















## **KUNZ** GMBH AIRCRAFT EQUIPMENT

A family owned business since its establishment in 1987, KUNZ is the leading supplier of aircraft recovery equipment and aircraft wheel and brake servicing equipment.

KUNZ sets standards with leading edge technology for aircraft wheel and brake service and overhaul. KUNZ Aircraft Wheel and Brake Shop Equipment is in use with all major airlines and MRO's.

**KUNZ is committed to technical excellence and continuous progress and development**in order to reduce operational costs in component service and overhaul and to manufacture durable, solid and user efficient equipment.

widest range of aircraft recovery equipment, carefully designed and engineered to meet airport and aircraft operator's requirements. **KUNZ Aircraft Recovery School's main** 

KUNZ has the expertise to plan, design and deliver complete production lines for Wheel and Brake service and overhaul, based on a lean work flow concept. The use of KUNZ Aircraft Recovery Equipment has proven many times to reduce the downtime of an entire airport or parts thereof in case of incidents and it also diminishes the risk of secondary damage to recoverable aircraft to a minimum. KUNZ offers the widest range of aircraft recovery equipment, carefully designed and engineered to meet airport and aircraft operator's requirements.

KUNZ Aircraft Recovery School's main focus is providing customers with a advanced training in Aircraft Recovery. Due to close cooperation with KUNZ GmbH, we are able to cover all conceivable recovery scenarios by means of KUNZ leading edge equipment.

# WHEELS

# KUNZ AIRCRAFT WHEEL SHOP EQUIPMENT

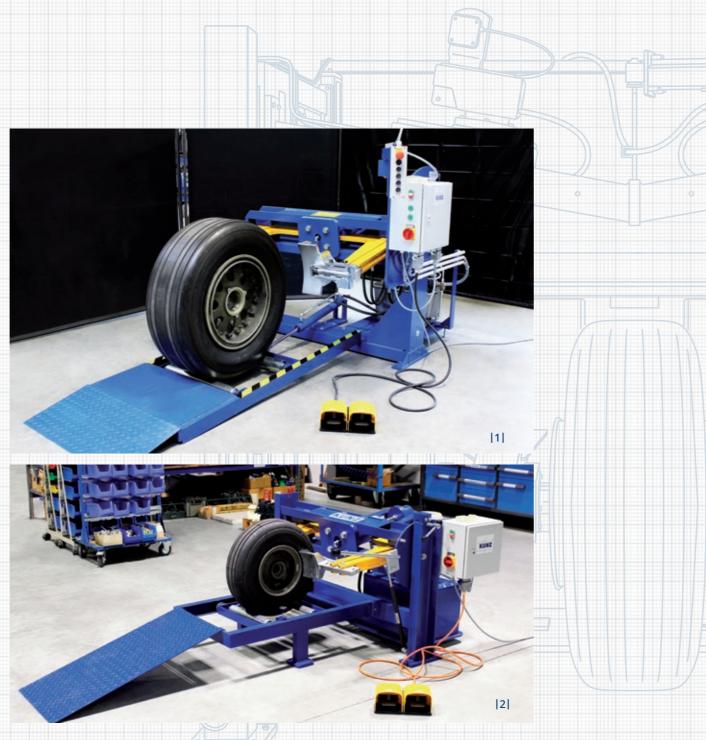
KUNZ provides a wide range of equipment for aircraft wheel maintenance. Our equipment is suitable for wheels and tires from all OEM brands.

## Why **KUNZ**?

70+ wheel FRODUCTS

up to 50 %
HIGHER THROUGHPUT

+100%
RELIABLE





more about our products, further information and videos on:

www.KUNZ.aero

#### EQUIPMENT FOR TIRE BEAD BREAKING

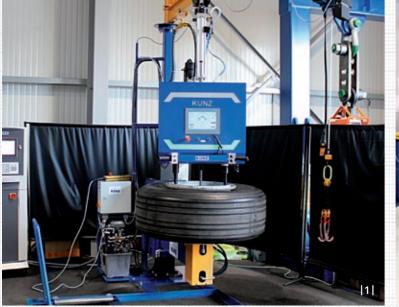
|1| KUNZ UBB® Universal BeadBreaker

|2| KUNZ SBB BeadBreaker for smaller aircraft tires

|3| KUNZ DUBB® Dynamic Universal BeadBreaker

#### EQUIPMENT FOR WHEEL TORQUING / NUT LOOSENING

- | 1 | KUNZ UTS NGtronic® Universal Torquing System Next Generation | 2 | KUNZ UTT Universal Torque Tool | 3 | KUNZ UTT-L Loosening Tool | 4 | KUNZ ULT Universal Loosening Tool













#### EQUIPMENT FOR WHEEL ASSEMBLY / DISASSEMBLY

|5| KUNZ Wheel Adapter Rings |6| KUNZ RimPull |7| KUNZ UAS Universal Assembly / Disassembly Stand

#### **EQUIPMENT FOR WHEEL / RIM HANDLING**

- |1| KUNZ WheelLift |2| KUNZ Wheel Inspection Stand |3| KUNZ LogMove®
- |4| KUNZ RLT Rim Lifting Tool |5| KUNZ RTR Rim Tilting Robot



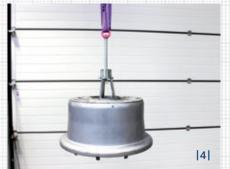






more about our products, further information and videos on: www.KUNZ.aero





**EQUIPMENT FOR WHEEL ASSEMBLY TESTING** 

[6] KUNZ TTS Tire Test System



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# BRAKES

# KUNZ AIRCRAFT BRAKE SHOP EQUIPMENT

KUNZ provides a wide range of equipment for aircraft brake maintenance. Our equipment is suitable for brakes from all OEM brands.

#### Why **KUNZ**?

35+ brake PRODUCTS

30% faster brake MAINTENANCE

100% SAFE brake TESTING





## EQUIPMENT FOR BRAKE ASSEMBLY / DISASSEMBLY

- |1| KUNZ UTT Universal Torque Tool
- |2| KUNZ BDU Brake Drain Unit
- [3] KUNZ BBS Brake Build-Up Stand



## EQUIPMENT FOR BRAKE HYDRAULIC TESTING

- |5| KUNZ BTS NGtronic® C Brake Test Stand
- [6] KUNZ BTS NEOtronic® Brake Test Stand
- |7| KUNZ BTS NGtronic® T Brake Test Stand |8| KUNZ BTS NG Trolley

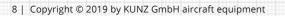


KUNZ

more about our products,
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# ENGINEERING

## LEAN WORKFLOW AND TURN-KEY SOLUTIONS FOR WHEEL & BRAKE SHOPS

Benefit from our experience. We can help you achieve a higher level of efficiency with a new design/redesign of workflow and workshop according to lean principles.

#### why **KUNZ**?

#### **KUNZ IS A ONE-STOP SOLUTION**

- World-market leader for Wheel & Brake Shop equipment
- Massive customer base (over 250) including OEMs and aircraft manufacturers
- Unique experience in delivering turnkey solutions for Wheel & Brake Shop all over the World for legacy carriers as well as third party MROs
- In-house workshop design capabilities
- Largest own product line for Wheel & Brake Shop equipment in the market
- Known for durable quality
- Huge network of renown suppliers to complement our existing range of equipment

# scope of Services



REVIEW

- > Space requirements
- > Existing machinery
- > Required machinery
- > Actual procedures & cycle times

# RESULTS in the workshop

- > DECREASE COMPLEXITY
- > Achieve maximum
  OVERVIEW & TRANSPARENCY
- Reduce human factor influence by IMPLEMENTING NEW TECHNOLOGY (automatization, RFID monitoring)
- Improve EFFICIENCY & CAPACITY
- > MEASURE SUCCESS

#### DESIGN

- > Which equipment
- > Where to locate it

In order to:

DEFINE SPACES for best SUITING WORKFLOWS

LEAN WORKFLOW DESIGN according to CMM and FAA/ EASA compliance standards.



Wheel & Brake Shop example 1



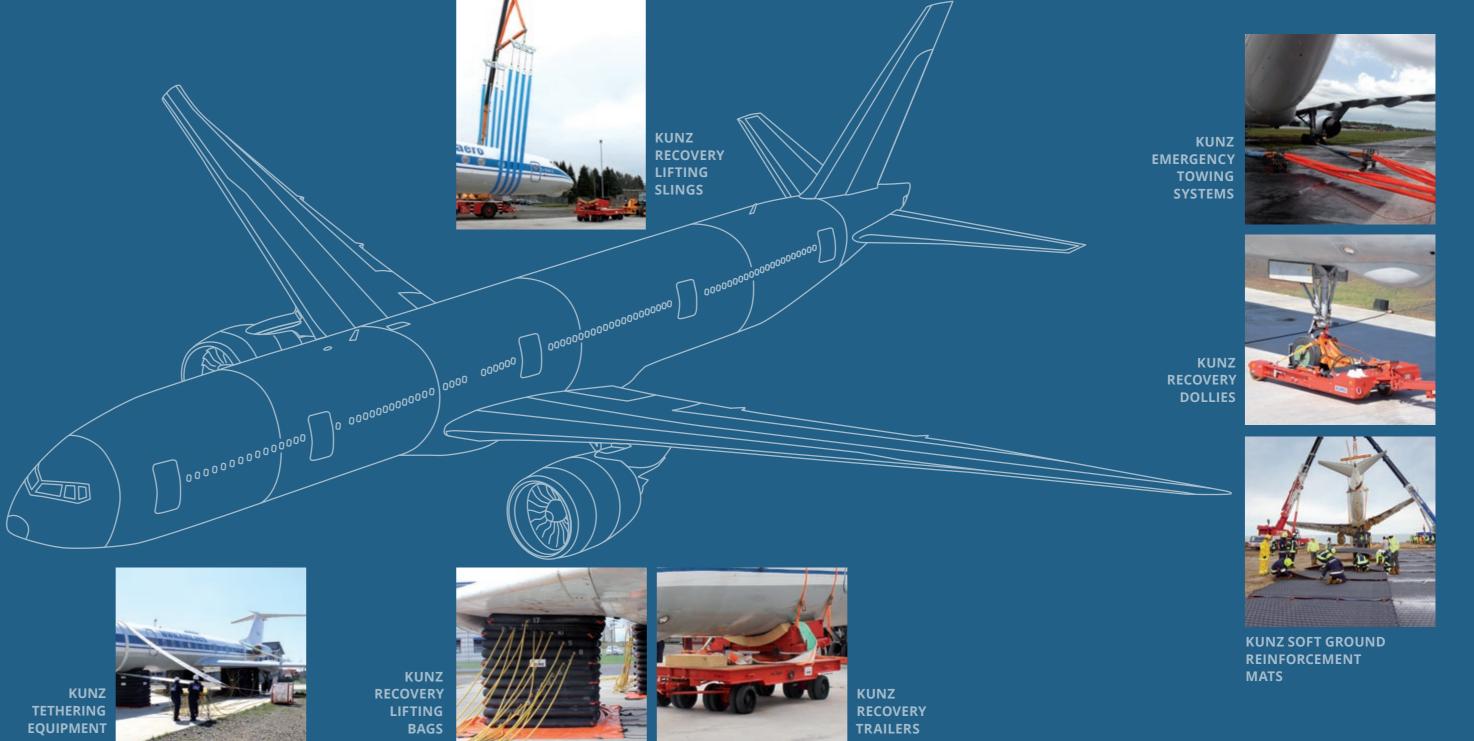
Wheel & Brake Shop example 2

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# AIRCRAFT RECOVERY

#### **KUNZ AIRCRAFT RECOVERY EQUIPMENT**

KUNZ provides a wide range of aircraft recovery equipment, such as Recovery Lifting Slings and Recovery Lifting Bags for aircraft lifting, Recovery Trailer and Recovery Dollies for aircraft movement in "damaged wheel" or "collapsed landing gear" scenarios, as well as De-Bogging Kits and Soft Ground Reinforcement Mats.The design of KUNZ aircraft recovery equipment meets international standards and recommendations.





#### **KUNZ AIRCRAFT RECOVERY SCHOOL GMBH**

Founded in 2016 and based on 30 years of experience, KUNZ Aircraft Recovery School's main focus is providing customers with a well-funded training in Aircraft Recovery.

The Recovery School is situated in Hahn am See, Germany, close to KUNZ GmbH's headquarters and 35 minutes driving distance from Frankfurt Airport.

KUNZ Aircraft Recovery School's trainings are performed by recovery trainers with many years of experience, who will convey both theoretical and practical knowledge. Our customers will receive an official certificate after the training.

#### THEORETICAL TRAINING

In theoretical training, customers are introduced to the recovery scenario. Experienced aircraft recovery trainers will provide them with the crucial knowledge required for a successful recovery.

#### PRACTICAL TRAINING

In practical training, the customer learns the right way to solve recovery situations using KUNZ leading edge aircraft recovery equipment on a TU-134A, with a functional undercarriage.

#### TRAINING AT CUSTOMER'S SITE

KUNZ also offers training with supervisor on site according to your requirements.



- |1| FULL LIFTING WITH LIFTING BAGS
- |2| TETHERING
- |3| **DEBOGGING**
- |4| FLAT TIRE SCENARIO
- |5| GROUND REINFORCEMENT
- |6| NLG COLLAPSED SCENARIO

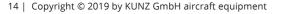














# Our valued **CUSTOMERS**



around the **WORLD** 



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## **KUNZ** - OUR VALUED CUSTOMERS

Airports
AENA (several locations)
Almaty Airport
Ankara Airport
Antalya Airport
Aosta Airport
Athens Airport
Bahrain Airport
Barcelona Airport
Beijing Capital Airport
Berlin Airport Tempelhof
Berlin Airport (TXL, SXF)
Bologna Airport
Borispol Airport
Bremen Airport
Cancun Airport

Chengdu Shuangliu Airport Chicago Midway Airport - Signature Flight Support

Chicago O'Hare Airport - Signature Flight Support

Cochin Airport Cologne-Bonn Airport Copenhagen Airport Curacao Airport Dalian Airport Dresden Airport Dubai International

Dushanbe Int'l Airpor Düsseldorf Airport Emilianovo Airport Erfurt Airport Frankfurt/Main Airport Funchal Airport Fuerteventura Airport

Geneva Airport Graz Airport Guangzhou Bai Yun Airport

Guilin Liangjiang Airport Hamburg Airport Hannover Airport

Hong Kong KaiTak Airport Hong Kong International Airport Istanbul, Atatürk Airport Istanbul Sabiha Gökcen Airport Jayapura Airport Kassel Calden Airpor

Lehigh Valley Airport, Allentown, PA Leipzig Airport Linz Airport Ljubljana Airport Luxembourg Airport Lviv Airport

Krasnodar Airport

Madrid Airport Manila Airport Melilla Airport Moscow Sheremetyevo Airport

Moscow Vnukovo Airport Munich Airport

Ninoy Aguino International Airport

Nuremberg Airport Oslo Airport

Palma de Mallorca Airpor Pontianak Airport PT Angkasa Pura

Rome FCO Airport Sabiha Gokcen Airport Saransk Airport

> Sentani Airport, Jayapura Shanghai Hong Qiao Airport Sheremetyevo Airport Simferopol Airport Sofia Airport

Sochi Airport Stuttgart Airport Tbilisi Airport Tenerife Norte Airport

Tenerife Sur Airport Tianjin Xingang Airport Tokyo (NRT) Airport

Venice Airport Vienna Airport Warsaw Frederic Chopin Airport

Yakutzk Airport

Aero Mexico Air Algérie Air Arabia / HS-AECO Air Astana Air Atlanta Icelandi

> Air Baltic Air Berlin Air Caledonie

**Airlines** 

Aeroflot

ACES

Air Canada Air China Air Corsica Air Dolomiti Air France

Air Iceland Air India Air Macao Air Madagasca

Aurora Airlines

Avianca Airlines

Aviadynamics

Air Mauritius Air New Zealand Air Tanzania Aircompany Polet Airphil Express Alsager Aviation American Airlines Angola Airlines

Antonov Salis GmbH Arkia Israeli Airlines Asiana Airlines ATA Airlines

Felix Airways Finnair Austrian Airlines Flydubai Garuda Indonesia GOL Linhas Aerea Azerbaijan Airlines Gulf Air

Azul Linhas Aereas Brasileiras S.A. Aviation Partnership Phils Corp Belavia Belarussian Airlines

Biman Bangladesh Airlines bmi British Midland

> British Airways Canadian Airlines Cargolux

Carpatair Cemair Chautaugua Airlines

China Airlines China Eastern Airlines

China Southern Airlines (several locations) China Southwest Airlines

Comair Airlines Corsair Czech Airlines Delta Air Lines

DHL Aviation, Bahrain Don Avia Eastar Jet Egypt Air

EL AL Emirates Airline Estonian Air Ethiopian Airlines Etihad Airways Eural Air

Eurowings Eznis Airways Far Eastern Air Transport

Hainan Airlines

Iberia Icelandair Sichuan Airlines Singapore Airlines SmartLynx Airlines South African Airways Spanair

Sri Lankan Airlines Sriwijaya Air SunExpress Airlines Syrian Arab Airlines TACA Airlines

TAM Linhas Aereas S.A TAP Air Portugal

TAROM Tassili Airlines, Algeria

LATAM Airlines TUIfly

Libyan Arab Airlines Lion Airlines

Iran Aseman Airlines

Jamal Aviation

Japan Airlines

JAMCO

Jeju Air

let Aviation

Kallitta Air

Korean Air

LAN Chile

Lauda Air

KD Avia

KLM

Job Air Logistics

Jordan Aviation

Kenya Airways

**Kunming Airlines** 

Kuwait Airways

Luxair Mahan Air

Malaysian Airlines Malev Hungarian Airlines Middle East Airlines

MNG Airlines

Monarch Aircraft Engineering Mongolian Airlines Middle East Airlines

> Northwest Airlines Olympic Airways Oman Air Onur Air

Oren Air Presidential Air Fleet Nigeria Pal Express

Qantas Airways Qatar Airways Rossiya Russian Airlines Royal Brunei Airlines Royal Flight Bahrain

Royal Jordanian SAS Copenhagen, Oslo, Stockholm Saudi Arabian Airlines

Shaheen Air International Ltd. Shanghai Airlines Shanghai Hute Airlines

Shenzhen Airlines Shenzen Donghai Airlines

Siberia Airlines

Companies, Manufacturers

AAA Aerospace USA Inc. Abu Dhabi Aircraft Technologies ACE Aeroplex of Central Europe

Aermeccanica S.R.L.

Aviation Australia / Riyadh College of

TEAM Aer Lingu Thai Airways Tianiin Airlines Travel Service

Turkmenistan Airlines

T'way Air

Ukraine International Airlines United Airlines **Ural Airlines** 

UPS UT Air Vietnam Airlines

Widerøe Airlines Xiamen Airlines Yakutia Airlines Yangon Myanma

Yemen Airways

Yunnan Airlines

Aviadynamics

and Military Organizations

Egypt Air Force

Aero Wheel & Brake Service Corporation Aerocontractors Nigeria

Aero-Dienst GmbH Aerohelice Lda. AeroRepair Corp.

AIRBUS Airbus Defence and Space

Excellence

Aircraft Technical Services Aviadynamics Aviall Services

Avior Tech Services

ALROSA, Russia

AMAC Aerospace

AMECO Beijing

AMMROC

Amiri Fleet Kuwait

Tunis Air Turkish Airlines Technic Inc.

Antavia SAS Apella S.A. Austrian Air Force

AviaServices Aviation Component Rep. Serv. Vladivostok Airlines BAE Systems

> Baimtec Material Co Balashikha BLMZ

Beijing Andawell Science and Technology Co., Ldt. Beijing Cronda New Technology Co., Ltd.

Beijing Kailan Av. Tech. Beijing KeRongDa Tech. Beijing Kunlun High Tech Co., Ltd. Belgian Air Force

BF Goodrich, (several locations) BOEING Bower Aero

Canadian Air Force Civil Aviation Authority Bahrain Cobham Aviation Services

Collins Aerospace Czech Air Force Daher Aerospace

Domodedovo Technique EADS

EADS CASA EAN Jet Center Nigeria

Embraer Executive Jet Service Falcon Aviation Services

GOAM Ace Air

Honeywell

Goodrich Asia-Pacific Ltd.

Gulf Air Technical Services

Hellenic Aerospace Industry

Israel Aerospace Industries

Japan Air Self Defence Force

Jet Aviation (several locations)

Kiev Aircraft Repair Plant 410

LOT Aircraft Maintenance Services

M.C.M. - Maintenance Center Malta

MyTechnic Aircraft MRO Services

M.C.M. - Maintenance Center Munich

Lufthansa Technik (several locations)

LAO Airlines Engineering

Mazeres Aero Equipment

Jordan Aeronautical Systems Company

Haveus Aerotech India

Horizon Aerospace Ltd.

Hua Cheng Auto Repair

Indian Air Force

Irkut Corporation

Israel Air Force

Italian Air Force

Kanchan Enterprises

Kearsley Airways

Kuwait Air Force

Leonardo Company

Magnetic MRO

Max Air

Magnum Aviation

Meggitt Aerospace

NATO AWACS E3A

Nayak Aircraft Services

JAMCO

JorAMCo

Indian Navy

Finnish Air Force Polish Air Force Flybe Aviation Services PT Anekasa Pura I French Air Force RIX Mro

GAMECO Rotable Repairs Ltd Gazprom Avia Royal Air Force of Omar Royal Air Force of UK German Air Force

> Royal Brunei Flight Royal Netherlands Air Force Royal Saudi Air Force

Northrop Grummar

Oman Aviation Services

Ogma Industries

Pakistan Air Force

Oman Air Force

Royal Thai Air Force Royal Thai Navy Röder Präzision **RUAG Aviation** 

Sabena Aerospace Safran Landing Systems

SAS (several locations) Saudi Arabian Air Force Shanghai Hute Aviation

Sibir Technics Ltd. Silk Way Technics Simpherol

Sky Wheels UK Spanish Air Force

S-Pro

SR Technics (several locations) ST Aerospace Solutions Sukhoi Civil Aircraft TAE Aerospace

TAMPA Cargo S.A. Tasman Aviation Enterprises

Technic Aviation TP Aerospace Technics (several loca-tions)

TS Aircraft Shop Turkish Airlines Technic Turkish Air Force United Space Alliance

US Air Force (several locations) US Navy (several locations) UTG Maintenance & Engineering

Volga-Dnepr Technics Vertical Force

