



KNIGHT AEROSPACE GROUND SUPPORT EQUIPMENT (GSE) PRODUCT PRESENTATION



Changing the Industry With Every Product Delivered

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COMPANY INFORMATION

Knight Aerospace Medical Systems LLC (dba Knight Aerospace)

- Knight Aerospace Founded In January 1992
- Classification: Women and Minority Owned Small Business
- Government Cage Codes: 7AYX2
- ISO 9001:2015 and AS9100D Certified

Corporate & Manufacturing Facility

- 120,000 sq. ft. Facility
 - 8,000 Sq. Ft. Office
 - 60,000 Sq. Ft. Manufacturing
 - 40,000 Sq. Ft. Manufacturing/Storage
 - 12,000 Sq. Ft. dedicated completion center with integrated electrical shop
 - Port San Antonio, San Antonio, Texas

Capabilities

- Original Equipment Manufacture Facility
- Engineering
 - Mechanical and Electrical
 - Build to Print or Customer Provided
- Manufacturing
 - Cutting, Machining (Mechanical and CNC), Sheet Metal, Assembly
 - Electrical Cable and Wiring Assemblies
 - Completion Room and Paint Booth



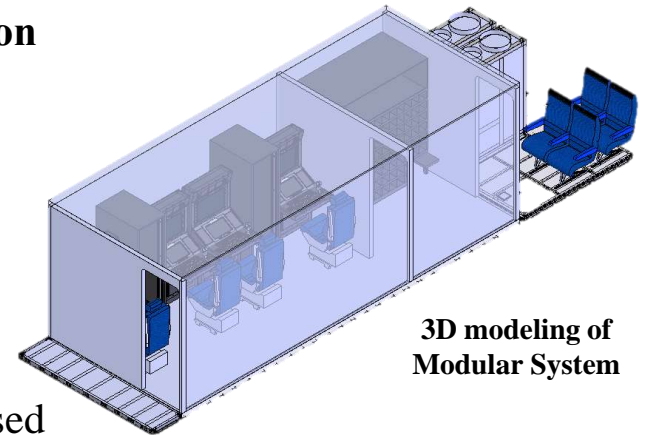
CAPABILITIES

ENGINEERING AND PRODUCT MANAGEMENT

Knight Aerospace's engineering group provide detailed fabrication and assembly drawings for instructions to manufacture and assemble products to support KAPI or the customer.

Engineering

- Staff includes Mechanical Engineers, Electrical Engineers and Draftsmen.
- 2d and 3d engineering drawings
- Design new mechanical or electrical equipment and systems based on customer or industry requirements
- Systems Integration



3D modeling of Modular System

Mechanical Engineering

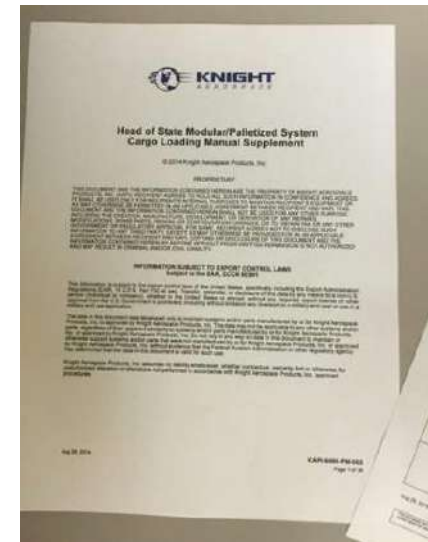
- Mechanical Structures
- Ground Support Equipment Design or Re-Engineer
- Aircraft Cabinet Design
- Composites design and integration

Electrical Engineering

- Wiring standard per SAE-AS50881
- Complete wiring schematics
- Individual Cables Design
- Communications wiring
- Circuit Design

Product Support and Integration

- ATA Format or Commercial Type Manuals
- Operations and Maintenance Manuals
- Test Plan and Reports
- Training Curriculum



ATA Format – Cargo Loading Manual Supplement

CAPABILITIES MANUFACTURING

Knight Aerospace provides complete manufacturing capabilities utilizing our facility and our AS9100D Quality System to process and control products more efficiently while delivering on time.

Manufacturing

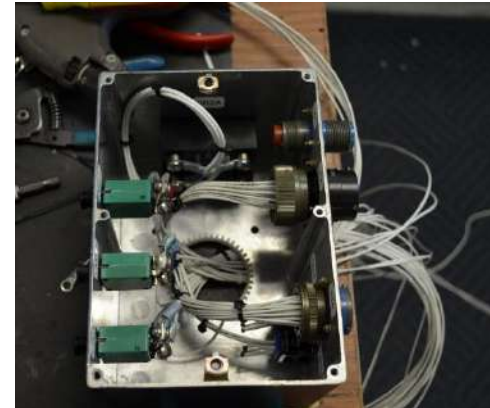
- Cutting – All metals
- Machine Shop
- Sheet Metal – Forming and Shearing
- Metal Welding – Tig and Mig Machine's
- Plasma Machine

Electrical

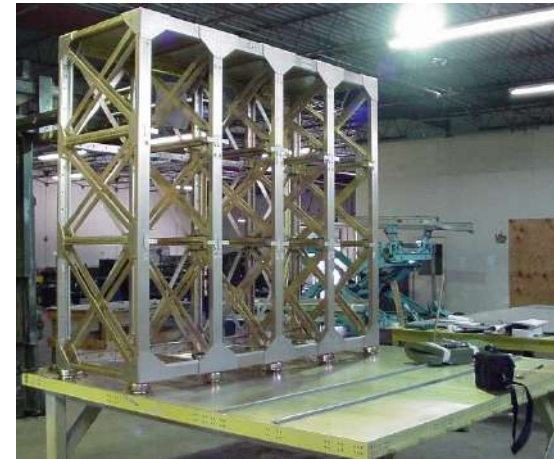
- Laser Wire Marking Machine for labeling and marking wiring
- Crimping and Soldering
- Complete Cable Assembly

Completion

- Enclosed Paint Booth
- Clean Room Interior Facility
- Open Assembly Area



**Electrical
Wiring**



**Sheet Metal
Capability**



**In-House
Mock Ups**

6000 Lb. Portable, Aircraft Crane Part Number 50223000-1

The 6000 lb crane is a portable, air transportable crane designed primarily to remove the engine from the C-130 aircraft. The crane can be utilized to remove other components with proper slings attached.



6000 Lb. Crane

Part Number 50223000-1

- 6000 Lb Crane used on installation and removal of the engine on the G-4 aircraft.

▪ ***CUSTOMERS***

- *USAF (110 Units)*
- *RMAF (2 Units)*
- *RAAF (2 Units)*
- *RSAF (4 units)*
- *RNAF (2 units)*
- *RTAF (1 Unit)*
- *EAF (3 Units)*
- *RNaAF (2 Units)*
- *Gulfstream (1 Unit)*



T56 Mobile Engine Test Stand

- The C-130 Mobile Engine Test Stand is used for complete performance testing of the T56 Turboprop engine.



- The system consists of a Control Cab, Engine Run-Up Stand and Fuel Tank. The unit is controlled and monitored by a computer system to monitor engine performance.
- Kits available for other engines

AE2100 Mobile Engine Test Stand

Part Number 52563000-1

- The C-130J Mobile Engine Test Stand is used for complete performance testing of the AE2100D3 Turboprop engine. The test stand can be adapted to run the T-56 engine.



- The system consists of a Control Cab, Engine Run-Up Stand and Fuel Tank. The unit is controlled and monitored by a computer system to monitor engine performance.
- Kits available for other engines

Dolly, QEC Transport

Part Number 4000014SP-9

- T56 or AE2100D3 Transport Dolly
- QEC Build-up and Storage Dolly
- Air Transportable
- Dimensions:
 - 177.5"(L) x 77"(W) x 93"(H)
 - 4.5 m x 2 m x 2.4 m
- Weight: 1350 lbs.



Dolly, Engine Buildup

Part Number 4000014SP-1

- T-56 Engine Buildup Dolly
- Engine supported by T-56 Engine Shaft through the H-casting and lobster tail on the forward end of the engine.
- Dimensions:
 - 180”(L) x 79” (W) x 94” (H)
- Weight: 1650 lbs.
- Standard 200-000-101 QEC dolly with modification kit for engine build-up.



P-3 Engine Transport & Engine Build-Up Dolly

Part Number 20054-1

- P-3 Transport Dolly
- QEC Build-up and Storage Dolly
- Air Transportable
- Dimensions:
 - 177.5"(L) x 77"(W) x 93"(H)
 - 4.5 m x 2 m x 2.4 m
- Weight: 1550 lbs.



- P-3 Engine Buildup Dolly
- Engine supported by T-56 Engine Shaft through the H-casting and lobster tail on the forward end of the engine.
- Standard 200-000-101 QEC dolly with modification kit for P-3 Engine transport or build-up.

Fixture, QEC Transportation & Storage

- The QEC Transportation Fixture is skid mounted, air transportable fixture designed to be transported on any cargo type aircraft.



Part Number 20301-1



Part Number 20301-101

- The QEC Storage Fixture is skid mounted, fixture designed to be used in non air transportable situations. For Ground Use Only.

T-56 Engine QEC Build-Up Stand

Part Number 20271

- Floor mounted QEC Build-up stand
- Frees up QEC dolly
- Space saving
- Provides easier access for maintenance
- The QEC Support Stand provides temporary support for a QEC prior to mounting on the aircraft or dolly (Part Number 20271-39).



P/N 20271-39 QEC Stand Kit



P/N 20271-1 QEC Shell Stand Kit



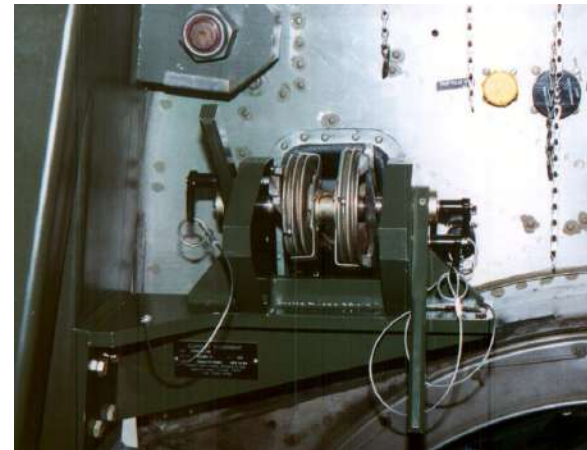
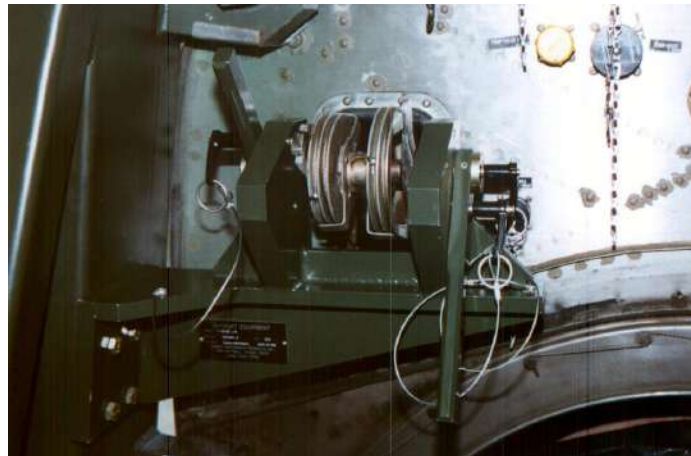
Stand Assembly, T-56 QEC Support Part Number 63D34070

- The QEC Support Stand provides temporary support for a QEC prior to mounting on the aircraft or dolly.



Fixture Installation, Engine Controls, QEC Firewall Part Number 20084-1

- Used on the 200-000-101 QEC Dolly to rig the engine controls prior to installing the QEC on the aircraft.



Aircraft Maintenance Shoring Supports

Part Number 7134770 & 7134771

- Fuselage shoring supports are used to support the fuselage during heavy maintenance to the C-130/382 aircraft.
- A set of shoring consists of seven cradles containing wheels to move into location and jacks to setup on the aircraft.



Cargo Ramp Support and Support, Aft Fuselage Blocking

P/N 402508 Support Assembly is used to support the aft fuselage of the C-130 aircraft during removal of the engines.



Part Number 402508



Part Number 20331-1

Part Number 3403198-1

- P/N 20331-1 & 3403198-1 Ramp Supports
- The cargo Ramp Support is placed beneath the cargo ramp when loading/unloading the aircraft to prevent an aft C.G. condition.
- P/N 3403198-1 is adjustable to three height positions and the support plate pivots to conform to cargo ramp attitude.
- P/N 20331-1 is adjustable to two heights by removing the second layer of wood support .

Cargo Removal Dolly Ramp and Upper Door



Part Number 338242-13H

The Cargo Ramp Dolly Assembly is a manually operated lift that elevates to remove or install the cargo ramp on the C-130 aircraft.



Part Number 342286-13H

The Upper Cargo Ramp Dolly Assembly is a manually operated lift that elevates to remove or install the upper cargo door on the C-130 aircraft.

Dolly, Scissor Lift Assy

Part Number 3402797-1

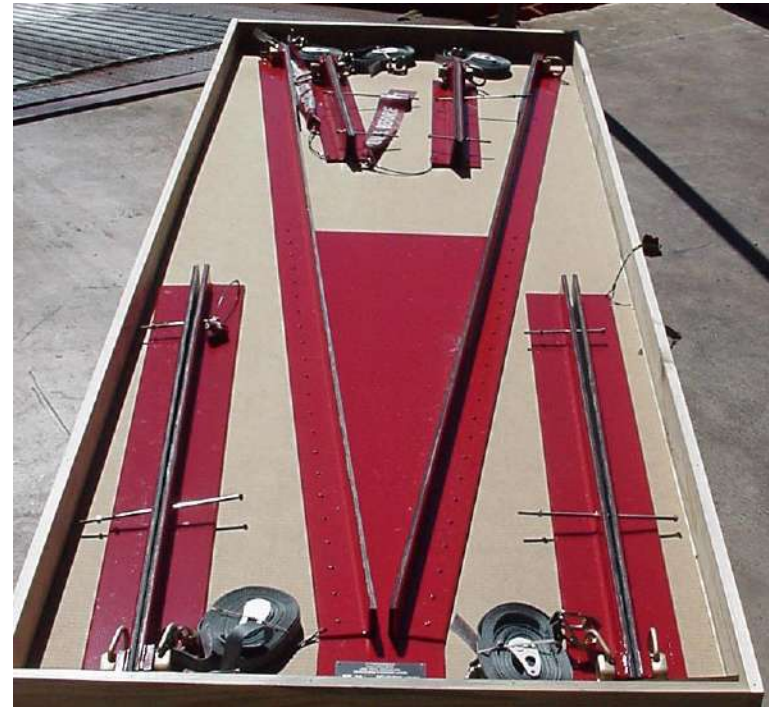
- Hydraulic operated dolly assembly.
- This dolly provides safe and efficient means for removal and installation of engine turbines, external fuel tanks and in-flight refueling pods and hose reels.



Lock Set, Control Surfaces

Part Number 337008-26H-64

- The Lock Set is used to lock the control surfaces (rudder, elevator, aileron) in place when the booster assemblies have not been removed from the aircraft.
- The Lock Set is constructed of aluminum and is lined with rubber pad to protect the aircraft skin.
- The Locks are retained to the aircraft by an elastic cord.
- Safety streamers are attached by steel lanyard to alert the ground/flight crew to remove them prior to operation of the controls.



Sling Assembly, Nacelle, Quick Engine Change Part Number 404055-9

- The sling assembly is used to handle the Hercules Engine, nacelle, or the complete QEC package with or without propeller.



Part Number 404055-9 Sling Assembly (Packaging)



Part Number 404055-9 Sling Assembly

Sling Assembly, Refrigerator Unit Hoist Assembly, APU Installation

- Used with PN 3402245 Hoist Assembly for removing and installing the Cargo Compartment Air Conditioning Unit
- Dimensions:
 - 3" x 3-1/2" x 26"
 - 7.6 cm x 8.9 cm x 66 cm
- Weight: 7 lbs (3.2 kg)



PN 3402242-1 Sling Assembly

- The hoist is used to install and remove the Model GTCP85-180L APU and the GTCP85-185L [A] APU on the C-130J/382J aircraft.
- Dimensions
 - 8" x 14" x 35"
 - 20 cm x 35.6 cm x 89 cm
- Weight: 15 lbs (6.8 kg)



PN 3402246-1 Hoist Assembly

Propeller Dolly and Stand

- The Propeller Transportation Dolly is used to support any #60 shaft propeller and its related assemblies.
- Dimensions:
 - 100"(L) x 80" (W) x 47" (H)
 - 2.54 m x 2 m x 1.2 m
- Weight: 680 lbs. (308 kg)



Part Number 3400847-1



Part Number 66961000

**(-1 with Casters and -25
without Casters)**

The Portable Propeller Pier is used to provide propeller support in remote locations.

The size and weight eliminates the need to carry a propeller dolly to remote locations.

Dolly, Nose Radome

Part Number 3401350-175

- This dolly provides safe and efficient means for removal, installation, and storage of the Nose Radome
- Dimensions:
 - 92" x 80" 60"
 - 2.3 m x 2 m x 1.5 m
- Weight: 960 lbs. (435 kg)



Bar, Nose Gear Jacking

Part Number 3401504-1

- The bar is designed to be placed between two flat nose wheel tires and, by placing jacks under each end, raise the nose gear for tire change.
- Dimensions:
 - 2.25" x 11 .5" x 63"
 - 5.7 cm x 27.9 cm x 160 cm
- Weight: 200 lbs. (90.7 kg)



Hoist Assembly, Universal

Part Number 3402245-1

- The hoist assembly is used for installing or removing the refrigeration unit, APU generator.
- Used in conjunction with:
 - P/N 3402242-1 Sling Assembly
 - P/N 3402248-1 Dolly
- Dimensions:
 - 8" x 8" x 49"
 - 20.3 cm x 20.3 cm x 124.5 cm
- Weight: 15 lbs. (6.8 kg)



Sling, Radome

Part Number 404058-1

- The sling assembly consists of a harness of fabric webbing, two metal handles, and a metal hoisting ring. This enables the radome to be hoisted manually or by a crane.
- Dimensions
 - 3 cubic feet (packaged)
 - 0.09 cubic meters
- Weight: 20 lbs (9 kg)



Dolly, Refrigeration Unit Handling

Part Number 3402248-1

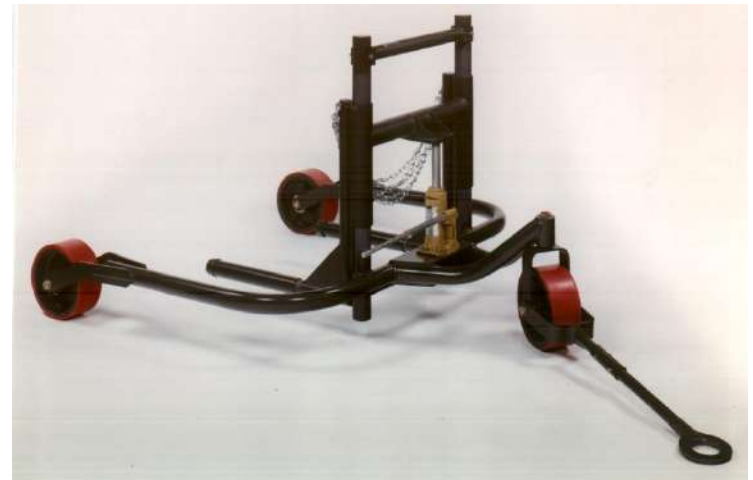
- The Dolly Assembly is used to transport the Flight Station or Cargo Compartment Air Conditioning Unit and to support the unit during storage.
- Applicable to C-130/382 & C130J/382J
- Dimensions:
 - 30" x 34" x 44"
 - 76.2 cm x 86.4 cm x 111.8 cm
- Weight: 60 lbs (27.2 kg)



Dolly, Aircraft Wheel Removal

Part Number 402500

- The Aircraft Wheel Removal Dolly is used for installation, removal and ground transportation of the landing gear wheels. It can be used for any heavy oversize wheel.
- A hydraulic pump mounted on the dolly allows for operation similar to a forklift to support the tire and wheel assembly, lift it and guide it off/on the axle or spindle.



Dolly Assembly, GTC Instl, Removal and Transport

Part Number 3401207-1 & 3400849-1

- Part Number 3400849-1
- The Dolly Assembly is designed to facilitate installation, removal and transportation of the Gas Turbine Compressor (GTC) or the Auxiliary Power Unit (APU) on the C-130/382 aircraft.



P/N 3401207-1 Dolly Assembly



P/N 3400849-1 Dolly Assembly

- Part Number 3401207-1
- The Dolly Assembly is designed to facilitate installation, removal and transportation of the Gas Turbine Compressor (GTC) or the Auxiliary Power Unit (APU) on the C-130/382 aircraft and the C-130J aircraft.

Towbar, Aircraft

Part Number 403980-1



- The towbar is designed to tow the aircraft by the nose landing gear, it attaches to the nose gear towing bolt with a locking latch.
- The towbar is used to tow the aircraft on level, firm, smooth surfaces which present low towing loads.
- Towbar can be used to pushback the aircraft also.
- Dimensions: 183-1/8" x 15" x 11-3/8" (465.2 cm x 38.1 cm x 29.9 cm)
- Weight: 190 lbs (86.2 kg)

Fuel Cell, Breathing and Ventilation System Part Number 92103000 (Big Windy)

- This unit is designed to purge a fuel cell down to acceptable LEL fume levels in minimal amount of time using pneumatically driven components. The unit will also provide breathing air for three persons simultaneously and is equipped with a stand-by air supply in the event of failure.



The unit is equipped with the following:

Two 8" Blowers driven by a 3 HP pneumatic motor

Breathing Air Pump (three person)

Various Hoses and Ducting

Refrigerator/Freezer, Aircraft Portable

Part Number 20206-1

- The Refrigerator/Freezer is a small compact unit capable of operating off 115V, 60 Hz or 28VDC. The refrigerator is also capable of operating as a freezer unit .
- Attaches to d-rings in the aircraft (four places)



Features:

- 115V, 60 Hz or 28 VDC
- Switch of a dial Refrigerator or Freezer
- Capacity: 100 lb
- Dimensions: 31 1/8" x 19 5/8" x 19 3/8"

Maintenance Stands, Aircraft

- C-130 Maintenance Stands
- P-3 Maintenance Stands
- Custom Stands
- Stand to Customer Drawings



P-3 Engine Maintenance Stands



TF-39 Engine Stands



TF-39 Engine Stands

Shop Engine Maintenance Stands

- Custom made shop Maintenance Stands
- Engine Shop Maintenance Stands
- Stands to customer drawings or design for specific application.



Test Set, Outflow and Safety Valves

Part Number 3403248-1

- The test set is used to perform an operational check of the outflow valve and/or safety valve.
- Kit consists of:
 - High & Low Vacuum Set
 - Air Pressure Set
 - Control Assembly
 - Safety Valve
 - Pressure Set
 - Hose Assemblies
- Dimensions:
 - 24" x 17- $\frac{1}{4}$ " x 9- $\frac{5}{8}$ "
 - 61 cm x 44 cm x 25 cm
- Weight: 48 lbs, 21.8 kg
- Shop Air Required for operation



Tool Kit, Mechanics & Hoist Assembly, Strut

- Part Number 3401486-15 Tool Kit, Mechanics Hand
- This tool kit is a carry around tool box with sufficient type of tools for general maintenance on the C-130/382.



- Part Number 350001-3 Hoist Assembly, Strut
- This hoist is used to lower or raise the main landing gear strut assembly during removal or installation.

Maintenance Platforms and Stairs

- Part Number 20265-1 Boarding Stair Aft Entry
- The boarding stair provides access to the rear entry door of the C-130 for general access.



B-1 Maintenance Platform

- B-1 Maintenance Platform
- Provides a portable work platform for general aircraft maintenance.
- Variable working height of 3 ft to 10 ft

Adapter Kit-Test, Vent Valve Fuselage Fuel Tank Lock Aircraft, Ground Safety

- The Vent Valve Fuselage Fuel Tank Adapter Kit-Test is used to test the vent valve on the fuel tanks on the C-130 aircraft



Part Number 3401376-1

- Used to lock aileron during maintenance operations,



Part Number 4S40000-101A

Thrust Trailer & Calibration Thrust Kit

- Thrust Trailer for the F100 Engine
- Adapter kits for other engines are available.



Part Number 3888B



Part Number 20F875

- Thrust Calibration kit used to calibrate the Thrust Trailer.

Cradle Assembly, External Fuel Tank Table Positioning, X-Y Movement

- P/N 3403221-1 Cradle Assembly is used with a scissor lift to remove and replace the external fuel tanks or inflight refueling pods
- P/N 3403222-1 Table Positioning, X-Y Movement allows for adjustment in position when aligning items such as external fuel tanks to bolts in wing.



Part Number 3403221-1



Part Number 3403222-1



Part Number 3403221-1

Brake Bleed Set

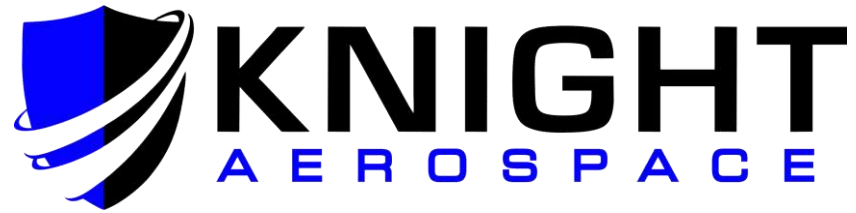
Part Number 3402684-39

- The Brake Bleed Set will bleed all four brakes at once or individually if desired and return fluid to the auxiliary hydraulic tank.



Custom Ground Support Equipment “Build to Print”





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