

# **OEM-APPROVED**

#### A global leader in the original design, development, and manufacture of recommended engine handling solutions:

Shipping Stands

• Fan Stator Shipping Stands

Optional Shipping Stand Accessories

Protective Covers

- Slings
- Shipping Containers
- Site Transport
- Pedestal Sets
- Fan Tooling

#### Approved by







External Shock Mounts & Split Engine Components Shipping Container

Engine OEM P/N: 11C3417P02 AGSE P/N: AGSE-C108



Fan Case Transfer Dolly with 11C4487 (AGSE-E175) Shipping Stand

Engine OEM P/N: 11C4490 AGSE P/N: AGSE-E177



Forward Fan Case Pedestal Set

Engine OEM P/N: 11C3281





### OEM-APPROVED FOR THE GENX-1B ENGINE SHIPPING STAND FEATURES

# CUSTOM DESIGNED | HIGHLY DURABLE | SAFE & ERGONOMIC LOW PROFILE & VERSATILE | MANUFACTURED IN-HOUSE LOWEST TOTAL COST OF OWNERSHIP | SHORTEST LEAD TIMES

## Our reliable & rugged Shipping Stands have been trusted for decades by airlines, aircraft hangars, and engine shops!

#### All Stands Provide:

- Air/Truck Transport or Storage for propulsors or full engines in QEC configuration\*
  - Tie-Down Rings offer secure retainment during air/truck transport
    - Forklift Pockets for convenient site transport

#### Select Models Feature:

- Bootstrap Capability to simplify on-wing engine removal & installation
- Integrated Shock-Absorbing Mounts to reduce vibrations for engine protection during transport
- External Shock-Absorbing Mounts for truck transport
- Roll-Over designs to achieve minimum "low profile" dimensions for passing through aircraft side cargo door
- Uplift or vertical adjustment to accommodate height-restricted transport
- · Jacking Legs to:
- Properly align the engine for fan removal & installation
- Raise the stand off the ground without the need for a forklift or overhead lifting device
- Palletized Bases compatible with aircraft cargo loading systems
- Ground Handling Bracket Sets (11C4628) to firmly support the engine from both sides of the fan hub frame
- "Mini-Bracket" Mounts for stable lower fan case support
- Stacking Spacers to minimize multi-stand shipping or storage volume when empty



Uplift Shipping Stand with Cover Protecting Full Engine

Engine OEM P/N: 11C4487 AGSE P/N: AGSE-E175

"AGSE Shipping Stands are designed and built in compliance with the specifications and requirements of the engine's equipment manufacturer (OEM). The customer is solely responsible for selecting the appropriate packaging based on all information at their disposal, including the specific application, regulatory compliances, product compatibility, shipping requirements, and documentation issued by the Engine OEM. Any AGSE-referenced shipping information presented in this product literature or other AGSE documentation is for general guidance only. It should not be considered a complete set of shipping requirements that can alter, satisfy, or influence regulatory and engine OEM shipping requirements. The content found in AGSE marketing materials and other documentation is subject to change; AGSE accepts no liability for loss or damage resulting from changes, errors, omissions, or misinterpretations of these AGSE publications.





## OEM-APPROVED FOR THE GENX-1B ENGINE SHIPPING STANDS

= Available Feature

												<b>U</b> - <i>F</i>	wallable Feature
SHIPPING	<b>STANDS BY PART NU</b>	MBER*											
PART Engine OEM NUMBER: AGSE	PROPULSOR CAPABLE OF TRANSPORT ON FREIGHTER AIRCRAFT*	FULL ENGINE TRANSPORT/ STORAGE	BOOTSTRAP CAPABLE	INTEGRATED SHOCK MOUNTS	EXTERNAL SHOCK MOUNTS	ROLL-OVER	UPLIFT	JACKING LEGS	PALLETIZED BASE	GROUND HANDLING BRACKET SET	MINI-BRACKET MOUNTS	STACKING SPACERS	OTHER ENGINES ACCOMMODATED
11C3359 <b>AGSE-E184</b>	Boeing 747, 767 & 777	•	•		•	•		•	•				
11C4487 AGSE-E175	Boeing 747, 767 & 777, Douglas DC-10 & MD-11 An-124 or Similar Specialized Aircraft	•†	•	•			•	•	•	•			
11C3443 AGSE-E176	For Ground Transport Only	•	•	•						•	•		
11C4678 AGSE-E257	Boeing 747, 767 & 777, Douglas DC-10 & MD-11			•									GEnx-2B
9446M34P01 AGSE-E196	For Ground Transport Only			•								•	GEnx-2B

†For Ground Transport & Air Transport on An-124 or Similar Specialized Aircraft Only.

A Shipping Stand comprises a Cradle & Base.



Full Engine/Propulsor Roll-Over Shipping Stand
Engine OEM P/N: 11C3359
AGSE P/N: AGSE-E184



Roll-Over Shipping Stand in Low Profile Position loaded onto the Main Deck of a Boeing 777 Aircraft Engine OEM P/N: 11C3359 AGSE P/N: AGSE-E184

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### OEM-APPROVED FOR THE GENX-1B ENGINE FAN STATOR SHIPPING STANDS

#### Dependable, efficient, and versatile handling solutions for fan stators!

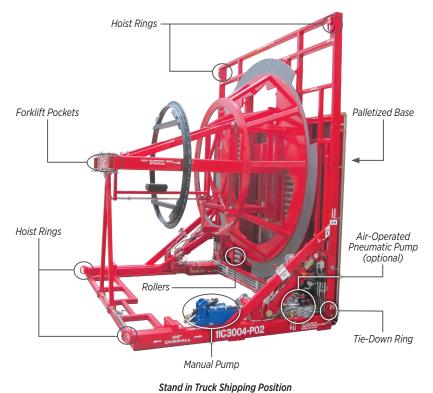
- Air/Truck Transport or Storage for fan stator modules\*
- Manual Pump to vertically adjust the stand for proper alignment during fan removal & installation
- Palletized Base compatible with aircraft cargo loading systems
- Rollers allow multiple positions for improved loading/ unloading onto/from aircraft
- Folding Side Guide Bars center the stand in Boeing 747 side cargo doors

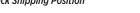
- Tie-Down Rings offer secure retainment during truck transport
- Forklift Pockets for convenient site transport
- Hoist Rings interface with overhead lifting devices for rotation to air or truck shipping positions
- Optional Air-Operated Pneumatic Pump rotates the stand without physical exertion or the need for an overhead lifting device

= Available Feature

FAN STATOR	FAN STATOR SHIPPING STANDS BY PART NUMBER*											
PART Engine OEM	CAPABLE OF TRANSPORT ON	AIR-OPERATED		COMPATIBLE WITH OTHER AGSE EQUIPMENT:								
NUMBER: AGSE	FREIGHTER AIRCRAFT*	PNEUMATIC PUMP (-PPK)	FAN CASE COVERS	FAN CASE TRANSFER DOLLIES	FORWARD FAN CASE SUPPORT RING	OTHER ENGINES ACCOMMODATED						
11C3004 AGSE-C069	Boeing 747, 767 & 777, Douglas DC-10 & MD-11	•	11C3409	11C4490	11C4486	GEnx-2B						
11C4572 AGSE-C084	Boeing 747, 767 & 777, Douglas DC-10 & MD-11		11C3409	11C4490		GEnx-2B						

#### Operational convenience from top to bottom!







Stand with Air Pump in Mid-Rotation



Stand in Air Shipping Position

Fan Stator Shipping Stand
Engine OEM P/N: 11C3004
AGSE P/N: AGSE-C069

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## OEM-APPROVED FOR THE GENX-1B ENGINE OPTIONAL SHIPPING STAND ACCESSORIES & PROTECTIVE COVERS

OPTIONAL SHI Improve safety & pro		ND ACCESSORIES			
PART Engine OEM NUMBER: AGSE	DESCRIPTION	COMPATIBLE WITH OTHER AGSE EQUIPMENT	INCLUDES:	SPECIFIC FUNCTION	OTHER ENGINES ACCOMMODATED
11C4510 AGSE-E18412	Stand Lift System	11C3359 (Roll-Over Shipping Stand) 11C4487 (Uplift Shipping Stand) 113417P01, 11C3417P02 (Shipping Containers) for split shipment/storage	Four (4) Jacking Leg Assemblies	Raises or lowers the Shipping Stand 47.5" (121 cm) for loading on or removal from a truck trailer or loading system without the need for a forklift or overhead lifting device	GEnx-2B
AGSE-V133	Accessory Drive System	11C3359 (Roll-Over Shipping Stand)	Cart with Motor-Controlled Drive Shaft	Rotates Cradle to achieve minimum dimensions to pass through aircraft side cargo door	GEnx-2B, Trent
11C4486	Forward Fan Case Support Ring	11C3004 (Fan Stator Shipping Stand) 11C3281 (FWD Fan Case Pedestal Set)	One (1) Ring Seven (7) Mounting Pads	Supports the Fan Stator during lift & turn operations, engine buildup, and transport	

PART NUMBER:	DDOWDER DDOTECTION TO	COMPATIBLE WITH		FOR USE DURING:	
Engine OEM	PROVIDES PROTECTION FOR:	OTHER AGSE EQUIPMENT	AIR TRANSPORT	GROUND TRANSPORT	SITE TRANSPORT
1C4500	Full Engine	11C3359 (Roll-Over Shipping Stand)	•	•	
167061	Cull Engine	11C4487 (Uplift Shipping Stand)	•		
11C3061	Full Engine	11C3443 (Truck Shipping Stand)		•	
1C3210	Propulsor	11C4487 (Uplift Shipping Stand) 11C3443 (Truck Shipping Stand)	•	•	
1C3409	Fan Case	11C3004, 11C4572 (Fan Stator Shipping Stands)	•	•	
1C3083	Stage 1 Fan Disk				•
1C4635	Bifurcation Assembly Engine Monitoring Unit Forward Mount Oil Tank Spinner Turbine Rear Frame		•	•	



## Stable & versatile overhead support for horizontal build-up or Shipping Stand transfer!

SLINGS BY	PART NUMBER								
PART Engine OEM NUMBER: AGSE	COMPATIBLE WITH OTHER AGSE EQUIPMENT:	MAXIMUM LOAD CAPACITY	CENTER OF GRAVITY ADJUSTMENT FEATURE	TWO (2) SPREADER BEAMS	FORKLIFT POCKETS	TELESCOPING ADJUSTMENT TOOL	INCLUDES STORAGE CONTAINER	OPTIONAL STORAGE CONTAINER	OTHER ENGINES ACCOMMODATED
11C4542 <b>AGSE-L033</b>	11C3359 (Roll-Over Shipping Stand) 11C4487 (Uplift Shipping Stand) 113443 (Truck Shipping Stand)	44,000 lbs 19,958 kg		•			•		GEnx-2B
11C4484 AGSE-L038	11C3359 (Roll-Over Shipping Stand) 11C4487 (Uplift Shipping Stand) 11C3443 (Truck Shipping Stand)	32,000 lbs 14,515 kg	Lifting Ring, Aft Cables		•	•		•	GEnx-2B, Trent
AGSE-L018	11C3359 (Roll-Over Shipping Stand) 11C4487 (Uplift Shipping Stand) 11C3443 (Truck Shipping Stand)	30,000 lbs 13,608 kg	Lifting Ring, Aft Cables		•	•	•		GEnx-2B, Trent
11C4648 AGSE-L043-G03		25,000 lbs 11,340 kg	Lifting Ring, Forward Turnbuckles		•	•		•	GEnx-2B
11C4640 AGSE-L043-G01		25,000 lbs 11,340 kg	Lifting Ring, Forward Turnbuckles		•	•		•	
11C4323	11C4628 (Ground Handling Bracket Set)	16,000 lbs 7,257 kg	Lifting Ring			•		•	GEnx-2B



Sling Supporting a Roll-Over Shipping Stand
Engine OEM P/N: 11C4484
AGSE P/N: AGSE-L038





## OEM-APPROVED FOR THE GENX-1B ENGINE SHIPPING CONTAINERS & SITE TRANSPORT

PART NUMBER:	ACCOMMODAT		COMPATIBLE WITH	REMOVABLE	FORKLIFT	SEPARABLE	SHOCK-	SLIDE OUT	VIEW	DOCUMENT	OTHER ENGINES
Engine OEM	SPLIT ENGINE COMPONENTS	SHIPPING STAND COMPONENTS	OTHER AGSE EQUIPMENT		POCKETS	SHIPPING CRATES	ABSORBING MOUNTS	PLATFORM/ CONTAINER LID	PORT WINDOW		ACCOMMODATE
11C4683 <b>AGSE-C119</b>	Core Module			•			•		•	•	GEnx-2B
11C3405 <b>AGSE-C071</b>	Acoustic Panels     Aft Support Ring     Deflector Panels     Fan Blades     Forward Flight Mount     Lower Bifurcation Assembly     Spinner     Splitter			•	•			•	•	•	
11C3417P02 <b>AGSE-C108</b>	Anti Ice Duct & Valve Hardware     Air Tubes & Brackets     Deflector Panels     Engine Monitoring Unit     Oil Tubes & Hose Clamps     Rating Plug     Turbine Rear Frame Drain Tubes     Wire Brackets	External Shock Mounts	11C3359 (Roll-Over Shipping Stand) when empty	•	•	•					
11C3417P01 <b>AGSE-C074</b>	Anti Ice Duct & Valve Hardware     Air Tubes & Brackets     Engine Monitoring Unit     Oil Tubes & Hose Clamps     Wire Brackets	Casters     External Shock Mounts     Stand Lift System	11C3359 (Roll-Over Shipping Stand) for split shipment/storage	•	•	•			•	•	

	SITE TRANSPORT  Exceptional transport within a facility or between local sites!												
PART Engine OEM NUMBER: AGSE	ACCOMMODATES:	COMPATIBLE WITH OTHER AGSE EQUIPMENT	DISASSEMBLES/ FOLDS WHEN EMPTY	PNEUMATIC TIRES	CASTERS	TOW BAR	JACKING LEGS	MANUAL MOVEMENT ONLY	STORAGE CONTAINER	OTHER ENGINES/AIRCRAFT ACCOMMODATED			
9446M34P02 <b>AGSE-E197-G02</b>	Propulsor	11C4678 (Shipping Stand) 9446M34P01 (Truck Shipping Stand)	•	•		•				GEnx-2B			
9446M34P03 AGSE-E197-G01	Propulsor	11C4678 (Shipping Stand) 9446M34P01 (Truck Shipping Stand)	•		•	•				GEnx-2B			
11C4490 AGSE-E177	Fan Case	11C4487 (Uplift Shipping Stand) 11C3443 (Truck Shipping Stand) 11C3004, 11C4572 (Fan Stator Shipping Stands)	•		•		•	•	•				
AM-2764	Inlet Cowl		•		•		•	•		Boeing 777			



## OEM-APPROVED FOR THE GENX-1B ENGINE PEDESTAL SETS & FAN TOOLING

Another	ideal horizontal b	uild-up s	olution to	ach	chieve ergonomically efficient engine centerline heights!  Supports select modules when used in conjunction with other pedestals:											
PART NUMBER: Engine OEM	MODULE SUPPORTED	NUMBER OF PEDESTALS	MAXIMUM LOAD CAPACITY	(cc	FULL ENGINE (configuration options below)				ENGINE WITHOUT LDT		CORE MODULE WITH LPT	CORE MODULE WITHOUT LPT (configuration options below)		FAN	COMPATIBLE WITH OTHER AGSE EQUIPMENT	
				#1	#2	#3	#4	#5	#1	#2	WIIIIEFI	#1	#2			
11C3281	Turbine Rear Frame	2	16,000 lbs 7,257 kg	•	•		•	•			•					
	Fan Hub Frame	2	10,000 lbs 4,536 kg	•	•				•		•	•	•		11C4628 (Ground Handling Bracket Sei	
	Turbine Center Frame	2	8,000 lbs 3,629 kg			•			•			•				
	Forward Fan Case	2	10,000 lbs 4,536 kg	•		•	•		•	•				•	11C4486 (Fan Case Support Ring)	
	Aft Fan Case	2	10,000 lbs 4,536 kg			•	•	•		•				•		
	Does Not Support a Specific Module	1	6,600 lbs 2,994 kg							•			•			

FAN TOOLING Improve safety & pi	roductivity during fan maintenance!			
PART NUMBER: Engine OEM	DESCRIPTION	SPECIFIC FUNCTION	COMPATIBLE WITH OTHER AGSE EQUIPMENT	ACCOMMODATES OTHER SELECT ENGINES
11C3272	Fan Hub Guide Pin Set	Aligns Fan Stator Outlet Guide Vane (OGV) Blades with Fan Hub		GEnx-2B
11C3403	Fan Case Taper Gage Set	Measures Fan Blade Tip clearance at 6 o'clock location		GEnx-2B
11C3406	Fan Case Runout Measurement Fixture	Measures Fan Case full indicator reading at F1.0, F1.5, and F2.0 locations		
11C3323	Stage 1 Fan Blade Spacer Removal Hydraulic Tool	Removes Fan Blade Spacers from Stage 1 Fan Blades		GEnx-2B
11C3398	Stage 1 Fan Blade Spacer Removal Tool	Removes Fan Blade Spacers from Stage 1 Fan Blades		GEnx-2B
11C4616	Fan Inlet Personnel Stand	Provides ergonomic access to upper bolts and acoustic panels during Fan Stator separation & mating procedures	11C4514 (Fan Stator Protector Set)	GEnx-2B
11C4514	Fan Stator Protector Set	Protects Fan Case during separation & mating procedures	11C4616 (Fan Inlet Personnel Stand)	GEnx-2B
11C3331	Fan Forward Acoustic Protector	Protects Inner Forward Fan Case during maintenance		