



Key factors and arguments for the UNI-TROLL Solution

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UNI-TROLL®

UNI-TROLL's 6 key-factors



Easy handling,
saving labour costs



Minimizes use of expensive
one-way packaging



Easy handling of
ISO module boxes



Prepared for automation,
AGV and autonomous trucks



Can be broken down for
storage and return transport



Designed for use in all
parts of the supply chain

OUR VISION IN 2.5 MINUTES

To start the video, please click and [Learn about our vision at Youtube](#)



Characteristics of present Load Carrier Concepts;

1. Are often controlled only by the individual retail chain.
2. Not always with standard (Euro Module) measurements.
3. Investments not shared with supply chain partners in a pool.
4. Not flexible heights and roll cages cannot be double stacked.
5. Difficult to load by robots in automated warehouses.
6. Low lifetime, heavy in repair costs - are not repaired.
7. Not always reduced volume when returned empty.
8. Not interchangeable with other partners of the supply chain.
9. Availability in peak season limited due to small pool size.
10. Supply chain partners use several different models.
11. Wholesalers often need to reload to serve retailer.
12. Working environment problems and noise challenging.



The 3 Models - M2, M3 & M4

4 pcs Trolley M2 or Trolley M3 or 3 Trolley M4 besides each other fits in the width of most trucks 2,50 m (4x616 = 2464 mm) (3x816 = 2448 mm). Baseframes has each 2 fixed and 2 swivel castors (wheels).

Dimensions of the 3 models:

- **Uni-Troll M2; "Half-EUR-pallet size"**. Base frames 891x616mm external, and 815x606mm internal.
- **Uni-Troll M3; "New generation CC/DC"**. Base frames 1291x616mm external, and 1215x606mm internal.
- **Uni-Troll M4; "EUR-pallet size"**. Base frames 1291x816 mm external, and 1215x806 mm internal.

All base- and shelf-levels fits to modular crates 600x400 mm; M2 fits for 2 crates, M3 for 3, and M4 for 4 modular crates.



Model M2

Model M2

Each level has space for 2 modular crates 600x400mm

Choose your requested:

Height of trolley from 620mm to 2120mm by ordering different heights of corner posts. "Standard" is 8 A and 4 B posts a total of 2120 mm.

Length and numbers of posts (A-Post P75 = 750mm or B-Post P35 = 350mm). The base frame of M2 has storage with a capacity of 8 pcs of P75 and 4 pcs. of P35.

Number of shelves needed per trolley.

Type of shelf of either PlyWood in version Stackable (PWS) or the PolyPropylene and GlassFibre shelf (PPGF)

*Choice of **Additional equipment**:*

Shelf sloper - slopes shelves for brilliant display of goods

Parking brakes



Both M2 and M3 can be stacked to take up a minimum of space.



Two M2 staked upon each other

Model M3

Model M3

Each shelf has space for 3 modular crates 600x400mm.

Choose your requested:

Height of trolley from 520mm to 2620mm combined by ordering different heights of corner posts. "Standard" is 8 P105 posts and 4 P25 posts a total of 2620 mm.

Length and numbers of posts (P105 = 1050mm or P25 = 250mm). The base frame has storage with a capacity of 8 pcs of P105 and 4 pcs. of P25.

Number of shelves needed per trolley.

Type of shelf PlyWood in version Stackable (PWS)

*Choice of **Additional equipment**:*

Shelf sloper - slopes shelves for brilliant display of goods

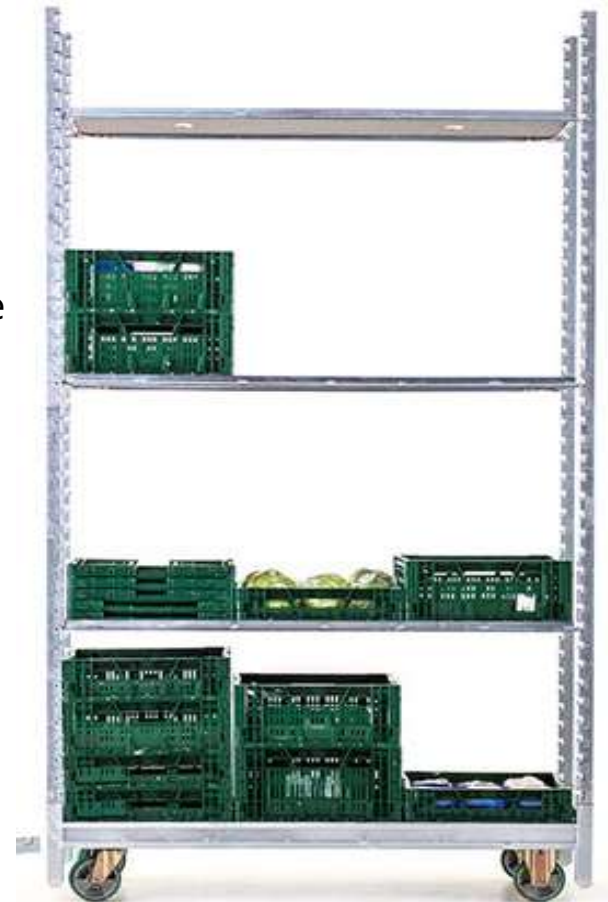
Parking brakes



Parking Brake System (additional)



P105 and P25 posts



Model M3

Model M4

Model M4

Each shelf has space for 4 modular crates 600x400mm.

Choose your requested:

Height of trolley from 92mm to 2220mm combined by ordering different heights of corner posts. "Standard" is a total of 2220 mm.

Length and numbers of posts (P65 = 650mm) . The base frame has storage with a capacity of 12 pcs of P65.

Number of shelves needed per trolley.

Type of shelf; PlyWood in version Stackable (PWS)

*Choice of **Additional equipment**:*

Shelf sloper - slopes shelves for brilliant display of goods

Parking brakes



Model M4



Why the name UNI-TROLL?

TROLL meaning of TROLLEY

- **UNIQUE** – two patents, trademark & EU-design registration
- **UNITED** – users are united behind the pool by joined ownership of a Pool-Company
- **UNIVERSAL** – anyone can use Uni-Trolls as the EURO-format, fits to modular crates (plastic boxes) and Uni-Troll trolleys fits to most trucks and AGVs or robots. Further on RFID tags /GRAI and Bar codes on frames and shelves make the trolleys and the goods easy to track and trace.

UNIQUE · UNITED · UNIVERSAL



UNIQUE - Why?

Why UNI-TROLL trolleys are unique

Two patents, the trademark & EU-design registration. As the trolleys are destackable and designed for your solution to automatically stack and destack of trolleys by machines.

The combination and customization of trolleys with crates and shelves according to your needs give

*Quick accessibility of products on shelves,
Reduce labour costs by efficient handling of goods*
Provide ergonomic working positions &
Save packaging to improve the environment.*

*Per circulation you save minimum 12 labour minutes . Calculated savings by 12 rotations per year.



Packed down 1:5,5



Bearing hangers



Patented posts



Shelf sloper

UNIVERSAL - Why?

UNI-TROLL trolleys are universal load carriers

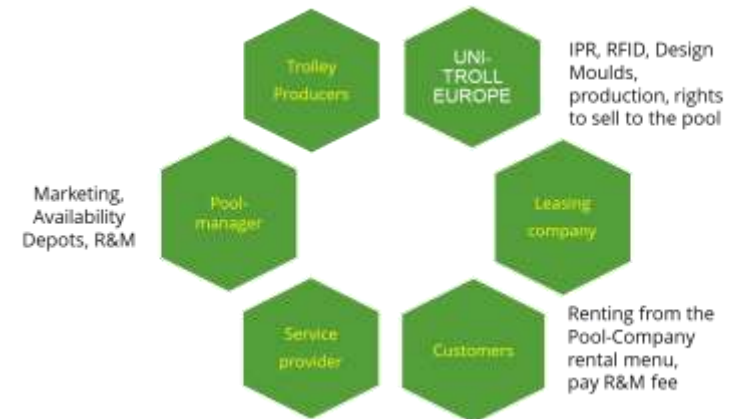
- ISO modular 600x400 crates are the standard size in Europe. You can rent standard crates by eg. IFCO, EPS (European Pool System), CC and others.
- Can be used in all links of a supply chain; producers, industries, transporters, logistic providers, wholesalers, retailers etc.
- Can be exchanged full for empty, when you join the pool
- Supplant expensive oneway pallets and shop displays
- Trolleys can be assembled and prepared with or without the load by machinery. We have identified several areas where robots / AGV can help you handle the trolleys, and the construction of Uni-Troll is optimized for this.



UNITED - How?

How the UNI-POOL is a united concept

- The purpose is to create synergies for the users.
- Investments are shared.
- Rotations per trolley per year is increased.
- More rotations means lower costs per unit.
- Controlling, cleaning, R&M is organised
- A Pool-Company is the owner of all trolleys, and has the obligation to control and optimize the use.
- The role of the Pool-Company is “orchestrator”.
- The users can have individual ownership (shares) after the number they buy/lease through a joint holding company.
- *Financing by leasing is organised in the Pool-Company at very favourable conditions.*



The contribution to SDG 17

How the UNI-TROLL concept contribute to SDG?

- *Improves human working environment – support tools*
- *Designed for double stacking*
- *Industrial standardization creates value*
- *Designed for automation, AGV and driverless trucks*
- *Save energy in transport – less emission of carbon gas*
- *Improves and strengthens supply chains*
- *Improves logistic processes – less food losses and waste*
- *Partnerships and circular economy - pool companies*



The five SDG UNI-TROLL contributes to

UNI-TROLL contributes most to these 5 SDG.

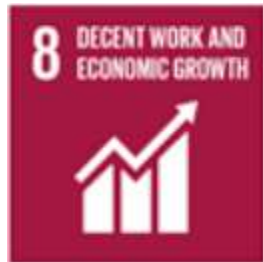
08 Decent work and economic growth

09 Industry innovation and infrastructure

12 Responsible production and consumption

13 Climate action

17 Partnerships for the goals



The idea of a new roll pallet

More efficient supply chains are needed for the World in the future;

1. The international / global trade and goods distribution increases.
2. The World needs sustainable recycling supply chain items to cope with increasing population.
3. The ISO 400x600 mm module is most frequently used as the packaging standard.
4. Flexibility and efficiency must be increased, as the competition from global e-trade is increasing.
5. Goods on wheel saves labour and costs.
6. The working environment is in focus, and costs for manual handling is increasing.
7. Automatic handling with AGV and robots improves the working environment and are saving handling costs especially in automated warehouse installations.
8. Flexible loading heights maximizes the truck's loading capacity and saves costs and energy.
9. A future RTI must fit to many different products from many different industries and have low TCO.
10. A patented and RFID equipped system can be protected and safeguards the pool and handling costs.
11. Use of unique RFID tags optimizes the flow and is a must in logistic automated warehousing.
12. Soon driverless truck concepts will demand a new standard for load carriers.



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