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AGSE-E262-G02
(PWA211430)

AGSE-E262-G03

Transportation Stand

For Pratt & Whitney
PW1130G-JM Engine
and
PW1400G-JM Engine

ORIGINAL MANUAL DATED.07/20/2015

LATEST MANUAL REVISION LEVEL..... 12/18/2023 (REV V)

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Notice

1. Alteration, Modification, Reengineering, or Reproduction of Equipment

The alteration, modification, reengineering, or reproduction of AGSE equipment and/or parts is not permitted without prior written authorization from AGSE.

These modifications include but are not limited to:

- Structural changes to AGSE-supplied parts
- Substitution of AGSE-supplied parts, including hardware, with an alternate source or supplier
- Reverse engineering of AGSE equipment and parts.

Requests for modifications should be submitted to AGSE for review – please send modification requests to support@agsecorp.com.

Once reviewed by our Engineering team, a Customer Support Letter (Subject: No Technical Objection) will be issued for any approved modifications.

NOTE

Modifications executed without prior authorization by AGSE may result in a non-compliant product that is unsafe for operation.

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

The following is an itemized record of all changes from previous revision.

PAGE	REV	DESCRIPTION OF CHANGE	DATE
6.2-6.3	V	Updated EC Declaration	12/18/2023

2.0 – Illustrations

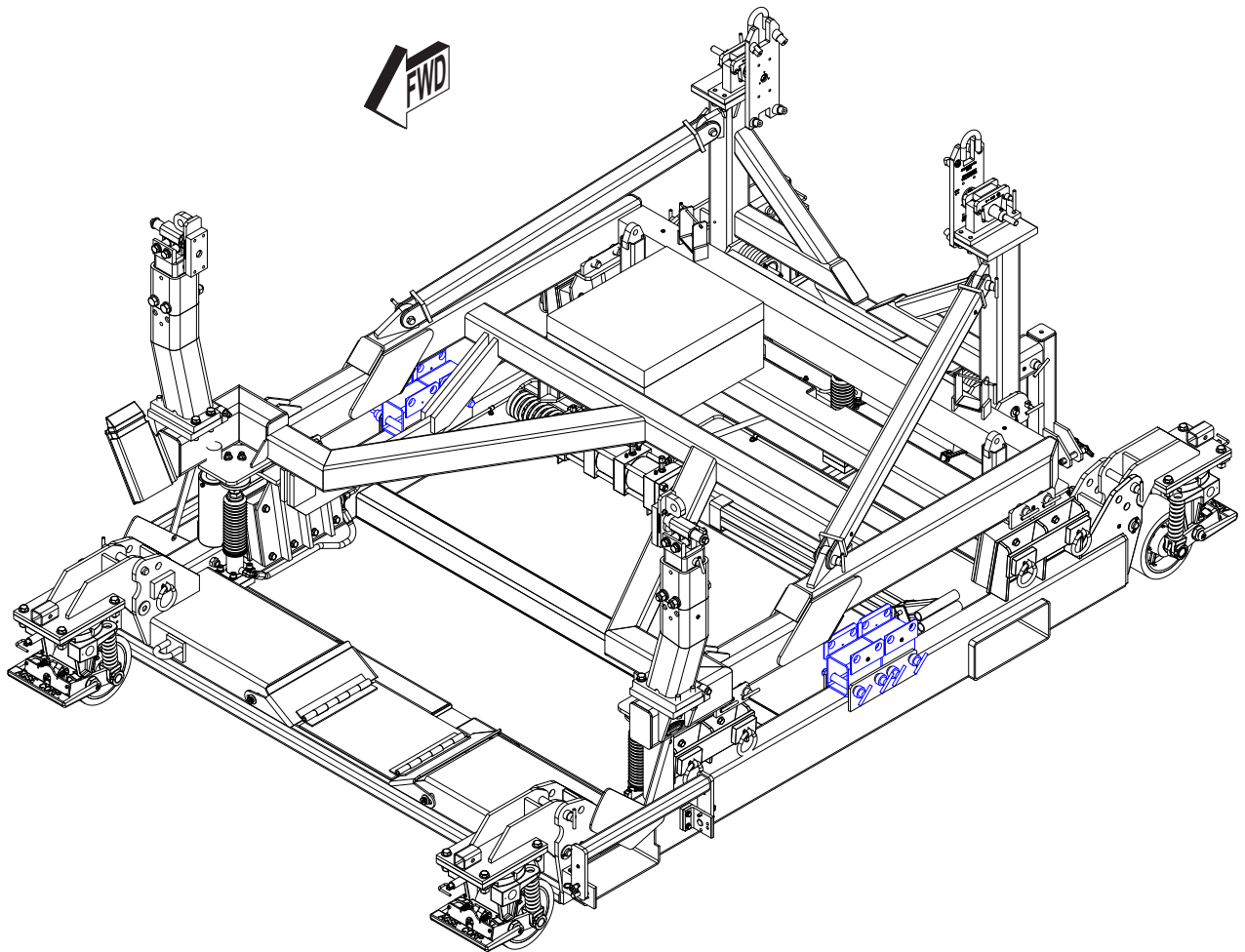


Figure 2.0-1 AGSE-E262-G02 Engine Transport Stand with Spacers in Storage Position

2.0 – Illustrations (Continued)

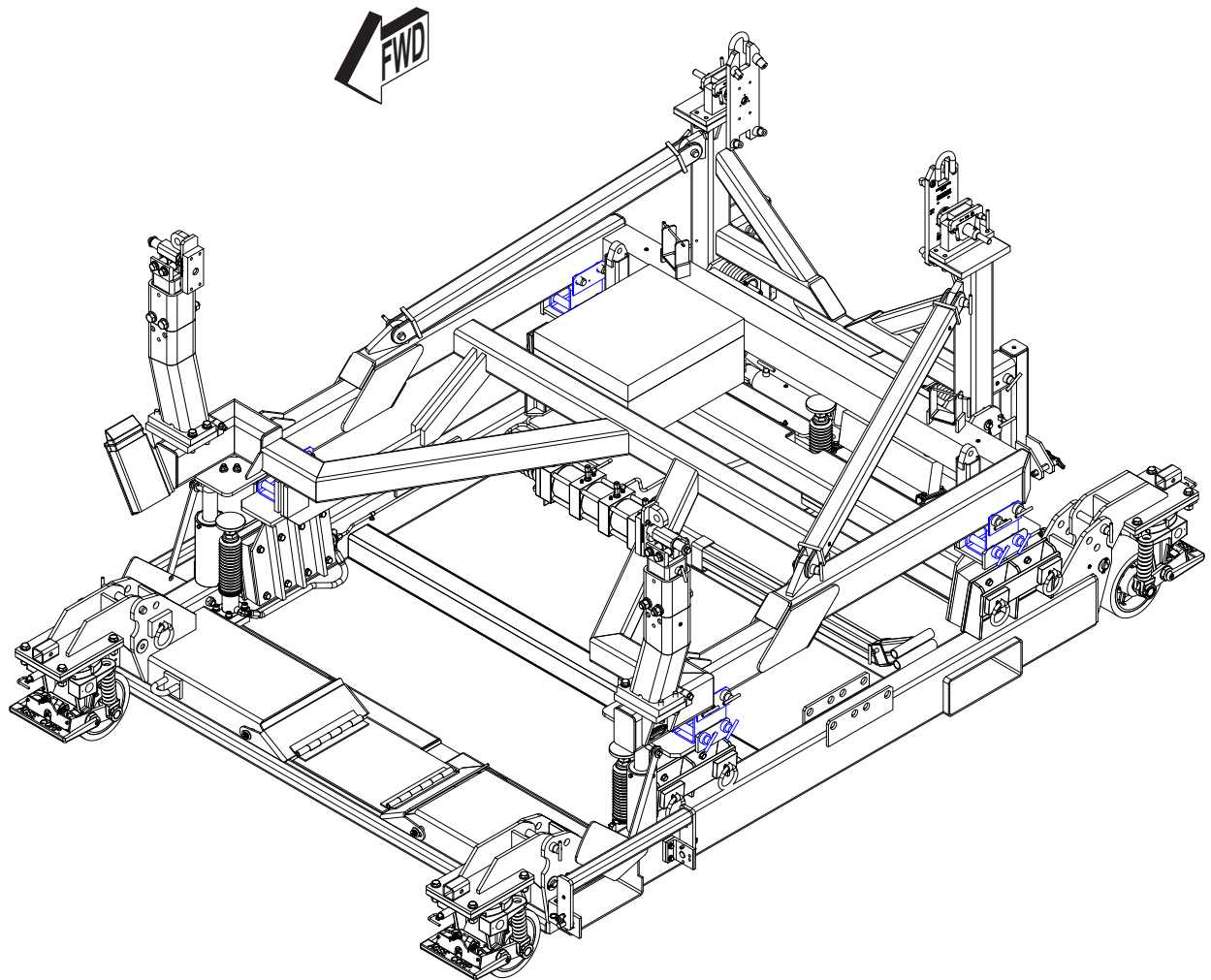


Figure 2.0-2 AGSE-E262-G02 Engine Transport Stand Raised by Spacers

2.0 – Illustrations (Continued)

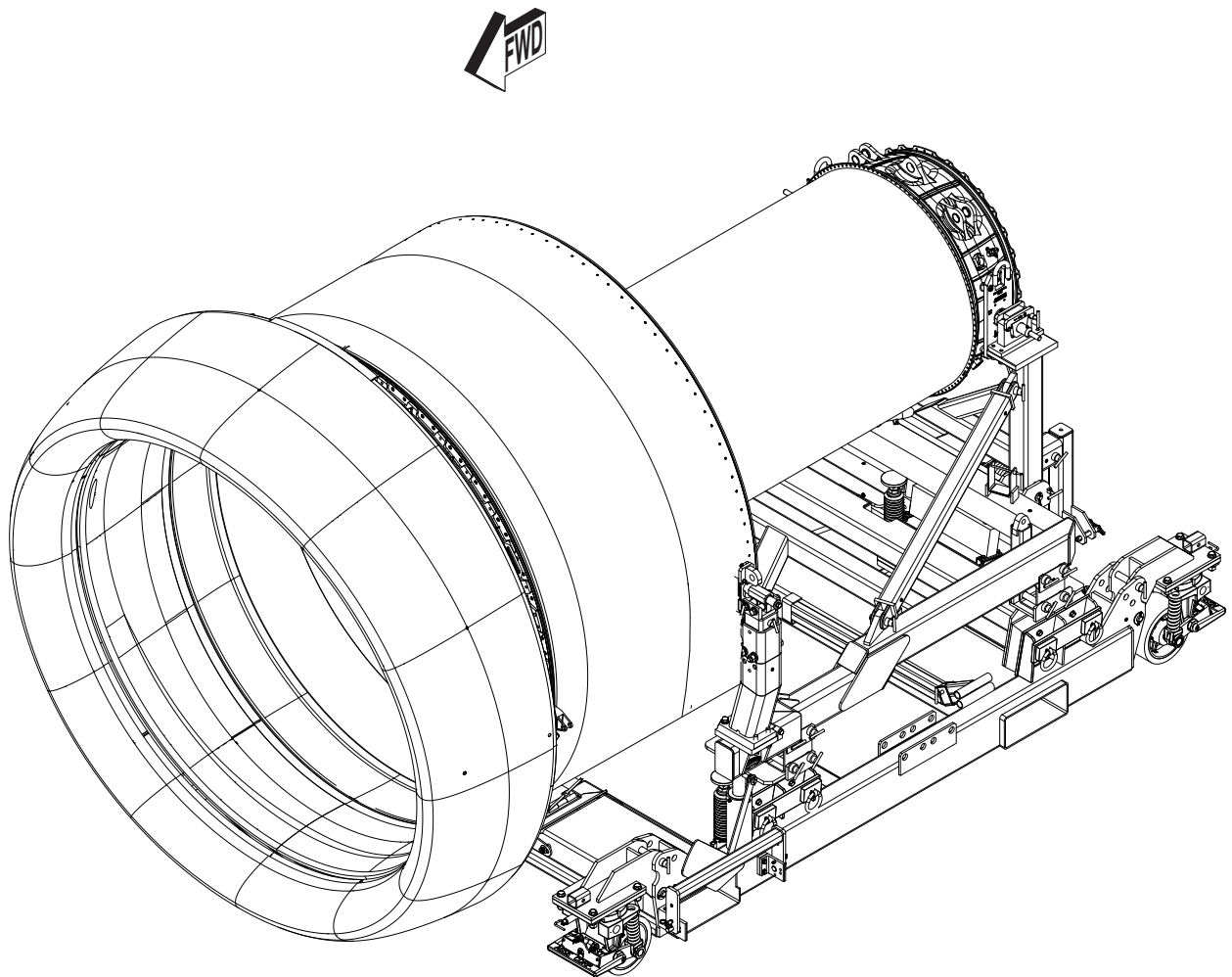


Figure 2.0-3 AGSE-E262-G02 Engine Transport Stand with PW-1130G Engine

2.0 – Illustrations (Continued)

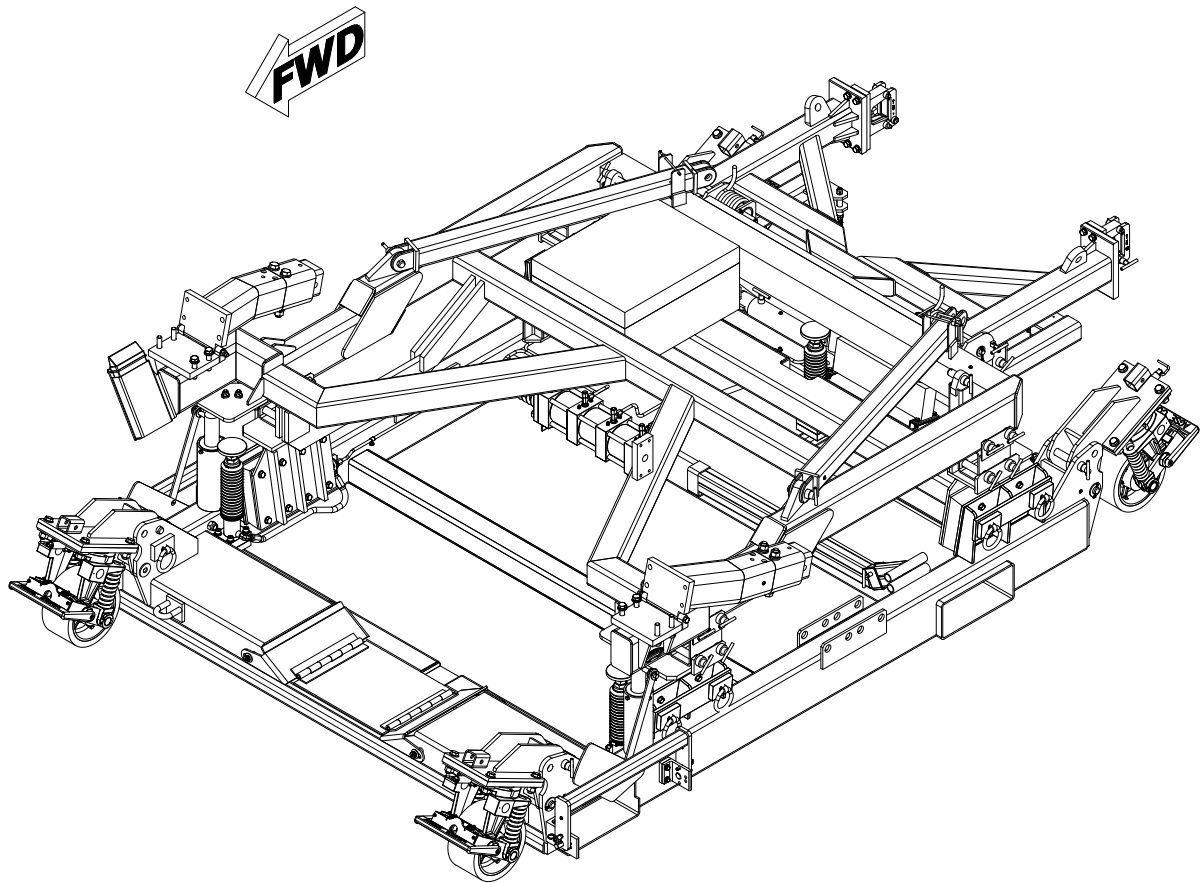


Figure 2.0-4 AGSE-E262-G02 Engine Transport Stand Fully Stowed

3.0 – Specification

3.1 General

The AGSE-E262-G02 (PWA211430A) and AGSE-E262-G03 engine transport stands are designed to transport the Pratt & Whitney PW1130G-JM and PW1400G-JM engines in the QEC configuration, minus the inlet. Both stands can also be used to store the full QEC engines, including the inlet. The stands are also capable of towing with the full QEC engine, including the inlet, for local on-site movement and bootstrap operations. The stands are designed and tested per Pratt & Whitney’s Ground Support Equipment Specification GSE 3028, “Full Engine Bootstrap Transport Stand for the PW1130G Engine.” The stands are capable of being shipped on the main deck of B747 Freighter Aircraft. A component storage box is secured to the base for all mounts and adapters. The stands are forkliftable from either side.

3.2 Design

The AGSE-E262-G02 (PWA211430A) includes GPS transmitters, mounting bracket, and hardware for engine and stand tracking. The AGSE-E262-G03 version is designed without GPS transmitter. Both engine transport stands include AGSE-E26202-S02 cradle and AGSE-E26201-S01 base.

The AGSE-E26202-S02 cradle consists of a welded steel frame with removable engine ground handling mounts compatible with the PW1130G-JM/PW1400G-JM Engine in QEC configuration. Tubular arms support the engine handling mounts.

The AGSE-E26201-S01 base consists of a welded steel frame with integral shock mounts to dampen ground handling loads and vibrations.

3.3 Mobility

The stand cradle and base can be towed from either end. Maximum towing speed of the unit is 8 km/hr (5 MPH).

CAUTION

Failure to unlock foot brakes on casters during towing operations will result in flat spots being worn into the tread surface of caster wheels.

CAUTION

Failure to unlock swivel locks on lead casters during towing will result in flat spots being worn into the tread surface of caster wheels.

Tie down rings located on the base sides, forward and aft caster supports to secure the stand to a truck trailer for truck shipment.

CAUTION

The cradle must never be tied directly down to the truck bed. Truck shipment using a truck trailer equipped with an “air-ride” type suspension system is mandatory.

3.4 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. Unit is primed and painted with high-grade, Skydrol resistant enamel, with color optional. Pins and miscellaneous hardware are manufactured from corrosion resistant materials, or plated as required.

3.5 Characteristics

Length (In.) - Without Engine	144-11/16
Width (In.) - Blockers Deployed - Without Engine	105-7/16
Height (In.) - Without Engine	67-5/16
Length (In.) - With Engine	184-1/8
Width (In.) - Blockers Stowed - With Engine	102-7/8
Ground to Engine Centerline (In.)	61-13/16
Stand Height (In.) (With 5” Shipping Spacers)	72-5/16
Cradle Weight (Lbs)	2000
Base Weight (Lbs)	2800
Total Stand Weight (Lbs)	4800
Total Stand Weight with Engine (Lbs)	12,400

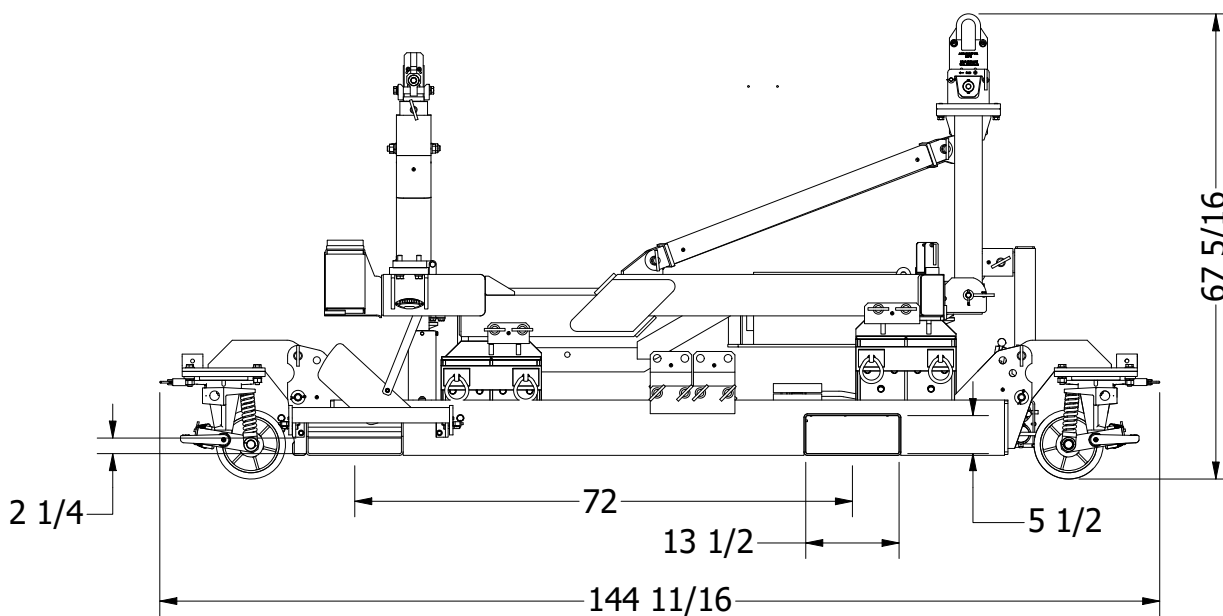
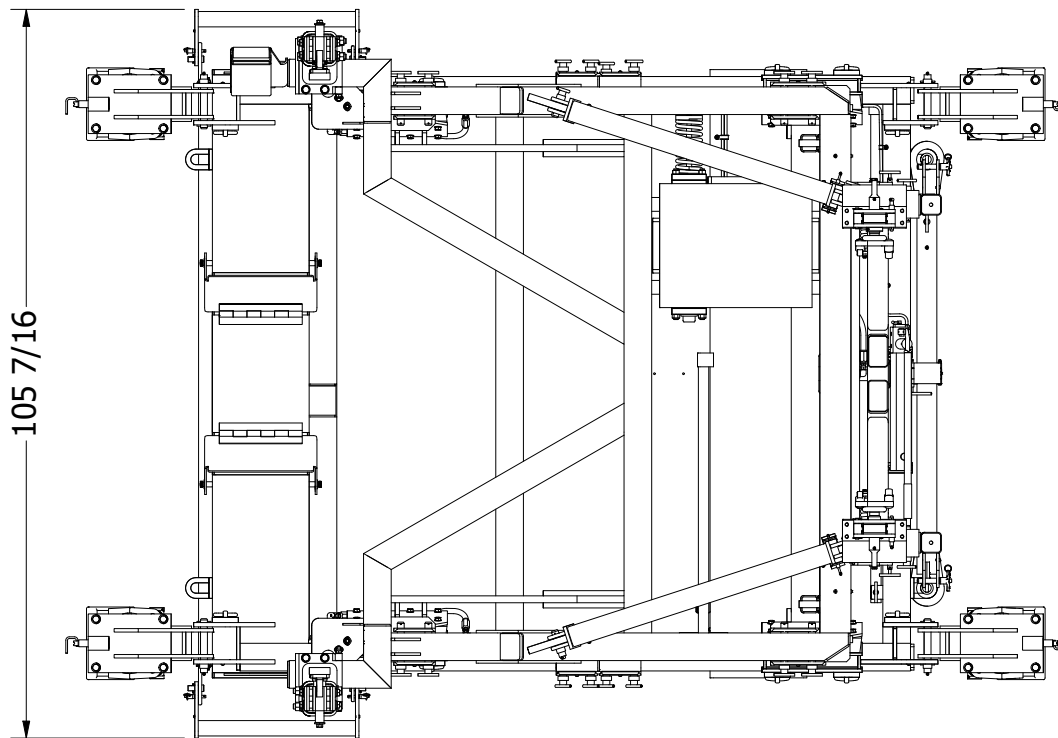


Figure 3.5-1 Engine Transport Stand Dimensions with Blockers Deployed

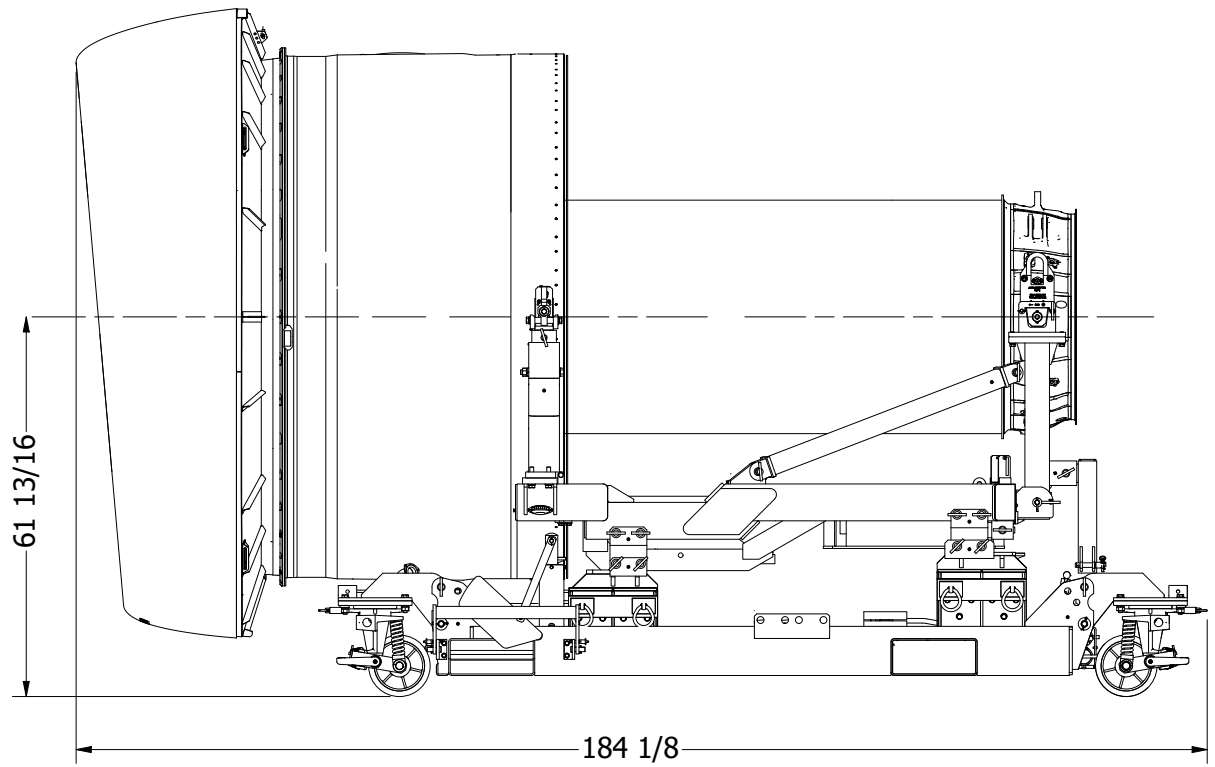
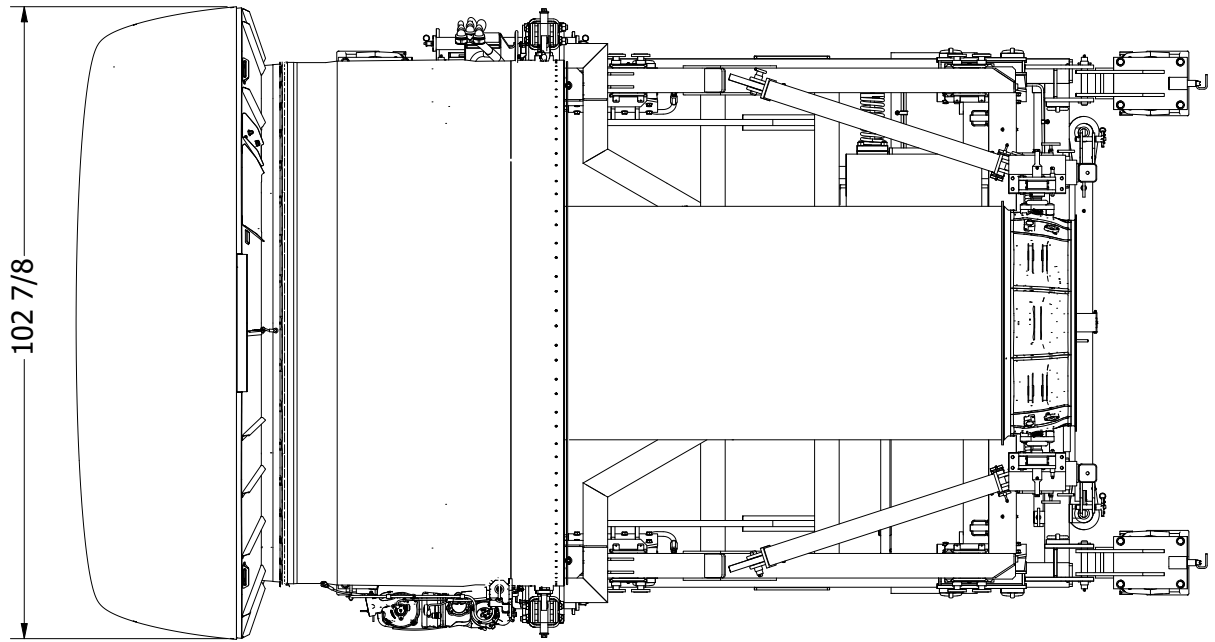


Figure 3.5-1 Engine Transport Stand with Engine

4.0 – Maintenance and Inspection

4.1 General

Life expectancy of this unit 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, the stand should be inspected for obvious signs of abuse or shipping damage. Observed damage should require complete inspection of the affected area to ensure stand integrity is not compromised.

4.2 Cleaning and Painting

The stand should be cleaned with a soap and water solution and rinsed thoroughly.

WARNING

Re-lubricate all grease zerk fittings after cleaning stand.

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 casters 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

Visual inspection of the swivel locks and brakes should occur with the scheduled lubrication. All non-painted machined surfaces should have a light grade oil spray as required. Spray with aerosol lubrication WD-40 or equivalent.

The Pump reservoir level should be checked every 90 days and refilled as necessary with the following hydraulic oil:

Manufacturer	Product
Commercial	MIL-5606 SAE 5W
Commercial	Mobil DTE 24 or Equivalent

4.4 Scheduled Inspection

CAUTION

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

Annual inspections of machined surfaces, pins, fasteners, structure, and shock mounts are recommended. The machined surfaces (pivots, axles, mounts) 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 stand structure is to be visually inspected for damage, weld cracks, or corrosion.

CAUTION

AGSE recommends that shock mounts be replaced every five (5) years. Additionally, periodic inspections should be performed and any of the following conditions are proper cause for replacement of the shock mounts prior to their expiration:

- 1. Visible evidence of cracks.**
- 2. Discoloration: visible damage caused by solvents.**
- 3. Permanent deformation.**
- 4. Mount does not flex during engine loading/unloading.**
- 5. Significant corrosion on shock attach-plate.**

The following exposures can reduce the life of shock mounts and it is recommended to avoid them where possible.

- High humidity and/or salty air
- Direct sunlight
- Solvent, corrosive liquids, and fumes
- Oils, jet fuel, or Skydrol hydraulic fluid
- Extreme temperatures
- Ozone or engine exhaust

4.5 Hydraulic System Maintenance (Illustration Figure 4.5-1)

NOTE

Close the reservoir vent cap before shipping or storing the stand. Open the vent cap before operating the hydraulic system.

To properly service the hydraulic system:

1. Open the reservoir vent cap on the pump.
2. Ensure that the piston on the Flow Divider is fully retracted.
3. Ensure that the lifting cylinders are fully retracted. If hydraulic components have not been removed, go to step 5.
4. Unbolt the lifting cylinders, and set them on the ground, so that they are below the Flow Divider and the hydraulic pump.
5. Open the top bleed ports located on the Flow Divider for each of the lifting cylinders.
6. Fill all chambers of the Flow Divider completely allowing time for the air to escape, using the brake bleeder ports as needed.
7. Close all ports except the pump reservoir cap.
8. Cycle the systems a few times and then Repeat steps 5, 6 and 7 until no air is present.
9. Fill the reservoir on the pump assembly approximately 1” from the top.
10. Reassemble the lifting cylinders in their original positions.
11. If the hydraulic system is unable to lift the loaded cradle, the pressure relief valve in the hand pump may need to be adjusted. To adjust the pressure relief valve, remove the cover cap, and tighten the relief valve set screw by **1/8-1/4 turn ONLY**. Once adjusted, try lifting the cradle again. If needed, the pressure relief valve may be tightened more, but only 1/8-1/4 turn at a time.

CAUTION

DO NOT fully tighten the pressure relief valve. This will make the output pressure on the hand pump too high, and will cause damage to the seals in the hydraulic system.

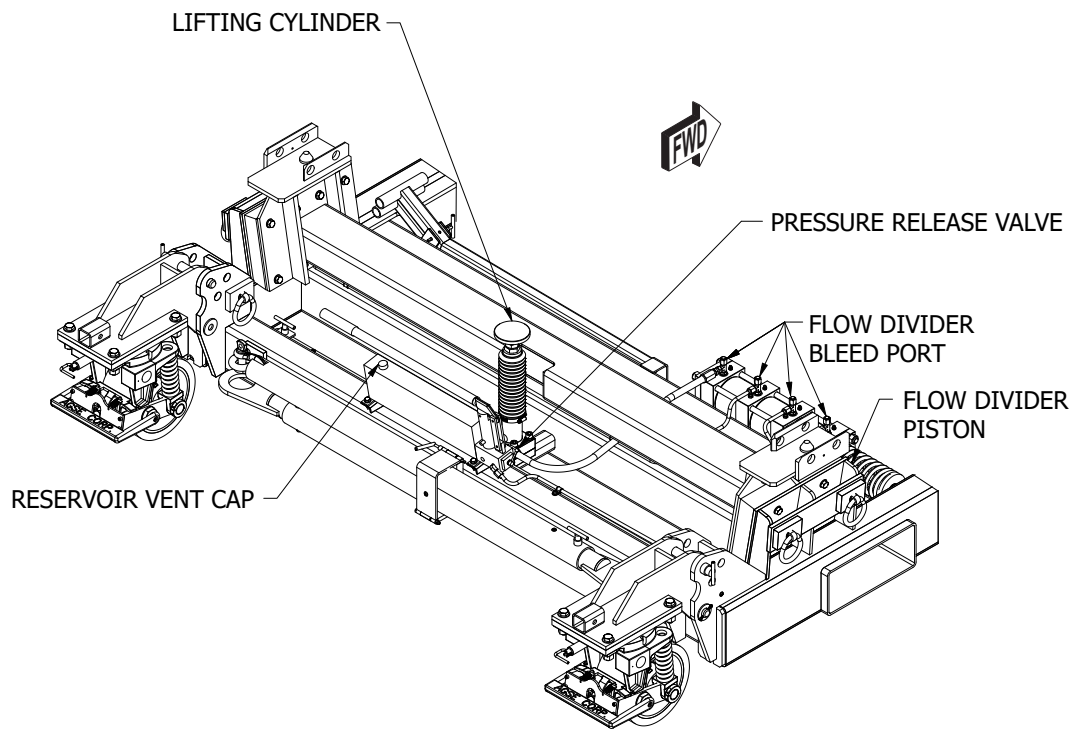


Figure 4.5-1



Figure 4.5-2

NOTE

Periodic inspections of the hydraulic cylinder should be made to ensure that there is sufficient thread engagement between the hydraulic cylinder and the swivel foot. The dimensions should be $3\text{-}1/4'' \pm 1/4''$ (Illustration Figure 4.5-3).

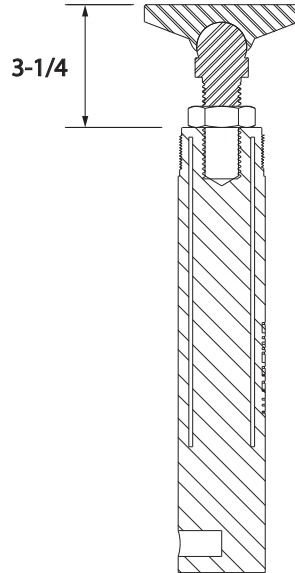


Figure 4.5-3

4.6 General Maintenance Schedule

NOTE:

This Maintenance Schedule does not supersede the maintenance described in the 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	
Engine Mounts	Apply Anti-seize to engine bolt threads	L			
	Lubricate/protect sliding pins	L			
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.

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.

4.7 Replacement Hardware and Repairs

To properly service the hydraulic system: It is important to recognize that all AGSE products are designed, built, tested and Engine OEM Qualified to very exacting AGSE and Engine OEM Standards. This is to protect the product that is being shipped from incurring any visible or non-visible damage during transportation and resulting in it becoming unserviceable. To maintain this product in a fully qualified and safe condition, any/all replacement hardware needs to be AGSE approved hardware. Any/all structural modifications/repairs need to be performed by or under the supervision of AGSE or an AGSE Authorized Service Provider.

CAUTION

Use of non-AGSE approved hardware or unapproved repairs will have the following result:

- 1. Immediately void any remaining AGSE warranty.**
- 2. Take the stand/container out of its Engine OEM Qualified condition.**
- 3. Put the stand/container at risk of failure.**
- 4. Put the engine/component at risk of damage and may affect the serviceability of that engine/component.**

Any questions on this should be directed to your local AGSE Rep.

5.0 – Operation

CAUTION

The stand shipping spacers need to be installed when towing or shipping the stand with the engine installed. Removal of the spacers maybe required during bootstrap engine change on wing based on aircraft ground clearance.

5.1 Preparing the Stand for Operation

NOTE

The engine transport stand is shipped with the spacers installed between cradle and base.

- 1) Inspect stand for obvious damage.
- 2) Using a forklift or a hoisting system, raise the transport stand off the floor.
- 3) Remove the AGSE-E22115-S01 caster lift bar from its storage at the bottom of the base AFT end by removing the AM-90500-32T safety pin. (Illustration Figure 5.1-1).

WARNING

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

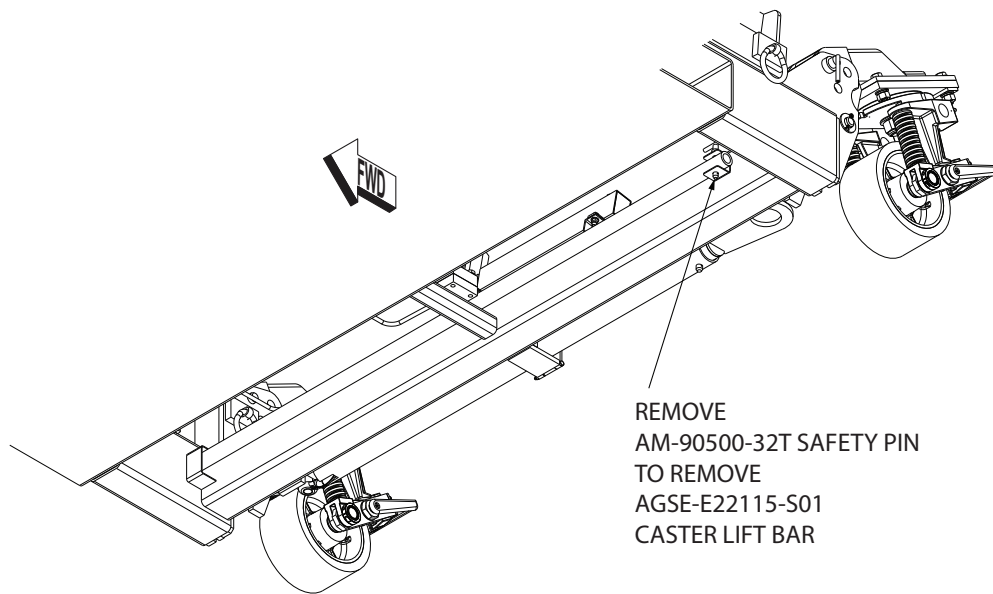


Figure 5.1-1 Caster Lift Bar Removal

- 4) Remove the AM-91000-96T-H900 safety pin securing the castor in the stow position then use the castor lift bar to rotate the castor downward at four (4) locations. Secure the castors with the same hardware. (Illustration Figure 5.1-2).
- 5) Lower the stand to the floor then set the castor brakes.

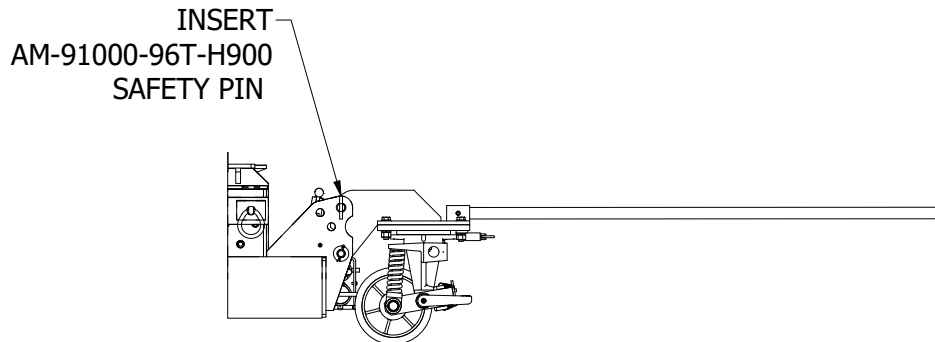
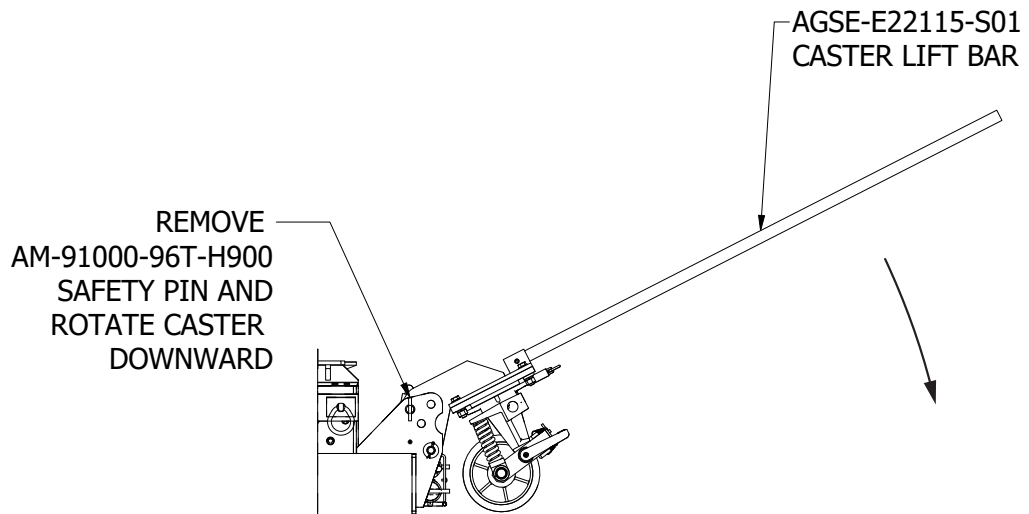


Figure 5.1-2 Caster Deployment

NOTE

If the stand is in stow position, follow steps 6-17.

- 6) Remove eight (8) 5/8" hex head cap screws, eight (8) 5/8" flat washers, eight (8) 5/8" lock washers and eight (8) 5/8" hex nuts. (Illustration Figure 5.1-3).
- 7) Rotate AGSE-E26238-S01 LH front mounting leg and AGSE-E26238-S02 RH mounting leg to the upright position. (Illustration Figure 5.1-3).

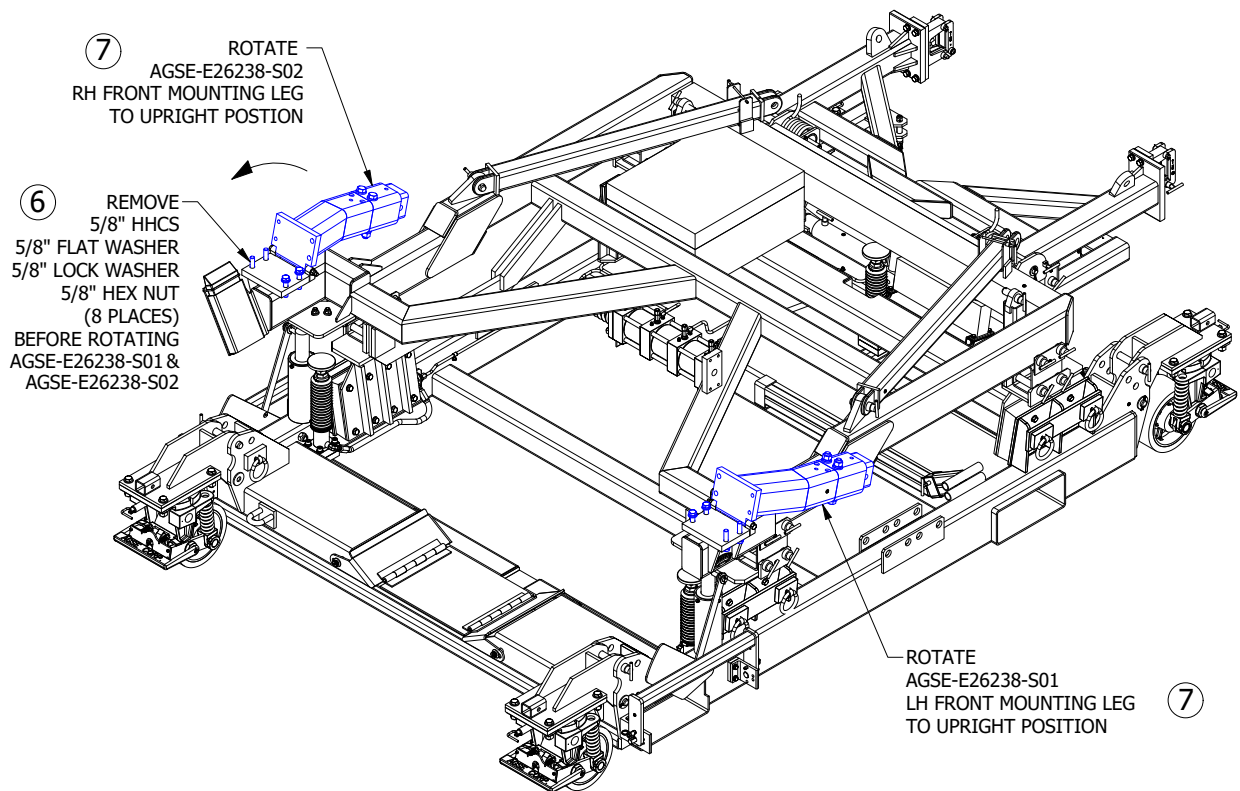


Figure 5.1-3

- 8) Secure with the removed hardware. (Illustration Figure 5.1-4).
- 9) Remove two (2) AM-90250-64L safety pins to free the AGSE-E26208-P01 AFT braces from their stow position. (Illustration Figure 5.1-4).
- 10) Rotate AGSE-E26208-P01 AFT braces and hold above storage position. (Illustration Figure 5.1-4).

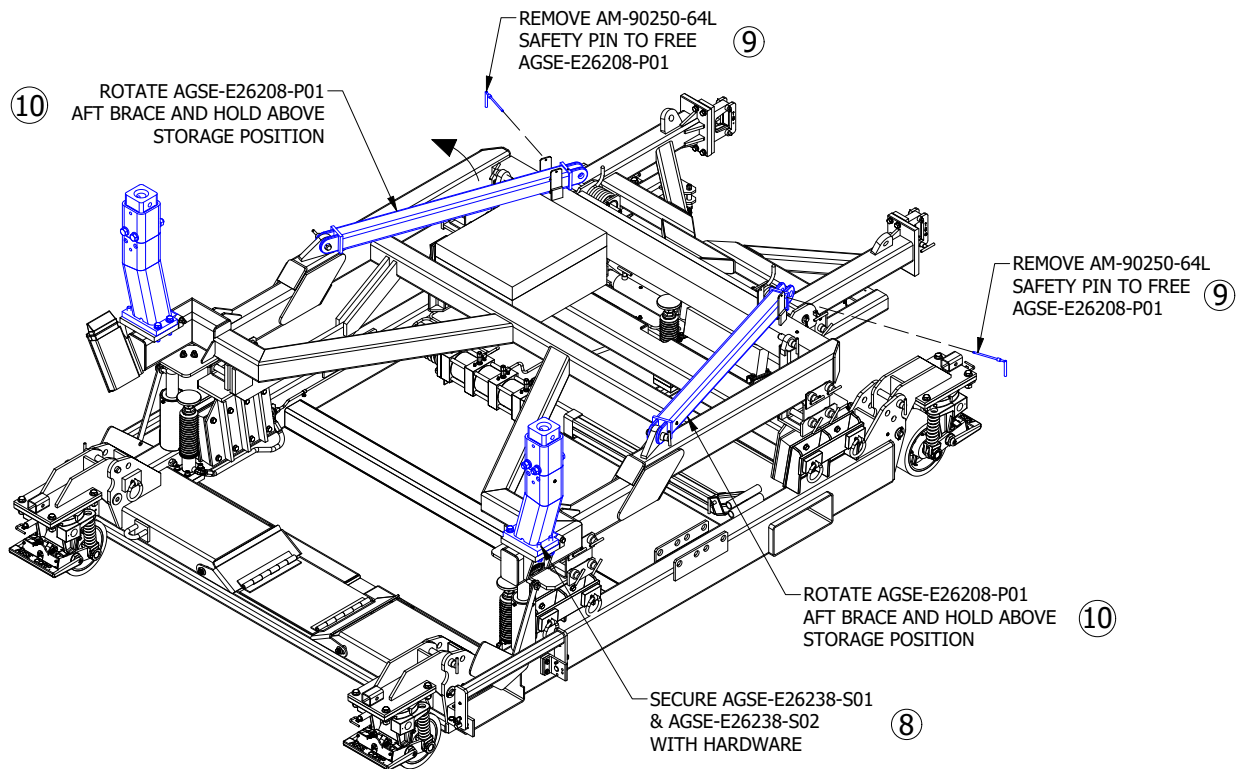


Figure 5.1-4

- 11) Remove two (2) AGSE-E25902-P01 safety pins. (Illustration Figure 5.1-5).
- 12) Rotate the AGSE-E26206-P01 frame weldment to the upright position. (Illustration Figure 5.1-5).

NOTE

Torsion springs are installed at the base of the frame weldment, to assist raising and lowering. If these torsion springs are removed or damaged, two or more people, an overhead hoist, or a forklift will be required to raise and lower the frame.

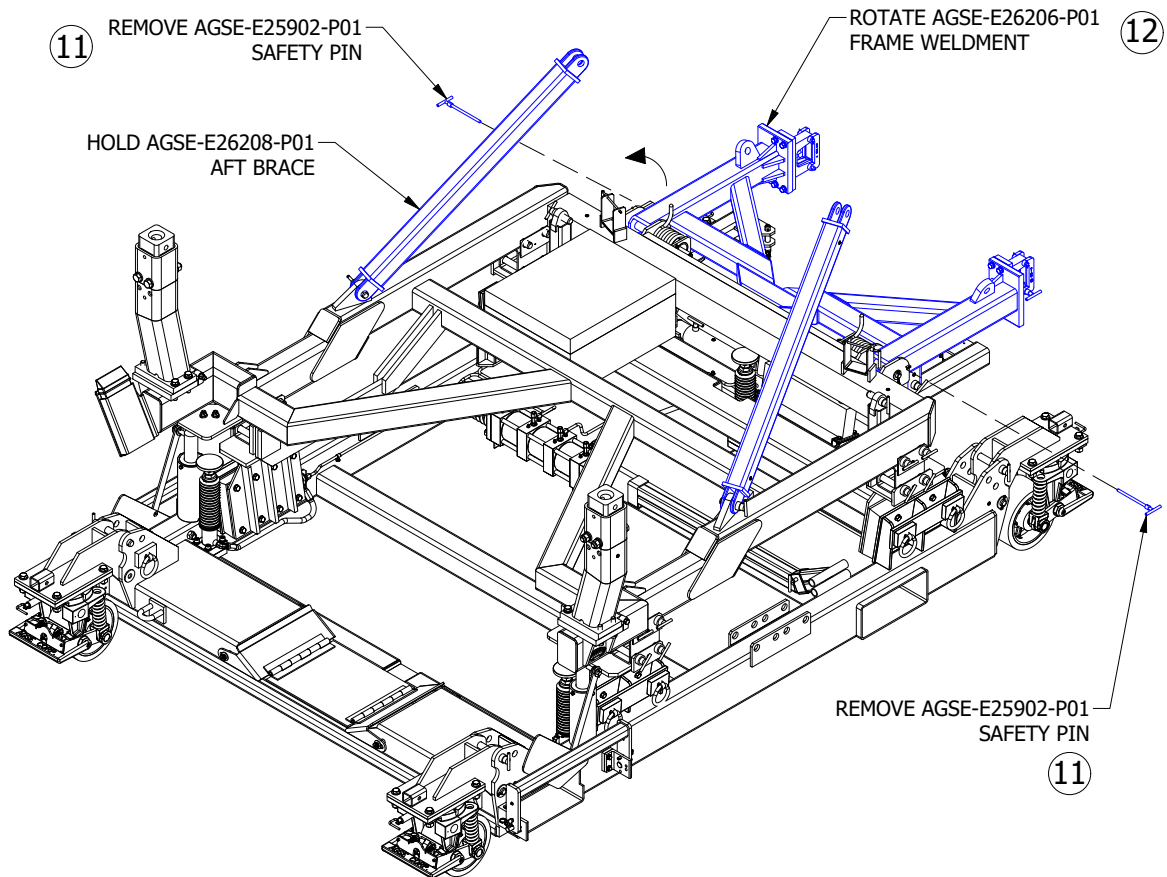


Figure 5.1-5

- 13) Attach the AFT braces to the frame weldment and secure with two (2) AM-91000-34T safety pins. (Illustration Figure 5.1-6).
- 14) Re-insert two (2) AGSE-E25902-P01 safety pins. (Illustration Figure 5.1-6).

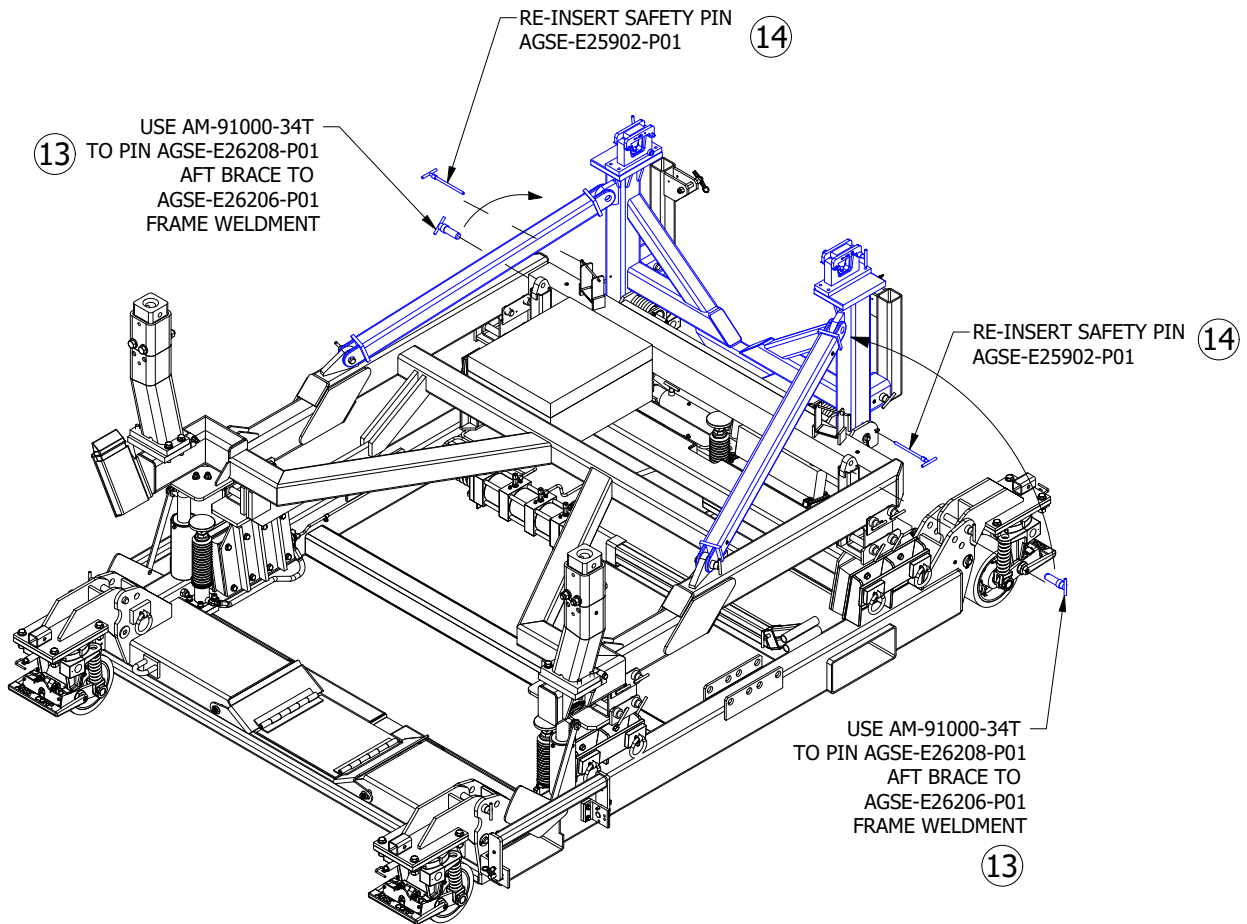


Figure 5.1-6

15) Remove two (2) AM-91000-64T safety pins to remove AGSE-E26230-P01 RH bootstrap adapter and AGSE-E26230-P02 LH bootstrap adapter. (Illustration Figure 5.1-7).

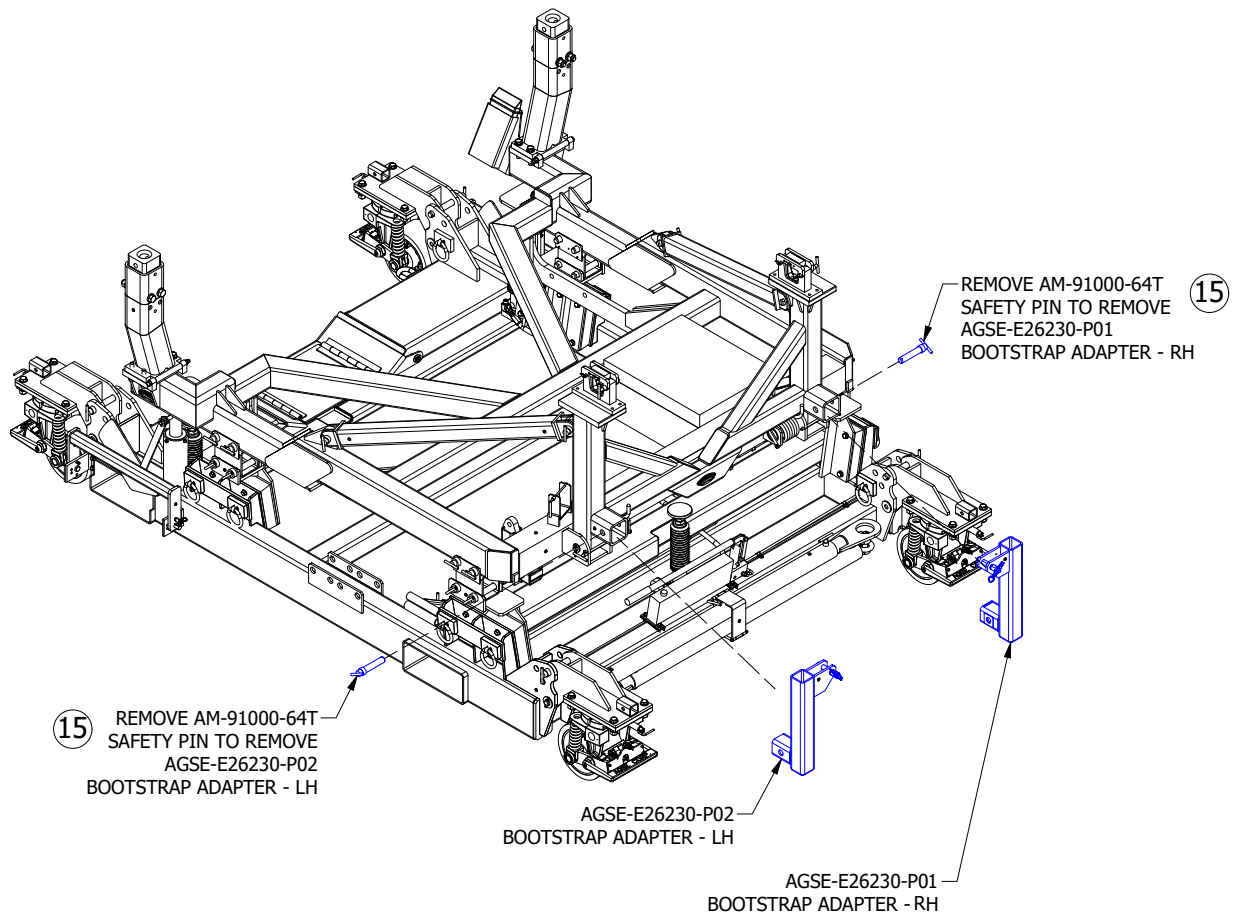


Figure 5.1-7

- 16) Rotate AGSE-E26230-P01 RH bootstrap adapter and AGSE-E26230-P02 LH bootstrap adapter 180° clockwise. (Illustration Figure 5.1-8).
- 17) Re-insert AM-91000-64T safety pin. (Illustration Figure 5.1-8).
- 18) Before installing the engine into the stand, verify the functional operation of the hydraulic lift system. Cycle the lift system through one full cycle - raising the cradle, removing the spacers, lowering the cradle, raising the cradle back up, and reinstalling the spacers. See section 5.3 for details.

The stand is now ready for operation.

CAUTION

Stainless steel pins of various sizes are widely used with this equipment. All are retained by a cable lanyard, which terminates in a spring retainer clip. Stowage is provided for all pins when not engaged, either in their normal position or nearby, and they should always be stowed. Failure to do so may cause tangling, breaking of the lanyards, and loss of pins.

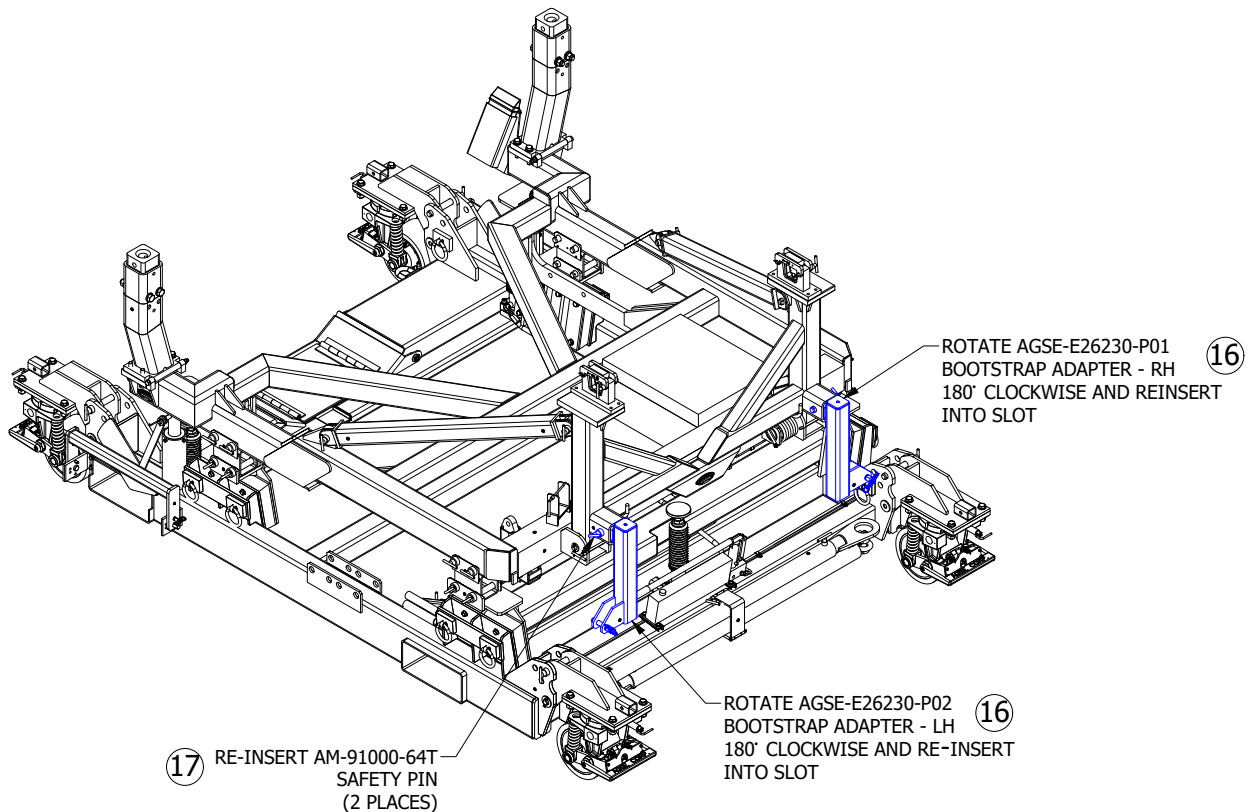


Figure 5.1-8

5.2 Engine Installation onto Stand (Engine not installed on Aircraft)

- 1) Inspect stand for obvious damage.
- 2) Ensure the base and cradle are securely pinned together.
- 3) Remove the AGSE-E25950-S01 FWD mount adapter (LH) and AGSE-E25950-S02 FWD mount adapter (RH) from the AGSE-E26210-S01 storage box and install on the FWD engine ground handling mounts using eight (8) 5/16" hex head cap screws, eight (8) 5/16" lock washers and eight (8) 5/16" flat washers as shown in Illustration Figure 5.2-1.
- 4) Remove AGSE-E25948-S03 LH AFT mount spindle assembly, AGSE-E25948-S04 RH AFT mount spindle assembly, AGSE-E26207-P01 LH AFT mount adapter, and AGSE-E26207-P02 RH AFT mount adapter from the storage box and install on the engine AFT ground handling mounts using the hardware provided. (Illustration Figure 5.2-1).

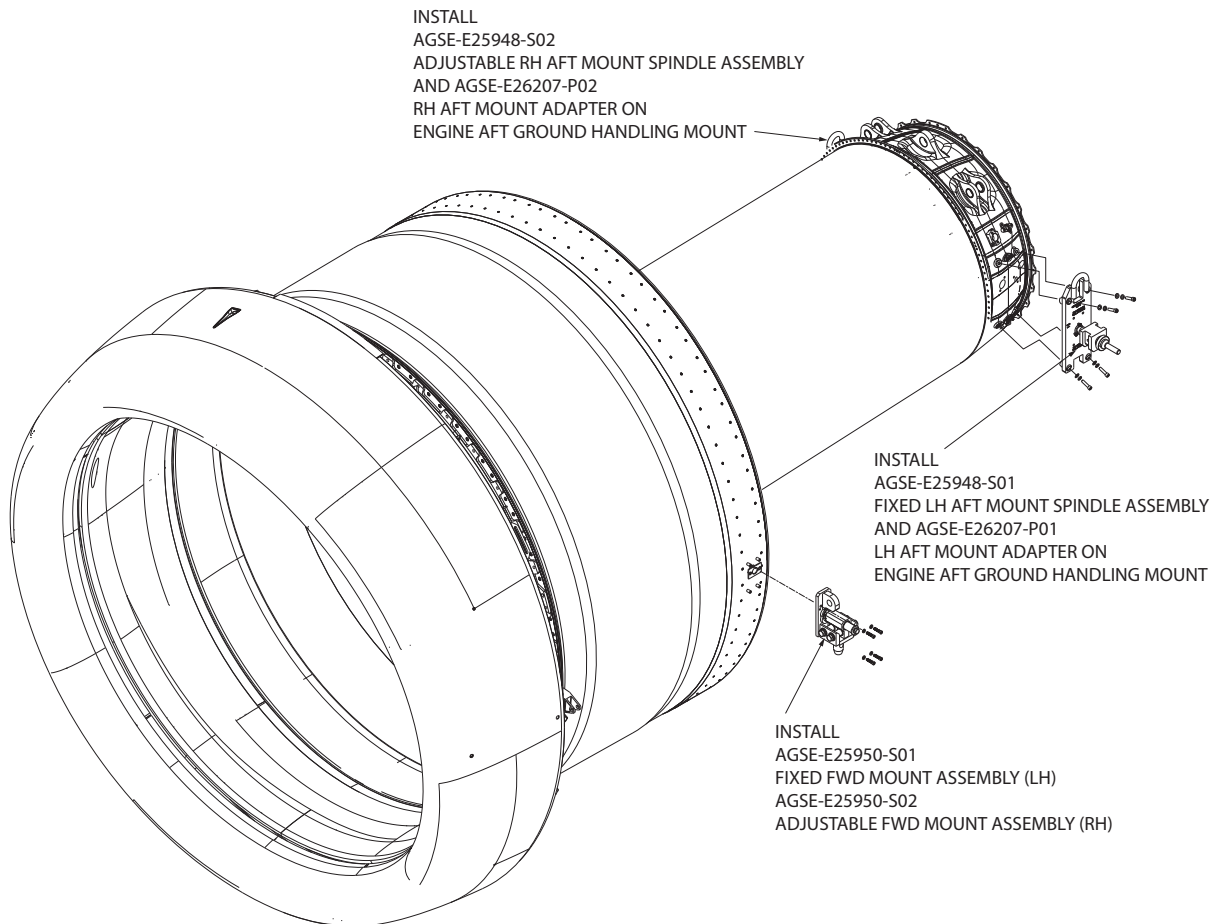


Figure 5.2-1

- 5) Position the stand beneath and centered to the suspended engine.

CAUTION

Minimal clearance exists between the engine and stand. The operator is responsible to ensure the engine does not contact the stand.

WARNING

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

- 6) Slowly lower the engine until the FWD mount adapters are aligned with the receptacles on the cradle. (Illustration Figure 5.2-2)
- 7) Continue to lower the engine until the AFT mount trunnions and the AFT mount blocks are aligned with the saddles on the AFT mounts.
- 8) Continue to lower the engine until the AFT mount trunnions and the AFT mount blocks are fully seated in the saddles of the AFT mounts. Install the AFT mount caps and secure with the safety pins and the hold-down pins.

NOTE

A small amount of grease or silicon lubricant may be applied at the interface between the AFT mount blocks and the AFT mount saddles, to help prevent the blocks from sticking.

- 9) Secure the FWD adapters to the stand using the AM-90750-64T safety pins.
- 10) Lower the engine until the engine weight is fully supported by the stand then remove the engine sling.

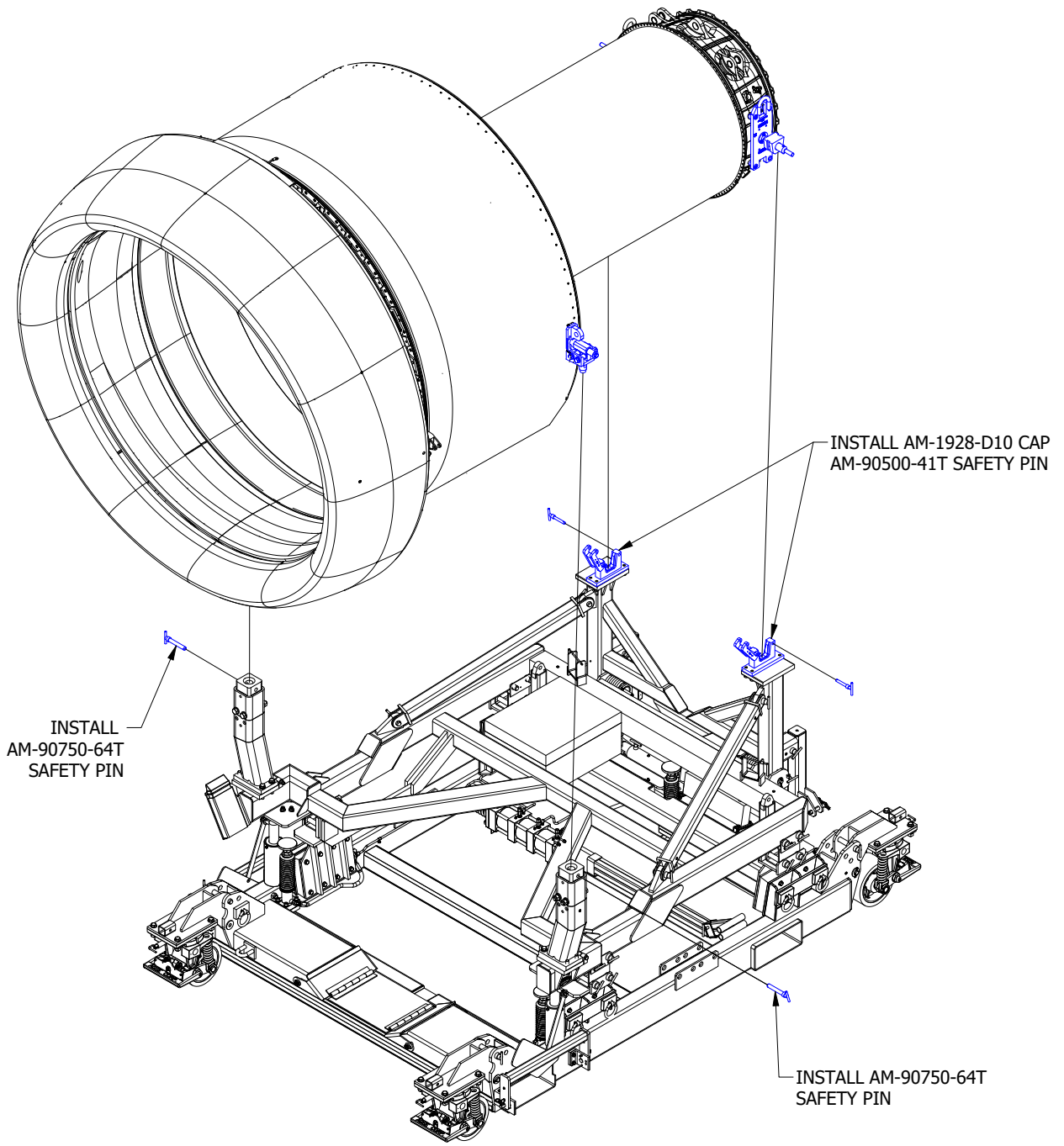
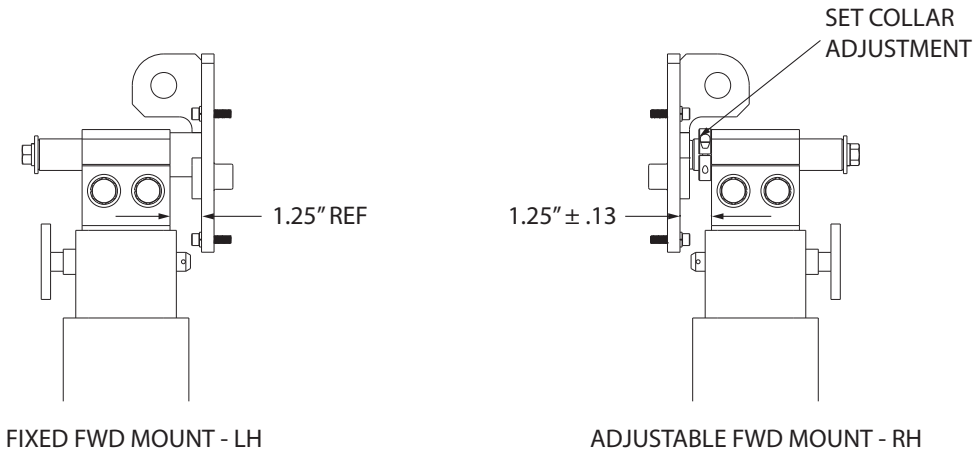
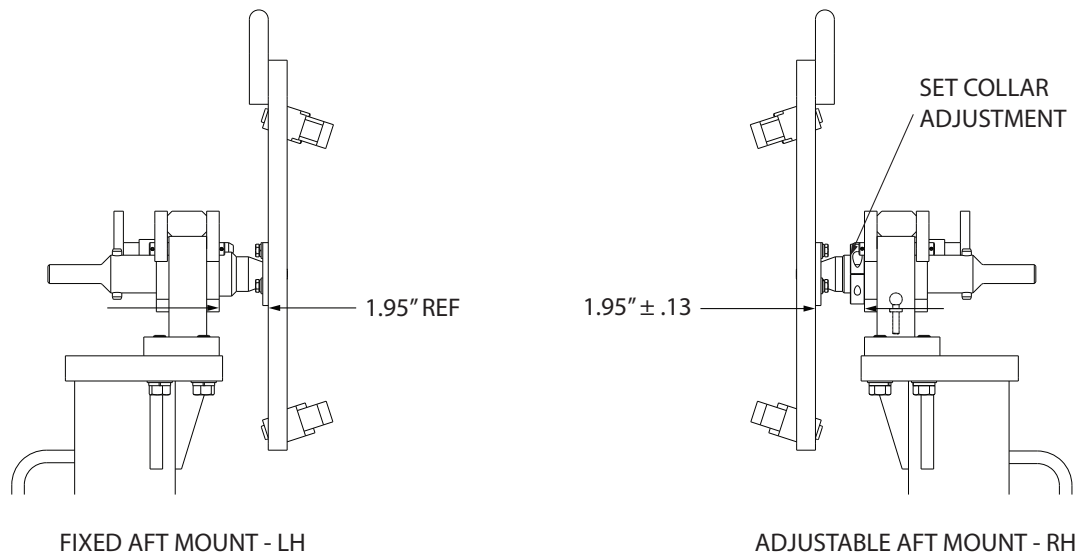


Figure 5.2-2



VIEW AFT LOOKING FWD



VIEW AFT LOOKING FWD

Figure 5.2-3

5.3 Preparing the Stand for Bootstrapping (Engine Installed on Aircraft)

- 1) Inspect stand for obvious damage.
- 2) Ensure the base and cradle are securely pinned together.
- 3) Remove eight (8) (4 on each side) AM-91000-90T cradle safety pins to free the cradle from the AGSE-E26219-P01 shipping spacers. (Illustration Figure 5.3-1).

NOTE

Sequence steps 3 through 7 and 18, spacer removal to lower the cradle, maybe omitted from the procedure if the operator determines sufficient clearance exists between the engine, stand, pylon firex and starter duct.

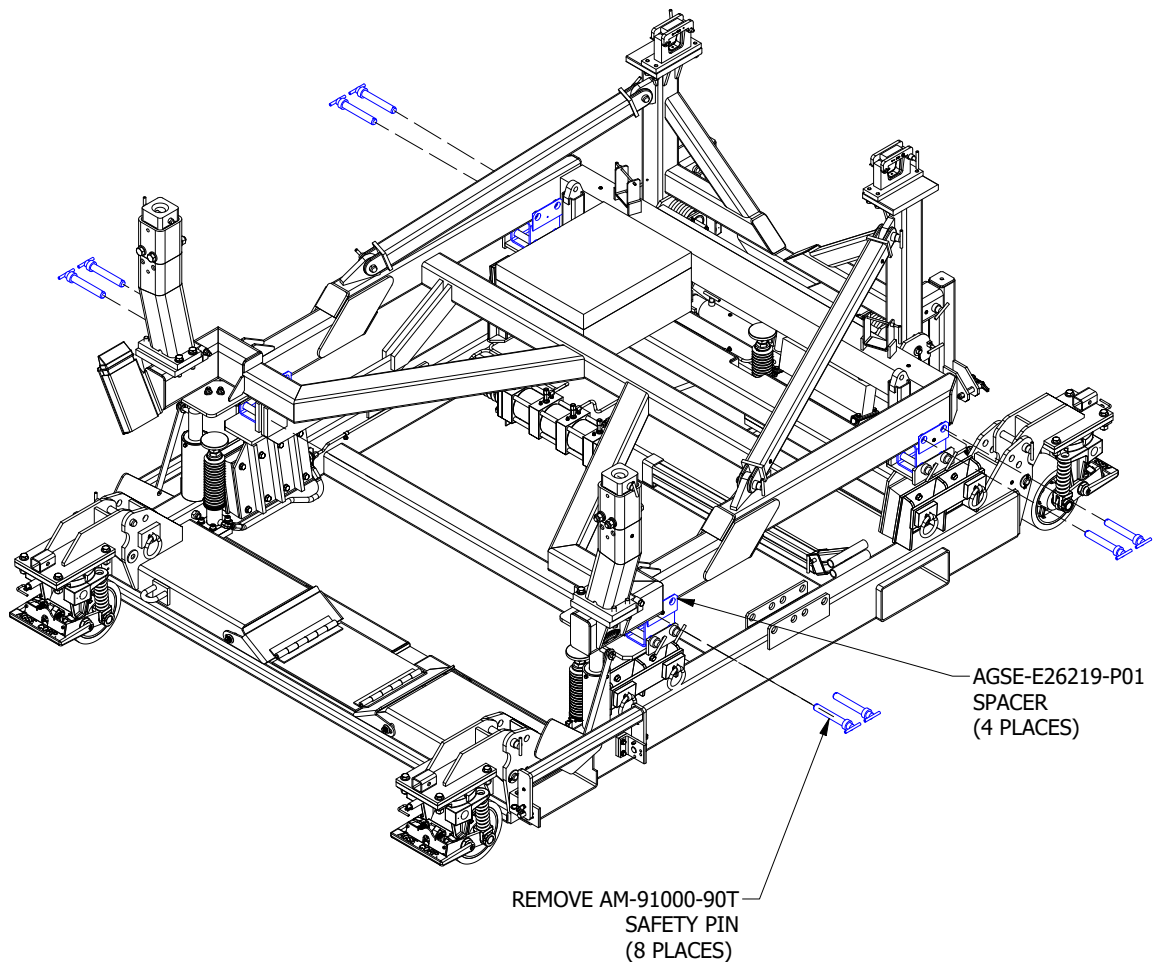


Figure 5.3-1

- 4) Use the hydraulic hand pump to raise the cradle approximately 1". (The cradle is on the spacers, so it only needs to lift up enough for the spacers to clear the dagger pins.)
- 5) Remove the eight (8) AM-91000-90T safety pins to remove the shipping spacers from the base.
- 6) Use the hydraulic hand pump to lower the cradle down to the base and secure with the safety pins removed in step 3. Open the pressure relief valve **SLOWLY** to lower the cradle.

NOTE

Use the hand pump as necessary to aid installing the pins.

- 7) Store the shipping spacers as shown in Illustration Figure 5.3-2.

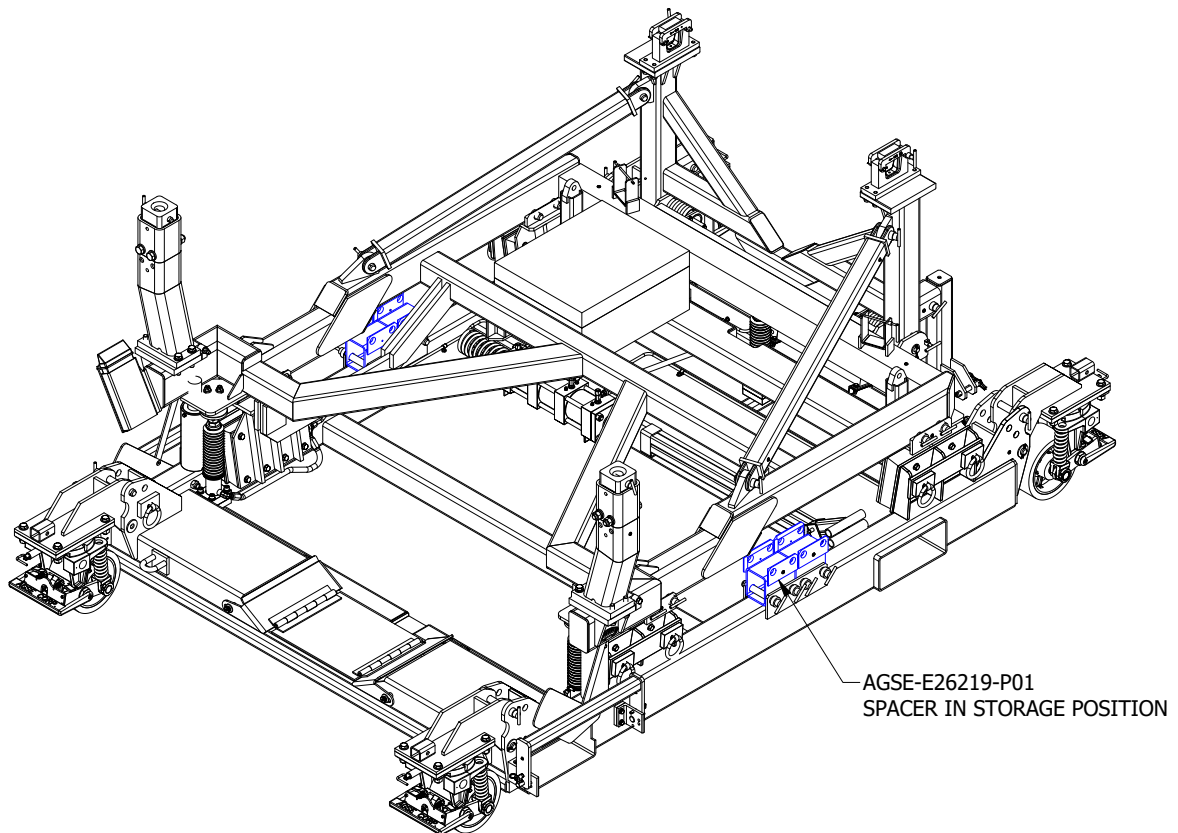


Figure 5.3-2

- 8) Remove the AGSE-E25950-S01 FWD mount adapter (LH) and AGSE-E25950-S02 FWD mount adapter (RH) from the AGSE-E26210-S01 storage box and install on the FWD engine ground handling mounts using eight (8) 5/16” hex head cap screws, eight (8) 5/16” lock washers and eight (8) 5/16” flat washers as shown in Illustration Figure 5.2-1.
- 9) Remove AGSE-E25948-S01 LH AFT mount spindle assembly, AGSE-E25948-S02 RH AFT mount spindle assembly, AGSE-E26207-P01 LH AFT mount adapter, and AGSE-E26207-P02 RH AFT mount adapter from the storage box and install on the engine AFT ground handling mounts using the hardware provided. (Illustration Figure 5.2-1).
- 10) For Airbus, remove the AFT bootstrap adapters from their storage locations and install them in the deployed positions. (Illustration Figure 5.3-3).
- 11) For Irkut, the Airbus AFT bootstrap adapters may be left in their storage locations. (Illustration Figure 5.3-4 and Figure 5.3-5).
- 12) To provide clearance under the nacelle, the front mounting legs may be unbolted and pivoted aftward.
- 13) Position the stand beneath and centered to the suspended engine.

CAUTION

Minimal clearance exists between the engine and stand. The operator is responsible to ensure the engine does not contact the stand.

WARNING

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

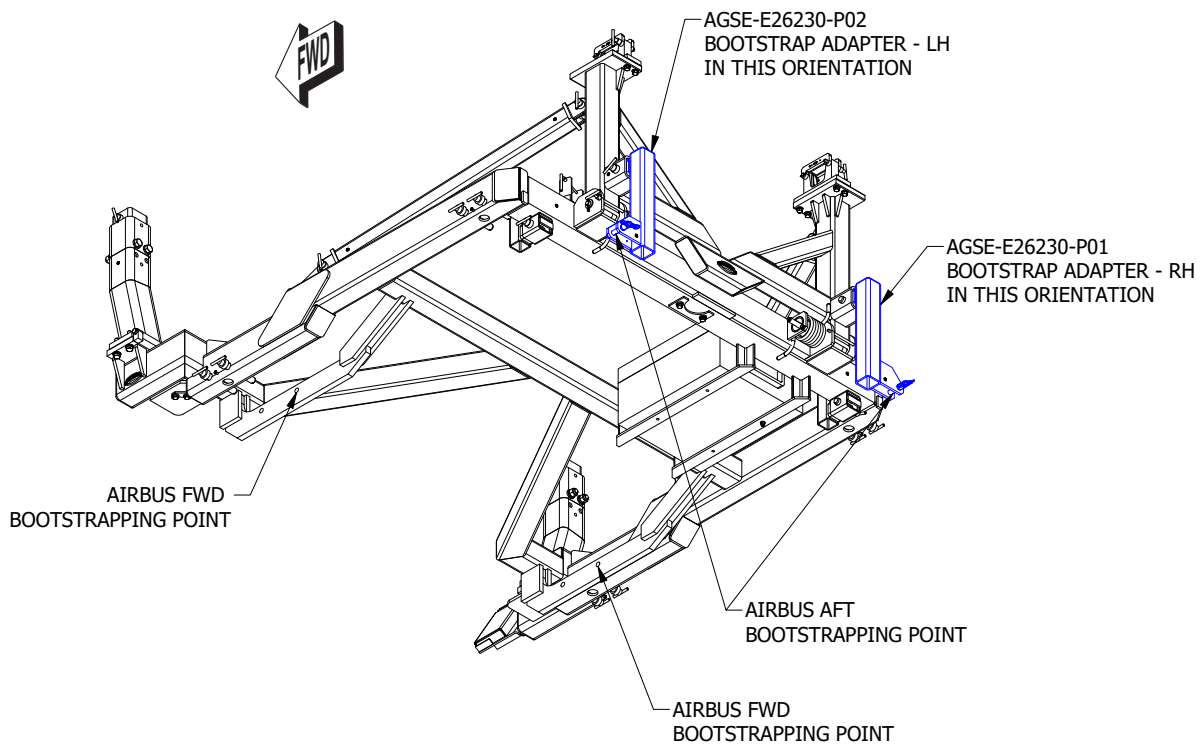


Figure 5.3-3 Airbus Bootstrapping Points

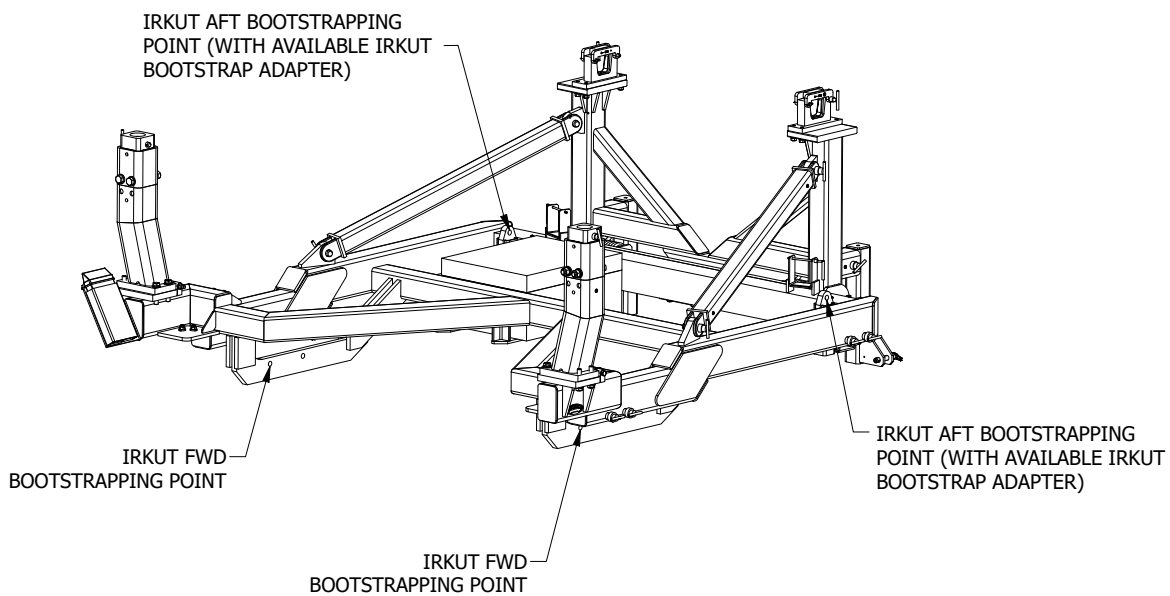


Figure 5.3-4 Irkut Bootstrapping Points with Available AFT Bootstrap Adapter

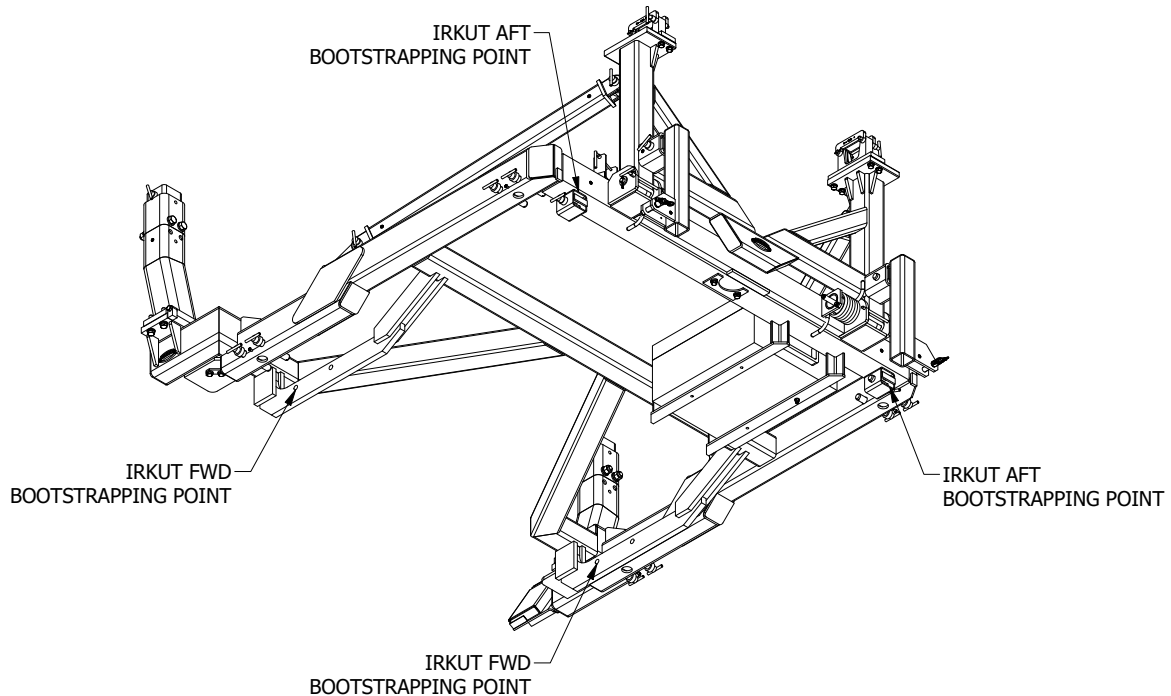


Figure 5.3-5 Irkut Bootstrapping Points without AFT Bootstrap Adapter

- 15) Secure the bootstrap to the appropriate points on the engine cradle.
- 16) Remove eight (8) AM-91000-90T safety pins securing the cradle to the base.
- 17) Proceed with the bootstrap lift, following the aircraft manufacturer's recommended procedures.
- 18) Lower the cradle with engine back onto the base, and secure using eight (8) safety pins removed in step 16.
- 19) Move the stand forward only until the engine is clear of the aircraft wing. Use caution, as the clearance between the engine and aircraft pylon is minimal.
- 20) Reinstall the shipping spacers removed in steps 3 - 7.

WARNING

Do NOT tow the stand with engine until the shipping spacers have been reinstalled.

5.4 Stowing the Stand for Transport

- 1) Remove the FWD mount adapters AGSE-E25950-S01 and AGSE-E25950-S02 from the engine and store in the AGSE-E26210-S01 storage box.
- 2) Remove AGSE-E25948-S01 LH AFT mount spindle assembly, AGSE-E25948-S02 RH AFT mount spindle assembly, AGSE-E26207-P01 LH AFT mount adapter, and AGSE-E26207-P02 RH AFT mount adapter from the engine and store in the AGSE-E26210-S01 storage box.
- 3) If needed, reinstall the AGSE-E26219-P01 shipping spacers, by following steps 4 through 7.
- 4) Remove eight (8) (4 on each side) AM-91000-90T cradle safety pins to free the cradle from the base.
- 5) Use the hydraulic hand pump to raise the cradle approximately 5-1/2”.
- 6) Remove the shipping spacers from their storage position and install on the shock mount. Secure with eight (8) AM-91000-90T safety pin.
- 7) Use the hydraulic hand pump to lower the cradle onto the spacers. Secure the cradle with the safety pins removed in step 3. (Illustration Figure 5.4-1)
- 8) Reverse procedures in Section 5.1 to completely stow the stand.

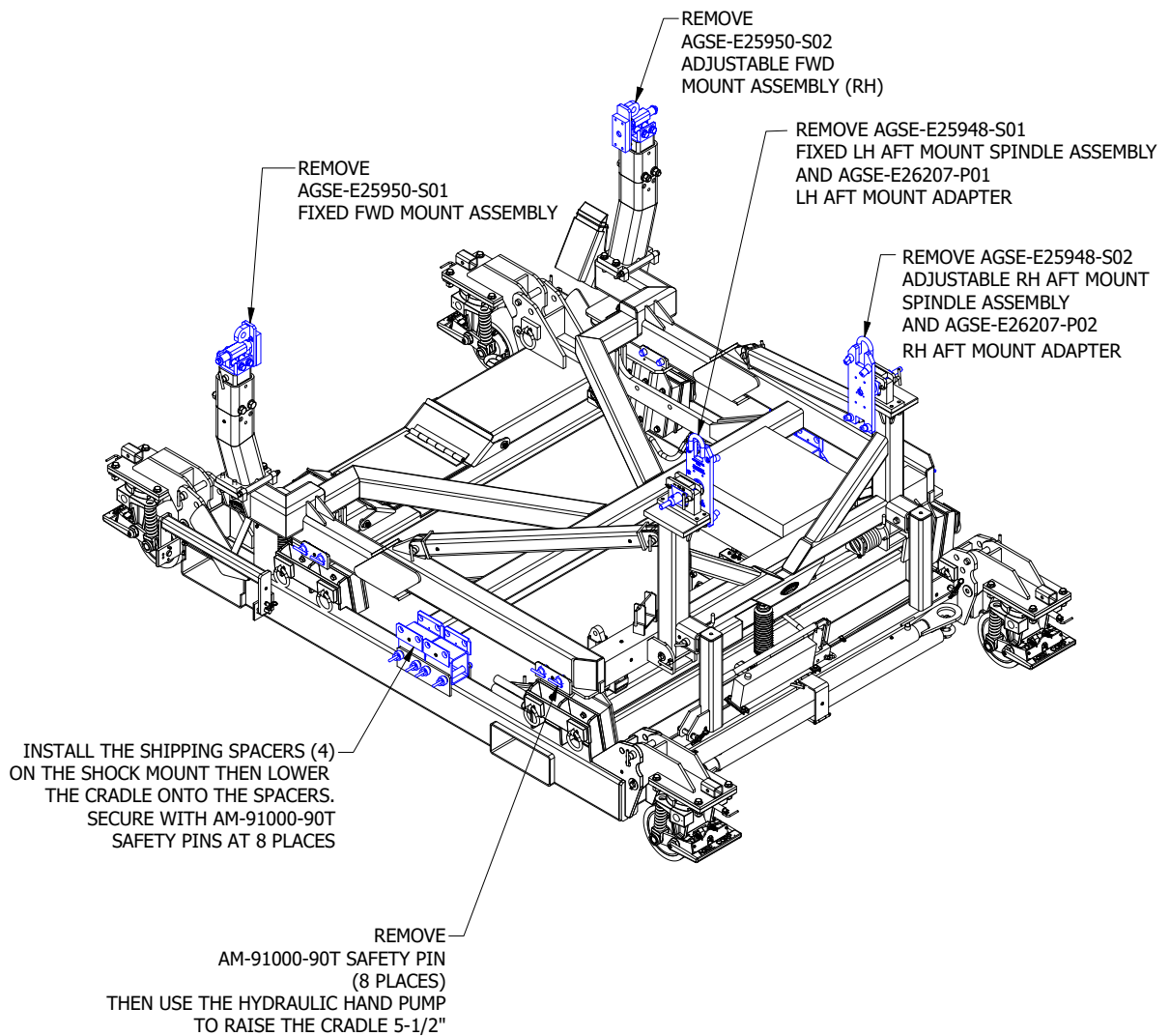


Figure 5.4-1

5.5 Forklifting

WARNING

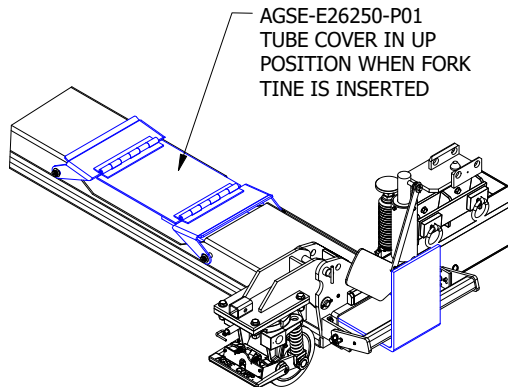
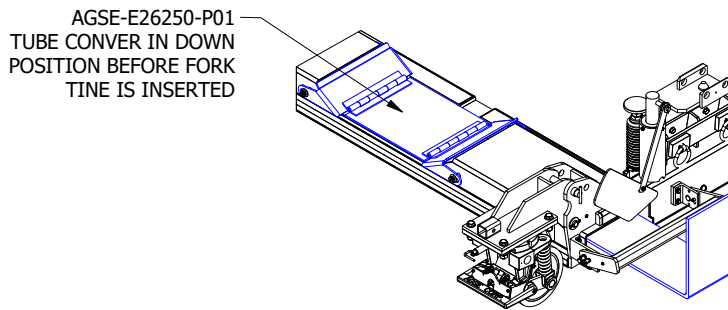
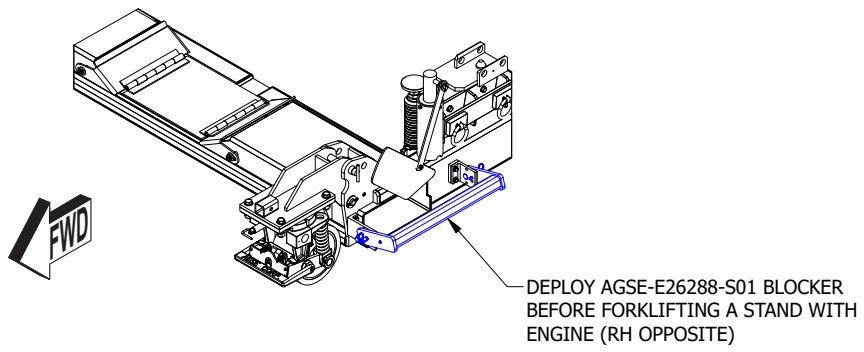
The blockers **MUST BE DEPLOYED** before forklifting a stand with an engine installed to avoid possible damage to the engine due to contact between engine and forklift.

5.5.1 Fork Tube Covers

The AGSE-E26250-P01 fork tube center cover is designed to prevent the engine from contacting the fork tines. The fork tube center cover is joined by a hinge which allows it to be raised when the fork tine is inserted. (Illustration Figure 5.5-1).

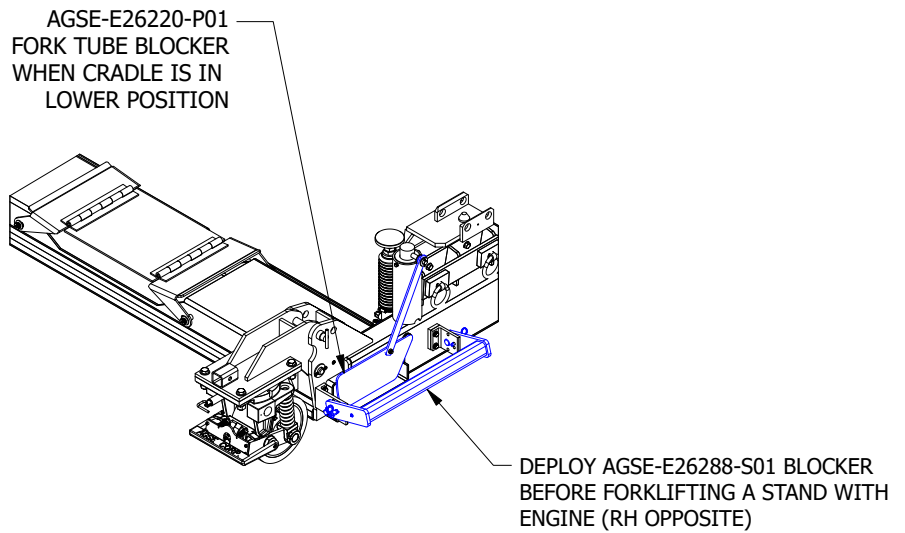
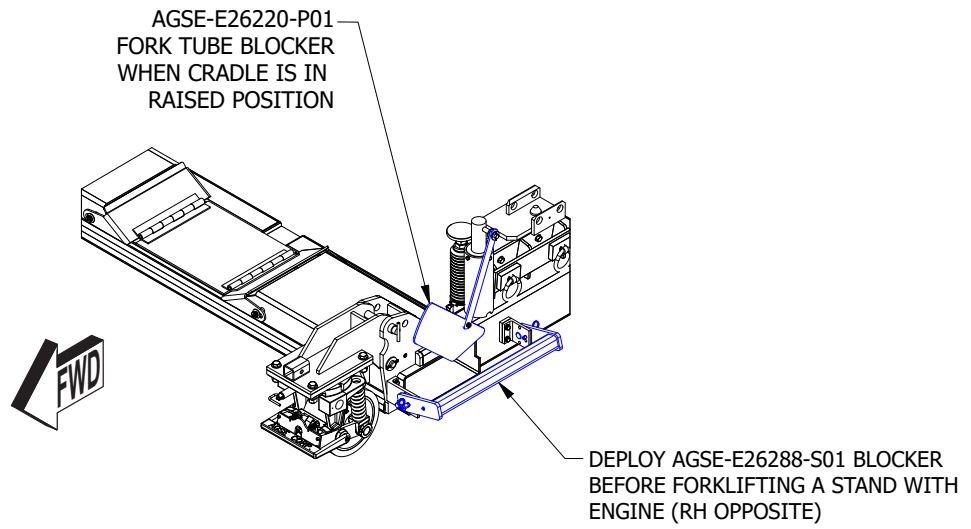
5.5.2 Fork Tube Blockers

When the cradle is lowered (with engine installed), the AGSE-E26251-P01 plungers are pushed down, the AGSE-E26220-P01 (LH) and AGSE-E26220-P02 (RH) fork tube blockers will be rotated down to cover the fork tube pockets to prevent the fork tine to be inserted. (Illustration Figure 5.5-2).



CRADLE NOT SHOWN FOR CLARITY

Figure 5.5-1 Fork Tube Covers and Fork Tube Blockers



CRADLE NOT SHOWN FOR CLARITY

Figure 5.5-2 Fork Tube Blockers

5.6 Shipping Tie-Down (Illustration Figure 5.6-1)

CAUTION

Truck shipment using a truck trailer equipped with an “air-ride” type suspension system is mandatory.

CAUTION

The cradle must never be tied directly down to the truck bed. **DO NOT** tie-down above the shock mounts. Doing so will disable the shock mount system and will result in engine damage.

NOTE

The tie-down rings are rated at 10,000 lbs. capacity.

5.6.1 Air Shipment

The tie-down procedures for air shipment should be done in accordance with the aircraft weight and balance manual and at the discretion of the cargo loadmaster. The stand can be shipped in stow position as an option.

5.6.2 Truck Shipment

Secure the transport base empty or loaded with engine to the truck bed at the discretion of the cargo handler. Use chains (10,000 lbs. capacity minimum) and/or nylon straps (5,000 lbs. capacity minimum) per the following diagram. The stand can be shipped in stow position as an option.

CAUTION

The stand should **NOT** be shipped with an engine while the cradle is in the **LOWERED** position. There is not enough sway space below the engine for the shock mounts system to operate. Damage to the engine is likely to occur.

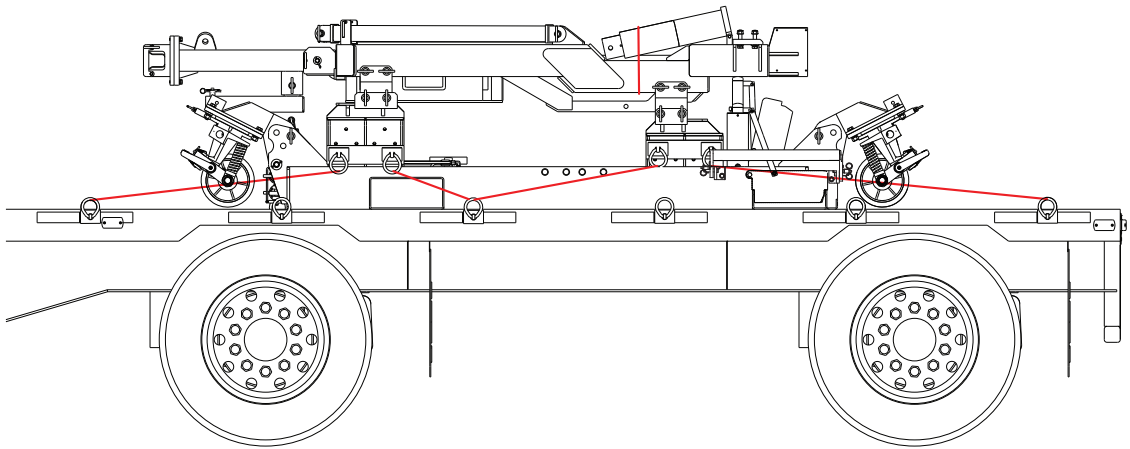
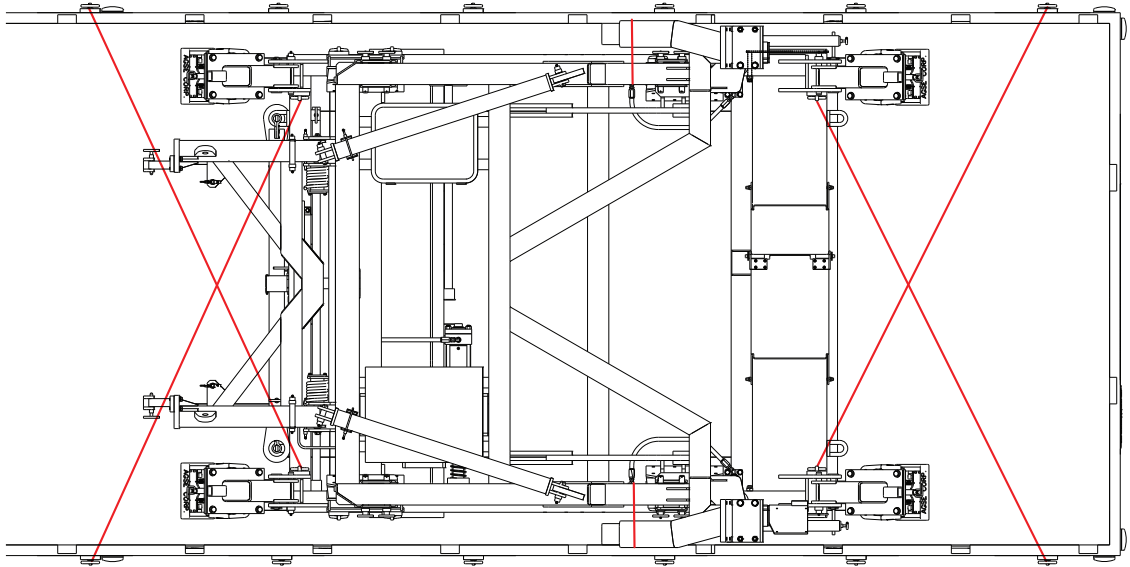


Figure 5.6-1 Truck Tie-Down (Stand and Casters in Stow Position) - Optional

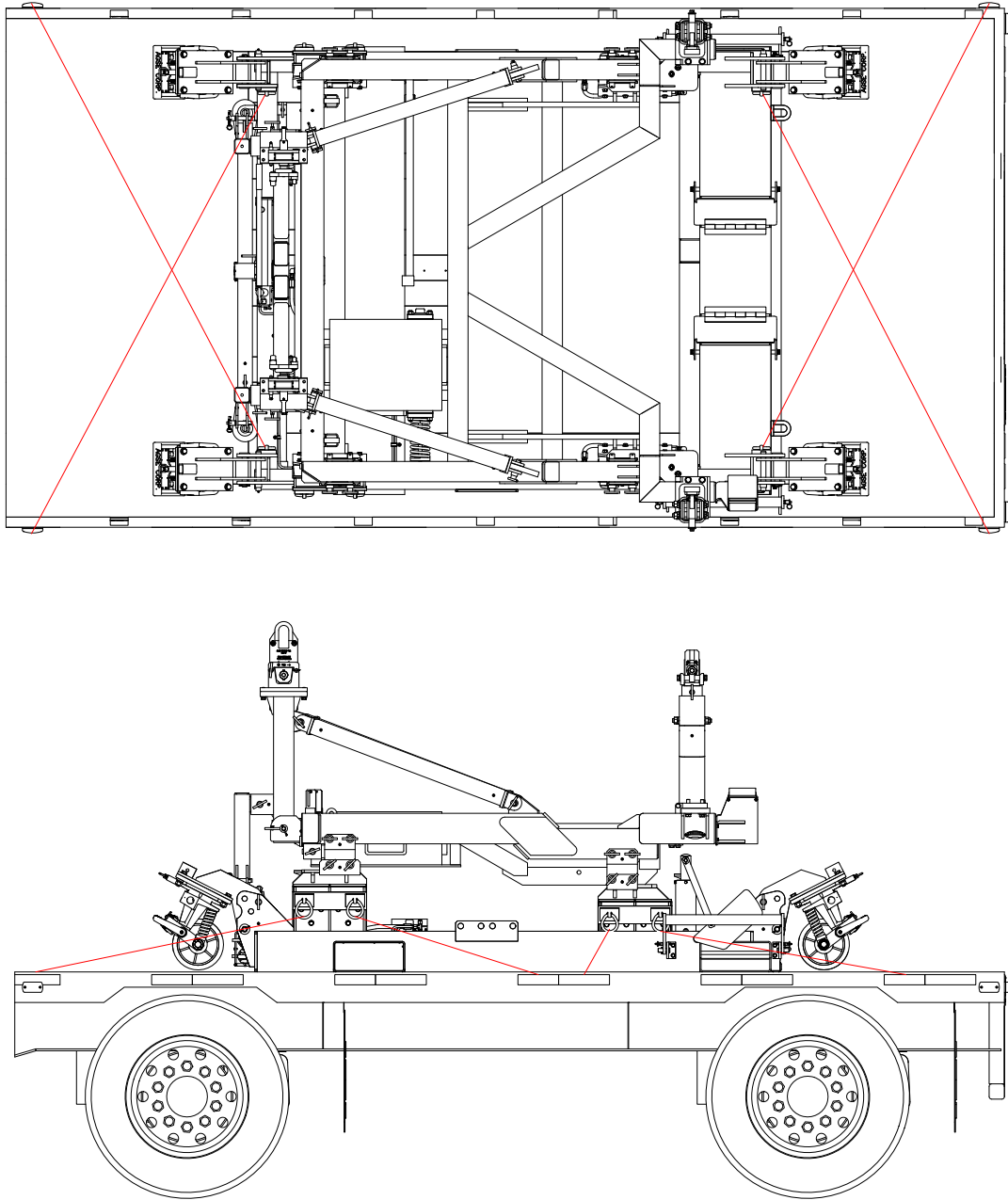


Figure 5.6-2 Truck Tie-Down (Casters in Stow Position)

5.7 Component Storage Box

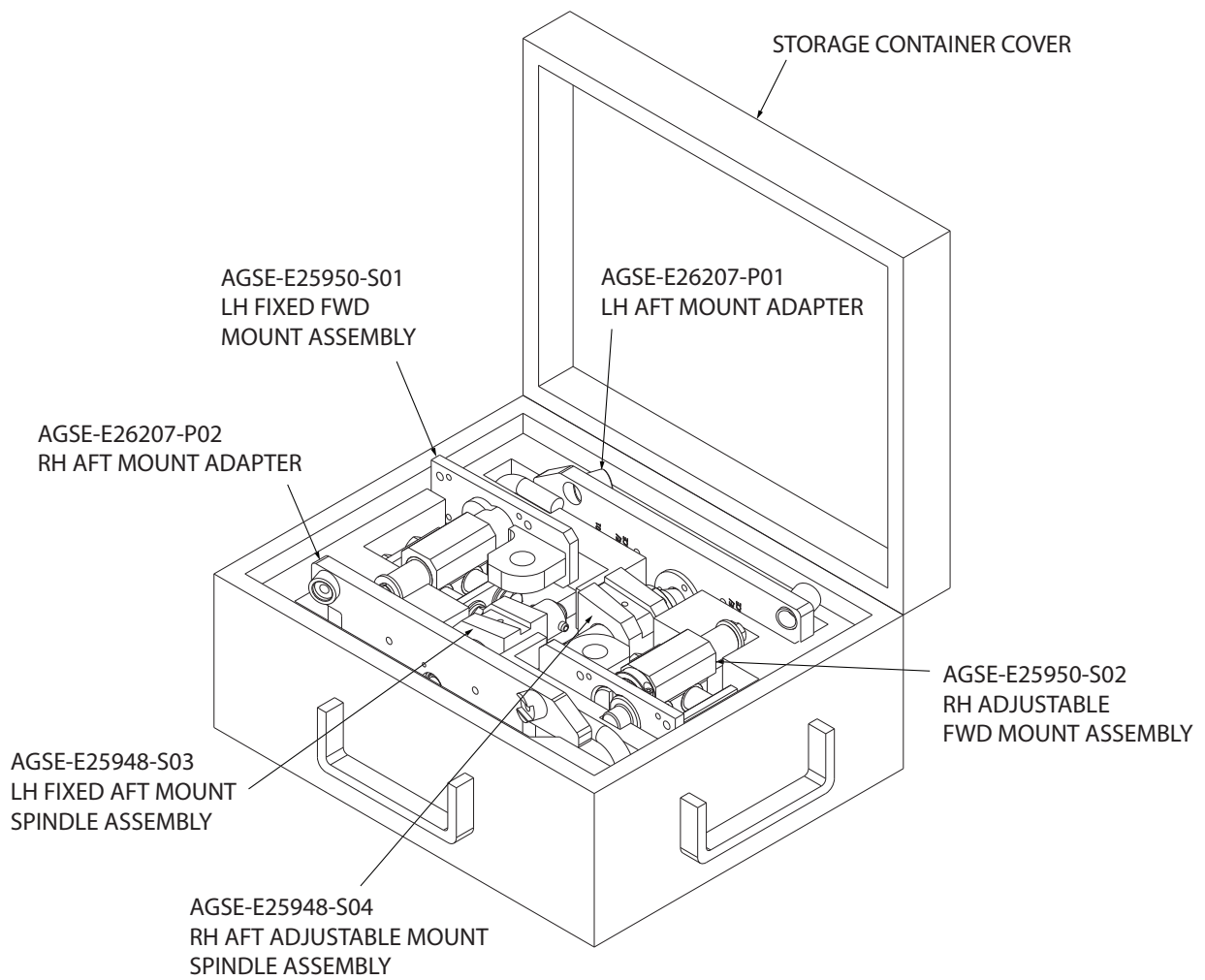


Figure 5.7-1 AGSE-E26210-S01 Storage Box

6.0 – SAFETY

6.1 Stress

Design stress safety factors are compliant with PW PPS 1778. The equipment is provided with safety devices and guards to properly operate the equipment.

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.

6.4 Risk Assessment

6.4.1 Limits of the Machinery

The AGSE-E262-G02 (PWA211430A) Engine Transport Stand is a commercial product designed specifically only to store and/or transport the Pratt & Whitney PWA1130G-JM/PW1400G-JM engines in QEC configuration. 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 PW1130G-JM/PW1400G-JM Engine Transport 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-E262-G02 Engine Transport 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 within 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.





ADVANCED GROUND SYSTEMS ENGINEERING LLC

EC DECLARATION OF CONFORMITY

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

- 2006/42/EC Machinery Directive (2006/05/17)

Machinery covered by this Declaration:

Description: Engine Transportation Stand, PW 1130G
Model: AGSE-E262
Part Number: AGSE-E262-G02 (PWA211430)
Serial Number: _____

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:

- Pratt & Whitney GSE Specifications No. 3028, FULL ENGINE BOOTSTRAP TRANSPORT STAND FOR THE PW1130G/PW1400G ENGINE, 2014/09/22 REV A.
- AGSE Quality System Procedure Number QSP-006
- Aerospace Recommended Practice Standard, SAE ARP 1840, 2007/02 Rev B

Place: Santa Fe Springs, California, USA

Date: _____

Signed: _____
Quality Representative

Technical File: Pedro Fernandes
Advanced Ground Systems Engineering
Pct Ana Maria Bastos, N20
A-dos-Cunhados, Portugal 2560-005
+351-96-520-4851



ADVANCED GROUND SYSTEMS ENGINEERING LLC

EC DECLARATION OF CONFORMITY

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

- 2006/42/EC Machinery Directive (2006/05/17)

Machinery covered by this Declaration:

Description: Engine Transportation Stand, PW 1130G
Model: AGSE-E262
Part Number: AGSE-E262-G03 (PWA211430)
Serial Number: _____

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:

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+351-96-520-4851

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.

NOTICE

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

IPB Figure 1 – AGSE-E262-G02/G03 Engine Transport Stand Assembly

ITEM	PART NUMBER	QTY	PART DESCRIPTION
	AGSE-E262-G02	-	Engine Transport Stand Assy (Illustration Figure 8.1-1)
	AGSE-E262-G03	-	Engine Transport Stand Assy (Illustration Figure 8.1-2)
1	AGSE-E26201-S01	1	Base Assy (See IPB Figure 2 for Details)
3	AGSE-E26219-P01	4	Spacer
5	AGSE-E23316-S01	1	U-Bolt Assy (Used in AGSE-E262-G02 only)
6	03-1033-05	1	GPS Transmitter (Used in AGSE-E262-G02 only)
7	AM-91000-90T	8	Safety Pin - 1" Dia. x 5-5/8" Grip
8	AGSE-E26202-S02	1	Cradle Assy - PW1130G/PW1400G (See IPB Figure 3 for Details)
9	AGSE-S00308-04C008A05	8	Button Head Screw
10	AGSE-E26260-P01	1	GPS Bracket Weldment (Used in AGSE-E262-G02 only)
11	AGSE-S00104-04C012A01	2	Screw, Hex Head (Used in AGSE-E262-G02 only)
12	AGSE-S00131-04A17	2	Washer (Used in AGSE-E262-G02 only)
13	AGSE-S00135-04A17	2	Washer, Locking (Used in AGSE-E262-G02 only)
14	AGSE-S00121-04CD08A27	2	Set Screw, Hex Skt Drive, 1/4-20 UNC x 1/2" Lg (Used in AGSE-E262-G03 only)

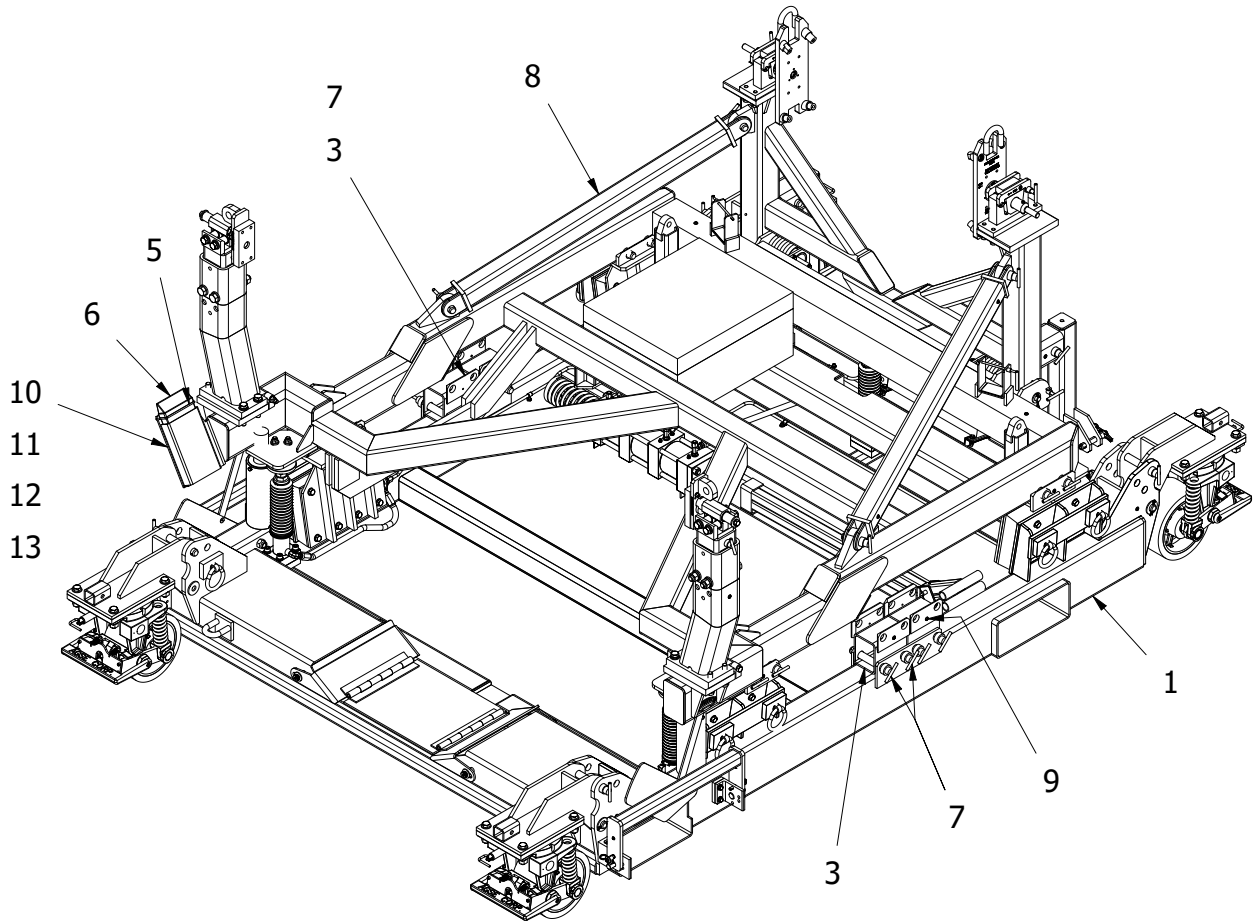


Figure 8.1-1 AGSE-E262-G02 Engine Transport Stand

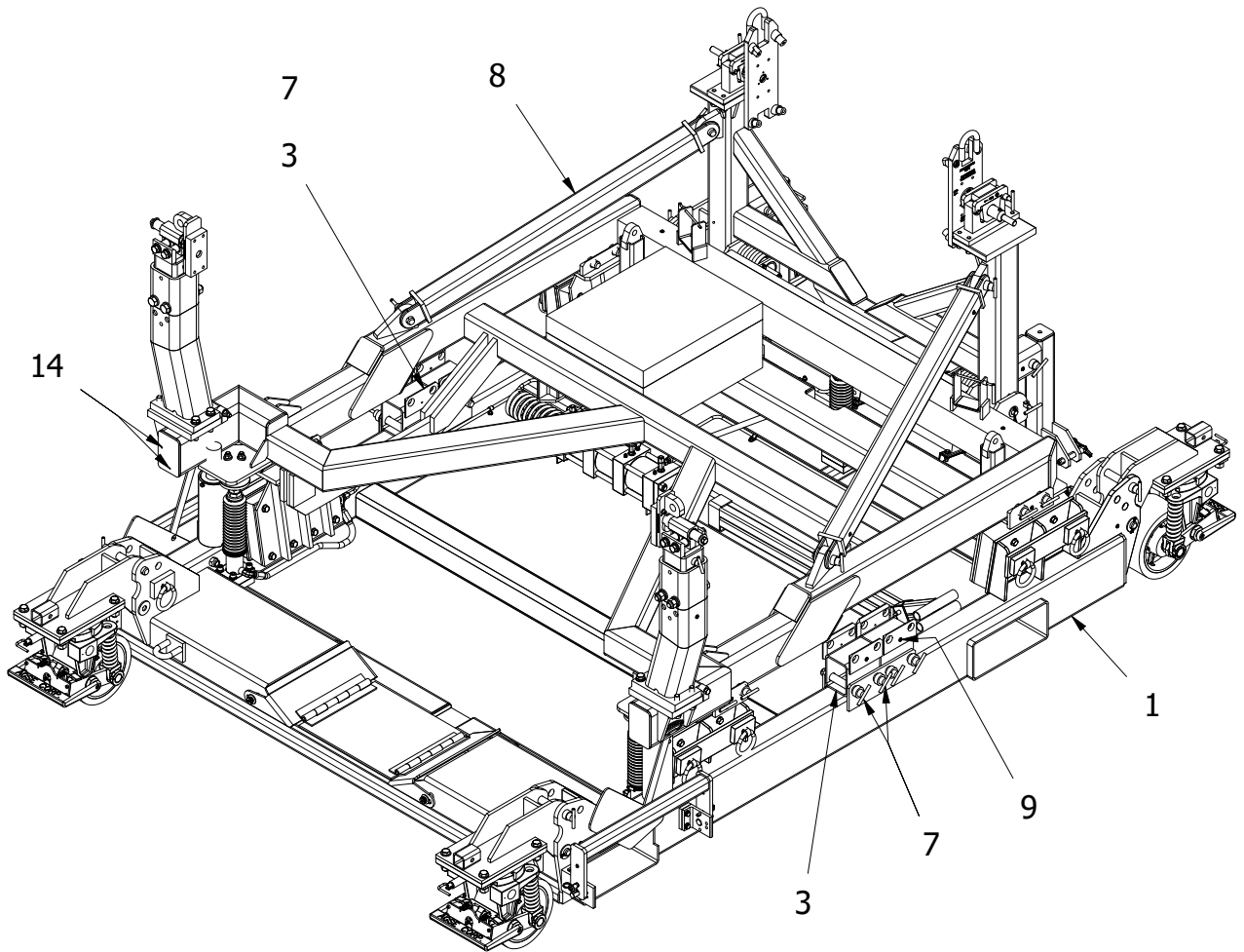


Figure 8.1-2 AGSE-E262-G03 Engine Transport Stand

IPB Figure 2 – AGSE-E26201-S01 Base Assembly

ITEM	PART NUMBER	QTY	PART DESCRIPTION
	AGSE-E26201-S01	-	Base Assy (Illustration Figures 8.2-1 and 8.2-2)
1	AGSE-E26204-P01	1	Base Weldment
2	AGSE-E26205-P01	1	FWD Cradle Mount - RH
3	AGSE-E26205-P02	1	FWD Cradle Mount - LH
4	AGSE-E26215-P01	1	AFT Cradle Mount
5	AGSE-E26220-P01	1	Fork Tube Blocker - LH
6	AGSE-E26220-P02	1	Fork Tube Blocker - RH
7	AGSE-E26251-P01	2	Plunger Weldment
8	AGSE-E26253-P01	2	Forklift Blocker Link
9	AGSE-E26288-S01	2	Blocker Assy (See IPB Figure 4 for Details)
10	AGSE-E26250-P01	1	Fork Tube Cover Weldment
11	AGSE-E26254-P01	2	Forklift Blocker Pin
12	AGSE-E26236-P02	1	Leveling Mount - 1"-8UNC x 4" O/A Length
13	AGSE-E26228-P02	3	Mounting Block
14	AGSE-E26233-S01	1	Hydraulic Assy (See IPB Figure 8 for Details)
15	AGSE-E26252-P01	2	Forklift Blocker Bushing
16	AGSE-E22105-P01	4	Caster Mounting Bracket
17	AGSE-E22105-P02	4	Caster Pivot Pin
18	AGSE-E22115-S01	1	Caster Lift Bar Assy
19	AGSE-E22116-P01	1	Tow Bar Storage Clamp
20	AGSE-E22117-S01	2	Tow Bar Assy (See IPB Figure 11 for Details)
21	AM-2079-2	4	Shock Absorbing Swivel Caster Assy
22	AGSE-E16911-P01	2	Caster Steering Bar

IPB Figure 2 – AGSE-E26201-S01 Base Assembly (Continued)

ITEM	PART NUMBER	QTY	PART DESCRIPTION
23	AM-91000-96T-H900	4	Safety Pin - 1" OD x 6" Grip
24	AM-90250-48L	1	Safety Pin - 1/4" OD x 3" Grip
25	AM-90250-32T	1	Safety Pin - 1/4" Dia. x 2" Grip
26	AGSE-S00238-P05	2	Compression Spring - 2.59" OD x 2.123" ID x 9.63 FL 30#/In
27	AGSE-E26236-P01	2	Leveling Mount - 1"-8UNC x 4-1/2" O/A Length
28	AGSE-S00241-P02	12	Tie Down Ring - 10,000 Lbs. Cap
29	AGSE-S00304-P04	8	Shock Mount
30	AGSE-S00104-04C056A01	1	Screw, Hex Head
31	AGSE-S00153-04CA01	1	Lock Nut
32	AGSE-S00114-06C016A07	2	Screw, Flat Head
33	AGSE-S00104-06C020A01	4	Screw, Hex Head
34	AGSE-S00153-06CA01	4	Nut
35	AGSE-S00131-06A17	16	Washer
36	AGSE-S00104-08C020A01	4	Screw, Hex Head
37	AGSE-S00105-08F016A01	64	Screw, Hex Head
38	AGSE-S00126-08C10S08A07	4	Shoulder Screw
39	AGSE-S00118-08C032A07	12	Screw, Socket Head
40	AGSE-S00131-08A17	4	Washer, Locking
41	AGSE-S00135-08A17	16	Washer, Locking
42	AGSE-S00104-10C040A01	8	Screw, Hex Head
43	AGSE-S00104-10C044A01	8	Screw, Hex Head
44	AGSE-S00135-10A17	16	Washer, Locking
45	AGSE-S00131-10A17	40	Washer

IPB Figure 2 – AGSE-E26201-S01 Base Assembly (Continued)

ITEM	PART NUMBER	QTY	PART DESCRIPTION
46	AGSE-S00150-10CA01	16	Nut
47	AGSE-S00131-12A1	6	Washer
48	AGSE-S00153-12CA01	2	Nut
49	AGSE-S00131-16A17	4	Washer
50	AGSE-S00166-094D016A17	4	Cotter Pin
51	AGSE-S00166-188D024A17	4	Cotter Pin
52	AGSE-S00104-04C012A01	8	Screw, Hex Head
53	AGSE-S00139-16CA01	3	Nut
54	AGSE-S00114-05C024A27	6	Screw, Flat Head
55	AGSE-S00135-04A17	8	Washer, Locking
56	AGSE-S00140-06CA01	2	Nut
57	AGSE-S00308-04C006A05	6	Button Head Screw
58	AGSE-E26289-S01	3	Bellow Assembly
64	AGSE-S00135-06A17	8	Washer, Locking
65	AGSE-S00104-06C016A01	8	Screw, Hex Head
66	AGSE-E26292-P01	2	Fork Tube Blocker Bracket
67	AGSE-E26292-P02	2	Fork Tube Blocker Bracket
68	AGSE-S00175-08A17	76	Washer

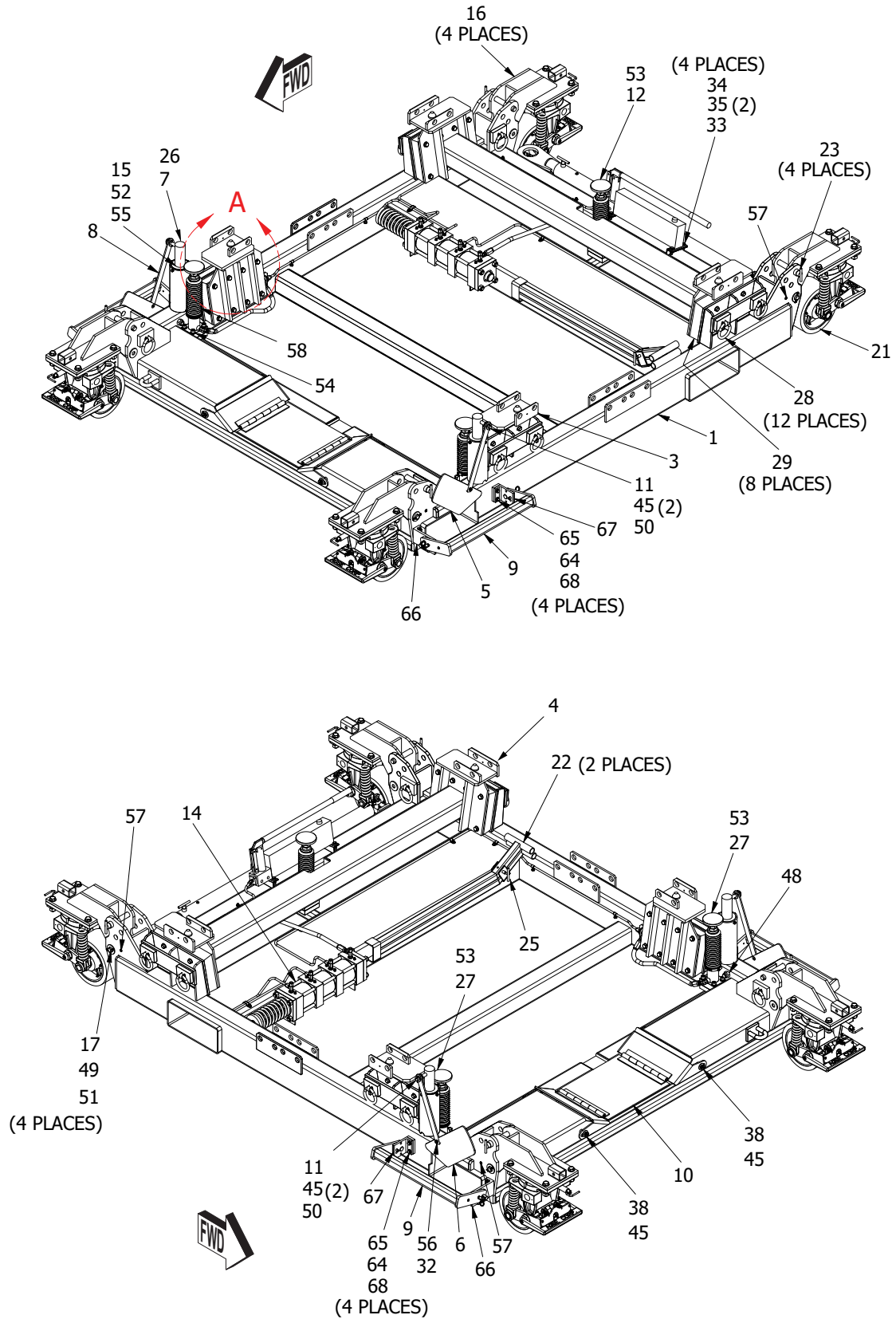
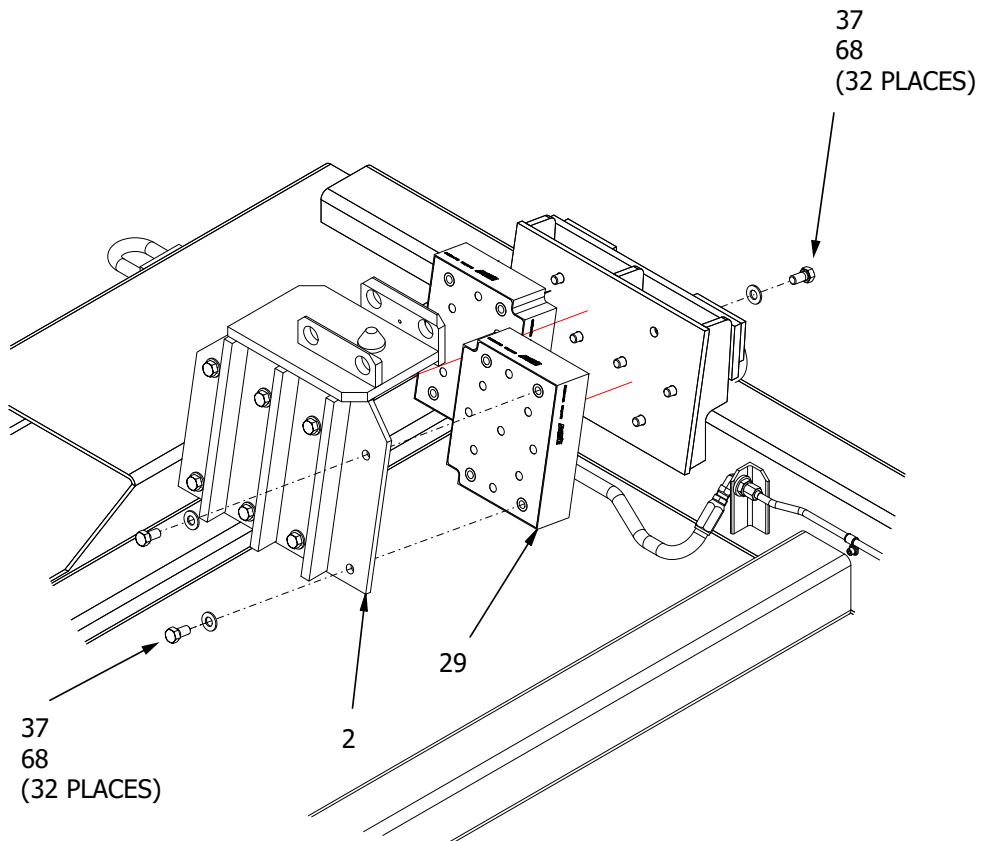
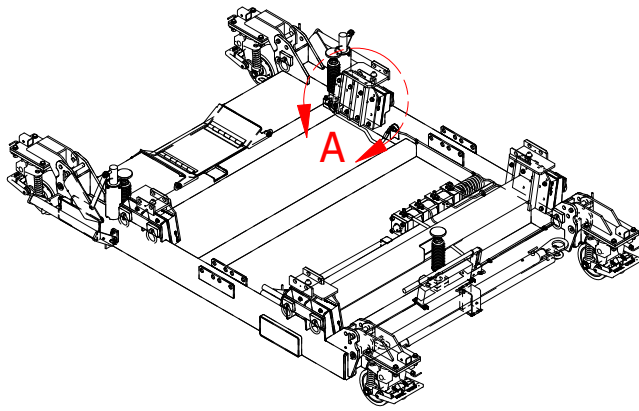


Figure 8.2-1 AGSE-E26201-S01 Base Assembly



DETAIL A

Figure 8.2-2 AGSE-E26201-S01 Shock Mount

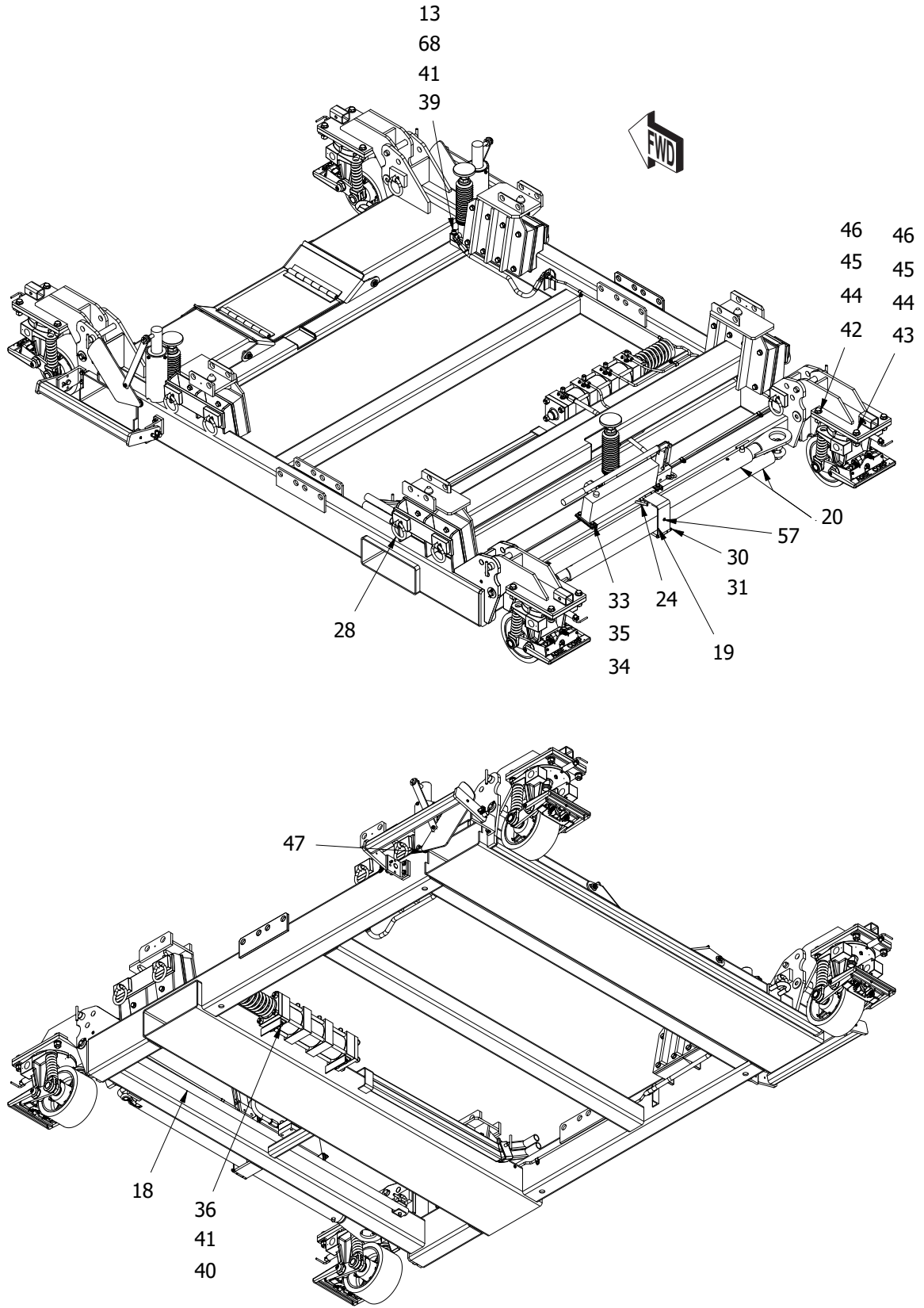


Figure 8.2-2 AGSE-E26201-S01 Base Assembly

IPB Figure 3 – AGSE-E26202-S02 Cradle Assembly

ITEM	PART NUMBER	QTY	PART DESCRIPTION
	AGSE-E26202-S02	-	Cradle Assy (Illustration Figure 8.3-1)
2	AGSE-E26206-P01	1	Frame Weldment
3	AGSE-E26207-P01	1	AFT Engine Mount - LH
4	AGSE-E26207-P02	1	AFT Engine Mount - RH
5	AGSE-E26208-P01	2	AFT Brace Weldment
6	AGSE-E26238-S01	1	Front Mtg Leg - LH (See IPB Figure 5 for Details)
7	AGSE-E26238-S02	1	Front Mtg Leg - RH (See IPB Figure 5 for Details)
8	AGSE-E25948-S01	1	Fixed AFT Mount Assy - LH (See IPB Figure 6 for Details)
9	AGSE-E25948-S02	1	Adjustable AFT Mount Assy - RH (See IPB Figure 7 for Details)
10	AGSE-E26210-S01	1	Storage Box Assy
13	AGSE-E26218-P01	2	Spring Support
14	AGSE-E26225-P01	2	Pivot Pin - 3/4" Dia. x 5-1/2" Grip
15	AGSE-E26229-P01	2	Torsion Spring
16	AGSE-E26230-P01	1	Bootstrap Adapter - RH
17	AGSE-E26230-P02	1	Bootstrap Adapter - LH
18	AGSE-E25950-S01	1	Fixed FWD Mount Assy - LH (See IPB Figure 9 for Details)
19	AGSE-E26232-P02	2	Rubber Pad - 1/2" x 3" x 2"
20	AGSE-E25950-S02	1	Adjustable FWD Mount Assy - RH (See IPB Figure 10 for Details)
22	AM-90250-64L	2	Safety Pin - 1/4" OD x 4" Grip
23	AGSE-E25902-P01	2	Safety Pin - 3/8" OD x 5-1/2" Grip - Drilled Collar

IPB Figure 3 – AGSE-E26202-S02 Cradle Assembly (Continued)

ITEM	PART NUMBER	QTY	PART DESCRIPTION
24	AM-90750-64T	2	Safety Pin
25	AM-91000-34T	4	Safety Pin
26	AM-91000-64T	2	Safety Pin
27	AM-91000-90T	8	Safety Pin
28	CL-12-BLPT-2.50	2	Ball Lock Pin
30	AGSE-S00166-188D024A05	2	Cotter Pin
31	AGSE-S00104-08C144A01	2	Screw, Hex Head
32	AGSE-S00104-04C012A01	4	Screw, Hex Head
33	AGSE-S00135-04A17	10	Washer, Locking
34	AGSE-S00131-04A17	10	Washer
35	AGSE-S00104-06C024A01	4	Screw, Hex Head
36	AGSE-S00153-06CA01	4	Lock Nut
37	AGSE-S00131-06A05	8	Washer
38	AGSE-S00135-06A17	8	Washer, Locking
39	AGSE-S00118-06F024A05	8	Screw, Hex Head
40	AGSE-S00104-08C032A01	8	Screw, Hex Head
41	AGSE-S00135-08A17	8	Washer, Locking
42	AGSE-S00131-08A17	12	Washer
43	AGSE-S00104-10C040A01	8	Screw, Hex Head
45	AGSE-S00135-10A03	8	Washer, Locking
46	AGSE-S00131-10A17	8	Washer
47	AGSE-S00131-12A17	2	Washer
50	AGSE-S00118-05F020A07	8	Screw, Socket Head
51	AGSE-S00135-05A17	8	Washer, Locking
52	AGSE-S00153-08CA01	2	Lock Nut

IPB Figure 3 – AGSE-E26202-S02 Cradle Assembly (Continued)

ITEM	PART NUMBER	QTY	PART DESCRIPTION
53	AGSE-E26203-P02	1	Cradle Weldment - PW1130G/PW1400G
54	AGSE-S00104-04C016A01	6	Screw, Hex Head
57	AGSE-S00352-P01	3	Bubble Sight Level - 4" x 1/2" x 5/8"
58	AGSE-S00102-N6C008A17	6	Screw, Pan Head
60	AGSE-S00356-P01	4	Rubber Push-On Cap
61	AGSE-E26226-P01	2	Irkut Bootstrap Adapter - AFT (Optional)
62	AM-91000-48T	2	Safety Pin Assy - 1" Dia. x 3" Lg (Optional)
64	AGSE-E26290-P01	2	Foot Pad Stop - FWD
65	AGSE-E26291-P01	1	Foot Pad Stop - AFT
66	AGSE-S00131-08A17	10	Washer
67	AGSE-S00104-08C028A01	6	Screw, Hex Head
68	AGSE-S00355-08CA01	4	Nut
69	AGSE-S00135-08A17	2	Washer, Locking
70	AGSE-S00175-08A17	8	Washer
71	AGSE-S00175-06A05	8	Washer
72	AGSE-S00308-04C006A05	14	Screw, Pan Head

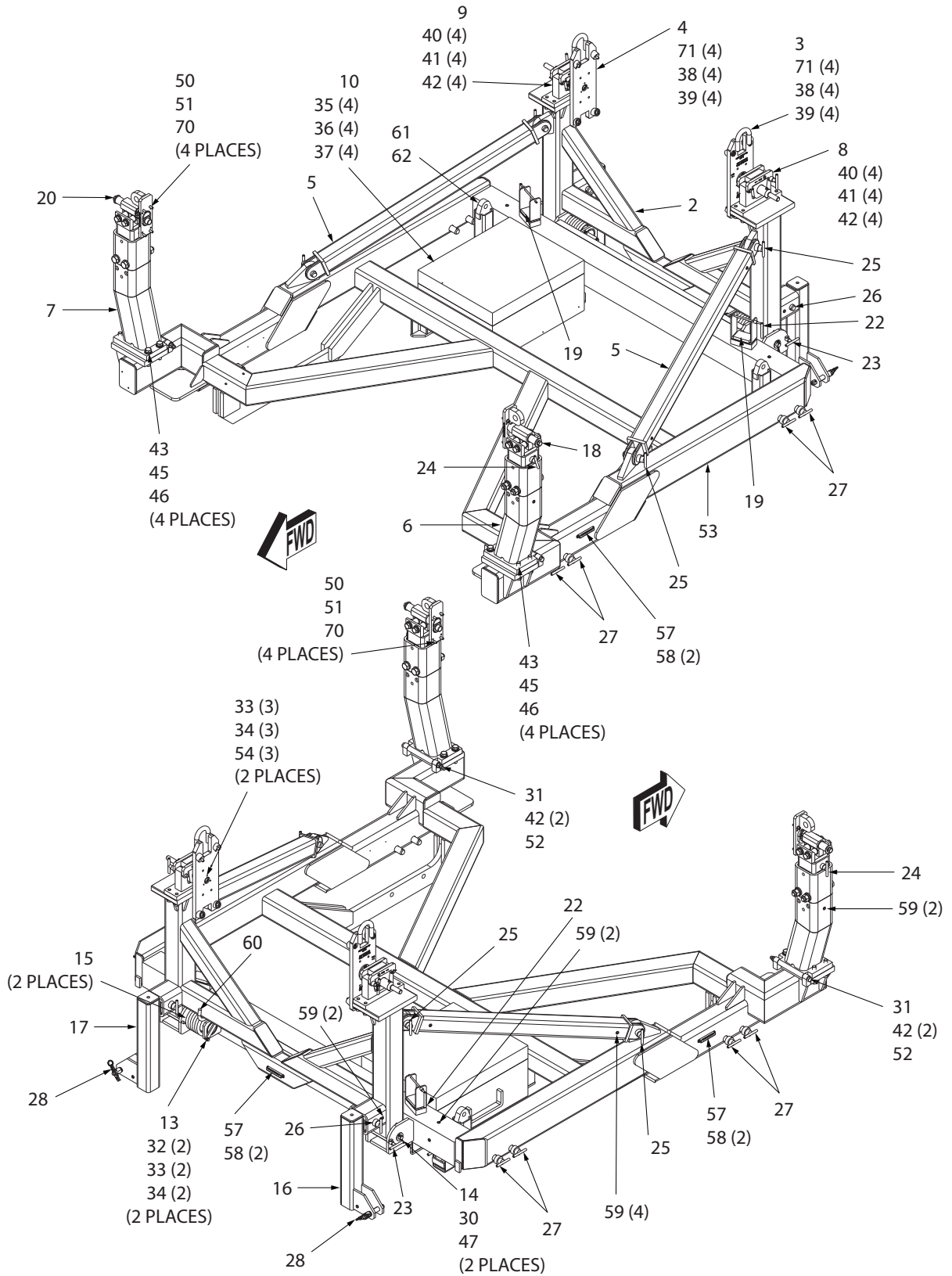


Figure 8.3-1 AGSE-E26202-S02 Cradle Assembly

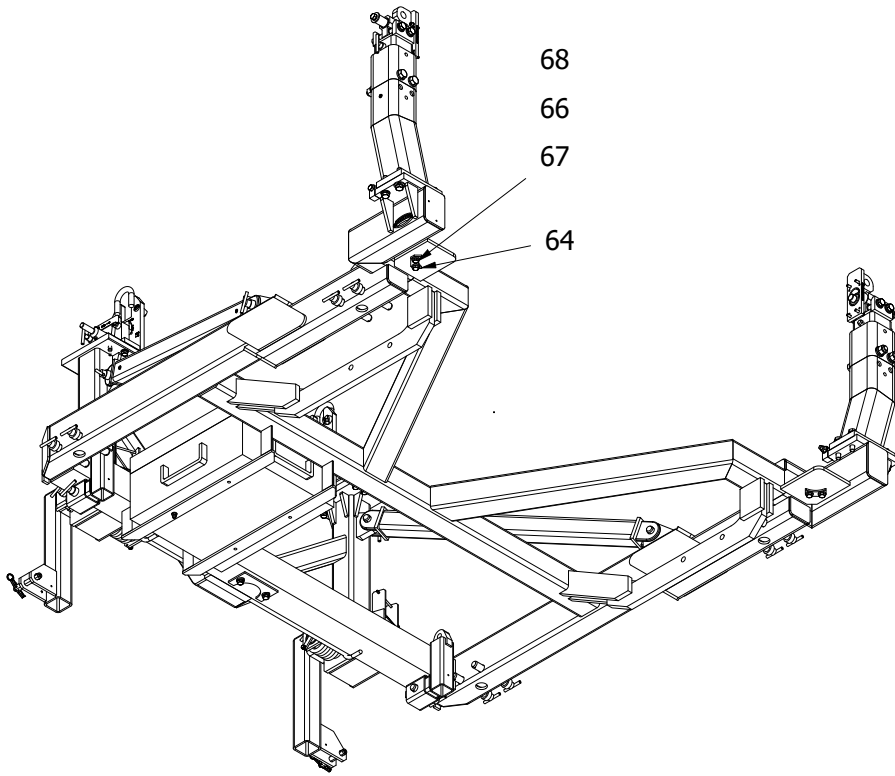
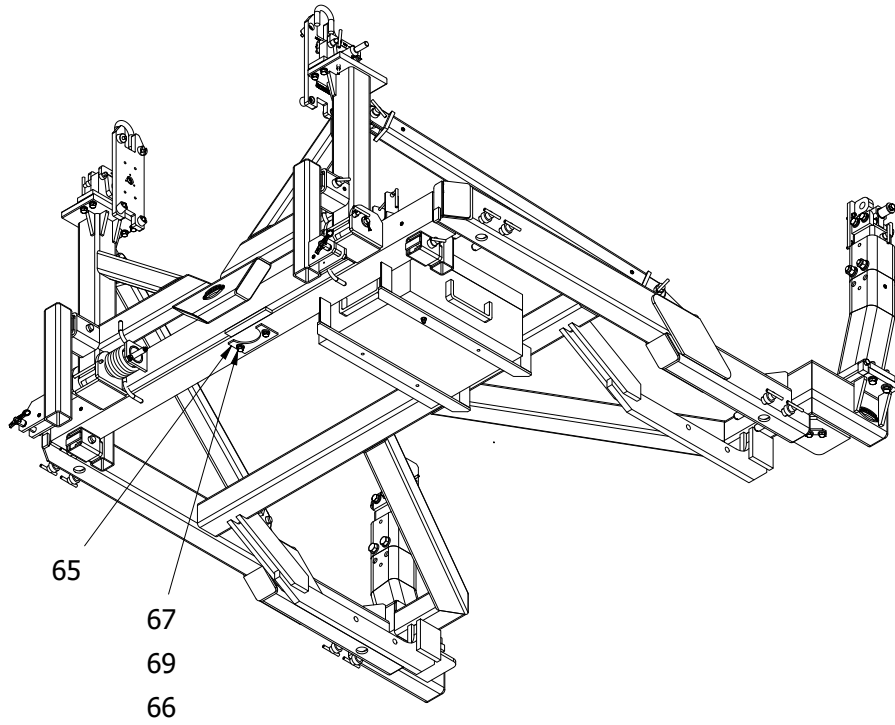


Figure 8.3-2 AGSE-E26202-S02 Cradle Assembly

IPB Figure 4 – AGSE-E26288-S01 Blocker Assembly

ITEM	PART NUMBER	QTY	PART DESCRIPTION
	AGSE-E26288-S01	1	Fork Tube Blocker Assy (Figure 8.4-1)
1	AGSE-E26288-P01	1	Fork Tube Blocker - Wldt
2	98330A945	2	Clevis Pin - 3/4" Dia. x 2" Lg - Adjustable Grip - SS
3	CL-6-BLPB-1.25-S	2	Ball Lock Pin - 3/8" Dia. x 1-1/4" Grip Lg
4	AGSE-S00308-04C008A05	2	Screw, Button Head
5	AGSE-S00166-125D016A17	2	Cotter Pin

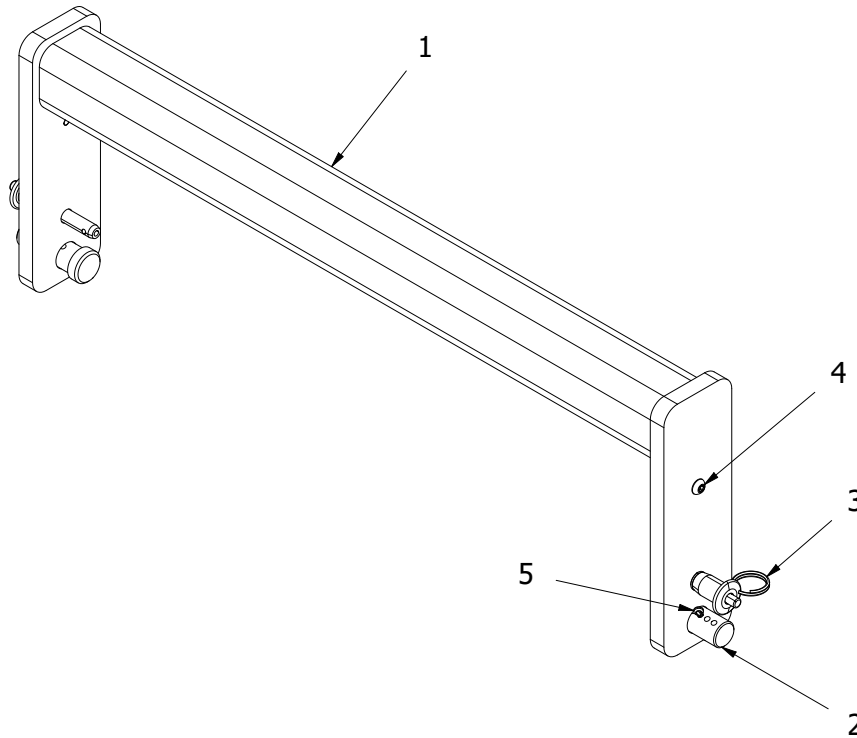


Figure 8.4-1 AGSE-E26288-S01 Blocker Assembly

IPB Figure 5 – AGSE-E26238-S01/S02 Front Mounting Leg Assemblies

ITEM	PART NUMBER	QTY	PART DESCRIPTION
	AGSE-E26238-S01	-	Front Mtg Leg Assy - LH (Figure 8.5-1)
	AGSE-E26238-S02	-	Front Mtg Leg Assy - RH (Figure 8.5-1)
1	AGSE-E26238-P01	1	Front Mtg Leg Base - LH (Used on AGSE-E26238-S01)
2	AGSE-E26238-P02	1	Front Mtg Leg Base - RH (Used on AGSE-E26238-S02)
3	AGSE-E26238-P03	1	Front Mtg Leg - Upper
4	AGSE-S00131-12A17	4	Washer
5	AGSE-S00135-12A17	2	Washer, Locking
6	AGSE-S00150-12CA01	2	Nut
7	AGSE-S00104-12C0104A01	2	Screw, Hex Head

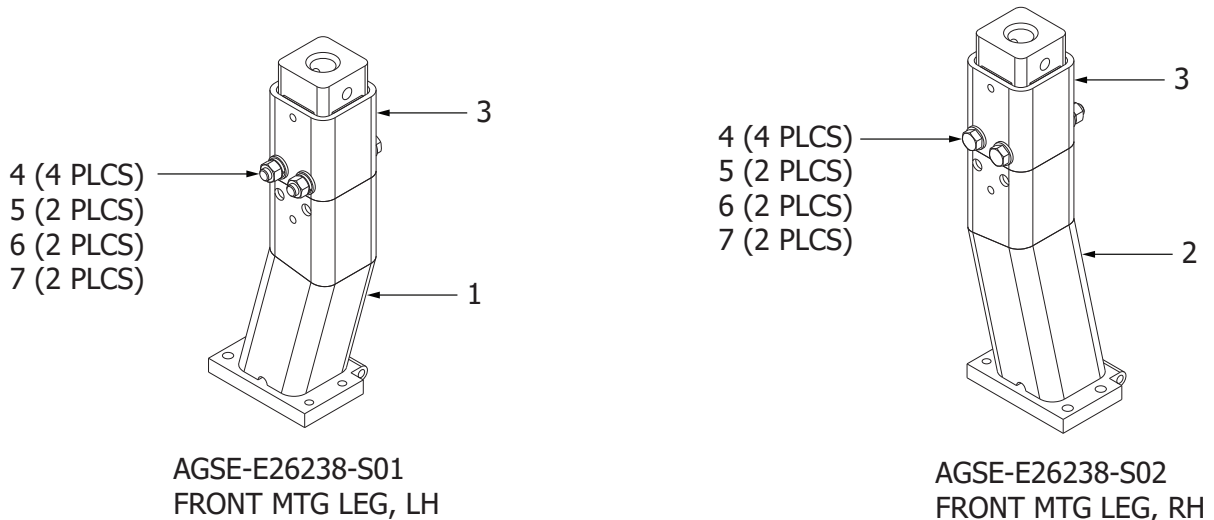


Figure 8.5-1 AGSE-E26238-S01/S02 Front Mounting Leg Assemblies

IPB Figure 6 – AGSE-E25948-S01 Fixed AFT Mount Assembly - LH

ITEM	PART NUMBER	QTY	PART DESCRIPTION
	AGSE-E25948-S01	1	Fixed AFT Mount Assy - LH (Figure 8.6-1)
	AGSE-E25948-S03	1	Fixed AFT Mount Spindle Assy - LH
1	AGSE-E22108-P01	1	Spherical Bearing - 1” OD x .813 Bore x 3/8” Wide - 304 SS (Detail of AGSE-E25948-S03)
2	AGSE-E22108-P02	1	Retainer (Detail of AGSE-E25948-S03)
3	AGSE-E25945-P01	1	AFT Mount Saddle
4	AGSE-E25946-P01	1	Mount Block (Detail of AGSE-E25948-S03)
5	AGSE-E25947-P01	1	Fixed Shaft - AFT Mount (Detail of AGSE-E25948-S03)
6	AGSE-E25949-P01	1	Cap - AFT Mount Saddle
7	AGSE-E25951-P01	1	Spherical Socket Seat (Detail of AGSE-E25948-S03)
8	AM-1928-G10	1	Hold Down Pin
9	AM-90500-41T	1	Safety Pin
10	AGSE-S00115-06C008A01	1	Screw, Button Head (Detail of AGSE-E25948-S03)
11	AGSE-S00166-093D012A05	2	Cotter Pin
12	AGSE-S00170-380D032A17	1	Slotted Spring Pin (Detail of AGSE-E25948-S03)
13	AGSE-S00308-04C006A05	1	Button Head Screw (Detail of AGSE-E25948-S01)
14	AG545	2	Washer

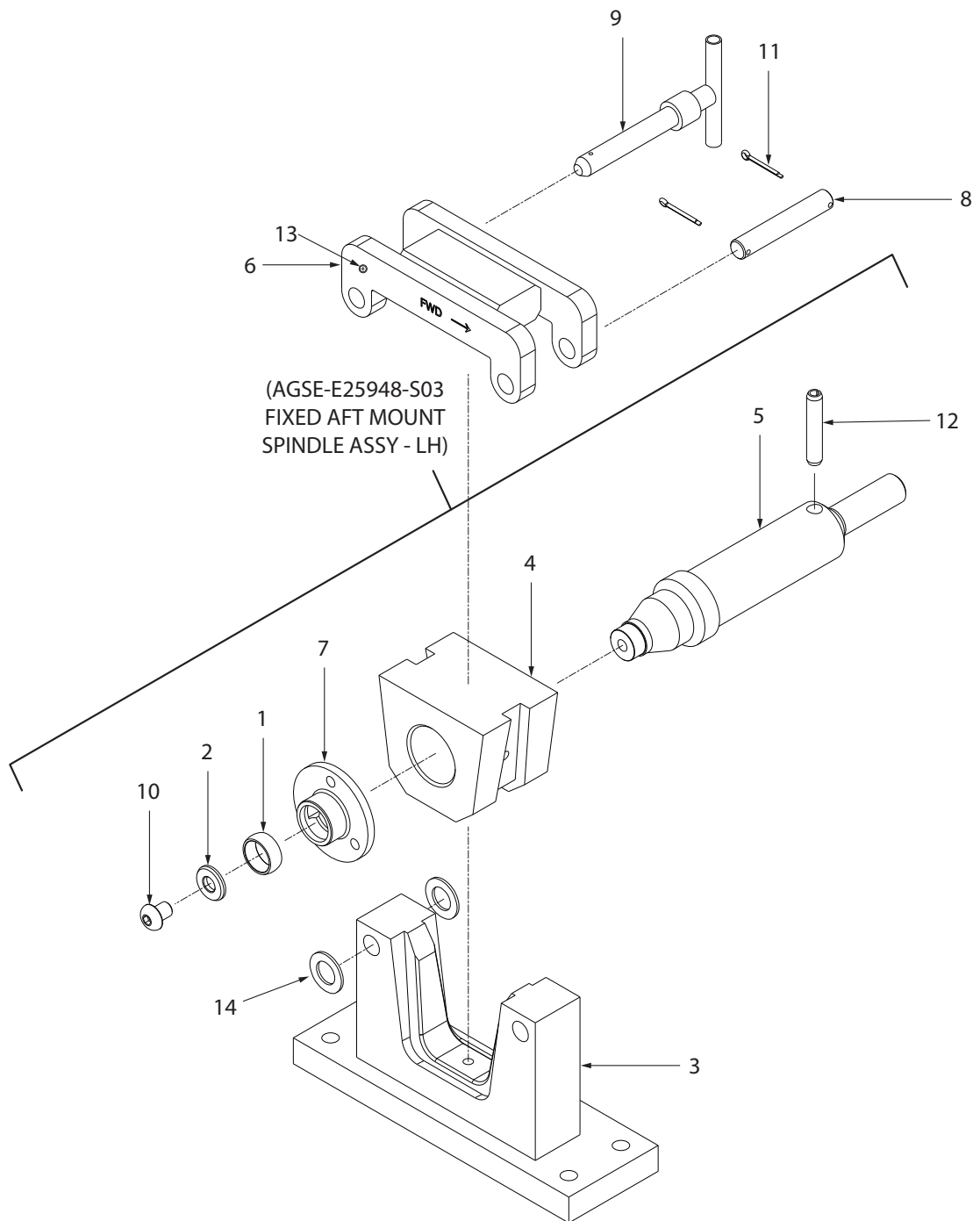


Figure 8.6-1 Fixed AFT Mount Assembly - LH

IPB Figure 7 – AGSE-E25948-S02 Adjustable AFT Mount Assembly - RH

ITEM	PART NUMBER	QTY	PART DESCRIPTION
	AGSE-E25948-S02	1	Adjustable AFT Mount Assy - RH (Figure 8.7-1)
	AGSE-E25948-S04	1	Adjustable AFT Mount Spindle Assy - RH
13	AGSE-E22108-P01	1	Spherical Bearing -1” OD x .813 Bore x 3/8” Wide (Detail of AGSE-E25948-S04)
14	AGSE-E22108-P02	1	Retainer (Detail of AGSE-E25948-S04)
15	AGSE-E25945-P01	1	AFT Mount Saddle
16	AGSE-25946-P01	1	Mount Block (Detail of AGSE-E25948-S04)
17	AGSE-E25947-P02	1	Adjustable Shaft - AFT Mount (Detail of AGSE-E25948-S04)
18	AGSE-E25949-P01	1	Cap - AFT Mount Saddle
19	AGSE-E25951-P01	1	Spherical Socket Seat (Detail of AGSE-E25948-S04)
20	AM-1928-G10	1	Hold Down Pin
21	AM-90500-41T	1	Safety Pin - 1/2” Dia. x 2-9/16” Grip
22	AGSE-S00115-06C008A01	1	Screw, Button Head (Detail of AGSE-E25948-S04)
23	AGSE-S00166-093D012A05	2	Cotter Pin
24	AGSE-S00170-380D032A17	1	Slotted Spring Pin (Detail of AGSE-E25948-S04)
25	AGSE-S00193-P05	1	Threaded Collar (Detail of AGSE-E25948-S04)
26	AGSE-S00116-04C008A17	1	Screw, Button Head (Detail of AGSE-E25948-S02)
27	AG545	2	Washer

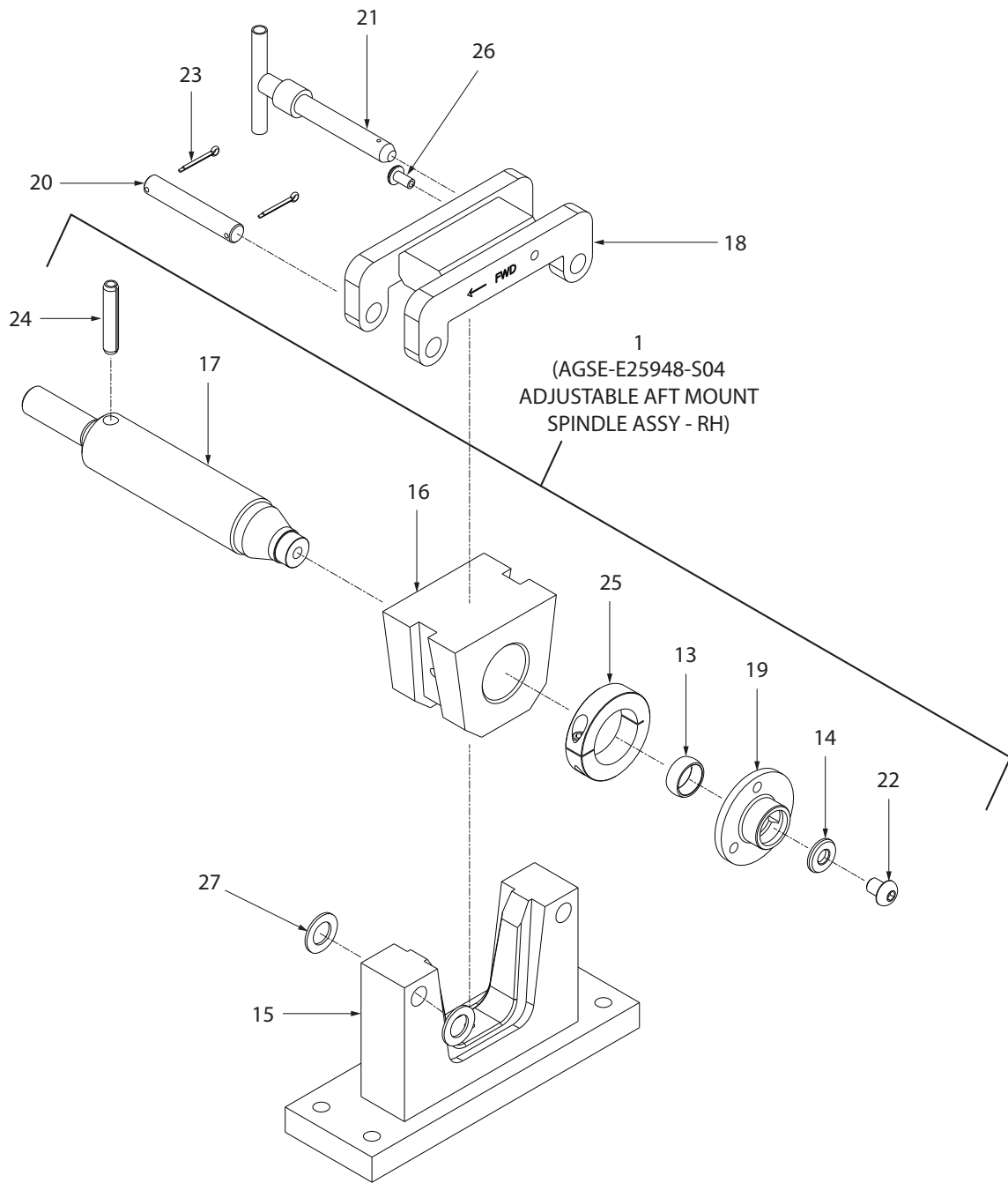


Figure 8.7-1 Adjustable AFT Mount Assembly - RH

IPB Figure 8 – AGSE-E26233-S01 Hydraulic Installation

ITEM	PART NUMBER	QTY	PART DESCRIPTION
	AGSE-E26233-S01	-	Hydraulic Installation (Figure 8.8-1)
1	AGSE-E26233-01	1	Hyd Tube - 3/8" OD x .035W - 304 SS - Seamless Tube
3	AGSE-E26233-05	1	Hyd Tube - 3/8" OD x .035W - 304 SS - Seamless Tube
5	AGSE-E26233-09	1	Hyd Tube - 3/8" OD x .035W - 304 SS - Seamless Tube
6	AGSE-S00305-S01	1	Flow Divider with Spring
	(Alt. AGSE-S00305-S02)	1	Flow Divider without Spring
7	AGSE-S00208-P01	3	Single Acting Cylinder - 10-T Cap - 8" Stroke
9	6 BTX-S	6	Nut - 3/8" JIC
10	6 TX-S	6	Flare Sleeve - #6 - JIC
11	6-CBTX-S	1	Elbow - 90 Deg - 3/8" to 1/4" NPT - Stl
12	AGSE-S00131-09A17	2	Washer
13	6 R50X-S	4	Tee - SAE-6 x 3/8" JIC x 3/8" JIC
14	6-6 CCTX-S	3	Elbow - 90 Deg - 3/8" x 3/8" - 18 NPTF
17	8863T13	A/R	Tube Clamp - Cushioned - 3/8" ID
18	AGSE-S00118-04C008A07	A/R	Screw, Socket Head
19	AGSE-S00131-04A17	A/R	Washer
20	AGSE-S00135-04A17	A/R	Washer, Locking
21	AGSE-E26261-P01	1	Hand Pump
22	6 FNTX-S	4	Cap - 3/8" Tube Fittings
23	6 WETX-S	2	Bulkhead Union - 3/8" NPT x 3/8" NPTF
25	AGSE-S00139-09FA01	2	Nut
26	3225T26	1	Vibration Damping Loop Clamp Snug-Fit
27	AGSE-S00325-B27	3	Hydraulic Hose Assy

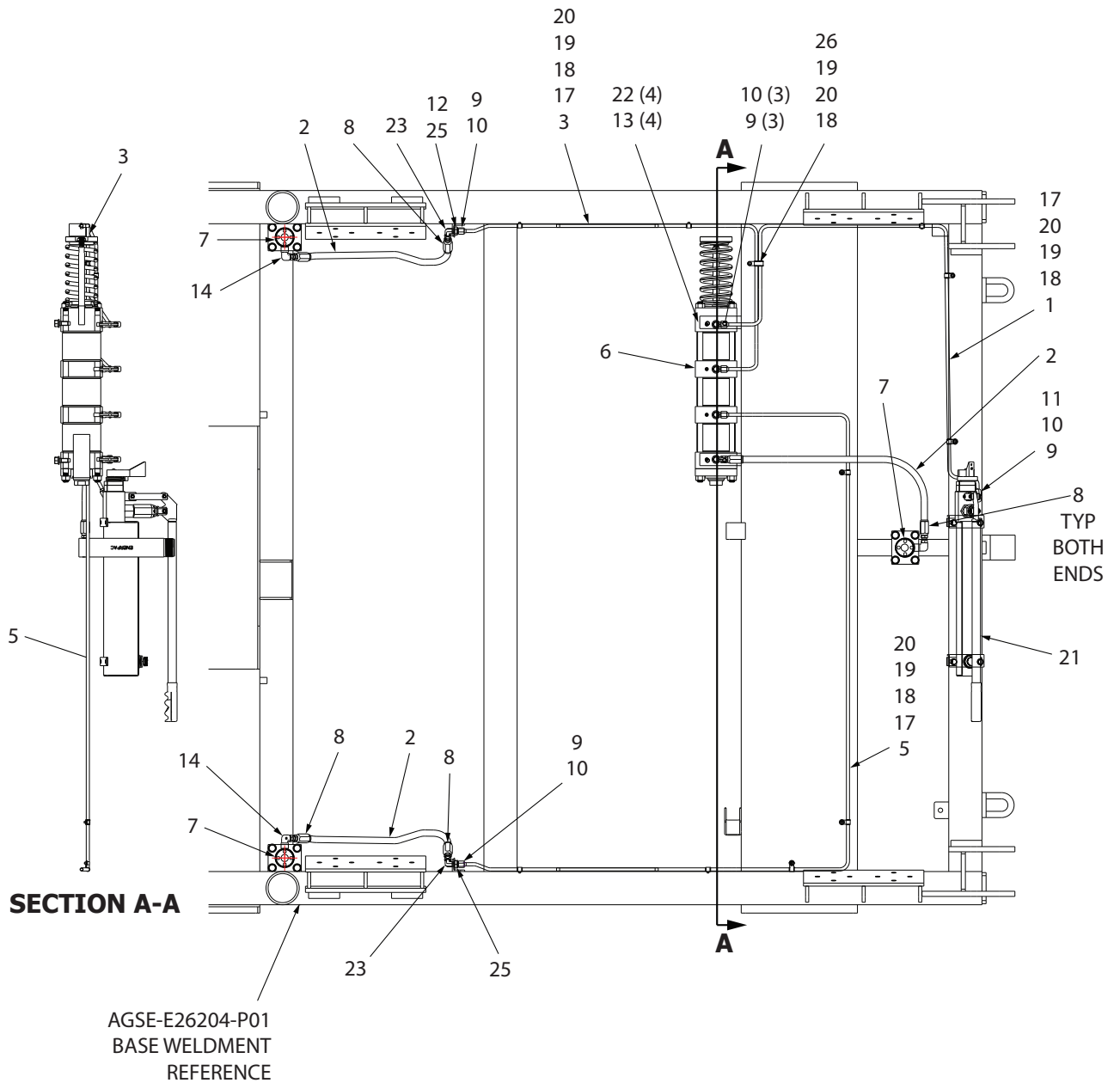


Figure 8.8-1 AGSE-E26233-S01 Hydraulic Installation

IPB Figure 9 – AGSE-E25950-S01 Fixed FWD Mount Assembly - LH

ITEM	PART NUMBER	QTY	PART DESCRIPTION
	AGSE-E25950-S01	1	Fixed FWD Mount Assy - LH (Figure 8.9-1)
1	AGSE-E25941-P01	1	Fixed FWD Mount Adapter
2	AGSE-E25942-P01	1	FWD Mount Bracket Support
3	AGSE-E25950-P01	1	Slide Assy
4	AGSE-E25950-P02	2	Slide Bar
5	AGSE-S00131-10A17	4	Washer
6	AGSE-S00135-10A03	4	Washer, Locking
7	AGSE-S00104-10C020A01	4	Screw, Hex Head
9	91525A337	1	Washer
10	AGSE-S00135-08A17	1	Washer, Locking
11	AGSE-S00104-08C016A01	1	Screw, Hex Head

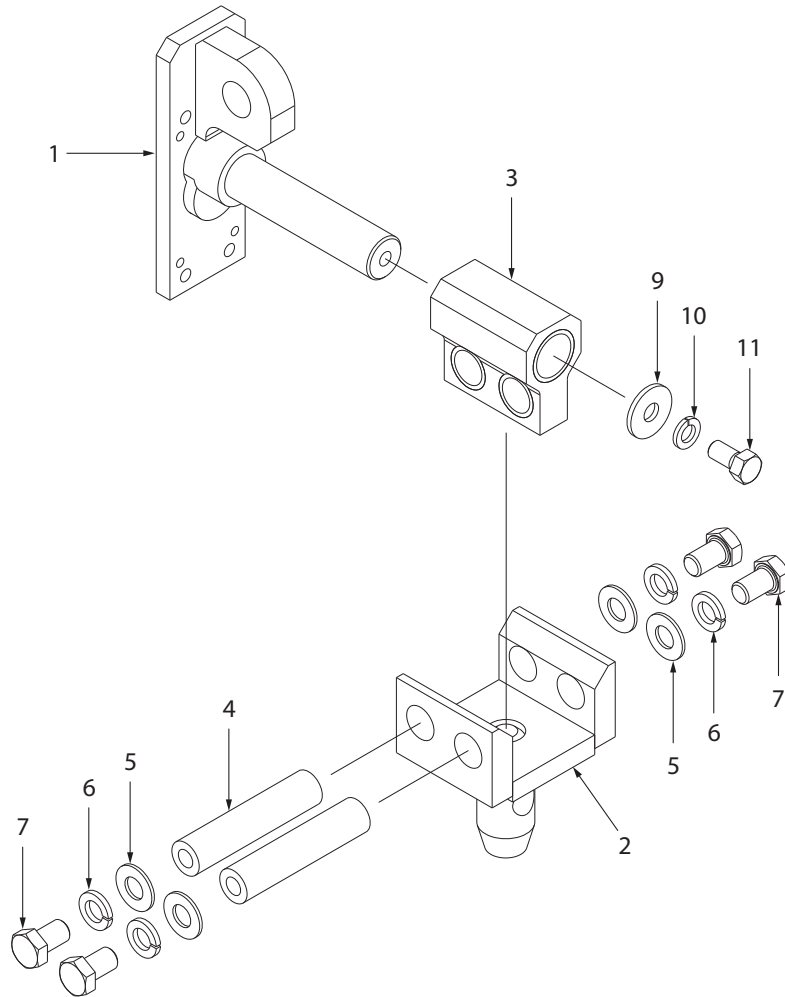


Figure 8.9-1 AGSE-E25950-S01 Fixed FWD Mount Assembly - LH

IPB Figure 10 – AGSE-E25950-S02 Adjustable FWD Mount Assembly - RH

ITEM	PART NUMBER	QTY	PART DESCRIPTION
	AGSE-E25950-S02	1	Adjustable FWD Mount Assy - RH (Figure 8.10-1)
9	AGSE-E25941-P02	1	Fixed FWD Mount Adapter
10	AGSE-E25942-P01	1	FWD Mount Bracket Support
11	AGSE-E25950-P01	1	Slide Assy
12	AGSE-E25950-P02	2	Slide Bar
13	AGSE-S00131-10A17	4	Washer
14	AGSE-S00135-10A03	4	Washer, Locking
15	AGSE-S00104-10C020A01	4	Screw, Hex Head
17	TSP-20-12-SS	1	Threaded Shaft Collar - 2-Piece - 1-1/4"-12UNF - SS
18	91525A337	1	Washer
19	AGSE-S00135-08A17	1	Washer, Locking
20	AGSE-S00104-08C016A01	1	Screw, Hex Head

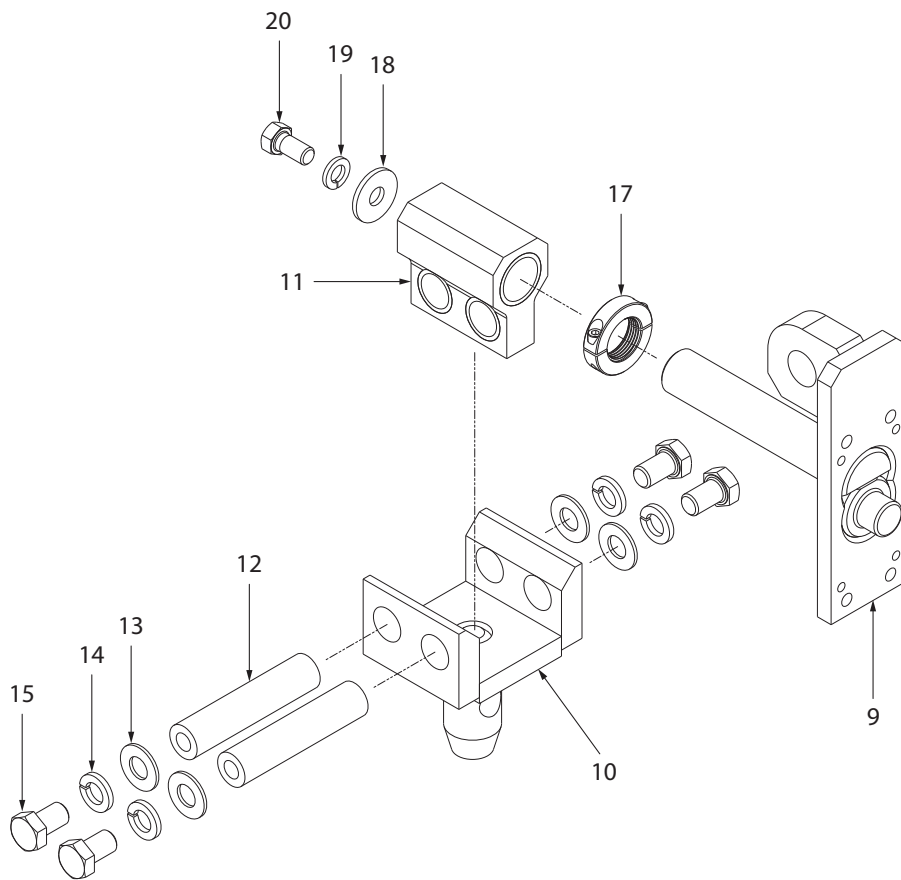


Figure 8.10-1 AGSE-E25950-S02 Adjustable FWD Mount Assembly (RH)

IPB Figure 11 – AGSE-E22117-S01/S02 Telescoping Towbar Assembly

ITEM	PART NUMBER	QTY	PART DESCRIPTION
	AGSE-E22117-S01	-	Telescoping Towbar Assy (Figure 8.11-1)
	AGSE-E22117-S02	-	Telescoping Towbar Assy
1	AGSE-E22118-P01	1	Towbar Outer Tube Assy
2	AGSE-E22118-P02	1	Towbar Inner Tube Assy
3	AM-90625-46T	1	Safety Pin - 5/8" Dia. x 2-7/8" Grip (Used on AGSE-22117-S01)
4	AGSE-S00202-P07	1	Ball Lock Pin (Used on AGSE-22117-S02)
5	AGSE-S00318-P02	A/R	Sash Chain (Used on AGSE-22117-S02)
6	AGSE-S00212-P01	2	Cable Ring (Used on AGSE-22117-S02)
7	AGSE-S00102-04C006A05	1	Screw, Pan Head

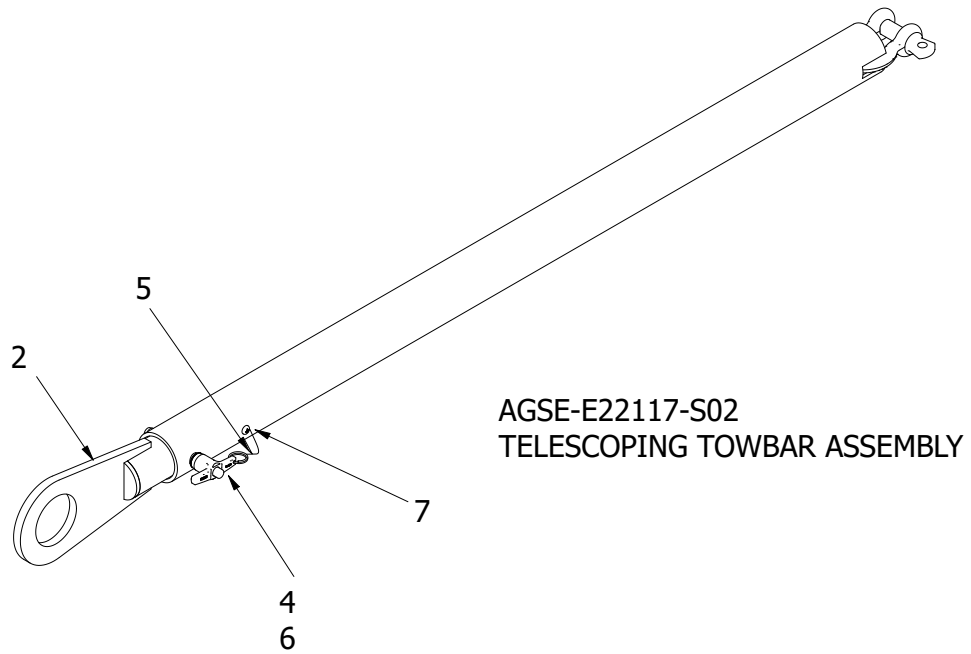
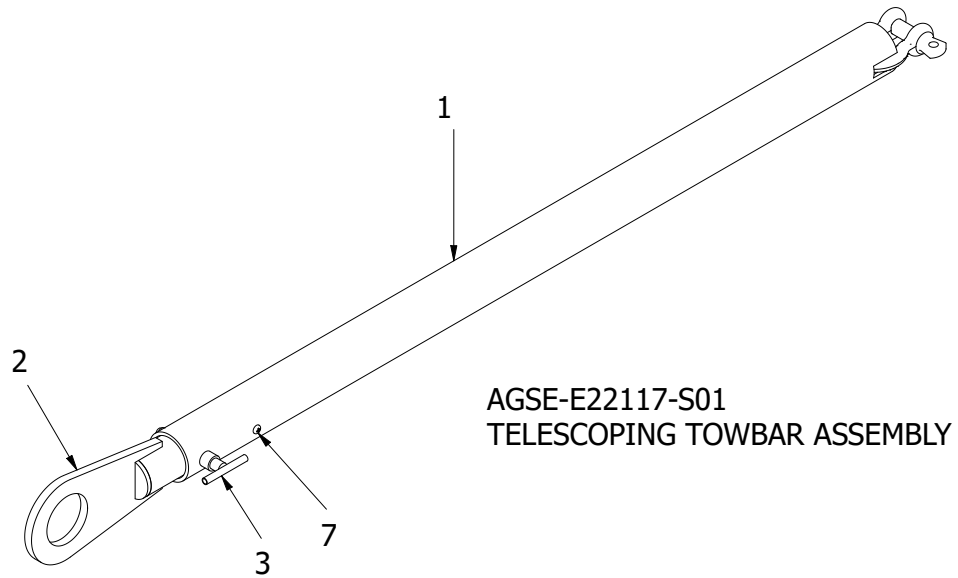


Figure 8.11-1 AGSE-E22117-S01/S02 Telescoping Towbar Assy

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.

9.2 Stencils and Placards

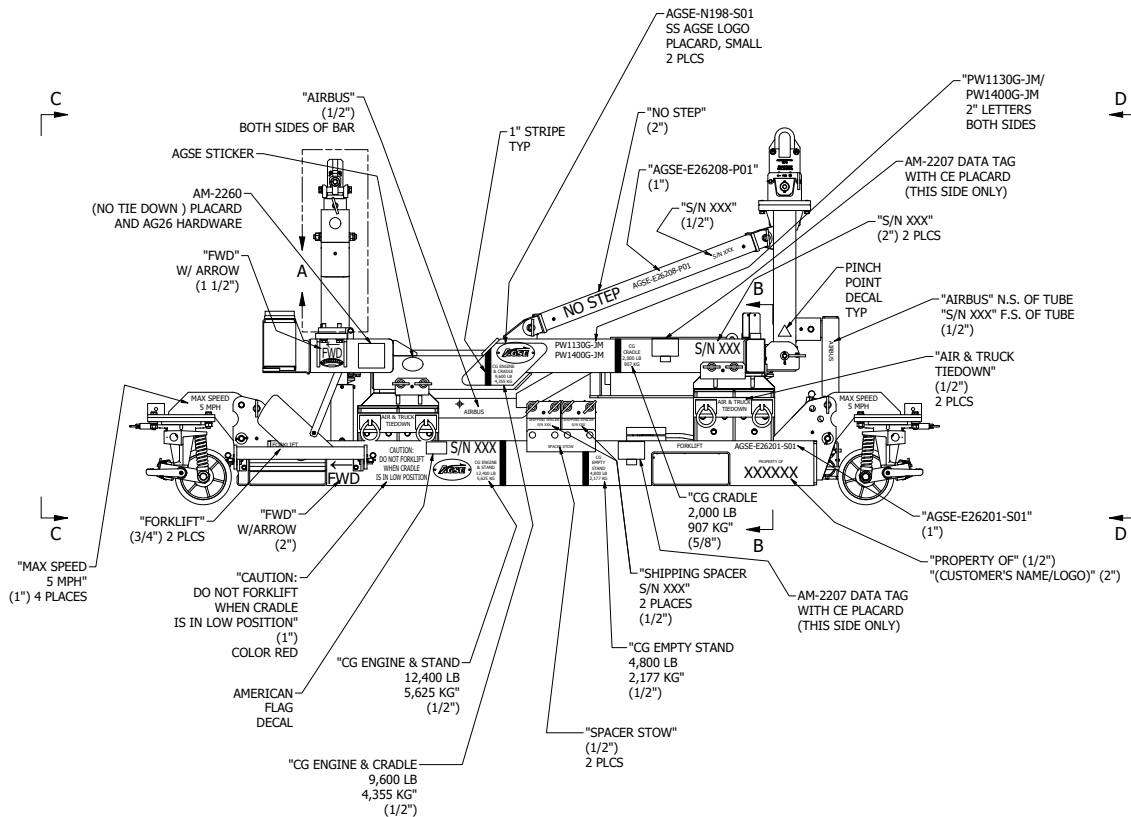
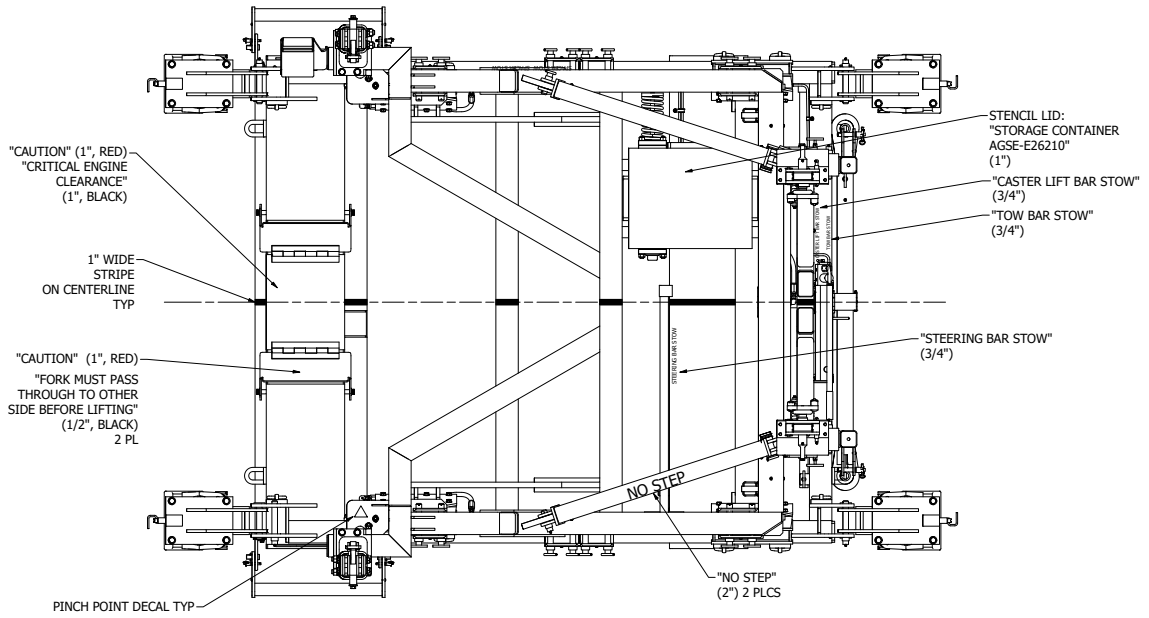


Figure 9.2-1

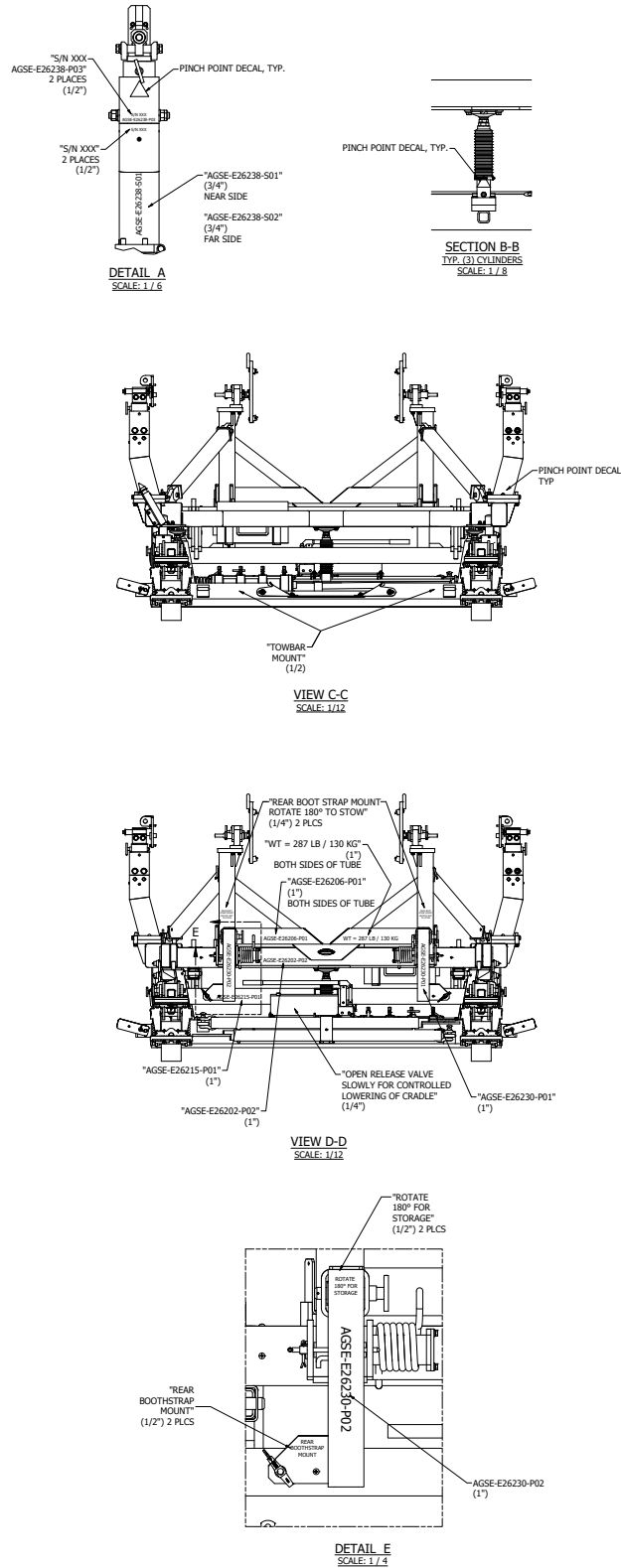


Figure 9.2-2

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	PART DESCRIPTION
AGSE-E22105-P02	4	Caster Pivot Pin
AGSE-E22117-S01	2	Towbar Assy
AM-2079-2	2	Shock Absorbing Swivel Caster Assy
AGSE-E16911-P01	2	Caster Steering Bar
AM-91000-96T-H900	4	Safety Pin
AM-90250-48L	1	Safety Pin
AM-90250-32T	1	Safety Pin
AGSE-S00304-P04	8	Shock Mount
AGSE-E26289-S01	3	Bellow Assembly
AM-90250-64L	2	Safety Pin
AGSE-E25902-P01	2	Safety Pin
AM-90750-64T	2	Safety Pin
AM-91000-34T	4	Safety Pin
AM-91000-64T	2	Safety Pin
AM-91000-90T	8	Safety Pin
CL-12-BLPT-2.50	2	Ball Lock Pin