PACKAGING SOLUTIONS



WE CONTAIN YOUR WORLD 01 Our Philosophy

Thermodyne is much more than a manufacturer of first-class transport containers.

WE CONTAIN YOUR WORLD – this philosophy stands for the development of tailor-made, customer-specific special solutions for a variety of industries.

# Organisation

Workflow – from initial consultation right through to delivery



With powerful project management, clearly defined processes and personal order processing from the first minute to the last of the project, we offer our customers a unique 360° service. Resulting in unparalleled solutions providing professional function and efficiency.

WE CONTAIN YOUR WORLD

CAPACITY





Thermodyne is proud to offer state of the art production and storage facilities for the efficient order fulfillment. We have the flexibility to complete orders from a single unit right through to larger requirements of several thousand pieces. Upon request, we can store completed orders without extra charge.



# Service

No matter how good the product – more often than not it's the quality of service that enables maximization to the full potential.

Thermodyne has both the experience to understand your requirements

Thermodyne has both the experience to understand your requirements and the range of skills and resources to make it happen.



# Measurement of component parts

- software controlled
- maximum precision
- in house and locally



### Assembly

- component placement
- mounting
- procurement



### Solution development

- creative
- customised
- individual



## Design

- Layout advice & consultation
- calculations
- CAD design
- material selection



## Drop tests

- Modern testing machinery
- In house
- Testing under laboratory conditions
- Validation of residual acceleration (peak deceleration) using sensors



## Logistics

- shipping completion
- customs clearance
- contracts
- stocking
- RFID labelling



### Certifications such as

- MIL-STD-810
- STANAG 4280
- DEF STAN 81-41
- ATA300, CAT 1

- HM224B/D0T31FP
- ASTM D 6179
- UN-approval for dangerous goods

# Custom solutions

Any individual solution is determined entirely by the requirements. The type of foam insert, special internal fixtures, fitted electronics for functionality, corporate branding and solutions for OEMs – Thermodyne will provide the optimum solution to ensure safety and protection for secure storage and transportation.



### Container reinforcement

- Aluminium strengthening
- for an increased stacking load
- strengthens the lid
- for heavy contents



#### Foam interiors

- individual solutions
- variety of densities, colours and properties (such as antistatic, flame retardant, etc.)
- precision manufacturing



#### Electronic installations

- fan
- plugs
- switches
- installation



## Configuration

For example:

- range of handles and catches
- locks
- wheels and feet
- document pockets
- additional handles
- humidity indicators



## Labelling

ID labels & stickers

**OEM-solutions** 

embossed logo

OEM-colours

development by Corporate Design

- moulded-in ID and logos
- silk screen printing
- hot stamping
- laser lettering



### Forklift truck transportation

- feet or runners
- reinforced base
- optional: strengthened lid for stackability



### Mechanical hardware

- steel rope springs
- panel frames
- component receptacles
- thermoformed inserts
- chamfered inserts



#### Removable lid

· Lift-off lid



### Stainless steel hardware

- corrosion resistant fittings
- ideal for marine/saltwater environments



### Ingress Protection

- P54 (dust protection, water splash)
- IP65 (dustproof, strong water jet)
- IP67 (dustproof, temporary immersion)



#### ATA300

Manufactured to comply with ATA300, Cat. I



# Product overview

# Variety for every application

With more than 50 years of project experience, we understand there are a multitude of products that all need the same thing: protective packaging. To satisfy this requirement, we have developed a uniquely extensive product range offering 800+ sizes. There is virtually no limit to the special designs we can provide. Trust us with your products and we will develop the optimum packaging solution. WE CONTAIN YOUR WORLD! And that starts with a quantity of just 1!

### Shipping Cases



- ldeal for safe shipping and transit
- 350+ standard sizes
- individual special formats
- low weight, high strength

# Carrying Cases



- User friendly with single handle
- 150+ standard sizes

# **Trolley Cases**



- specially developed for rough industrial use
- robust pull-out handle. recessed
- easy-roll wheels
- low weight, high strength
- 100+ standard sizes

### **AppliCase**



- eye-catching design
- 50+ standard sizes
- Also available with wheels and/ or handles fitted at each end

### Peli<sup>TM</sup>



- Full range of all Peli products
- Customisation options include foam interior, labelling, printed logo etc.

# Containers for hazardous goods



- standard products for NiCd and Li-lon batteries, oxygen cylinders or oxygen generators
- hazardous goods specific, individual solutions

### 19" Rack Mount Cases



- For 19" instrumentation and equipment
- Equipment depths 280 - 1080 mm
- with and without anti-vibration mounted frame

#### Foams



- range of materials offering different properties
- contract manufacturing
- converted to specific requirements
- plain sheets
- TCS Mats

# Products Shipping Cases



customisation options

stackable

protective bumps (protected fittings)

sizes (internal) from L 130 x W 154 x H 165 mm to L 2020 x W 875 x H 560 mm All Thermodyne Shipping Cases are made of high-impact polyethylene (PE-HD) withstanding even the most extreme physical stresses. The solid-coloured shells are also resistant to chemicals. As such, colour and shape are retained even under extreme conditions and meet even the toughest industry-specific standards. Depending on the version, our Shipping Cases also meet special civil and military packaging standards, such as the rigorous aerospace certification, ATA300 (Category I), which states that a container must still be functional even after 280 drop tests.

hinged or removable lid (several options)

high impact shell

ergonomic, rubberised handles

low weight, high strength













# **Products** Carrying Cases

The virtually unbreakable PE-HD shell and high chemical resistance ensure that this unbeatable, lightweight case delivers the protection demanded under the harshest conditions.













# Products Trolley Cases

robust pull-out handle, recessed



customisation options

recessed, easy-roll wheels

Trolley Cases from Thermodyne are versatile, reliable & functional for the busy professional, offering user-friendly, precision handling. Like our Shipping Cases, Trolley Cases are manufactured in high-impact polyethylene (PE-HD) to withstand even the most extreme conditions. Easy handling whether at the airport or in the factory.

stackable

Shipping Cases and Carrying Cases can be supplied with wheels as a Trolley Case. Please contact us for more details.















# Products **AppliCase**



customisation options

ergonomic, soft-grip handle

smooth surface for branding & labelling

sizes (internal) from L 429 x W 298 x H 155 mm to L 725 x W 550 x H 780 mm. Also available with wheels and/or handles fitted at each end.

AppliCases - your company's calling card for your professionals on site. The eye-catching design is reflected across the range. These robust cases are designed for the most demanding usage, regularly passing the test in situations that require nothing but the best. Style & function - a winning partnership.

> lockable catches (optional TSA or combination lock)

corner bumpers protect from scratching while providing stackability

> At the heart of the AppliCase is its wide ranging versatility. With the right equipment, they are the perfect partner in multiple fields including technical, medical and instrumentation.





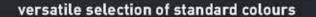












# **Products** Containers for hazardous goods

At Thermodyne, hazardous goods are in safe hands. Accredited by the Federal Institute for Materials Research and Testing (BAM) we design and manufacture standardised hazardous goods containers in either plastic, stainless steel or aluminiuim.



tested safety

Sizes (internal) from L 400 x W 335 x H 160 mm to L 1185 x W 607 x H 355 mm

Individual containers for hazardous goods

We are able to develop and certify an approved container for your hazardous goods. Contact us to discuss your requirement.

Available directly from stock:

- Dangerous goods packaging for Li-lon and NiCd batteries in acc. with UN 3480/UN 2795
- oxygen cylinders acc. HM224B/D0T31FP and/or 49 CFR 173.168
- oxygen generators in accordance with UN 3356















WE CONTAIN YOUR WORLD

Solutions

05

#### Solutions

# SOLUTIONS

# **Aviation & Logistics**



Thermodyne has many years of industry experience in the production of transportation containers for aviation and logistics customers.

# Precision Measurement Technology and Electronics



At Thermodyne, the development of packaging solutions for sensitive electronic equipment and components is in good hands.

# Project examples Solutions for many industries

Thermodyne has years of experience in the production of individual, industry-specific solutions. Especially certified products for applications in the military, medical and clean room, aviation, logistics or electronics sectors are among our core competencies. As a result, our customers noticeably gain in efficiency, safety and reliability when transporting their specialized components, equipment and goods. Meet the challenges of special logistics with the qualified expertise of Thermodyne. We make your world transportable.

### Cleanroom, Laboratory and Medical Technology



For many years, Thermodyne has been developing and producing top quality transportation containers for medical accessories and for use in cleanroom environments.

# Military



Thermodyne designs and manufactures transportation containers that meet international military standards and regulations in every detail.



# Aviation, Logistics and Aerospace We protect your delicate equipment

Stackable. Robust. Lightweight. Space-saving. Waterproof. Fireproof. The requirements for the transportation of sensitive goods for spare parts, production and supply chains can be very specific. Freight transportation containers from Thermodyne are in use worldwide - in the air, on the road and on the high seas. Our containers pass even the toughest testing procedures and are therefore certifiable in accordance with ATA300, CAT 1.

# A few examples:

# Dangerous goods container according to statutory specifications



# Trolley Case for maintenance technology



Torsion rigid Shipping Case with feet for forklift transport



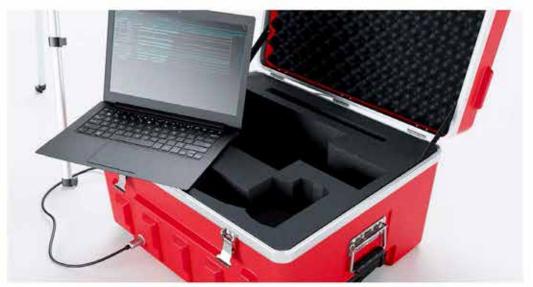


# Precision Measurement Technology and Electronics We contain your electronics

Highly sensitive technology for taking measurements and electronic products demand sophisticated solutions for safe transport and optimum packaging. In particular, OEMs trust the individual products from Thermodyne. It often makes sense to integrate the electronics securely in the transportation container. This way, our customers take advantage of both security and functionality, united in one product.

# A few examples:

# Shipping Case for measurement technology



# Carrying case for built-in electrical components



### Trolley Case with active ventilation and power supply



WE CONTAIN YOUR WORLD D5 Solutions





# Cleanroom, Laboratory and Medical Technology

# We protect your medical values

Medical products, surgical equipment, endoscopes, mobile X-ray technology - in some cases, these goods are of considerable value requiring reliable packaging. Products for industrial cleanroom conditions often have to meet significantly higher standards. Thermodyne develops and supplies individual solution packages specifically for these purposes.

A few examples:

# Shipping with insulation



# Special container for medical technology



# AppliCase for doctor's instruments





# Military

# We contain your military equipment

Whether reconnaissance technology, drone and radar technology or weapon systems: The requirements for the safe transportation of military equipment are almost limitless. Depending on the standard required, our containers meet the toughest military standards, such as MIL-STD-810, MIL-PRF-28800F, MIL-C-4150J, STANAG 4280 and DEF STAN 81-41.

# A few examples:

### 19" Rack Mount Cases for rough terrain



# Special solution for high-tech products



# Shipping Case for military goods





# CORPORATE RESPONSIBILITY

Dr.-Ing. Daniel Bätzel, Managing Director Thermodyne's intelligent and long-term usable solutions are produced in a climate-friendly setting. In addition, they are fully recyclable and therefore an important part of the recovered substance cycle.



# Sustainability

# Reusable and recyclable solutions

Thermodyne's manufacturing process use "regrind", reconditioned granular plastics, as well as plastics made from naturally renewable resources on customer request. We return our waste to our suppliers, who use it to produce new materials for our production process. This creates a closed cycle, which characterises the special sustainability of our products and solutions.



# Environment

Modern and climate-friendly production

Our production and storage facilities were designed and constructed purposely for low energy consumption and sustainability. The buildings have an air well that draws in air from the ground to provide cooling in summer and heating in winter. In addition, we have equipped the roof with a state-of-the-art photovoltaic system, producing a large part of our energy requirements. This - together with energy-efficient production facilities - turns an industrial building into a climate-neutral production environment.

