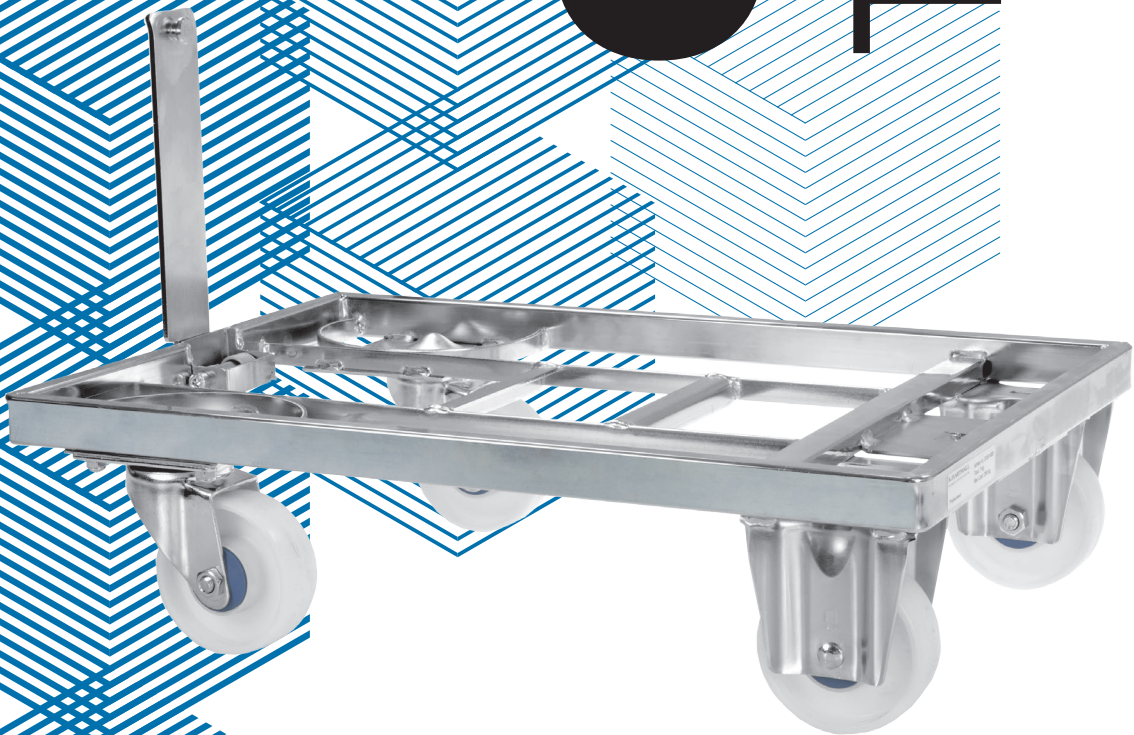


K.HARTWALL ■

www.k-hartwall.com

Carrelli Trolley



Material Handling

V 4.0

LEANPRODUCTS
Lean manufacturing

NOTE / NOTES

Material Handling

T +39 0434 572757
info@LeanProducts.eu
www.LeanProducts.eu

LEANPRODUCTS
Lean manufacturing

Index



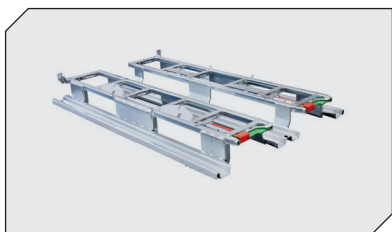
► 6 **Dolly 400 X 600**



► 10 **Dolly 800 X 600**



► 12 **Maniglia ergonomica per Dolly**
Ergonomic handle for Dolly



► 14 **Adapter pallet**



► 16 **Dolly Pallet Type II**



► 18 **Dolly Taxi Type II**



► 20 **Dolly Pallet Type I**



► 22 **Assieme Timone**
Towing Device Assembly



► 24 **Carrelli Milk Run modulari**
Modular Frame



4



5

L'Adapter Pallet viene caricato con 4 Dolly e poi posizionato con il muletto sul camion.

The Adapter pallet is loaded with 4 Dollies uploaded through the forklift on the truck.



3

Il processo dal fornitore

The process by the supplier



2

I Dolly sono collegati assieme come un treno e trasportati in una prima zona di stoccaggio.

Dollies are linked together like a train and transported to a first storage area.



1

Dalla linea di produzione i prodotti vengono collocati nei contenitori in plastica (KLT) posizionati sui dolly.

From the production line products are placed in plastic containers (KLT) on the dollies.



6

Gli Adapter Pallet sono consegnati nel magazzino ingresso prodotti del cliente.

The Adapter pallet are delivered in the warehouse of the customer input.



7

I prodotti sono collocati nel magazzino: i Dolly nella parte inferiore, mentre gli Adapter Pallet con i componenti di scorta nella zona superiore.

The products are placed in the warehouse: the Dolly at the bottom, while the Adapter Pallets with spare components in the upper zone.

Il processo dal cliente

The process by the customer



8

I Dolly vengono prelevati dal magazzino e portati nella stazione di utilizzo.

Dollies are taken from warehouse and brought to the workstation.



9

Nella postazione di assemblaggio i prodotti vengono estratti dai contenitori KLT e utilizzati. I Dolly con i KLT sono portati ad un'altezza ergonomica grazie ad un elevatore di casse.

In the station assembly products are extracted by KLT containers and used. The Dolly with the KLT is raised to a ergonomic height thanks to a box lifter.

Carrelli / Trolley

Dolly 400 x 600



CODE LP-KD101



CODE LP-KD201



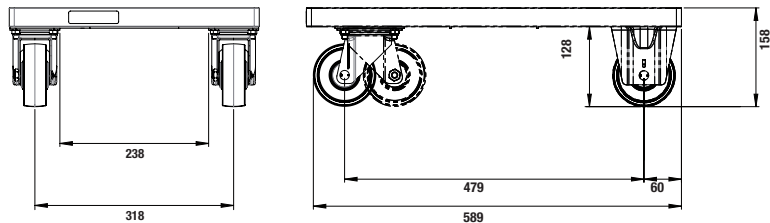
TECHNICAL DATA

- Material: Steel
- Surface treatment: blue zinc EN-ISO 2081
- Weight: 6,5 KG
- Capacity: 250 KG
- Wheel size: 100 mm
- Compatible: Adapter pallet
- Stacking: n°15 h= 2300 mm

■ Special versions ISO and US

- 400 x 400 mm
- 600 x 500 mm
- 609 x 381 mm (24" x 15")
- 609 x 571 mm (24" x 22.5")
- TAG RFID

Dolly 400 x 600



■ Le ruote K. Hartwall sono equipaggiate con cuscinetti a ricircolo di sfere e capsule di protezione per performance elevate e protezione ruote.

■ K. Hartwall wheels are equipped with high quality ball bearings and hub caps for high performance and wheel protection.



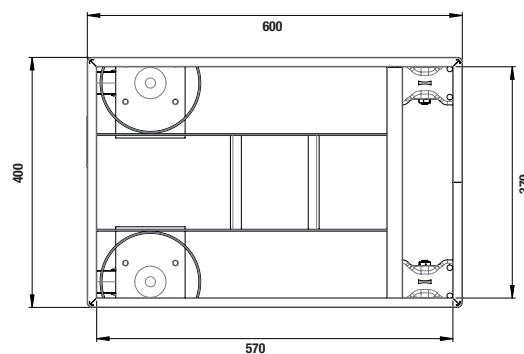
■ Poliammide
Polyamide



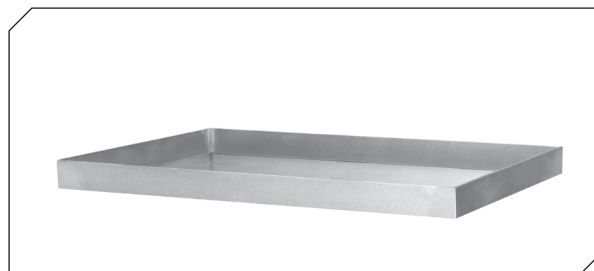
■ Gomma elastica
Elastic rubber






■ Poliammide ESD
Hard plastic ESD



Accessori / Accessories



■ Vassoio in plastica / Plastic tray

PRODOTTO PRODUCT	CODE	NOME NAME	Ruote Girevoli Swivelling Wheels		Ruote Fisse Fixed Wheels		Larghezza Width mm	Lunghezza Length mm
	LP-KD101	Dolly Type I	2	Poliammide Polyamide	2	Poliammide Polyamide	400	600
	LP-KD104	Dolly Type I	2	ESD	2	ESD	400	600
	LP-KD201	Dolly Type II	4	Poliammide Polyamide	0	—	400	600
	LP-KD204	Dolly Type II	4	ESD	0	—	400	600
	LP-KA001	Vassoio in plastica per dolly 400 x 600 Plastic tray for dolly 400 x 600						

Carrelli / Trolley

Dolly 400 x 600



CODE LP-KD704



CODE LP-KD702

Material Handling



TECHNICAL DATA

- Material: Steel
- Surface treatment: blue zinc EN-ISO 2081
- Weight: 6,5 KG
- Capacity: 250 KG
- Wheel size: 100 mm
- Compatible: Adapter pallet
- Stacking: n°15 h= 2200 mm
- Milkrun: Yes

Special versions ISO

- 500 x 600 mm
- TAG RFID

Carrelli / Trolley

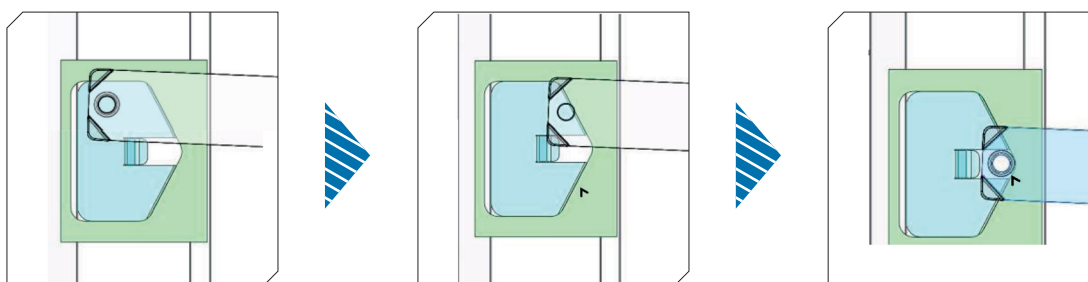
Dolly 400 x 600



CODE LP-KD702
LP-KA002



Easy Lock System patent by K. Hartwall



■ È sufficiente posizionare il timone nell'area del gancio (~70mm²).
Grazie al sistema Poka-Yoke il perno si blocca in automatico.

■ Simply placed the towbar in the plate area (~70mm²). Thanks to the
Poka-Yoke System the knob is automatically locked.

PRODOTTO PRODUCT	CODE	NOME NAME	Ruote Girevoli Swivelling Wheels		Ruote Fisse Fixed Wheels		Larghezza Width mm	Lunghezza Length mm
	LP-KD702	Dolly Type VII	2	Gomma Rubber	2	Gomma Rubber	400	600
	LP-KD704	Dolly Type VII	2	ESD	2	Gomma Rubber	400	600
	LP-KA002	Spondine per dolly 600 x 400 Sideguides for dolly 600 x 400			4 pezzi / 4 pieces			
	LP-KA001	Vassoio in plastica per dolly 400 x 600 Plastic tray for dolly 400 x 600						

Carrelli / Trolley

Dolly 800 x 600



CODE LP-KD802

Material Handling

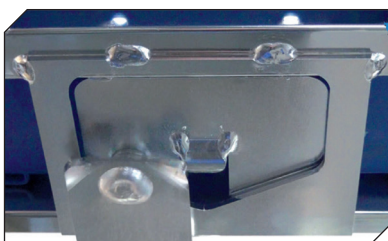
TECHNICAL DATA

- **Material:** Steel
- **Surface treatment:** blue zinc EN-ISO 2081
- **Weight:** 13,6 KG
- **Capacity:** 500 KG
- **Wheel size:** 100 mm
- **Compatible:** Adapter pallet
- **Stacking:** n°15 h= 2300 mm



CODE LP-KD802 LP-KA083

Easy Lock System

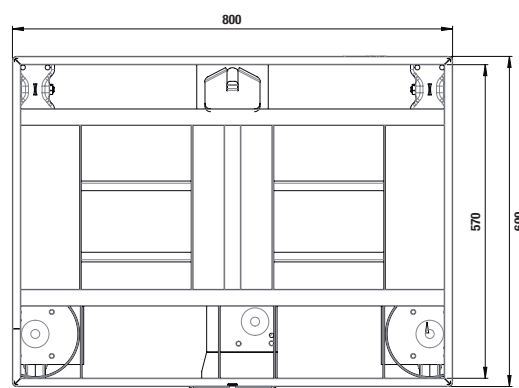
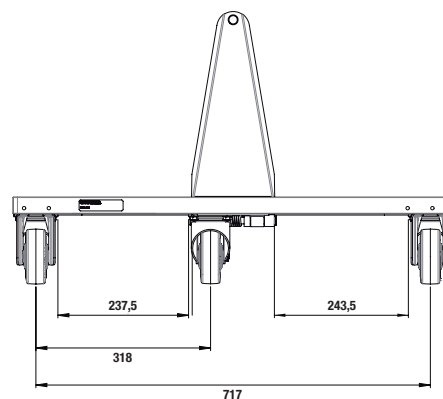
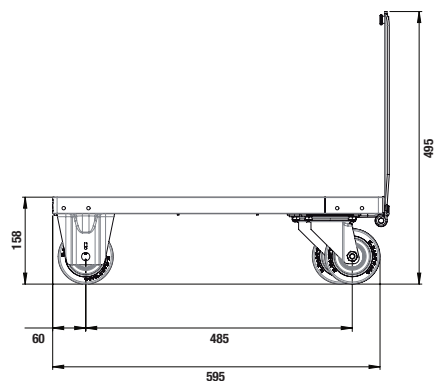


- **Piano in playwood**
- **Playwood plate**

T +39 0434 572757
info@LeanProducts.eu
www.LeanProducts.eu

LEANPRODUCTS
Lean manufacturing

Dolly 800 x 600



CODE LP-KD812

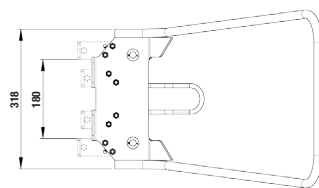
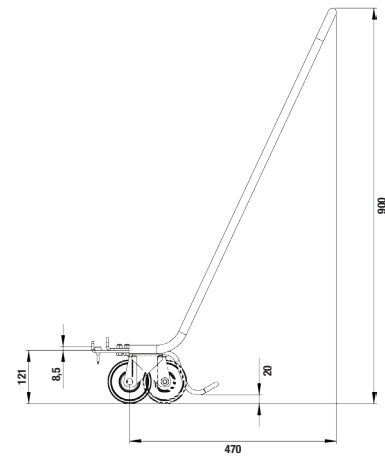
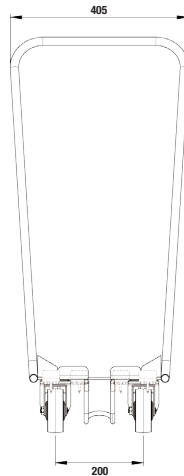
PRODOTTO PRODUCT	CODE	NOME NAME	Ruote Girevoli Swivelling Wheels		Ruote Fisse Fixed Wheels		Larghezza Width mm	Lunghezza Lenght mm
	LP-KD802	Dolly Type 800 x 600	3	Gomma Rubber	3	Gomma Rubber	800	600
	LP-KD804	Dolly Type 800 x 600	3	ESD	2	Gomma Rubber	800	600
Versione timone con foro Towbar version with hole	LP-KD812	Dolly Type 800 x 600	3	Gomma Rubber	2	Gomma Rubber	800	600
	LP-KA081	Vassoio per dolly 800 x 600 Plastic tray for dolly 800 x 600						
	LP-KA082	Piano in Playwood per dolly 800 x 600 Playwood Plate for dolly 800 x 600						
	LP-KA083	Spondine per dolly 800 x 600 Sideguides for dolly 800 x 600			4 pezzi / 4 pieces			

Carrelli / Trolley

Maniglia ergonomica per Dolly

Ergonomic handle for Dolly

Material Handling

**CODE LP-KA010**

■ La maniglia ergonomica per Dolly aiuta la movimentazione manuale dei carrelli. Compatibile con Dolly 600 x 400 e 800 x 600.

■ The ergonomic handle for Dolly helps the manual handling of trolleys. Compatible with Dolly 600 x 400 e 800 x 600.



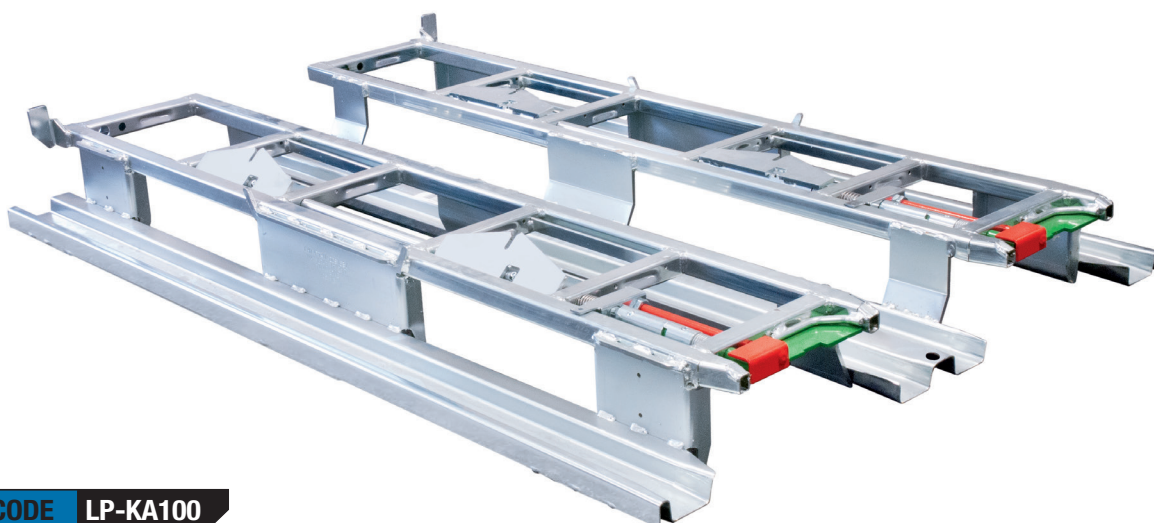
■ Inserire l'aggancio nella parte inferiore del telaio del carrello.

■ Insert the handle in the lower part of the dolly's frame.

T +39 0434 572757
info@LeanProducts.eu
www.LeanProducts.eu

LEANPRODUCTS
Lean manufacturing

Adapter Pallet



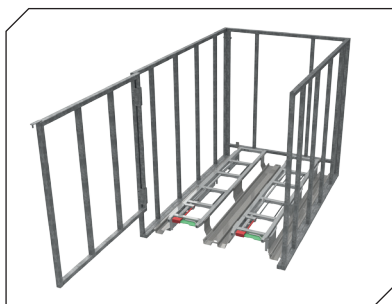
CODE LP-KA100

TECHNICAL DATA

- **Material:** Steel
- **Surface treatment:** blue zinc EN-ISO 2081
- **Weight:** 39 KG
- **Capacity:** 1000 KG
- **Compatible:** Adapter pallet
- **Stacking:** n°15 h= 2250 mm

-Combinations

- 6 Dolly 400 x 400 mm
- 4 Dolly 400 x 600 mm
- 2 Dolly 800 x 600 mm
- 2 Dolly 400 x 600 mm + 1 Dolly 800 x 600 mm



Carrelli / Trolley

Funzionamento Adapter Pallet

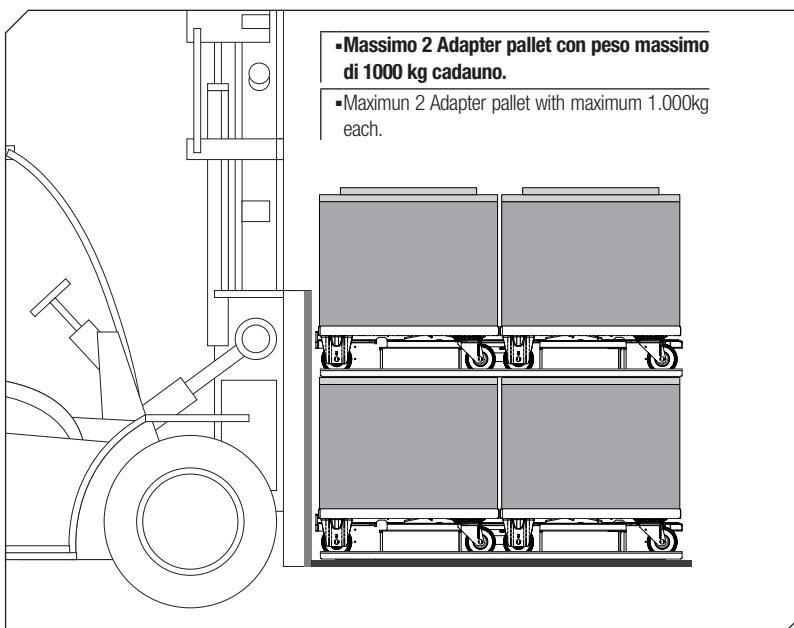
Adapter Pallet operation

Material Handling



• Trasporto Dolly dimensioni 400 x 400 mm, 400 x 600 mm e 800 x 600 mm.
Possibile mix dimensioni.

• Dolly handling dimensions 400 x 400 mm, 400 x 600 mm e 800 x 600 mm.
Mix sizes possible.



• Massimo 2 Adapter pallet con peso massimo di 1000 kg cadauno.

• Maximun 2 Adapter pallet with maximum 1.000kg each.



• Blocco e sblocco semplificato da pedali colorati con sistema semaforo.

• Simple locking and unlocking by colored pedals, traffic light systems.



• Sistema con cinghie opzionale.

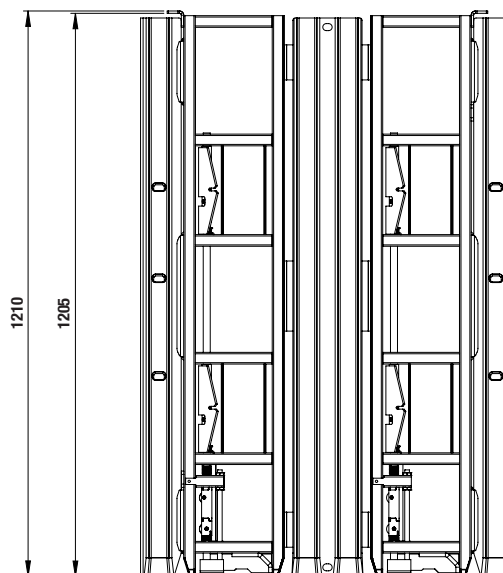
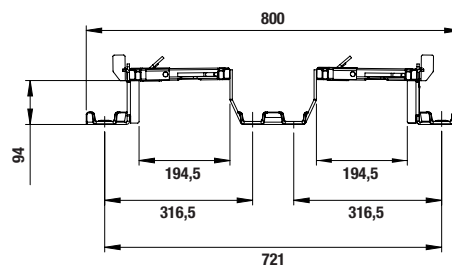
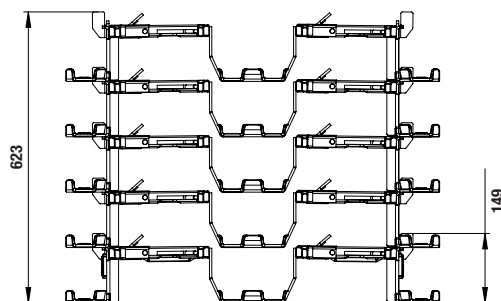
• Optional strap system.






• Possibile accatastamento di Adapter pallet con contenitori e coperchio.

• Stacking possibility of Adapter pallet with bins and cover.

Adapter Pallet



PRODOTTO PRODUCT	CODE	NOME NAME	Larghezza Width mm	Lunghezza Lenght mm
	LP-KA100	Adapter pallet	800	1200
	LP-KA101	Adapter pallet con gabbia Adapter pallet with cage	900	1300
	LP-KA105	Cinghia per Adapter pallet Strapping for Adapter pallet		

Carrelli / Trolley

Dolly Pallet Type II



CODE LP-KP001
LP-KPA01



CODE LP-KP001
LP-KPA02

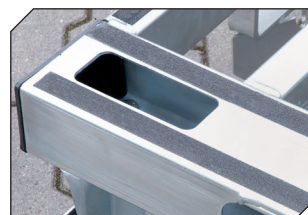


CODE LP-KP003
LP-KPA01



TECHNICAL DATA

- Material: Steel
- Surface treatment: blue zinc EN-ISO 2081
- Weight: 39 KG
- Max Load: 1000 KG
- Towing: 3000 KG
- Max speed: 6 Km/h
- Wheels diameter: 160 mm
- Hideble towbar
- Swinging handle
- Wheel protection from fork lift forks
- Stacking: n°6 h= 1680 mm



- Versione con nastro antiscivolo
- Anti-slip tape version.



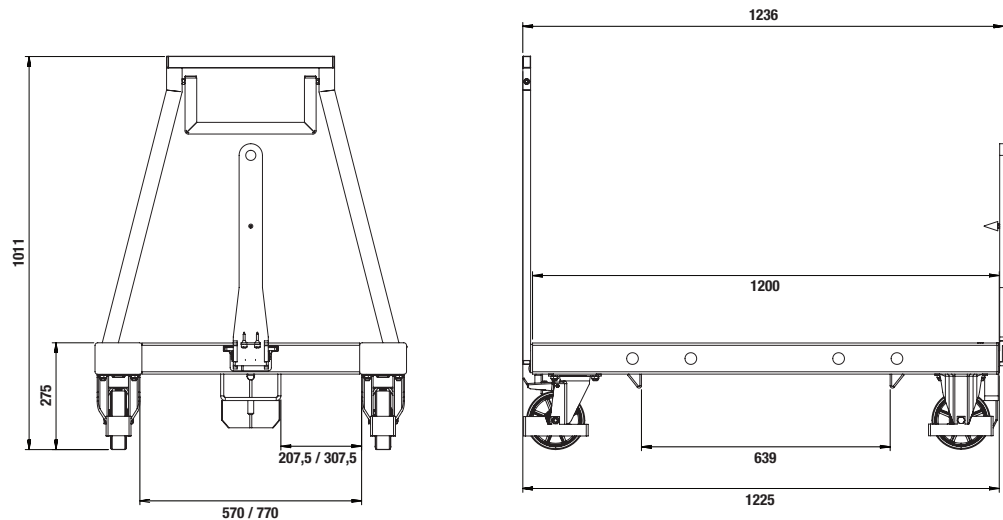
- Timone a scomparsa.
- Pull out towbar.

- K. Hartwall.
- Patent by K. Hartwall.

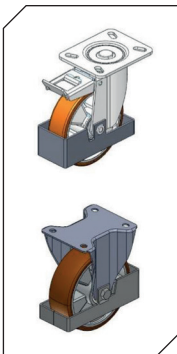


- Kit cinghie ferma carico integrate (ritorno a molla).
- Integrated strapping device (spring return).

Dolly Pallet Type II

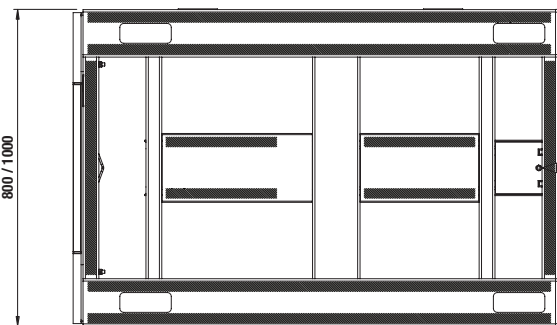


Ruote con o senza freno / Wheels with or without brake



- Ruote diametro 160 mm in poliuretano
- Interno in alluminio
- Cuscinetti a ricircolo di sfere
- Protezione piede
- Ruota girevole con o senza freno

- 160 mm polyurethane wheels
- Aluminium inner core
- High precision ball bearings
- Foot guard
- Swivel wheel with or without brake



PRODOTTO PRODUCT	CODE	NOME NAME	Ruote Girevoli con freno Swivelling Wheels with brake		Ruote Fisse Fixed Wheels		Larghezza Width mm	Lunghezza Lenght mm
	LP-KP001	Dolly Pallet Type II	2	Poliuretano Polyurethane	2	Poliuretano Polyurethane	800	1200
	LP-KP002	Dolly Pallet Type II	2	Poliuretano Polyurethane	2	Poliuretano Polyurethane	1000	1200
	LP-KP003	Dolly Pallet Type II	4	Poliuretano Polyurethane	2	Poliuretano Polyurethane	800	1200
	LP-KP004	Dolly Pallet Type II	4	Poliuretano Polyurethane	2	Poliuretano Polyurethane	1000	1200
	LP-KPA01	Piano antiscivolo per dolly Pallet Type II Playwood plate for dolly Pallet Type II					800	1200
	LP-KPA04	Piano antiscivolo per dolly Pallet Type II Playwood plate for dolly Pallet Type II					1000	1200
	LP-KPA02	Kit cinghie fermacarico Strapping device			2 pezzi 2 pieces			

Carrelli / Trolley

Dolly Taxi Type II

Material Handling



CODE LP-KT001

TECHNICAL DATA

- Material: Steel
- Surface treatment: blue zinc EN-ISO 2081
- Weight: 75 KG
- Max Load: 500 KG
- Max load per shelf: 150 KG
- Towing: 3000 KG
- Max speed: 6 Km/h
- Wheels diameter: 160 mm
- Shelf adjustment: 50 mm
- Hideble towbar
- Wheel protection from fork lift forks



- Timone a scomparsa.
- Pull out towbar.

■ K. Hartwall.
 ■ Patent by K. Hartwall.

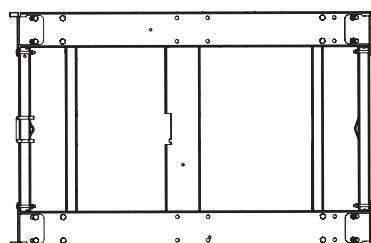
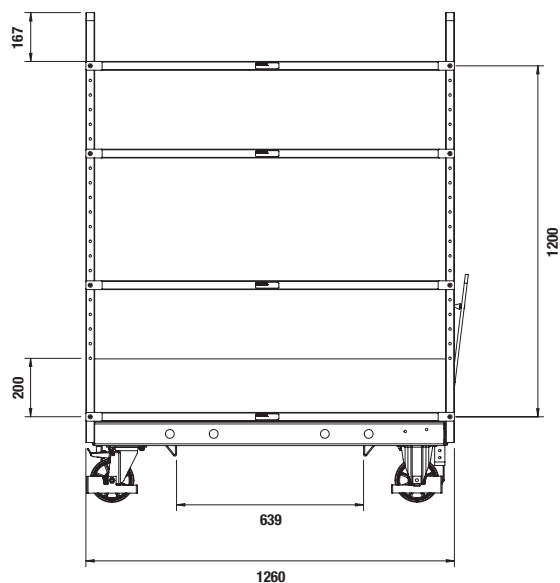
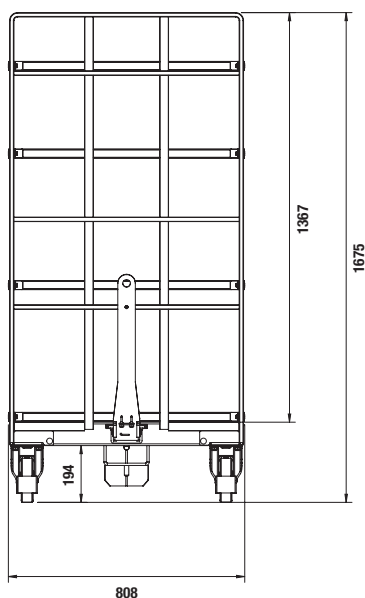


- Piano regolabile.
- Shelf adjustment.

T +39 0434 572757
 info@LeanProducts.eu
 www.LeanProducts.eu

LEANPRODUCTS
 Lean manufacturing

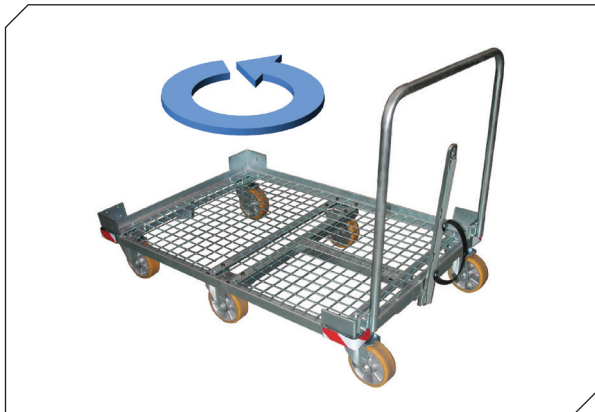
Dolly Taxi Type II



PRODOTTO PRODUCT	CODE	NOME NAME	Ruote Girevoli con freno Swivelling Wheels with brake		Ruote Fisse Fixed Wheels		Larghezza Width mm	Lunghezza Length mm
	LP-KT001	Dolly Taxi Type II	2	Poliuretano Polyurethane	2	Poliuretano Polyurethane	808	1260
		Standard: base + 2 ripiani Standard: deck + 2 shelves						
	LP-KTA01	Ripiano aggiuntivo per dolly Taxi Type II Additional shelf for dolly Taxi Type II					1 pezzo 1 piece	
	LP-KPA02	Kit cinghie fermacarico Strapping device					2 pezzi 2 pieces	

Carrelli / Trolley


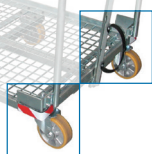
Dolly Pallet Type I



CODE LP-KP112

TECHNICAL DATA

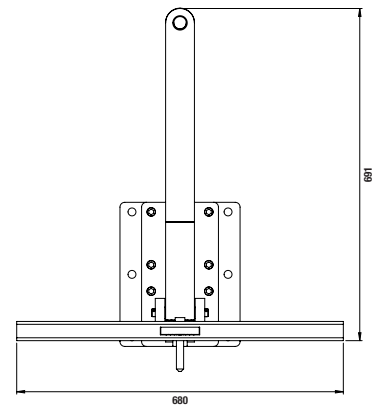
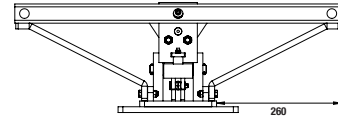
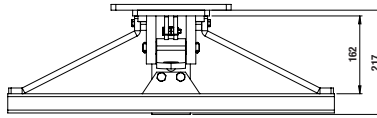
- Material: Steel
- Surface treatment: blue zinc EN-ISO 2081
- Weight: 35 KG
- Max Load: 1000 KG
- Towing: 3000 KG
- Max speed: 6 Km/h
- Wheels diameter: 125 / 160 mm

PRODOTTO PRODUCT	CODE	NOME NAME	Ø mm	Ruote Girevoli Swivelling Wheels		Ruote Fisse Fixed Wheels		Larghezza Width mm	Lunghezza Lenght mm
	LP-KP102	Dolly Pallet Type I	125	4	Gomma Rubber	2	Gomma Rubber	880	1280
	LP-KP112	Dolly Pallet Type I	125	4	Gomma Rubber	2	Gomma Rubber	1080	1280
	LP-KP104	Dolly Pallet Type I	160	4	Poliuretano Polyurethane	2	Poliuretano Polyurethane	880	1280
	LP-KP111	Dolly Pallet Type I	160	4	Poliuretano Polyurethane	2	Poliuretano Polyurethane	1080	1280
		LP-KPA03	Kit per dolly pallet: agevolatore ESD, paracolpi in gomma e nastro bianco rosso Dolly pallet kit: ESD facilitator, rubberbumpers and red / white tape						

Carrelli / Trolley

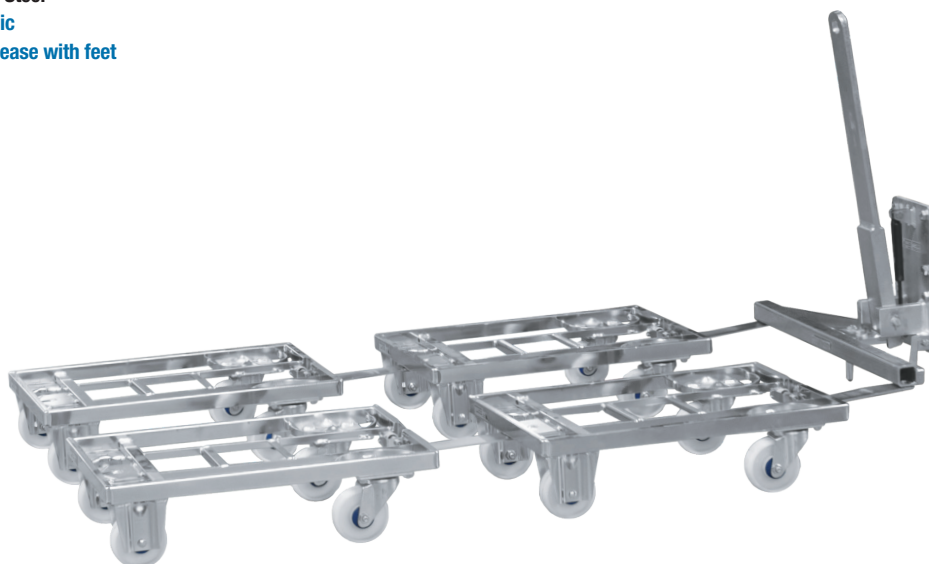
Assieme Timone

Towing Device Assembly


CODE LP-D0100
TECHNICAL DATA

- Load Capacity: 6 t Pin: 2 t
- Material: Steel
- Ergonomic
- Quick release with feet

- Compatibile con la maggior parte delle motrici
- Suitable for any tractors



Carrelli / Trolley

Soluzioni su richiesta

Customize solutions

Taxiwagen



• Sistema sicuro ed economico per il trasporto di 3 file di contenitori 600 x 400.

• Safe and economic system for the transport of 3 rows of container 600 x 400.



• È possibile caricare e scaricare su entrambi i lati grazie alle rampe.

• Loading and unloading from both sides thanks to ramps.



• Dotato di leva per facile apertura e chiusura delle rampe.

• Equipped with lever for easy opening and closing of ramps.

Assieme Timone / Towing Device



• Possibile aggancio con tutti i tipi di motrice.

• Suitable for any tractors.

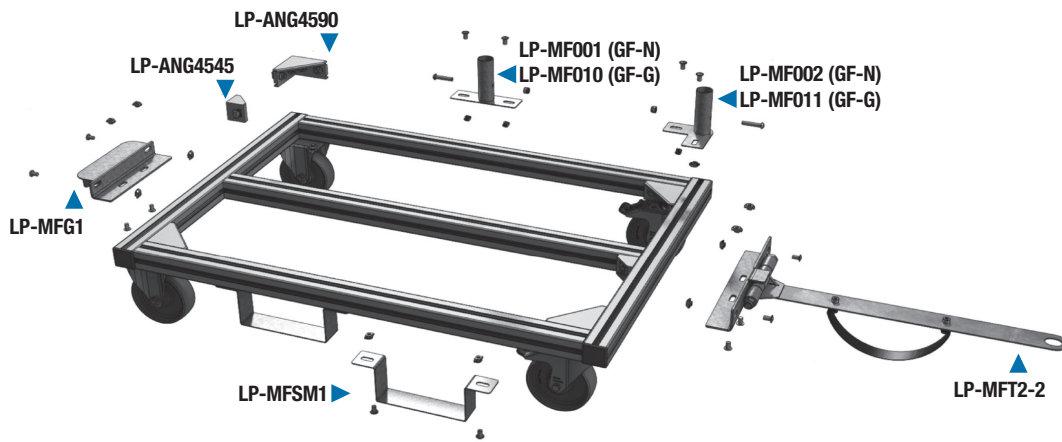


Carrelli Milk Run modulari

Modular Frame

I carrelli Modular Frame sono studiati per adattarsi alle necessità di trasporto del cliente. Partendo dalla struttura base si possono ottenere numerose configurazioni. Personalizzabile anche la parte superiore.

The modular frame are designed to fit the customer's transportation needs. Starting to the can obtain many configurations. The top part is also customizable.



Versione con 4 ruote

4 wheels version



Quattro ruote con supporti rotanti con la stessa altezza da terra.

4 swivelling wheels with the same height from the floor.

Versione con 6 ruote

6 wheels version



Quattro ruote con supporti rotanti e due con supporti fissi con la stessa altezza da terra. Rotazione sul posto.

2 swivelling wheels and 2 fixed wheels with the same height from the floor. On-the-spot rotation.

Versione a rombo

Diamond version



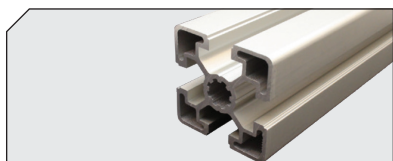
Due coppie di ruote con supporti rotanti e fissi; i supporti fissi hanno un'altezza da terra leggermente superiore. Rotazione sul posto.

2 swivelling wheels and 2 fixed wheels. The fixed wheels support have a greater height from the floor. On-the-spot rotation.

Carrelli / Trolley

Profilo 45 x 45

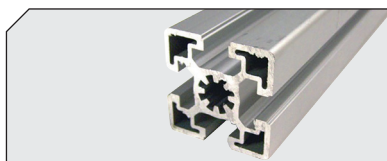
Frame 45 x 45



NOME	Profilo 45 x 45
NAME	Frame 45 x 45
CODE	LPQ-4545

Profilo 45 x 45 P

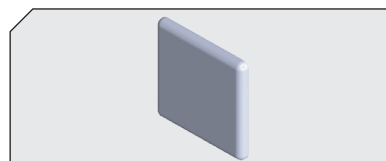
Frame 45 x 45 P



NOME	Profilo 45 x 45 P
NAME	Frame 45 x 45 P
CODE	LPQ-4545P

Cappuccio 45 x 45

End cap 45 x 45



NOME	Cappuccio di copertura 45 x 45
NAME	End cap 45 x 45
CODE	LPQ-4545CAPG

Gancio traino

Tow bar



NOME	Gancio traino
NAME	Tow bar
CODE	LP-MFG1

Timone carrello

Towing device assembly



NOME	Timone completo
NAME	Towing device assembly
CODE	LP-MFT2-2

Angolare 45 x 45

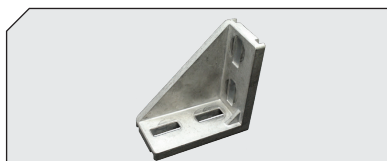
Angle bracket 45 x 45



NOME	Angolare 45 x 45
NAME	Angle bracket 45 x 45
CODE	LPQ-ANG4545

Angolare 45 x 90

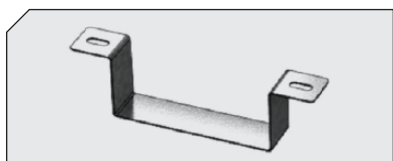
Angle bracket 45 x 90



NOME	Angolare 45 x 90
NAME	Angle bracket 45 x 90
CODE	LPQ-ANG4590

Accessorio per muletto

Accessory for fork lift



NOME	Accessorio per muletto
NAME	Accessory for fork lift
CODE	LP-MFSM1

Kit sponda

Edge kit



NOME	Kit sponda
NAME	Edge kit
CODE	LP-MFS1-1

Supporto laterale

Side support



NOME	Supporto laterale / Side support	
NAME	GF-N	GF-G
CODE	LP-MF001	LP-MF010

Supporto angolare

Corner support



NOME	Supporto angolare / Side support	
NAME	GF-N	GF-G
CODE	LP-MF002	LP-MF011



LEANPRODUCTS®

Lean manufacturing

T +39 0434 572757
info@LeanProducts.eu

www.LeanProducts.eu