



In safe hands.



BOEING B737 EQUIPMENT CATALOGUE

**IN SAFE
HANDS**



Dear Madam or Sir,

One of the key success factors of managing a medium sized Group like HYDRO has always been the direct involvement and accessibility of top management to what we call the voice of the customer. My personal view is that there is simply no better way than the direct contact with customers. In many cases it has proven the right way to just get down into the trenches to really comprehend what is going on and what needs immediate attention. Additionally I can assure you that this spirit is flown down from all of us in management and ownership to all of our employees.

With HYDRO I can personally assure you, you will have a strong partner who is not seeking short-term objectives, but who will be there to support you for decades to come. HYDRO started up in 1965 as a small engineering business in Biberach, a picturesque village in Germany's Black Forest. Today about 700 employees worldwide are always near to our customers.

We stand for innovation, experience and reliability. In 2015 we repurchased one of our axle-jacks from Helvetic Airways. It was in service for nearly 50 years. You see — our product promise is truly unique.

A constant quest for improvement and close cooperation with our customers are important parts of our culture. HYDRO employees are people with a strong passion for customer satisfaction and entrepreneurial genes.

Yours sincerely

A handwritten signature in blue ink that reads "Peter Prinz". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Peter Prinz

CEO

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WITH HYDRO YOU ARE IN SAFE HANDS!

With over half a century of experience in the aircraft industry and a strong passion for precision, we are the single source that can meet all of your requirements.

Our whole life cycle solutions are designed to perfectly fit your needs, from the development of turn-key systems, the manufacturing of Ground Support Equipment and Tooling, and a diverse range of services. We measure our success based on the complete satisfaction of our customers.

Privately owned and financially strong, our global presence makes us always available at your site. We foster an atmosphere of operational excellence, so all of our employees, processes and products are strictly focused on supporting you and your safety.

Our business units include:

GROUND SUPPORT EQUIPMENT

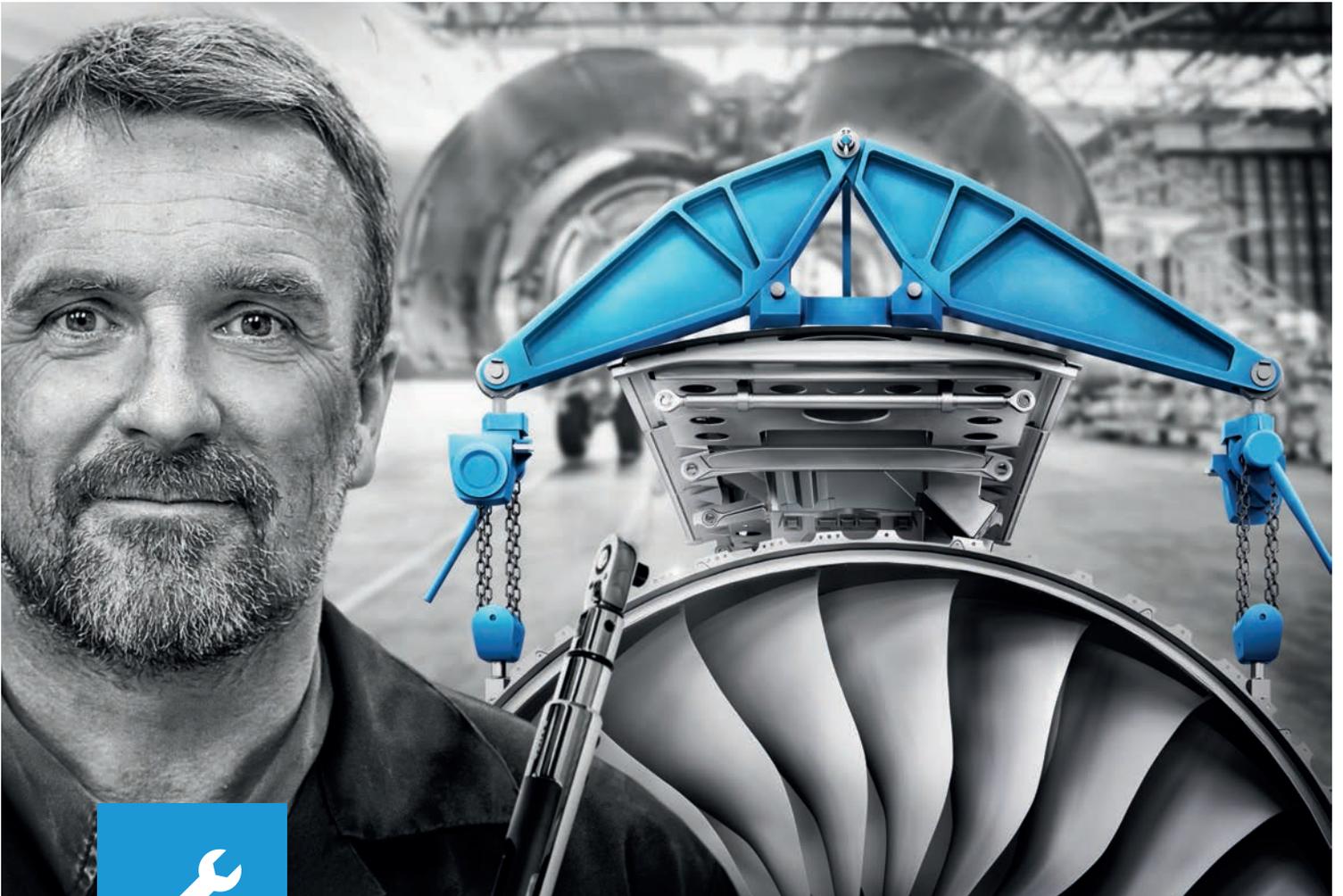


HYDRO stands for ultimate precision in GSE support. Our passion for precision doesn't just refer to precision in every detail, it means that we precisely provide products that are fully aligned to the needs of OEMs, airlines and maintenance facilities around the world. Before we launch a new product, it has been rigorously

tested in harsh operation conditions. We set standards with uncompromising safety, total functionality, reliability, longevity and user-friendliness. That's why professionals trust in our products.

PRECISELY THE PROFESSIONAL CHOICE

AIRFRAME AND ENGINE TOOLING



We understand and accompany every tool throughout its life cycle, supporting it to perfection from cradle to grave. Every tool has a life, and we create, manage and support this life. Our well-known design capabilities, global supply chain presence, and project management experience in supporting OEMs from requirement

capture to operation readiness and validation make this possible. We not only make tools to fit for function, we go the extra mile so you don't have to.

IT'S NEVER JUST A TOOL

ENGINE TRANSPORTATION



Safeguarding your valuable Engine assets requires a whole chain of events to be carefully managed, which is simplest with a HYDRO engine transport system at the very heart of your operation.

Over the years, HYDRO has set the standard for safe engine transportation. Our products stand between your engine and potential harm. We ensure every detail delivers simple operation and total safety, paired with extreme robustness for the harshest conditions.

State-of-the-art lean production ensures world-class on-time delivery of new stands to our customers. Robotic-welding, laser-tracked inspection and dedicated assembly technicians help ensure complete reliability.

Our Engine Transportation stands are supported by ten strategically located service stations around the world. Why accept any risk?

SIMPLY THE SAFEST WAY FOR YOUR ENGINE

ENGINEERED SOLUTIONS



Your future relies on your actions today. HYDRO is a competent partner that can accompany you on your path forward. For several decades, we have supported the aviation world with future leading solutions. We are the experts for even the most complex installation challenges, and our products are found in nearly all assembly lines and maintenance facilities around the world. With the support of our excellent, certified

project management, you can be confident knowing that your projects will proceed properly, 100% on time and on budget. Be assured, we will always integrate state of the art technologies to provide solutions tailored exactly to your needs.

FACILITATING YOUR FUTURE

SERVICE



With over 50 years of OEM service experience and more than 10 service stations worldwide, we are always available to take care of your issues. From proof load testing to complete full service management, we provide you with a customized care solution that ensures the ongoing operation readiness of your equipment. We deliver total reliability. With the compre-

hensive know-how that only the true expert can supply, we maintain, repair, train and optimize, so that you can take full advantage of the safety and efficiency of your products.

TRUSTED CARE FAR BEYOND

1_INDEX

A

APU — Auxilliary Power Unit The APU is a small jet engine that is used to start the larger jet engines. In airliners it's usually at the very rear of the aircraft, below the tail.

AVAD — Automatic Vertical Adjustment Device The Automatic Vertical Adjustment Device allows automatic fast and precise vertical alignment of tripod-jack at any time during the tripod positioning process.

B

BS EN — British Standard European Norm

C

CSD — Constant Speed Drive A constant speed drive is a mechanical gearbox that takes an input shaft rotating at a wide range of speeds, delivering this power to an output shaft that rotates at a constant speed, despite the varying input. It is used to drive mechanisms, typically electrical generators, that require a constant input speed.

E

EJAL — Electronic Jacking And Levelling The EJAL system is a fully automated system for synchronized aircraft lifting and lowering with a tripod-jack set.

EPS — Engine Pedestal Sets Engine Pedestal Sets (EPS) are multi-purpose systems which can be used for various engine types from different engine manufacturers for engine storage and maintenance tasks.

F

Fly-away version Shorter and lighter version of a product, to be stored in an aircraft. This version is not intended to be used in everyday application.

H

HGPU — Hydraulic Ground Power Unit The Hydraulic Ground Power Unit is used for maintenance and testing of mainline aircraft hydraulic systems.

I

IDG — Integrated Drive Generator The IDG is the world standard for constant frequency power in aircrafts. It is part of the engine.

IglooMX Patent protected aircraft maintenance shelter as "hangar-in-a-back".

L

LTS — Laser Target System The mobile laser target system allows faster positioning of tripod-jacks for aircraft jacking. It can be universally used on all tall HYDRO tripod-jacks.

INDEX

M

MLG — Main Landing Gear The main landing gear is the undercarriage of an aircraft and will be used for either takeoff or landing. The main landing gear is located under the wing or next to the body structure.

N

NB — Narrow Body A narrow-body aircraft or single-aisle aircraft is an airliner arranged along a single aisle permitting up to 6-abreast seating in a cabin below 4 metres (13 ft) of width.

NLG — Nose Landing Gear The nose landing gear is the undercarriage of an aircraft and will be used for either taxiing, towing, takeoff or landing. The nose landing gear is located under the nose of an aircraft.

R

RC-Design Compact axle-jack design. This fly-away axle-jack has been specially designed for removal and installation of aircraft wheels.

RL-Design The RL axle-jack has been designed for removing and installation of wheels and brakes in recovery conditions.

RT-Design The RT axle-jack has been designed for removing and installation of wheels and brakes in normal conditions.

S

SCS — Supplemental Cooling System

Standard version Special designed tool for one aircraft application.

U

Universal version Special designed tool for a various range of aircraft application.

W

WB — Wide Body A wide-body aircraft is a larger airliner usually configured with multiple aisles and a fuselage diameter of more than 5 metres (16 ft) allowing at least seven-abreast seating and often more travel classes.

EQUIPMENT LIST

Equipment	Version	Location/Designation	Model-No.
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ATA Chapter 06 – Dimensions & Areas

Aircraft Maintenance and Access Stand			DF071554-06
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ATA Chapter 07 – Lifting & Shoring

STANDARD PORTFOLIO

Tripod-Jacks

Standard FortEvo Set	Wing	FEN352
	Nose	FEN122
	Tail	FEN121
Universal Narrow Body FortEvo Set	Wing	FENT354
	Nose	FENT101
	Tail	FEN15
Standard SmartLine Set	Wing	TJSL0E03503
	Tail	TJSL0E01003
Universal A320 / B737 SmartLine Set	Wing	TJSL1E03501
	Tail	TJSL1E01001

Axle-Jacks

Standard	NLG / MLG	RT4550
	MLG	RT6050
	MLG	RT9050
	MLG	RT15050
Accessories for RT Jacks	Axle Jack hose pressure kit	PO-54665
Fly-Away	NLG	RH1029
	NLG	RH1606
	NLG & MLG	RC4509
	MLG	RC6010
	MLG	RC9002
	Recovery	NLG
MLG		RL9004

Equipment	Version	Location/Designation	Model-No.
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ATA Chapter 09 — Towing & Taxing

STANDARD PORTFOLIO

Tow-Bars	Standard	NLG	TOWB737S
	Universal	NLG	TOWUNIV3
	Fly-Away	NLG	TOWB737-AZ
	Multi	NLG	TOWMULTI2
	Multi Tow Head	NLG	TOWHEAD-2B
Load Limiter		MLG	SG224

ATA Chapter 12 — Servicing

STANDARD PORTFOLIO

Service Carts	Standard	Nitrogen Service Cart	NBNT
		Oxygen Service Cart	NBOT
		Service Support Trailer	NBWBCT
Fluid Dispenser	Standard	Fluid Dispenser	BOB02, BOB05, BOB20
Aircraft tyre pressure gauges	Standard		NTG3004
Aircraf tyre inflation	Standard		MK7ATIS

ATA Chapter 25 — Equipment / Furnishing

STANDARD PORTFOLIO

Cabin interior access stand			DF071553-01
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ATA Chapter 29 — Hydraulic Power

STANDARD PORTFOLIO

Hydraulic Power	Standard		HGPU
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Equipment	Version	Location/Designation	Model-No.
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ATA Chapter 32 — Landing Gear

STANDARD PORTFOLIO

Wheel/Brake Change Dolly	Standard	NLG/MLG	MH13-003
	Option	Brake Cradle	24010-031-000
	Brake Hoist	NLG / MLG	HG14 HG14-001

MLG R/I Trolley	Standard		MLGMULTI-1
Frame Kit for B737NG		MLG	MLGFB737NG
Compression Tool		MLG	MLGC01
Landing Gear Change Stand		MLG	DF071559-01
Aircraft Wheel Chocks		NLG / MLG	NBWC
Aircraft Wheel & Tire Handling		NLG / MLG	NBWS
Aircraft Strut & Accumulator Service Tool		NLG / MLG	SIC3500

ATA Chapter 38 — Waste Line Cleaning

STANDARD PORTFOLIO

Waste Line Cleaning System	Standard		WLC1
Vaccum Toilet Blockage Remover	Standard		VTBR2

ATA Chapter 49 — Auxiliary Power Unit

STANDARD PORTFOLIO

Auxiliary Power Unit Multi-Purpose Platform Stands			DF71556-03 XP
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ATA Chapter 53 — Fuselage

STANDARD PORTFOLIO

IglooMX Fuselage Shelter		Fuselage	890121
IglooMX Nose Shelter		Nose	890135

Equipment	Version	Location/Designation	Model-No.
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ATA Chapter 54—Nacelles / Pylons

STANDARD PORTFOLIO

Nose Cowl Dolly Installation Device			DF71560-01
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ATA Chapter 71 — Power Plant

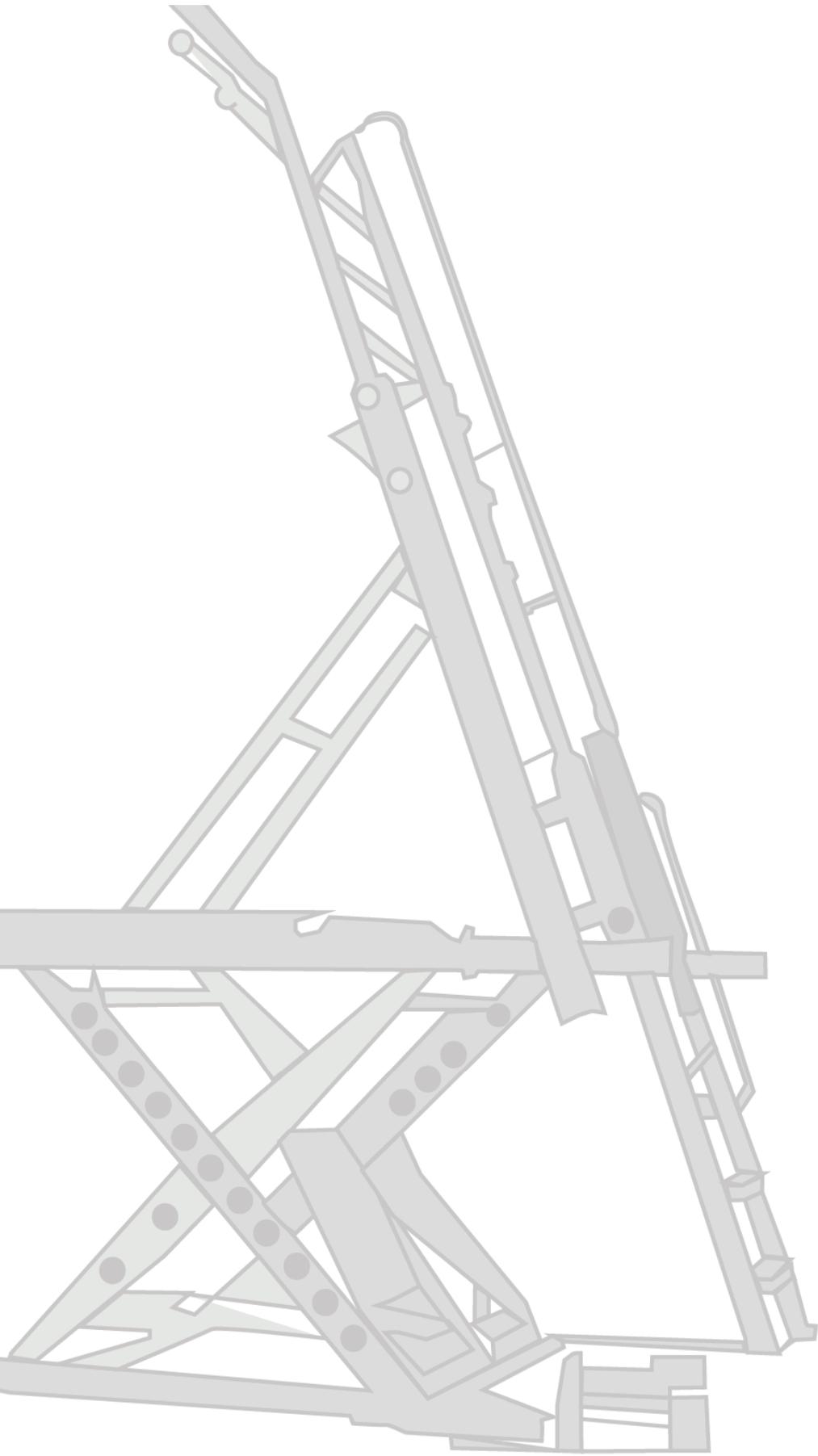
STANDARD PORTFOLIO

Engine Change System “COBRA”	All Engines	Engine	TP91G1F
COBRA Adapter Kit	CFM-56-7 / Leap-1B	Lifting Beam	TPBBC0A0
Lifting Adapter		Lifting Adapter	TPBAC0B0
Lug Slave / Master		Lifting Lug	TPBLA0C0
Engine Pedestal Set	Universal	Engine Pedestal Set	EPS001-002
	CFM56-3	EPS Adapter	47001-002-000
	CFM56-7B	EPS Adapter	47001-029-000
	Leap-1B	EPS Adapter	47001-031-000
Engine Transportation	Base	CFM56-3	AM-2563-200
		CFM56-7B	
	Cradle	CFM56-7B	AM-2811-4800
Hoisting Sling	Universal	CFM56-3	HG20
		CFM56-5A/-5B/-5C	
		CFM56-7	
		C2500-A1/-A5	
		V2500-A1/ -A5	
IglooMX Engine Shelter		Engine	890106

ATA Chapter — Others

STANDARD PORTFOLIO

Proof Load Test Fixture	Universal	Up to 50t	PV050
	Universal	Up to 165t	PV165
Boeing Tooling	Universal	Boeing Licensed tooling for B737 family	Upon request



1

DIMENSIONS & AREAS

ATA CHAPTER 06

HYDRO
PARTNER PRODUCT

1.1

AIRCRAFT MAINTENANCE ACCESS STAND

DESCRIPTION

This stand is designed with an adjustable scissor lift base to give it the height required to access variable areas on the aircraft.

As the stand is designed for multiple aircraft use, for wide-body aircraft the stand facilitates safe access to nose cowls, fan cowls and pylon disconnect zones on PW, GE and RR engines, providing a safe working solution to many of the traditionally difficult under-cowling maintenance locations. The unit is also designed to safely access the same points outside of cowling, specifically forward and aft pylon service points, as well as hard to reach refuel panels and under-wing areas.



PRODUCT FEATURES

- Anti-fatigue ladder rungs rather than narrow ladder rungs (this ensures comfort when using the stands to change LRU'S, adjust components, or connect/disconnect engines and nacelles)
- Access to the B737 Empennage, avionics and aft-fuselage access points.
- The hydraulic pitch and height adjustment allows for the diverse angles and height variables.
- Extensive aluminum construction for easy movement and corrosion-resistant powder coat finish for longevity.
- For increased safety and ease of mobility, the stand comes equipped with 4 corner-levelling jacks, fold away tow-bars and lift truck fork pockets.
- Designed and tested in accordance with ANSI-ASC A14.7 and BS EN 131.7
- Adjustable Scissor Lift Base
- Padding Material Equipped
- Fall Restraint Anchor Points
- Controls: Hydraulic
- Ergonomic Design
- High-Grade Materials
- 2 Person Movement
- Powder Coated Finish
- 4 Corner-Levelling Jacks
- Fold Away Tow Bars
- Lift Truck Fork Pockets
- Foot pump

BENEFITS

- Flexibility for use on all Boeing aircraft.
- Full use on Airbus wide-body aircraft as well as the A320 family
- Safety and Reliability
- Unrivalled quality and durability
- Rigorous inspection and testing
- B737 Access to Empennage
- Designed according to ANSI-ASC A14.7 and BS EN 131.7
- CE certified

AVAILABLE ACCESSORIES

- Air-powered pump
- Utilities package
- Extension
- Additional upper Platform

**TECHNICAL SPECIFICATION**

DF071554-06	
Towing Speed	10 KPH / 6 MPH
Material Type	Ladder - Aluminium Frame - Steel
Certifications	ANSI-ASC A14.7, BS EN 131.7 & CE
Dimensions (shipping)	89 11/16 " x 64 1/2" x 163 3/16" x 2,400 lbs
Height	Low: 126 1/2" High: 239 1/4"
Foot Print	89 11/16" x 163 3/16"



2

LIFTING & SHORING

ATA CHAPTER 07

2.1

FortEvo TRIPOD-JACKS

DESCRIPTION

The Fort Evo N-Series has been engineered and developed using state-of-the-art technology. The consistent modularity allows it to be configured according to customer specific requirements. Various configuration options, from the basic to the high-end versions, are available in combination with central Electronic Jacking and Levelling (EJAL) control system for safe operation. The FortEvo tripod-jack covers all of the most common narrow body aircraft.



HYDRO TRIPOD-JACKS INCLUDE

- Tripod structure
- Dual manual hydraulic pump with high- and low-pressure unit
- Overload relief valve offers protection against over-pressurization
- Pressure indicator in bar and psi + conversion table for kN and tonnes
- Safety lock nut offers protection against unintended pressure relief
- Level for vertical alignment verification
- Feet with fixed ground plates
- Spring-loaded castors with locking mechanism
- Hard-chromium-plated cylinder tube for long and trouble-free service life
- Interchangeable adapters for additional aircraft types
- Low-friction seal for uniform piston return
- Secondary cylinder seal for protection against contaminants and to prolong life of primary seal
- Skydrol-resistant paint and galvanized plating for corrosion protection
- Movable tow-bars
- Ladder with platform or pedestal (according to jack height)
- Rain hat
- Interface for HYDRO proof load equipment
- Factory proof load with 150% of nominal capacity incl. proof load certificate

BENEFITS

- High Quality made in Germany
- Airbus and Boeing validated
- Long life-cycle
- CE-marked
- Robust and proven design
- Secondary cylinder seal for protection against contaminants and to prolong life of primary seal
- At least 10 years spare part availability
- On-site service

**TECHNICAL SPECIFICATION****STANDARD TRIPOD-JACK SET B737**

	Wing	Nose	Tail
Model-No.	FEN352	FEN122	FEN121
Capacity	35 t 38.5 tons	12 t 13.2 tons	12 t 13.2 tons
Min. height	1,550 mm 61.0 inch	1,450 mm 57.1 inch	2,545 mm 100.2 inch
Hydr. lift	1,120 mm 44.1 inch	1,020 mm 40.2 inch	1,000 mm 39.4 inch
Screw ext.	255 mm 10.0 inch	255 mm 10.0 inch	330 mm 13.0 inch
Max. height (with fixed ground plates)	2,885 mm 113.6 inch	2,685 mm 105.7 inch	3,835 mm 151.0 inch
Max. height (with height-adjustable ground plates)	2,925 mm 115.1 inch	2,725 mm 107.3 inch	3,875 mm 152.6 inch
Application	B717 B737-200 to B-900 B737-7/ -8/ -9 MAX Embraer 170 MD80 / MD90 Fokker 28 Fokker 100	B737-100 to -900 B737-7/ -8/ -9 MAX MD90 CS100 / CS300 A220-100 / A220-300 RRJ-95 MC-21	B737-100 to -900 B737-7/-8/ -9 MAX MC-21



TECHNICAL SPECIFICATION

UNIVERSAL NARROW BODY TRIPOD-JACK SET

	Wing	Nose	Tail
Model-No.	FENT354	FENT101	FEN15
Capacity	35 t 38.5 tons	10 t 11.0 tons	15 t 16.5 tons
Min. height	1,750 mm 68.9 inch	1,500 mm 59.1 inch	2,600 mm 102.4 inch
Hydr. lift	2,100 mm 82.6 inch	1,985 mm 78.1 inch	1,800 mm 70.9 inch
Screw ext.	660 mm 25.9 inch	450 mm 17.7 inch	250 mm 9.8 inch
Max. height (with fixed ground plates)	4,470 mm 175.9 inch	3,895 mm 153.4 inch	4,610 mm 181.5 inch
Max. height (with height-adjustable ground plates)	4,510 mm 177.5 inch	3,935 mm 154.9 inch	4,650 mm 183.0 mm
Application	A318 A319 / A319NEO A320 / A320 NEO A321 / A321 NEO B737-100 to B737-900 B737-7/ -8/ -9MAX RRJ-95 Embraer 190 B727 MC-21 MD80 / MD90 Dash 8Q-400 C919	A318 A319 / A319NEO A320 / A320 NEO A321 / A321 NEO B707 / B727 B737-100 to -900 B737-7/-8/-9 MAX MD90 RRJ-95 MC-21 C919	A318 A319 / A319NEO A320 / A320 NEO A321 / A321 NEO B707-120/B707-320/ B,C B707-420 /-720/B B737-100 to -900 B737-7/ -8/ -9 MAX B757 Tu-204 MC-21

Available options

Overview

Drive Units	<ul style="list-style-type: none"> ▪ Air-hydraulic pump ▪ Electro-hydraulic pump
Safety lock nut	<ul style="list-style-type: none"> ▪ Manually operated safety lock nut ▪ Automatically operated safety lock nut*
Castors	<ul style="list-style-type: none"> ▪ Spring-loaded swivel castors ▪ Hydraulically height-adjustable swivel castors ▪ Hydraulically height-adjustable high speed outdoor castors
Transportation	<ul style="list-style-type: none"> ▪ Forklift adapter ▪ PowerCat (electrical towing unit) interface
Positioning	<ul style="list-style-type: none"> ▪ Fixed mounted laser target system ▪ Mobile laser target system
Levelling	<ul style="list-style-type: none"> ▪ Automatic Vertical Adjustment Device (AVAD)
Lifting & Lowering	<ul style="list-style-type: none"> ▪ Mechanical stroke measuring system ▪ Electronical stroke measuring system* ▪ Fast lowering system* ▪ Electronic jacking and levelling system (EJAL) — synchronized aircraft jacking*
Corrosion Protection	<ul style="list-style-type: none"> ▪ Hard-chromium-plated piston
Load Cell System	<ul style="list-style-type: none"> ▪ Load indication ▪ Overload warning system ▪ A/C weighing — upon request

*only in combination with electro-hydraulic pump

ELECTRONIC-HYDRAULIC PUMP

DESCRIPTION OF OPTIONS



DESCRIPTION

Electrically driven hydraulic pump unit for HYDRO tripod-jack use.

PRODUCT FEATURES

- Electrically driven
- Robust design
- Maximum user comfort and best view to the jacking point area during jacking operation due to the cable connected hand held controller

AVAILABILITY

- Available for all electric narrow and wide body HYDRO tripod-jacks

BENEFITS

- Increased operational performance
- Prepared for later update with our EJAL system and automatically operated safety lock nut
- Hand held controller

AUTOMATICALLY OPERATED SAFETY LOCK NUT

DESCRIPTION OF OPTIONS



DESCRIPTION

Electrically driven safety lock nut; specially designed for HYDRO tripod-jacks.

PRODUCT FEATURES

- Automatically operated safety lock nut during aircraft lifting and lowering operation
- Product requirement: electric driven hydraulic jack
- Electrically driven
- Robust design

AVAILABILITY

- Available for all narrow and wide body HYDRO tripod-jacks

BENEFITS

- Cost-efficient
- Reduction of man power
- Increased operational performance
- Especially useful for tall tripod-jacks
- Absolutely recommended for tripod-jack systems with a high level of automation
- One-man operation

HYDRAULICALLY HEIGHT-ADJUSTABLE SWIVEL CASTORS

DESCRIPTION OF OPTIONS



DESCRIPTION

Hydraulically height-adjustable swivel castors with central operation unit.

PRODUCT FEATURES

- Simple application
- Central operation of all three castors with hand pumps — close to the bubble level
- Heavy duty swivel casters with brakes for storage and swivel locks for improved towing

AVAILABILITY

- Available for all electric driven narrow and wide body HYDRO tripod-jacks
- Recommended for all bigger narrow and wide body tripod-jack models from a total weight of 700 kg upwards

BENEFITS

- Increased operational performance — time reduction for jack levelling and positioning
- Higher precision in jack levelling
- Especially useful for big and heavy tripod-jacks
- Increased ground clearance during towing

HYDRAULICALLY HEIGHT-ADJUSTABLE HIGH SPEED OUTDOOR CASTORS

DESCRIPTION OF OPTIONS



DESCRIPTION

Hydraulically height-adjustable swivel castors with central operation unit, specially designed for outdoor usage and improved towing speed up to 25 km/h / 15 mph.

PRODUCT FEATURES

- Robust design
- Simple application
- Hydraulic height-adjustable via hand pumps
- Heavy duty casters; two fixed castors and one castor steerable via tow-bar

AVAILABILITY

- Available for nearly all HYDRO narrow and wide body jacks

BENEFITS

- Solid rubber wheels — maintenance free
- Greater moving speed over longer distances up to 25 km/h / 15 mph possible
- Tripod-jack towing also on bad surfaces or over gaps and cracks/snow
- Increased operational performance — time reduction for jack moving, levelling and positioning
- Higher precision in jack levelling
- Especially useful for big and heavy tripod-jacks
- Increased ground clearance during towing

FORKLIFT ADAPTER

DESCRIPTION OF OPTIONS



DESCRIPTION

Fork lift adapters allow easy movement of tripod-jacks with a forklift even on bad surfaces or over gaps and cracks.

PRODUCT FEATURES

- Fast and cost-saving way for moving big and heavy tripod-jacks over long distances or onto a truck with a forklift
- Robust welded steel frame
- Simple application

AVAILABILITY

- Available for nearly all narrow and wide body HYDRO tripod-jack models

BENEFITS

- Movement of tripod-jack with fork lift also on bad surfaces or over gaps and cracks possible
- Increased operational performance

POWERCAT (ELECTRICAL TOWING UNIT) INTERFACE

DESCRIPTION OF OPTIONS



DESCRIPTION

Fast and cost-saving way for moving and positioning of big heavy tripod-jacks or other equipment

Product features

- Max. towing capacity 14,000 kg (30,800 lbs)
- All operating elements integrated in the handle/tow-bar (similar to electric powered pallet trucks)
- Battery driven (24 V – 240 Ah)
- Battery charger (option — not part of delivery)
- Different jack adapters available
- Heavy duty rollers
- Simple application

AVAILABILITY

- Developed and recommended for A380 Main Jacks
- Applicable and adaptive for all other big and heavy HYDRO tripod-jacks

BENEFITS

- Significant reduction of man power
- Master Mover
- Increased operational performance — time reduction for jack positioning
- Higher precision in jack positioning
- Useful for all heavy tripod-jacks

FIXED MOUNTED LASER TARGET SYSTEM

DESCRIPTION OF OPTIONS



DESCRIPTION

The fixed mounted laser target system allows precise and faster positioning of tripod-jacks for aircraft jacking.

PRODUCT FEATURES

- The system projects a red laser cross for easy positioning of the jack under the aircraft jacking point
- Simple application: activation by push button on jacks handheld controller

AVAILABILITY

- Laser system is available for all HYDRO narrow and wide body tripod-jack models
- Available only for electric powered HYDRO tripod-jack models

BENEFITS

- Increased operational performance — time reduction for aircraft jacking
- Higher precision in jack positioning
- Useful for tall tripod-jacks
- Installed on each tripod-jack

MOBILE LASER TARGET SYSTEM

DESCRIPTION OF OPTIONS



BENEFITS

- Increased operational performance — time reduction for jack levelling and positioning
- Higher precision in jack positioning
- Reduction of man power
- Useful for tall tripod-jacks
- Universal use on all tall HYDRO tripod-jacks possible

DESCRIPTION

The mobile laser target system allows precise and faster positioning of tripod-jacks for aircraft jacking. It can be universally used on all tall HYDRO tripod-jacks.

PRODUCT FEATURES

- The unit projects a laser cross for easy positioning of the jack under the aircraft jacking point
- Simple application: remove jacking adapter from the jack and replace it with LTS adapter, turn on the laser, level and position the jack under the jacking point. Universal use — system includes two adapters which cover all HYDRO narrow and wide body tripod-jack models (excluded optional A380 main jack adapter)
- Battery driven
- Plastic storage and carrying case with foam cushioning (includes space for optional A380 adapter)

AVAILABILITY

- System can be used in combination with all HYDRO narrow and wide body tripod-jack models (excluded A380 main jack — optional adapter is available)

AVAD (AUTOMATIC VERTICAL ADJUSTMENT DEVICE)

DESCRIPTION OF OPTIONS



DESCRIPTION

The Automatic Vertical Adjustment Device allows automatic fast and precise vertical alignment of tripod-jack at any time during the tripod positioning process.

PRODUCT FEATURES

- Fully automated vertical alignment device for the individual tripod-jacks
- Inclination sensor
- Proportional hydraulic valves
- Simple application: activation by push button on jacks handheld controller
- Robust design

AVAILABILITY

- Available for all narrow and wide body electric powered HYDRO tripod-jacks which are equipped with hydraulic height adjustable wheels

BENEFITS

- Automatic fast and precise vertical alignment of tripod-jack at any time during tripod positioning process
- Cost-efficient
- Increased operational performance
- Faster jack positioning
- Absolutely recommended for tripod-jack sets on a high level of automation
- Universal use on all tall HYDRO tripods possible

MECHANICAL STROKE MEASURING SYSTEM

DESCRIPTION OF OPTIONS



DESCRIPTION

The mechanical stroke measurement system monitors the working stroke of the hydraulic cylinders of tripod-jacks.

PRODUCT FEATURES

- Mounted outside of the cylinder
- Main components made of aluminum
- Robust and proven design

AVAILABILITY

- Available for all narrow and wide body HYDRO tripod-jacks

BENEFITS

- Different jacking levels can be reached repeatable
- Robust and proven design
- Failsafe
- Maintenance free
- Pure mechanical system
- Also usable as a simple synchronous lifting system

ELECTRONICAL STROKE MEASURING SYSTEM

DESCRIPTION OF OPTIONS



DESCRIPTION

The electrical stroke measurement system monitors the working stroke of tripod-jacks hydraulic cylinder. The measured stroke will be shown on a display.

PRODUCT FEATURES

- Electrical stroke measurement system — monitors the working stroke of jacks hydraulic cylinder
- Measured stroke will be shown on display (if tripod-jack is equipped with) or on EJAL control desk
- Mounted outside of the cylinder
- Robust and proven design
- Only recommended for EJAL systems

AVAILABILITY

- Available for all electric narrow and wide body HYDRO tripod-jack

BENEFITS

- Different aircraft jacking levels can be reached repeatable
- In conjunction with the EJAL system: measured stroke of each tripod-jack will be transmitted to the control desk. This enables precise synchronous control of all tripod-jacks during aircraft lifting and lowering
- Can also be used for limitation of hydraulic lift to prevent aircraft damage

FAST LOWERING SYSTEM

DESCRIPTION OF OPTIONS



BENEFITS

- Increased lowering speed of the hydraulic cylinder without load
- Reduction of process time
- Can also be used for limitation of tripod jacks lifting capacity (maintenance panel required)

DESCRIPTION

The Fast Lowering System increases the lowering speed of the hydraulic cylinder of tripod-jacks without load.

PRODUCT FEATURES

- Pressure sensor integrated in the hydraulic system (can also be used for limitation of jacks lifting capacity)
- The fast lowering function is automatically activated when lowering movement is activated and the cylinder-/system- pressure drops under the limit value
- Fast lowering function is automatically deactivated during movement operations of loaded cylinder
- Hydraulic system pressure will be shown on display (if tripod-jack is equipped with)
- Only recommended for tripod-jacks with automatically operated safety lock nuts

AVAILABILITY

- Available for all narrow and wide body HYDRO tripod-jacks

ELECTRONIC JACKING AND LEVELLING SYSTEM (EJAL)

DESCRIPTION OF OPTIONS



DESCRIPTION

The EJAL system is a fully automated system for synchronized aircraft lifting and lowering with a tripod-jack set.

PRODUCT FEATURES

- Fully automated system for aircraft lifting and lowering with a tripod-jack set
- Individual operation of jacks also possible
- Electrical system — universal useable for different tripod-jack sets
- Aircraft inclination sensor
- Touch panel display
- Cable drums with spring return for power supply of tripod-jacks and for main power supply
- Heavy duty casters with brakes
- Robust design
- Simple application

BENEFITS

- Reduction of man power
- Cost-efficient
- Increased operational performance
- Faster jacking operation
- Permanent control of aircraft inclination
- Minimized risk for the operator and aircraft through synchronized lifting and lowering operation
- Maximum safety
- High level of automation for aircraft lifting and lowering process

AVAILABILITY

- Available for all narrow and wide body electric powered HYDRO tripod-jack sets.

2.2

SMART LINE TRIPOD-JACKS

DESCRIPTION

Our standard tripod-jack series for narrow-body aircraft is called "TJSL". It has been engineered primarily for use in aircraft maintenance.

Lean production and a high production volume enable us to achieve maximum efficiency and value for money with our Smart Line tripod-jack series. Various configuration options like an air-hydraulic or electrically driven pump unit are available.



HYDRO TRIPOD-JACKS INCLUDE

- Tripod structure: frame with hydraulic lift cylinder
- Mechanical extension (extractable by crane or forklift)
- Manually operated safety lock nut
- Pressure indicator in kN/bar; shorttons/psi; t/bar or kN/psi
- Pressure relief valve to protect against overload
- Bubble level indicator to verify the vertical alignment
- Tripod legs with height-adjustable ground plates
- Low friction seal for constant piston return
- Highly user-friendly design and low-maintenance
- Secondary cylinder seal for protection against contaminants and to prolong life of primary seal
- Skydrol-resistant paint and galvanized plating for corrosion protection
- Movable tow-bars
- Ladder with platform or pedestal (according to jack height) for easy manual safety operation
- Rain hat
- Interface for HYDRO proof load equipment
- Factory proof load with 150 % of nominal capacity incl. proof load certificate

OPTIONS

DRIVE UNIT

- Manual hydraulic pump
- Air-hydraulic pump incl. manual hydraulic pump for precise adjustment
- Electro-hydraulic pump incl. manual hydraulic pump for precise adjustment (Supply Voltage: 3/PE AC 380-420V 50Hz or 3/PE AC 440-480V 60 Hz)

UNDERCARRIAGE

- Fixed undercarriage
- Mechanically-adjustable undercarriage

BENEFITS

- High quality made in Germany
- Airbus and Boeing validated
- Stainless steel cover — all parts are protected against dirt, harsh environment and UV-radiation
- Long life-cycle
- CE-marked
- Robust and proven design
- Secondary cylinder seal for protection against contaminants and to prolong life of primary seal
- User-friendliness
- At least 10 years sparepart availability
- On-site service



TECHNICAL SPECIFICATION

STANDARD TRIPOD-JACK SET B737

	Wing	Tail
Model-No.	TJSL0E03503	TJSL0E01003
Capacity	35 t 38.5 tons	10 t 11 tons
Min. height	1,800 mm 70.9 inch	2,300 mm 90.6 inch
Hydr. lift	1,400 mm 55.1 inch	1,420 mm 55.9 inch
Screw ext.	- mm - inch	- mm - inch
Max. height	3,200 mm 126.0 inch	3,720 mm 146.5 inch
Application	B737-300 to -900 B737-7/ -8 /-9 MAX	B737-300 to -900 B737-7 /-8 /-9 MAX

UNIVERSAL A320 / B737 TRIPOD-JACK SET

	Wing	Tail (T) Nose (N)
Model-No.	TJSL1E03501	TJSL1E01001
Capacity	35 t 38.5 tons	10 t 11 tons
Min. height (mech. Ext. retracted)	1,850 mm 72.8 inch	1,840 mm 72.4 inch
Min. height (mech. Ext. extended)	3,027 mm 119.2 inch	2,220 mm 87.4 inch
Hydr. lift	1,370 mm 53.9 inch	1,420 mm 55.9 inch
Mech. Ext.	1,200 mm 47.2 inch	380 mm 15.0 inch
Max. height (mech. Ext. retracted)	3,220 mm 126.8 inch	3,260 mm 128.3 inch
Max. height (mech. Ext. extended)	4,397 mm 173.1 inch	3,640 mm 143.3 inch
Application	A318 A318/A319 NEO A320/A320 NEO A321/A321NEO B737-300 to -900 B737-7/ -8 /-9 MAX	A318 (N) A318/A319 NEO (N) A320/A320 NEO (N) A321/A321NEO (N) B737-300 to -900 (T) B737-7/ -8 /-9 MAX (T)

2.3

AXLE-JACKS | STANDARD AXLE-JACKS (RT-DESIGN)

DESCRIPTION

The RT axle-jacks have been engineered primarily for use in aircraft maintenance. The consistent modularity allows it to be configured according to your specific requirements. HYDRO products are built to withstand harsh environmental conditions and rugged use. Furthermore safety and "Made in Germany" quality have the highest priority.

The HYDRO RT axle-jacks offer an optimum performance for professional use.



PRODUCT FEATURES

- Integrated pneumatically-driven hydraulic pump with maintenance unit
- Integrated automatic retraction system for a quick removal of the axle-jack
- Very short extension time to jacking point (full extension in less than 1 minute)
- Manual hand pump (operated by the tow-bar)
- Optimized undercarriage for easy maneuvering
- All functional parts protected by a stainless steel cover against damage during rough operation and weather
- Cover for cylinder
- Tow-bar for operating the jack
- Stainless steel cover: all other parts are Skydrol-resistant painted
- Label with A / C applications
- modular design and available spare parts
- Leak-proof operation because of into the oil tank integrated elements
- Stainless steel cover — all parts are protected against dirt, harsh environment and UV-radiation
- Worldwide unique manufacturing process for the high stressed components of the hydraulic cylinder
- Documented verification for each step of manufacturing for each part

BENEFITS

- High quality made in Germany
- Long life-cycle
- CE-marked
- Robust and proven design
- Easy maneuvering due to optimized undercarriage
- Best handling and extreme repair-friendly
- At least 10 years spare part availability
- On-site service

AVAILABLE ACCESSORIES**Transport Trolley**

Single Transport Trolley SG158



Twin Transport Trolley SG169
(Only necessary for 3 axis landing gears)

Wheel Refill Unit

Tire inflation gauge RFM940RF80-25

Hose lines:

- for small tire valves VG8 - NB A/C's 00180-104-000
- for big tire valves VG12 - WB A/C's 00180-106-000

Maintenance

Interface for HYDRO proof load equipment

Fly-Away Version

Shorter and lighter version of the standard RT-Axle Jack model



TECHNICAL SPECIFICATION

STANDARD AXLE-JACK (RT-DESIGN)

Model-No.	RT4550	RT6050	RT9050	RT15050
Capacity	45 t 50 tons	60 t 66 tons	90t 99.2 tons	150 t 165 tons
Min. height	190 mm 7.5 inch	246 mm 9.7 inch	260 mm 10.2 inch	276 mm 10.8 inch
Hydr. lift	313 mm 12.3 inch	328 mm 12.9 inch	324 mm 12.8 inch	275 mm 10.8 inch
Screw ext.	70 mm 2.8 inch	121 mm 4.8 inch	112 mm 4.4 inch	42 mm 1.7 inch
Max. height	573 mm 22.6 inch	695 mm 27.4 inch	698 mm 27.5 inch	593 mm 23.3 inch
Application	A340 - 200 / - 300 / - 500 / - 600 (NLG, MLG & CLG) A350-900/-1000 (MLG & NLG) A300/A310 (NLG & MLG) A320 Family incl. NEO (NLG & MLG) A330 - 200 / - 300 (NLG) A350-900/ -1000 (NLG) B707 (MLG) B727 (NLG & MLG) B737 - 100 to -900 incl. MAX (MLG) B717 (MLG) B737-300 to -900 incl. B737 MAX -7/ -8/ -9 (NLG & MLG) B757-200/ -300 (NLG & MLG) B767 -200/ -300/ -400ER (NLG) B777-200 /-200ER /-200LR /-300/ -300ER (NLG) B787-8 /-9(NLG) Embraer 170/ 175/ 190/ 195 (NLG & MLG) DC-10/ MD-11 (NLG) MD-80/ MD-90 (MLG) L-1011 (NLG) CS100 / CS300 (NLG) MC-21 (NLG & MLG) A220-100/ -300 (NLG)	A300 / A310 (NLG & MLG) A320 Family incl. NEO (NLG & MLG) A330 - 200 / - 300 (NLG & MLG) A340-200/ -300 (NLG & MLG & CLG) A340-500 / -600 (NLG & CLG) A340 - 200 / - 300 (NLG & MLG & CLG) A340-500/ -600 (NLG & CLG) A350-900(NLG) B727 (NLG & MLG) B707/ B717 / B737-100 to -900 incl. MAX (MLG) B727 (NLG & MLG) B707/ B717/ B737 - 300 to - 900 incl. MAX (MLG) B747 - 100 / - 200 / -300 / -400 /-400ER (NLG & MLG) B747-8 (NLG) B757 - 200 / - 300 (NLG & MLG) B767-200/ -300/ -400ER (NLG & MLG) B777-200/ -200ER/ -200LR/ -300/ -300ER (NLG) B787-8/ -9 (NLG & MLG) DC-10 (NLG & MLG) MD-11 (NLG & MLG & CLG) MD-80/ MD-92/ MC-21 (MLG) L-1011 (NLG & MLG) CS100 / CS300 (NLG & MLG) A220-100 / -300 (NLG)	A300 / A310 (MLG) A320 Family (MLG) A330 (NLG & MLG) A340 (NLG & MLG & CLG) A350-900 (NLG & MLG) A350-1000 (MLG) A340-500/ -600 (MLG) B727 (NLG & MLG) B707 / B737-100 to -900 incl. MAX (MLG) B747 / B767 / B777 / B787 (NLG & MLG) DC-10 / MD-11 (MLG) L-1011 (MLG)	A380 (BLG,WLG) A380 (NLG) A300 / A310 (MLG) A320 Family (MLG) A330-300 (MLG) A340-200 /-300 (MLG) A340-500 / -600 (NLG & MLG) B707 / B787 / B737-100 to -900 incl. MAX (NLG & MLG) B727 (NLG & MLG) B767-200/ -300/ -300ER/ -400ER (MLG) B777-200/ -200ER/ -300/ -300ER (MLG) L-1011 (MLG) DC-10 / MD-11 (MLG)

2.4

AXLE-JACKS | FLY-AWAY AXLE-JACKS (RH-DESIGN)

DESCRIPTION

Our hand-carry axle-jack series called "RH" has been engineered primarily for use in aircraft maintenance. The series can be used with most common narrow-body and wide-body aircraft types.

The RH axle-jacks are a smaller version of the RC axle-jacks and designed for carrying by one person. Our products are built to withstand harsh environmental conditions and rugged use. Safety and "Made in Germany" quality have the highest priority. The RH axle-jacks offer optimum performance for professional use.



PRODUCT FEATURES

- Single manual hand pump
- Nitrated cylinders and rams to guarantee a long and trouble-free life
- Grab handle for hand transportation
- Fixed undercarriage for easy manoeuvring
- With 2 wheels & handle bar, for transportation on the ground
- Skydrol-resistant paint; all other parts are galvanized for corrosion protection
- Label with A / C applications
- Interface for HYDRO proof load equipment

AVAILABLE ACCESSORIES

- wooden box
- Aluminium box

BENEFITS

- High quality made in Germany
- Long life-cycle
- CE-marked
- Robust and proven design
- Easy maneuvering due to optimized undercarriage
- At least 10 year spare part availability



TECHNICAL SPECIFICATION

FLY-AWAY AXLE-JACK (RH-DESIGN)

Model-No.	RH1029	RH1606
Capacity	10 t 11 tons	16 t 11 tons
Min. height	145 mm 5.7 inch	159 mm 6.3 inch
Max. height	450 mm 17.7 inch	390 mm 15.4 inch
Application	A220-100/ -300 (NLG) A320 Family (MLG) AN-140 (NLG & MLG) AN-148 / AN-158 (NLG) B717 / B737 Family incl. MAX (NLG) BAe 146/ AVRO RJ / CRJ700 / CRJ900 (NLG) Dash-8 / DC-9 / MD-80 / MD-90 (NLG) Embraer 170 / 175 / 190 (NLG) Fokker 27 / 28/ 50 (NLG & MLG) Fokker 70 /60 / 100 (NLG) CS100 / CS300 / MC-21 / SSJ100 (NLG) CRJ100 / CRJ200 (MLG)	A320 Family incl. NEO (NLG) B737-300 to -900 incl. B737-7/-8/-9 MAX (NLG)

2.5

AXLE-JACKS | FLY-AWAY AXLE-JACKS (RC-DESIGN)

DESCRIPTION

Our fly-away axle-jack series called "RC" has been engineered primarily for use in aircraft maintenance. The series can be used with most common narrow-body and wide-body aircraft types.

The RC axle-jacks have a compact and modular design used throughout that allows them to be configured according to your specific requirements. Our products are built to withstand harsh environmental conditions and rugged use. Safety and "Made in Germany" quality have the highest priority. The RC axle-jacks offer optimum performance for professional use.



PRODUCT FEATURES

- Hand pump with low and high pressure unit
- Fixed undercarriage for easy maneuvering
- Tow-bar for movement and transportation
- Skydrol-resistant paint; all other parts are plated for corrosion protection
- Label with A / C applications
- Factory proof load at 150% of nominal capacity, including Proof Load Certificate
- Interface for HYDRO proof load equipment

BENEFITS

- High quality made in Germany
- Long life-cycle
- CE-marked
- Robust and proven design
- Easy maneuvering due to optimized undercarriage
- At least 10 year spare part availability
- On-site service

AVAILABLE ACCESSORIES

DRIVE UNITS

- Air-hydraulic pump

SAFETY LOCK NUT

- Manually operated safety lock nut

CASTORS

- Spring loaded castors with tow-bar
- Spring loaded castors with dampened tow-bar

TRANSPORTATION

- Wooden box
- Aluminium box



TECHNICAL SPECIFICATION

COMPACT AXLE-JACK (RC-DESIGN)

Model-No.	RC4509	RC6010	RC9002
Capacity	45 t 49.6 tons	60 t 66.1 tons	90 t 99 tons
Min. height	190 mm 7.5 inch	246 mm 9.7 inch	261 mm 10.2 inch
Hydr. lift	313 mm 12.3 inch	328 mm 12.9 inch	324 mm 12.7 inch
Screw ext.	70 mm 2.8 inch	121 mm 4.8 inch	112 mm 4.4 inch
Max. height	573 mm 22.6 inch	695 mm 27.4 inch	697 mm 27.4 inch
Application	A300 / A310 (NLG & MLG) A320 Family incl. NEO (NLG & MLG) A330-200 / -300 / A350-900 (NLG) A340-200 to -600 B707 / B727 / (NLG & MLG) B717 / B737-100 / -200 (MLG) B737-300 to -900 incl. MAX 7/8/9 (NLG & MLG) B757-200 / -300 (NLG & MLG) B767-200/ -300/ -400ER (NLG) B777-200 / -200ER / -300 / -200LR / -300ER (NLG) B787-8/ -9 (NLG) MD-80 / MD-90 (MLG) Embraer 170 / 175 / 190 / 195 (NLG & MLG) DC-10 / MD-11 / L-1011 (NLG) MC-21 (MLG)	A220-100/ -300 (NLG & MLG) A300 / A310 (NLG & MLG) A320 Family (NLG & MLG) A330 (NLG & MLG) A340-200 / -300 (NLG & MLG & CLG) A340-500 / -600 (NLG & CLG) A380 NLG B707 / B727 (NLG & MLG) B717 / B737-100 to -900 incl. MAX (MLG) B747-8 / B777 (NLG) B747-100 to -400 (NLG & MLG) B757 / B767 / B787-8 / -9 (NLG & MLG) DC-10 / MD-11 / L1011 (NLG & MLG) CS100 / CS300 (NLG & MLG) Embraer 190 / 195 (MLG) MC-21 (MLG)	A220-100/ -300 (NLG & MLG) A300 / A310 / A320 Family incl. NEO (MLG) A330-200 / -300 (NLG & MLG) A340-200 / -300 (NLG & MLG & CLG) A340-500 / -600 (NLG & MLG & CLG) A350-900 (NLG & MLG) B707 / B737-100 to -900 incl. MAX (MLG) B727 (NLG & MLG) B747-100 / -200 / -300 (NLG & MLG) B747-400 / -400ER / -8 (NLG & MLG) B767-200 / -300 / -400ER (NLG & MLG) B777-200 / -200ER / -300 / -200LR / -300ER (NLG & MLG) B787-8 / -9 / (NLG & MLG) CS100 / CS300 (NLG & MLG) DC-10 / MD-11 / MC-21 / L-1011 (MLG)

2.6

AXLE-JACKS | RECOVERY AXLE-JACK (RL-DESIGN)

DESCRIPTION

Our recovery axle-jack series called "RL" has been engineered primarily for use in aircraft recovery maintenance tasks. The series can be used with most common narrow-body and wide-body aircraft types.

The key feature of the RL axle-jack is the extremely low lifting point. Our products are built to withstand harsh environmental conditions and rugged use. Safety and "Made in Germany" quality have the highest priority. The RL recovery jacks offer optimum performance for professional use.



PRODUCT FEATURES

- Hand pump with low and high pressure unit
- Ram set salt-bath nitrided and polished
- Manually operated safety lock nut
- Force indicator, e.g. bar/kN, bar, psi, ...
- Tow-bar
- Interface for HYDRO proof load equipment
- Hydraulic undercarriage
- Skydrol-resistant paint
- Label with A/C applications
- Interface for HYDRO proof load equipment
- Factory proof load at 150% of nominal capacity, including Proof Load Certificate

OPTIONS

- Hydraulic height-adjustable undercarriage

BENEFITS

- High quality made in Germany
- Long life-cycle
- CE-marked
- Robust and proven design
- Easy maneuvering due to optimized undercarriage
- At least 10 year spare part availability



TECHNICAL SPECIFICATION

RECOVERY AXLE-JACK (RL-DESIGN)

Model-No.	RL9004	RL3015
Capacity	90 t 99.2 tons	30 t 33.1 tons
Min. height	70 mm 2.8 inch	73 mm 2.9 inch
Hydr. lift	580 mm 22.8 inch	564 mm 22.2 inch
Max. height	650 mm 25.6 inch	637 mm 25.1 inch
Application	A300 / A310 (MLG) A330 / A340 (NLG & MLG) A340-500 / -600 (CLG) A350-900 / -1000 (MLG) A380 (NLG & WLG) B707 (MLG) B737-100 to -900 incl. MAX (MLG) B777 (MLG) B727 / B767 / B787 (NLG & MLG) B747 (NLG & MLG & WLG) MD-11 (MLG)	A319 / A320 / A321 (NLG) A220-100 / -300 (NLG & MLG) A330-300 / A340-300 (NLG) B737-100 to -500 (NLG & MLG) B737-700 to -900 (NLG) B737-7 / -8 / -9 MAX (NLG) An-148 / An-158 (NLG & MLG) Embraer 170/175/190/195 (NLG & MLG) CS100 / CS300 (NLG & MLG)



2.7

AXLE-JACK HOSE PRESSURE KIT

DESCRIPTION

The axle-jack hose pressure kit is primarily designed to allow the aircraft tyre gas to operate the axle jack.

The axle-jack hose kit features an overall length of 4-meters to allow good flexibility around the aircraft when changing the wheel and operating the axle jack as well as allowing a safe working distance for the operator.

Equipped with an integrated isolation valve, the operator can accurately control the gas flow from the wheel to the axle jack making for a safe operation.

The hose features a safe screw-on valve adapter which interfaces with the aircraft wheel offering added safety to the user when working with high pressure gases.



PRODUCT FEATURES

- 4-meter length hose
- Isolation valve to control gas flow
- Double braided hose with rubber covering
- Safe screw-on tyre valve adapter

BENEFITS

- Optimal efficiency
- Accurate gas flow control
- Allows the operator flexibility when in use

AVAILABLE ACCESSORIES

- Fitment to 8V size tyre valves and axle jack
- Fitment to 12V size tyre valves and axle jack
- Fitment to 8V and 12V size tyre valves and axle jack



3

TOWING & TAXING ATA CHAPTER 09

3.1

TOW-BAR (STANDARD)

DESCRIPTION

Our standard tow-bar series for most common commercial, business and military aircraft is called "TOW". It has been engineered primarily for use in aircraft maintenance. This standard tow-bar covers one dedicated aircraft type.

Our tow-bars are designed in accordance with the requirements from aircraft manufacturers and the applicable norms and standards. They fit perfectly to the operator's needs. The free-floating axle enables easy connection to the NLG. The maintenance-free hand pump with integrated spring and dead man's circuit guarantees high safety and outstanding accuracy. Customers all over the world trust in the outstanding quality made in Germany.



PRODUCT FEATURES

- Rigid tow head, clamp type
- Rigid tow eye diameter 3" (76.2 mm)
- Main tube made of high strength steel
- Maintenance free hand pump with integrated spring and dead man circuit for high safety
- Shear pin for push/pull and torque and retaining pin for maximum safety
- Hydraulically height adjustable undercarriage with floating axle system and pneumatic tires
- Tube-mounted spare shear pin holder incl. spare shear pins
- Skydrol-resistant paint
- Label with A/C applications
- All in one system (integrated cylinder, hand pump, oil reservoir and return spring)
- Encapsulated hydraulic system (no rubber hoses, no fittings)
- Death man circuit
- Maintenance free
- Fast and easy replacement of the hand pump
- Tow head design integrated shear pins and retaining pin
- Wide range of available options

BENEFITS

- High quality made in Germany
- Designed to norms
- Long life-cycle
- CE-marked
- Ergonomic design
- Maintenance free worldwide unique new hand pump system
- Easy maneuvering due to optimized undercarriage with integrated floating axle system
- At least 10 year spare part availability
- On-site service

OPTIONS**Tow Head**

Revolving tow head

Tow Eye

- Revolving tow eye
- Revolving tow eye with shock absorber

Undercarriage

Height-adjustable undercarriage with solid rubber tires

**TECHNICAL SPECIFICATION****TOW-BAR (STANDARD)**

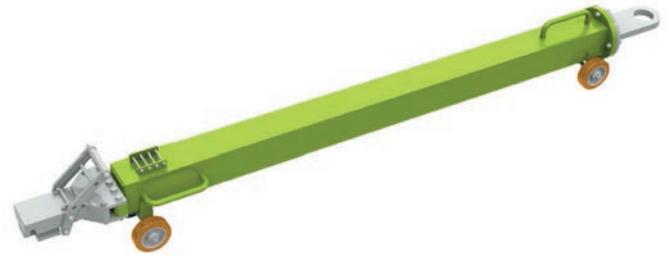
Model-No.	TOWB737S	TOWUNIV3
Length	5,219 mm 205.5 inch	5,309 mm 209.0 inch
Weight	241,4 kg 532.2 lbs	258 kg 568.8 lbs
Application	B737-300 to -900 B737-7 / -8 / -9 MAX	A320 Family incl. NEO B737-300 to -900 B737-7 / -8 / -9 MAX

3.2

TOW-BAR (FLY-AWAY)**DESCRIPTION**

Our fly-away tow-bar series has been designed for most common commercial, business and military aircraft. It has been engineered primarily for use in aircraft maintenance. This fly-away tow-bar covers one dedicated aircraft type, is weight optimized and easily to disassemble.

Our tow-bars are designed in accordance with the requirements from aircraft manufacturers and the applicable norms and standards. They fit perfectly to the operator's needs. Customers all over the world trust in the outstanding quality made in Germany.

**PRODUCT FEATURES**

- Rigid tow head, clamp type
- Rigid tow eye diameter 3" (76.2 mm)
- Main tube made of high strength steel
- Shear pin for push/pull and torque and retaining pin for maximum safety
- Temporary auxiliary undercarriage with full rubber tires (for instance mountable/removable)
- Skydrol-resistant paint
- Label with A/C applications
- Tow head design integrated shear pins and retaining pin

AVAILABLE ACCESSORIES**Transportation Box**

Wooden box (33184-004-000)

BENEFITS

- High quality made in Germany
- Designed to norms
- Long life-cycle
- CE-marked
- Ergonomic and light design
- Easy maneuvering due to convertible undercarriage
- At least 10 year spare part availability
- On-site service



TECHNICAL SPECIFICATION

TOW-BAR (FLY-AWAY)

Model-No.	TOWB737-AZ
Length	2,400 mm 94.5 inch
Weight	103 kg 114.6 lbs
Application	B737-100 to -900 B737-7 / -8 / -9 MAX

3.3

TOW-BAR (MULTI CONCEPT)**DESCRIPTION**

Our multi tow-bar series for most common commercial, business and military aircraft is called "TOWMULTI". It has been engineered primarily for use in aircraft maintenance. The TOWMULTI system allows you to handle different types of aircraft by simply replacing the tow-head.

All tow-bar components such as the tube, undercarriage and tow eye are bolted rather than welded. This modular concept provides maximum flexibility and radically simplifies equipment maintenance.

Our tow-bars are designed in accordance to the requirements from aircraft manufacturers and the applicable norms and standards. They perfectly match the operator's needs and fit various aircraft types. Customers all over the world trust in the outstanding quality made in Germany.

**PRODUCT FEATURES**

- Main tube made of high strength steel without tow head
- Rigid tow eye diameter 3" (76.2 mm)
- Hydraulically height adjustable undercarriage with floating axle system and pneumatic tires
- Tube-mounted spare shear pin holder
- Skydrol-resistant paint
- Label with A / C applications
- Tow head design integrated shear pins and retaining pin

BENEFITS

- High quality made in Germany
- Designed to norms
- Long life-cycle
- CE-marked
- Ergonomic and light design
- Easy maneuvering due to convertible undercarriage
- At least 10 year spare part availability
- On-site service

OPTIONS

Tow Eye

- Revolving tow eye
- Revolving tow eye with shock absorber

Undercarriage

Height-adjustable undercarriage with floating axle system and solid rubbertires

AVAILABLE ACCESSORIES

Interchangeable Tow Head

- TOWHEAD-2B Clamp type tow head for B737-300 to -900 incl. MAX



- TOWHEAD-2C Clamp type tow head for A320 Family incl. NEO



TECHNICAL SPECIFICATION

TOW-BAR (FLY-AWAY)

Model-No.	TOWMULTI-2	TOWHEAD-2B
Length	4,710 mm 185.4 inch	490 mm 19.3 inch
Weight	181 kg 399 lbs	28 kg 61.7 lbs
Application	Depending on the mounted tow head	B737-300 to -900 B737-7 / -8 / -9 MAX

3.4

DEBOGGING LOAD LIMITER

DESCRIPTION

For debugging purpose we offer an electro-hydraulic load limiter. Debugging kits are used to pull an aircraft back on the runway. They are usually mounted at the main landing gears. It is recommended to use the debugging kit in combination with a load limiter. This mechanical load disconnection is resettable, with no need to replace destroyed parts after max. traction power.



PRODUCT FEATURES

- Precise load measuring with a strain gauge based dynamometer
- Mechanical load release at a pre-set load point (electro-hydraulic principle)
- Radio controlled
- Integrated power supply (standard battery)

OPTIONS

- Card reader for data storage and documentation
- Radio controlled handheld receiver for monitoring of the current load

BENEFITS

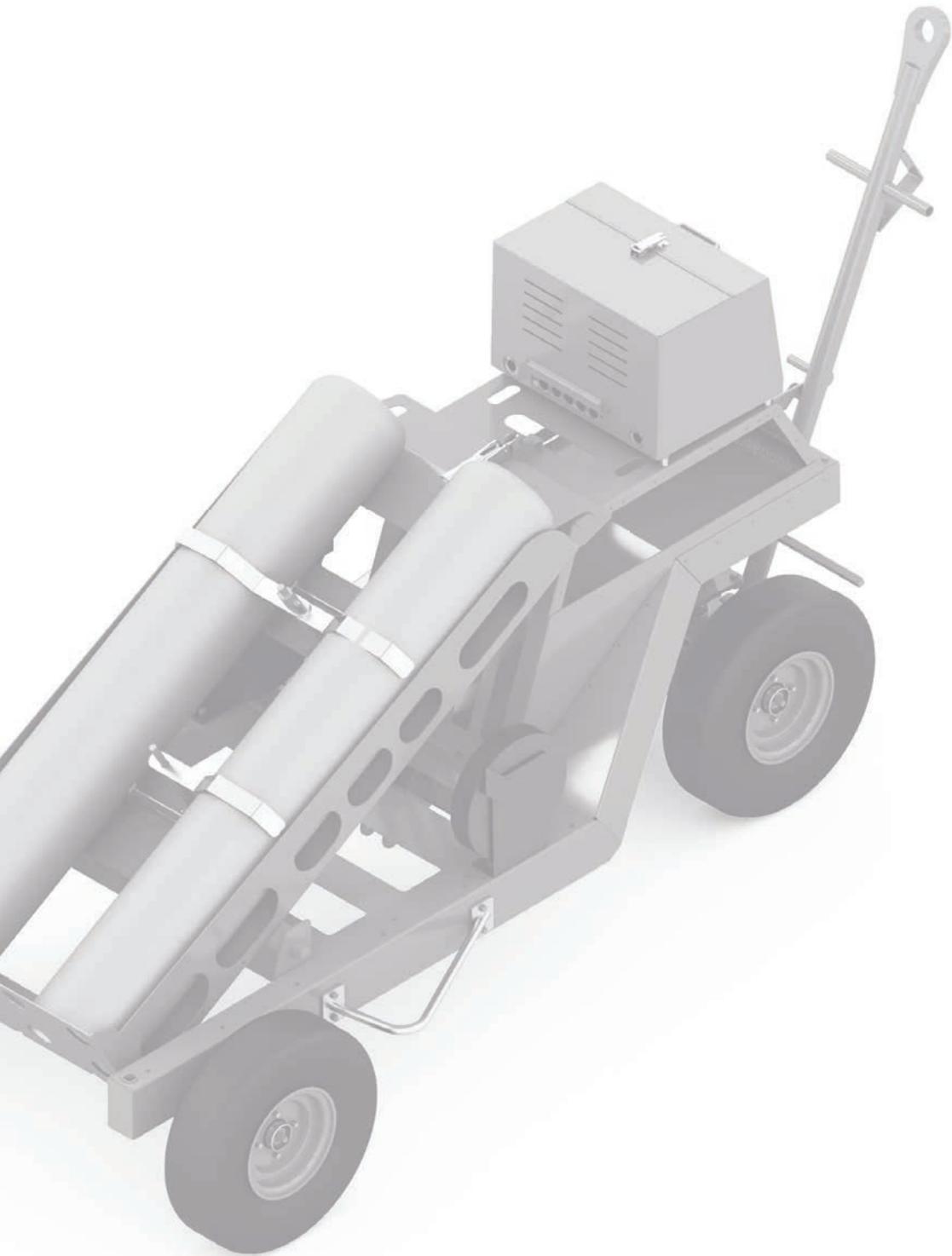
- High quality made in Germany
- Fully controlled operation
- Long life-cycle
- CE-marked
- Ergonomic and light design
- At least 10 year spare part availability
- On-site service



TECHNICAL SPECIFICATION

DEBOGGING LOAD LIMITER

Model-No.	SG224
Length	861 mm 33.9 inch
Width	299 mm 11.8 inch
Height	299 mm 11.8 inch
Weight	55 kg 121.3 lbs
Max. Capacity	30 t



4

SERVICING

ATA CHAPTER 12



4.1

OXYGEN SERVICE CART

DESCRIPTION

The Oxygen service cart is available as two or four bottle variants. The unique design allows all oxygen cylinders to be loaded or off-loaded simultaneously by a single person. This specific design incorporates all relevant occupational health and safety requirements for manual handling and allows operators to undertake their desired tasks safely and efficiently.

The certified charging panel is housed within a waist-height weatherproof cabinet and features one calibrated inlet pressure gauge and one calibrated outlet pressure gauge. To minimize static and heat build-up from fast flowing oxygen bottle gas, the charging panel inlet features heavy-duty brass heat-soak stems along with oxygen grade hose and piping.

The charging configuration (2,400 psi) is operated by a self-venting regulator, secondary isolation valve and features a built-in excess pressure relief valve allowing optimum pressure settings to be achieved.

All components associated with the oxygen service cart are oxygen cleaned, certified and traceable. The 4-bottle easy load oxygen cart features inert, oxygen safe fluid within the hydraulic cylinder tray operating system.



PRODUCT FEATURES

- Self-venting regulator and secondary isolation valve
- Auto retractable hose reel with 9-metre hose
- Easy load cylinder stowage tray (manual operation for 2-bottle variant and hydraulic operation for 4-bottle variant)
- Earth grounding reel and cable
- 50 mm towing eye
- Ground Support Equipment BS EN compliant and CE marked
- Calibrated and certified
- Spare parts and components readily available
- Finish: Zinc phosphate primer with top layer powder-coat finish in RAL1028 (yellow)
- Modular charging system
- Self-venting regulator
- Easy-load system
- Pressure relief and isolation valves
- Heat soak

BENEFITS

- Safety and reliability
- Unrivalled quality
- CE-marked
- Ergonomic design
- On-site service
- Modular charging system
- Easy-load system

OPTIONS

- 2-bottle variant or 4-bottle variant
- Fully fitted gas booster allows intensified outlet pressure & full cylinder consumption
- In-situ cylinder re-fill port - Integrated re-fill port allows cylinder refill without removing cylinders
- Any colour paint finish - RAL code is required to allow for different paint colour
- Different size towing eye
- Weather-proof cover
- Powder fire extinguisher - 3 kg powder fire extinguisher and retaining bracket
- Self-venting regulator
- Pressure relief and isolation valves

AVAILABLE ACCESSORIES**Country compatible cylinder connectors**

- UK oxygen bottle connection
- German oxygen bottle connection
- French oxygen bottle connection
- USA / North America / Singapore bottle connection

**TECHNICAL SPECIFICATION**

	NBNT
Lenght	2700 mm 106.3 inch
Width	1324 mm 52.1 inch
Height	1441 mm 56.7 inch



4.2

NITROGEN SERVICE CART

DESCRIPTION

The Nitrogen service cart is available as two or four bottle variants. The unique design allows all nitrogen cylinders to be loaded or off-loaded simultaneously by a single person. This specific design incorporates all relevant occupational health and safety requirements for manual handling and allows operators to undertake their desired tasks safely and efficiently.

The dual use colour coded low and high pressure certified nitrogen charging panel housed within a waist-height weather-proof cabinet features one calibrated inlet pressure gauge, one calibrated LOW outlet pressure gauge and one calibrated HIGH outlet pressure gauge.

The low pressure 330 psi and high pressure, 3,300 psi nitrogen charging configuration is operated by self-venting regulators, secondary isolation valves and features built-in excess pressure relief valves, allowing for optimum pressure settings to be achieved when undertaking nitrogen servicing and replenishment tasks.



PRODUCT FEATURES

- Self-venting regulators and secondary isolation valves
- Auto retractable hose reels each with 9-metre hose
- Easy load cylinder stowage tray (manual operation for 2-bottle variant and hydraulic operation for 4-bottle variant)
- 50mm towing eye
- Ground Support Equipment BS EN Compliant and CE marked
- Calibrated and certified
- Spare parts and components readily available
- Finish: Zinc phosphate primer with top layer powder-coat finish in RAL1028 (yellow)
- Modular charging system
- On-site service
- Dual use charging system; Low pressure and high pressure charging systems are integrated inside a single box
- Pressure relief and isolation valves

BENEFITS

- Safety and reliability
- Easy-load system
- Unrivalled quality
- Ergonomic design
- Modular charging system
- On-site service

AVAILABLE ACCESSORIES**Country compatible cylinder connectors**

- UK nitrogen bottle connection
- German nitrogen bottle connection
- French nitrogen bottle connection
- USA / North America / Singapore bottle connection

OPTIONS

- bottle variant or 4-bottle variant
- Fully fitted gas booster allows intensified outlet pressure & full cylinder consumption
- In-situ cylinder re-fill port - Integrated re-fill port allows cylinder refill without removing cylinders
- Any colour paint finish - RAL code is required to allow for different paint colour
- Different size towing eye
- Weather-proof cover

**TECHNICAL SPECIFICATION**

	NBOT
Lenght	2700 mm 106.3 inch
Width	1324 mm 52.1 inch
Height	1441 mm 56.7 inch



4.3

AIRCRAFT WHEEL AND BRAKE CHANGE TRAILER

DESCRIPTION

The aircraft wheel and brake change service support trailers have been primarily designed to aid with fast, safe and effective wheel and brake change operations on the ramp, around the airport and even within the hangar.

Designed to accommodate any two aircraft wheels (up to A380 size), one wheel and brake change dolly, one axle-jack and a multitude of aircraft tooling, the Newbow Aerospace wheel and brake change trailer is the ultimate aviation mobile service support centre. The trailer is accessed via the spring balanced rear ramp door that offers a minimal gradient, which allows one person to easily load and off-load large aircraft wheels and the axle-jack. Inside the trailer is a centrally mounted (removable) workbench that allows operators to undertake any additional tasks. The front mounted towing arm features an integrated double acting parking brake.

The nitrogen system consists of a modular weatherproof charging cabinet featuring a calibrated low and high pressure configuration, two auto-retractable hose reels, a cylinder connection manifold and two gas cylinder stowage points and restraints. In addition, the aircraft wheel and brake change



trailers can be fully customized ahead of manufacture to meet any individual and operator requirements. In association with our strategic partner network, global re-calibration, service, repair and overhaul of the nitrogen cabinet is offered along with a charging system exchange scheme.

PRODUCT FEATURES

- Fully enclosed or open top
- Spring assisted low gradient rear ramp door
- Towing arm with integrated double acting parking brake
- Front axle and enclosed turntable assembly
- 2-pack paint finish, skydrol resilient
- Operational payload 1000 kg as standard
- Stowage for 2 x wheels, 1 x axle jacks, 1 x
- Brake pack, 1 x wheel dolly & tooling
- Front mounted tool box or nitrogen
- Charging system
- Internal workbench (removable)
- Ground Support Equipment BS EN and H&S compliant
- Certified
- Serviceable
- Fully traceable
- Reliable, robust and safe
- NBWBCT-70280 & 70275 Feature extra side ramp door
- NBWBCT-70280 & 70275 can store additional contents
- Optional modular nitrogen system
- Side and rear access ramps
- Adjustable ride height rear suspension
- Overrun braking system with braked hubs

BENEFITS

- CE marked
- Ground Support Equipment BSEN Compliant
- Ergonomic Design
- Easy loading and off-loading

OPTIONS

- Standard or Nitrogen configuration
- Any colour paint finish
- Customer corporate logos
- Fully customized solutions available

AVAILABLE ACCESSORIES

- Country compatible gas cylinder connections (N2 Option)
- Mobile wheel mover

**TECHNICAL SPECIFICATION**

Trailer	Length	Width	Height
NBWBCT-70280	4666 mm	2400 mm	2102 mm
NBWBCT-70275	4666 mm	2400 mm	2102 mm
NBWBCT	3486 mm	2336 mm	1997 mm
NBWBCT-N2	3486 mm	2336 mm	1997 mm
NBWBCT-70281 (Open Top)	3486 mm	2336 mm	1384 mm
NBWBCT-70282 (Open Top)	3486 mm	2336 mm	1384 mm

4.4

FLUID DISPENSER

DESCRIPTION

The fluid dispenser allows serving aircraft hydraulic reservoirs, engines, APU, IDG, CSD, landing gear struts, thrust reversers, actuators and many more.

PRODUCT FEATURES

- Translucent specially formulated polyethylene reservoir, compatible, for all fluids
- Easy fluid level control
- Screwed filler cap, big size
- Colored fluid placard
- Galvanized steel handle
- Hand pump, stainless steel shaft and laminated aluminum handle (Double sealed with relief valve)



BENEFITS

- CE-marked
- Ergonomic design
- On-site service

OPTIONS

Dispenser sizes

- 2 US gallon (7.6 litres)
- 5 US gallon (19 litres)
- 20 US gallon (76 litres)

Fluid Designation & Placard

- | | |
|--------------------|---------------------|
| ▪ A - EXXON 2380 | ▪ F - 2197 |
| ▪ B - ENGINE OIL | ▪ G - SKYDROL |
| ▪ C - MOBIL 254 | ▪ H - HYDRAULIC OIL |
| ▪ D - 5606 | ▪ K - HYJET IV |
| ▪ E - MOBIL JET II | ▪ L - CSD/IDG |



TECHNICAL SPECIFICATION

FLUID DISPENSER

Model-No.	BOB02	BOB05	BOB20
Reservoir capacity	7.6 litres (2 US gallon)	19 litres (5 US gallon)	76 litres (20 US gallon)
Pump outlet pressure	175 psi 79–83 kPA	175 psi 79–83 kPA	175 psi 79–83 kPA
Volume per stroke	7.2 cubic in. / 120 cc	7.2 cubic in. / 120 cc	7.2 cubic in. / 120 cc
Hose length	7' / 2.2 m	15' / 4.5 m	15' / 4.5 m
Net weight (empty)	14 lbs / 6.36 kg	48 lbs / 21.77 kg	74 lbs / 33.60 kg
Filter rating	10 Micron (nominal)	10 Micron (nominal)	10 Micron (nominal)
Dimensions	total height: 428 mm (16.82") total length: 314 mm (12.36") width: 267 mm (10.50")	total height: 1,028 mm (40 1/2") total length: 603 mm (23 3/4") width: 464 mm (18 1/4")	total height: 1,028 mm (40 1/2") total length: 603 mm (23 3/4") width: 464 mm (18 1/4")



4.5

AIRCRAFT TYRE PRESSURE GAUGES

DESCRIPTION

The aircraft tyre pressure checking gauges are offered in a wide range of configurations allowing coverage of all make and model aircraft.

Each tyre pressure gauge is calibrated to an accuracy of +/-1% allowing optimum aircraft tyre pressure settings to be achieved.

The 100 mm pressure gauge dial face allows instant visibility of the tyre pressure making the operators task very efficient in any environment.

The wide range of push-on tyre valve adapters are designed to interface with 8V and 12V tyre valves and cover any tyre aircraft in service.



PRODUCT FEATURES

- Calibrated accuracy +/-1%
- EN837-1 Compliant
- Single scale dial
- 260, PSI, 300 PSI, 400 PSI, 450 PSI, 500 PSI ranges available
- Shatter Proof lens
- 100 mm dial for easy visibility
- Protective rubber cover
- 45 0mm air hose assembly
- Wide range of adapter to interface with the tyre valve
- Released with calibration test certificate

BENEFITS

- Accurate tyre pressure setting
- Easy to use
- Ergonomic design
- Instant pressure visibility
- Suitable for any aircraft



4.6

AIRCRAFT TYRE INFLATION

DESCRIPTION

The aircraft tyre inflation tools and kits are offered in a wide range of configurations allowing coverage of all make and model aircraft.

The 350 psi inflation tool allows accurate inflation of the aircraft tyre as well as vent capability.

An optional excess pressure relief valve can be integrated allowing automatic venting of inflation gas, factory pre-set to vent between 150 psi and 350 psi.

The tyre inflation kits can be provided with a range of inflation hoses each at a two-metre length to allow a safe working distance for the operator. The inflation hoses all feature safe screw-on thread type inflation adapters offering added safety during the tyre inflation procedure.



PRODUCT FEATURES

- Calibrated accuracy +/-1.5%
- EN837-1 compliant
- Single scale dial
- 350 psi working pressure
- Shatter proof lens
- Inflation & deflation capability
- Pre-use accuracy check
- 2-meter length inflation hoses
- Compatible inflation tool and hoses
- Released with calibration test certificate

BENEFITS

- Accurate tyre inflation
- Operator safety
- Easy to use
- Safe working distance



5

EQUIPMENT / FURNISHING ATA CHAPTER 25

HYDRO
PARTNER PRODUCT

5.1

CABIN INTERIOR ACCESS STAND

DESCRIPTION

The Liftsafe DF071553-01 Cabin Interior Access Stand is ideal for use in the economy aisle and is designed to fit over most economy and some business class seats. It has been designed as a single worker unit with a capacity of 330 lbs. It is collapsible for easy carrying and storage. The ladder is of durable construction made primarily of structural aluminum with stainless steel hardware and a self-weight of only 25 lbs. Anti-slip ladder rungs ensure maintenance staff and employee safety during operation.

The Cabin Access Stand is ideal for ramp use and can easily be carried up ramp stairs.

The ladder is designed and tested in accordance with ANSI-ASC A14.7 and BS EN 131.7 including CE Certification.



PRODUCT FEATURES

- Padding Material
- 1 Person Movement
- Material Type: Polished Aluminum
- B737 Access to Cabin Economy Seats
- A350 Access to Cabin Economy Seats
- Collapsible
- Anti-Slip Ladder Rungs
- Padding Material Equipped
- High Grade Materials
- Rigorous Inspection and Testing

BENEFITS

- Safety and reliability
- Ergonomic design
- Unrivalled quality and durability



TECHNICAL SPECIFICATION

DF071553-01	
Certifications	ANSI-ASC A14.7, BS EN 131.7 & CE
Dimensions (shipping)	16 1/2" x 47 5/8" x 36 1/8" x 25 lbs
Height	lowered: 47 5/8"
Foot Print	16 1/2" x 36 1/8"



6

HYDRAULIC POWER ATA CHAPTER 29

HYDRO
PARTNER PRODUCT
TESTAUGLE

6.1

HYDRAULIC GROUND POWER UNIT

DESCRIPTION

Hydraulic Ground Power Unit used for maintenance and testing of mainline aircraft hydraulic systems. It has been designed for all aircraft types with 3000psi or 5000psi hydraulic systems and a flow rate of up to 60USgpm.



PRODUCT FEATURES

- Single system or dual independent system (two motors and two pumps).
- Suitable hydraulic supply for "Ram Air Test Ground Checks" together with the Airbus certified TEST-FUCHS RAT Tester
- Automatic over temperature shutoff feature at 160°F (70°C)
- Ramp function for soft pressure build-up
- Pressure and flow rates are infinitely variable and limitable
- The stainless steel hydraulic reservoir has a capacity of 63USgal (240l)
- Hydraulic reservoir selection (A/C or >HGPU<) via illuminated buttons on the control panel
- Two large fan operated oil-air coolers ensure optimum cooling
- Maximum towing speed is 15mph (25km/h)
- When parked the control panel is protected ("Weatherproof Cover for Control Panel")
- Dual system without a transfer gearbox (to prevent hydraulic/lubricating oil contamination)
- Large fuel tank (53USgal (200l)) fitted to diesel version enabling 8 hours of continuous operation
- Flushing circuit with loading system
- Filter (25 micron) in the return line
- Required hose lengths differing from the standard 33ft (10m) for Single System and 39ft (12m) for Dual System must be specified by customer.
- Electrical soft start
- Sampling points
- Connected Mode with Dual System. The hose lengths will be 33ft long.
- Cover colour change from standard blue (RAL 5017)/light grey (RAL 7035). The required colour combination must be specified by the customer including the RAL standard.
- Changes to the standard languages (German, English, Russian, Spanish) for front panel markings must be clearly defined by the customer as an additional requirement.
- Dual Output Kit for >HGPU< with Single System
- Spring-loaded chassis
- Water separation system

BENEFITS

- Airbus certified
- Easy draining and filling of the aircraft reservoirs
- User friendly ergonomic setup and operation
- world-wide universal connection (compatible with multiple voltages)
- For hangar and outdoor usage

OPTIONS

FLOW MEASUREMENT WITH DIGITAL INDICATOR

- Single system 2 to 66 USgpm (10 to 250 l/min), +/-1% of full scale
- Dual system (independent) 1.3 to 42 gpm (5 to 160 l/min)

LEAKAGE MEASUREMENT

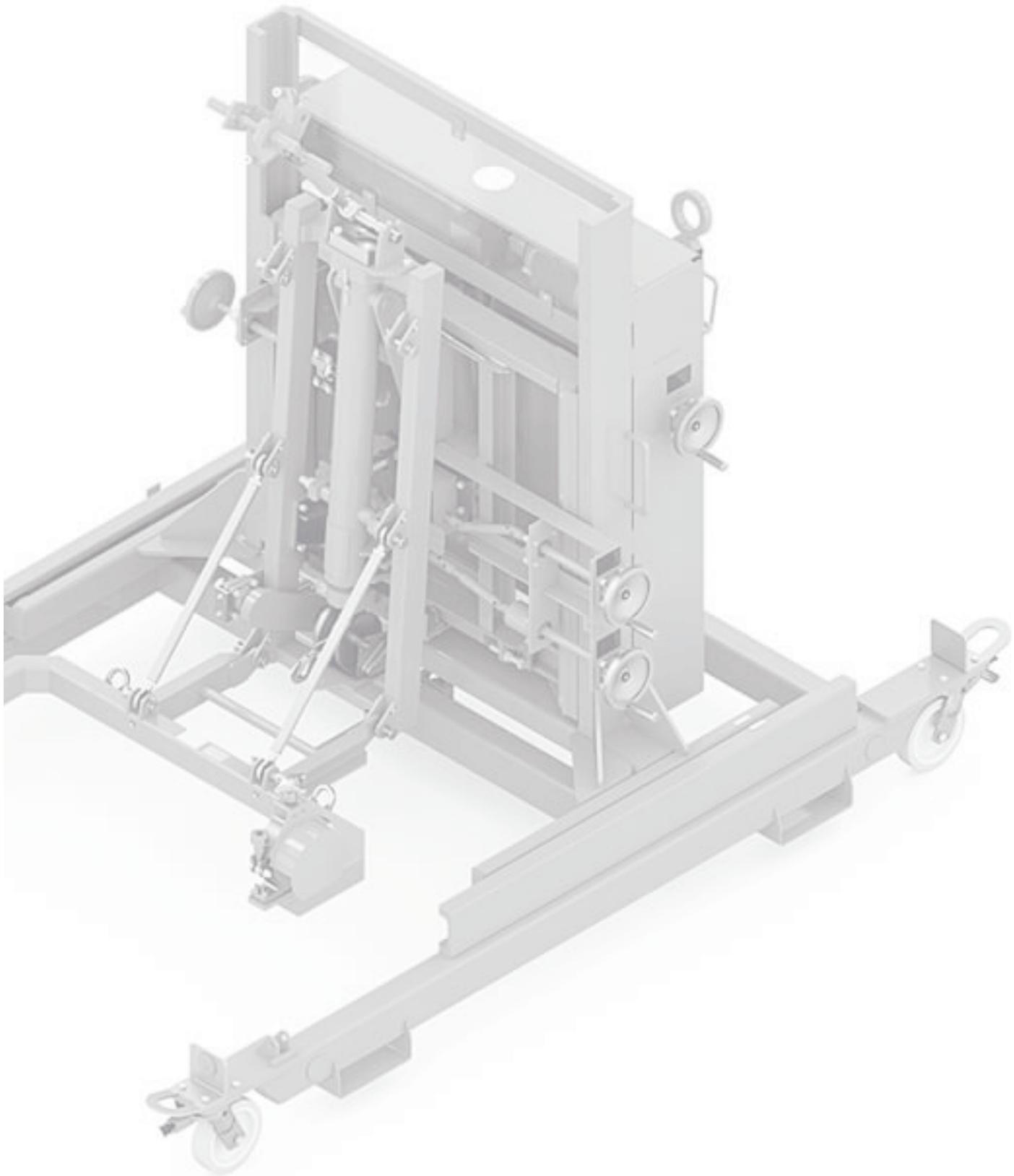
- 0.08 to 5.3 USgpm (0.32 to 20 l/min), +/-1% of full scale
- 0.11 to 10.6 USgpm (0.40 to 40 l/min), +/-1% of full scale



TECHNICAL SPECIFICATION

HYDRAULIC POWER

Model-No.	Electric Motor driven	Diesel engine driven
Dimension	3800 x 1800 x 1700 mm	4600 x 1800 x 2100 mm
Weight	2500 kg	3200 kg
Operating ambient temperature	-25 to +45 °C (-13 to +113 °F)	-25 to +45 °C (-13 to +113 °F)
Noise emission	max. 75dB at 1m distance	Approx. 84 dB (A) at control panel
Electrical supply	3/PE AC 50-60Hz 400V	-
Power	Approx. 86-104 kVA	-
Measurement accuracy		
Supply pressure (analog)	0-5800psi (0-400bar), cl. 1 (EN 837)	
Return pressure (analog)	0-145psi (0-10bar), cl. 1.6 (EN 837)	
Oil temperature indicator	0-100°C	
Flow measurement	single circuit 0.08-66gpm (0.32-250lpm) +/- 1% of full scale dual circuit 0.08-42 gpm (0.32-160lpm) +/- 1% of full scale	
Filter	3 micron in filling circuit, 6 micron in each low and high pressure circuit, 25 micron in return	
Depending on the type of equipment, the following hydraulic oils can be used	Phosphate-Ester Hydraulic Oil ("Skydrol" or "Hyjet") or Mineral Oil based Hydraulic Oil ("MIL-H-5606", "MIL-H-83282", "MIL-H-87257)	



7

LANDING GEAR ATA CHAPTER 32

7.1

WHEEL AND BRAKE CHANGE EQUIPMENT (UNIVERSAL)

DESCRIPTION

The HYDRO hydraulic wheel trolley for removal of wheels and brake drums on aircraft is an accessory from the HYDRO Service Cart and is therefore part of a complete service unit. It allows unloading of the aircraft wheels or brakes which are carried along on the service cart. A special adapter at the back of the service cart is designed to carry along the wheel/brake changer on the service cart



PRODUCT FEATURES

- Movable frame with lifting unit
- High lifting height makes it ideal for lifting
- Manually adjustable lifting arms for wheel sizes \varnothing 650 – 1500 mm
- Swivelling crane for easy installation of slings
- 2 swivel castors and 2 360° revolving castors
- Skydrol-resistant paint; standard color: yellow RAL 1028

BENEFITS

- User friendly ergonomic setup and operation
- Universal application
- On-site service

AVAILABLE ACCESSORIES



Bracket support assembly (24010-031-000)



TECHNICAL SPECIFICATION

WHEEL AND BRAKE CHANGE EQUIPMENT (UNIVERSAL)

Model-No.	MH13 - 003
Nominal load	260 kg 570 lbs
Max. width	1,420 mm 55.9 inch
Max. length	921 mm 36.3 inch
Min. height	980 mm 38.6 inch
Admissible operating temperature	-20°C to +60°C -4°F to +140°F
Weight	170 kg 375 lbs
Application	B737 incl. MAX A318 / A319 / A320 / A321 A319neo / A320neo / A321neo RRJ-95

7.2

BRAKE HOIST

DESCRIPTION

The Brake Hoist HG14-001 is designed for simple changes or transportation of aircraft brakes.

The Brake Hoist is an accessory unit of wheel/brake changers type MH and is therefore part of a complete service unit. It allows simple changes or transportation of aircraft brakes.



PRODUCT FEATURES

- Clevis
- 2 clamping elements for holding the brakes
- Hand wheel for easy operation
- Threaded rod

BENEFITS

- User friendly ergonomic setup and operation
- On-site service
- Universal application



TECHNICAL SPECIFICATION

HOISTING SLING

Model-No.	HG14	HG14-001
Nominal load	200 kg 440 lbs	200 kg 440 lbs
Max. width	741 mm 29.2 inch	786 mm 31.0 inch
Max. length	558 mm 22.0 inch	592 mm 23.3 inch
Max. height	125 mm 4.9 inch	125 mm 4.9 inch
Admissible operating temperature	-20°C to +60°C -4°F to +140°F	-20°C to +60°C -4°F to +140°F
Weight	12 kg 26.4 lbs	13 kg 28.6 lbs
Application	B737-100 to -500	B737-600 to -900

7.3

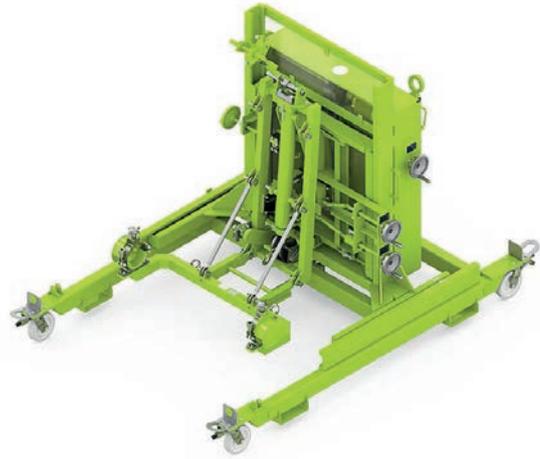
LANDING GEAR REMOVAL / INSTALLATION TROLLEY

DESCRIPTION

HYDRO has developed a new and innovative multi-purpose Main Landing Gear Trolley, the MLGTMULTI-1.

The MLGTMULTI-1 is a one-base platform that efficiently uses changeable frame kits, to replace the main landing gears without wheels and brakes of various narrow body aircraft.

This one-base platform makes the MLGTMULTI-1 a versatile, convenient, and cost-saving trolley choice for servicing the main landing gears on the most popular small aircraft in the world.



PRODUCT FEATURES

- Base frame without A/C specific landing gear frame kit
- Longitudinal frame
- Hand wheel for vertical, transversal or longitudinal movement
- Hand wheel for pitch or yaw movement

BENEFITS

- User friendly ergonomic setup and operation
- Outstanding accuracy
- Universal application
- Operational safety
- Low total cost of ownership
- CRAS certified by LHT

ACCESSORIES

Frame Kit

- for 320 Family - MLGFA320 incl. NEO
- for B737-600 to -900 -MLGFB737NG
- for Embraer E1 (E170 / 175; E190 / 195 - MLGFE1

Scissors pallet truck

For transportation, storage and installation of frame kits. The MLGC01 also serves as strut compression tool for B737-600 to -900.

OPTIONS

- **AB:** Pneumatically driven lifting; Explosion proofed according to NEC500:CI I DIV 2 GP D T3
- **AC:** Electrically driven lifting; 3 Phase AC 380-420V 50 Hz or 3 Phase AC 440-480 60Hz; CE & UL marked



TECHNICAL SPECIFICATION

Model-No.	MLGTMULTI-1	MLGFB737NG
Capacity	1000 kg 10 kN	700 kg 7 kN
Weight	950 kg 2094.4 lbs	38 kg 83.8 lbs
Width	1,882 mm 74.1 inches	98 mm 3.9 inch
Length	2,893 mm 74.1 inch	1,102 mm 43.4 inches
Min. height	1,793 mm 70.6 inches	615 mm 25.6 inches
Longitudinal movement (X-axis)	+/- 175 mm +- 4.9 inches	
Transverse movement (Y-Axis)	+/- 125 mm 4.9 inches	
Yaw (rotation around Z-axis)	+/- 4°	
Pitch (rotation around Y-axis)	+7° (-3° / +4°)	
Total lift	800 mm 31.5 inches	
Towing speed		
▪ with MLG	3 km/h 1.9 mph	
▪ without MLG	6 km/H 3.73 mph	
Application	Universal	B737-600 to -900

HYDRO
PARTNER PRODUCT

7.4

LANDING GEAR CHANGE STAND

DESCRIPTION

This stand is the safest, most efficient solution in accessing the landing gear and wheel wells areas. The Landing Gear Change Stand is an adjustable-height maintenance platform designed for service on landing gear struts and wheel bay access positions. The platform can be used either as a set or separately, based on the work to be performed. This unit also works as a daily maintenance stand.

The freestanding modules are designed for regular maintenance and inspection of your aircraft.



PRODUCT FEATURES

- Easily maneuvered with telescoping handrails
- Fully compliant with global standards and regulations
- Caster Details: 10" with Brakes & Swivel
- Freestanding Modules
- Platforms Can be used Alone or Linked Together and used as One Large Platform
- High-Grade Materials
- Rigorous Inspection
- Padding Material
- 1 Person Movement and Testing
- Polished Aluminum
- Fall Restraint Anchor Points Equipped

BENEFITS

- Safety and Reliability
- Ergonomic Design
- Unrivalled Quality and Durability
- Designed and tested in accordance with ANSI-ASC A14.7 and BS EN 131.7
- CE certified



TECHNICAL SPECIFICATION

DF071559-01	
Towing Speed	10 KPH / 6 MPH
Material Type	Ladder - Aluminium Frame - Aluminium
Certifications	ANSI-ASC A14.7, BS EN 131.7 & CE
Dimensions (shipping)	73 5/16" x 36 1/16" x 96" x 1,058lbs x 2 stands
Height	Lowered : 36 1/10" to 50 1/2"
Foot Print	73 5/16" x 196 1/4"



7.5

AIRCRAFT WHEEL CHOCKS

DESCRIPTION

The aircraft wheel chocks are manufactured from a solid rubber extrusion and feature a weather-resistant hand rope along with high visibility strips on each face of the chock.



PRODUCT FEATURES

- Solid rubber
- Heavy duty
- 1-metre hand rope
- High visibility strip on all 3 sides
- None slip design

BENEFITS

- Easy to handle
- Solid rubber extrusion
- Visible at night
- Suitable for all wheel size



TECHNICAL SPECIFICATION

NBWC-6	NBWC-9
12 kg wheel chock	6 kg wheel chock
Suitable for medium/large wheels	Suitable for small / medium size wheels
250 mm x 220 mm x 235 mm	250 mm x 170 mm x 150 mm



7.6

AIRCRAFT WHEEL & TYRE HANDLING

DESCRIPTION

The mobile aircraft wheel handling dolly is designed to facilitate the storage and transportation of aircraft wheels or tyres. Offered as a single or double bay unit, the operator can easily place one or two wheels inside the frame for safe handling and manoeuvring. Equipped with four castor wheels (rear swivelling with footbrake) and a heavy duty low-level loading tray, the task can be undertaken by a single person.

The aircraft wheels can be fully secured into the frame by positioning the drop-fit bar into the locators. Additional straps and restraints are not required. The unit is suited to the hangar or airport environment and offers additional user health & safety compliance when handling heavy aircraft wheels or tyre



PRODUCT FEATURES

- Safe & efficient handling and moving of aircraft wheels & tyres
- Available as a single or double bay unit
- Fully mobile
- Heavy-duty low-level loading tray for one person use
- Castor wheels (rear swivelling with foot brake)
- Powder coat finish (RAL 1028 standard)
- Available to cover all size aircraft wheels and tyres
- Single or double wheel handling
- Manual handling Health & Safety Compliant

BENEFITS

- One person use
- Easy transportation of wheels or tyres

**TECHNICAL SPECIFICATION**

Wheel handling dolly	Variant	Measurement
NBWS-2WB	2-Bay wide-body wheels	540 x 1390 x 1200 mm
NBWS-1WB	1-Bay wide body wheel	1540 x 720 x 1200 mm
NBWS-2NB	2-bay narrow body wheels	440 x 620 x 1200 mm
NBWS-1NB	1-Bay narrow body wheel	1440 x 620 x 1200 mm



7.7

AIRCRAFT STRUT & ACCUMULATOR SERVICE TOOL

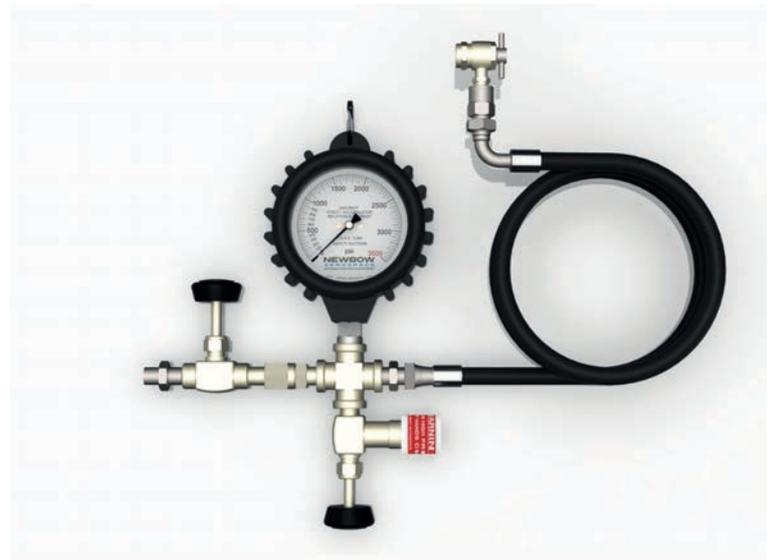
DESCRIPTION

The aircraft strut service tool is fully universal and can be used with any make and model aircraft.

The 3500psi gauge features a pre-use accuracy check, Perspex lens and protective rubber cover.

Equipped with a 2-meter length inflation hose allows the operator to undertake the desired high-pressure inflation task whilst remaining at a safe and secure working distance.

The unit consists of an inlet flow isolation valve with none return valve and an additional excess pressure valve, allowing optimum inflation pressures to be achieved.

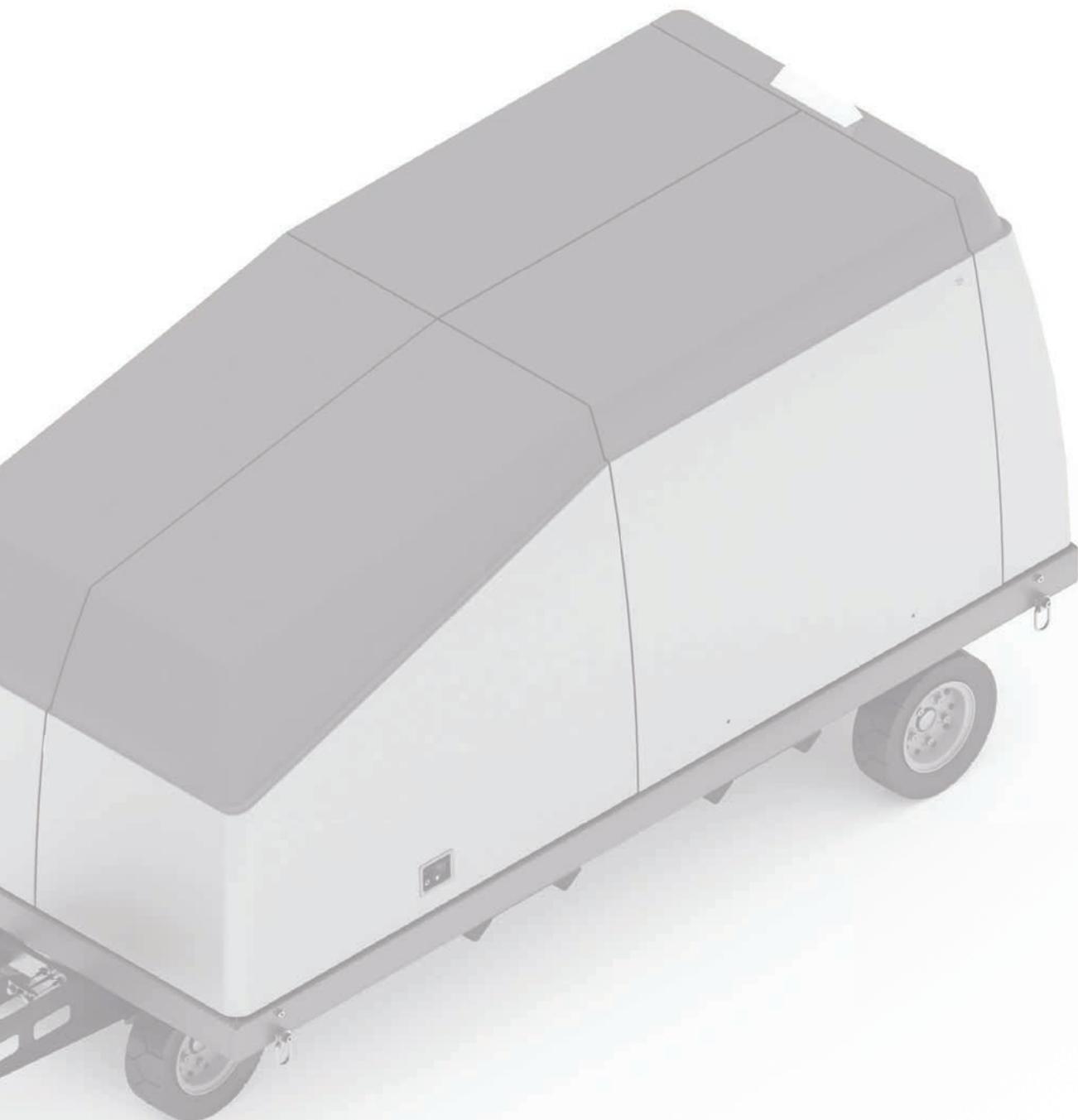


PRODUCT FEATURES

- Calibrated accuracy +/-1%
- EN837-1 Compliant
- Single scale dial
- 3500 psi working pressure
- 100mm diameter gauge
- Shatter Proof lens
- Inflation & deflation capability
- Pre-use accuracy check
- Released with calibration test certificate

BENEFITS

- Accurate strut inflation
- Easy operator visibility when in use
- Accurately adjustable pressures
- Safe working distance



8

WASTE LINE CLEANING ATA CHAPTER 38

HYDRO
PARTNER PRODUCT
TETRAUGHG

8.1

WASTE LINE CLEANING

DESCRIPTION

The Waliclean has been developed for cleaning vacuum waste line systems of different aircraft types.



PRODUCT FEATURES

- 1 EA water supply hose, 20 m (65 ft), on hose reel with standard claw coupling (GEKA)
- 3 EA cleaning hose, 20 m (65 ft) each, on hose reel with couplings
- 2 EA blanking caps for cleaning hose
- 2 EA A/C sensor head each with a sensor cable (40 m (130 ft)) on cable reel for measurement and monitoring
- 1 EA A/C adapter 0,4 m 0° to connect cleaning hoses to the vacuum waste line system
- 1 EA A/C adapter 0,4 m 90° to connect cleaning hoses to the vacuum waste line system
- 1 EA electrical connection cable, 20 m (65 ft), with CEE-plug (32 A)
- 1 EA rope, 20 m (65 ft), with carabiner to lift the cleaning hoses up to cabin height and bag for storage
- 2 EA strain relief for cleaning hoses
- 3 EA blanking caps A/C Waste Line (in case, leaking toilets can be repaired and pipes can be blanked off)
- 1 EA waste water hose, 10 m (33 ft), with couplings and caps, stored in an extractable drawer
- 1 EA ball valve "SUPPLY" (to avoid leaking of cleaning fluid in the A/C while connecting or disconnecting)
- 1 EA ball valve "RETURN" (to avoid leaking of cleaning fluid in the A/C while connecting or disconnecting)
- 2 bags of citric acid (25 kg each) for inonntial cleaning

BENEFITS

- Airbus certified
- User friendly ergonomic setup and operation
- Environmental friendliness
- Fully automatic cleaning process
- Minimized service time
- On-site service

OPTIONS

- Extended functionality for upper deck and simultaneous cleaning of two systems
- Continuous-flow heater
- Motor drive for hose reel
- Tool box with drawer and storage shelf for citric acid
- Spring-loaded chassis
- Cover paint alternative to standard

AVAILABLE ACCESSORIES

- Dust cover
- Additional waste water hose 10 m (33 ft) with couplings and caps, stored in a separate shelf between the fork lift access points

**TECHNICAL SPECIFICATION****WASTE LINE CLEANING**

Model-No.	WLC1	
Operating conditions	Ambient temperature	5 to 50 °C (41 to +104 °F)
	Storage temperature	0 to 60 °C (32 to +140 °F)
	Noise emission	max. 63dB(A) in 1 m distance
Electrical supply	Mains supply	3/PE AC 50/60Hz 380 – 480V
	Nominal current	max. 21 A (max. 32A with option B)
	Power	14.6 kVA (max. 22.1 kVA with option B)
	Preliminary fuse (electricity- and performance characteristicis at 400V 50 Hz)	25A gL (max. 32A gL with option B)
Dimensions and weight	Length	2,850 mm (112.2 in)
	Width	1,600 mm (63.0 in)
	Height	1,500 mm (59.1 in)
	Weight	approx. 1,200 kg (approx. 2,645.5 lb)

HYDRO
PARTNER PRODUCT
TETRAVUE

8.2

MOBILE LAVATORY VACUUM BLOCKAGE REMOVER

DESCRIPTION

This system is an all-purpose equipment to clear and remove pipeline blockage of vacuum-lavatory systems on aircraft. It has been developed for daily use after the aircraft returns from a flight and reports a blockage. By negative pressure the blockage in the waste line can be sucked out. The system requires short time and reduces the downtime of aircraft.



PRODUCT FEATURES

- Flexible by setup on a car trailer
- Connection for tank drainage with Waste Service Truck
- For indoor and outdoor use
- Unit prepared for worldwide operation (universal motor)
- Big reservoir for several applications
- Unit can be used either in electric mode or diesel mode
- Diesel aggregate gives independence of electric supply

BENEFITS

- Simple, manual operation
- No more grounding of aircraft.
- Fast operation - removes solid blockage from vacuum waste line within 1/2 hour
- Environmentally friendly



TECHNICAL SPECIFICATION

Model-No.	VTBR2	
Dimensions	4200 x1860 x 2050 mm	
Weight	approx. 1400 kg	
Operating ambient temperature	5 to 40°C 41 to 104°F	
Storage temperature	0 to 60°C 32 to 140°F	
Air humidity	5 to 90% (non-condensing)	
Altitude	max. 1000m MSL 3280 ft	
Mains supply	3/N/PE AC 50Hz 400V	
Power	3.7kVA	
Performance of vacuum pumps	-0.3 to -0.7 bar	
Tank volume	300l 79 USgal	
Diesel-engine electrical generator	Stroke	434 cm
	Rotation Speed	Rot. Speed 3000 U/min
	Consumption	Approx. 1.94 l/h (0.5 gal)
Tank content	24 l 6gal	
Performance	5.6 kVA	



9

AUXILIARY POWER UNIT ATA CHAPTER 49



9.1

MULTI-PURPOSE PLATFORM STAND

DESCRIPTION

The Aviation Platform Stand has been designed for maintenance access points for a multitude of aircraft, as well as the possibility of a safe platform for two person use. For the B737 this stand allows access to APU, in case of multi-aircraft use, the lowered position is designed to clear wheel well entry points and has been tested and is operational on both Airbus and Boeing wide-body aircraft. The unit is in service at a multitude of operators, MRO's and manufacturers.



PRODUCT FEATURES

- Telescopic side rails ensure safety compliant access to the forward and aft lower cargo holds
- Powder coat finish ensures corrosion resistance maintaining the longevity of the stand
- Hydraulically actuated via an ergonomically positioned foot pump
- Collapsible guardrails
- Anti-fatigue ladder steps ensuring the safety of your maintenance staff
- Anti-fatigue ladder rungs
- Padding material equipped
- Fall Restraint Anchor Points
- Controls: Hydraulic Foot Pump
- High-Grade Materials
- Rigorous Inspection and Testing
- DF071556-03 XP has a safe platform for two person use
- 1 Person Movement and Testing
- Fall Restraint Anchor Points Equipped
- Designed according to ANSI-ASC A14.7 and BS EN 131.7

AVAILABLE ACCESSORIES

- Air-powered pump
- Utilities package
- Tow-bar
- Telescopic rails

BENEFITS

- Safety and Reliability
- Ergonomic Design
- Unrivalled Quality and Durability
- Flexibility for use on all wide-body Boeing aircraft
- Full use on Airbus wide-body aircraft as well as the A320 family
- Small Footprint and Greater Geometry
- Rigorous inspection and testing
- CE certified



TECHNICAL SPECIFICATION

	DF071556-03	DF071556-03 XP
Towing Speed	10 KPH / 6 MPH	10 KPH / 6 MPH
Material Type	Ladder - Aluminium Frame - Steel	Ladder - Aluminium Frame - Steel
Certifications	ANSI-ASC A14.7, BS EN 131.7 & CE	ANSI-ASC A14.7, BS EN 131.7 & CE
Dimensions (shipping)	79 3/4" x 80 1/4" x 105 1/2" x 1,200lbs	92" x 80" x 105 1/2" x 1,400 lbs
Height	Low: 73" High: 103"	Low: 73" High: 103"
Foot Print	79 3/4" x 105 1/2"	792" x 105 1/2"



10

FUSELAGE

ATA CHAPTER 53



10.1

IglooMX FUSELAGE SHELTER

DESCRIPTION

The patent protected IglooMX Fuselage Shelter is the ideal tool for fuselage repair tasks.

This shelter can be “docked” to the damaged portion of the fuselage to create a fully controlled environment. It is also a very useful tool when any maintenance work is being undertaken in the cargo bay or for repairs around the door entry areas

The IglooMX Fuselage Shelter is designed to provide a “hand-in-glove” fit against the fuselage. It is supplied with flexible fabric flanges that can be taped to the body of the aircraft to prevent any ingress of dust or moisture. A similar seal is created between the base tubes of the shelter and the ground.

In addition to composite repair work the fuselage shelter may be used for window repairs, paint work and aircraft livery.

These shelters feature specially designed fabrics that are both lightweight and tough, providing excellent abrasion and tear resistance. The unique materials are also fire retardant and resistant to hydraulic fluid and fuels, ensuring that they remain functional for many years.

The IglooMX kit can be inflated in under 5 minutes and deflated and stored away in approximately 20 minutes.



PRODUCT FEATURES

- Installation Crew: 4 Persons
- Inflation Time: 5 Minutes
- Folding and re-packing time: 20 Minutes
- Strong but lightweight for easy handling
- Fire Retardant and resistant to Fuels, Oils and Hydraulic Fluids
- Unique patented design
- Withstand wind speeds of up to 25 Knots
- 20 year proven track record with leading airlines, airframers and MRO's

BENEFITS

- Universal application
- Cost savings
- Space savings
- On-site service

AVAILABLE ACCESSORIES

- Dehumidification
- Temperature control
- Positive pressure control
- Lighting kit (only required for night time work as the shelter fabric allows for very good light transmission)
- Air-Conditioning
- Air-filtration package
- Water filled ballast bag kit

**TECHNICAL SPECIFICATION****FUSELAGE SHELTER**

	890121
Dimensions (packed)	1400 x 1200 x 1000 mm
Dimensions (setup)	6500 x 5400 x 6100 mm (6.5 x 5.4 x 6.1 m)
Packaged weight	172 kg 379.2 lbs
Ambient Temperature	-30°C to +70°C -22°F to +158°F
Inflation Device	2 H.P. Electric Blower
Power Supply	110V 60Hz or 220V 50Hz models available



10.2

IglooMX NOSE SHELTER

DESCRIPTION

When your aircraft has been damaged by a bird-strike, lightning-strike or a collision on the apron, it can take a considerable amount of time to source an available hangar to undertake the necessary repairs. The patent protected IglooMX Inflatable Nose Shelter system provides the ideal solution for such events.

This “hangar-in-a-bag” system reduces downtime to a minimum and saves time and money on hangar space rental and towing charges. The Nose Shelter may be used for multiple purposes including windshield replacement, radome composite repairs and nose landing gear maintenance or replacement.

The IglooMX is small enough to ship as part of the fly-away kit. It is inflated and “docked” around the front of the aircraft by following the simple installation instructions provided. Inflation takes less than 5 minutes with a crew of 3-4 people.

The Nose Shelter has plenty of space internally for scaffolding, scissors-lift or boom-lift and is supplied complete with heating and filtration ducts.

Once in place, the shelter system will boost your maintenance team’s productivity by providing a warm and safe environment in which to work.

These shelters feature specially designed fabrics that are both lightweight and tough, providing excellent abrasion and tear resistance. The unique materials are also fire retardant and resistant to hydraulic fluid and fuels, ensuring that they remain functional for many years.

The IglooMX kit can be deflated and stored away in approximately 20 minutes.



PRODUCT FEATURES

- Installation Crew: 3-4 Persons
- Inflation Time: 5 Minutes
- Folding and re-packing time: 20 Minutes
- Strong but lightweight for easy handling
- Fire Retardant and resistant to Fuels, Oils and Hydraulic Fluids
- Unique patented design
- Can withstand windspeeds of up to 25 Knots
- 20 year proven track record with leading airlines, airframers and MRO’s

BENEFITS

- Can be branded with airline logo
- No previous training required
- Provides privacy from passengers during maintenance

AVAILABLE ACCESSORIES

- Ramp Heater
- Air-Conditioning
- Lighting Set on tripods
- Reusable Shipping Crate
- Water filled Ballast Bag Kit
- Camcleaner Air-Filtration package
- Dehumidifier package

**TECHNICAL SPECIFICATION****NOSE SHELTER**

890135	
Dimensions (packed)	1500 x 1100 x 1100 mm
Dimensions (setup)	6500 x 9800 x 7400 mm (6.5 x 9.8 x 7.4 m)
Packaged weight	172 kg 379.2 lbs
Ambient Temperature	-30°C to +70°C -22°F to +158°F
Inflation Device	2 H.P. Electric Blower
Power Supply	110V 60Hz or 220V 50Hz models available



11

NACELLES / PYLONS ATA CHAPTER 54



11.1

NOSE COWL DOLLY INSTALLATION DEVICE

DESCRIPTION

This new and innovative unit will allow for the safe removal and installation of the nose cowl without the need for an overhead crane.

The Nose Cowl Dolly is able to handle the aircraft nose cowls on a variety of aircraft engines.



PRODUCT FEATURES

- Ready to ship AOG unit
- Lightweight and compact shipping configuration
- Caster Details: 10" with Brakes & Swivel
- High-Grade Materials
- Padding Material
- 1 Person Movement
- Material Type: Aluminum
- Powder Coated Finish

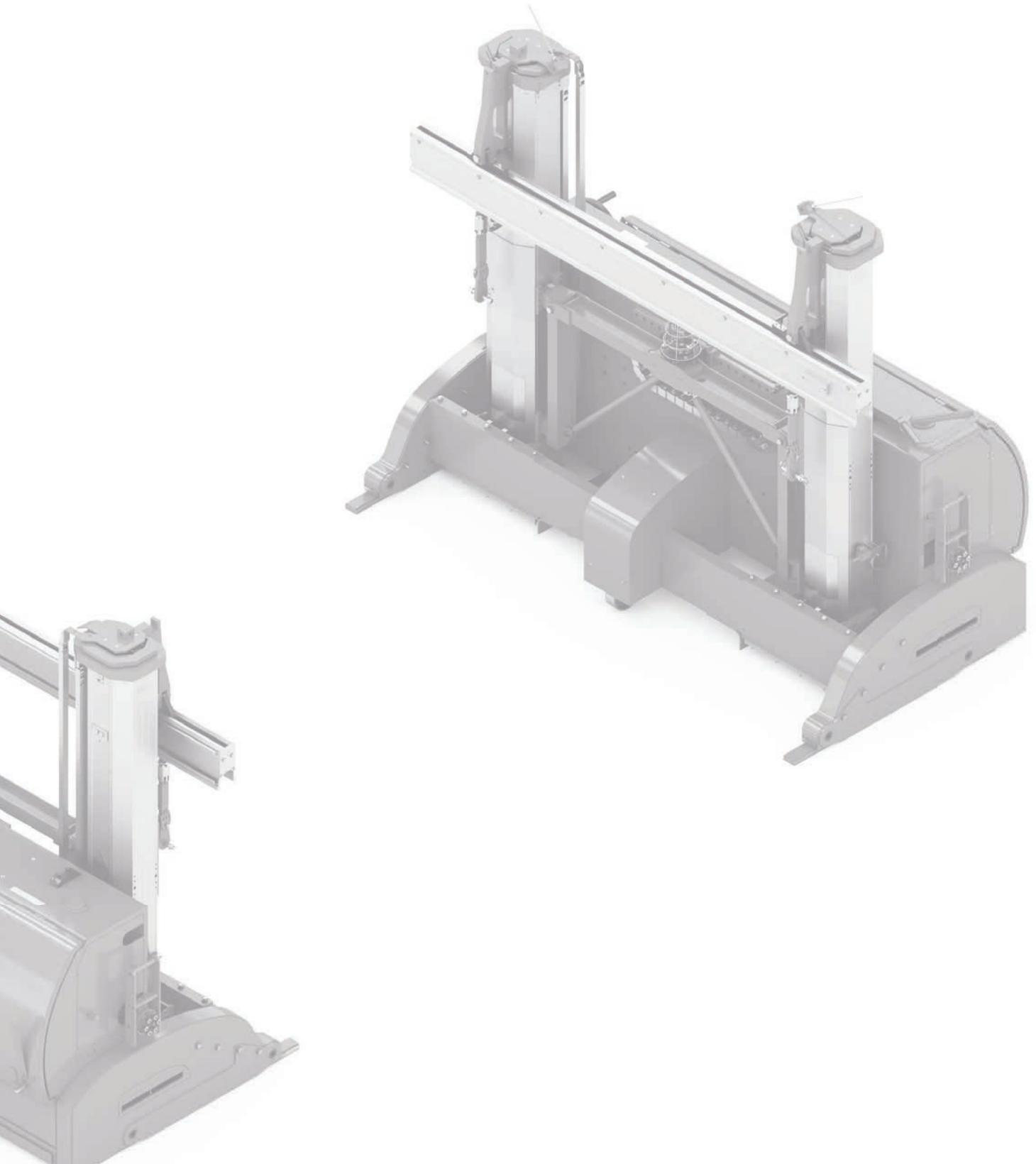
BENEFITS

- Safety and reliability
- Ergonomic design
- Unrivalled quality and durability
- Extended warranty



TECHNICAL SPECIFICATION

DF071560-01	
Certifications	ANSI-ASC A14.7, BS EN 131.7 & CE
Dimensions (shipping)	17 9/16" x 27 1/2" x 95 1/8" x 150lbs
Height	lowered: variable
Foot Print	84" x 107 3/4" x 84 1/2"



12

POWER PLANT

ATA CHAPTER 71

12.1

ENGINE CHANGE SYSTEM

DESCRIPTION

The COBRA Engine Change System has been designed to ensure a fast engine change and to minimize operational failure and technical risks.

This offers you tremendous benefits by reducing your costs through minimal aircraft downtimes.

Your maintenance team has been waiting for this technology — now it is here at HYDRO.



STANDARD CHARACTERISTICS

- Universal, innovative engine change system
- Applicable to aircraft with wing-mounted engines
- Interchangeable adapters for flexible and universal handling of engine dollies, cradles and shipping stands
- Accessories available for multi-purpose applications
- Suitable for a wide range of aircraft

PRODUCT FEATURES

- Consists of master and slave unit
- Semi-automatic lifting of engine, dolly and cradle or shipping stand
- 4 pillars: each pillar can be controlled independently
- Movement possible in 3 axes

BENEFITS

- OEM approved
- Up to 70% time saving for engine changes (compared to bootstrap)
- Short amortization period on investment cost
- Protects the aircraft, engine and operator with various safety features
- Easy operation
- On-site service

AVAILABLE ACCESSORIES

- Transportation trailer with or without diesel power unit
- Spare part kit
- Load cell calibration kit
- Diesel power unit
- Lift adapters for a wide range of aircraft

**TECHNICAL SPECIFICATION****ENGINE CHANGE SYSTEM**

Model-No.		TP91G1F	
Performance	Nominal capacity	16.3 t (36,000 lbs)	
	Max. lift stroke	Long pillar	2,800 mm (110 inch)
		Ultra Short pillar	1,700 mm (67 inch)
		Lifting speed	5 mm/sec or 10 mm/sec [fast mode] [0.2 inch / sec or 0.5 inch / sec [fast mode]]
	Power supply	200–480V; 50–60Hz	
	Movability	Max. horizontal movement	± 120 mm (4'')
Max. transversal movement		± 150 mm (6'')	
Max. inclination longitudinal		10°	
Weight	Weight master	1,200 kg (2,645 lbs)	
	Weight Slave	1,048 kg (2,310 lbs)	

12.2

ENGINE PEDESTAL SET

DESCRIPTION

HYDRO Engine Pedestal Sets (EPS) are multi-purpose systems which can be used for various engine types from different engine manufacturers.

For each new engine combination only a new adapter set is required while the pedestals are universal and used for any combination.

The basic set consists of 2 pedestals used at the front and 2 pedestals used at the rear of the engine. Due to the universal application of the basic set less storage space is required.



BENEFITS

- Universal application
- Cost savings
- Space savings
- On-site service

OPTIONS

Engine Adapter Kit

Engine adapter kits are available separately for each engine type and are attached to the basic set. Each engine adapter kit includes 2 rear adaptors and 2 front adaptors.

AVAILABLE ACCESSORIES

Spring loaded ball castors for easy positioning of pedestals



TECHNICAL SPECIFICATION

ENGINE PEDESTAL SET

Model-No.	EPS001-002
Nominal capacity	9 t
Weight basic set	514 kg (1133.2 lbs)
Application	CFM56-3 with EPS adapter 47001-002-000 CFM56-7B with EPS adapter 47001-029-000 Leap-1B with EPS adapter 47001-031-000

12.3

COBRA COMPATIBLE CFM56-7B ENGINE STAND

DESCRIPTION

The AM-2811/2563 Engine Handling System is designed to transport and or store the CFM International CFM56-7 engine in QEC configuration. The Engine handling system is compliant with CFMI specification 9970-957-889 (Air/Road shipping stand, CFM56-7 engine). It is capable of being shipped (with engine) in the cargo bays of the B-747 , B747F Transall CL44 Guppy, L100 Hercules, C130, DC9, B707, B720, B727, B737 and C130 aircraft. Engine pins securely into place quickly and easily. Bootstrapping capabilities have been incorporated for all engines and aircraft types specified. A document container is secured to the base for all manuals and documents. The Cradle is designed to collapse for shipping.

The transport base unit consists of a frame weldment supported by four wheel caster assemblies. Each caster assembly offers a 5" wide by 10" diameter wheel for easy mobility and a weight capacity of 5000 Lbs. each. Shock absorbing polyurethane tread wheels, position locks and face brakes are standard. All four caster assemblies are designed to pin in an elevated position for air/truck transport of the entire



unit, with engine. Tow bar stows on base frame when not in use. Maximum towing speed of unit is 5 km/h (3 MPH). Built-in shock absorbing mounts cushion all transport movements. A series of Tie-down rings (14) offer secure retainment during long distant hauling of unit.

Please see also AM-2563-227 for a base with wide forklift pockets!

BENEFITS

- Transportation and Storage Solution
- Air transportability
- OEM validated
- COBRA compatible



TECHNICAL SPECIFICATION

ENGINE PEDESTAL SET

Model-No.	Base AM-2563-200 with Cradle AM-2811-4800
Dimensions	
Casters up	169.5 x 196 x 99
Casters down	171.5 x 196 x 99
Weight	514 kg (1133.2 lbs)
Assembled	4,620
Preassembled	2,210 (Cradle) 2,410 (Base)
Application	CFM56-7B

12.4

HOISTING SLING

DESCRIPTION

Universal sling for CFM56 and V2500 engines.

PRODUCT FEATURES

- Basic beam
- The basic beam consists of an I-beam and an adjustable suspension unit, which can be adjusted by means of a hand wheel
- Engine adapters
- The front (FWD) and rear (AFT) adapters, which are attached to the basic beam by means of levers, are used to receive and attach V2500 engines.
- Wooden storage box
- All adapters, connection- and moving parts are either galvanized or nitrated
- Operation and maintenance manual, including spare parts list
- Test certificate



BENEFITS

- User friendly ergonomic setup and operation
- On-site service
- Universal application



TECHNICAL SPECIFICATION

HOISTING SLING

Model-No.	HG20
Nominal capacity	2.926 t 3.22 tons
Test load	5.852 t 6,45 tons
Extended height	1,500 mm 59.06 inch
Extended length	2,450 mm 96.5 inch
Screw extension	1350 mm 53.1 inch
Weight basic beam w/o adapter	162 kg 357.1 lbs
Application	CFM56-3; Boeing B737-300 / -400 / -500 CFM56-5A; Airbus A319 / A320 CFM56-5B; Airbus A319 / A320 / A321 CFM56-5C; Airbus A340 CFM56-7; Boeing B737-600/ -700 / -800 / -900 V2500 A1/A5; Airbus A319 / A320 / A321



12.5

IglooMX ENGINE CHANGE SHELTER

DESCRIPTION

AOG incidents can lead to costly delays and scheduling difficulties for operators. The patent protected IglooMX Inflatable Engine Change Shelter system provides the ideal solution for such events.

This “hangar-in-a-bag” system reduces downtime to a minimum and enables the AOG team to get the aircraft back in the air in the least possible time, thereby saving on costly hangar rentals and lost man hours.

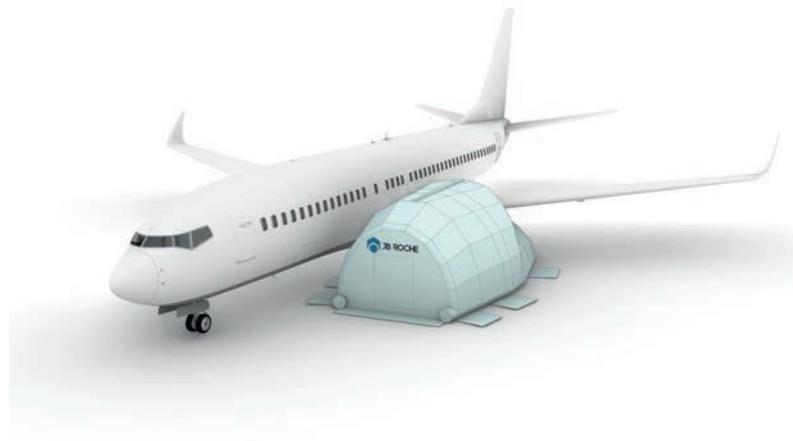
The IglooMX Shelter system is small enough to ship as part of the fly-away kit. It may be set up on either engine to encapsulate both engine and pylon. By following the simple installation instructions provided, this kit can be installed in a matter of minutes by a crew of 3-4 people.

Once in place, the shelter system will boost your maintenance team’s productivity by providing a warm and safe environment in which to work.

These shelters feature specially designed fabrics that are both lightweight and tough, providing excellent abrasion and tear resistance. The unique materials are also fire retardant and resistant to hydraulic fluid and fuels, ensuring that they remain functional for many years.

The IglooMX is supplied in a storage bag on wheels, making it easy to move around on the apron. In the unlikely event that the shelter becomes damaged while in use, an on-site repair kit is supplied as part of the package.

The IglooMX kit can be deflated and stored away in around 15 minutes.



PRODUCT FEATURES

- Installation Crew: 3-4 Persons
- Inflation Time: 5 Minutes
- Folding and re-packing time: 15 Minutes
- Strong but lightweight for easy handling
- Fire Retardant and resistant to Fuels, Oils and Hydraulic Fluids
- Unique patented design
- Withstand wind speeds of up to 25 Knots
- 20 year proven track record with leading airlines, airframers and MRO’s

BENEFITS

- Can be branded with airline logo
- No previous training required
- Provides privacy from passengers during maintenance
- Models available for use with COBRA Engine Change System

AVAILABLE ACCESSORIES

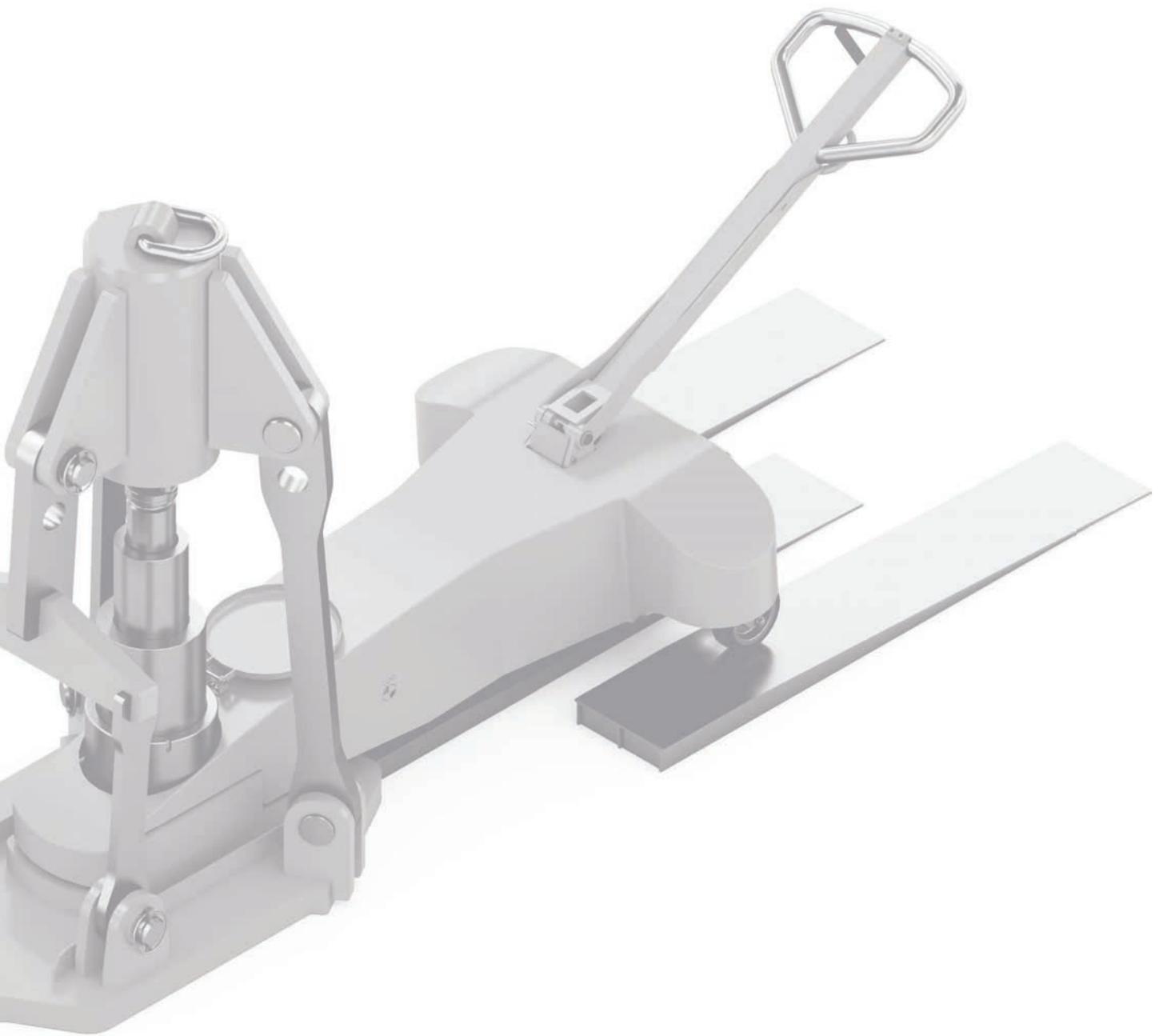
- Ramp Heater
- Air-Conditioning
- Lighting set on tripods
- Reusable shipping crate
- Water filled ballast bag kit



TECHNICAL SPECIFICATION

ENGINE CHANGE SHELTER

Model-No.	890106
Dimensions (packed)	1400 x 1000 x 1000 mm
Dimensions (setup)	8400 x 8100 x 4300 mm (8.4 x 8.1 x 4.3 m)
Packaged weight	170 kg 379.2 lbs
Ambient Temperature	-30°C to +70°C -22°F to +158°F
Inflation Device	2 H.P. Electric Blower
Power Supply	110V 60Hz or 220V 50Hz models available



13
OTHERS

13.1

PROOF LOAD TEST FIXTURE

DESCRIPTION

The proof load test fixture has been designed for testing of lifting devices.

The proof load test fixtures are used for

- Checking: the hydraulic lift cylinder and hydraulic circuit of tripod- and axle-jacks for leakage
- Controlling: the preciseness of the load indicator of tripod- and axle-jacks
- Testing: the adjustment of pressure relief valves of the hydraulic circuit of tripod- and axle-jacks

Standard characteristics of PV165 and PV250

- Load cell
- Adapter pieces (male \varnothing 19 mm and \varnothing 32 mm, female \varnothing 44.5 mm)
- Laptop with testing software "HyCat" and case
- Color printer for test certificates with case
- Measuring cable
- Storage box
- Power supply AC 240V/0.04 kVA/50Hz

Standard characteristics of PV050

- Hydraulic load cell (PV165 load cell also usable)
- Adapter pieces (male \varnothing 19 mm and \varnothing 32 mm)
- Storage box



BENEFITS

- User friendly ergonomic setup and operation
- Universal application
- On-site service

AVAILABLE OPTIONS

- Measuring amplifier and LED-Display
- Roll-paper printer for documentation of the measuring points
- Additional adapter (female \varnothing 44,5 mm)

**TECHNICAL SPECIFICATION****PROOF LOAD TEST FIXTURE**

Model-No.	PV050	PV165
Max. Test Force	50 t 55.0 US short tons	165t 181.5 US short tons

13.2

BOEING TOOLING**DESCRIPTION**

We have a long standing business relationship with Boeing. In 1990 the first license contract was established for make-to-print tooling. We are a strategic supplier for proprietary/make-to-print tooling and aftermarket services regarding all civil programs.

- 25 years of Boeing Tooling experience and knowledge
- Large stock of B737 tools
- Tool Change Bulletin support program for tool revision changes
- Specialist tooling sales team in Seattle, USA

**SCOPE OF SUPPLY**

Global supply of make-to-print tooling for civil manufacturing programs as well as after sales programs. HYDRO offers a large stock of Boeing Licensed Tooling for the majority of aircraft programs, including a heavy emphasis on the 737 programs. A specialist tooling sales team located in Seattle, USA, are in daily contact with Boeing's Maintenance & Ground Operations System team.

BENEFITS

- Short lead times
- Competitive pricing
- High quality products
- Global customer sales and service support



WORLDWIDE FOOTPRINT



SALES REPRESENTATIVE



SERVICE CENTER



MAIN OFFICE

HYDRO SYSTEMS KG

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