



**Ice Panther**

Ice arena equipment



***IcePanther***

i c e   a r e n a   e q u i p m e n t

# The future starts now

ice arena equipment

**engo** 

# IcePanther

## The future starts now

### INNOVATION AND USER-SAFETY IS OUR PRIORITY

engo has been developing and building ice resurfacing machines for over 45 years. Since then, we constantly improved and maximized the performance and ease of use of our machines.

As early as 1989, we responded to environmental changes by offering emission-free electric machines. In 1998 and 2002, engo invented and patented two revolutionary maintenance systems – the fast blade change and the auger washout system – both of which help reduce the workload and increase staff safety.

All of our machine types can be equipped with numerous innovative, helpful features, making each one a unique, customized piece.

### NOW EVEN CLOSER TO THE PULSE OF TIME A NEW ERA BEGINS ...

Due to our demand for the best reliability, our Ice resurfacers are constantly being developed and improved through innovations to ensure functionality combined with the highest level of quality and the latest technology.

**The new IcePanther fits almost seamlessly into the current models of engo Ice resurfacers. We have thereby set ourselves the goal of opening up a completely new era in design, performance, precision, comfort and ease of use.**



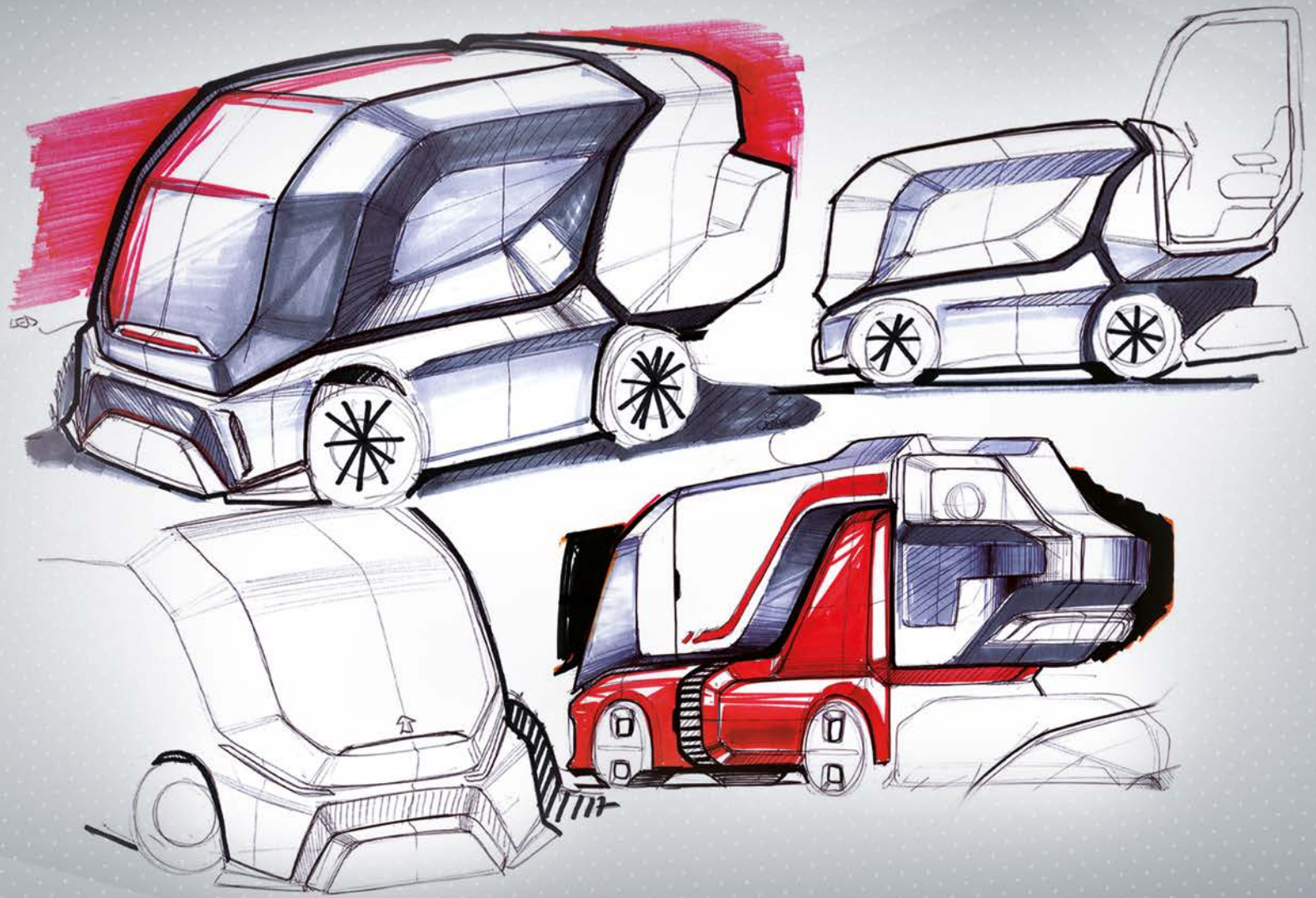
ice arena equipment



# Three·two·one Ready go

Start for future-oriented technology and design

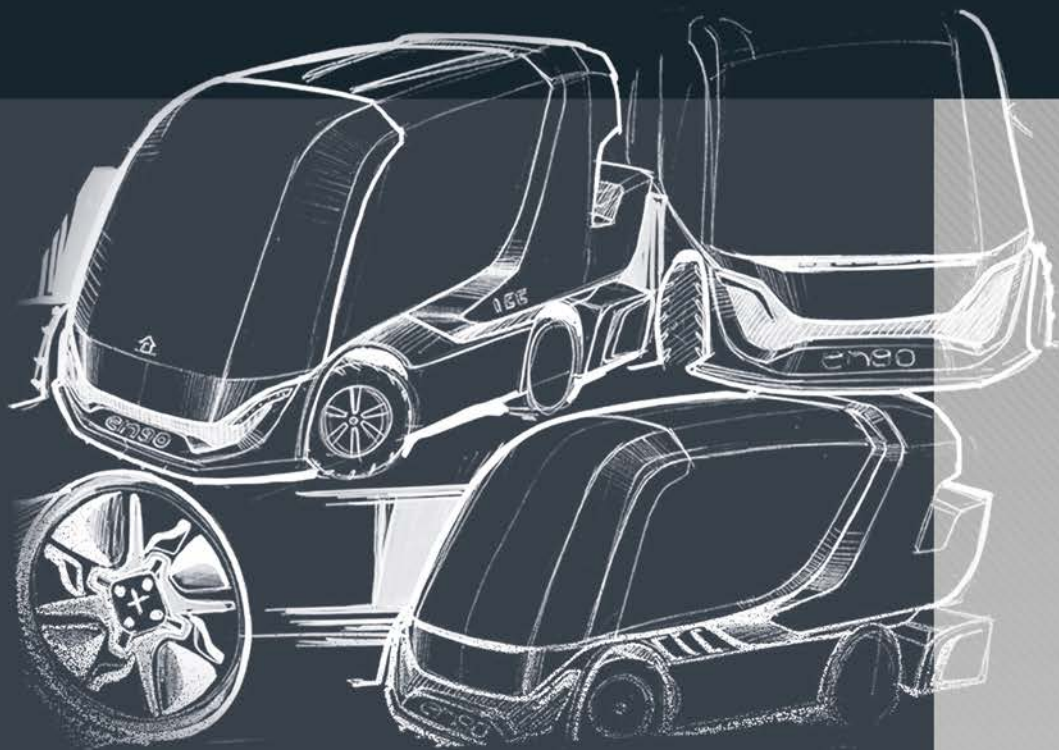




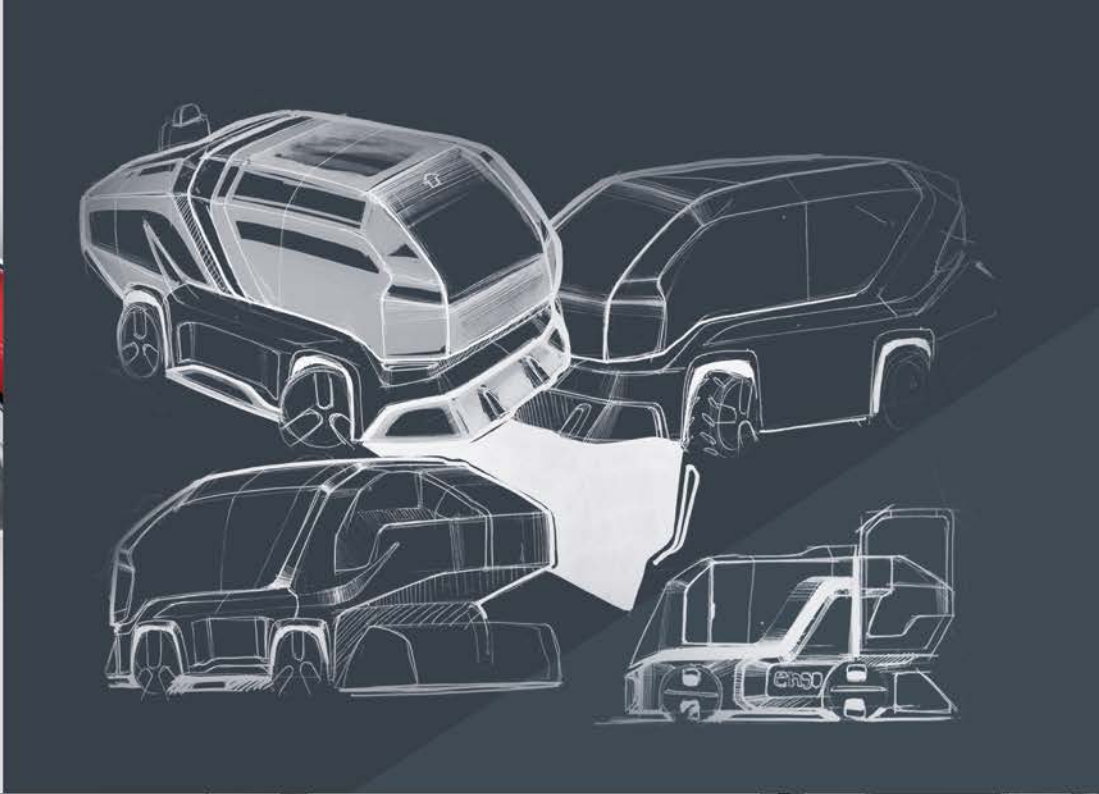
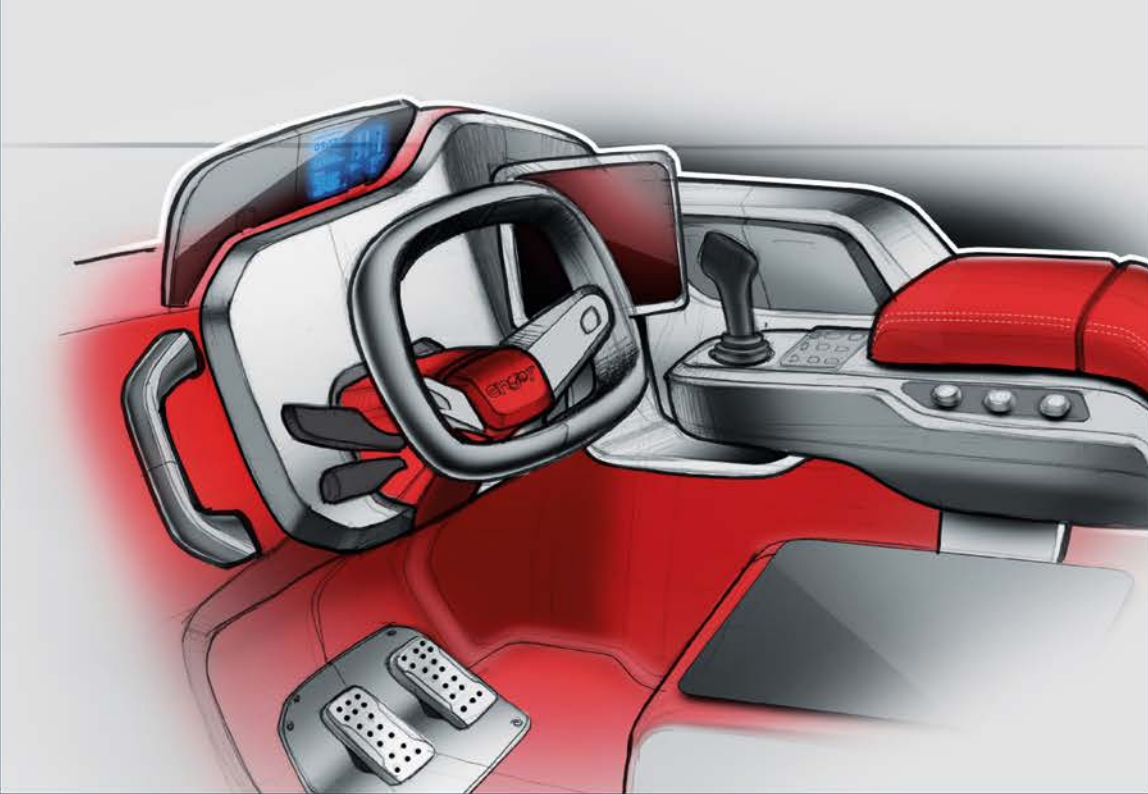
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# The briefing

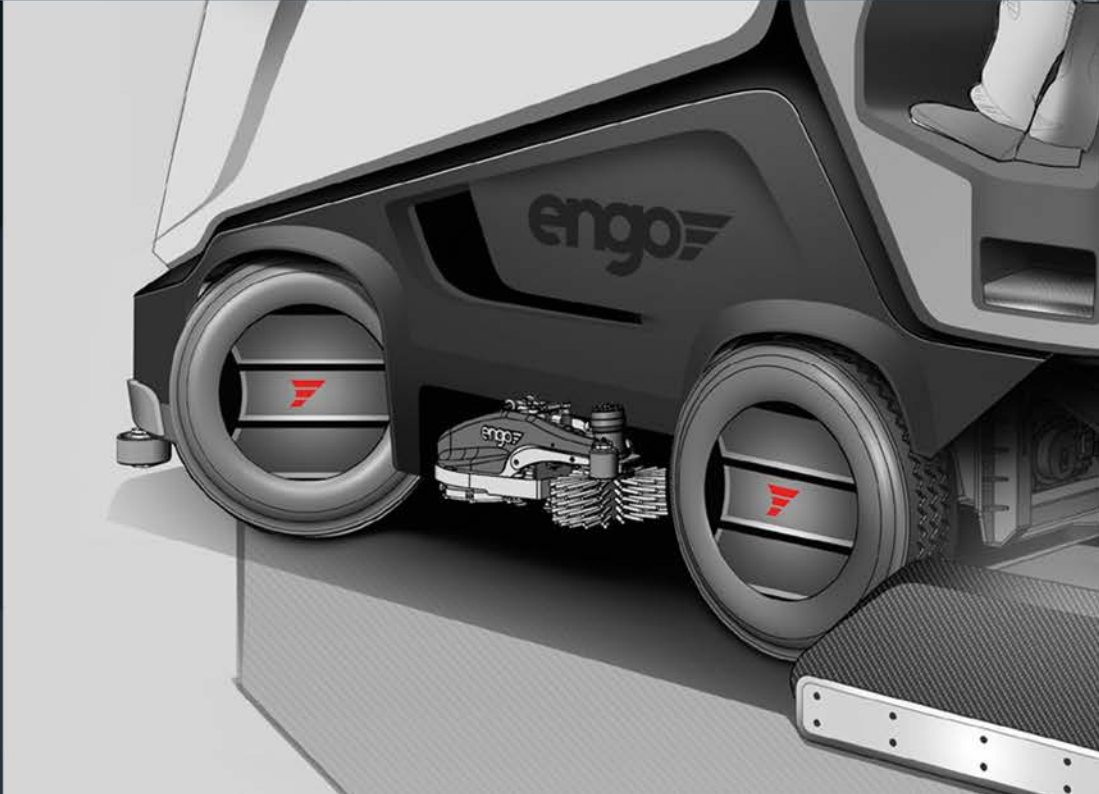
We have always believed that man and machine must work in perfect harmony to achieve maximum performance and synergy. For this reason, the IcePanther has been designed with the ergonomics of the operator's platform and the operator in mind, in order to facilitate the full development and perfection of the relationship between man and machine. In this regard, studies have been carried out to determine the optimal seating and arrangement position for the driver and the instrument panel, creating an unprecedented driving experience and intuitive feeling. Every screen, button, and switch is placed in the right location for immediate and intuitive access.

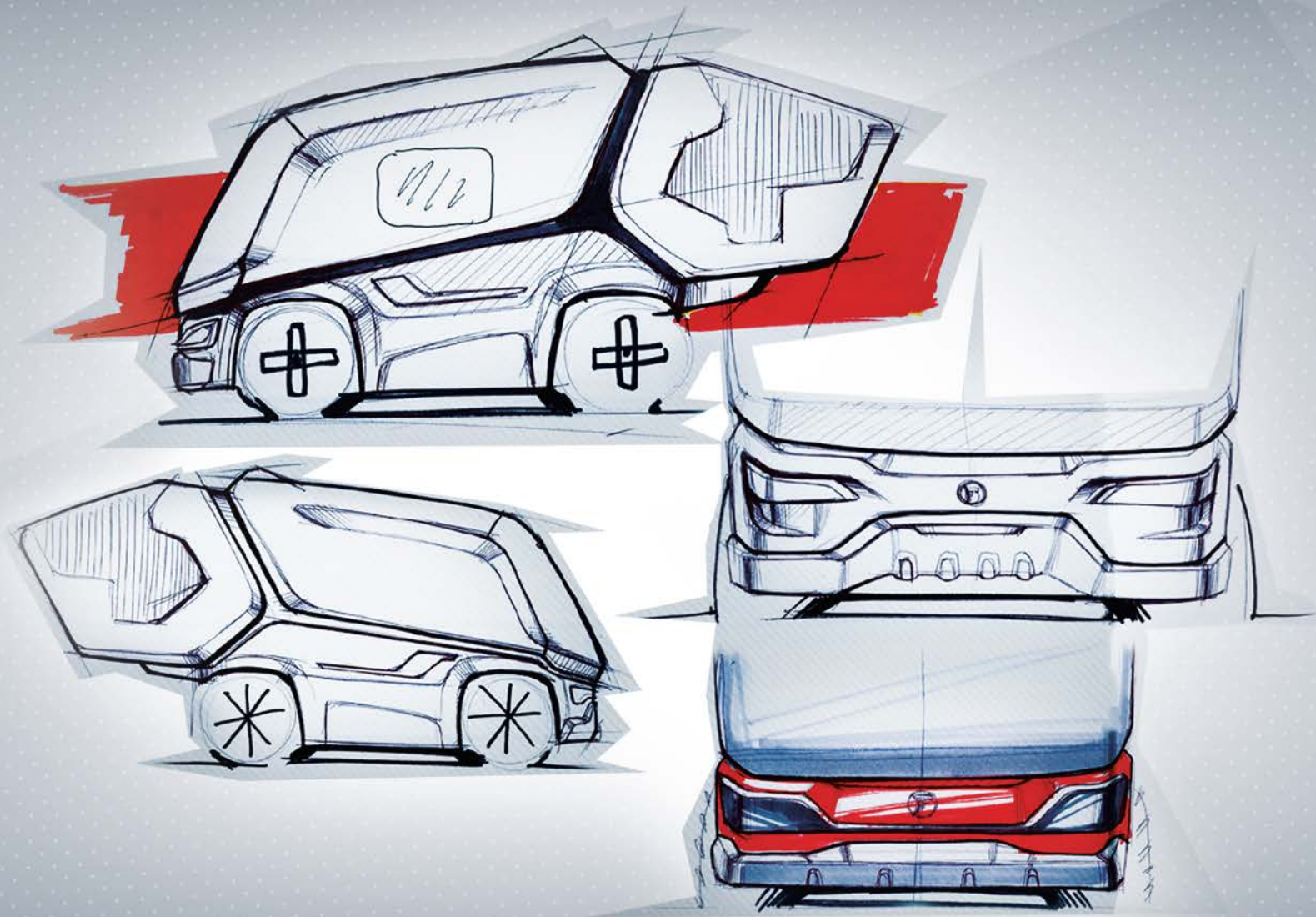






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# Exceed limits

Highest quality and innovation from development to production

The IcePanther combines the latest technical achievements in terms of ice processing with the newly created intuitive operating experience in an ergonomic environment.

With this modern model of the latest generation, in the fields of technology and design, it can be found in the most famous ice stadiums all over the world.

**Basically, Available in two versions:**

- IcePanther CLASSIC
- IcePanther PRO

## SOME FACTS AND FEATURES

- **trend-setting design**
- **economically efficient**
- **environmentally friendly and resource-saving**
  
- **ergonomic cockpit**
- **screens in different sizes selectable**
- **finger tips control or joystick**
  
- **motion: side and carriage advertising displays**
- **electric drive by Lithio technology**
- **passenger area and much more ...**

# IcePanther

ice arena equipment













# Interior



Highest ergonomics  
meets optimal operation

Driver and machine in perfect harmony  
for maximum performance and synergy.



design by  
mmdesign





SOME FACTS ABOUT  
THE ERGONOMIC INSTRUMENTS  
AND DRIVER'S COCKPIT:

- Height-adjustable steering wheel as standard
- Steering wheel moved a few centimeters to the left
- Adaptable and ergonomic armrest
- Screens in different sizes selectable
- Screens individually adjustable for visibility
- Specially ergonomically designed joystick
- Ergonomically designed driver cockpit
- Configurability from toggle switch to intuitive joystick



*design by engo*

# Power and quality

The next generation of ice resurfacing





IcePanther  
PRO

  
MADE IN  
SOUTH TYROL  
ITALY 

# Motion

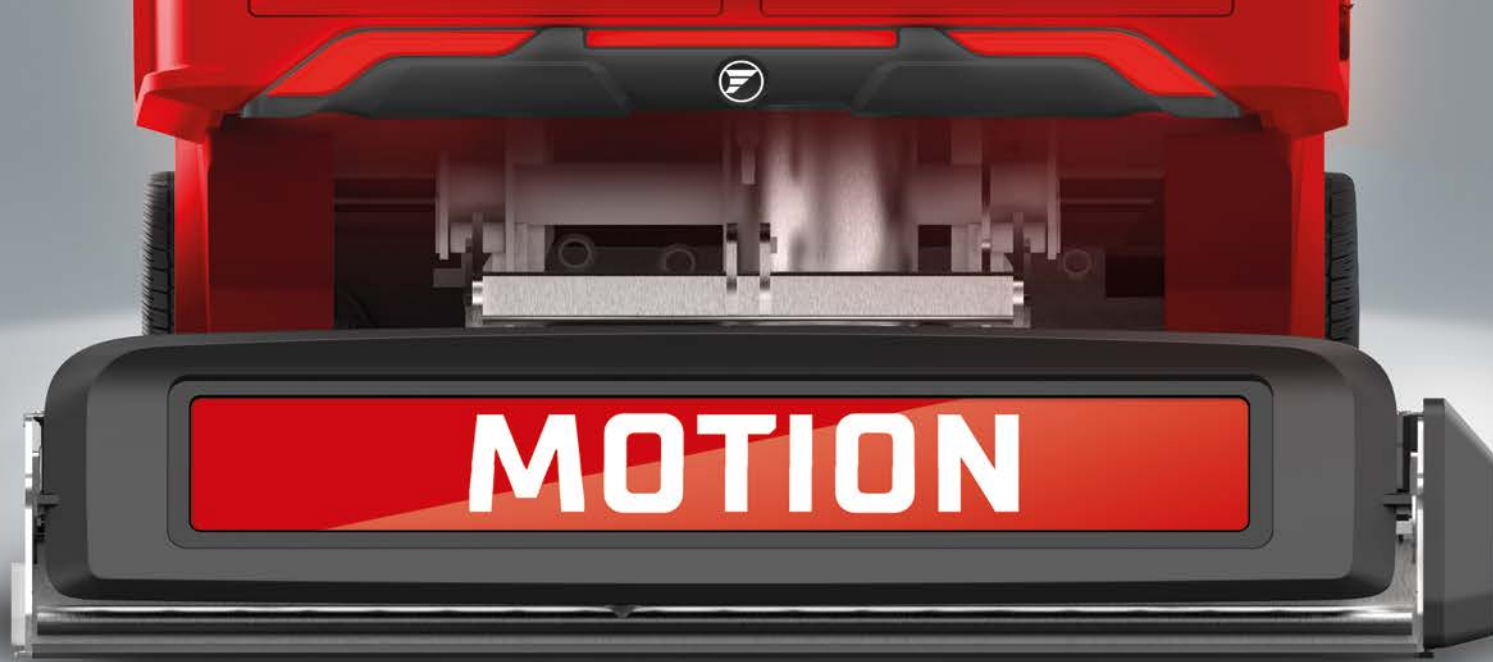


Digital animated LED display of the latest technology

- Best advertising platform and show effect for spectators
- New sponsoring potential







## Infinite possibilities for content presentation

Digital animated LED advertising significantly enhances viewer attention. The advertising impact of moving images or animations extends viewing time and improves recall values, thereby unlocking incredible sponsorship potential. Moreover, digital LED displays can be used in real-time to enhance the game action and entertain spectators at hockey games, ice galas, or figure skating competitions.



## Design and technical perfection down to the Last Detail

The top model of the latest generation leaves nothing to be desired in terms of ice processing, performance, precision, reliability, functionality, and comfort.

It can deliver exceptional ice conditions in multifunctional ice stadiums where top-class international championships are held. In addition to practical extras, it boasts exceptional details, such as a passenger area and much more.



# The e-evolution lithium-ion technology

With the innovative and modular design of our new Lithio series batteries we were able to boost our energy efficiency. This boost reduces costs and improves ice quality even further at all times. With in-between charging and incredible range our machines offer a drastic cost reduction for any facility that seeks to improve their operations. With this new technology and through modular design it can be adapted to your needs of range and weight.

**Our lithium battery packs are waterproof, maintenance free and up to 5 years of guarantee/warranty.**



ZERO EMISSIONS FOR CLEAN ICE AND AIR



# Colours

## Product customization

Through product customization, engo ice resurfer's can be adapted according to preferences for colour and special technical equipment, to suit individual customer's requests.



Colour design and additional labeling are optional features.











# The differences

IcePanther PRO > IcePanther CLASSIC

**engo**

## One machine, many choices

The IcePanther-resurfacer is available in two different editions, characterized by their different levels of operation comfort, scale of equipment and level of technically operated components.

# IcePanther

### THE MOST IMPORTANT EQUIPMENT

### PRO

### CLASSIC

ELECTRONIC CONTROL SYSTEM	Full Auto system freely configurable	manual
COCKPIT	2 Displays: 1 x 10,4 inches and 5 or 7 inches	1 Display: 7 inches
OPERATION ELEMENTS	new intuitive multi-function joystick, CAN keyboard, cruise control	single finger joystick, CAN keyboard, cruise control
SENSORS / optional	Ice temperature, ambient temperature and humidity, NEW: ICE THICKNESS MEASUREMENT	Ice temperature, ambient temperature and humidity, NEW: ICE THICKNESS MEASUREMENT
PRESETTING	various cutting depths, watering systems, joystick functions	—
SETTING WATER FILLING QUANTITY	freely selectable via screen	only complete filling
ICE EDGER / optional	hydraulic with height adjustment from the operator's platform by joystick	hydraulic with height adjustment from the operator's platform via keyboard
WASHING SYSTEMS	high pressure	low pressure
BATTERIES	LITHIO Technology battery	LITHIO Technology battery

*This information is subject to reservation*

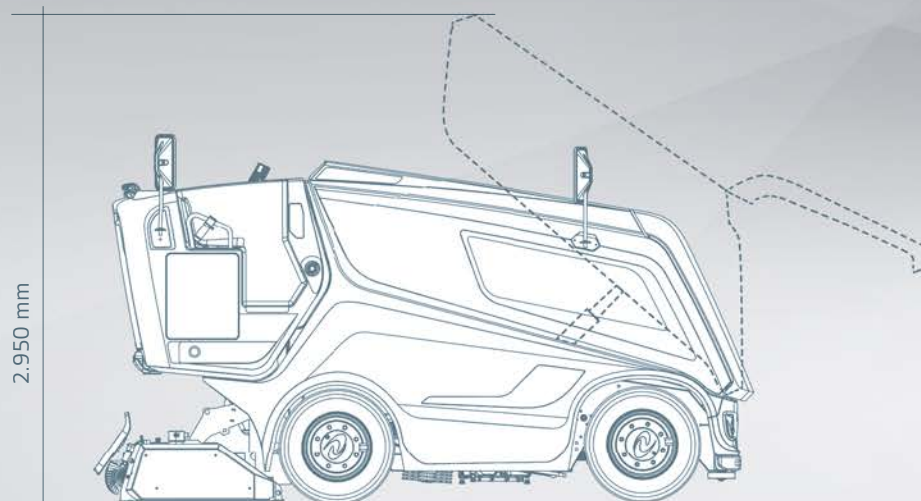
# IcePanther

## TECHNICAL DATA

ICE FIELDS	up to 2.500 m <sup>2</sup>
DIMENSIONS	4.260 x 2.125 x 2.200 mm*
SNOW TANK HEIGHT OPEN	2.950 mm
BLADE WIDTH	2.000 to 2.300 mm
TURNING RADIUS	4.000 mm
WATER TANK	Volume up to 1.500 L
SNOW TANK	Volume 3,0 m <sup>3</sup> (Compressed 3,8 m <sup>3</sup> )
WEIGHT / STANDARD	3.900 kg
WEIGHT / LOADED	5.200 kg
CONVOYERS ENGINE	Electric
PUMP PRESSURE OF WORKING UNITS	160 bar
HYDRAULIC OIL TANK	70 L
DRIVE SYSTEM	Electric all-wheel drive
MOTORS	5 synchron motors
BATTERY	LITHIO Technology battery starting from 320 Ah up to 560 Ah

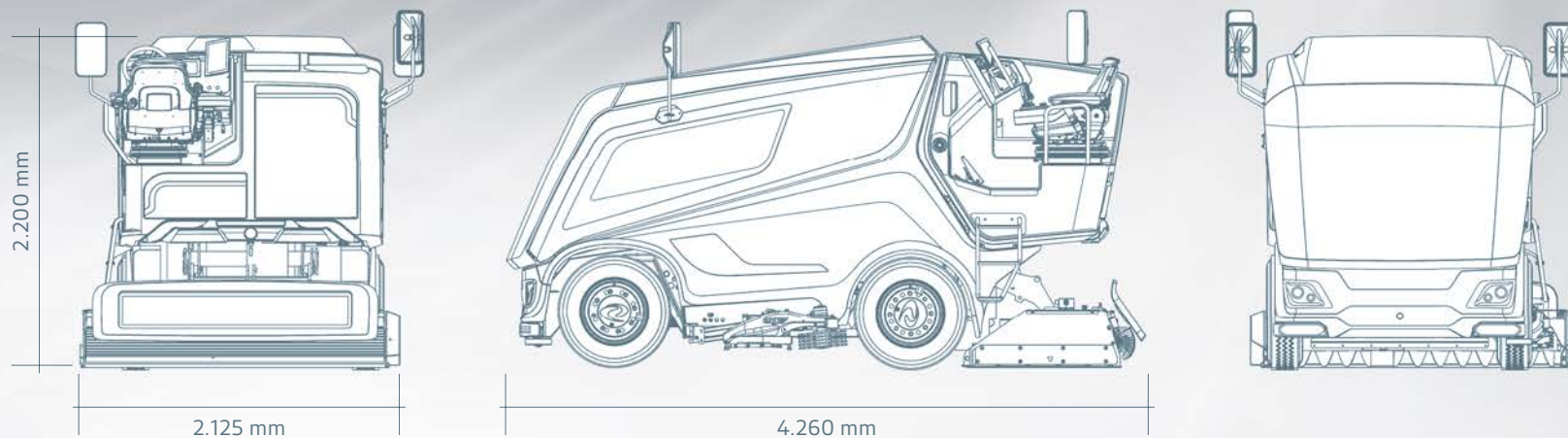
\*Length x Width x Height

\*\*This information is subject to reservation



## KEY FACTS AT A GLANCE\*\*

FRAME	<ul style="list-style-type: none"> <li>• bolted modular principle</li> <li>• Coating type freely selectable</li> </ul>
DRIVE	<ul style="list-style-type: none"> <li>• up to 870 NM per axle input</li> <li>• integrated negative parking brake</li> <li>• Single wheel brake hydraulically assisted in oil bath</li> <li>• Electronic control by potentiometer</li> </ul>
ELECTRIC MOTORS – SMAC SERIES	<ul style="list-style-type: none"> <li>• synchronous motor with 50 % lesser mass</li> <li>• 25 % more capability</li> <li>• higher efficiency up to 10 %, IP67</li> <li>• lower noise level</li> <li>• total power: up to 47,7 Kw depends on the machine configuration</li> </ul>
LITHIUM BATTERY	<ul style="list-style-type: none"> <li>• selectable 320/420 or 560 Ah,</li> <li>• auto motive,</li> <li>• own remote system,</li> <li>• charger NEMA 3 or IP 67</li> <li>• charging gun</li> </ul>
HYDRAULICS	<ul style="list-style-type: none"> <li>• Triple pump with variable speed</li> </ul>
COCKPIT	Ergonomically designed driver's cockpit with adjustable steering column and adjustable armrest, screens in various sizes selectable, new intuitive joystick or toggle switch, various sensors, presets and full-auto control



- BASIC MACHINE CONFIGURATION**
- quick blade change system
  - auger wash out system
  - one screen
  - toggle switch
  - water and knife manual
  - board brush

- SENSORS OPTIONAL**
- LLS laser leveling system
  - ice thickness measurement
  - ice temperature
  - ambient temperature
  - humidity sensor

- DRIVER'S AND PASSENGER SEAT**
- vertically and horizontal adjustable driver's seat with safety system
  - Passenger seat on the opposite of driver's area with safety system

- BODY – RTM TECHNIC**
- High-precision process for the manufacture of precision-fit body parts
  - process – AUTO MOTIVE
  - Consistent quality standard

- SNOW TANK**
- welded solid steel construction
  - Cataphoresis treated
  - OPTIONAL: Stainless steel
  - according to DIN 3,00 m<sup>3</sup>, compressed 3,80 m<sup>3</sup>

- WATER TANK DESIGNS**
- Tank construction in PE:
    - Monotank up to 1400 liters
    - OPTIONAL: Double tank 1000/400 liters
  - Tank construction in stainless steel:
    - Monotank up to 1500 liters
    - OPTIONAL: Double tank 1100/400 liters
  - Tank connection between wash water tank/ice preparation water tank controllable via cockpit
  - Water tank/snow tank connection Capacity up to 3200 liters

- MOTION OPTIONAL**
- Digital animated LED advertising display on the snow tank sides and on the sledge

- SOME POSSIBLE OPTIONS**
- Full Auto system start of working functions
  - joystick • 1 or 2 screens
  - manual/programmable water application and blade settings
  - snow tank lifting • different water tanks
  - different washing systems
  - Hydraulic Ice edger with electric height adjustment
  - Solid Ice system
  - LLS laser leveling system
  - ice thickness measurement
  - ice temperature • ambient temperature
  - humidity sensor
  - LED lighting package
  - front, rear and side camera
  - cabin and much more ...



# Equipment highlights

## OPTIONALS OR STANDARDS

Each engo ice resurfacers model includes a number of standard equipment features, and offers a range of functional, innovative options.

The most important Equipment at a glance:



### ICE RESURFACING

- SNOW TANK AND WATER TANK IN DIFFERENT VERSIONS
- AUGER WASHOUT SYSTEM
- ICE BOOST – Snow breaker for augers
- HYDRAULIC ICE EDGER WITH ELECTRIC HEIGHT ADJUSTMENT
- SOLID ICE SYSTEM / new age of ice making

### CONDITIONER AND BLADE

- CONDITIONER: POWDER-COATED, GALVANIZED, STAINLESS STEEL
- FAST BLADE CHANGE SYSTEM

### HIGH-PRESSURE WASHING SYSTEM

- TWS / TANK WASH SYSTEM
- WWS / WHEEL WASH SYSTEM
- IWS / HIGH-PRESSURE ICE WASHING SYSTEM  
The IWS cleans the scores on the ice precisely and removes traces of snow
- WATER FOUNTAIN FLOOD SYSTEM

### DRIVE SYSTEM

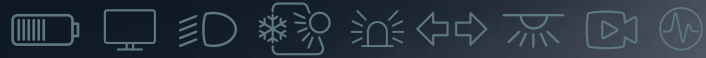
- ALL-WHEEL DRIVE
- MAINTENANCE-FREE SYNCHRONOUS MOTORS
- SERVO-ASSISTED UNIT FOR OIL BATH BRAKE

### COCKPIT

- ERGONOMIC DRIVER'S PLATFORM with joystick and colour touch screen display
- FULL AUTO SYSTEM START  
The system automatically starts the operating steps in a pre-defined order
- HEATED DRIVER SEAT

### SENSORS

- SENSOR FOR ICE THICKNESS MEASUREMENT
- SENSOR FOR ICE/AIR HUMIDITY AND AMBIENT TEMPERATURE
- SENSOR FOR WATER TEMPERATURE
- AUTOM. SPEED DEPENDENT PROPORTIONAL WATER MANAGEMENT
- LASER LEVELLING SYSTEM
- LASER LANE INDICATION
- PARKING SENSORS



### BATTERIES

- LITHIO TECHNOLOGY BATTERY / POWERPACK

### MOTION

- DIGITALLY ANIMATED ADVERTISING LED DISPLAY on the snow tank sides and on the sledge

### LIGHTS

- LED DAYTIME DRIVING LIGHTS
- LED INDICATORS FRONT AND BACK
- SIDE MOUNTED LED WORK LIGHT
- UNDERBODY LED LIGHTING

### EXTRAS

- FRONT, REAR AND SIDE CAMERA
- REMOTE DIAGNOSTIC SYSTEM SMART-CONNECT









# ice arena equipment

ICE RESURFACER

DASHER BOARDS

ACCESSORIES



Over 45 years of experience



# ENGO ICE RESURFACER PRODUCTION HALL





STEP 2

STEP 3

STEP 4

STEP 5

STEP 6

ELIAS



# Ice resurfacer Range

Our wide range of machines and special equipment combines maximum precision and high performance. Whatever individual requirements and circumstances your arena or driver may have, we have the ideal solution!

All of our machine types can be equipped with numerous innovative optional features, making each one a unique, individualized piece.

## IceLion / LITHIO Edition

5

- Application: Ice fields up to 7.000 m<sup>2</sup>
- Blade width: 2.500 mm
- Dimensions: 4.550 x 2.660 x 2.350 mm\*
- Operation: Electric

## IceTiger / LITHIO Edition

4

- Application: Ice fields up to 3.000 m<sup>2</sup>
- Blade width: 2.300 mm (Optional 2.500 mm)
- Dimensions: 4.000 x 2.420 x 2.300 mm\*
- Operation: Electric

## IceWolf / LITHIO Edition

### SMART / CLASSIC / PRO EDITION

3

- Application: Ice fields up to 1.800 m<sup>2</sup>
- Blade width: 2.000 mm (Optional 2.150 or 2.300 mm)
- Dimensions: 4.000 x 2.150 x 2.100 mm\*
- Operation: Electric

## IcePuma

2

- Application: Ice fields up to 1.200 m<sup>2</sup>
- Blade width: 1.700 mm
- Dimensions: 3.500 x 1.830 x 1.990 mm\*
- Operation: Electric

## IceDingo

1

- Application: Ice field boarders
- Blade width: 360 mm
- Dimensions: 1.400 x 470 x 1.200 mm\*
- Operation: Electric

\*Length x Width x Height



**IcePanther**





## ENGO DASHER BOARDS PRODUCTION

### **Cooperation between man and machine**

Our products are designed in a semi-automated process. Our boards are assembled by the employees before they are cut and adjusted by a CNC robot. Each element can be tailor-made and still efficiently produced. Our Ice resurfacer's, on the other hand, are produced in 6 cycles with prefabricated parts.



## Dasher boards Range

### INNOVATION AND USER-SAFETY

engo develops and produces IIHF-conform, tested flexible dasher board systems for all kinds of indoor and outdoor ice rinks. So-called flexible board systems are safer and more flexible than traditional boards, and they cushion the effect of robust body checks. engo was one of the first manufacturers to recognize the potential of flexible dasher boards to reduce the risk of injury. In collaboration with the technical university of Dresden, we developed the highquality model engo FlexBoard PPS.

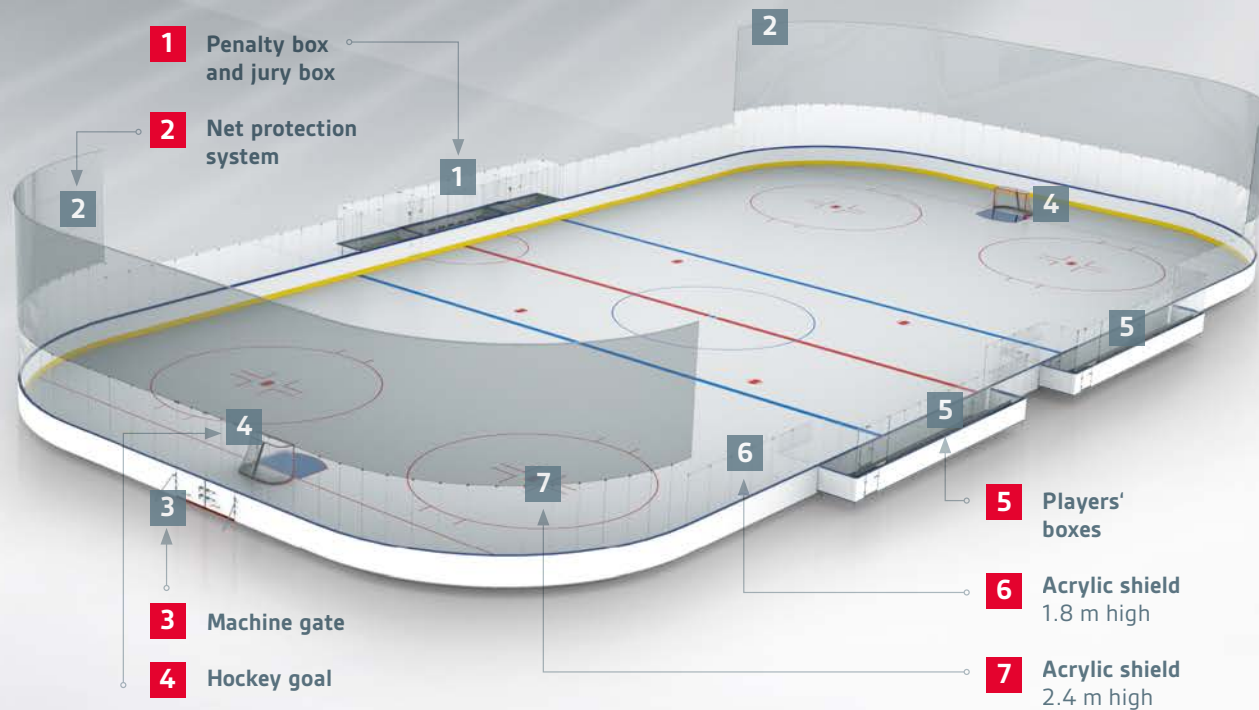
Because of its special material and structure, it absorbs the major part of the impact when players collide into it.



**FlexBoard**  
PPS



## Dasher board system



## FlexBoard PPS

### VERSATILE & SAFE

At engo FlexBoard PPS, flexibility depends on a support post made of a special plastic-based composite that is reinforced with fiberglass. What is unique about this product is the combination of a strong lower aluminum base, and a flexible, bendable upper part. They are the core components that together make up this incomparable board.

## FlexBoard CLASSIC

### THE CLASSIC SOLUTION

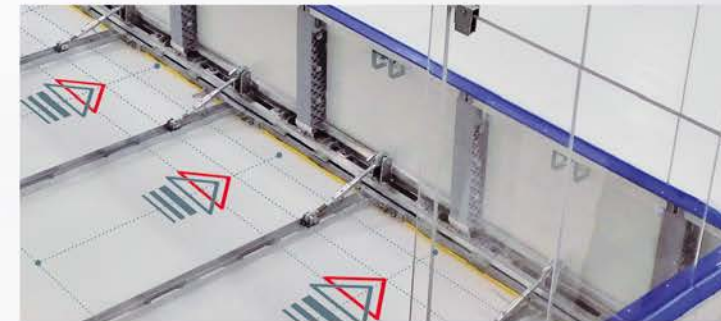
Board with stable double steel frame construction. It is equipped with 10 mm thick UV-resistant PE-HD 500 high density polyethylene panels with blue polyethylene handrail and impact rims. Suitable for indoor and outdoor ice rinks for ice hockey, short track speed skating or figure skating.



## FlexBoard PPS **MOTION**

### INNOVATIVE ADVERTISING

The LED foil is integrated inside the dasher board body, including the installation and control system. It only needs power supply provided by the ice arena. The LEDs with a pixel pitch of 5 mm are embedded in a soft urethane bed and thus optimally protected against impacts. The innovative, bendable LED foil is 7 mm thin and weighs only 6.25 kg per square meter.



## QuickAdapt System

### ONE SYSTEM, MANY SIZES

The innovative, patented QuickAdapt System is the cost effective alternative to a complete rebuilding to reduce your ice rink to the NHL size. It moves the dasher board with the help of hydraulic cylinders reducing the size of the ice rink by 4 meters within 3 hours only.





## Ice arena accessories

YOU NAME IT, WE'VE GOT IT  
The largest assortment of ice arena equipment and accessories to equip your ice arena.



- **HOCKEY GOAL, NETS AND PADDING**

- **LED PANNELLING**

Scoreboards, Jumbotrons or regular Videocubes

- **ICE RINK DIVIDER**

Ice rink divider made from resilient and durable plastic

- **ARENADECK**

Protection mats

- **ICE RINK MARKINGS**

Full professional field markings

- **RUBBER FLOOR**

Skate-proof rubber flooring in various thicknesses

- **CURLING SET**

- **PUCK REMOVER**

and Wax Protector

- **SHORTTRACK**

Protection mats

- **SPEEDSKATING**

Protection mats

- **ARENA SEATING**

Grandstand seating in any shape and design

... and much more!



# Over 45 years of experience



## STRONG FOR THE ICE AGE

engo is a reliable partner and supplier of high-quality ice arena equipment with over 45 years of experience. We develop and produce various models of electric ice resurfacer's, and innovative, flexible dasher boards. The product range also covers a comprehensive range of arena accessories. engo's products set standards in terms of user safety, innovative technology, and particularly in user-friendly operating systems.

## MEMBER OF THE TECHNOALPIN GROUP

Since 2018 engo is part of the TechnoAlpin Group. TechnoAlpin is the world market leader in the development of snowmaking technology.

## INTERNATIONAL TAILOR-MADE SERVICE

We do not only want to be a supplier, but also a reliable partner. That is why we offer a complete service from the project to the after-sales assistance. Our customer service is aimed at solving problems quickly and optimally. All service technicians have years of experience and can help with any questions. A network of partners and service providers are at your disposal.

## CERTIFICATIONS

All engo products conform to the CE marking. CE (= Conformité Européenne) is a special certification that indicates conformity with health, safety, and environmental protection standards for products sold within the European Economic Area. The engo company is also ISO certified. To meet the ISO 9001:2015 standards, we evaluated all of our processes using detailed metrics, and we implemented a quality management system according to international standards.

### CERTIFICATION



### MEMBER



### MEMBER of the TechnoAlpin Group





engo ice arena equipment

# We operate internationally and our aftersales team is also international.



**OVER 2.500**  
ICE RESURFACERS  
PRODUCED



**OVER 2.000**  
ARENAS  
SUPPLIED



**MORE THAN 100**  
EMPLOYEES  
WORLDWIDE



## LEGAL NOTICE

This brochure has been prepared only as a general guide for the customer.  
Some equipment described or shown may be optional at additional cost.  
Specifications are subject to change.  
For current product information, please contact the engo Company.

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