Jos. Sauerwald Söhne GmbH & Co. KG

Workepiece carriers (Trays)

1 Company

Tradition and progress since 1824

1824
Founded by Josef Sauerwald:
Soap production, ham smokehouse, coffee roasting, petroleum- and trade with colonial goods

1824 → 1900 → 1920 → 1965 → 1972 → 1980 → 1991 → 1999 → 2003 → now

1900 - 1965
Production of shoe and floor polish

1920 - 1987
Production of grinding and polishing materials

since 1965
Production of thermoformed plastic packaging

since 1972
Focus on packaging for non-food-products

since 1980
Regeneration and processing of wax for lost-wax casting

1991
Construction of the new production facility in Velmede

since 1999
DIN EN ISO 9001 certified

since 2003
Trade with packaging for electronic media data

Now
Thermoformed plastic packaging and workpiece carriers (trays), trade with media packaging, regeneration and processing of wax for lost-wax casting

Numbers, data, facts

Jos. Sauerwald Söhne

- Sauerwald-Group
- 45 employees
- 2 factories in Bestwig
- 3-layer production
- Sales revenue app. 10 millions €

Location Nuttlar

- General administration, merchandise warehouse, tool warehouse
- wax processing:
- Regenerating, extruding and injection moulding of wax
- Trading with packaging for electronic media

Location Velmede

- Production, warehouse & administration
- Thermoforming of
  - Workpiece carriers (Trays)
  - Blister packaging
  - Displays & inleys
- Further processing
- Milling, punching, assembling and more

Thermoforming and much more

With our longterm experience we consult and design your concepts for carrier systems according to your requirements or implement existing concepts for you:

- Consulting
- Conception
- Construction design
- Procurement (toolmaking, material, label, SLC, ...)
- Production
- Punching und CNC-milling

Production

- Initial material thickness from 0,28 up to 12 mm
- Material from plate or roll
- Wide range of processed plastics:
  - The classics:
    - ABS, ABS-TPU
    - PET, A-PET, G-PET, GAG-PET, ...
    - PVC
    - PS
    - PE
    - PP
  - Electrically conductive plastics
  - Compounds
  - Bioplastics

2 Workpiece carriers (Trays)

Wide range of Tray-Formats

Tray formats:

- Up to max. 1.200 mm x 1.400 mm
- Max. moulding surface 1.400 mm x 2.400 mm

To reduce tooling costs and the effort for toolmaking, use our height-adjustable frame tools. Only a tool-insert needs to be designed for your components.

Tray 800 x 1.400 mm in stacking frame

Formats of our existing frame tools

- 400 x 600 mm
- 600 x 800 mm
- 500 x 1.000 mm
- 800 x 1.200 mm
- 1.000 x 1.200 mm

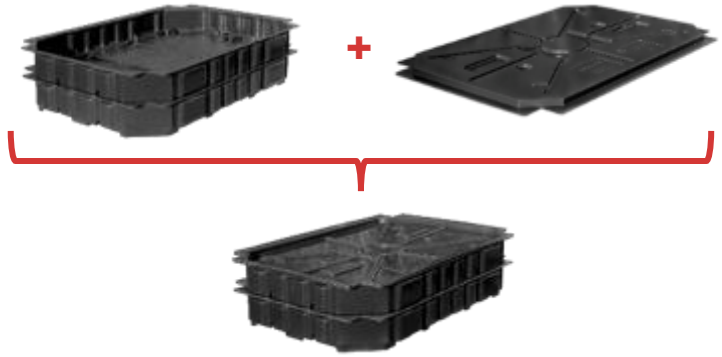
Tray 400 x 600 mm from our frame tool

Self-supporting stackable workpiece carriers (tray)

- Surrounds componentes on all sides
- Bottom of the upper layer grips into the stacking rim of the lower layer
- Ideal protection against dust and splash water
- Stacking via tray
- Inner area customised for your components
- Components lay securely in custom-fit mould cavity and are held in place by them

Lids:

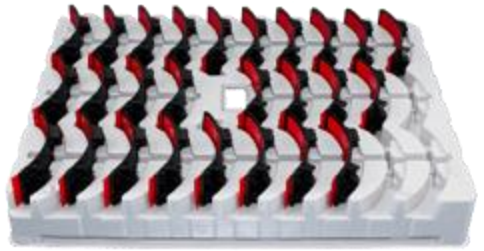
If the tray itself or the top tray in the stack shall be closed, we manufacture a custom-fit lid.



Self-supporting stackable trays in container

- Workpiece carriers matched to the internal dimensions of e.g.:
  - SLC (Small Load Carrier) / LLC (Large Load Carrier)
  - Lattice box / pallet cage
  - Pallett stacking frames
  - Foldable transport container / folding box
  - Stacking rack / steel rack / other transport rack
- Easy removal of layers due to gripping recesses
- Trays stacked in single or mutiple layers in the container

multi-layer in SLC



single-layer

multi-layer

Benefits

+ Force transmission via container and lower stacking height
+ therefore thinner material for the tray can be used
+ which can result in faster production of the trays on automatic roll-fed machines (up to 3 mm initial material thickness)
+ Automatic handling possible

Workpiece carriers with rotary stacking

empty trays stacked

Rotary stacked trays are designed, that the next upper layer is rotated horizontally by 180°.

Shapes (moulds), domes or shifted edges carry the weight partially or completely and stabilise the stacked trays.

When empty, the trays slide into each other.

The stacking direction can clearly be marked by colored stripes or shaped handling directions.

shaped handling directions

rotary stacked trays

Benefits

+ Reduced volume, when trays are empty
+ simple tool design
+ Safe stacking even with thin material

colour stripes

3 System packaging

Interlayer
(Force transmissions via components)

The weight of the upper layer is carried by the components:

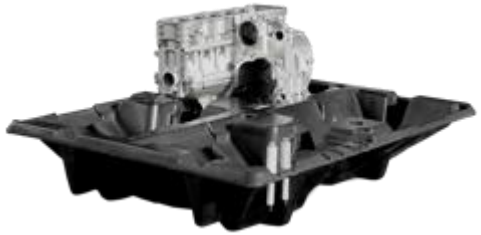
- Bottom layer lying on pallet or firmly mounted on pallet
- Interlayers:
  - The underside of interlayer lies wholly or partially on the components of the bottom layer
  - Components lie on top side of the interlayer. The shape of the top side holds the components in place.

An empty interlayer or a bottom layer can be used as a lid.

Benefits

+ Force transmission wholly or partially via components
+ Thinner material thickness of the trays
+ Special fixation of the components via upper and lower interlayer or bottom layer

Trays + SLC, LLC, folding boxes and more



- Compound of different materials or combination of diverse packaging enable optimal packaging solutions
- We design, mount, assemble and label system packagings, matching to our thermoformed trays...

.... in combination with:

- Special load carriers / steel load carriers
- SLC / LLC (small and large load carriers)
- Foldable transport container
- Cardboard boxes
- Folding boxes
- EPP foam
- Twin-wall-sheets
- Injection moulding components
- Wood boxes

tray + SLC + lid + palette

bottom layer + trays + lid + foldable transport container

System packaging – Trays in pallet stacking frames

Foldable stacking frame + tray

- Especially for larger and heavier components, the combination of stacking frames / stacking racks and our trays has proven its worth
- For very large components, foldable stacking frames and our interlayers and bottom layers can be used
- This significantly reduces the volume of the empty stacking frame

Stacking frames with trays

System packaging – Trays in steel load carriers

Tray and steel load carrier for front axle – compatible for automated production lines

Two trays as bottom layer loaded with 8-cylinder engine in a steel load carrier

One tray as bottom layer loaded with a 6-cylinder engine in a pallett-cage

4 Materials

Material thickness
Single-use or reuse?

Reuse: multi-use trays

- Field of application: heavy workpieces / components or multiple use in logistics and production
- Long-life cycles
- Resistant and robust against external influences and impacts
- For intial material thickness up to 3 mm, cost-effective and fast production on roll-fed machines

REUSE

Recycle: single-use trays

- Field of application: light workpieces / components or shipping of workpieces over long distances
- Focus: optimising the material thickness, *as thick as necessary and as thin as possible*
- Benefit: cost-effective production on fast roll-fed machines

RECYCLE

ESD-safe packaging & surface protection

Protect your electronic components from unintentional electrostatic discharges:

- Trays made of antistatic or electrically conductive materials prevent unintentional electrical discharges
- Material mit Durchgangswiderständen von
  - Antistatisch: 10^{10}-10^{11} Ω
  - Elektrisch ableitend: 10^{4}-10^{6} Ω

Protect your the sensitive surfaces or vulnerable parts of your components:

- Workpiece carriers / trays with soft TPU or TPE coating
  - Minimise abrasion
  - Increase non-slip capabillity, scratch- and pressure-resistance
  - Provide chemical resistance (against oil, fat, acid)

Sustainabillity

Tray made of organic plastic (corn starch)

- In terms of **sustainabillity, we can produce your trays from up to 100 % recyclable** material
- F.e. ABS / PS from industrial and other waste
- F.e. A-PET from single-use PET bottle production and post-consumer waste
- We can arrange to take back used trays and include them to our material cycle
- Always up to date, we are open-minded about alternative plastics
- We have already successfully thermoformed trys from different bio-plastics and bio-plastic-compounds

Tray made of bio-plastic compound containing lignin
(a by-product from the paper industry)

5 Automation & container management

Automated handling

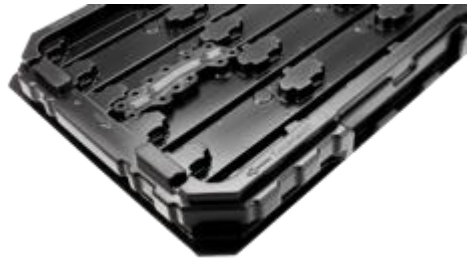
Coloured stripes + tool-side outer geometry

Precise Inner and outer contour + label

We design our trays to meet your requirements for automated handling:

- Detailed contours of the cavities
- Outstanding accuracy of the outline
- Special shapes as reference for the exact same insertion in the machine
- Water drain holes at the deepest points of the trays
- Automatic stacking and destacking of trays
- Automatic filling of the trays
- Clear guideline of the positioning via:
  - Poka Yoke corners
  - Coloured stripes
  - Labels
  - Shaped handling instructions

Tray in machine



Shaped handling instructions + Poka Yoke corners

Marking, labeling & traceability

Material designator

labes + transparent pockets- / insert pockets

Functioning container management via individual labeling in / on the tray

- Customer number
- Company logo

Guaranteed traceability and material recycling at the end of the life cycle via

- Material-ID / material designator
- Date stamp
- Manufacturer‘s marking

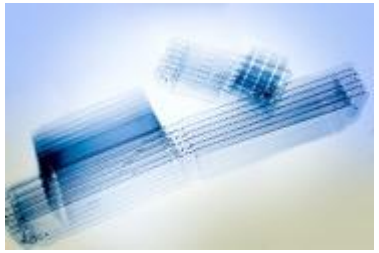
Customized markings via

- Shaped handling instructions
- Non-removable labels
- Barcode-labels
- RFID-chips
- Transparent pockets / insert pockets for variable für variable identifications signs

Manufacturer‘s marking + Article-no.

Handling instructions

What else do we do...



Blister packaging



Displays and inlays



Regenarting, Extruding and injection moulding of casting wax


Sauerwald Handels GmbH & Co. KG – trading
with packaging für electronic media

Questions? We are here for you!

Your personal contact persons:

Frank Steinbach
Sales

☎ +49 29 04 / 71 286-128

✉ frank.steinbach@sauerwald.de

JOS. SAUERWALD SÖHNE
Since 1824

www.sauerwald.de

Thomas Sauerwald
CEO

☎ +49 29 04 / 71 286-117

✉ thomas.sauerwald@sauerwald.de