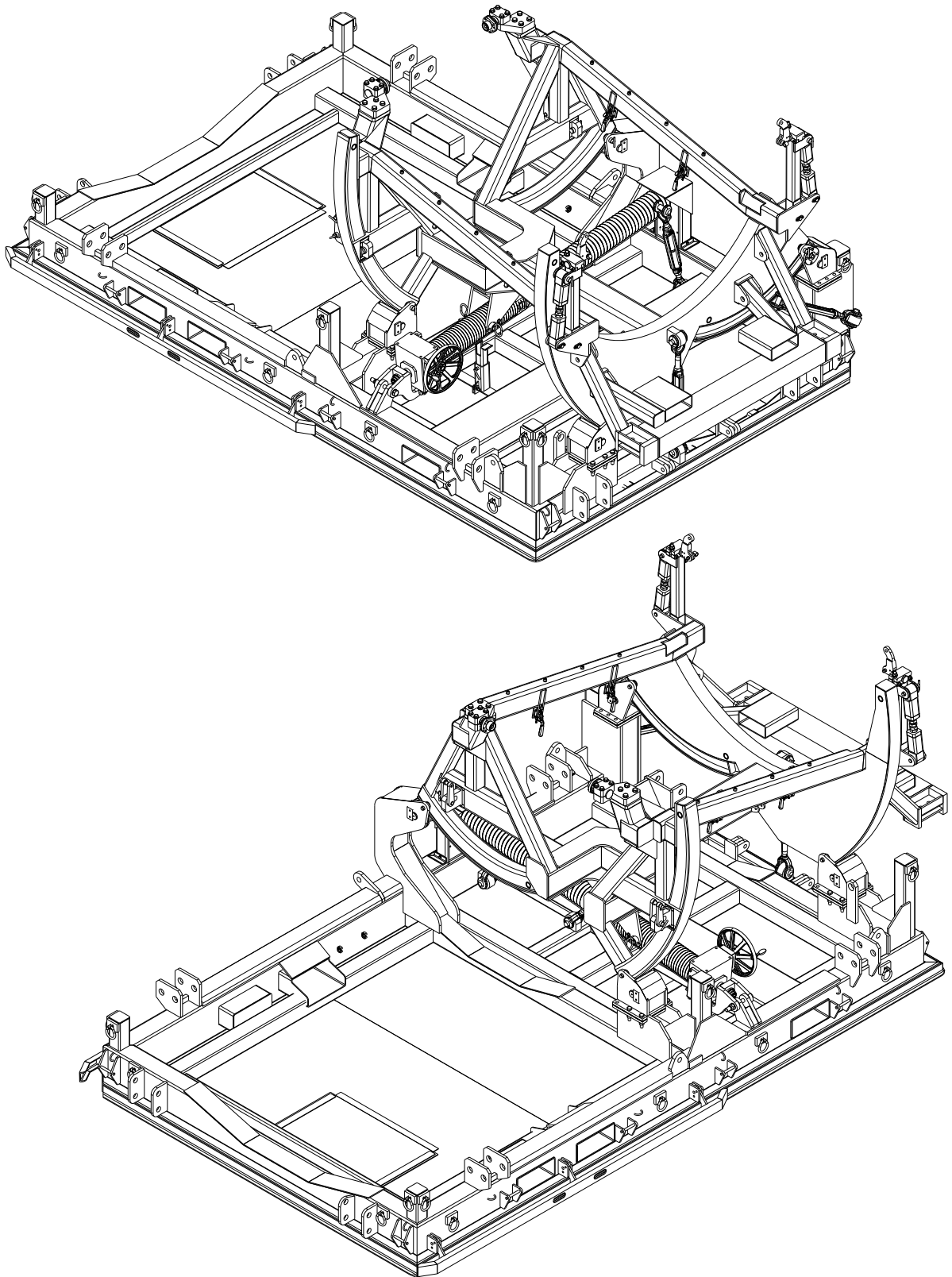


Figure 2.0-6 AGSE-E166-G02 Stand with Bootstrap Option

2.0 Illustrations (Continued)

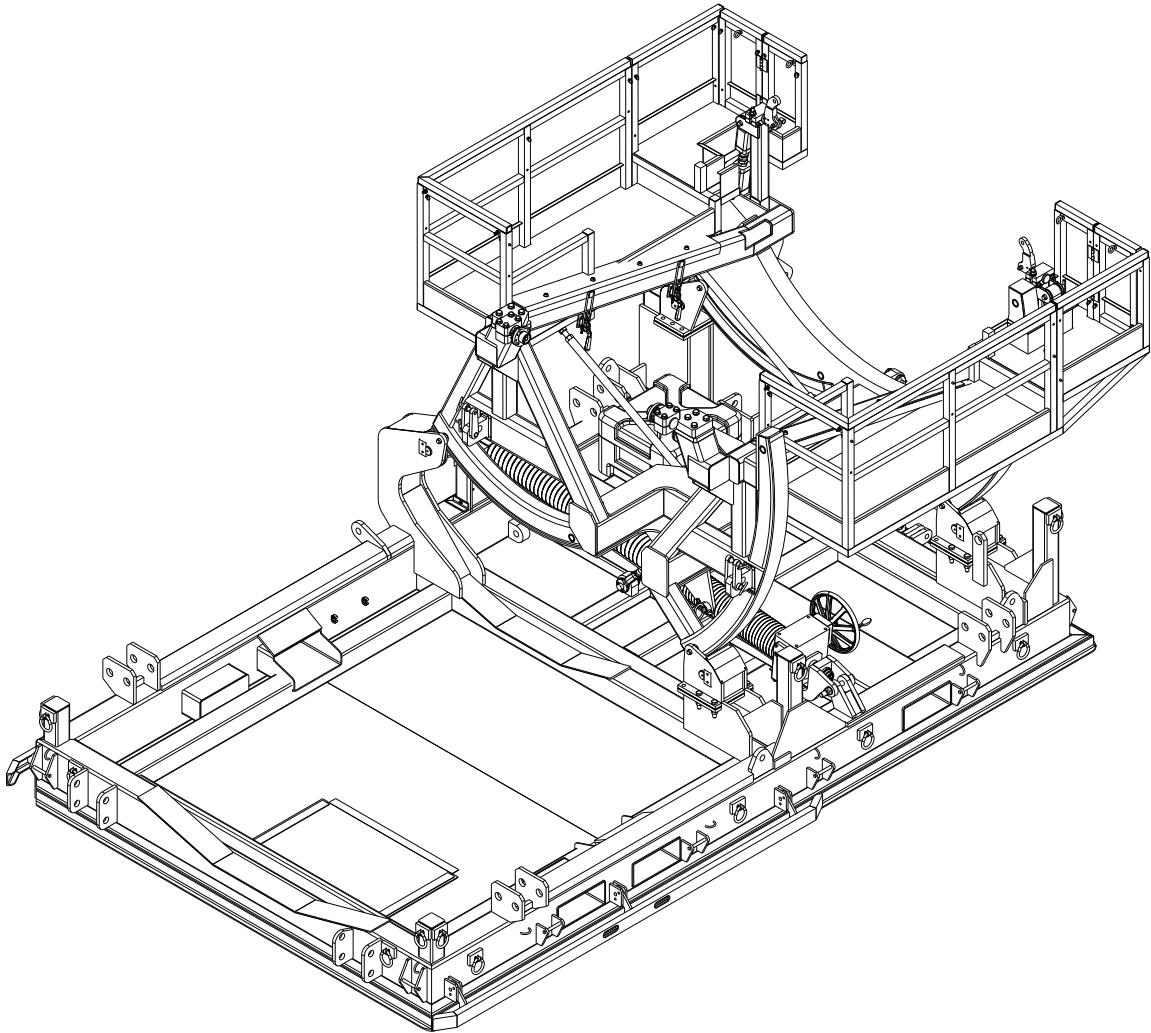


Figure 2.0-7 AGSE-E166-G02 Stand with Safety Kit Option

2.0 Illustrations (Continued)

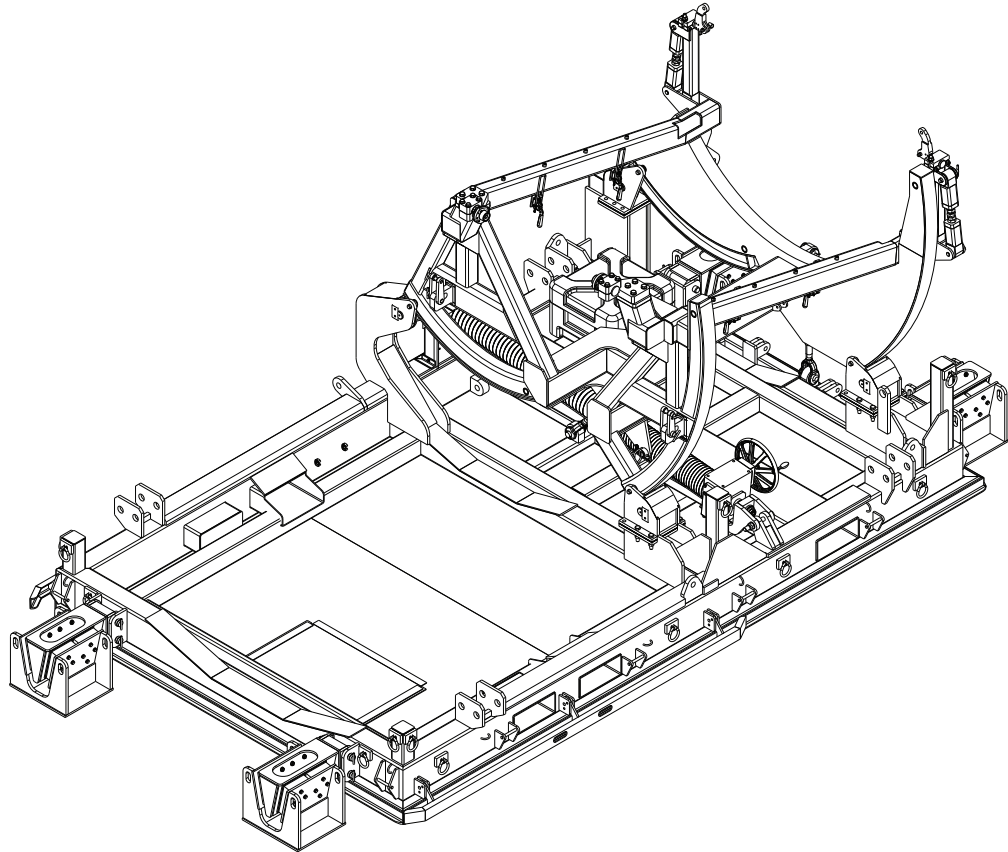
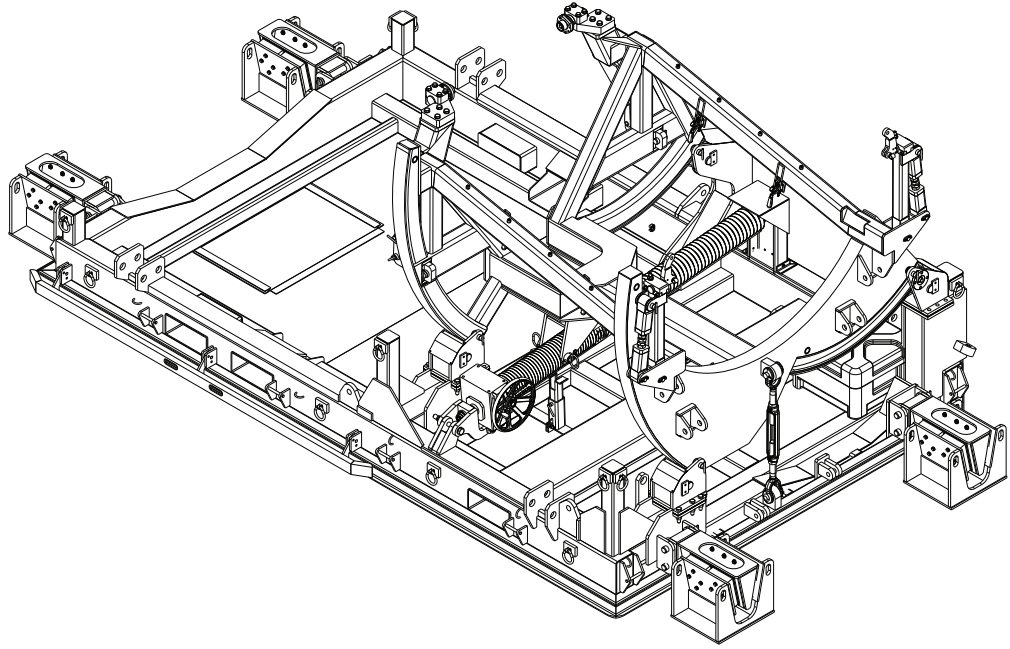


Figure 2.0-8 AGSE-E166-G02 Stand with Shock Mount Option

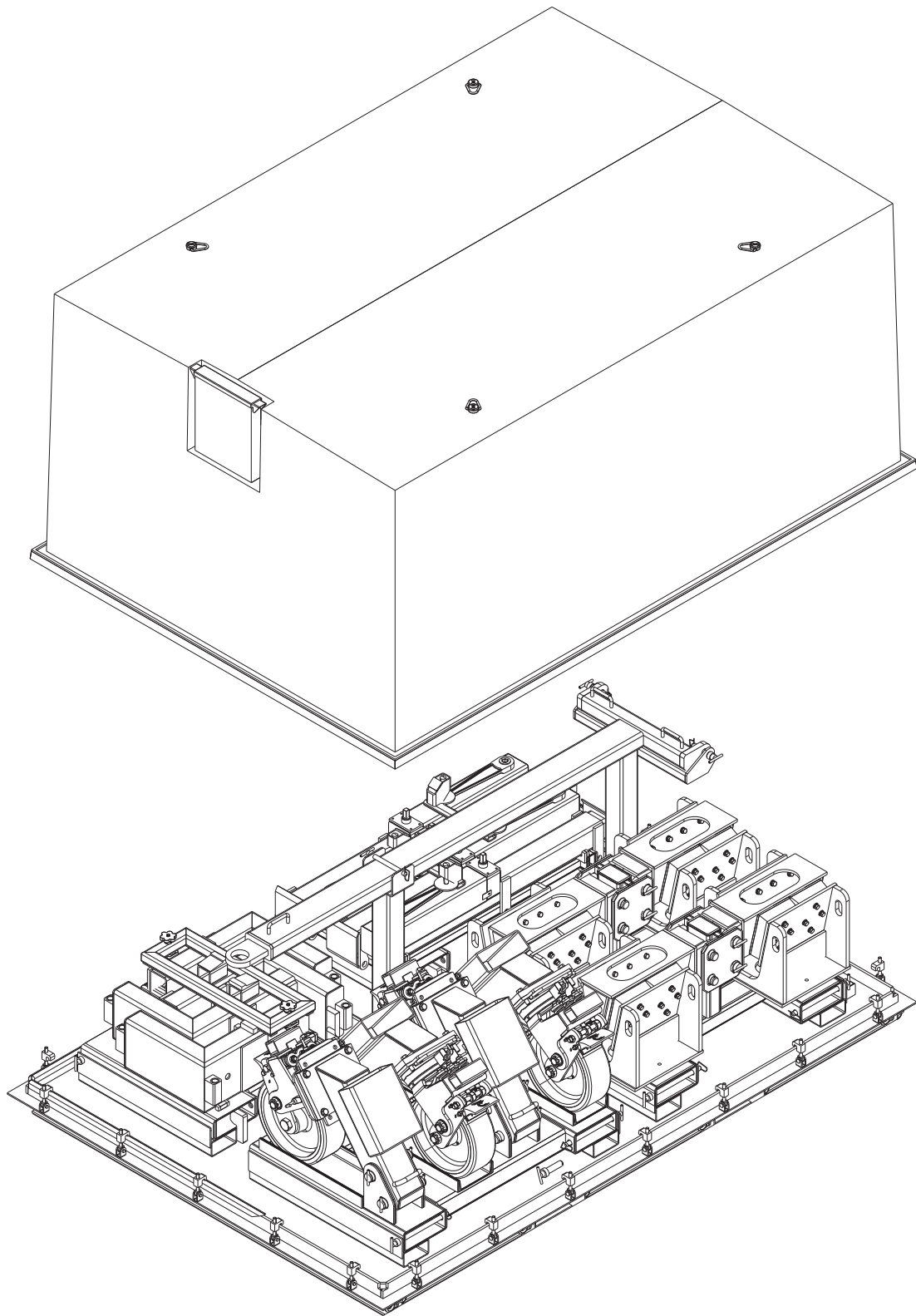


Figure 2.0-9 AGSE-E16625-S01 Optional Accessories Container

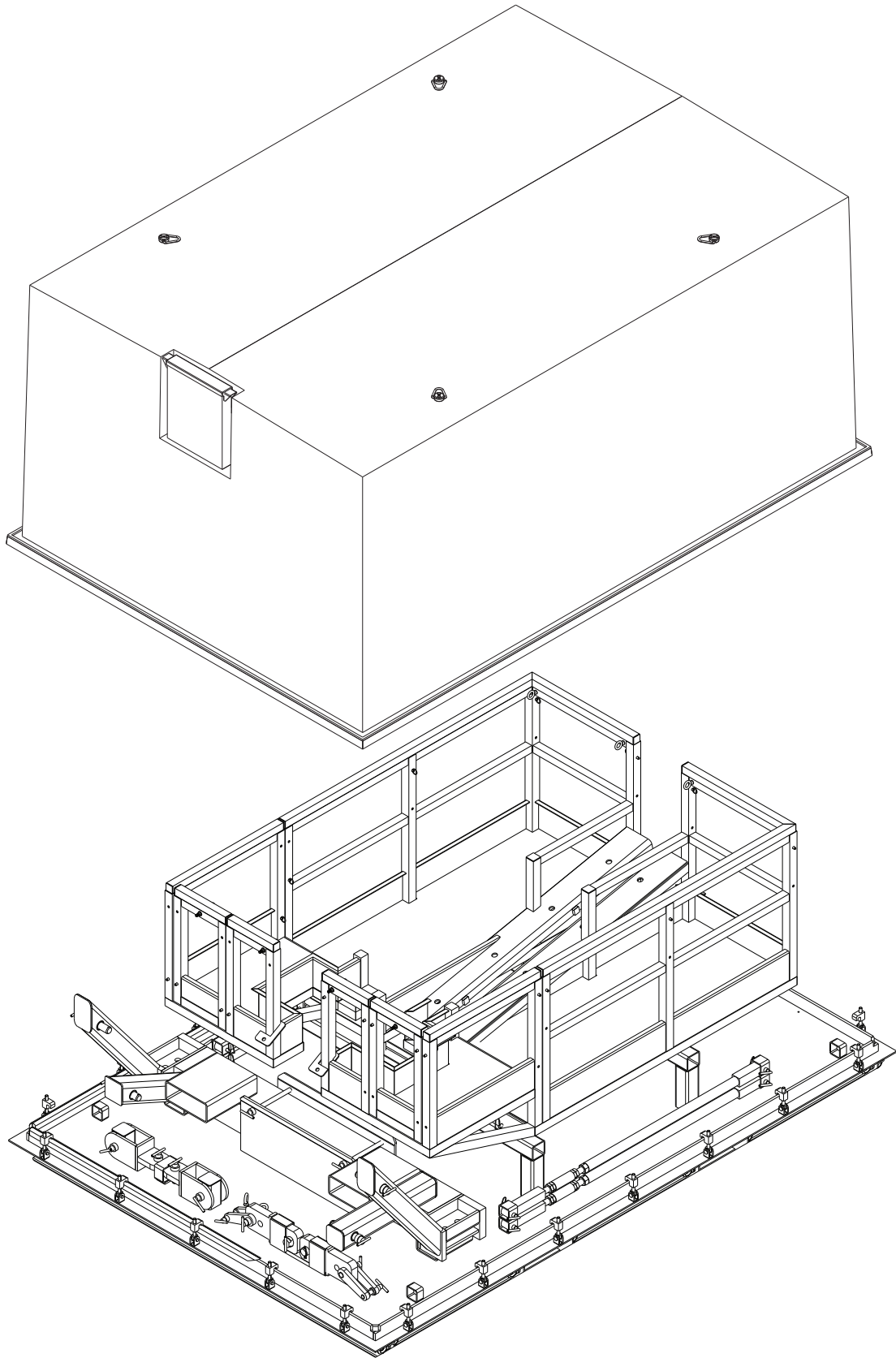


Figure 2.0-10 AGSE-E16640-S01 Bootstrap and Safety Kit Container

3.0 – Specification

3.1 General

The AGSE-E166-G02, Trent 900 All-Purpose Stand (APS), is specifically designed to accommodate the Trent 900 jet engine in a height restricted shipping mode. The stand is compliant with Rolls-Royce specification FDS 837. The stand (with engine) is suitable for air transport on the main deck of B747 Freighter aircraft and truck transport using optional external shock mounts. The stand includes a self-contained manual jackscrew for eccentrically rolling the engine 55° to achieve the minimum height and width to pass through the large side cargo door. Bootstrap adapters are included to interface with the A380 engine change system.

3.2 Mobility

The stand can be towed from the AFT end only. The stand with engine must be moved only by sling and/or shock absorbing truck or pallet dolly-loader. Sixteen (16) inch diameter casters, a jacking leg system to remove the stand (with or without engine) from a pallet dolly or loader and a personnel platform safety kit are available as optional equipment.

NOTE

If equipped with optional casters, the stand should only be towed on a smooth surface at a maximum speed of 3 MPH.

NOTE

Package is not ULD certified and must be lashed down to aircraft per Weights and Balance manual.

3.3 Design

The design, construction and integrity of this unit is in accordance with acceptable commercial manufacturing practices. All tests of the unit's design and structural integrity (proof load, fit & function, hoist tests, etc.) are completed on the first article and documented accordingly.

3.3.1 Base

The base is 125"x196" for air transport of the entire stand, with or without engine. Base features include fork lift access, side guides to center the stand in cargo doorway, storage container.

3.3.2 Cradle

The unit is capable of rotating the cradle a total of 55° which lowers the engine center line a total of twenty-six inches (26”) to accommodate the “Low Profile” features of the unit. Activation of the rotation feature is by manual ball screw actuator, with a friction type drag brake.

CAUTION

Engine must be properly configured during rotation, otherwise engine damage may occur. See Operation section 5.1 for rotation procedures.

The cradle, with or without engine, pins securely in place in both “RAISED” and “LOWERED” configurations.

3.4 Forkliftability

The forklift tubes, 5-1/2” x 13-1/2” inside, are provided on both sides of the base. The fork tines must be at least 11 ft (3,35 m) in length. The stand can be lifted or moved by forklift ONLY WITHOUT ENGINE INSTALLED. Provided forklift blockers must be used when the engine is installed on stand.

3.5 Fabrication and Finish

The stand is fabricated from structural steel shapes conforming to ASTM A500, A513, and A36 materials. All bolted connections use A325 structural bolts or SAE Grade 5 commercial hardware.

3.6 Construction and Finish

The unit is primed and painted with high grade, Skydrol resistant. Color is optional. Pins and miscellaneous hardware are corrosion resistant steel or plated as required.

3.7 Dimensions

	Without Engine	With Engine
Width	125.0 (in.)	133.0 (in.)
Height	86* (in.) 88** (in.)	150* (in.) 121.75** (in.)
Weight (Total)	11,000 (lbs.)	25,200 (lbs.)
Length	196.0 (in.)	201.3 (in.)

* Up Position

** Rolled Position

3.8 Optional Components

3.8.1 AGSE-E16637-S01 Caster and Tow Bar Kit (Figure 3.8-1)

Weight: (Caster) 265 Lbs. each (estimated)

Weight: (Towbar) 75 Lbs. (estimated)

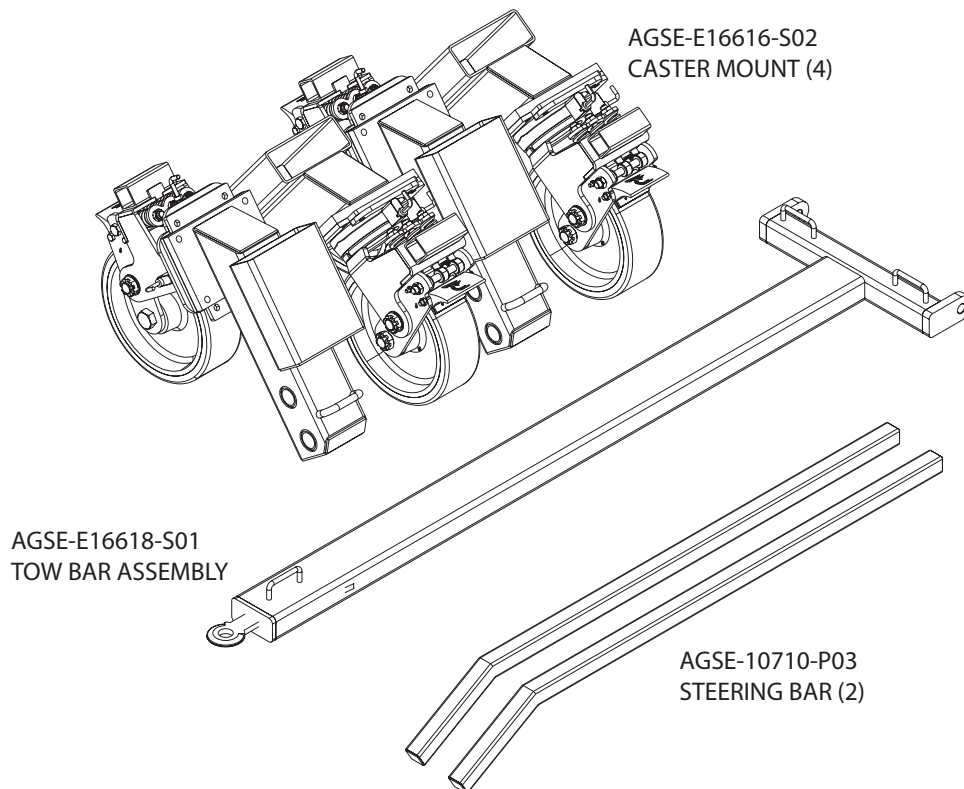
Description: The caster and towbar set includes four (4) casters and a single towbar. Each caster has a 16” diameter wheel, face brake, 4 position swivel lock.

This caster set has the capacity to allow a stand and full engine, including inlet cowling to be locally towed, up to 3MPH.

NOTE

The stand needs to be lifted up either with a forklift or optional jacking leg set for caster installation.

The tow bar attaches to the AFT end of the stand.



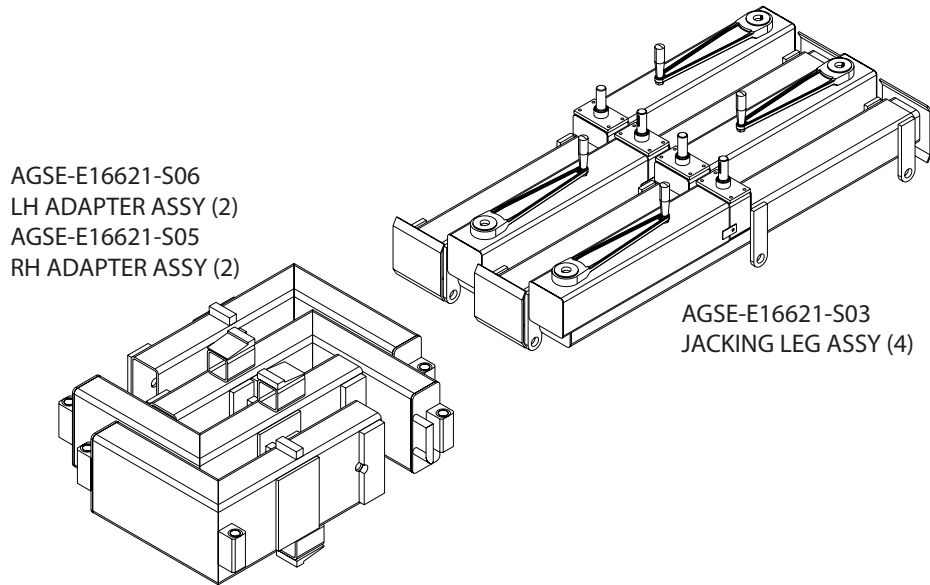
AGSE-E16637-S01 CASTER AND TOW BAR KIT

*Figure 3.8-1 Optional AGSE-E16637-S01 Caster and Tow Bar Kit
(See IPB Figure 6 For Details)*

3.8.2 AGSE-E16621-S07 Jacking Leg Kit (Figure 3.8-2)

Weight: 415 Lbs. each Jacking Leg and Adapter (estimated)

Description: The Jacking Leg Kit includes four (4) individual jacking leg assemblies with the capacity to lift a stand with complete engine including inlet cowl and plug-in adapters. This allows for the stand to be placed on, or removed from, a pallet loader or dolly. It also allows the stand to be lifted for the caster set (or jacking leg set) to be attached or removed. Each leg incorporates a self-contained, hand-powered jack with a 42" Stroke and a 7" x 16" foot pad.



AGSE-E16621-S07 JACKING LEG KIT

*Figure 3.8-2 Optional AGSE-E16621-S07 Jacking Leg Kit
(See IPB Figure 7 For Details)*

3.8.3 AGSE-E16620-S02 Shock Mount Kit (Figure 3.8-3)

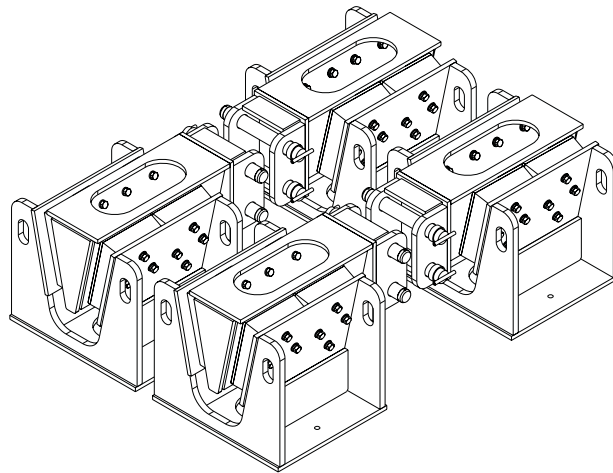
Weight: 150 Lbs. each (estimated)

Description: The Shock Mount Kit includes four (4) individual pin-on shock mounts and is designed to protect the engine during transportation. The mounts attach to the stand frame base using pins for quick and easy installation and removal.

NOTE

The stand needs to be lifted up either with a forklift or optional jacking leg set for shock mount installation.

Each foot contains four (4) elastomer shock absorbing shock pads tuned to a frequency 7~10 Hz to protect the engine from damage during road transportation on a non-air ride trailer.



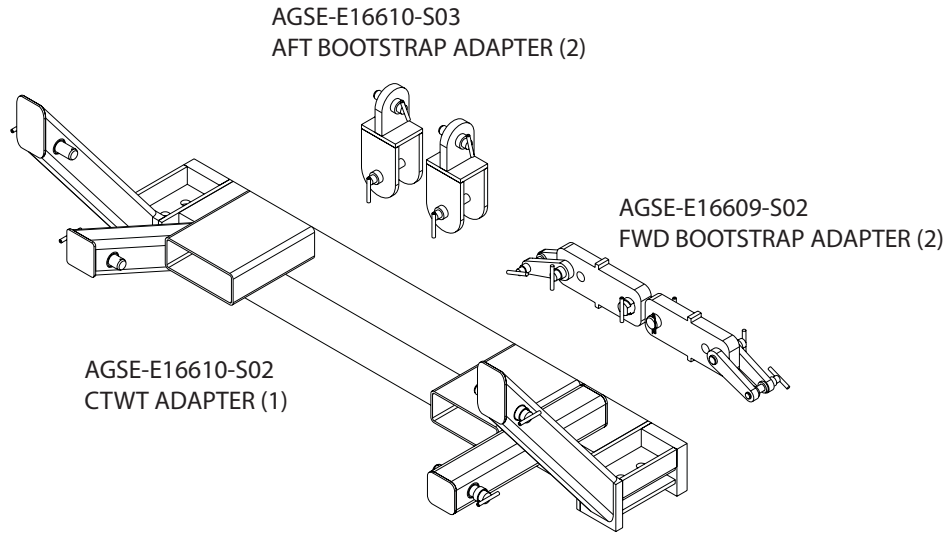
AGSE-E16620-S02 SHOCK MOUNT KIT

*Figure 3.8-3 Optional AGSE-E16620-S02 Shock Mount Kit
(See IPB Figure 10 For Details)*

3.8.4 AGSE-E16642-S01 Bootstrap Kit (Figure 3.8-4)

Weight: 1,170 Lbs. (estimated)

Description: The Bootstrap Kit includes two (2) AFT bootstrap adapters, two (2) FWD bootstrap adapters and one (1) counterweight adapter.



AGSE-E16642-S01 BOOTSTRAP KIT

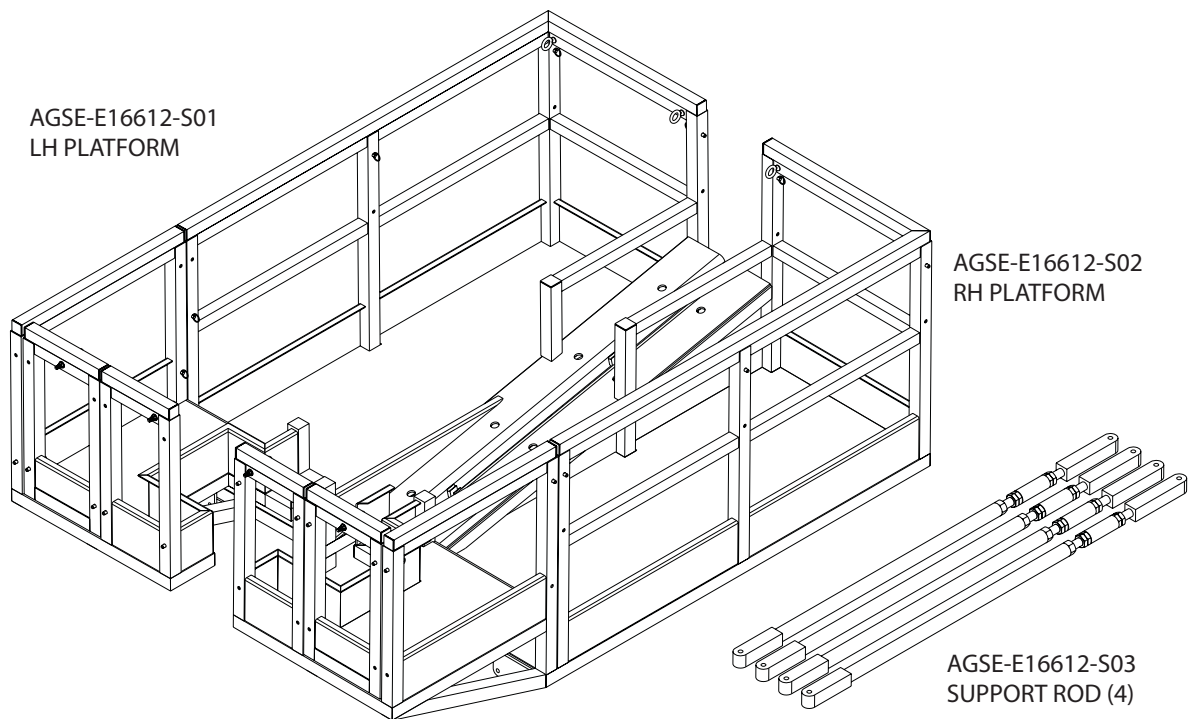
*Figure 3.8-4 Optional AGSE-E16642-S01 Bootstrap Kit
(See IPB Figure 8 For Details)*

3.8.5 AGSE-E16612-S04 Safety Kit Option (Figure 3.8-5)

Weight: 310 Lbs. (estimated)

Description: The Safety Kit is constructed from welded aluminum tubing and includes two (2) platforms (left and right) with adjustable braces and telescoping handrails. Each platform has an access gate at the AFT end and has the capacity of supporting three (3) persons on each side of the engine.

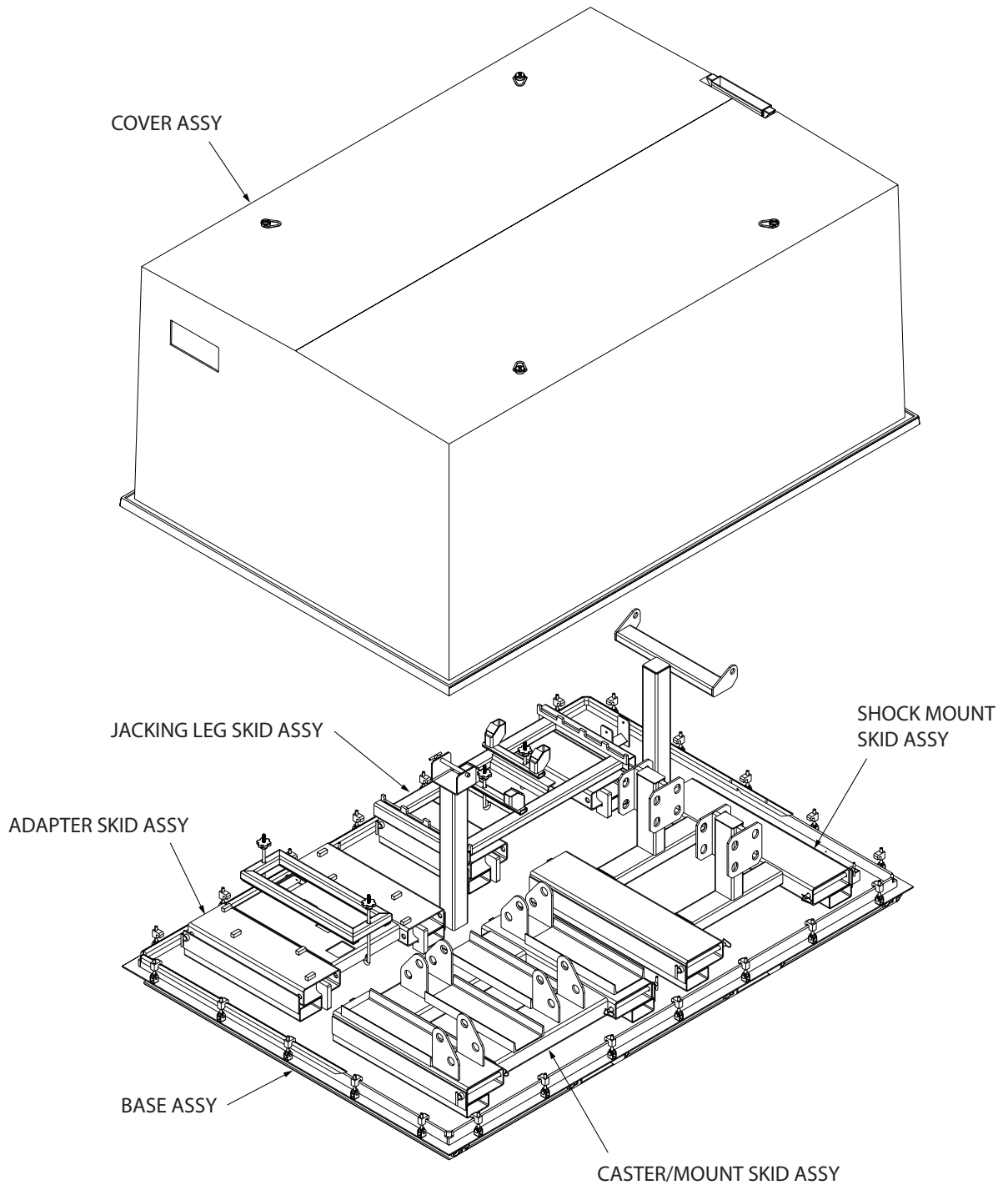
The Safety Kit is mounted on the cradle with pins for quick and easy installation and removal.



AGSE-E16612-S04 SAFETY KIT

*Figure 3.8-5 Optional AGSE-E16612-S04 Safety Kit
(See IPB Figure 11 For Details)*

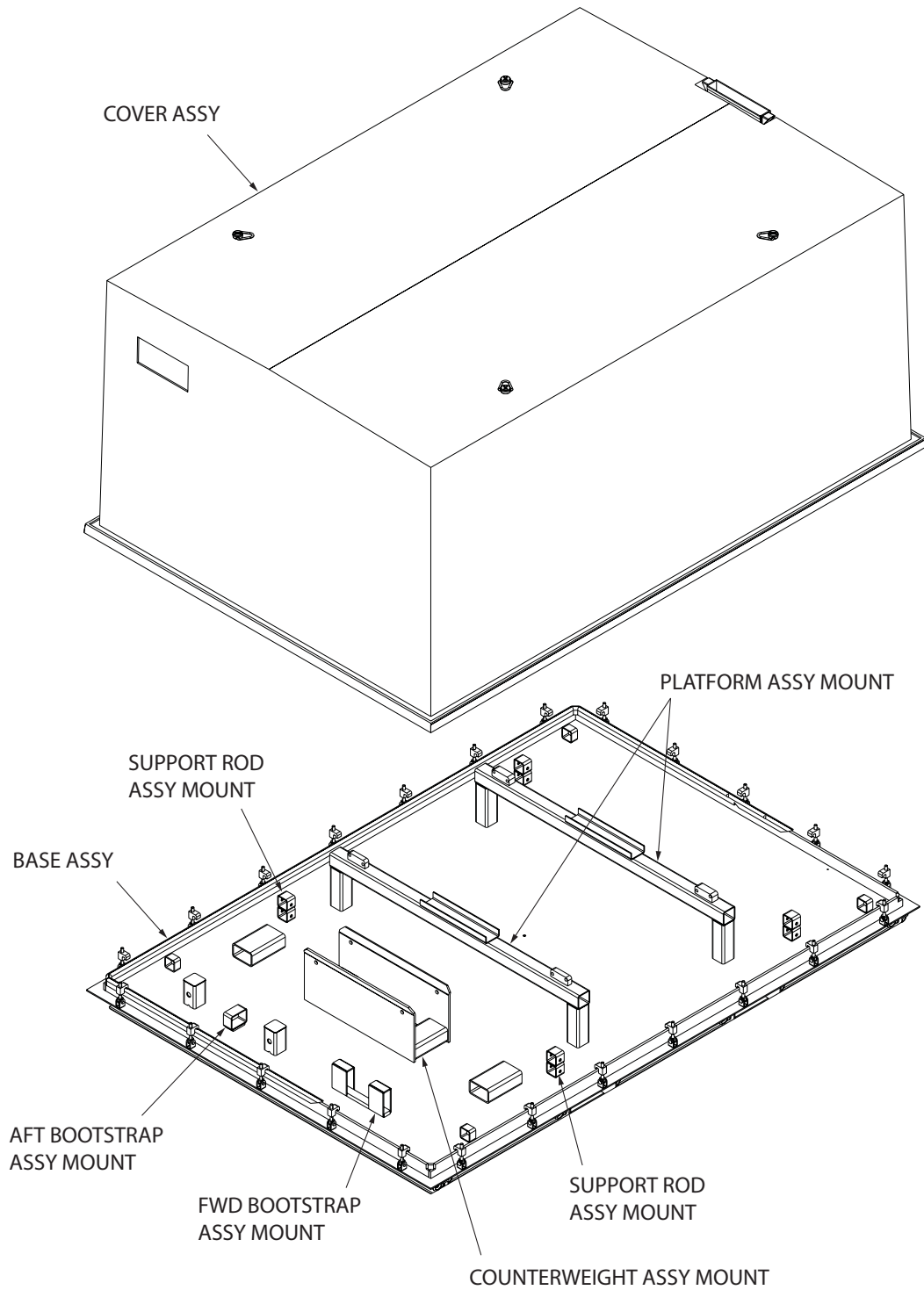
3.8.6 AGSE-E16625-S01 Accessories Container (Figure 3.8-6)



AGSE-E16625-S01 ACCESSORIES CONTAINER

Figure 3.8-6 Optional AGSE-E16625-S01 Accessories Container

3.8.7 AGSE-E16640-S01 Bootstrap And Safety Kit Container (Figure 3.8-7)



AGSE-E16640-S01 BOOTSTRAP AND SAFETY KIT CONTAINER

Figure 3.8-7 Optional AGSE-E16640-S01 Bootstrap and Safety Kit Container

4.0 – Maintenance and Inspection

4.1 General

Life expectancy of this equipment can be extended if it is properly maintained. By design, there is only minimal periodic servicing required. Annual inspections for damage, weld cracks, or corrosion are recommended. Prior to each use, this equipment should be inspected for obvious signs of abuse or shipping damage. Observed damage should require complete inspection of the affected area to ensure structural integrity is not compromised.

4.2 Cleaning and Painting

This equipment should be cleaned periodically with a soap and water solution and rinsed thoroughly.

CAUTION

Re-lubricate any mechanically moving parts and friction points where needed (bearings, shafts, grease zerk fittings etc.) after cleaning this equipment.

Damaged paint should be touched-up with Skydrol resistant high-grade enamel paint. Superficial scratches are expected during normal usage and will not affect function.

4.3 Scheduled Service

All bearings should be lubricated every 90 days with the following extreme pressure grease or equivalent grease:

Manufacturer	Product
Mobil Oil Company	Mobilplex E.P. #1
Texaco Oil Company	Texaco E.P. #1
Gulf Oil Corporation	Gulf Crown E.P. #1
Shell Oil Company	Shell Alavania E.P. #1

All non-painted machined surfaces should be coated with a light grade oil spray every 90 days. Spray with rust inhibitor LPS-3 (MIL-C-16173D, Gr. 2) or equivalent.

4.4 Scheduled Inspection

CAUTION

Prior to each use, this equipment should be inspected for obvious signs of abuse or shipping damage. Observed damage should require complete inspection of the affected area to ensure structural integrity is not compromised.

Annual inspections of machined surfaces, pins, fasteners and structure are recommended. The machined surfaces (wheels, axles, pivots) are to be visually inspected for signs of wear or corrosion. Action is to be taken immediately if areas are determined to be potentially dangerous to operating personnel, or a detriment to the equipment. Pins and fasteners are to be visually inspected for cracks, damage, or corrosion. Loose fasteners should be tightened. The structure is to be visually inspected for damage, weld cracks, or corrosion.

For stands equipped with the optional AGSE-E16620-S02 Shock Mount Option, the shock mounts are to be visually inspected for date, deterioration, separation from the mounting plate, or permanent deformation. AGSE recommends that shock mounts be replaced within five (5) years of the date marked on shock mounts.

CAUTION

Periodic inspections should be made and shock mounts must be replaced when any of the following conditions exist:

- 1. Shock mounts are more than five (5) years from the date marked.**
- 2. There is visible evidence of cracks.**
- 3. There are discolorations or deformations.**
- 4. Mount does not move or adjust during loading/unloading.**
- 5. There is debonding of the rubber mount from the shock attach plate.**

4.4-1. Torque Value Table

Bolt Diameter	Torque (Ft-Lbs)	Torque (N-M)
1/4	6	8,14
3/8	20	27,12
1/2	50	67,79
5/8	100	135,58
3/4	165	223,71
7/8	265	359,29
1	400	542,33

4.5 Friction Clutch Inspection and Maintenance

4.5.1 AGSE-E16626-S01 Cradle Jack Assembly (SN 115 Through SN 131)

The inspection and maintenance of the roll operation friction disc clutch (Figure 4.5-1), should be made before each use. All four (4) securing pins (IPB Fig. 1 - Item 17) of the cradle should be installed to prevent cradle rotation. Install wood blocks at the free end of the jack screw tube brace to maintain the jack current position. Then free the jack screw nut assembly to travel by removing the two (2) connecting pins (IPB Fig. 2 - Item 41 and 42, Figure 8.2-2). Rotate the jack screw hand wheel one (1) to two (2) turns and note the amount of force required. The force required to overcome the friction clutch and turn the hand wheel should be approximately 10 to 15 lbs. (45 to 67 N). Inspection and adjustment of the friction clutch assembly is required if there is little or no resistance felt when the hand wheel is rotated.

The friction disk (IPB Fig. 4 - Item 43) is seated in the AGSE-E16626-P10 brake plate (IPB Fig. 4 - Item 40) located between the gear box and hand wheel. Two (2) die springs (IPB Fig. 4 - Item 21) are installed in the brake plate to exert pressure on the disk and the hand wheel hub. Increasing the spring pressure increases the friction disk and force required to turn the hand wheel. (Figure 5.1-3).

Adjustment is made by removing the two (2) locking die spring cap screws located on the 1 face of the brake plate, then turning the internal die spring adjustment screws equally clockwise to increase pressure and counterclockwise to decrease pressure. After each adjustment, rotate the hand wheel one (1) or two (2) turns to determine the force required to turn the wheel. Once the above referenced resistance force can be felt, install the locking die springs and reconnect the jack screw nut assembly to the cradle rotation arm.

If the disk pressure cannot be adjusted to provide hand wheel resistance then the clutch assembly should be disassembled and visually inspected. Remove the hand wheel securing collar, hand wheel and friction disk. Inspect the friction disk surface for smoothness and replace as required or if the thickness is less than 0.063-inch (1,6 mm). Remove the four (4) die spring cap screws, adjustment screws and die springs to visually inspect for broken coils and replace as required. Install the die springs and adjustment screws to compress the spring approximately 0.25 inches (6,4 mm). Install the hand wheel with sufficient pressure to seat the hub surface on the friction disk then retain with the lock collar (IPB Fig. 4 - Item 20). Adjust the friction clutch as described in the previous paragraph.

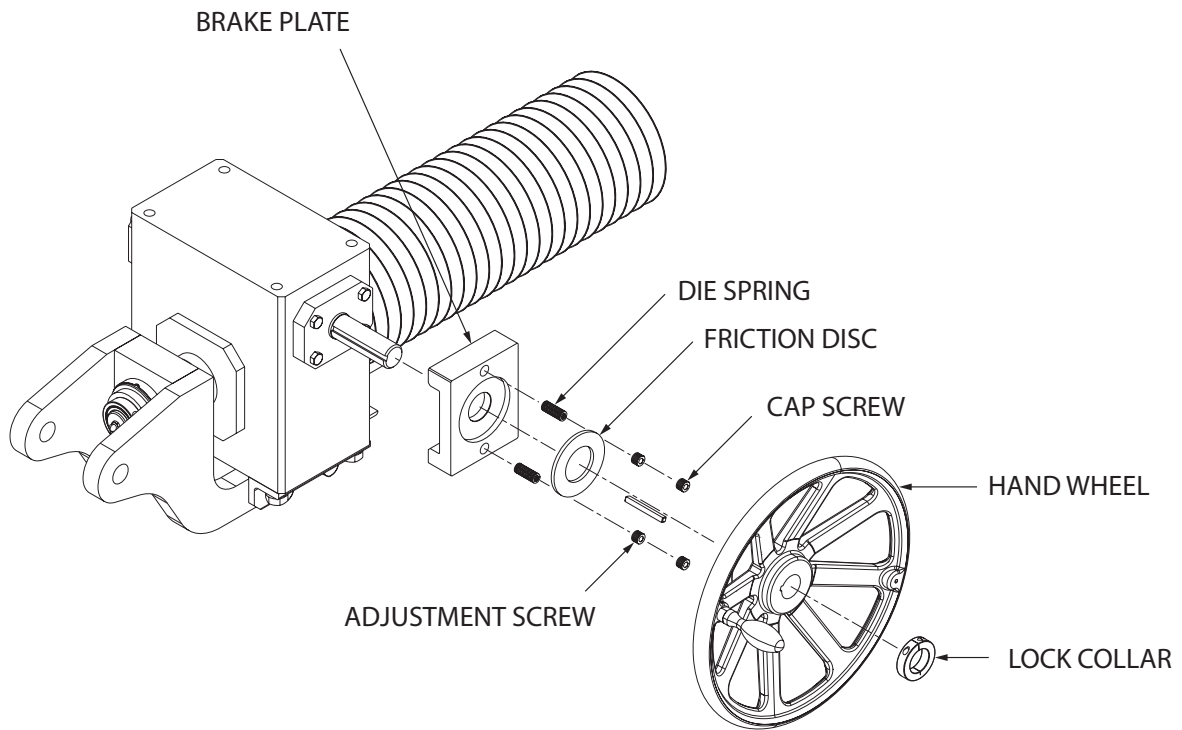


Figure 4.5-1 AGSE-E16626-S01 Cradle Jack Assembly

4.5.2 AGSE-E16626-S04 Cradle Jack Assembly

The inspection and maintenance of the roll operation friction disc clutch (Figure 4.5-2) should be made before each use. All four (4) safety pins (IPB Fig. 1 - Item 17) should be installed to prevent cradle rotation. Install wood blocks at the free end of the jack screw tube brace to maintain the jack current position. Then free the jack screw nut assembly to travel by removing the two (2) connecting pins (IPB Fig. 2 - Items 41 and 42). Rotate the jack screw hand wheel one (1) to two (2) turns and note the amount of force required. The force required to overcome the friction clutch and turn the hand wheel should be approximately 10 to 15 lbs. (45 to 67 N). Inspection and adjustment of the friction clutch assembly is required if there is little or no resistance felt when the hand wheel is rotated.

The friction disk (IPB Figure 4A - Item 43) is seated in the hand wheel pressure plate (IPB Fig. 4A - Item 40) located between the gear box and hand wheel. Two (2) compression springs (IPB Fig. 4A - Item 21) are installed in the pressure plate to exert pressure on the friction disk and the hand wheel hub. Increasing the spring pressure increases the friction resistance of the disk and force required to turn the hand wheel.

Adjustment is made by removing the two locking compression spring cap screws located at 90 and 270 degrees on the face of the brake plate, then turning the internal compression spring adjustment screws equally clockwise to increase pressure and counterclockwise to decrease pressure. After each adjustment, rotate the hand wheel one or two turns to determine the force required to turn the wheel. Once the above referenced resistance force can be felt, install the locking compression springs and reconnect the jack screw nut assembly to the cradle rotation arm.

If the disk pressure cannot be adjusted to provide hand wheel resistance then the clutch assembly should be disassembled and visually inspected. Remove the hand wheel retainer pin (IPB Figure 4A - Item 51), hand wheel and friction disk. Inspect the friction disk surface for smoothness/chips/cracks and replace if the thickness is less than 0.063-inch (1.6 mm). Remove the compression spring cap screws (2), adjustment screws (2) and compression springs (2) to visually inspect for broken coils and replace as required. Install the compression springs and adjustment cap screws to compress the spring approximately 0.25-inches (6.4 mm). Install the hand wheel with sufficient pressure to seat the hub surface on the friction disk then retain with the retainer pin (IPB Figure 4A - Item 51). Adjust the friction clutch as described in the previous paragraph.

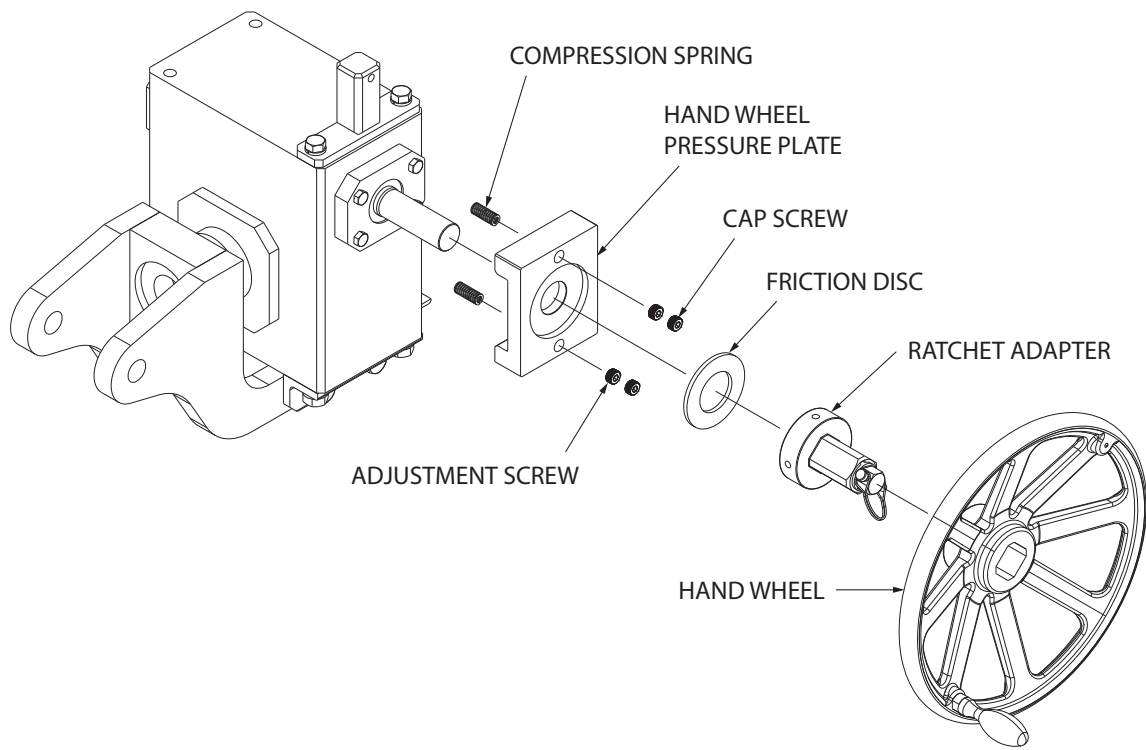


Figure 4.5-2 AGSE-E16626-S04

4.6 Optional Shock Mount Replacement

To replace an old shock mount:

1. Remove sixteen (16) 1/2" x 1" HHCS and sixteen (16) 1/2" washers (IPB Figure 16 - Items 6 and 7) to remove the AGSE-E16620-P02 shock mount arm (IPB Figure 16 - Item 2) from the AGSE-E16620-P01 shock mount base (IPB Figure 16 - Item 1). (Illustration Figure 4.7-1).
2. Remove the AGSE-S00304-P03 shock mount (IPB Figure 16 - Item 3) by removing four (4) 1/2" hex jam lock nuts and four (4) 1/2" flat washers (IPB Figure 16 - Items 5 and 6) securing the shock mount to the shock mount arm.
3. Install the new shock mount and secure with the hardware removed in steps 1 and 2.

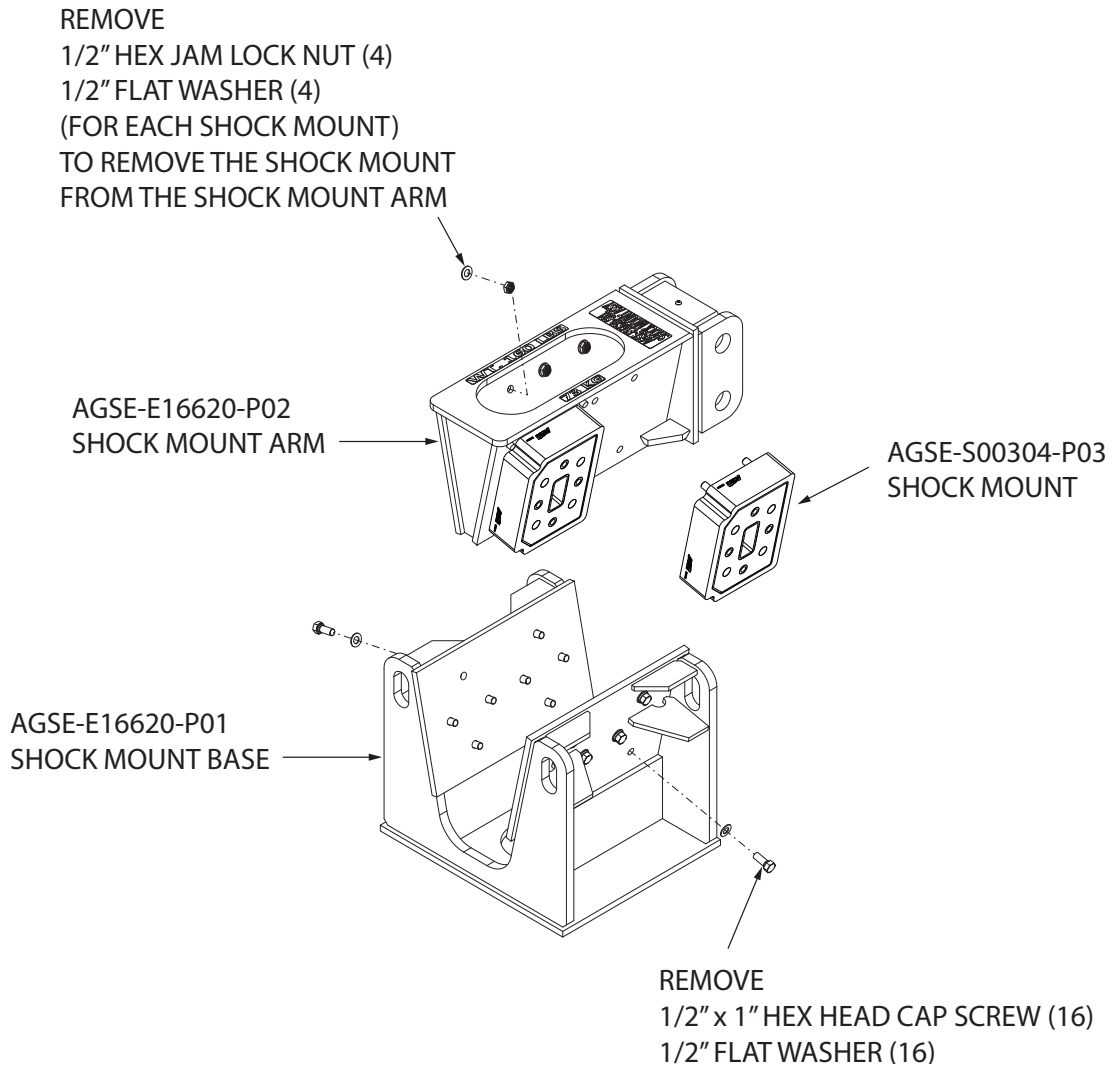


Figure 4.6-1 Shock Mount Replacement

4.7 General Maintenance Schedule

NOTE:

This Maintenance Schedule does not supersede the maintenance described in the equipment manual or by Customers' Company Maintenance Policy. Intervals indicated are recommendations only and should be altered to take into consideration usage factors and environmental conditions.

Component	Task to be Performed	Maintenance Intervals			
		Monthly	3 Months	6 Months	Yearly
General	Inspect for missing parts	1*			
	Inspect paint/plating finish			I	
	Inspect exposed/bare metal for rust		H		
	Function check equipment				2*
	Inspect all stencils/placards/stamps			I	
Casters	Check wheel condition			I	
	Tighten mounting bolts			T	
	Check swivel lock/brake			I	
	Lubricate bearings			L	
Structure	Inspect frame for damage/cracked welds			I	
	Tighten all bolts		T		
	Lubricate/protect moving joints		H	L	
Pins	Inspect for damaged/bent/worn pins			I	
	Inspect for broken/cracked pin handles			I	
	Inspect for broken/cut lanyards			I	
Shock Mounts	Check date				3*
	Inspect rubber for cracking/deformation			I	
	Inspect for permanent set/deformation			I	
Manual	Check manual is present/readable			4*	
	Check manual revision is current				5*

1* - Inspection for missing parts before every use.

2* - Carry out function test if equipment has not been used for extended period of time.

3* - AGSE recommends that shock mounts be replaced within five (5) years of the date marked on shock mounts.

4* - Check that manual is present before every use.

5* - Latest manuals are available from www.agsecorp.com or call (562) 906-9300

Legend

I - Inspect/Check

T - Tighten

L - Lubricate

H - Spray with rust inhibitor

R - Replace

Recommended Lubricant: Chevron Dura-Lith Grease EP, NLGI2 or equivalent.

5.0 – Operation

WARNING

1. Extreme caution must be taken during loading and unloading engine onto stand with overhead hoists or crane to minimize pinch point and/or crushing hazards due to tight clearances between engine and stand.
2. Screwjack support must be deployed only during bootstrap operations to prevent damage and stowed after use.
3. Caution must be taken when lifting and moving stand with a forklift. Fork tines must be 11 Ft (3,35 m) in minimum length and 20,000 lbs minimum capacity. A safety zone must be established to avoid potential crushing injury.
4. Stand **MUST NOT** be forklifted with engine installed. Approximate weight of stand and engine is 25,000 Lbs. Forklift blockers are provided to prevent forklift use when engine is installed. (Figure 5.0-1).
5. Be sure base-cradle pins and shipping braces are installed before moving and shipping stand.



Figure 5.0-1 Forklift blocker

5.1 Rotation of Cradle

CAUTION

FOLLOW INSTRUCTION PLACARD ON TOP OF GEAR BOX. (Cradle MUST NOT BE ROTATED with AFT bootstrap support attached). (Figure 5.1-1).

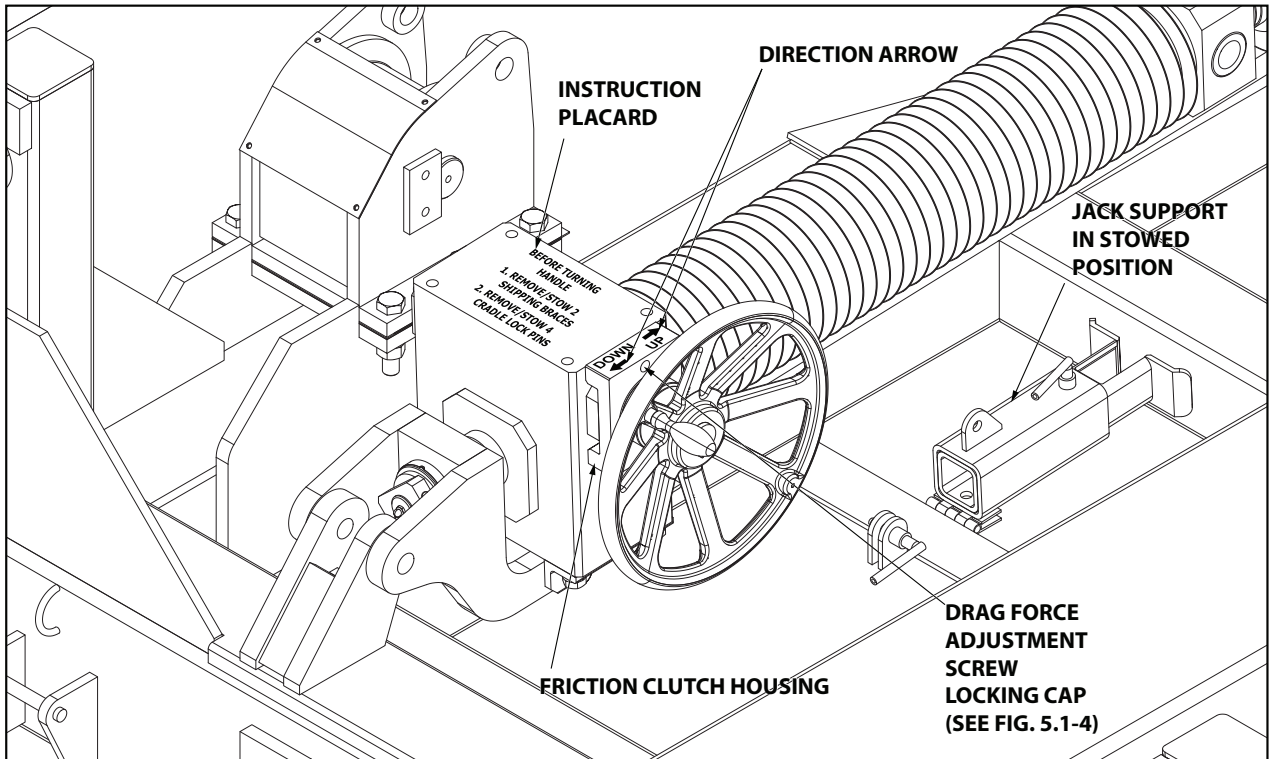


Figure 5.1-1

- 1) Verify that the screw jack support is in its stow position (Figure 5.1-1)
- 2) Remove four (4) Locking Pins. (Figure 5.1-2)

NOTE

To remove/install - Pins may require turning jack wheel to align individual pin holes.

- 3) Loosen and disconnect the forward and aft shipping braces. (Figure 5.1-2).
- 4) Remove and stow FWD LH bootstrap bracket and connecting link.
- 5) Remove and stow AFT bootstrap support and brackets.*
- 6) Remove and stow safety kit platform assemblies.*
- 7) Turn gearbox hand wheel CCW to rotate and lower cradle CCW, turn hand wheel CW to rotate and raise cradle CW. (Figure 5.1-1).

* The Bootstrap and Safety Kit are optional components

CAUTION

1. Should sudden resistance be encountered at the wheel or shaft when rolling engine **IMMEDIATELY STOP** and inspect all rolling points.
2. Clearances between engine & stand are very close. Spotters are strongly recommended to watch and warn the operator of contact with engine.

NOTE

If required, the gearbox hand wheel may be released at any time during the rotation cycle.

CAUTION

If the hand wheel begins to turn when released, maintain a constant grip on the wheel until the rotation cycle is complete and pins are installed. See Figure 5.1-3 for friction drag force adjustment.

- 8) When rotation cycle is complete, install the four (4) locking pins. (Figure 5.1-2)
- 9) Reconnect and tighten the FWD and AFT shipping braces.

CAUTION

1. Operator **MUST NOT** let the wheel “free spin” at any time. Maintain constant pressure on the wheel at all time while rotating “up” or “down”. Release wheel only **AFTER** cradle is pinned in place.
2. Operator must **NEVER** use an impact type tool to power assist wheel rotation. The use of power tools is permitted only if they are constant power and not impact.

WARNING

1. Loose clothing must never be worn when performing tasks described in this section.
2. A safety zone must be established to avoid potential crushing or pinching during cradle rotation.
3. Stand with engine **MUST NOT** be moved or lifted without installing and tightening the two (2) turnbuckle shipping braces.

THE STAND IS NOW READY TO BE MOVED

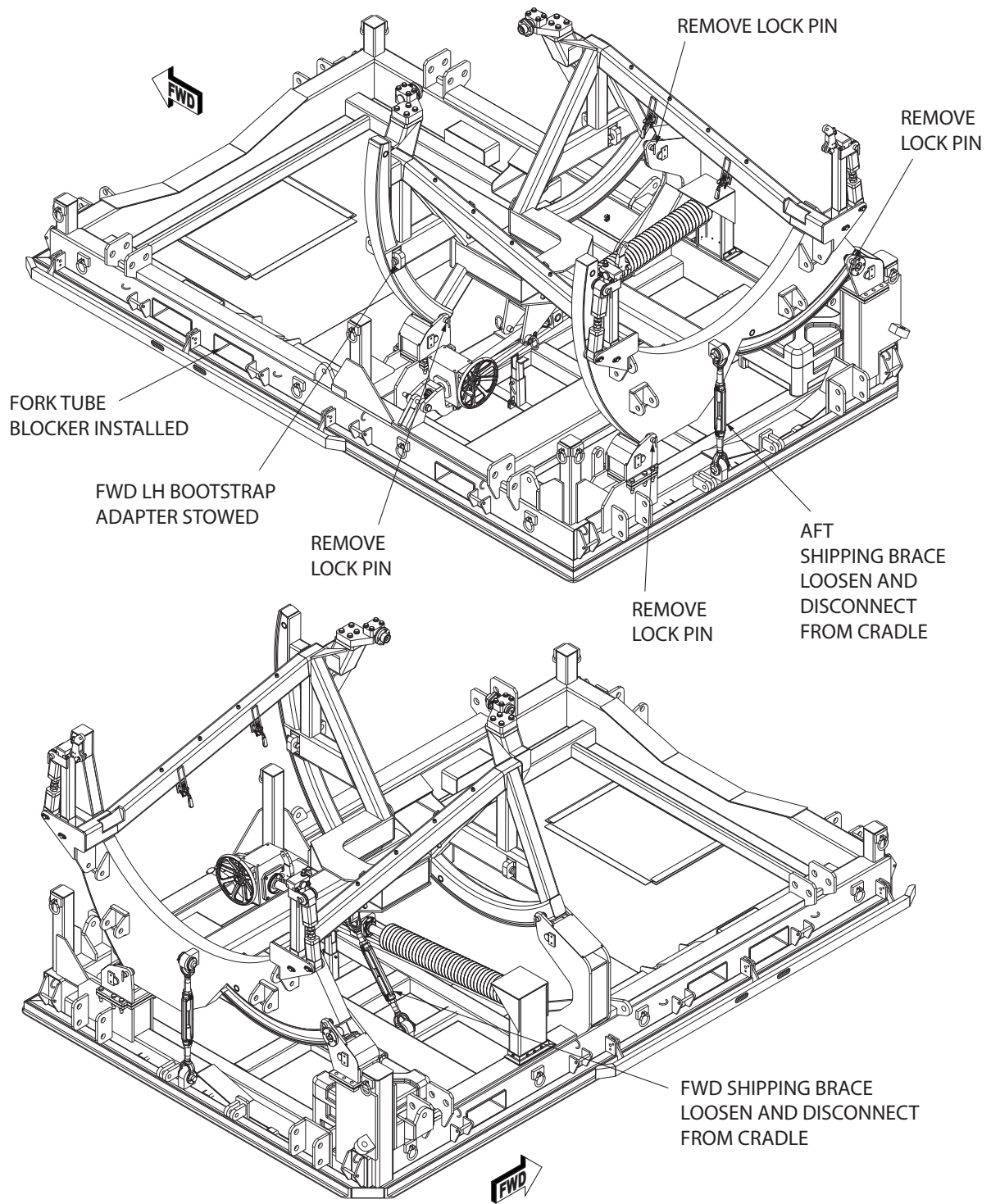
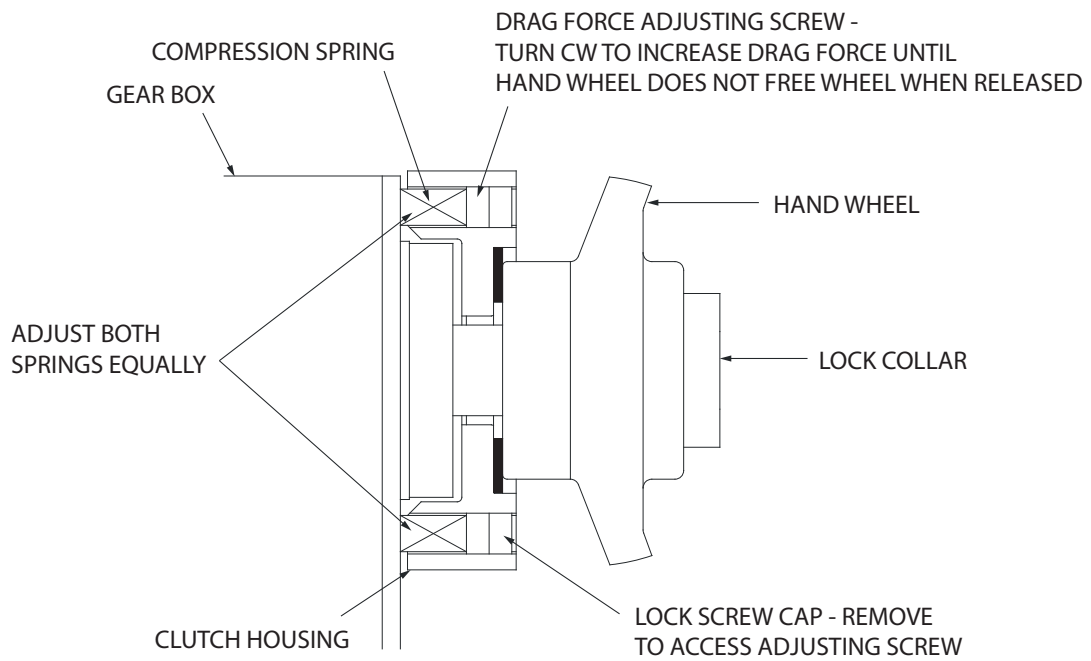
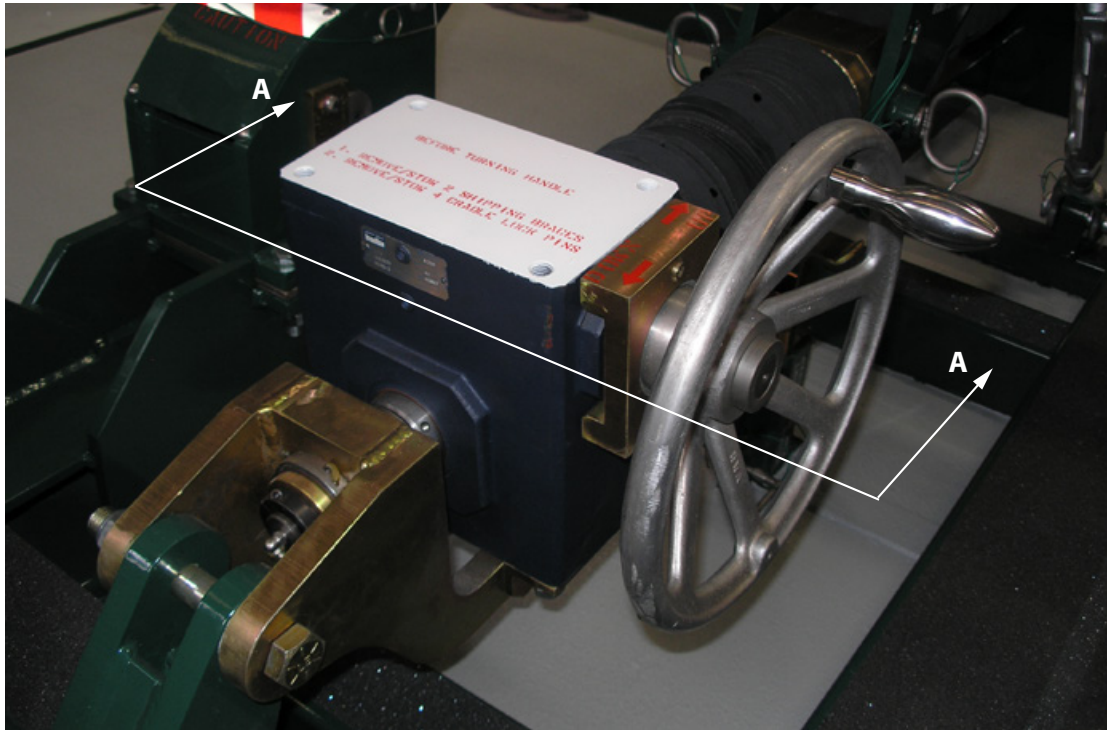


Figure 5.1-2



SECTION A - A

FRICTION CLUTCH ADJUSTMENT DETAIL NOTE

FRICTION DRAG FORCE HAS BEEN PRE-SET BY AGSE. ADJUST ONLY IF HAND WHEEL BEGINS TO FREEWHEEL DURING ROTATION WHEN HAND WHEEL IS RELEASED

Figure 5.1-3

5.2 Installing Engine into Stand (Using Over-Head Hoist Sling)

Preparation Notes:

- a. Cradle must be in raised position and secured by four (4) locking pins.
 - b. Remove mount adapters and mounting hardware from storage container on base. (Figure 5.2-1A).
 - c. A minimum of four (4) spotters is recommended. One spotter is recommended at each of the four (4) mount adapters to guide trunnion into support saddle/support clamp block, and to prevent contact between engine and cradle.
 - d. FWD fork tube blockers installed and pinned. (Figure 5.2-1).
- 1) Inspect the stand for damage/missing parts. Do not operate the stand if in unsafe condition.
 - 2) Using an overhead hoist, position the engine near forward mount supports.

CAUTION

Care must be taken when working near suspended loads. Personnel should never stand beneath the suspended load.

WARNING

Minimal clearance exists between the engine and stand. The operator is responsible to ensure the engine does not contact the stand. Extreme caution must also be taken to avoid injuries due to tight spaces.

- 3) Loosely install the trunnion saddle plates and bolts. (Figure 5.2-2)
- 4) Bolt the trunnions to the engine.
 - LH Side - The 'fixed' trunnion with flanges.
 - RH Side - The 'adjust-and-lock' trunnion
 - Back off the lock collars to the ends of the threaded shaft.
- 5) Lower the engine and guide the trunnions into saddle plates. Loosely install the caps and bolts.
- 6) Pin the AFT trunnions to engine.



Figure 5.2-1

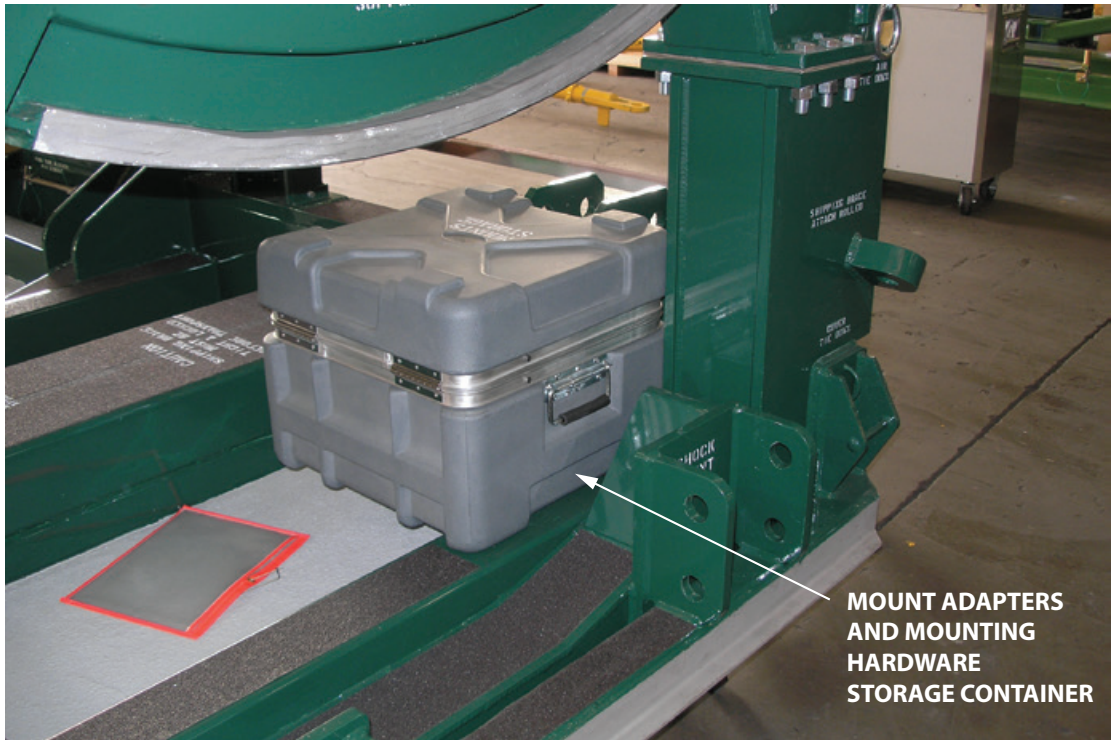


Figure 5.2-1A

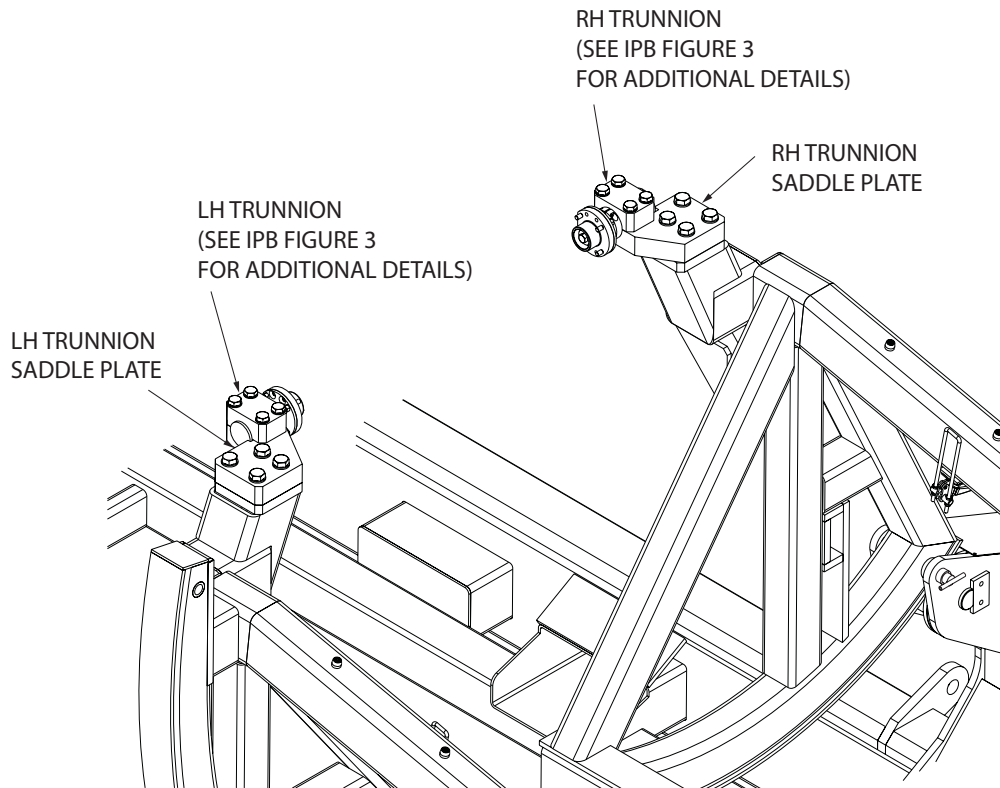


Figure 5.2-2

- 7) Rotate the AFT mount supports up to trunnions. (Figure 5.2-3)
- 8) Locate the trunnion to saddle blocks and clamp. Secure the clamp with the swing bolt.
- 9) Approximately center the FWD trunnion saddle plates on the supports and tighten the bolts.
- 10) Adjust the RH trunnion using a hex lug and threaded lock collar to take up all the slack in the FWD trunnions.
- 11) Lock the adjustable trunnion lock collars. Tighten the cap bolts until supported by the stand.
- 12) Lower the engine until supported by the stand.
- 13) Adjust the AFT mount support braces. Keep the AFT end centered on the cradle:
 - RH IN Tension(Pull) (Figure 5.2-3)
 - LH IN Compression (Push) (Figure 5.2-3)
 - Secure with lock nuts.

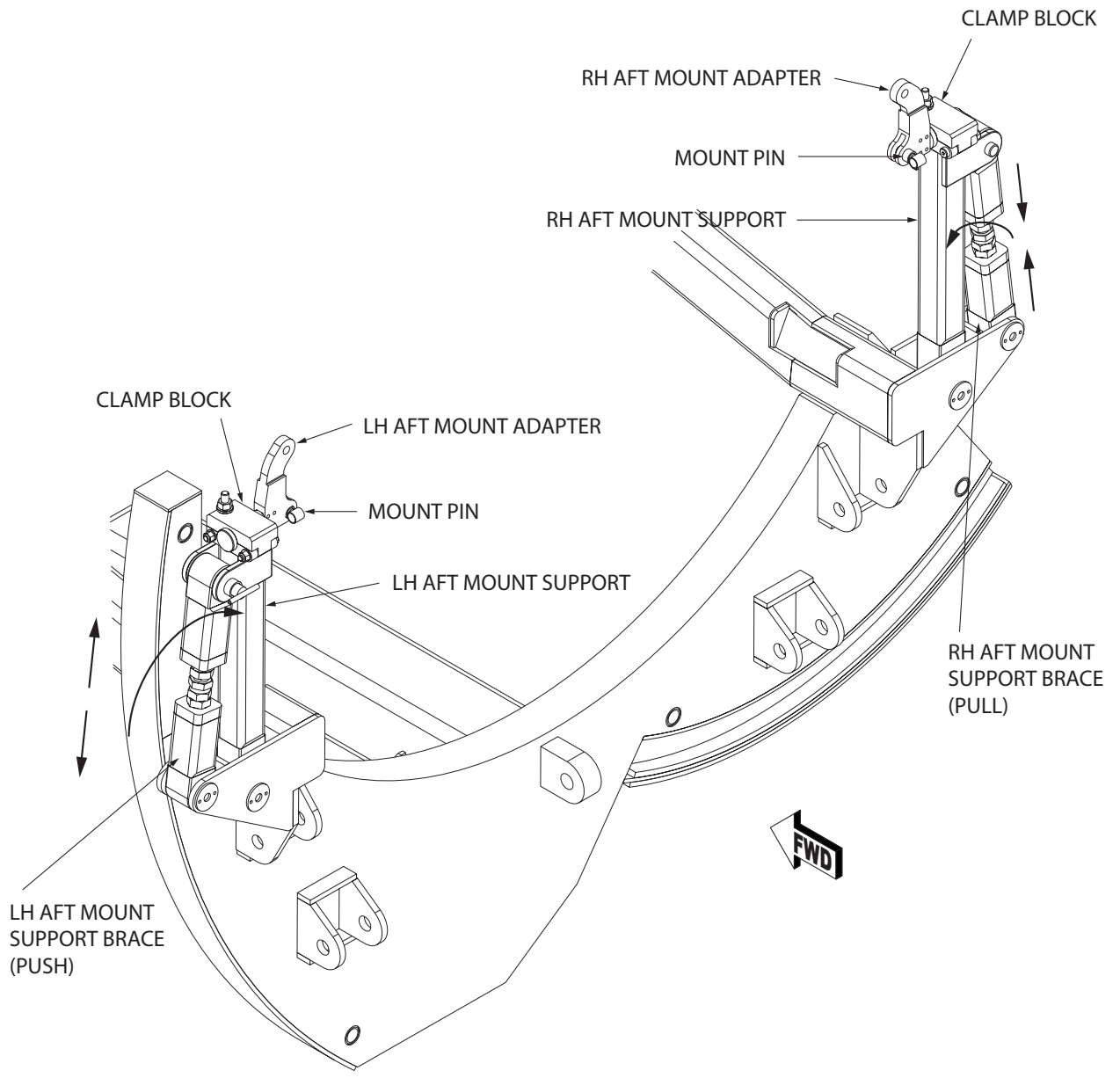


Figure 5.2-3 AFT Mount Installation

5.3 Bootstrapping - Install/Remove Engine To/From Pylon

NOTE

Airbus Bootstrap Beam Assemblies and hoists are to be installed per Airbus Procedures. Remove components per Airbus Engine Manual.

5.3.1 Configure Stand (Same for both 5.3.2 & 5.3.3)

- 1) Rotate cradle to the upright position per Section 5.1.
- 2) Attach Aft Bootstrap Support/counterweight to designated brackets on cradle with pins. Install AFT bootstrap pulley brackets for the designated engine position (inboard or outboard) and secure with pins.
- 3) Position Safety Kit Platforms onto cradle. Secure with pull latches located on the inside of the cradle frame. Attach and adjust support braces and secure with lock nuts. Pin handrails in the raised position.
- 4) Install LH FWD bootstrap attach bracket. Secure with pin, be sure pin flat surface is against cradle structure. Install RH FWD bootstrap bracket pin the same way.
- 5) Install FWD bootstrap dyno connecting links in the correct hole of the attach brackets (inboard or outboard).

CAUTION

Safety harness should be used to prevent slipping and falling from ladder's or platform's height. It is also recommended to use lanyards tied to wrist for tools to avoid dropping tools or metal parts from a height.

5.3.2 Removing Engine from Wing (Configure stand per Section 5.3.1)

- 1) Position configured stand under and centered with pylon.

NOTE

The stand may only be towed from the rear of the stand. Keep hoist chains clear of the engine while positioning the stand. If aircraft is on the landing gear, the stand w/engine must be brought into position from the front of the wing. If the aircraft is on jacks the stand w/engine may be brought into position from either front or back of the wing.

- 2) Attach FWD bootstrap dynos to hoists and cradle connecting links. (Figure 5.3.2-1)
- 3) Attach AFT bootstrap pulley/cable assembly to cradle AFT bootstrap pulley brackets with pins. Connect RH cable end to hoist. Connect LH cable end to bootstrap dyno, connect dyno to hoist. (Figure 5.3.2-1)

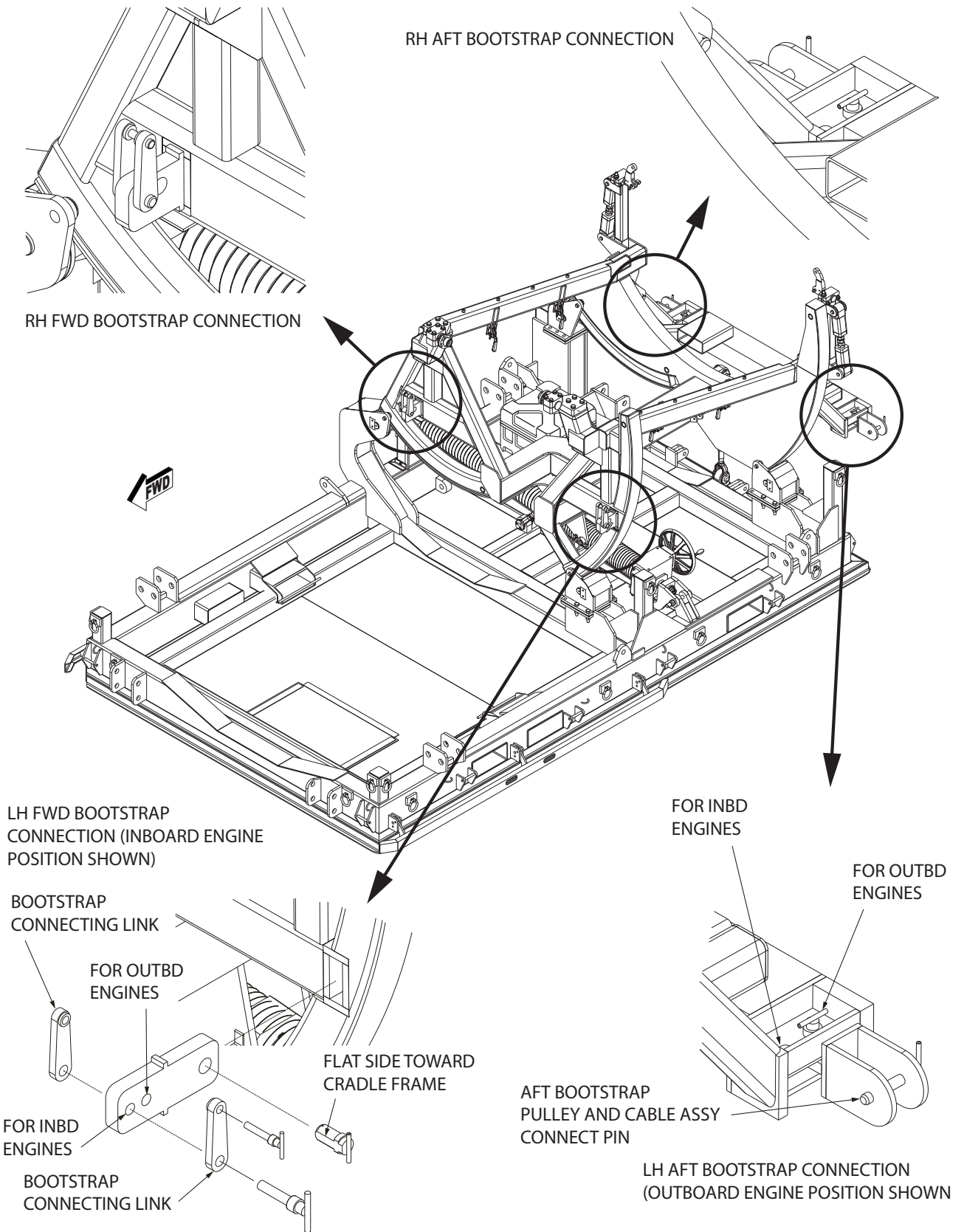


Figure 5.3.2.1 Bootstrap Connections

- 4) Operate each hoist to take out all slack in the hoist chains. Slowly tension the FWD hoists until cradle FWD casters begin to lift off floor. Slowly tension the AFT hoists until cradle is approximately 1” (25mm) off the floor. The stand with engine will move to center under the pylon. Engage caster swivel locks.
- 5) Lower the AFT end of the stand to the floor then the FWD end to the floor. Engage caster brakes, continue to lower the stand until the hoist chains are slack.
- 6) Disconnect FWD and AFT shipping braces, remove AFT capture roller (requires hand tools), remove 4 cradle-to-base pins (may require rotating cradle to loosen pins). Tension hoist chains until cradle begins to lift. (Figure 5.3.2-2)
- 7) Pivot jack screw support to upright position and pin. Extend inner support and pin. Remove two jack screw nut to cradle pins (Figure 5.3.2-2). The cradle is ready to be raised from base. Place all required tools and parts on the safety kit platforms. Installation mechanics, maximum 3 per side, should position themselves on the platform FWD, center and AFT. **Note:** The platforms have access gates at the AFT ends.

CAUTION

Care must be taken when working near suspended loads. Personnel should never stand beneath the suspended load.

WARNING

Minimal clearance exists between the engine cowl doors and cradle. The hoist operators are responsible to ensure the engine does not contact the stand. Extreme caution must also be taken to avoid injuries due to tight spaces.

- 8) Raise cradle to engine. Attach AFT trunnions to TBH and FWD trunnions to intercase.

CAUTION

Watch for close fit areas around lower Bi-Fi & TBH Fire Wire. Spotters are recommended to guide cradle past close fit areas.

- 9) Install aft trunnions in aft support saddle blocks. Loosely secure with clamp blocks.
- 10) Raise FWD end of cradle. Loosely install FWD trunnion saddle plates.
- 11) Engage FWD trunnions with plates and install caps.
- 12) Tighten all trunnion caps, plates and clamps.
- 13) Remove engine from pylon per Airbus procedures.
- 14) Lower engine away from pylon and down to base.

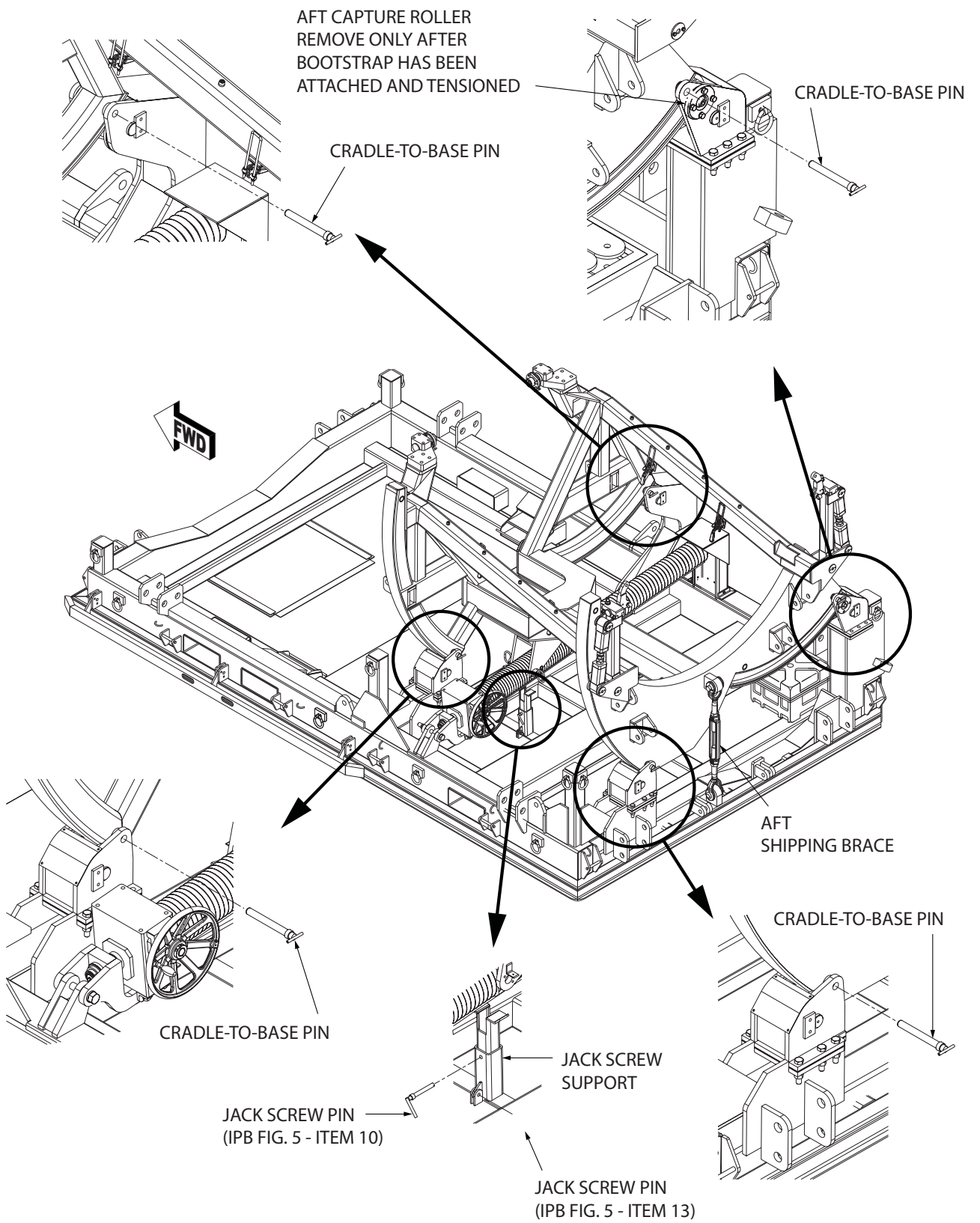


Figure 5.3.2-2

CAUTION

Be sure the cradle is level or tilted slightly with FWD end up, AFT end down - close fit with inlet.

- 15) Continue to lower cradle to base. Lower cradle onto support AFT rollers first and install retaining pins. Install jack screw nut pins, lower support away from jack screw nut and stow. (Install two (2) AFT cradle-to-base pins on either side or left side). Install capture roller.
- 16) Disconnect all bootstrap connections. Pull hoist chains clear of engine. Pull or push stand forward away from aircraft. (If aircraft is on jack stands, it may be moved AFT to clear aircraft).

WARNING

Stand with engine MUST NOT be moved or lifted without installing and tightening the two (2) turnbuckle shipping braces.

5.3.3 Installing Engine on Pylon

- 1) Position configured stand with engine under and centered with pylon.

NOTE

The stand may only be towed from the rear. Keep hoist chains clear of the engine while positioning the stand. If aircraft is on the landing gear, the stand with engine must be brought into position from the front of the wing. If the aircraft is on jacks the stand with engine may be brought into position from either front or back of the wing.

- 2) Attach FWD bootstrap dynos to hoists and cradle connecting links. (Figure 5.3.2-1)
- 3) Attach AFT bootstrap pulley/cable assembly to cradle AFT bootstrap pulley brackets with pins. Connect RH cable end to hoist. Connect LH cable end to bootstrap dyno, connect dyno to hoist. (Figure 5.3.2-1)
- 4) Operate all hoist to take all slack in hoist chains. Slowly tension the FWD hoists until cradle FWD casters begin to lift off floor. Slowly tension the AFT hoists until stand is approximately 1" (25mm) off the floor. The stand with engine will move to center under the pylon. Engage caster swivel locks.
- 5) Lower the AFT end of the stand to the floor then the FWD end to the floor. Engage caster brakes, continue to lower the stand until the hoist chains are slack.

- 6) Disconnect FWD and AFT shipping braces, remove 4 cradle-to-base pins (may require rotating cradle to loosen pins). Tension hoist chains until cradle begins to lift. Remove AFT capture roller (requires hand tools). (Figure 5.3.2-2).
- 7) Pivot jack screw support to upright position and pin. Extend inner support and pin. Remove two jack screw nut to cradle pins. The cradle is ready to be raised from base. Place all required tools and parts on the safety kit platforms. Installation mechanics, maximum 3 per side, should position themselves on the platform FWD, center and AFT.

NOTE

The platforms have access gates at the AFT ends.

- 8) Raise engine/cradle to pylon. Install engine per Airbus procedures.

CAUTION

Be sure the cradle is level or tilted slightly with FWD end up, AFT end down - close fit with inlet. Engine/stand CG is very close to FWD hoists.

- 9) Disconnect cradle from engine, aft fittings first. Lower cradle clear of engine guiding cradle past critical clearance areas. Continue to lower cradle to base. Install two cradle-to-base pins on either side or left side. Lower cradle onto support rollers and pin. Install jack screw nut pins, lower support away from jack screw nut and stow. Install capture roller assembly.
- 10) Disconnect all bootstrap connections. Pull hoist chains clear of stand and move stand AFT clear of engine.

5.4 Preparing Engine for Rotation for Transport

- 1) Drain fluids as required by engine manual.
- 2) Remove items listed in engine manual.
- 3) Install protective covers, caps, etc. as required by engine manual.
- 4) Rotate engine to transport position. (See Section 5.1).

CAUTION

Stand CANNOT be forklifted with engine installed . A sling with spreader beam must be attached to the four (4) designated hoist points on the base. (Figure 5.4-1). Approximate weight of stand and engine is 25,000 Lbs.

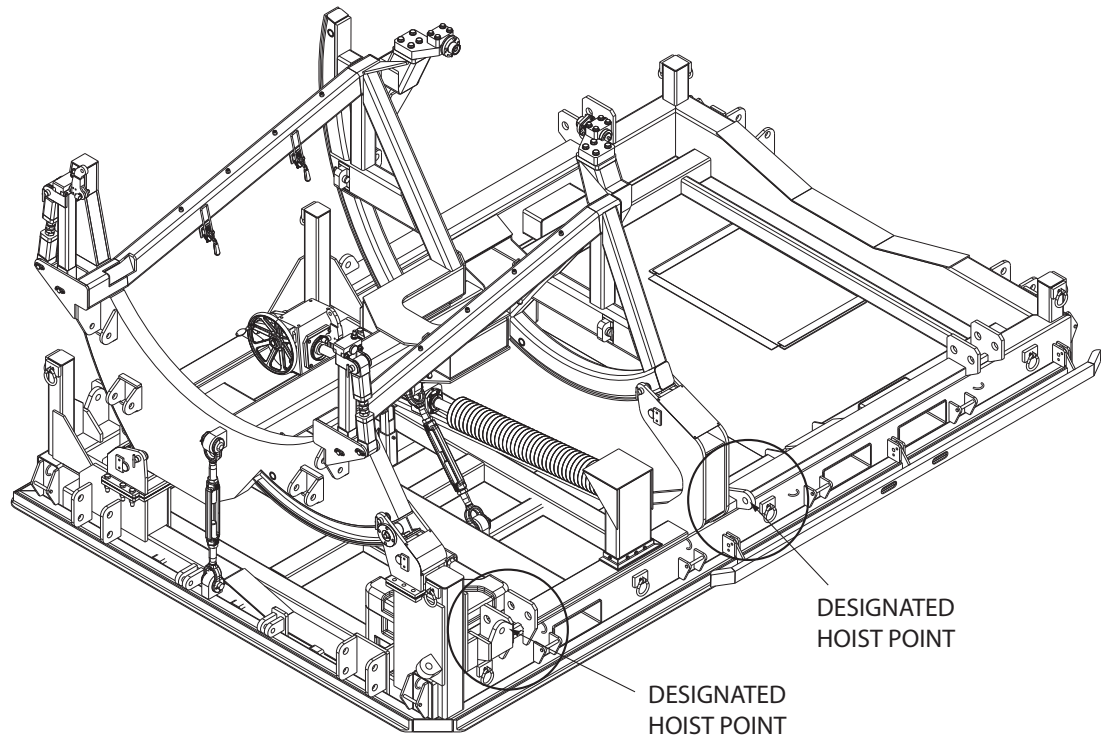
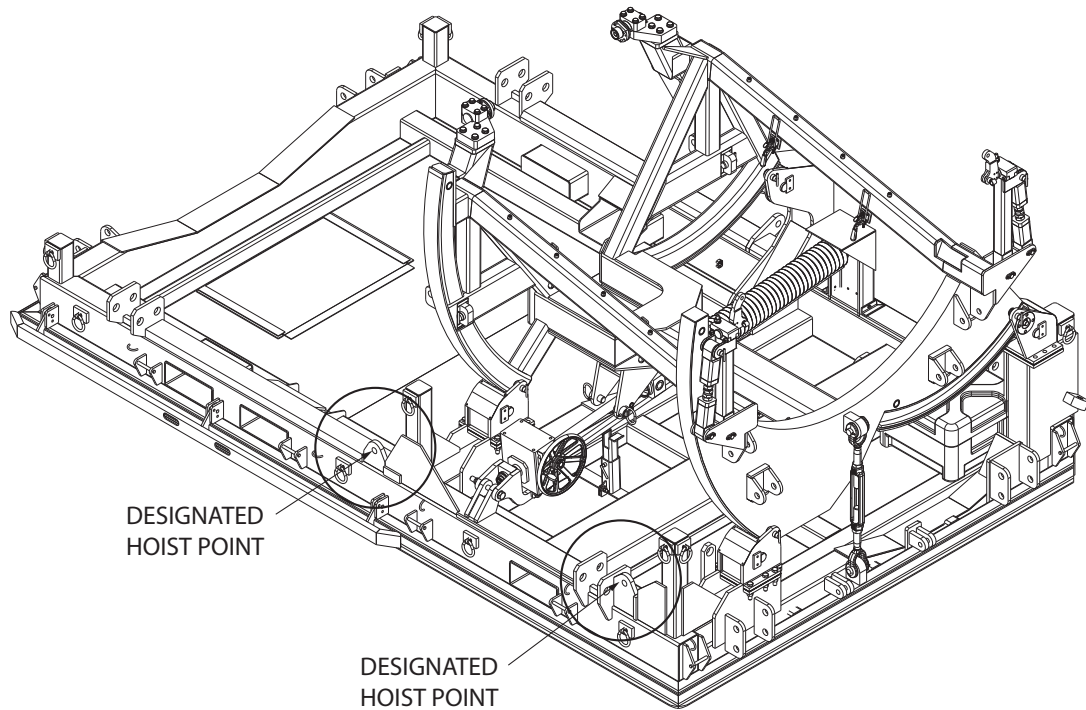


Figure 5.4-1 Hoist Points

5.5 Loading onto B747 Freighter

CAUTION

Load fan case end first. Clearance between upper door edge and top of engine is between .5" (12.7mm) and .25" (6.35 mm). Spotters are recommended to prevent contact with engine.

5.5.1 Two Loading Options Available:

A. Lateral Loading

- Pallet is 196", and will fit between the outer rows of pallet locks.
- Pallet is 125" wide to fit standard pallet spacing.

CAUTION

Clearance of engine to aircraft is close (approximately 2" (50,8 mm)). Spotter is recommended to warn operator of possible contact.

B. Longitudinal Loading

- Pallet must be rotated at designated point on left side pallet edge.
- Center load on either RH/LH side.

CAUTION

Stand must be lashed to aircraft floor regardless of load option. Use weights and balance manual and Load Master directions for positioning and securing stand.

5.6 Optional Accessories Installation and Usage

5.6.1 Caster and Tow Bar Installation (Figure 6.6.1-1)

- 1) Lift the stand/engine using an over head hoist system, jacking legs or jack stands.
- 2) Install casters (4) then secure with safety pins (IPB Figure 6 - Item 9).
- 3) Install tow bar at the AFT end of the stand using two (2) safety pins.

NOTE

The stand should only be towed on a smooth surface at a maximum speed of 3 MPH.

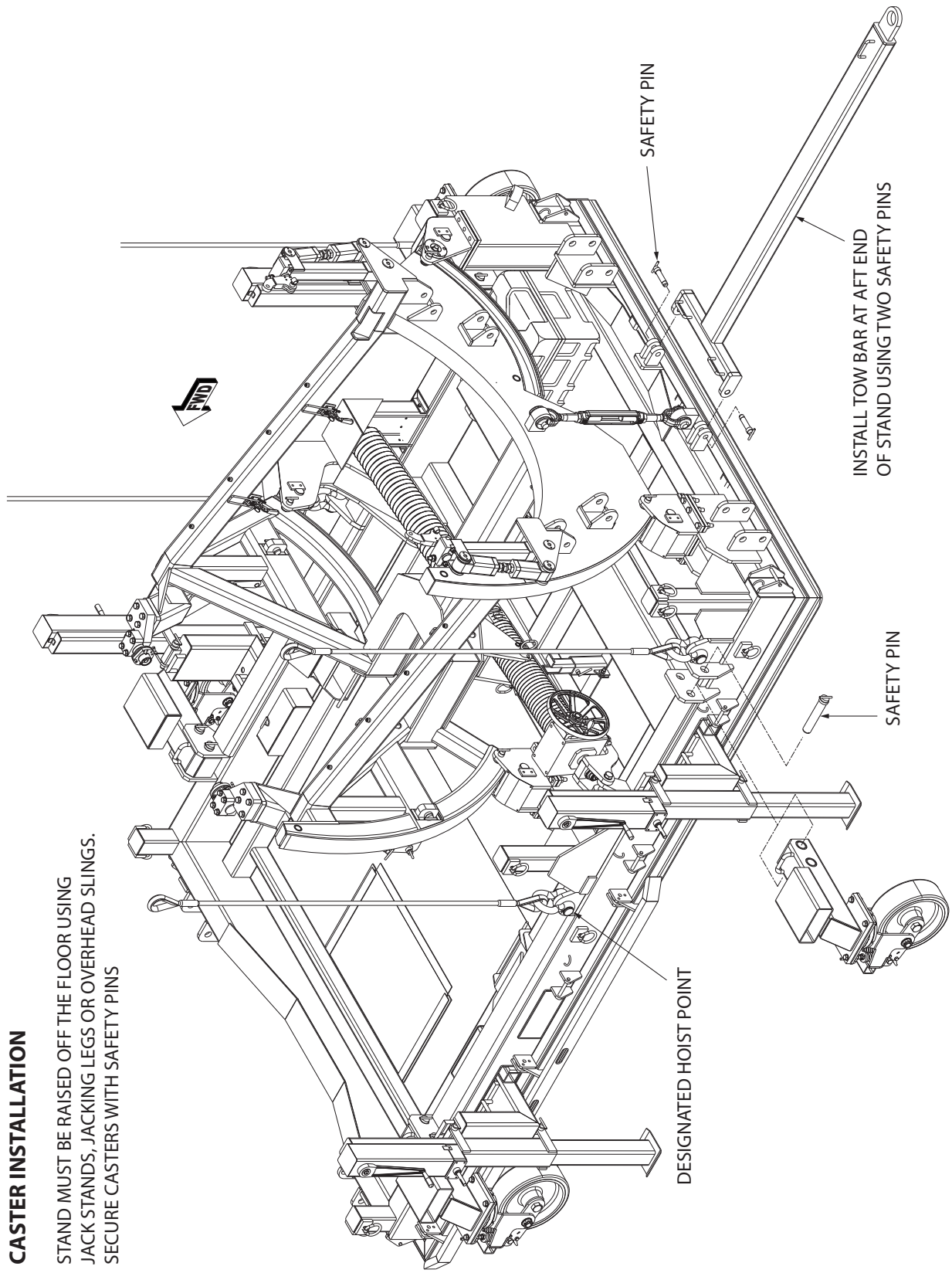


Figure 5.6.1-1 Caster and Tow Bar Installation

5.6.2 Jacking Legs Usage and Operation (If No Sling or Forklift Available) (Figure 5.6.2-1)

5.6.2.1 Usage

The jacking legs are used to lift stand with or without engine to:

- 1) Install casters.
- 2) Install shock mounts.
- 3) Lift 41 inches to place stand onto or take off from pallet dolly, RR mattress or truck trailer.

5.6.2.2 Operation

- 1) Install the leg supports (4) first into the FWD jack leg sockets (2) and AFT forklift tubes (2) on base. Secure using the safety pins and retainer clips.

NOTE

There are RH and LH support assemblies with tapered spacer block facing AFT.

- 2) Install the jacking leg assemblies (4) on the leg supports using the provided safety pins.

NOTE

Any jacking leg assembly can be installed on any leg support.

- 3) Use provided ratchet crank handle secured with hand knob to raise or lower the stand. There are two (2) cranking speeds:
 - Top shaft for high speed (for no or low load).
 - Bottom shaft for low speed (for high load).

CAUTION

The maximum difference in jack leg height is not to exceed 1 inch between pairs of jacks, and 2 inches maximum difference overall for all four jacks.

A fixed structural stop prevents the jack nut from travelling past the end of the jack screw.

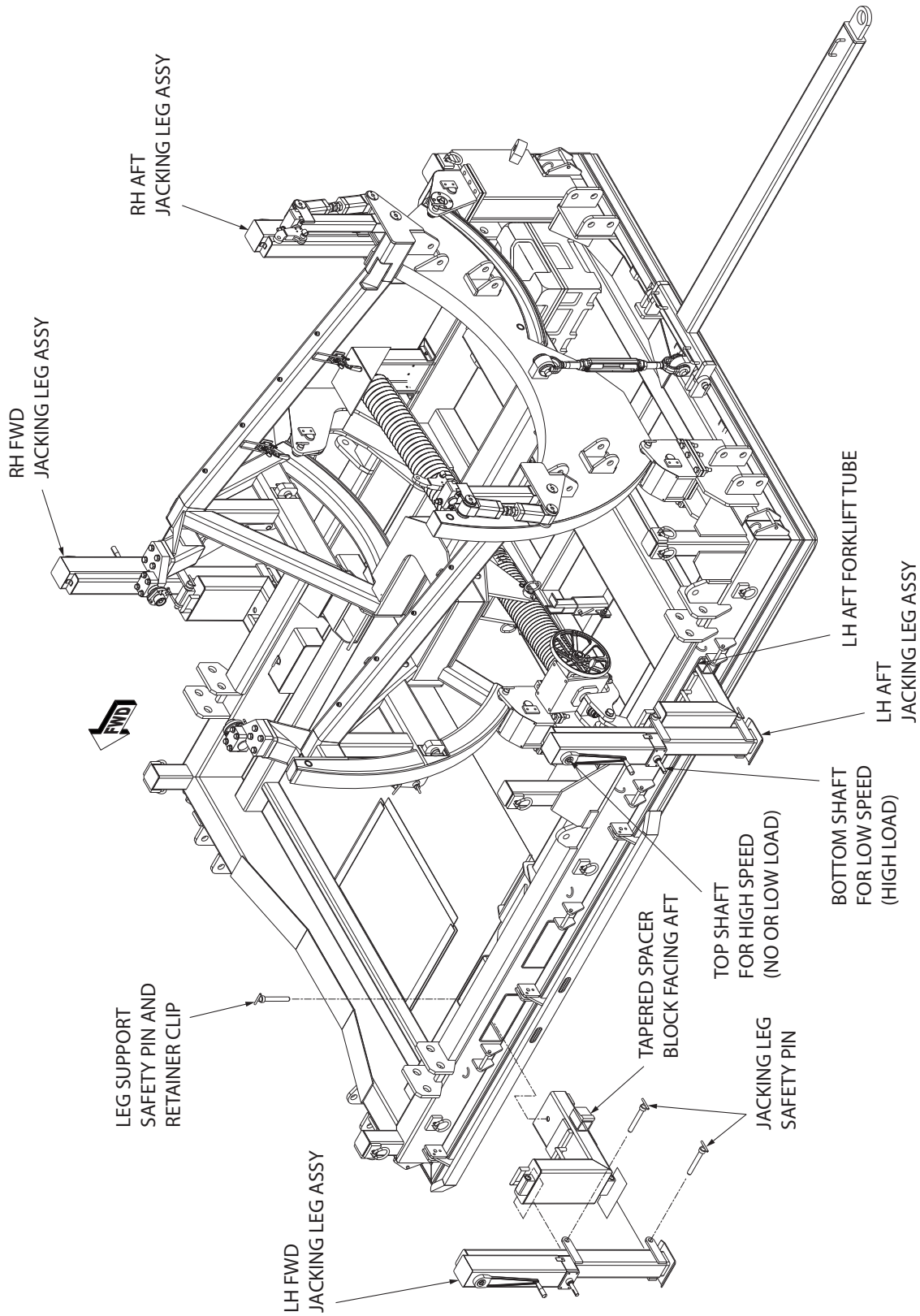


Figure 5.6.2-1 Jacking Leg Installation

5.6.3 Shock Mount Usage and Installation (Figure 5.6.3-1)

5.6.3.1 Usage

The shock mounts are used when transporting engine stand on air-ride equipped tractor trailer only. Only use slots on each shock mounts to secure stand/engine to truck trailer during stand transportation. There are placards on each shock mount for truck tie-down instructions.

CAUTION

DO NOT use tie-down rings on the stand base when transporting engine stand.

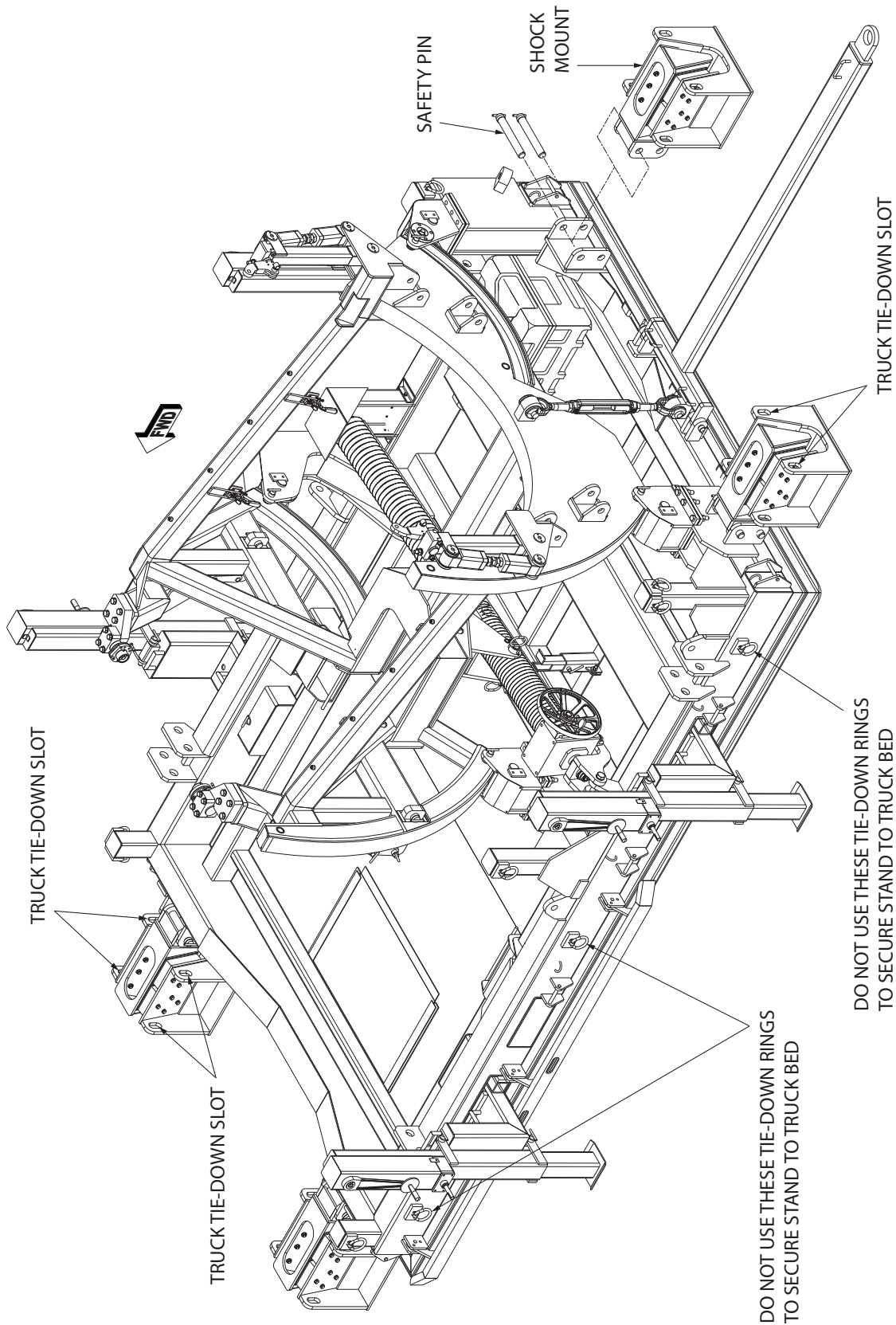
CAUTION

Periodic inspections should be made and shock mounts must be replaced when any of the following conditions exist:

- 1. Shock mounts are more than five (5) years from the date marked.**
- 2. There is visible evidence of cracks.**
- 3. There are discolorations or deformations.**
- 4. Mount does not move or adjust during loading/unloading.**
- 5. There is debonding of the rubber mount from the shock attach plate.**

5.6.3.2 Installation

Jacking legs or sling may be used to lift stand approximately 12,7 cm (5”) to install shock mount assemblies. Secure shock mounts on stand with safety pins (IPB Fig. 10 - Item 4)



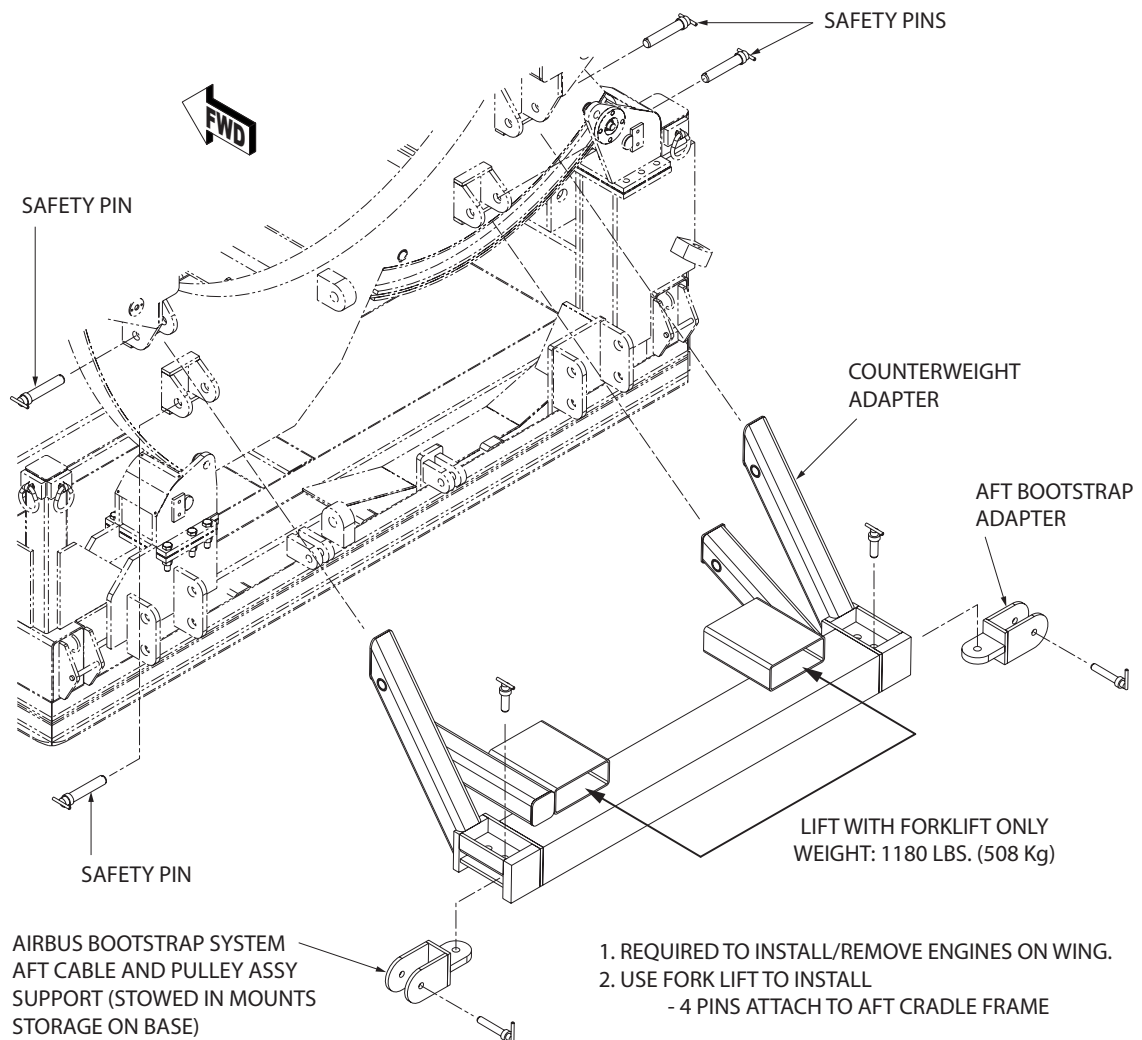
USE JACKING LEGS OR SLING TO LIFT STAND FOR SHOCK MOUNT INSTALLATION

Figure 5.6.3-1 Shock Mount Installation

5.6.4 Aft Bootstrap Counterweight and Support Assembly (Figure 5.6.4-1)

The AFT bootstrap counterweight and support assembly are part of every stand and are required to install/remove engines on wing. The unit weighs 1120 lbs. (508 kg).

- 1) Use forklift to align AFT bootstrap counterweight and support assembly with the AFT cradle frame (Figure 5.6.4-1).
- 2) Secure the component with four (4) safety pins (IPB Figure 8 - Item 4).
- 3) Remove the AFT bootstrap adapters by removing the safety pins (2) (IPB Figure 8 - Item 5) then stow in the mounts storage on the base.



**AFT BOOTSTRAP COUNTER WEIGHT AND SUPPORT ASSEMBLY
PART OF EVERY STAND UNLESS SPECIFIED BY CUSTOMER**

**COUNTER WEIGHT MUST BE REMOVED BEFORE THE CRADLE
IS ROLLED TO TRANSPORTATION POSITION.**

Figure 5.6.4-1 AFT Bootstrap Counterweight and Support Assembly

5.6.5 Safety Kit (Figures 5.6.5-1 and 5.6.5-2)

The AGSE-E16612-S04 Safety Kit:

- 1) Provides mechanics access to engine-to-pylon connections and has the capacity of 750 lbs (340.19 Kg) evenly distributed.
- 2) Requires sling to install and remove.
- 3) Has two (2) position hand rails:
 - HIGH when engine/stand is on the ground.
 - LOW when engine/stand is under the fan cowl doors for removal/installation of engine.
- 4) Is secured by draw latches on the cradle (2 on each side).
- 5) Is supported by adjustable support rods (2 on each side).

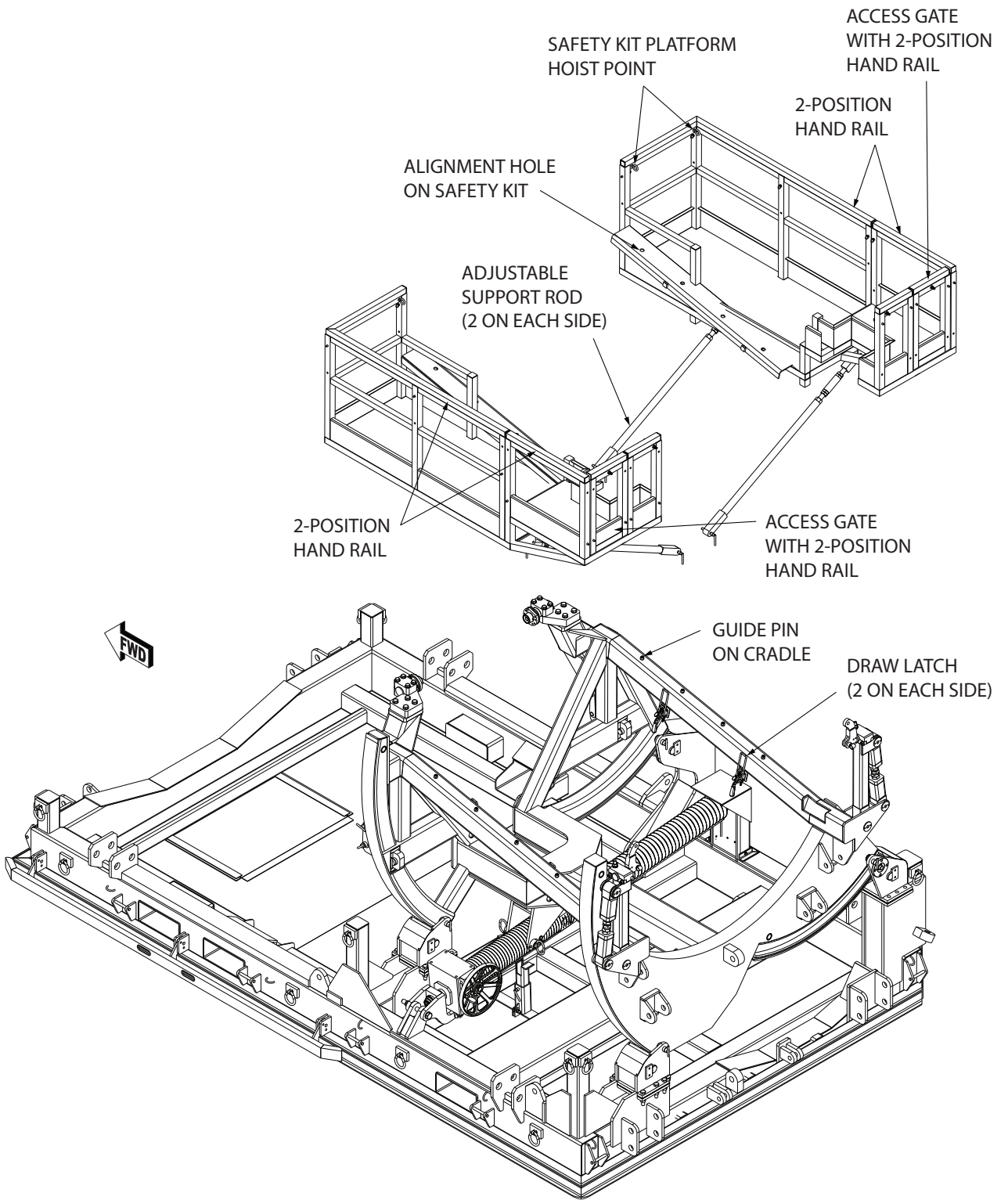


Figure 5.6.5-1 AGSE-E16612-S04 Safety Kit

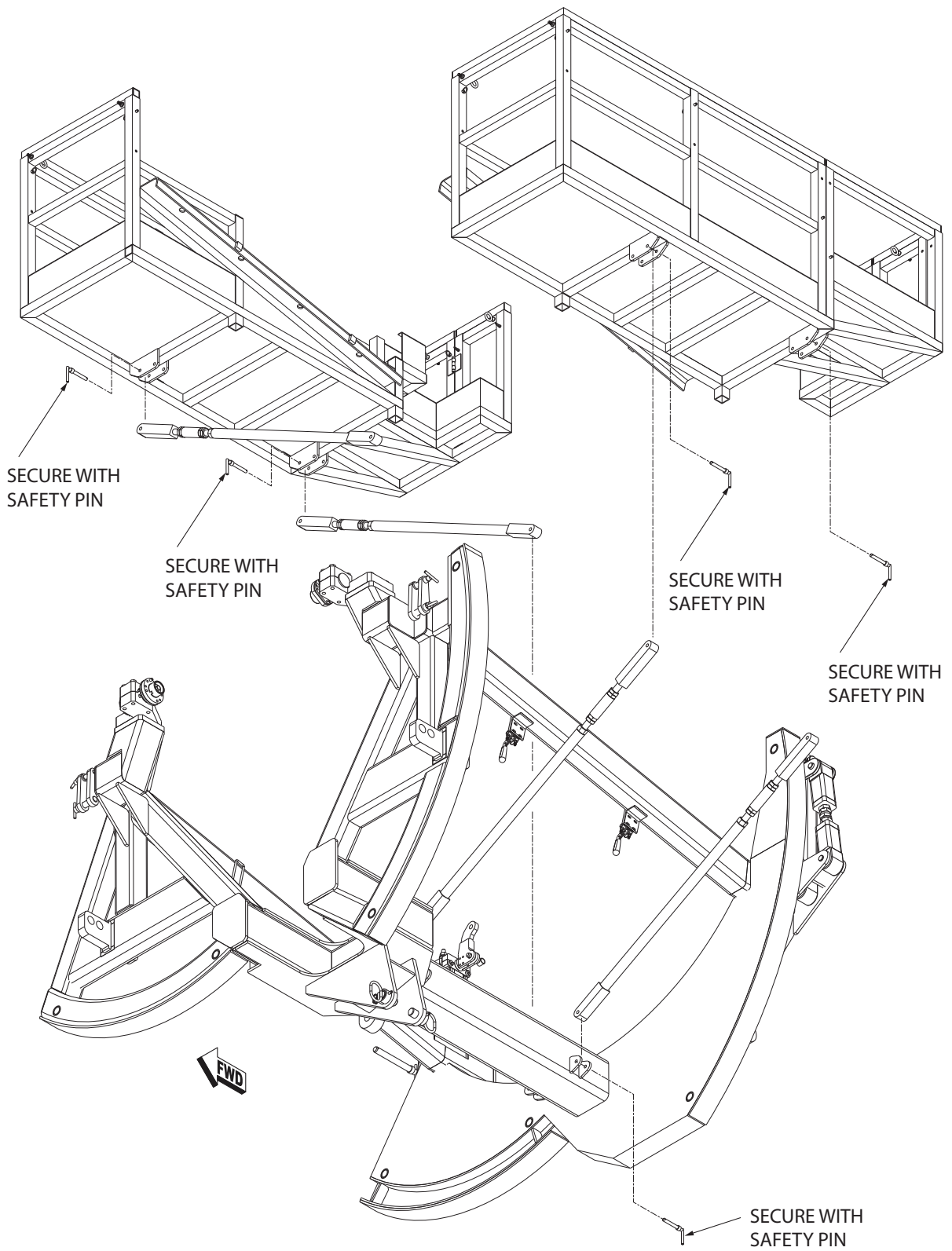


Figure 5.6.5-2 AGSE-E16612-S04 Safety Kit

5.7 Ground Shipment

WARNING

When the engine is transported by truck, the shock mounts **MUST** be used and the shock mounts **MUST** be the sole constraint to be chained and secured to the truck bed. Any other constraint to the stand itself will essentially short-out the shock dampening system and may result in internal engine damage.

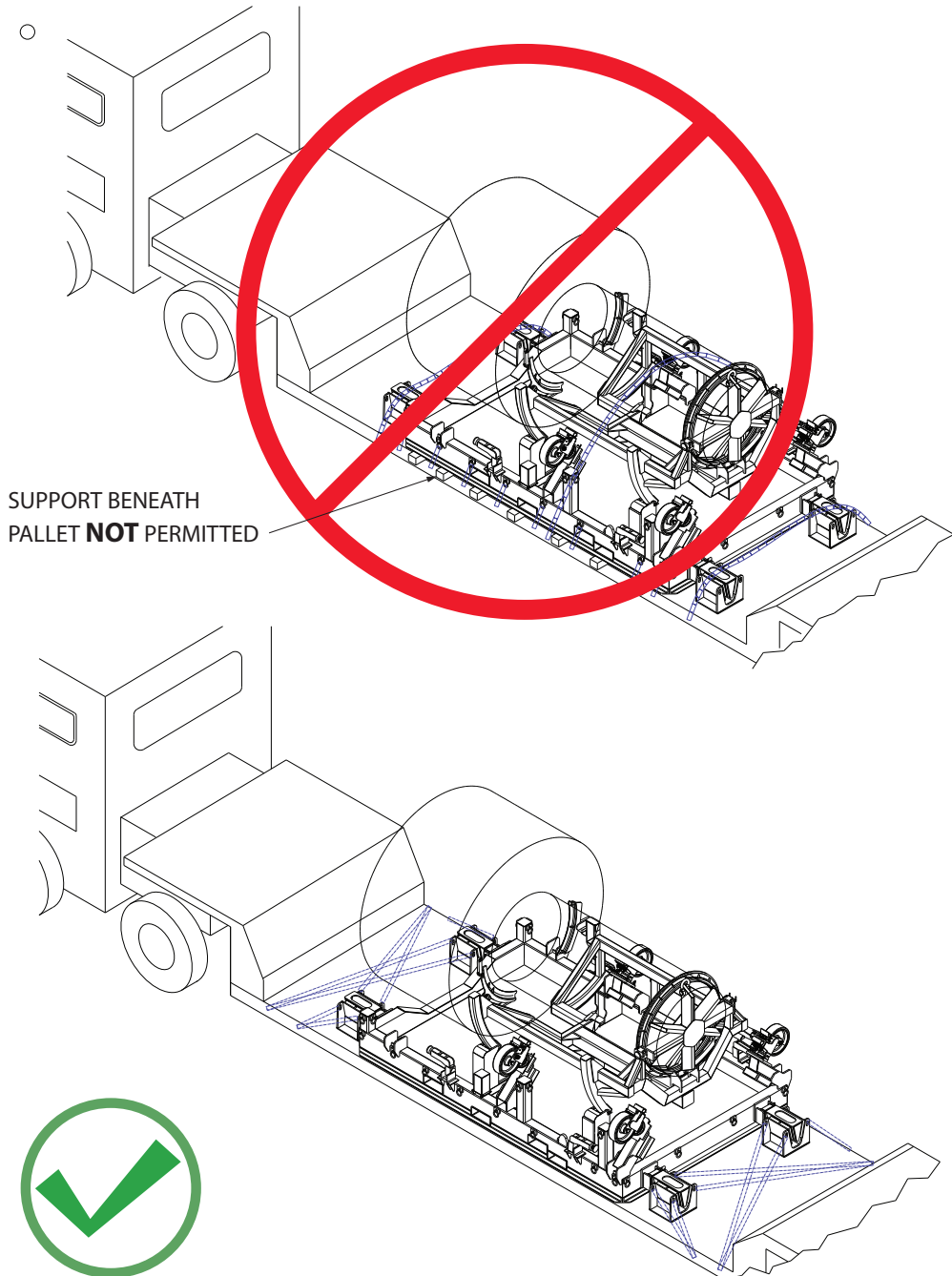


Figure 5.7-1

6.0 – SAFETY

6.1 Stress

Design stress safety factors are compliant with industry standards.

6.2 General

Most accidents are the result of violating standard safety rules in operation or improper servicing and maintenance of equipment.

Many safety features have been incorporated into the design to assist in safe operation of this equipment. These items do not fool-proof the equipment nor do they replace the operator's responsibility to operate the equipment in a safe manner.

6.3 Prevention

A good preventative maintenance program should include periodic lubrication, adjustment, and immediate correction of defects revealed through inspections. Preventive maintenance will not only contribute to safe operation, but will also extend useful service life as well.

NOTICE

Failure to carry out periodic inspections and routine maintenance will result in the voiding of any implied or expressed warranties. Also reference all warranties, service procedures and maintenance schedules from the vendor brochures, manuals and flyers listed at the end of this manual.

6.4 Risk Assessment

6.4.1 Limits of the Machinery

The AGSE-E166-G02 All-purpose Roll-Over Stand is a commercial product designed specifically only to store and/or transport the Rolls-Royce Trent 900 engine. The equipment is to be used only by trained mechanics free from physical impairment and who are familiar with this or similar fixture. The equipment is not to be used or made available to the general public.

6.4.2 Risk Assessment and Residual Risk

The risk evaluation performed was based on objective observation based on the experience of AGSE with similar equipment. Necessary Warning and Caution Notes have been incorporated into the Operation Section of the Trent 900 All-purpose Roll-Over Stand Operation Manual along with instructions. Stencils also have been put on the equipment to identify hazardous and/or potential risk areas.

The operation of the AGSE-E166-G02 All-Purpose Roll-Over Stand can be with medium risk of injury and is considered safe to use under supervision. Low residual risks include potential pinch points during operation of the equipment.

Equipment detailed in this manual has undergone stringent safety analyzing using methods and standards set forth withi European Standard EN 1050 and is considered to be safe for its intended use. Reports on risk analysis and evaluation according to 2006/42/EC Machinery Directive (17 May 2006) are available upon request.



EC DECLARATION OF CONFORMITY

The machinery listed below fulfills all relevant provisions of the directives listed:

- 2006/42/EC Machinery Directive (17 May 2006)

Machinery covered by this Declaration:

Description:	Trent 900 APS Engine Transportation Stand
Model:	AGSE-E166
Part Numbers:	AGSE-E166-G02 APS Transportation Stand

Harmonized Standards:

- ISO 12100:2010 Safety of Machinery - General Principles for Design - Risk Assessment and Risk Reduction
- ISO/TR 14121-2:2012 Safety of Machinery - Risk Assessment - Part 2: Practical Guidance and Examples of Methods

Standards and Specifications:

- Rolls Royce Specification, "Trent 900 All-Purpose Transportation Stand", Issue 1, Date 04/2/06
- Rolls-Royce Specification, "Trent 900 All-Purpose Transportation Stand Safety Kit", Issue 1, Date 04/2/06.
- AGSE Quality System Procedure Number QSP-006
- Aerospace Recommended Practice Standard, SAE ARP 1840, Revision B, 02/2007.

Place: Santa Fe Springs, California, USA

Date: December 14, 2018

Signed:

Stevan Case 
Engineering Manager

Technical File: Jean-Marc Neveu
Techman-Head
10 Ave Loeonce Duteil
ZI du Sanital – 86100
Chatelleraut, France
+33(0)5 49 02 53 40

7.0 – Warranty

7.1 Statement of Warranty

Advanced Ground Systems Engineering LLC (AGSE) warrants to original purchasers that its products will be free of defects in material and workmanship under normal use and conditions for claims received within a period of one year from date of purchase (final billing date), and to the extent that if any AGSE product fails in operation because of such defect, the company will replace or repair, at its option, the defective article. Prior to the repair or replacement of any defective product, the company shall be notified in writing as to the nature of the defect. The company shall assume no liability for freight, disassembly, removal, refitting and installation charges on any article returned unless such charge(s) is approved by AGSE in writing prior to the return. On component items purchased by AGSE for incorporation into an AGSE manufactured product, only the component manufacturer's warranty (if any) shall apply to that component. Said manufacturer's warranty shall be passed on to AGSE's customer to the extent permitted. This warranty is applicable only when AGSE products are operated for intended purposes within the recommended procedures, load limits, properly maintained, not damaged or abused, etc., including as indicated in company manuals, catalogs, and drawings. All warranty claims must be applied for within sixty days from when the defect becomes known. The foregoing warranty is in lieu of all other warranties, or liabilities, either expressed or implied, and AGSE expressly excludes all implied warranties of merchantability and fitness for a particular purpose and all non-infringement warranties as well as disclaims all liabilities to third parties. In no event shall AGSE be liable for any amounts in excess of the purchase price of the product.

CAUTION

Failure to conduct periodic inspections, routine maintenance, or improper operation will result in the voiding of the warranty.

8.0 – Parts Breakdown

8.1 General

The following pages can be used in the identification of components used in the product described in this manual. Parts Lists are broken down by “ITEM,” “PART NUMBER,” “QTY,” and “DESCRIPTION.”

NOTICE

“ITEM” numbers are for reference to the Illustrated Parts Breakdown (IPB) only. Do not order replacement parts by “ITEM” number. Order parts by “PART NUMBER” only.

8.2 Illustrated Parts Breakdown

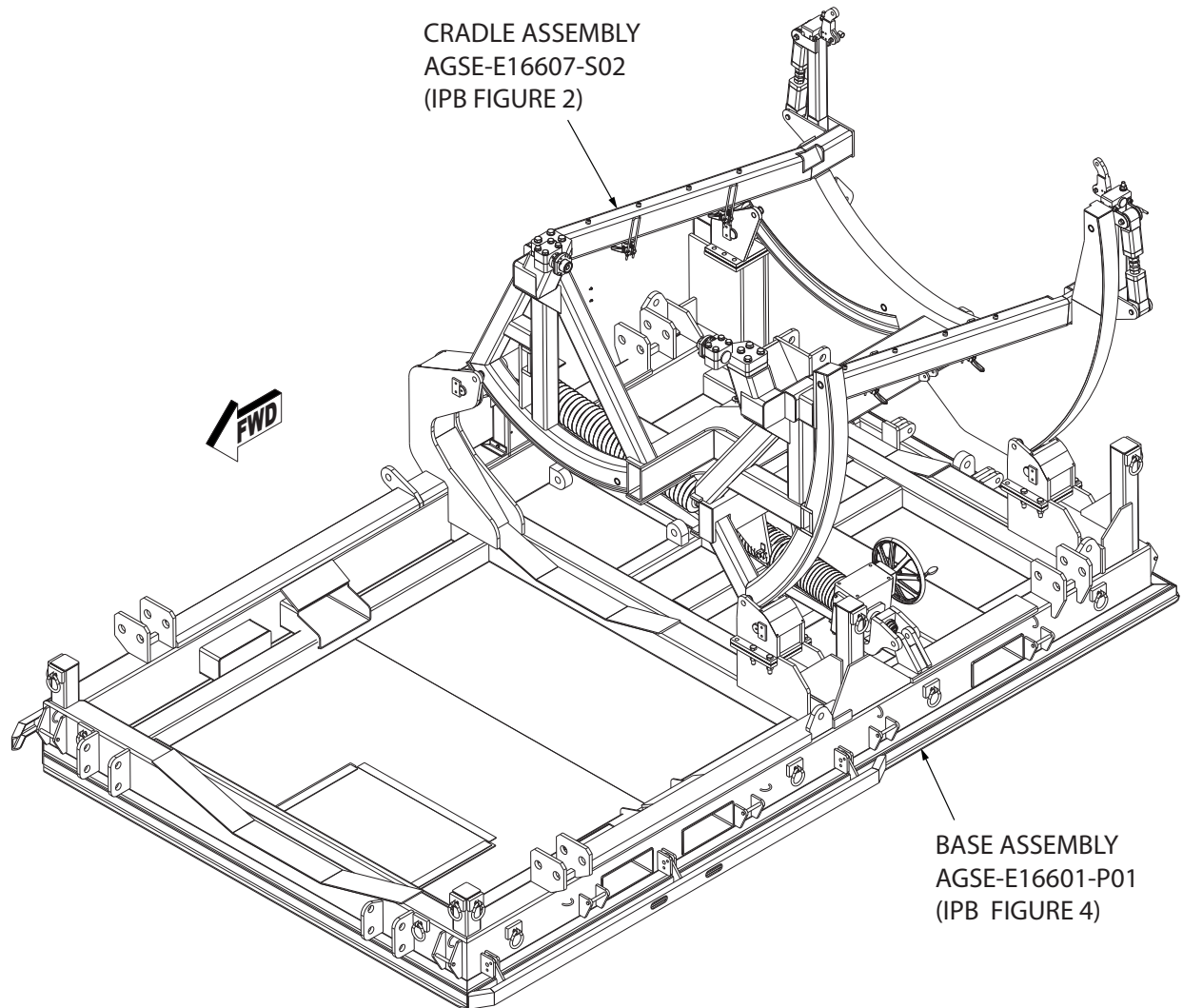


Figure 8.1-1 AGSE-E166-G02 APS Rollover Stand

IPB Figure 1 - AGSE-E166-G02 APS Rollover Stand Assembly

ITEM	PART NUMBER	QTY	PART DESCRIPTION
	AGSE-E166-G02	-	Trent 900 APS Roll-Over Stand Assy (Figure 8.1-1 through 8.1-4)
1	AGSE-E16601-S01	1	Base Assy (See IPB Figure 5 For Details)
2	AGSE-E16602-P01	4	Support Roller
3	AGSE-E16602-S02	4	Roller Shaft Assy
4	AGSE-E16602-P03	4	Bearing Spacer
5	AGSE-E16602-P04	4	Bearing Spacer
6	AGSE-E16602-P05	8	Shaft Keeper
8	B3228	8	Needle Roller Bearing - 2" Dia. - Bore
9	Commercial	16	HHCS - 3/8"-16UNC x 1" Lg - GR 5- Zinc Plt
10	Commercial	16	Lock Washer - 3/8" Dia. Nom I.D. - Zinc Plt
11	AGSE-E16603-P01	1	Side Guide - RH
12	AGSE-E16603-P02	1	Side Guide - LH
13	Commercial	6	HHCS - 3/4"-10UNC x 3-1/4" Lg - Gr 5 - Zinc Plt
14	Commercial	12	Flat Washer - SAE - 3/4" Dia. Nom I.D.
15	Commercial	6	Hex Lock Nut - 3/4-10UNC w/ Nylon Insert - Gr 5 - Zinc Plt
16	AM-90500-28L-H900	2	Safety Pin Assy
17	AM-9100-120T-H900	3	Safety Pin Assy
18	AGSE-E16626-S01	1	Cradle Jack Assy (See IPB Figure 4 For Details)
18A	AGSE-E16626-S04	1	Cradle Jack Assy - Optional (See IPB Figure 4A For Details)
19	AGSE-E16606-P09	1	Special Safety Pin Assy

IPB Figure 1 - AGSE-E166-G02 APS Rollover Stand Assembly (Continued)

ITEM	PART NUMBER	QTY	PART DESCRIPTION
20	Commercial	REF	HHCS - 1"-8UNC x 5-1/2" Lg. - GR 5 - Zinc Plt (See IPB Figure 4 - Item 38)
21	Commercial	REF	Flat Washer - R - 1" Dia. Nom I.D. (See IPB Figure 4 - Item 44)
22	Commercial	REF	Hex Lock Nut - 1"-8UNC - Zinc Plt (See IPB Figure 4 - Item 40)
23	AGSE-E16607-S02	1	Cradle Assy (See IPB Figure 2 For Details)
24	AGSE-E16611-S01	1	Aft Cradle Guide Roller Assy
24A	AGSE-E16611-P01	1	Housing (Used on Item 24)
24B	PLR2-1/2-16	1	Roller - Stud Mount - TRB - 2-1/2" Dia. (Used on Item 24) (Alt McMaster-Carr 3643K19)
24C	Commercial	1	Lock Washer - 1" Nom ID - Zinc Plt (Used on Item 24)
24D	Commercial	1	Lock Nut - 1"-14UNF - Zinc Plt (Used on Item 24) (Alt McMaster-Carr 91342A270)
25	Commercial	4	HHCS - 1/2"-13UNC Dia. x 1-3/4" Lg. GR 5 - Zinc Plt
26	Commercial	4	Lock Washer - 1/2" Dia. Nom I.D. - Zinc Plt
27	HG-228-1032938	2	Turnbuckle - 1-1/2" x 12" Jaw/Jaw
28	YRX-183	1	Storage Case
29	Commercial	3	HHCS - 1/4"-20UNC x 1" Lg - Zinc Plt
30	Commercial	3	Lock Washer - 1/4" - Zinc Plt
31	Commercial	3	Flat Washer - Wide - 1/4" Dia. - Zinc Plt
32	1723A22	4	Tool Holder Clip
33	91785A537	4	Truss Hd Screw - 1/4"-20UNC x 1/2" Lg
60	AGSE-E16617-P01	2	Fork Tube Blocker
62	AM-90750-226T-H900	2	Safety Pin Assy

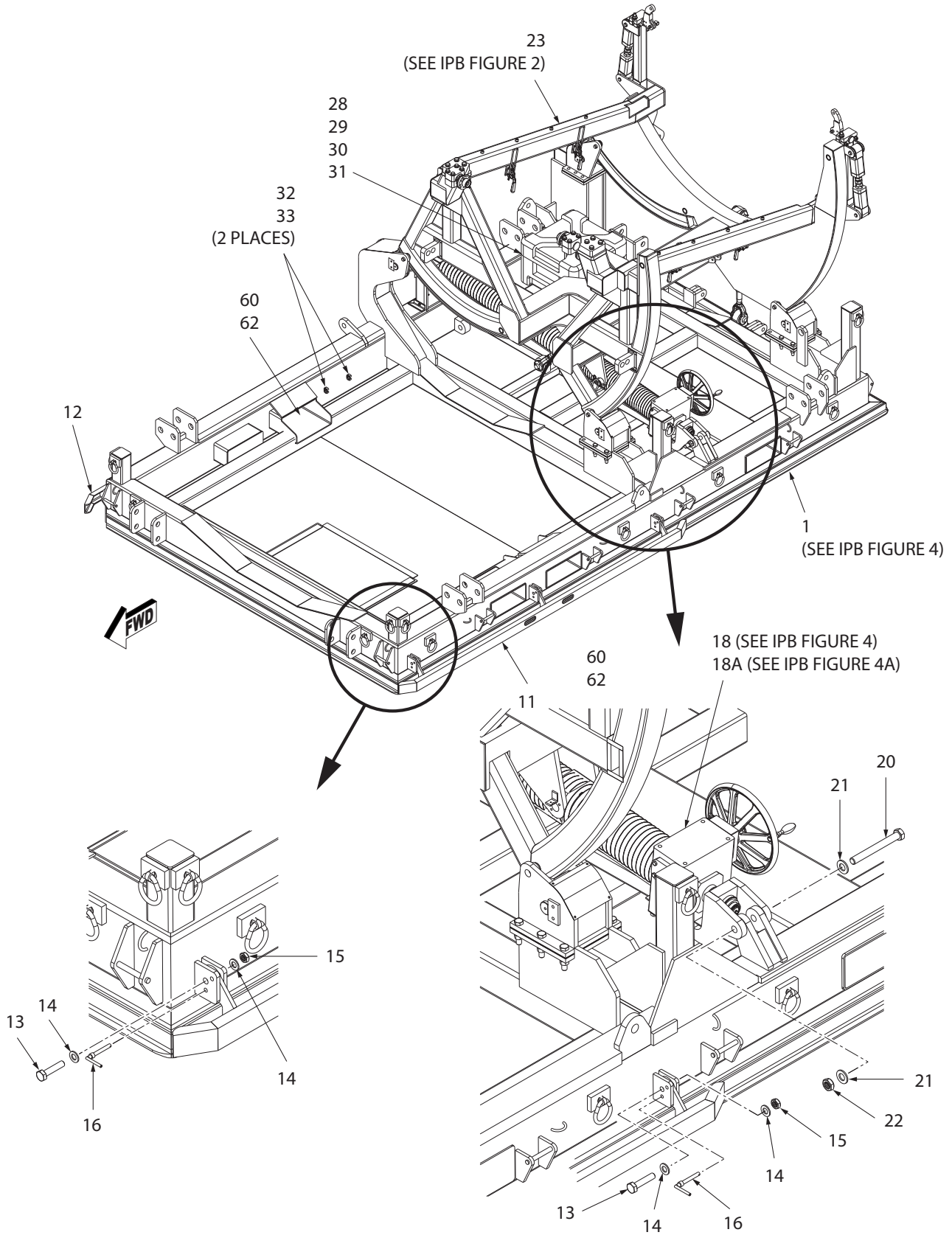


Figure 8.1-2 AGSE-E166-G02 APS Rollover Stand

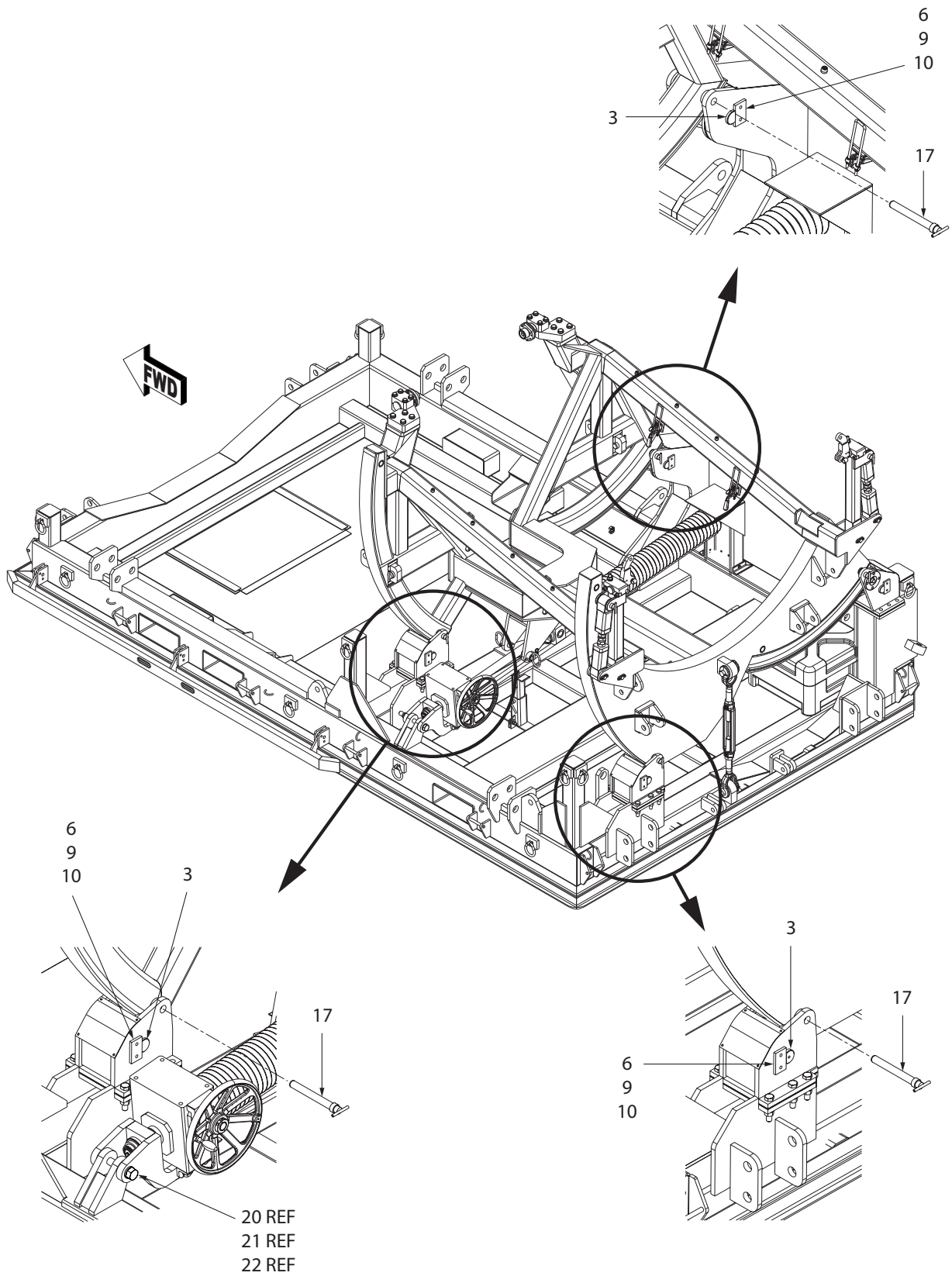


Figure 8.1-3 AGSE-E166-G02 APS Rollover Stand

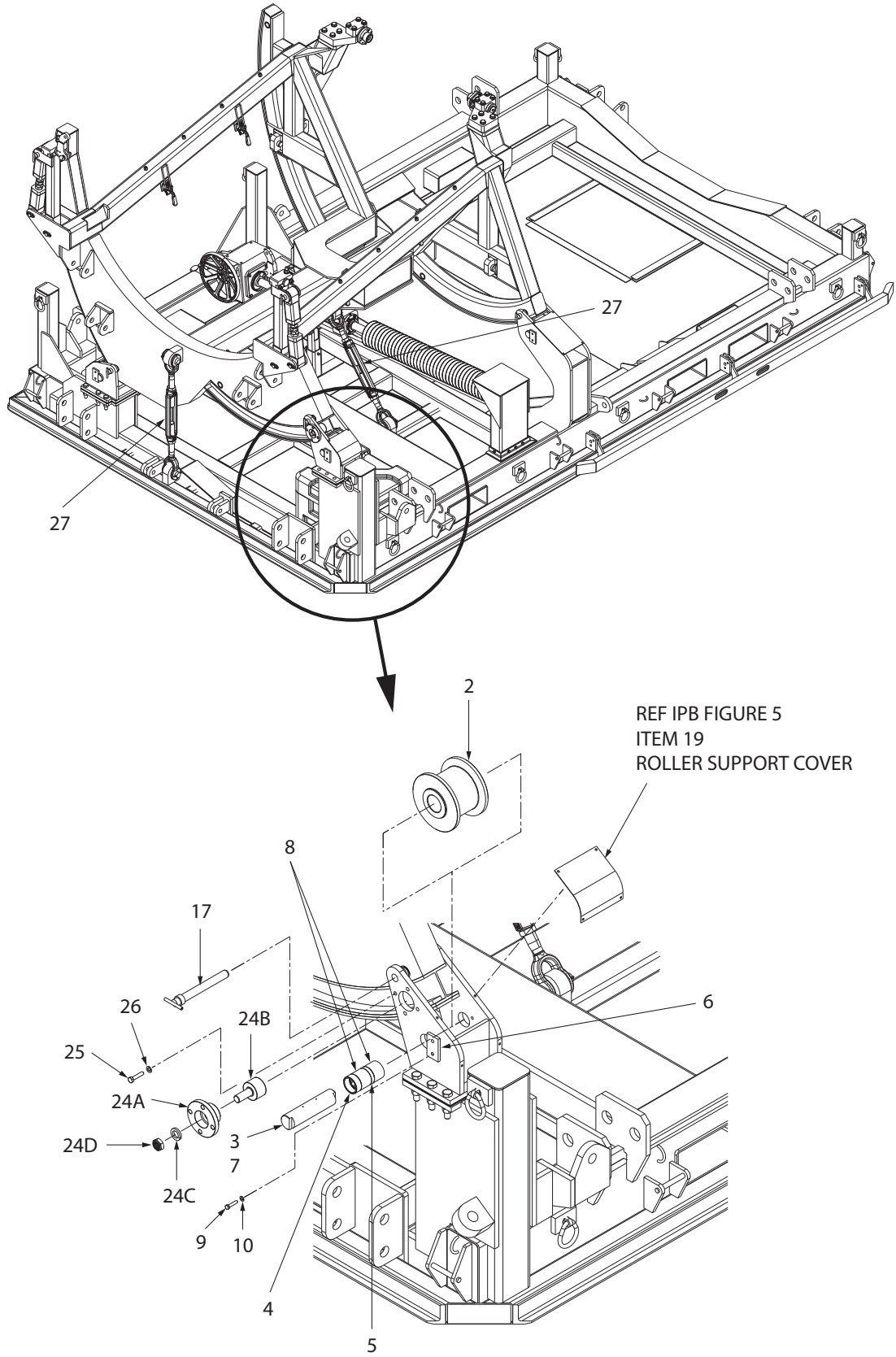


Figure 8.1-4 AGSE-E166-G02 APS Rollover Stand

IPB Figure 2 - AGSE-E16607-S02 Cradle Assembly

ITEM	PART NUMBER	QTY	PART DESCRIPTION
	AGSE-E16607-S02	-	Cradle Assy (Figure 8.2-1 and 8.2-2)
1	AGSE-E16607-P02	1	Cradle Weldment
2	AGSE-E16607-S05	1	FWD Mount Assy - RH (See IPB Figure 3 for Details)
3	AGSE-E16607-S04	1	FWD Mount Assy - LH (See IPB Figure 3 for Details)
4	AGSE-E16607-S07	1	FWD Trunnion Assy - RH (See IPB Figure 14 for Details)
5	AGSE-E16607-S08	1	FWD Trunnion Assy - LH (See IPB Figure 14 for Details)
19	AGSE-E16608-S01	2	AFT Support Brace Assy
20	AGSE-E16608-P03	1	AFT Mount Support
21	AGSE-E16608-P07	1	AFT Mount Support
22	AGSE-E16608-P04	4	AFT Mount Support And Brace Pin
23	AGSE-E13217-P03	2	Clamp Block Upper Half
24	AGSE-E13208-S01	2	AFT Mount Adapter
25	AGSE-E13208-P05	2	AFT Mount Pin
26	AGSE-E16608-P05	2	Eye Bolt - 5/8"-11UNC Dia. - H900
27	AM-91000-64T-H900	2	Safety Pin Assy
28	94758A035	2	Flange Nut - 5/8"-11UNC Dia. - SS - 18-8
29	91259A806	4	Skt Hd Shld Bolt - 5/8" Dia. x 3" Lg w/ 1/2"-13UNC Dia. x 3/4" Lg
30	Commercial	4	Flt Washer - N - 1/2" Dia. Nom ID - Zinc Plt
31	97135A250	4	HH Lock Nut - 1/2"-13UNC Dia. w/ Nylon Insert - Gr 8 - Zinc Plt
32	Commercial	8	HHCS - 1/4"-20UNC Dia. x 5/8" Lg - Gr 5 - Z/Cr Plt
33	Commercial	8	Lock Washer - 1/4" Dia. Nom ID - N Z/Cr Plt

IPB Figure 2 - AGSE-E16607-S02 Cradle Assembly (Continued)

ITEM	PART NUMBER	QTY	PART DESCRIPTION
34	5071A53	4	Pull Action Toggle Clamp
35	AGSE-E16632-P02	2	U-Bolt (Latch)
36	AGSE-E16632-P03	8	Guide Button
37	Commercial	8	SHCS - 3/8"-16UNC - 3/4" Lg - SS
38	Commercial	16	HHB - 5/16"-18UNC x 1" Lg - SS
39	Commercial	16	Flat Washer - 5/16" ID - SS
40	Commercial	16	Lock Nut - 5/16"-16UNC - SS
41	AGSE-E16626-P11	2	Connecting Pin Assy
42	CL6BLPB2.50-S	2	Button Ball Lock Pin - 3/8" Dia. x 2-1/2" Grip
43	Commercial	2	Roll Pin - 1/16" Dia. x 3/4" Lg
44	Commercial	8	Jam Nut - 5/16"-18UNF - SS
46	AGSE-E16608-P08	4	Pin Keeper

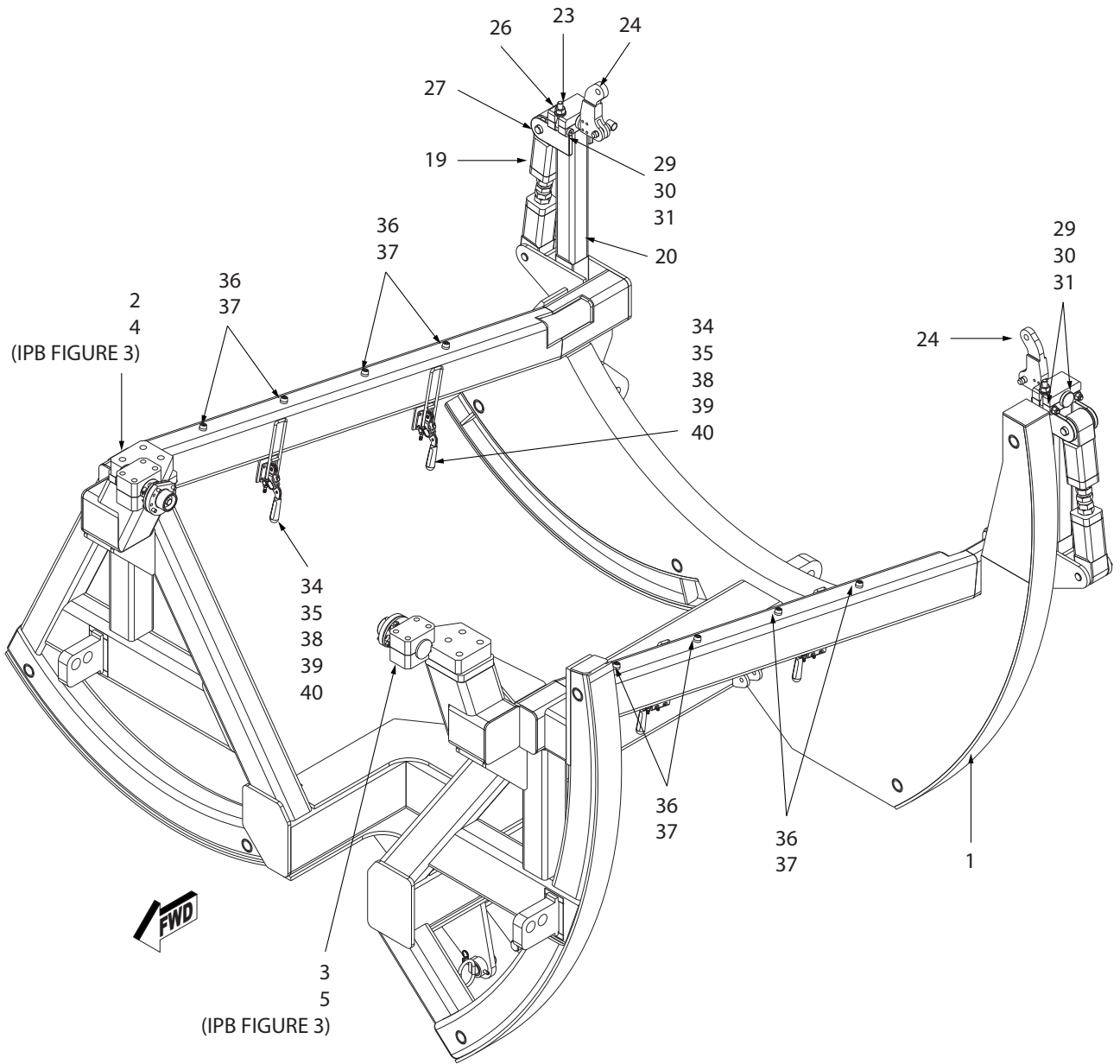


Figure 8.2-1 AGSE-E16607-S02 Cradle Assembly

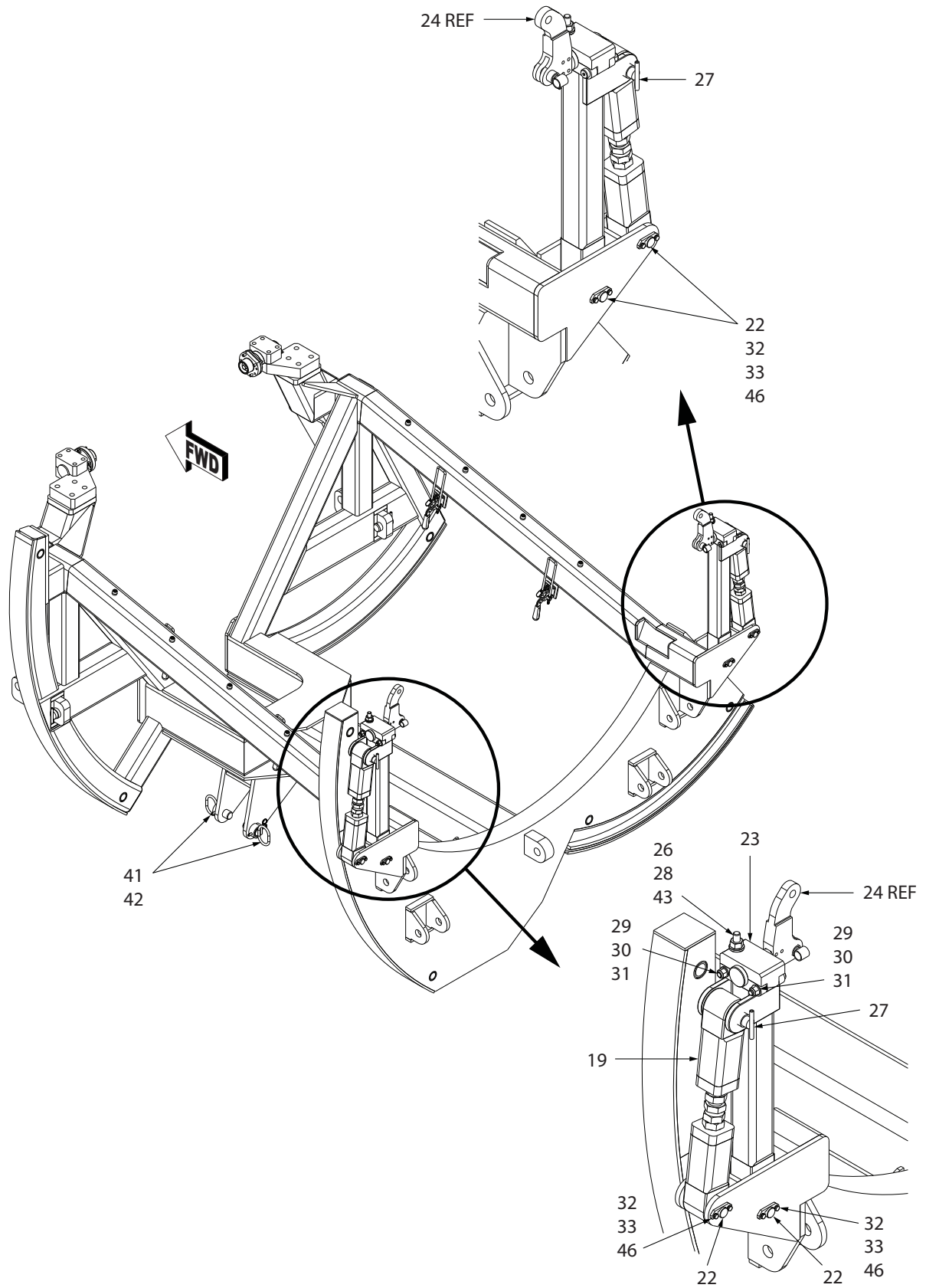


Figure 8.2-2 AGSE-E16607-S02 Cradle Assembly

IPB Figure 3 - AGSE-E16607-S04/S05 FWD Mount Assemblies

ITEM	PART NUMBER	QTY	PART DESCRIPTION
	AGSE-E16607-S04	1	FWD Mount Assy - RH (Figure 8.3-1)
	AGSE-E16607-S05	1	FWD Mount Assy - LH (Figure 8.3-1)
2	AGSE-E13109-P01	1	Trunnion Saddle Plate - RH (Used on AGSE-E16607-S04)
3	AGSE-E13203-P01	1	Trunnion Saddle Plate - LH (Used on AGSE-E16607-S05)
4	AGSE-E13203-P03	1	Trunnion Cap
14	AGSE-S00104-10F056A23	4	Screw, Hex Head
15	AGSE-S00131-10A05	4	Washer
16	AGSE-S00104-12C056A23	4	Screw, Hex Head
17	AGSE-S00131-12A05	4	Washer
49	AGSE-E16607-S07	1	RH Trunnion Assy.
50	AGSE-E16607-S08	1	LH Trunnion Assy.

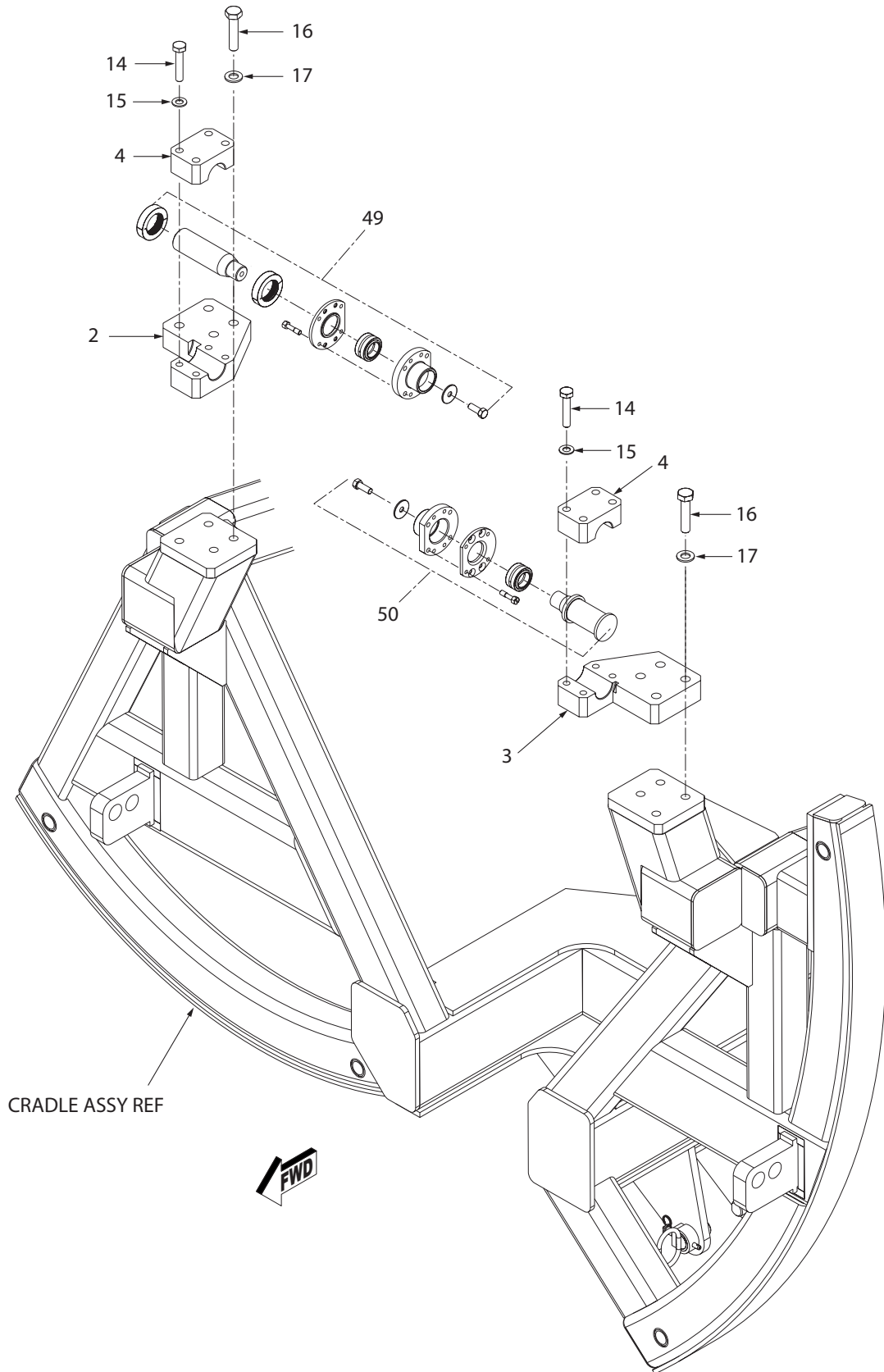


Figure 8.3-1 AGSE-E16607 FWD Mount Assemblies

IPB Figure 4 - AGSE-E16626-S01 Cradle Jack Assembly

ITEM	PART NUMBER	QTY	PART DESCRIPTION
	AGSE-E16626-S01	-	Cradle Jack Assy (Figure 8.4-1)
1	AGSE-E16626-S02	1	Screw Support
2	AGSE-E16626-S03	1	Nut Carrier Assy
3	AGSE-E16626-P01	1	Jack Mount
4	AGSE-E16626-P02	1	Nut Carrier (Used on AGSE-16626-S03)
5	AGSE-E16626-P03	1	Screw Support Weldment (Used on AGSE-E16626-S02)
6	AGSE-E16626-P04	1	Bellow Mount
7	AGSE-E16626-P05	2	Bearing Shaft Washer
8	AGSE-E16626-P06	2	Gear Support Angle
9	AGSE-E16626-P07	2	Nut Carrier Bushing (Used on AGSE-E16626-S03)
11	AGSE-E16626-P09	1	Hand Wheel
12	AGSE-E16627-S01	1	Lead Rolled Ball Screw - Thk Large - Modified
13	B2228-8	1	Bearing - Cylindrical Sintered Bronze - Oil Impregnated - 1.753" OD/ 1.378" ID x 1" Lg
14	B81624-12	1	Bearing - Cylindrical Sintered Bronze - Oil Impregnated - 1.503" OD/ 1.003" ID x 1" Lg (Used on AGSE-E16626-S02)
15	CL-550-RHS	1	Revolving Handle - Rounded Design - Threaded - Stainless
16	H242-40-2-1.688	1	Worm Gear - Style "H" 242 - Single Reduction Hollow Shaft - 40:1 - Assembly PSTN #2 - 1.688 Bore
17	5011T35	3	Worm-Drive Hose & Tube Clamp - 2-1/2" To 5-1/2" Clamp Dia. Range - 1/2" Band Width - 312 SS

IPB Figure 4 - AGSE-E16626-S01 Cradle Jack Assembly (Continued)

ITEM	PART NUMBER	QTY	PART DESCRIPTION
18	5011T41	1	Worm-Drive Hose & Tube Clamp - 3-1/16" To 4" Clamp Dia. Range - 1/2" Band Width - 316 SS
19	6438K58	1	Clamp-On Collar - One-Piece Threaded 1-3/8" - 12 Thread - 2-1/4" OD - 9/16" Width - SS
20	9421T21	1	Shaft Collar - One-Piece Clamp-On 1-1/4" Bore - 2-1/16" OD - 1/2" Width Type 316 SS
21	9297K16	2	Die Spring - 1/2" OD x 1-1/4" Lg
22	HGF-40	1	Grease Fitting - 1/8" NPT 90 - SS
23	MK-MF-10	1	Grease Fitting - Hydraulic Metric M6 x 1 Thd - Straight
24	T176	2	Thrust Bearing - 1.760 Bore - Banded - TTC
25	THK-SS-120108-A	1	Bellows - SS
26	THK-SS-120108-B	1	Bellows - SS
27	Commercial	2	HHCS - 3/8"-16UNC -1
28	Commercial	2	Lock Washer - 3/8"
29	Commercial	2	Washer - 3/8"
30	Commercial	2	Hex Nut - 3/8"-16UNC
31	Commercial	4	HHCS - 5/8"-11UNC - 1.75
32	Commercial	4	HHCS - 5/8"-11UNC - 2
33	Commercial	8	Lock Washer - 5/8"
34	Commercial	4	SHCS - M14 x 40
35	Commercial	4	Lock Washer - M14
36	Commercial	1	3/8" Sq Key x 7-9/16" Lg Plt Key Stock
37	Commercial	1	1/4" Sq Key x 2-1/2" Lg Plt Key Stock
38	Commercial	1	HHCS - 1"-8UNC x 8-1/2" Lg - Gr 5 Zinc Plt - Modified
39	Commercial	1	Hex Lock Nut - 1"-8UNC - Zinc Plt

**IPB Figure 4 - AGSE-E16626-S01
Cradle Jack Assembly (Continued)**

ITEM	PART NUMBER	QTY	PART DESCRIPTION
40	AGSE-E16626-P10	1	Brake Plate
41	96235K7	4	Die Spring Screw Cap - 9/16"-18UNF - 1/4" Hex - 5/16" Thk
42	6391K293	1	Sleeve Bearing - 1-1/2" OD x 1" ID x 3/4" Lg
43	6525K1	1	Friction Disc - 3-3/8" OD x 1-7/8" ID
44	Commercial	2	Flat Washer - R - 1" Dia. Nom ID

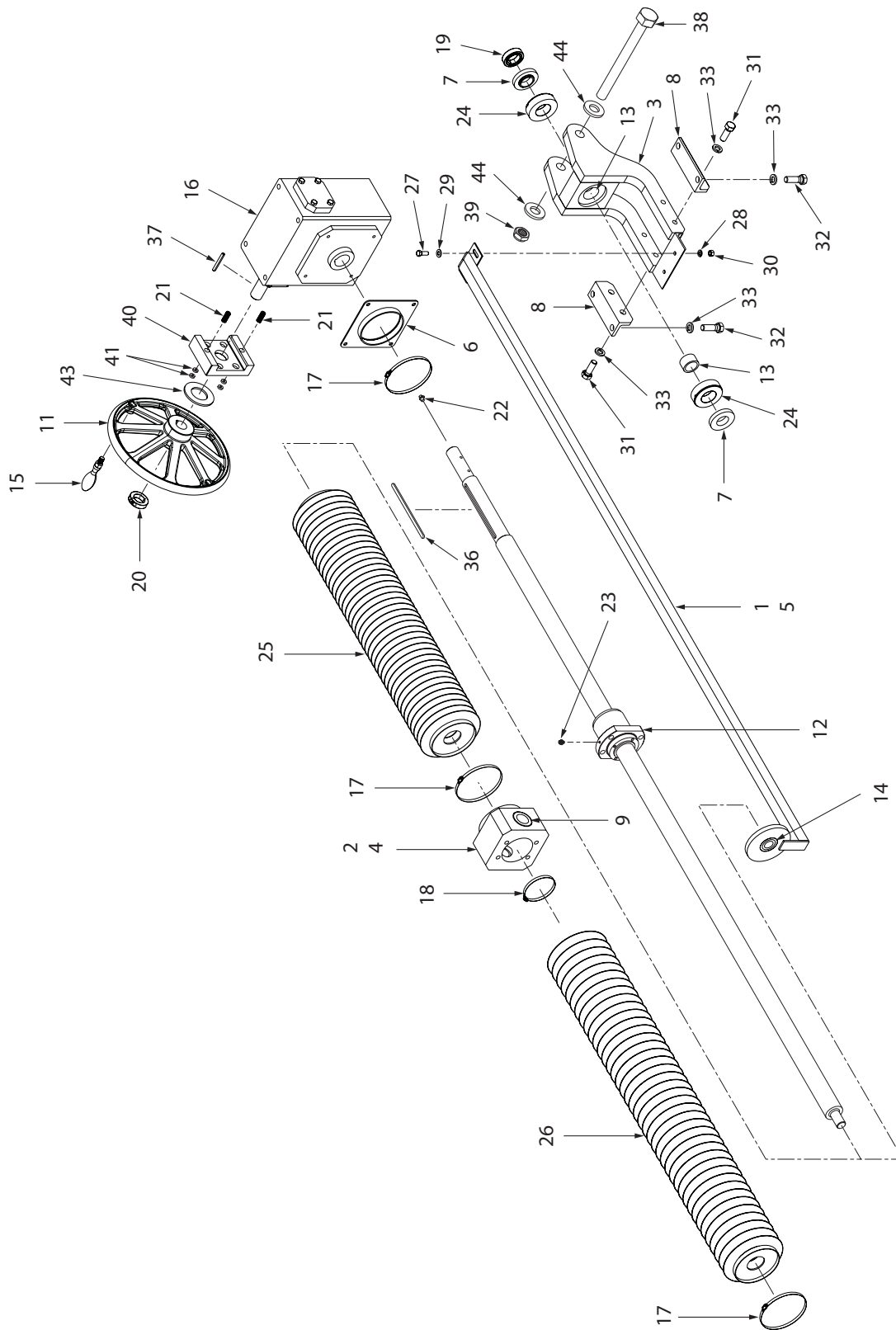


Figure 8.4-1 AGSE-E16626-S01 Cradle Jack Assembly

IPB Figure 4A - AGSE-E16626-S04 Cradle Jack Assembly

ITEM	PART NUMBER	QTY	PART DESCRIPTION
	AGSE-E16626-S04	-	Cradle Jack Assy (Figure 8.4A-1)
1	AGSE-E16626-S02	1	Screw Support
2	AGSE-E16626-S03	1	Nut Carrier Assy
3	AGSE-E16626-P01	1	Jack Mount
4	AGSE-E16626-P02	1	Nut Carrier (Detail Part of Item 2)
5	AGSE-E16626-P03	1	Screw Support Weldment (Detail Part of Item 1)
6	AGSE-E16626-P04	1	Bellow Mount
7	AGSE-E16626-P05	2	Bearing Shaft Washer
8	AGSE-E16626-P06	2	Gear Support Angle
9	AGSE-E16626-P07	2	Nut Carrier Bushing (Detail Part of Item 2)
10	AGSE-E16626-P13	1	Bearing Shaft Washer - 1/2" Thk
12	AGSE-E16627-S01	1	Thk Large-Lead Rolled Ball Screw (Modified)
13	B2228-8	1	Bearing - Oil-Impregnated - Cylindrical Sintered Bronze - 1.753" OD - 1.378 ID x 1" Lg
14	B2432-12	1	Bearing - Oil-Impregnated - Cylindrical Sintered Bronze - 2.004" OD - 1.504" ID x 1" Lg (Detail Part of Item 1)
15	CL-550-RHS	1	Revolving Handle - Rounded Design - Threaded - Stainless (USA)
16	H242-40-2-1.688	1	Style "H" 242 Single Reduction Hollow Shaft Worm Gear - 40:1 - Assembly PSTN #2 - 1.688" Bore
17	5011T35	3	316 SS Worm-Drive Hose & Tube Clamp - 2-1/2" to 5-1/2" Clamp Dia Range - 1/2" Band Width
18	5011T41	1	316 SS Worm-Drive Hose & Tube Clamp - 3-1/16" to 4" Clamp Dia Range - 1/2" Band Width

IPB Figure 4A - AGSE-E16626-S04 Cradle Jack Assembly (Continued)

ITEM	PART NUMBER	QTY	PART DESCRIPTION
19	AGSE-E16652-S01	1	Special Nut Assy (for the Ball Screw)
20	9421T21	1	Type 316 SS One-Piece Clamp-on Shaft Collar - 1-1/4" Bore - 2-1/16" OD - 1/2" Width
21	9297K16	2	Die Spring - 1/2" OD x 1-1/4" Lg
22	HGF-40	1	Grease Fitting - SS - 1/8" NPT 90°
23	MK-MF-10	1	Hydraulic Grease Fitting - Metric - M6 x 1 Thd - Straight
24	T169	2	Banded Thrust Bearing - 1.697" Bore (TTC)
24	T176	2	Banded Thrust Bearing - 1.697" Bore (TTC)
25	THK-SS-120108-A	1	Bellow - SS
26	THK-SS-120108-B	1	Bellow - SS
27	Commercial	2	HHCS - 3/8"-16UNC x 1"
28	Commercial	2	Lock Washer - 3/8"
29	Commercial	2	Flat Washer - 3/8"
30	Commercial	2	Hex Nut - 3/8"-16UNC
31	Commercial	4	HHCS - 5/8"-11UNC x 1-3/4"
32	Commercial	4	HHCS - 5/8"-11UNC x 2"
33	Commercial	10	Lock Washer - 5/8"
34	Commercial	4	SHCS - M14 x 40 mm Lg - Gr 8 - Zinc Plt
35	Commercial	4	Lock Washer - SS - M14
36	Commercial	1	3/8" Sq Key x 7-9/16" Lg - Plt Key Stock
38	Commercial	1	HHCS - 1"-8UNC x 8-1/2" Lg - Zinc Plt - Modified
39	Commercial	1	Hex Lock Nut - 1"-8UNC - Zinc Plt
40	AGSE-E16626-P10	1	Brake Plate
41	96235K7	4	Die Spring Screw Cap - 9/16"-18UNF - 1/4" Hex - 5/16" Thk

IPB Figure 4A - AGSE-E16626-S04 Cradle Jack Assembly (Continued)

ITEM	PART NUMBER	QTY	PART DESCRIPTION
42	6391K293	1	Sleeve Bearing - 1-1/2" OD x 1" ID x 3/4" Lg
43	6525K1	1	Friction Disc - 3-3/8" OD x 1-7/8" ID
45	Commercial	2	Flat Washer - 5/8" ID
46	Commercial	2	HHCS - 5/8"-11UNC - 1-1/4" Lg
47	AGSE-E16648-P01	1	Hand Wheel/Ratchet Adapter
48	94105A614	2	Set Screw - 3/8"-16 x 3/4" Lg - Alloy
49	AGSE-E16648-P02	1	Hand Wheel
50	AGSE-E16648-P03	1	Hand Wheel Storage Bracket
51	98416A125	2	Retainer Pin
52	AGSE-E16650-S02	1	Air Ratchet Extension Bar Assy
54	Commercial	2	Flat Washer - 2" OD x 1" ID Nom - Zinc Plt

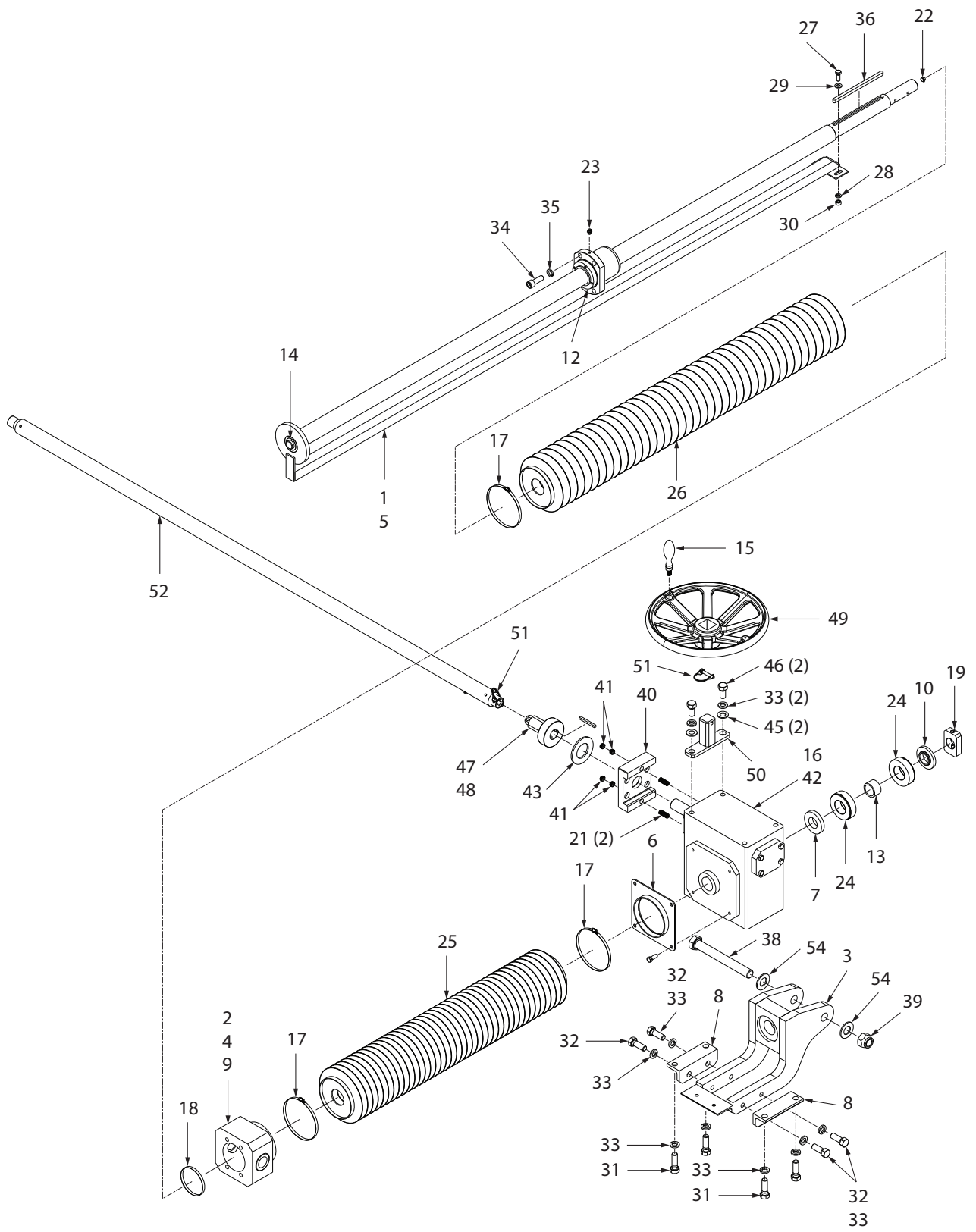


Figure 8.4A-1

IPB Figure 5 - AGSE-E16601-S01 Base Assembly

ITEM	PART NUMBER	QTY	PART DESCRIPTION
	AGSE-E16601-S01	-	Base Assy (Figure 8.5-1)
1	AGSE-E16601-P01	1	Base Weldment
2	AGSE-E16606-P01	1	FWD Roller Support Weldment - LH
3	AGSE-E16606-S01	3	FWD Shim Set - LH
4	AGSE-E16623-P01	1	Cradle Jack Support Base
5	AGSE-E16623-P02	1	Cradle Jack Support Holder
6	AGSE-E16624-P01	1	Protective Jack Cover
7	Commercial	18	HHCS - 3/4"-10UNC x 3-1/2" Lg - Gr 5 Zp-Plt
8	Commercial	18	Hex Hd Nut - 3/4"-10UNC - Gr 5 - Zp-Pl
9	Commercial	18	Lock Washer - 3/4" Dia. - Zp-Pl
10	AM-90500-48L-H900	1	Safety Pin Assy
11	Commercial	5	HHCS - 3/8"-16UNC x 3-1/2" Lg. - Gr 5 Zp-Plt
12	Commercial	5	Lock Washer - 3/8" Dia. - Zp-Plt
13	AM-90500-24L	1	Safety Pin Assy
15	AGSE-E16606-P02	1	AFT Roller Support Weldment - LH
16	AGSE-E16606-S02	3	AFT Shim Set - LH
17	AGSE-E16629-P01	1	AFT Roller Support Weldment - RH
18	AGSE-E16629-S01	3	AFT Shim Set - RH
19	AGSE-E16630-P01	2	Roller Support Cover - LH
20	AGSE-E16631-P01	1	AFT Roller Support Cover - RH
21	AGSE-E16631-P02	1	FWD Roller Support Cover - RH
22	Commercial	16	Slotted Pan Hd Screw - 1/4"-20UNC - 1" Lg - SS
23	YRX-183	1	Storage Case
24	Commercial	4	Slotted RHCS - 1/4"-20UNC - 3/4"
25	Commercial	4	Lock Washer - 1/4"

**IPB Figure 5 - AGSE-E16601-S01
Base Assembly (Continued)**

ITEM	PART NUMBER	QTY	PART DESCRIPTION
26	Commercial	4	Flat Washer - 1/4" - Wide
27	8619K446	1	High Density Polyethylene - 1/8"x36"x24"

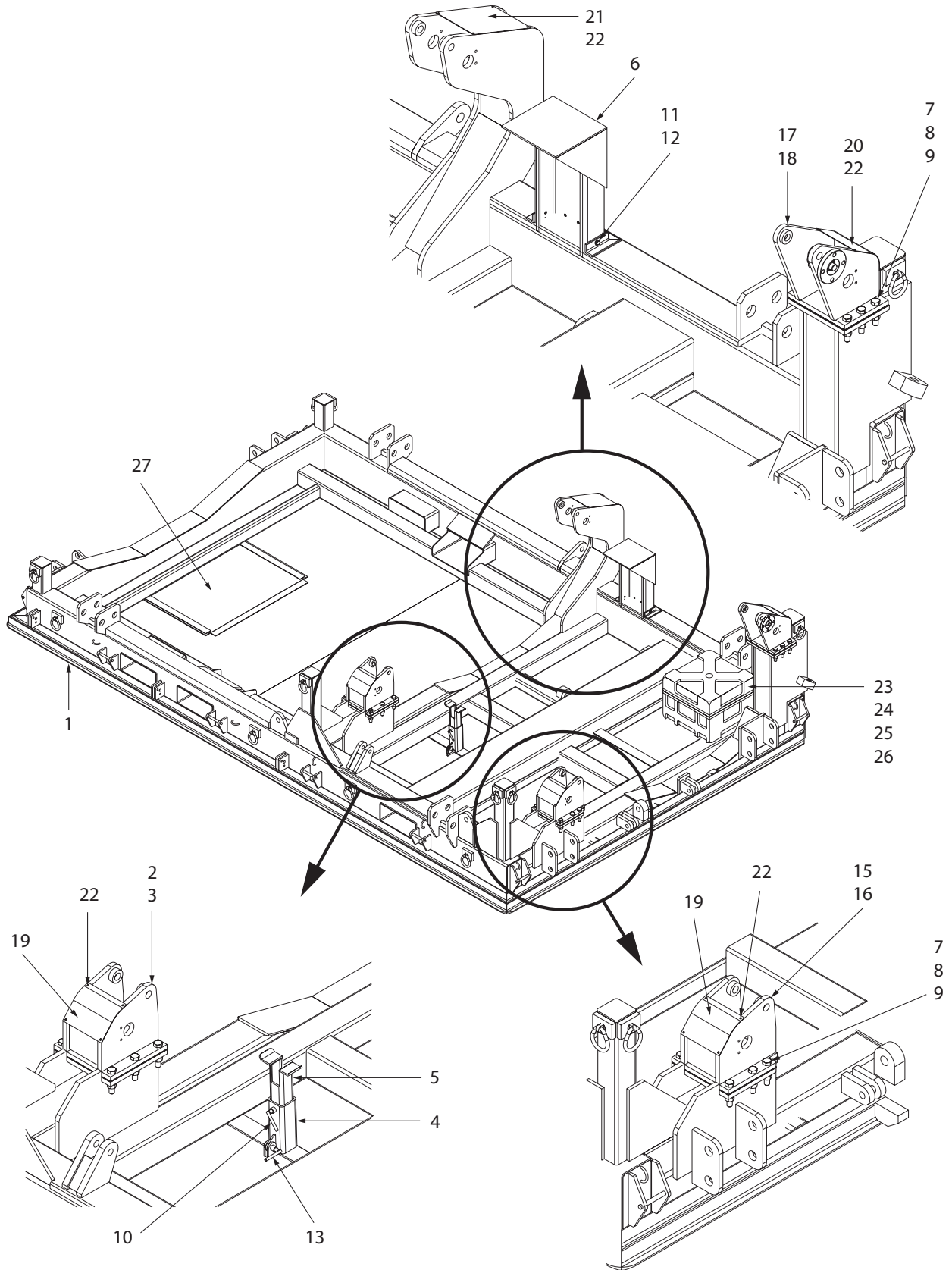


Figure 8.5-1 AGSE-E16601-S01 Base Assembly

IPB Figure 6 - AGSE-E16616-S02 Optional Caster Mount Assembly

ITEM	PART NUMBER	QTY	PART DESCRIPTION
	AGSE-E16616-S02	-	Caster Mount Assy (Figure 8.6-1)
1	AGSE-E16616-P02	1	Caster Mount
5	Commercial	2	HHCS - 5/8"-11UNC x 3-1/2" Lg Gr 5 - Zinc Plt
6	Commercial	4	Hex Head Nut - 5/8"-11UNC
7	Commercial	4	Flat Washer - SAE - 5/8"
8	Commercial	4	Lock Washer - 5/8"
9	AM-91750-124T	2	Safety Pin Assy
10	AM-2079-20	1	Caster Assy - 16" Dia x 5"
	<i>105-102</i>	<i>0</i>	<i>Superseded by AM-2079-20, April 2022</i>
	<i>AGSE-E16616-P03</i>	<i>0</i>	<i>Obsolete, March 2011</i>
11	Commercial	2	HHCS - 5/8"-11 UNC x 3" Lg Gr. 5 - Zinc Plt

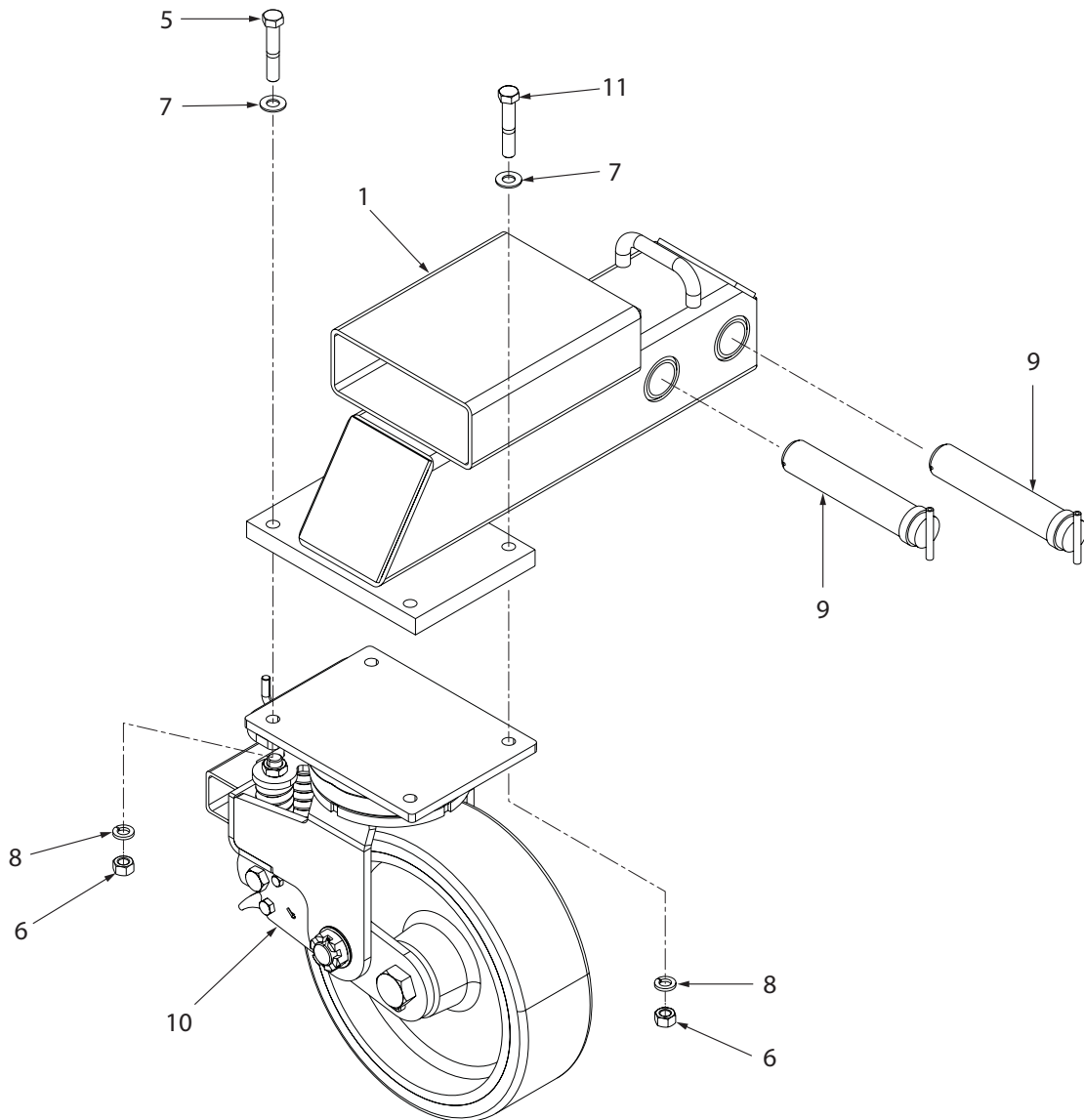


Figure 8.6-1 AGSE-E16616-S02 Optional Caster Mount Assembly

IPB Figure 7 - AGSE-E16621-S01/S02 Optional Jacking Leg Assemblies

ITEM	PART NUMBER	QTY	PART DESCRIPTION
	AGSE-E16621-S01	-	Jacking Leg Right Assy - 42" Lift (Figure 8.6-1)
	AGSE-E16621-S02	-	Jacking Leg Left Assy - 42" Lift (Figure 8.6-1)
	AGSE-E16621-S03	1	Jacking Leg Assy - 42" Lift
1	AGSE-E16621-P01	1	Leg Mount - RH (Used on AGSE-E16621-S01)
2	AGSE-E16621-P02	1	Jacking Leg - Modified (Used on AGSE-E16621-S03)
3	AM-91000-98T-H900	2	Safety Pin Assy
5	AGSE-E16621-S04	1	Steel Ratchet Handle Assy
6	AGSE-E16621-P04	1	Leg Mount - LH (Used on AGSE-E16621-S02)
7	AGSE-E16621-P03	1	Shaft Support (Used on AGSE-E16621-S03)
8	AGSE-E16621-P05	1	Sprocket Shaft (Used on AGSE-E16621-S03)
9	AGSE-E16621-P06	1	Chain Guard (Used on AGSE-E16621-S03)
10	#1610	1	Tapered Bushing - 1" Bore W/KW (Used on AGSE-E16621-S03)
11	D35BTB35	1	Double Sprocket #35 - 35 Teeth (Used on AGSE-E16621-S03)
12	#1008	1	Tapered Bushing - 3/4" Bore W/KW (Used on AGSE-E16621-S03)
13	D35BTB19H	1	Dbl Sprocket #35 - 19 Teeth (Used on AGSE-E16621-S03)
14	6261K711	1	#35 Dbl Chain x 6 Ft Lg (Used on AGSE-E16621-S03)
15	6261K221	1	#35 Dbl Chain Connecting Link (Used on AGSE-E16621-S03)

**IPB Figure 7 - AGSE-E16621-S01/S02
Optional Jacking Leg Assemblies (Continued)**

ITEM	PART NUMBER	QTY	PART DESCRIPTION
16	Commercial	6	HHCS - 1/4"-20UNC x 3/4" Lg - SS (Used on AGSE-E16621-S03)
17	Commercial	6	Lock Washer - 1/4" ID (Used on AGSE-E16621-S03)
19	Commercial	1	Key Stock 1/4" x 1/4" x 1-1/4" Lg (Used on AGSE-E16621-S03)
20	Commercial	1	Key Stock 3/16" x 3/16" x 1-1/4" Lg (Used on AGSE-E16621-S03)
21	Deleted		
22	Deleted		
23	Commercial	6	Flat Washer - 1/4" ID - SS (Used on AGSE-E16621-S03)
24	AM-91000-98T	1	Safety Pin Assy
27	3088A514	2	Shim - Stl 3/4" ID x 1-1/8" OD x 1/8" Thk
28	TB1220	1	Thrust Bearing - 3/4" ID x 1-1/4" OD x 1/8" Thk
29	Commercial	2	Roll Pin - 3/16" Dia. x 1/2" Lg - SS

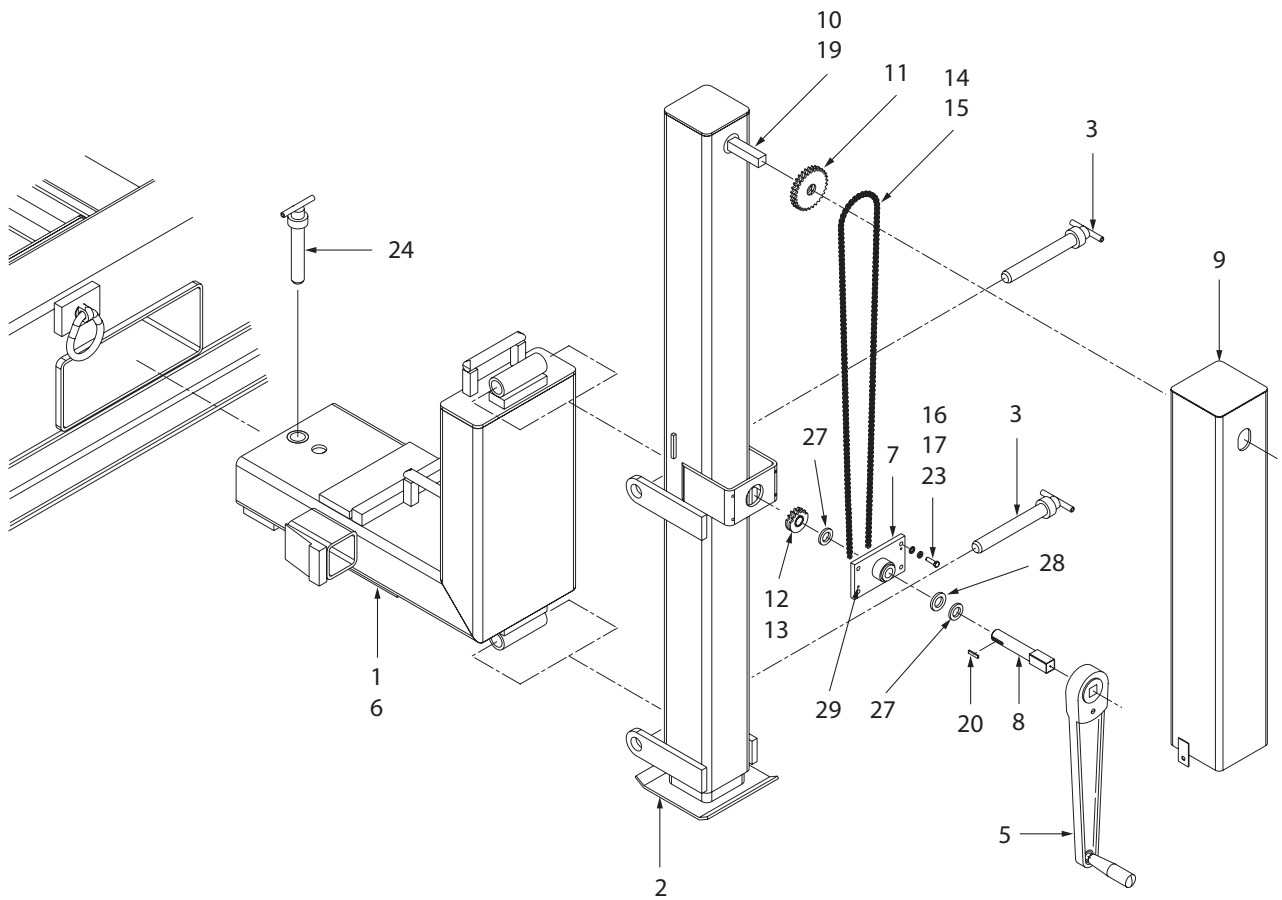


Figure 8.7-1 AGSE-E16621-S01/S02 Optional Jacking Leg Assemblies

IPB Figure 8 - AGSE-E16610-S01 Optional AFT Bootstrap Assembly

ITEM	PART NUMBER	QTY	PART DESCRIPTION
	AGSE-E16610-S01	-	AFT Bootstrap Assy (Figure 8.8-1)
	AGSE-E16610-S02	1	Ctwt Adapter Assy
	AGSE-E16610-S03	2	AFT Bootstrap Adapter Assy
1	AGSE-E16610-P04	1	Weldment (Used on AGSE-E16610-S02)
2	AGSE-E13219-P01	1	Pulley Mount (Used on AGSE-E16610-S03)
3	AM91000-36T-H900	1	Safety Pin Assy (Used on AGSE-E16610-S03)
4	AM91250-90L-H900	4	Safety Pin Assy (Used on AGSE-E16610-S02)
5	AM90875-66L-H900	1	Safety Pin Assy (Used on AGSE-E16610-S03)

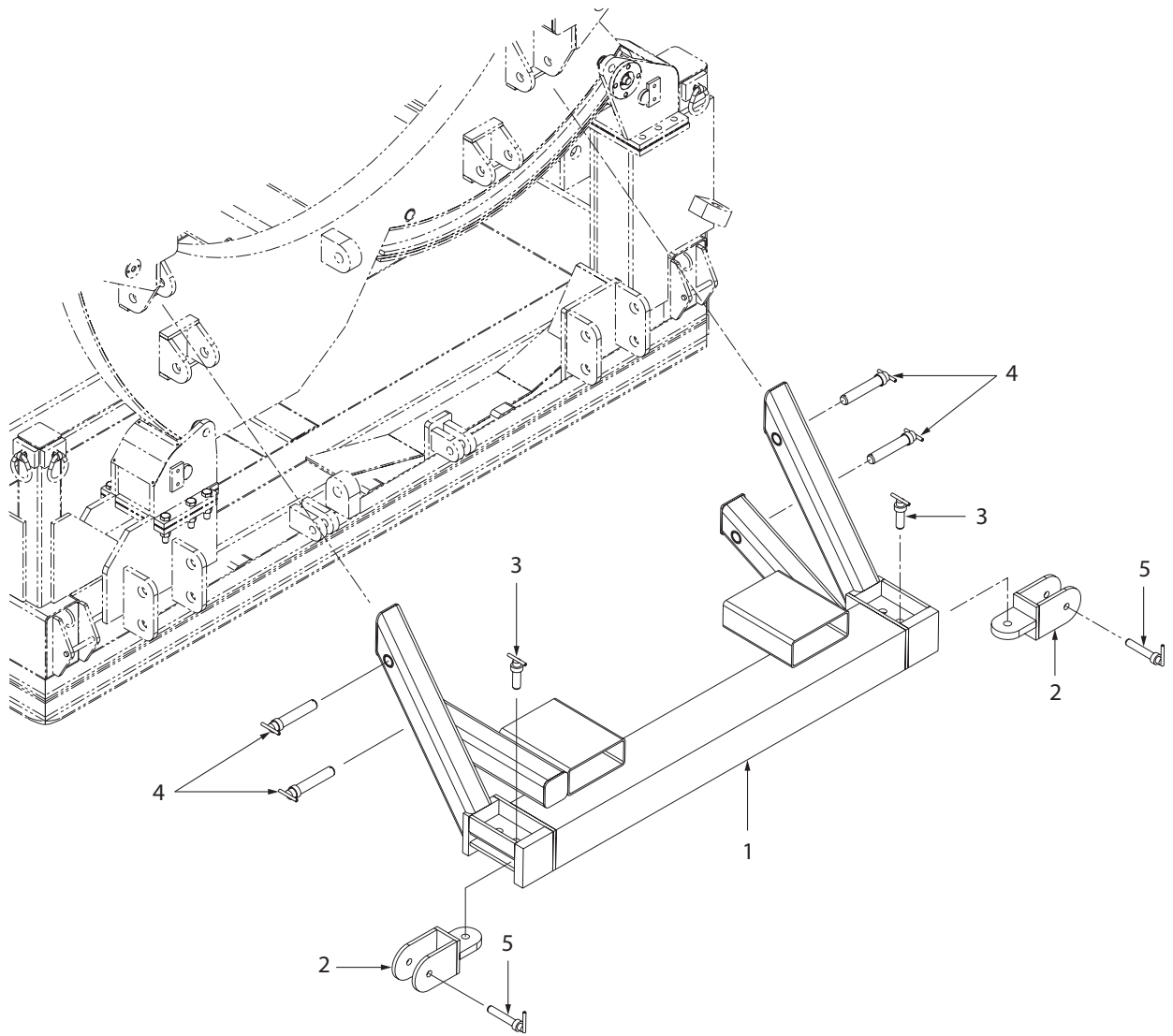


Figure 8.8-1 AGSE-E16610-S01 Optional AFT Bootstrap Assembly

IPB Figure 9 - AGSE-E16609-S01 Optional FWD Bootstrap Assembly

ITEM	PART NUMBER	QTY	PART DESCRIPTION
	AGSE-E16609-S01	-	FWD Bootstrap Assy (Figure 8.9-1)
1	AGSE-E16609-S02	2	FWD Bootstrap Assy (Non-Illustrated)
2	AGSE-E16609-P01	1	Outer Link (Used on AGSE-E16609-S02)
3	AGSE-E16609-P02	1	Inner Link (Used on AGSE-E16609-S02)
4	AGSE-E16609-P03	1	Adapter Pin (Used on AGSE-E16609-S02)
5	AGSE-E16609-P04	1	Dyno Pin (Used on AGSE-E16609-S02)
6	AGSE-E16609-P05	1	FWD Bootstrap Adapter (Used on AGSE-E16609-S02)
7	AGSE-E16609-P06	1	FWD Bootstrap Mtg Pin (Used on AGSE-E16609-S02)

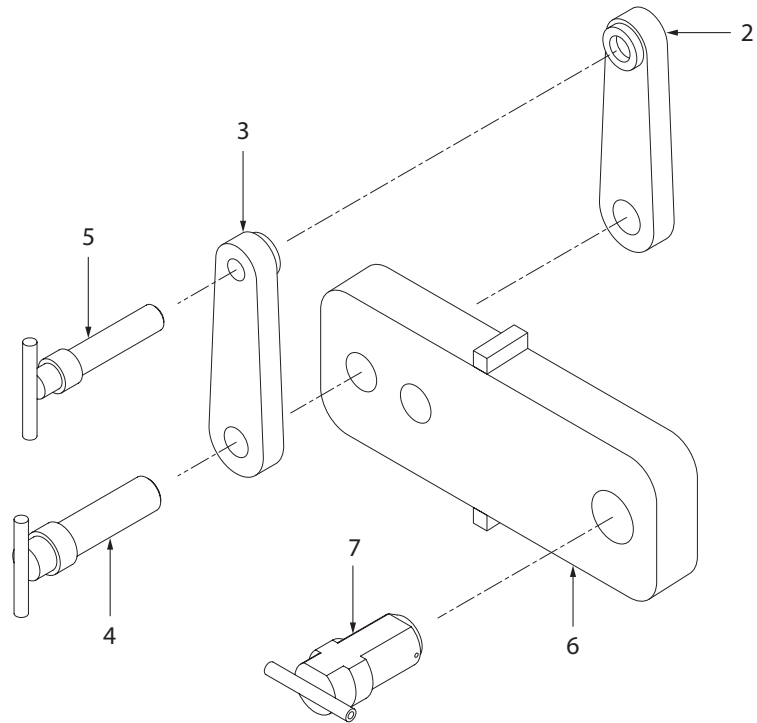


Figure 8.9-1 AGSE-E16609-S01 Optional FWD Bootstrap Assembly

IPB Figure 10 - AGSE-E16620-S01 Optional Shock Mount Assembly

ITEM	PART NUMBER	QTY	PART DESCRIPTION
	AGSE-E16620-S01	-	Shock Mount Assy (Figure 8.10-1)
1	AGSE-E16620-P01	1	Shock Mount Base
2	AGSE-E16620-P02	1	Shock Mount Arm
3	AGSE-S00304-P03	4	Shock Mount
4	AM-91500-150T-H900	2	Safety Pin Assy
5	AGSE-S00140-08FA01	16	Thin Nylon Insert Locknut
6	AGSE-S00175-08A17	32	Washer
7	AGSE-S00105-08F016A01	16	Screw, Hex Head
8	AGSE-S00308-04C008A05	1	Screw, Button Head

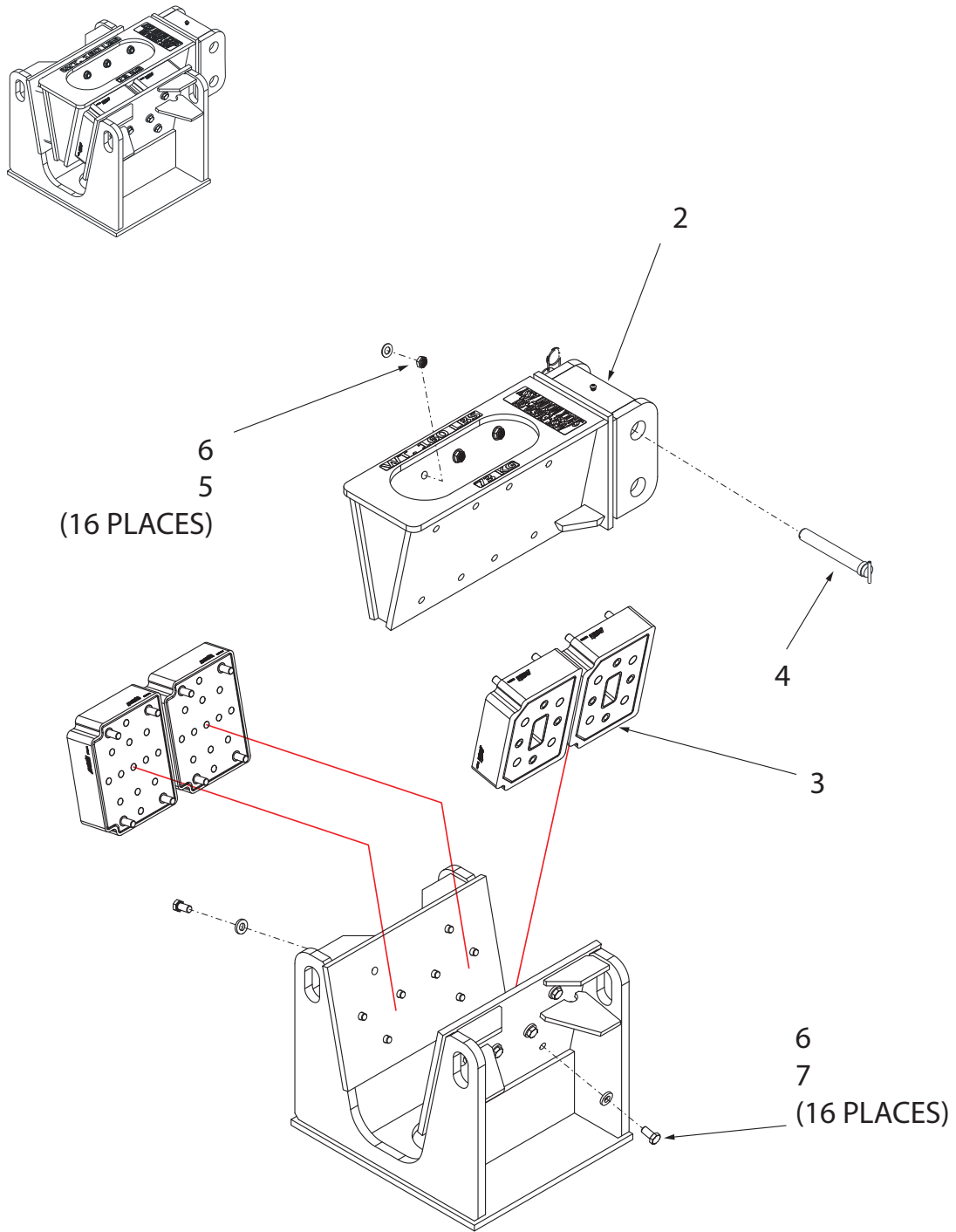


Figure 8.10-1 AGSE-E16620-S01 Optional Shock Mount Assembly

IPB Figure 11 - AGSE-E16612-S04 Optional Safety Kit Assembly

ITEM	PART NUMBER	QTY	PART DESCRIPTION
	AGSE-E16612-S04	-	Safety Kit Assy (Figure 8.11-1)
2	AGSE-E16612-S01	1	Platform Assy - LH
3	AGSE-E16612-S02	1	Platform Assy - RH
4	AGSE-E16612-S03	4	Access Platform Support Rod Assy (See IPB Figure 11A for Details)
6	98404A378	10	Spring Loaded Quick Release Pin - 3/8" Dia. x 1-3/4" Lg. (Used on AGSE-E16612-S01 and AGSE-E16612-S02)
8	AGSE-E16612-P01	1	Platform Frame - LH (Used on AGSE-E16612-S01)
9	AGSE-E16612-P02	1	Platform Frame - RH (Used on AGSE-E16612-S02)
10	AGSE-E16612-P03	1	FWD Adj. Hand Rail - LH (Used on AGSE-E16612-S01)
11	AGSE-E16612-P05	1	FWD Adj. Hand Rail - RH (Used on AGSE-E16612-S02)
12	AGSE-E16612-P07	1	Mid Adj. Hand Rail (Used on AGSE-E16612-S01 and AGSE-E16612-S02)
13	AGSE-E16612-P09	1	AFT Inboard Hand Rail (Used on AGSE-E16612-S01 and AGSE-E16612-S02)
14	AGSE-E16612-P10	1	AFT Outboard Hand Rail (Used on AGSE-E16612-S01 and AGSE-E16612-S02)
19	3014T142	4	Eye-Bolt - 3/8"-16UNC Dia. x 2-1/2" Lg Zinc Plt Steel (Used on AGSE-E16612-S01 and AGSE-E16612-S02)
20	Commercial	4	Flat Washer - 3/8" Nom ID - Zinc Plt
21	Commercial	4	Hex Jam Lock Nut - 3/8"-16UNC - Zinc Plt

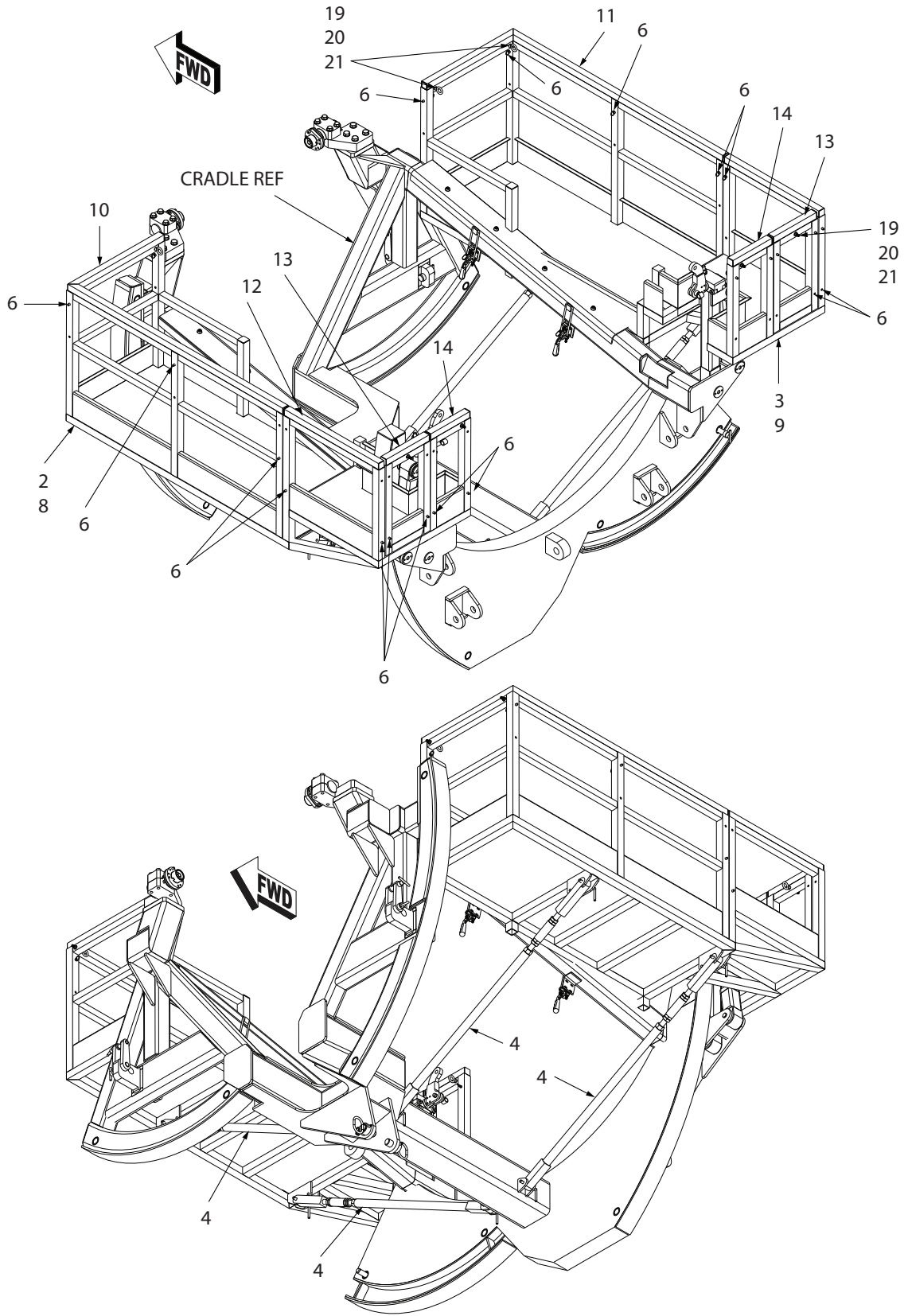


Figure 8.11-1 AGSE-E16612-S04 Optional Safety Kit Assembly

IPB Figure 11A - AGSE-E16612-S03 Access Platform Support Rod Assembly

ITEM	PART NUMBER	QTY	PART DESCRIPTION
	AGSE-E16612-S03	-	Access Platform Support Rod Assy (Figure 8.11A-1)
1	AGSE-E16612-P16	1	Clevis Blk - Zinc Plt
2	AGSE-E16612-P17	1	Center Body - Zinc Plt
3	AGSE-E16612-P18	1	Extension Rod - Zinc Plt
4	94846A550	1	Hex Jam Nut - 1"-8UNC- RH Thrd - Zinc Plt
5	99612A182	1	Hex Jam Nut - 1"-8UNC - LH Thrd - Zinc Plt
6	AM-90500-44L-H900	2	Safety Pin Assy

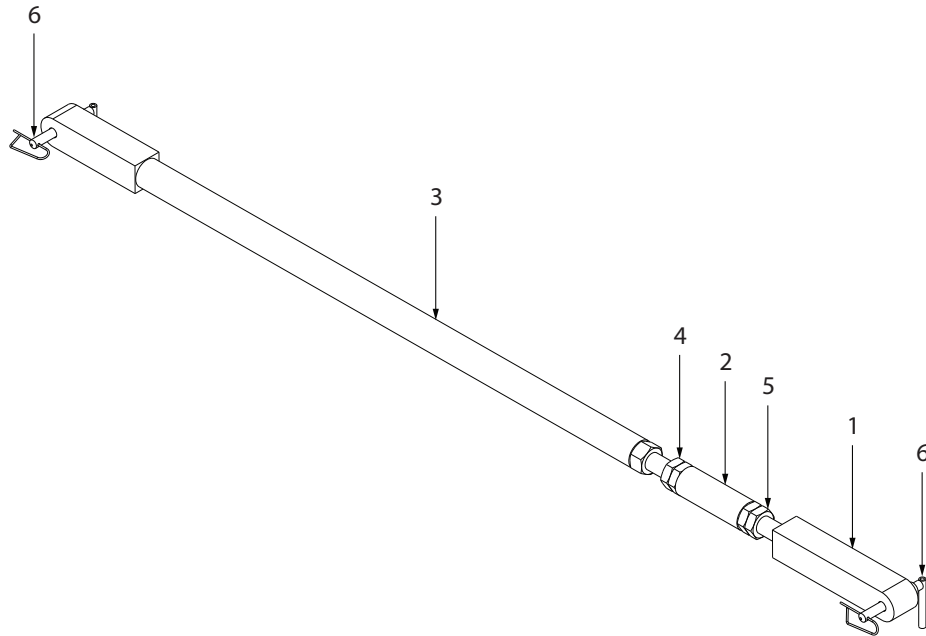


Figure 8.11A-1

IPB Figure 12 - AGSE-E16625-S01 Accessories Container Assembly

ITEM	PART NUMBER	QTY	PART DESCRIPTION
	AGSE-E16625-S01	-	Accessories Container Assy (Figure 8.12-1)
1	AGSE-C06510-S01	1	Cover Assy
2	AGSE-E16638-P01	1	Container Base Assy
3	AGSE-E16644-S01	1	Jacking Leg Skid Assy
4	AGSE-E16645-S01	1	Adapter Skid Assy
5	AGSE-E16633-P01	1	Caster/Mount Skid Assy
6	AGSE-C07405-P01	1	Shock Mount Skid Assy
7	AM-90750-180T-H900	8	Safety Pin Assy - 3/4" Dia. x 11-1/8" Grip
8	AM-90375-76T	1	Safety Pin Assy - 3/8" Dia. x 4-3/4" Grip
9	AM-90750-115T-H900	1	Safety Pin Assy - 3/4" Dia. x 7-1/8" Grip

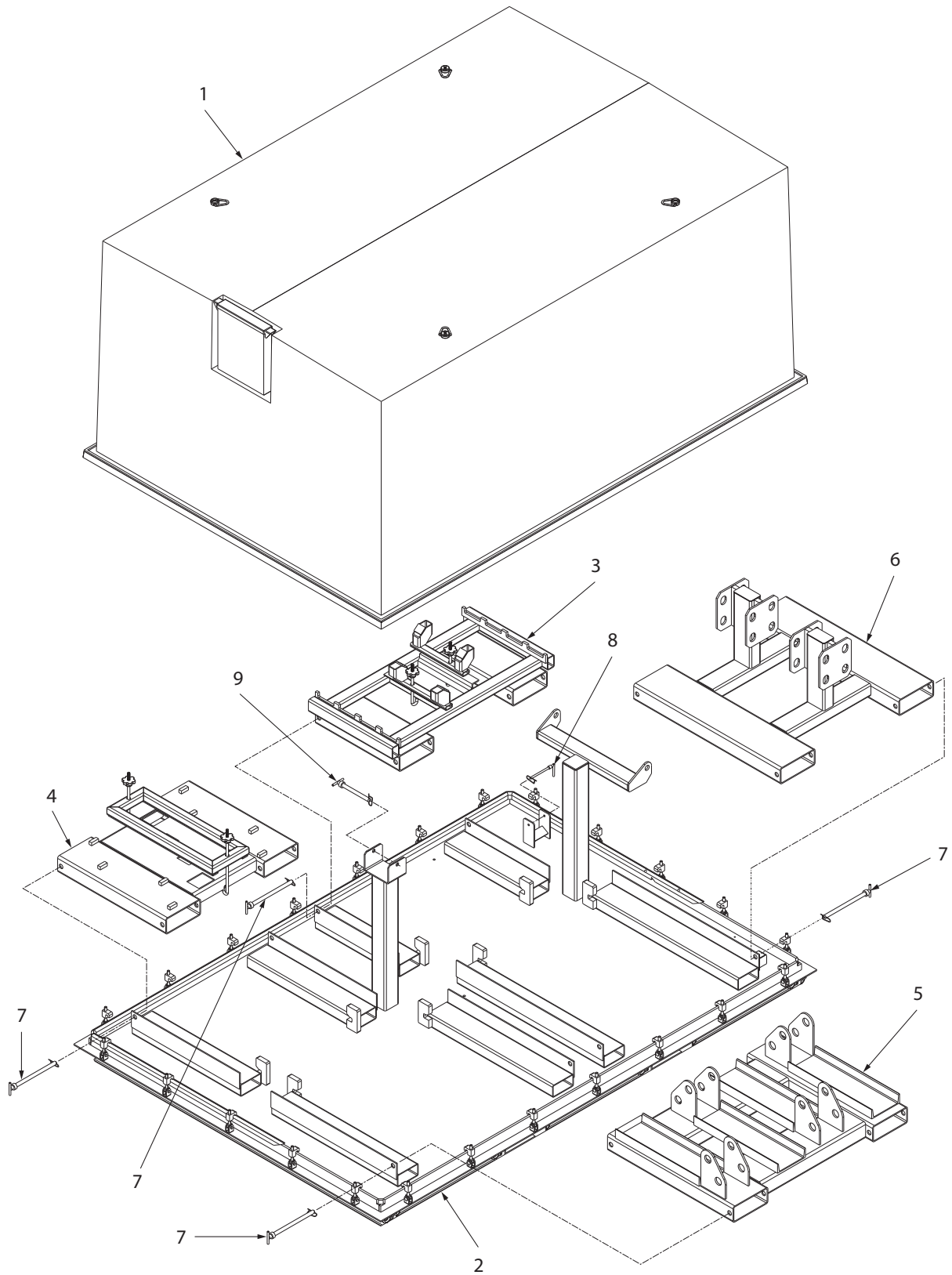


Figure 8.12-1

IPB Figure 13 - AGSE-E16640-S01 Bootstrap and Safety Kit Container Assembly

ITEM	PART NUMBER	QTY	PART DESCRIPTION
	AGSE-E16640-S01	-	Accessories Container Assy (Figure 8.13-1)
1	AGSE-C06510-S01	1	Cover Assy
2	AGSE-E16638-P02	1	Container Base Assy
3	AM-90750-44L-H900	4	Safety Pin Assy
4	AGSE-90750-155T-H900	2	Safety Pin Assy
5	3576T16	1	Hammer Close Chain Connector
6	AGSE-E16640-S02	4	Strap Assy
7	AGSE-E16640-1	1	SHT 5 x 3-3/8" x 3/16" Thk - ASTM-A36 - Zinc Plt (Detail of Item 6)
8	3576T16	1	Hammer-Close Chain Connector (Detail of Item 6)
9	TBD	1	2" Polyester Webbing W/ Ratchet and "D" Ring Ends (Detail of Item 6)

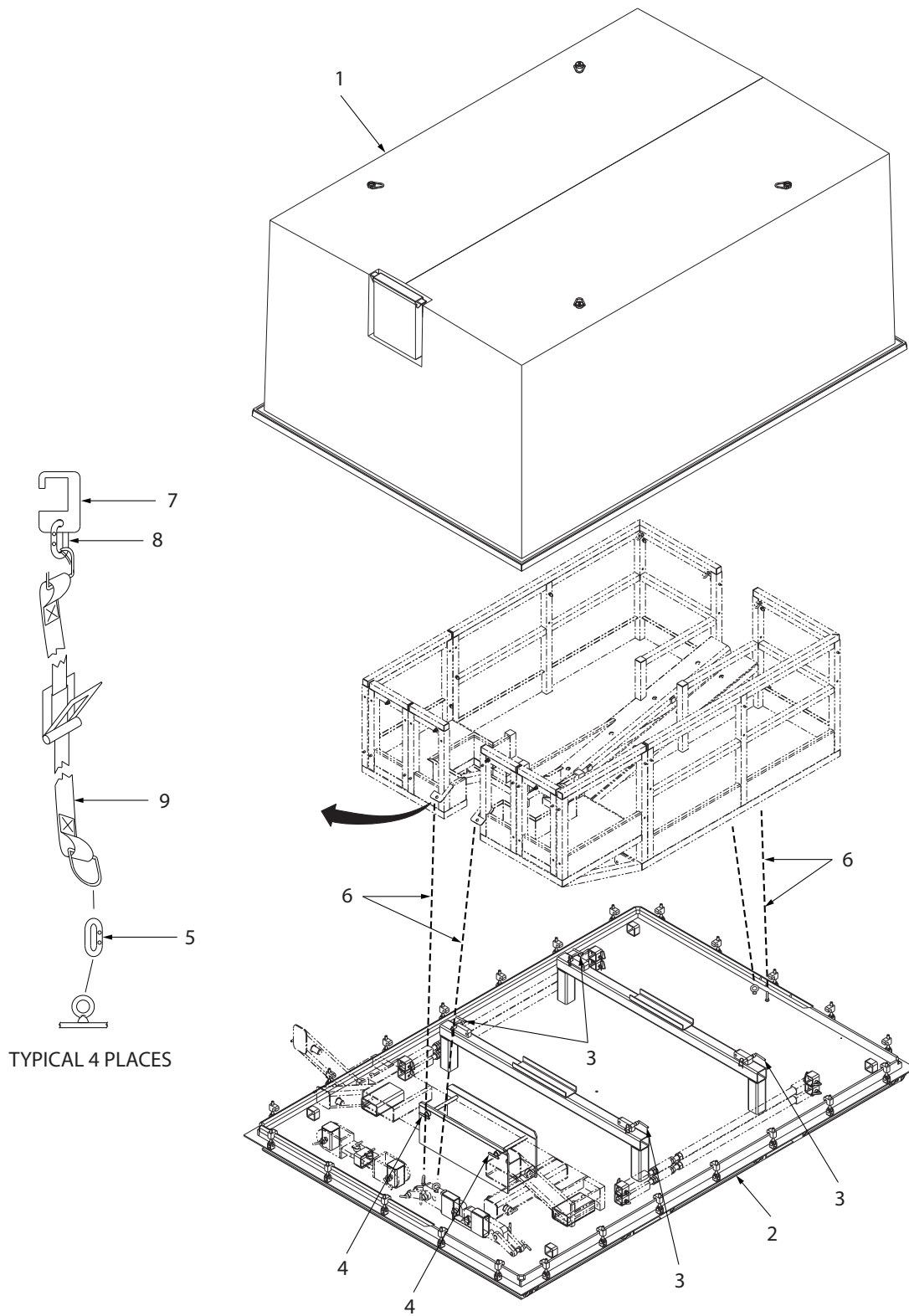
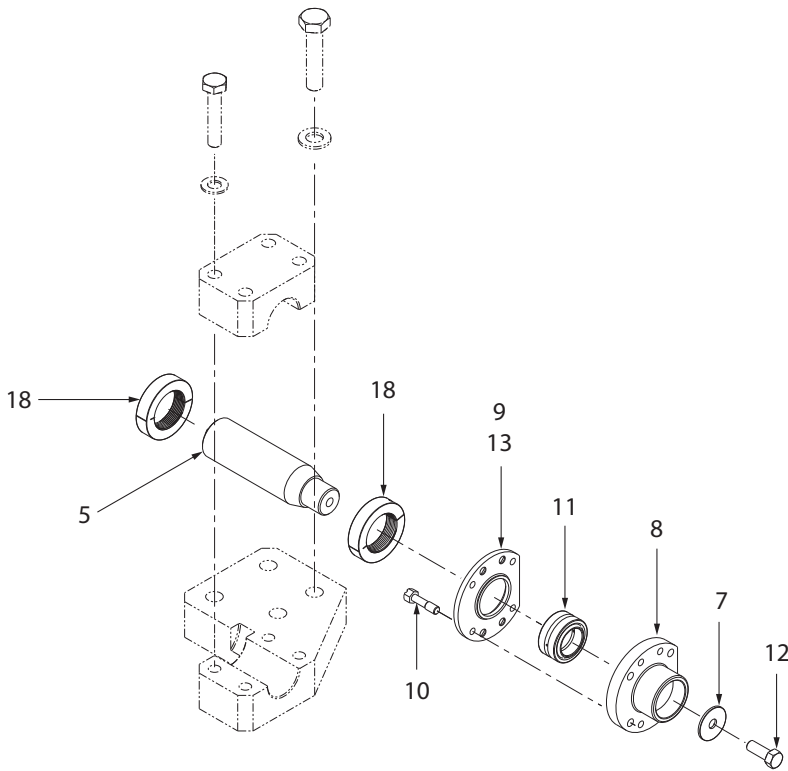


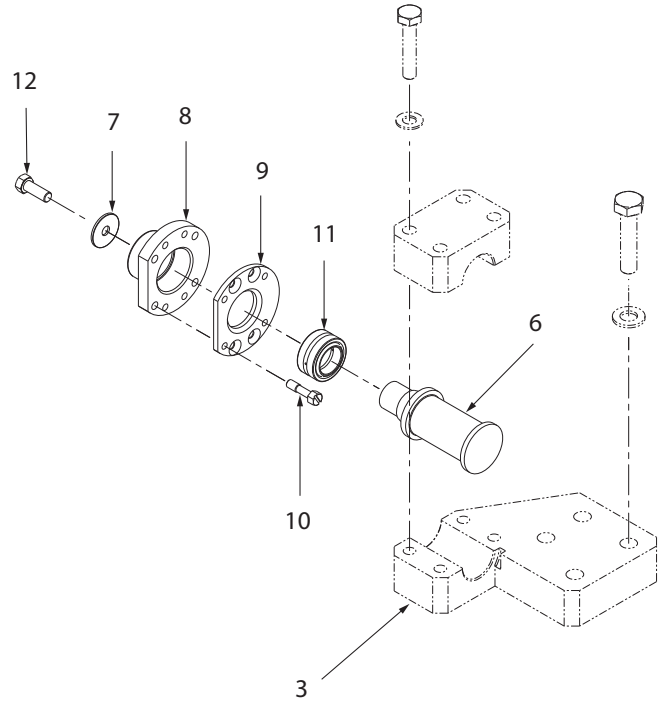
Figure 8.13-1

IPB Figure 14 - AGSE-E16607-S07/S08 FWD Trunnion Assemblies

ITEM	PART NUMBER	QTY	PART DESCRIPTION
	AGSE-E16607-S07	1	FWD Trunnion Assy - RH (Figure 8.14-1)
	AGSE-E16607-S08	1	FWD Trunnion Assy - LH (Figure 8.14-1)
5	AGSE-E13109-P02	1	Trunnion - FWD Mount - RH (Used on AGSE-E16607-S07)
6	AGSE-E13204-P01	1	Trunnion - FWD Mount - LH (Used on AGSE-E16607-S08)
7	AGSE-E13204-P03	1	Retainer
8	AGSE-E13205-P01	1	Mount Adapter
9	AGSE-E13205-P02	1	Retainer
10	AGSE-E13205-P03	4	Mount Adapter Bolt
11	13SF22	1	Bearing - Spherical - 1" Dia. - 3/8" Bore
12	Commercial	1	HHCS - 1/2"-20UNF x 1" Lg - SS
13	Commercial	4	FSHS - 3/8"-24UNF X 3/4" Lg - SS
18	TCL-32-12-SS	2	Thd Clamp Collar



**AGSE-E16607-S07
RH TRUNNION ASSEMBLY**



**AGSE-E16607-S08
LH TRUNNION ASSEMBLY**

Figure 8.14-1 AGSE-E16607-S07 and AGSE-E16607-S08 Trunnion Assemblies

9.0 – Stencils, Decals, and Placards

9.1 General

Various stencils, decals, and placards are added to the equipment to provide warnings, cautions, and general information. These items should be reviewed and understood by maintenance and user personnel. The preceding drawings in section 8.0 identify all stencils, decals, and placards used on this equipment.

9.2 Stencil Details

Item No.	Letter Size	Stencil Contents
1	1”	FWD MOUNT
2	2”	TRENT 900
3	3”	ROLLS-ROYCE
4	1”	C.G. CRADLE ONLY 4,000 LBS.
5	1”	C.G. CRADLE & BOOTSTRAP 5,120 LBS.
6	1/2”	SAFETY KIT BRACE ATTACH
7		“FWD” and Engine Logo
8	1/2”	REMOVE PINS FOR BOOTSTRAP
9	1”	MAX. WEIGHT OF E166-G02: 12,800 LBS (5,805 KG) ENGINE T900: 14,200 LBS (6,441 KG) TOTAL: WEIGHT 27,000 LBS (12,246 KG)
10	1”	FWD MOUNT

Item No.	Letter Size	Stencil Contents
11	1/2"	FWD BOOTSTRAP ADAPTER REMOVE BEFORE ROTATE <==
12	1/2"	FWD BOOTSTRAP ADAPTER ==>
13	1/2"	FWD BOOTSTRAP REMOVE BEFORE ROTATE ==>
15	1"	SHIPPING BRACE MUST BE TIGHT & LOCKED BEFORE TRANSPORT
16	1"	AGSE-E166-G02 TRENT 900 ALL PURPOSE STAND
17	2"	S/N "XXX"
18	1/2"	SHIPPING BRACE ATTACH
19	1/2"	AFT BOOTSTRAP SUPPORT ATTACH
20	1"	SAFETY KIT ATTACH

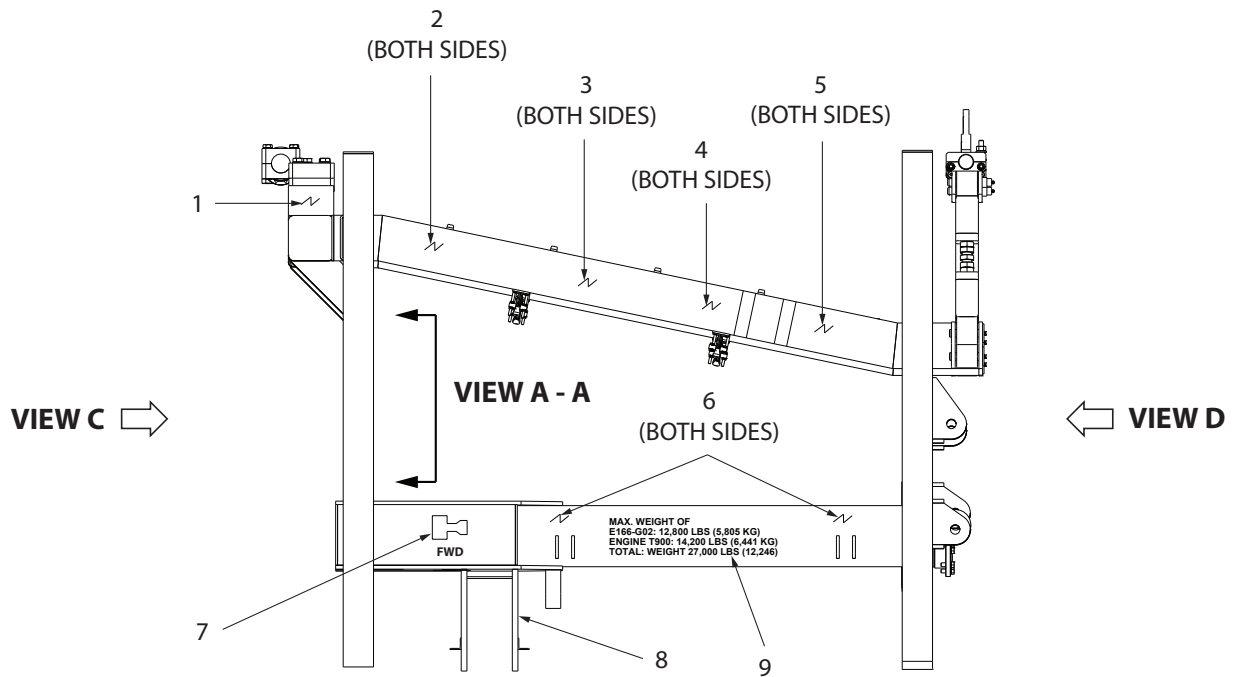
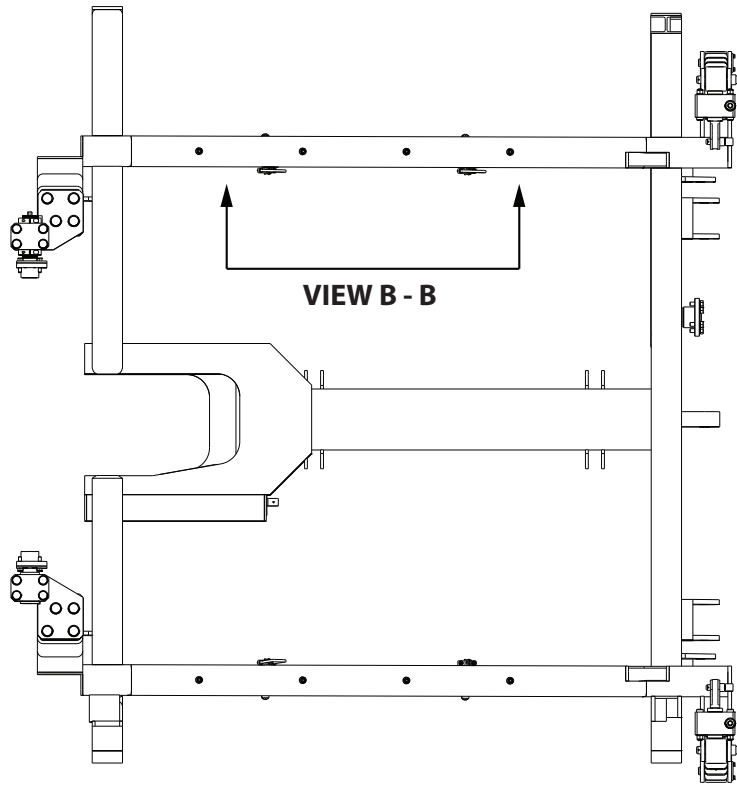
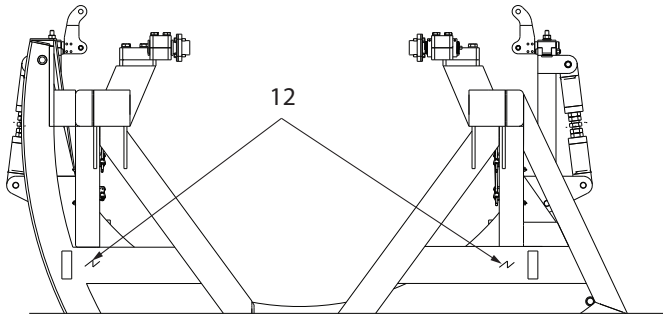
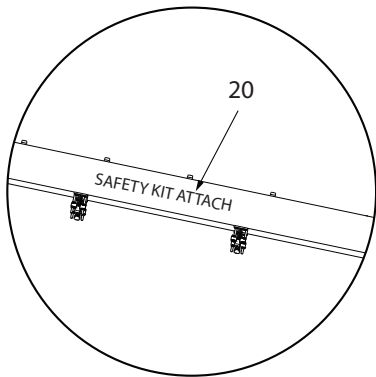


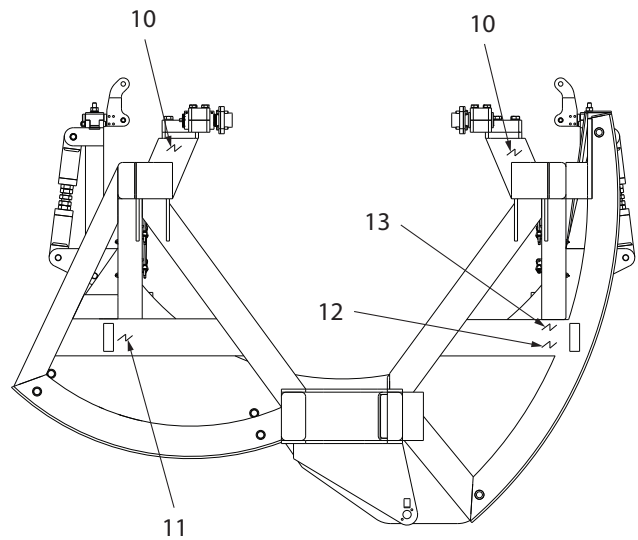
Figure 9.2.1-1



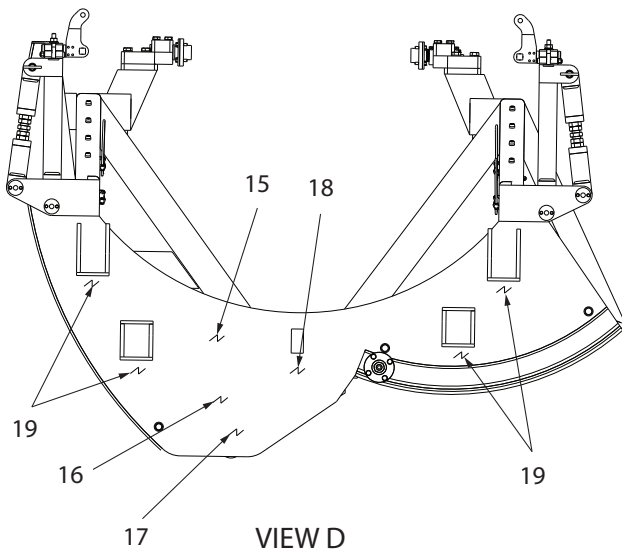
VIEW A - A



VIEW B - B
(TYP BOTH INSIDE SURFACES)



VIEW C



VIEW D

Figure 9.2.1-2

Item No.	Letter Size	Stencil Contents
1	1/2"	AIR TIE DOWN ONLY
2	3/8"	EMPTY STAND ONLY TRUCK TIE DOWN ENGINE IN STAND AIR TIE DOWN
3	1/2"	COVER TIE DOWN
4	3/4"	NO FORK LIFT JACKING LEG ONLY
5	3/4"	NO FORK LIFT WITH ENGINE INSTALLED
6	1"	FORK LIFT
7	1/2"	COVER TIE DOWN
8	3/8"	EMPTY STAND ONLY TRUCK TIE DOWN ENGINE IN STAND AIR TIE DOWN
9	1/2"	STAND ENGINE HOIST
10	1/2"	COVER TIE DOWN
11	3/8"	EMPTY STAND ONLY TRUCK TIE DOWN ENGINE IN STAND AIR TIE DOWN
12	3/8"	C.G EMPTY BASE & CRADLE 12,800

Item No.	Letter Size	Stencil Contents
13	1"	FORK LIFT & JACKING LEG
15	3/8"	EMPTY STAND ONLY TRUCK TIE DOWN ENGINE IN STAND AIR TIE DOWN
16	1/2"	STAND ENGINE HOIST
17	1/2"	COVER TIE DOWN
18	1"	NO STEP ON SCREW
19	3"	FWD LOGO
20	1 1/2"	ROLLS-ROYCE
21	1/2"	SHIPPING BRACE ATTACHED UPRIGHT <===
22	1"	SHIPPING BRACE MUST BE TIGHT & LOCKED BEFORE TRANSPORT
23	1/2"	TOW BAR ATTACHED
24	1/2"	SHIPPING BRACE ATTACHED UPRIGHT <===
25	1/2"	SHIPPING BRACE ATTACH UPRIGHT

Item No.	Letter Size	Stencil Contents
26	1/2"	TOW BAR ATTACHED
27	1/2"	COVER TIE DOWN
28	1/2"	JACKING LEG PIN REMOVE FOR FORK LIFT
29	1/2"	BEFORE ROLLING PULL 4 CRADLE TO BASE PINS RELEASE 2 SHIPPING BRACES
31	3/8"	JACKING LEG PIN REMOVE FOR FORK LIFT
32	1/2"	CASTER MOUNT
33	1/2"	FORK TUBE BLOCKER PIN STORAGE
34	1/2"	AIR TIE DOWN ONLY
35	1"	CASTER MOUNT
36	3/4"	NO FORK LIFT JACKING LEG ONLY
37	3/4"	NO FORK LIFT WITH ENGINE INSTALLED
38	1"	FORK LIFT
39	1 1/2"	ROLLS-ROYCE

Item No.	Letter Size	Stencil Contents
40	1/2"	STAND ENGINE HOIST
41	2"	TRENT 900
42	3/4"	MAX. WEIGHT OF E166-G02: 12,800 LBS (5,805 kg) ENGINE T900: 14,200 LBS (6,441 kg) TOTAL WEIGHT: 27,000 LBS (12,246 kg)
43	1"	FORK LIFT & JACKING LEG
44	1/2"	COVER TIE DOWN
45	1/2"	STAND ENGINE HOIST
46	1/2"	AIR TIE DOWN ONLY
48	3/8"	EMPTY STAND ONLY TRUCK TIE DOWN ENGINE IN STAND AIR TIE DOWN
49	3/8"	C.G. EMPTY BASE & CRADLE 12,800 LBS
50	3/8"	EMPTY STAND ONLY TRUCK TIE DOWN ENGINE IN STAND AIR TIE DOWN

Item No.	Letter Size	Stencil Contents
51	1/2"	COVER TIE DOWN
52	3"	FWD LOGO
53	3/8"	EMPTY STAND ONLY TRUCK TIE DOWN ENGINE IN STAND AIR TIE DOWN
54	1/2"	COVER TIE DOWN
55	3/8"	EMPTY STAND ONLY TRUCK TIE DOWN ENGINE IN STAND AIR TIE DOWN
56	3/8"	STOW SCREW SUPPORT FOR BOOTSTRAP
57	1/2"	AIR TIE DOWN ONLY
58	1"	SHOCK MOUNT
59	1"	AGSE-E166-G02 TRENT 900 ALL PURPOSE STAND
60	2"	S/N "XXX"
61	1"	SHOCK MOUNT
62	1/2"	AIR TIE DOWN ONLY

Item No.	Letter Size	Stencil Contents
63	3/8"	EMPTY STAND ONLY TRUCK TIE DOWN ENGINE IN STAND AIR TIE DOWN
64	3/8"	EMPTY STAND ONLY TRUCK TIE DOWN ENGINE IN STAND AIR TIE DOWN
65	1/2"	AIR TIE DOWN ONLY
66	1/2"	SHIPPING BRACE ATTACH ROLLED
67	1/2"	AIR TIE DOWN ONLY
68	1/2"	COVER TIE DOWN
69	1"	SHOCK MOUNT
70		SIDE GUIDE DEPLOY FOR LOAD/UNLOAD THRU B747 F SIDE CARGO DOOR

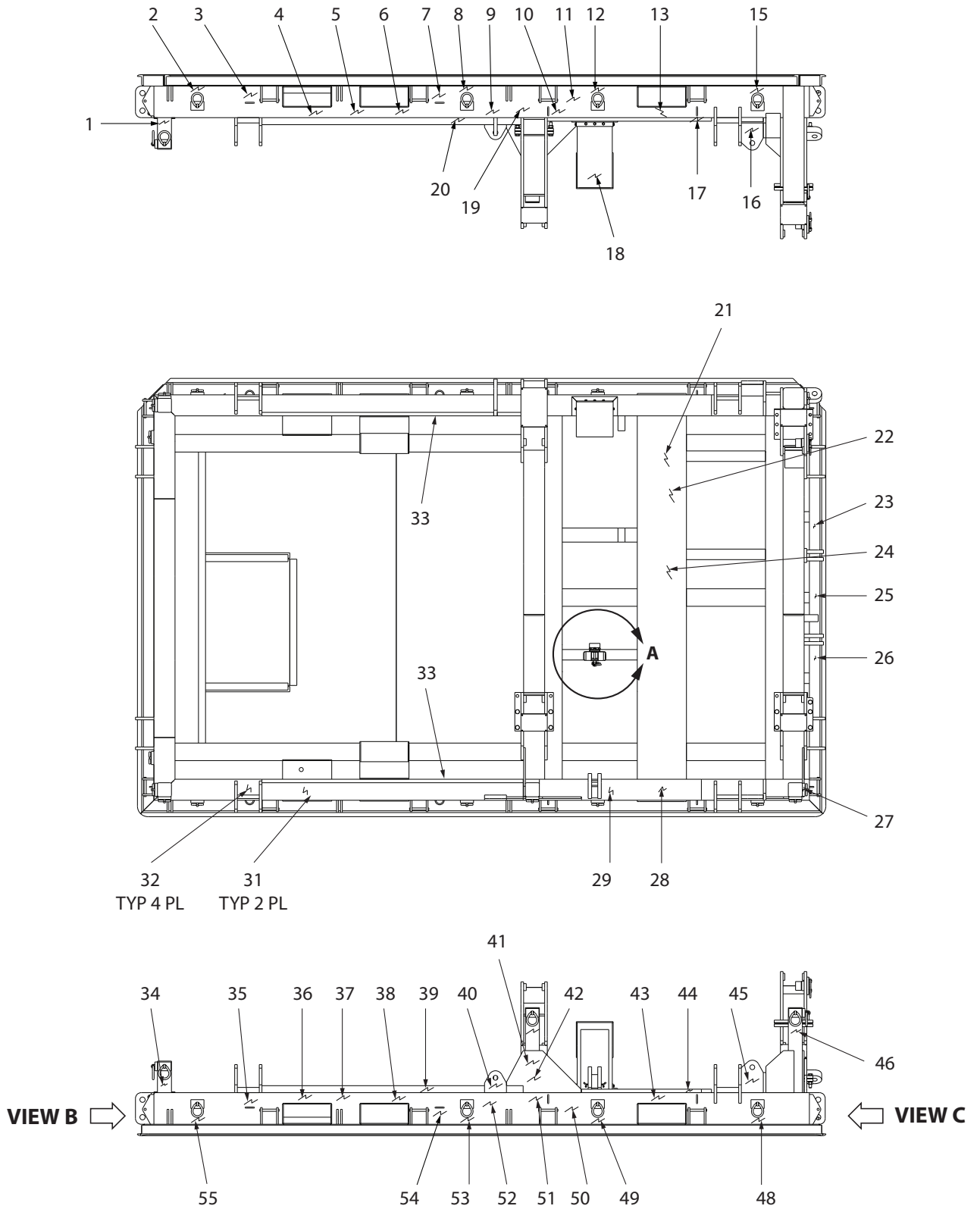
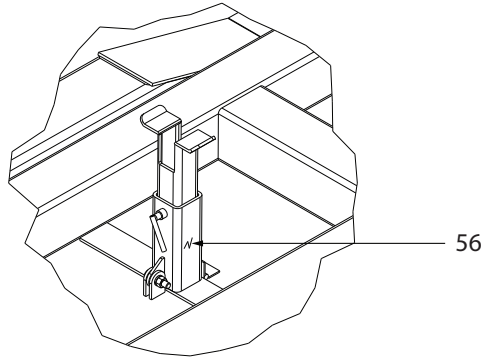
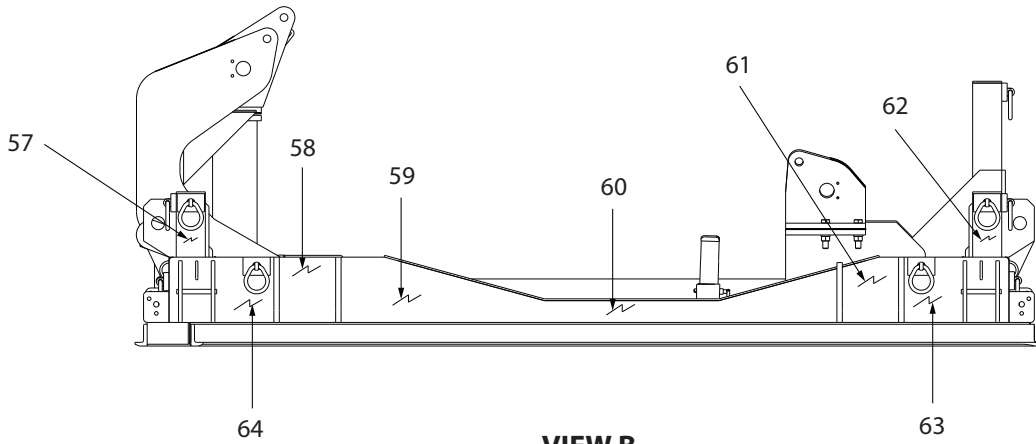


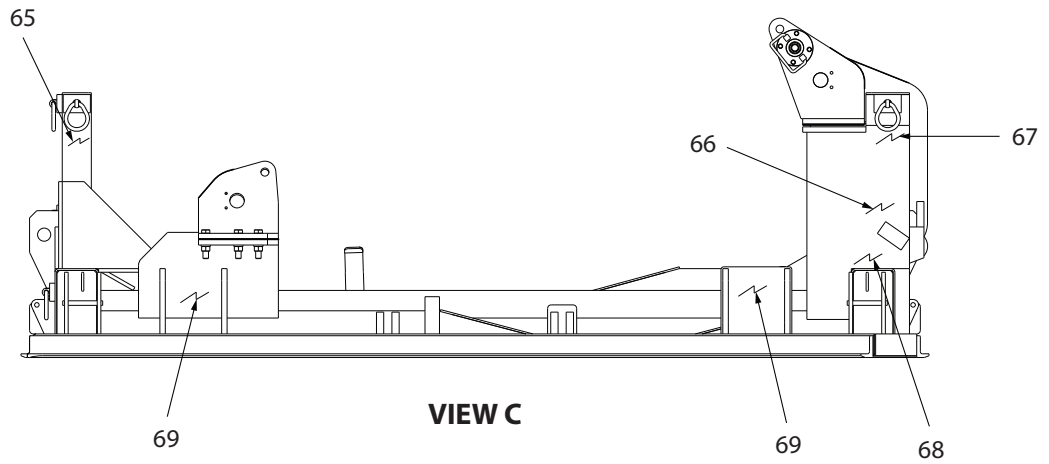
Figure 9.2.2-1



DETAIL A



VIEW B



VIEW C

Figure 9.2.2-2

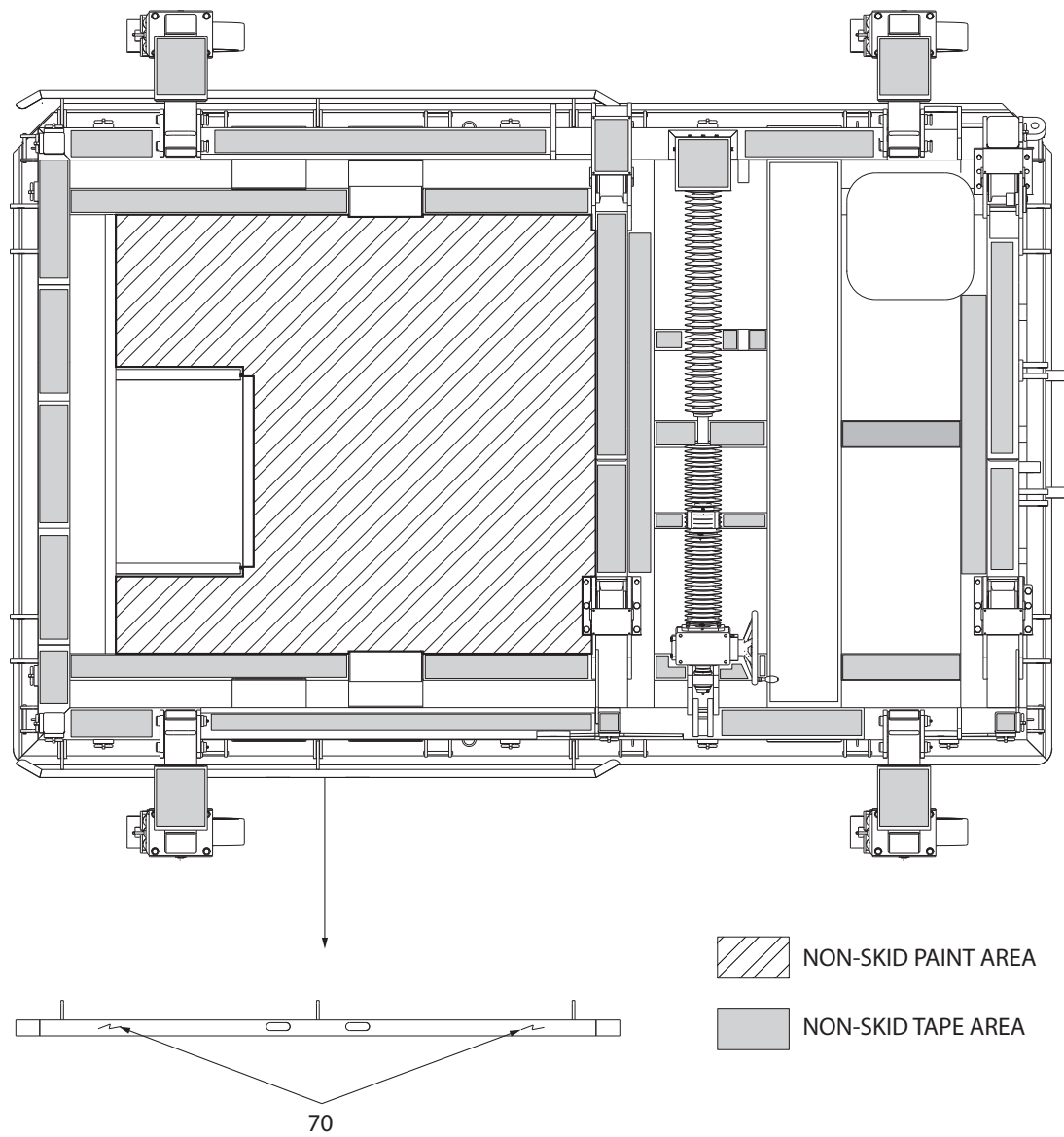


Figure 9.2.2-3

9.2.3 Tow Bar Stencils (Figures 9.2.3-1)

Item No.	Letter Size	Stencil Contents
1	1"	WEIGHT 120 LBS
2	1"	AGSE-E16618-S01 TOW BAR ASSY
3	2"	MAX. SPEED 3 MPH/5 KMH

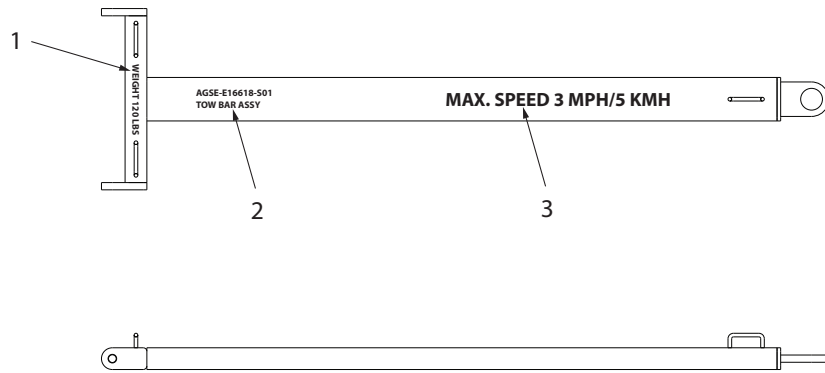


Figure 9.2.3-1

9.2.4 Shock Mount/Caster Stencils (Figures 9.2.4-1)

Item No.	Letter Size	Stencil Contents
1	1"	3 MPH 5 KMH MAX. TOW SPEED
2	1"	FORK LIFT
3	1"	WT. 147 LBS
4	1/2"	AGSE-E120-S01 SHOCK MOUNT ASSY
5	1"	E16616-P02 "CASTER MOUNT" NEARSIDE SURFACE ONLY

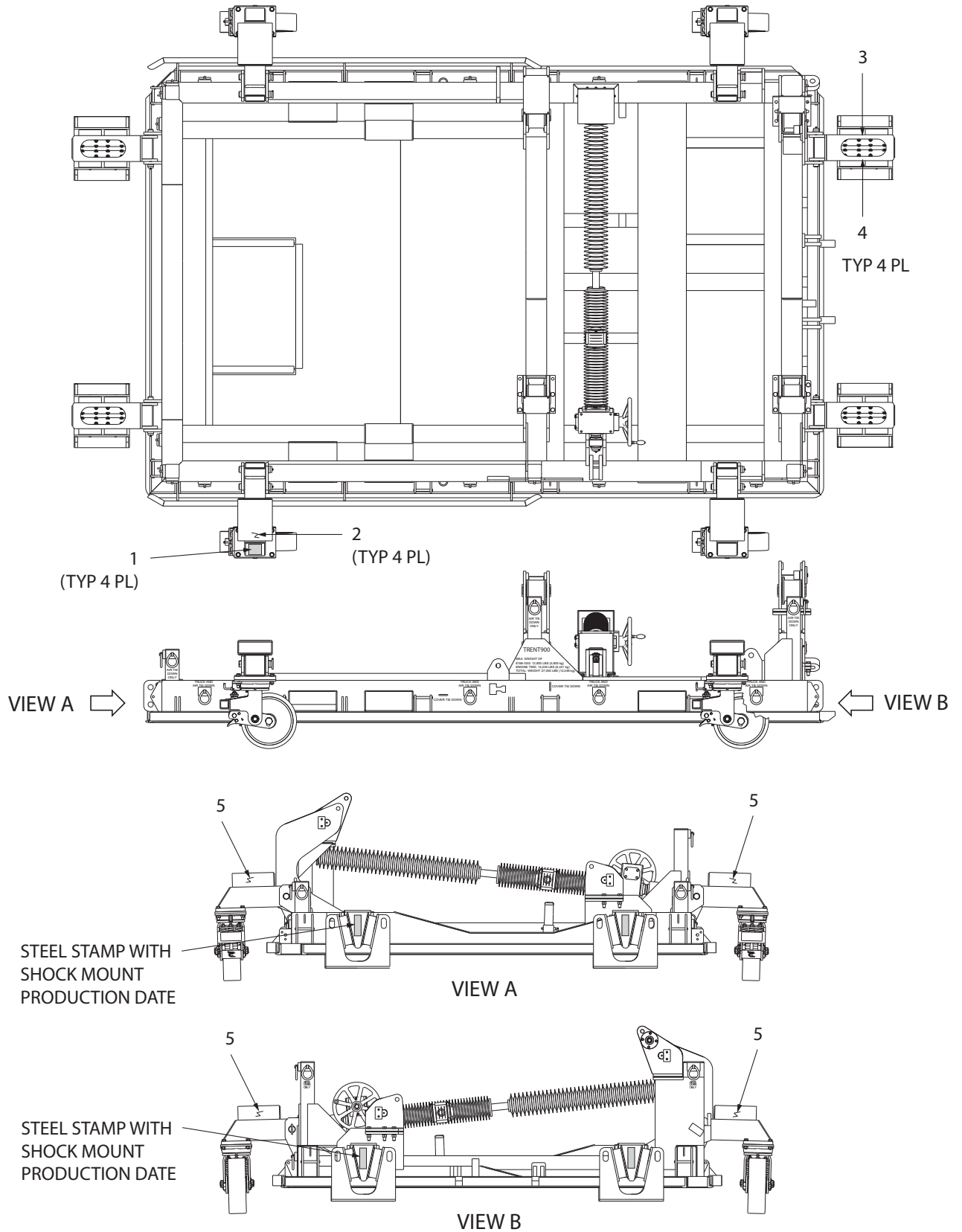


Figure 9.2.4-1

9.2.5 Jacking Leg/Leg Mount Stencils (Figures 9.2.5-1)

Item No.	Letter Size	Stencil Contents
1	1/2"	LOWER
2	1/2"	RAISE
3	1/2"	WEIGHT 155 LBS (70 KG)
4	3/4"	ASSY, JACKING LEG E16621-S03
5	3/4"	LEG MOUNT R.H. E16621-P01
6	1/2"	WEIGHT 106 LBS (48 KG)
7	1"	UP
8	1"	BASE
9	3/4"	LEG MOUNT L.H. E16621-P04

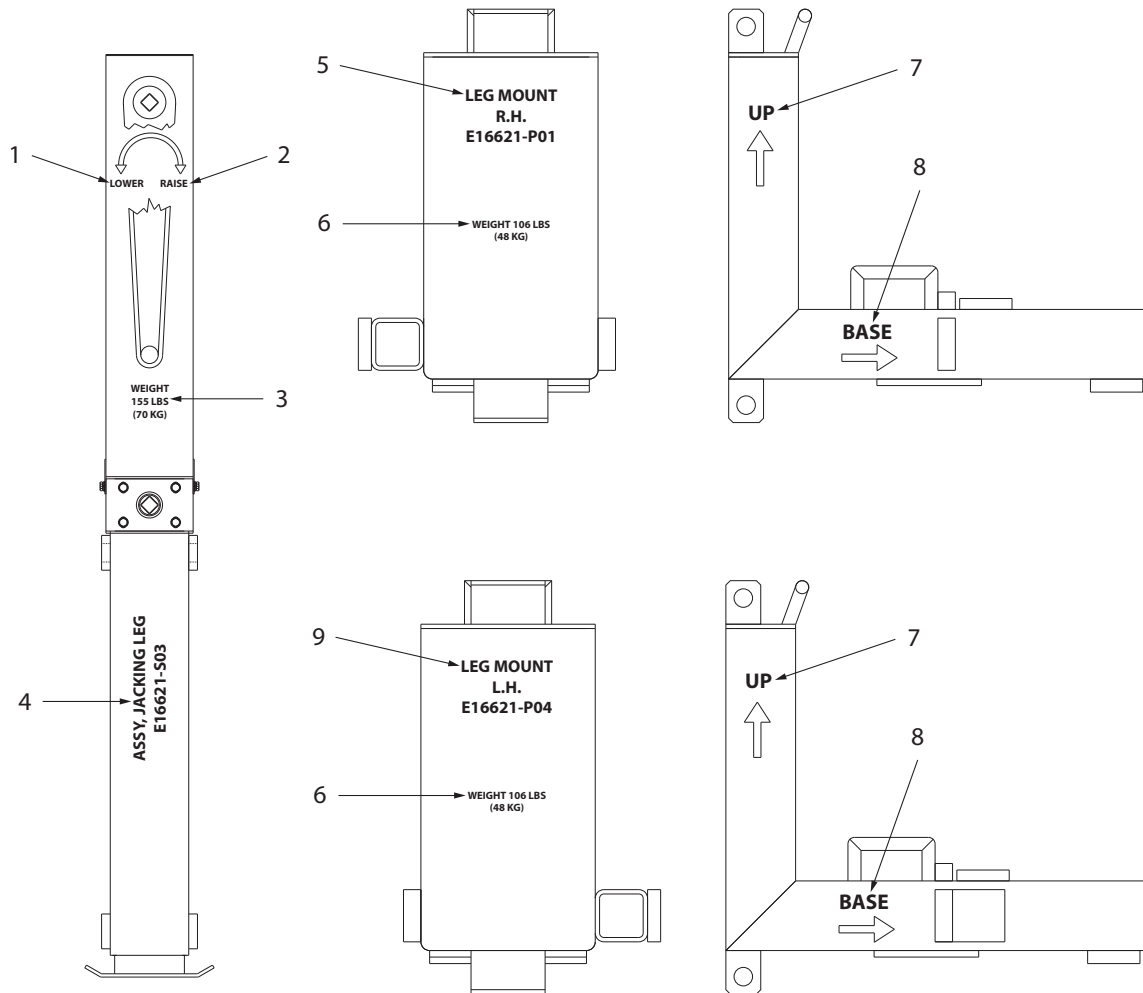


Figure 9.2.5-1

9.2.6 Safety Kit Stencils and Non-Skid Tape and Paint (Figures 9.2.6-1)

9.2.6.1 Right Hand Platform

Item No.	Letter Size	Stencil Contents
1		E16612-S02 R.H. SAFETY KIT PLATFORM ASSY.
2		TOTAL CAPACITY 341 KG (750 LB) MAX. 3 PERSONS TOTAL WEIGHT 76 KG (167 LB) EACH SIDE
3		E16612-P10
4		E16612-P09
5		LATCH INSIDE
6		E16612-P05
7		E16612-P07
8		MAX. 2 PERSONS PER LEVEL

9.2.6.1 Left Hand Platform

Item No.	Letter Size	Stencil Contents
1		E16612-S01 L.H. SAFETY KIT PLATFORM ASSY.
2		TOTAL CAPACITY 341 KG (750 LB) MAX. 3 PERSONS TOTAL WEIGHT 76 KG (167 LB) EACH SIDE
3		E16612-P10
4		E16612-P09
5		LATCH INSIDE
6		E16612-P03
7		E16612-P07
8		MAX. 2 PERSONS PER LEVEL

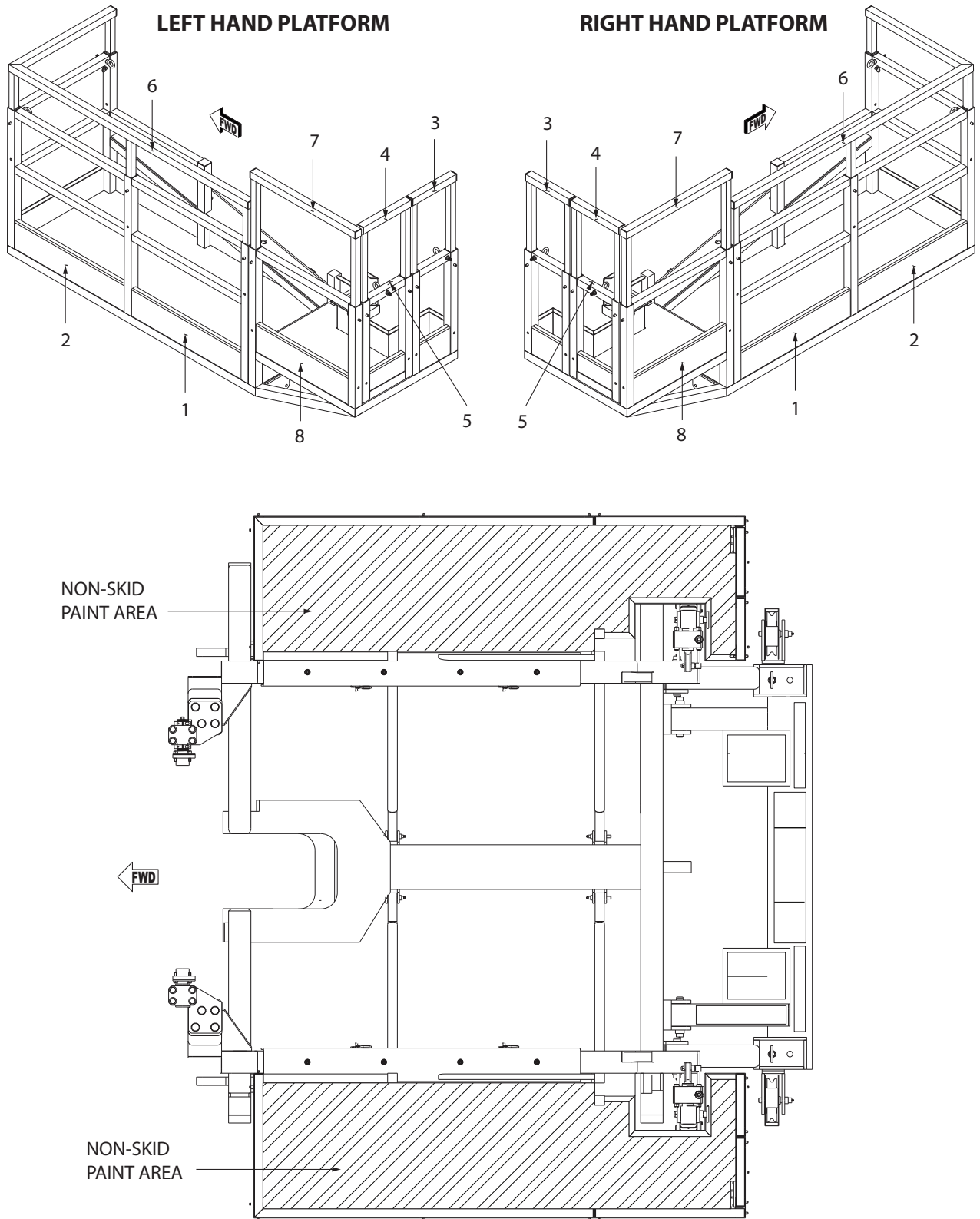


Figure 9.2.6-1

10.0 – Recommended Spares

10.1 Critical Items

AGSE defines “critical” items as those items, if broken or missing, that would render the equipment inoperable or severely impair equipment operation. Since most of these items are also long leads, it is AGSE’s recommendation that such items be identified, purchased, and stocked by the customer. In the remote event of “critical” item failure, the equipment can be quickly repaired and placed back in service with minimal down time.

AGSE does not typically stock all components used with the equipment, so immediate shipment of “critical” items may not always be possible. AGSE will respond to customer requests for quotation on any spare parts, and expedite orders for spare parts as required. The customer should never assume immediate delivery is always possible.

It is the responsibility of the operator of the equipment to review the recommended spares list and balance costs against equipment down-time. The list can be adjusted by the operator based on the actual service life of components experienced during equipment usage.

PART NUMBER	QTY	DESCRIPTION

No required spares at this time