

Telescopic forks

Hydraulic lift truck forks
Save time, space and money



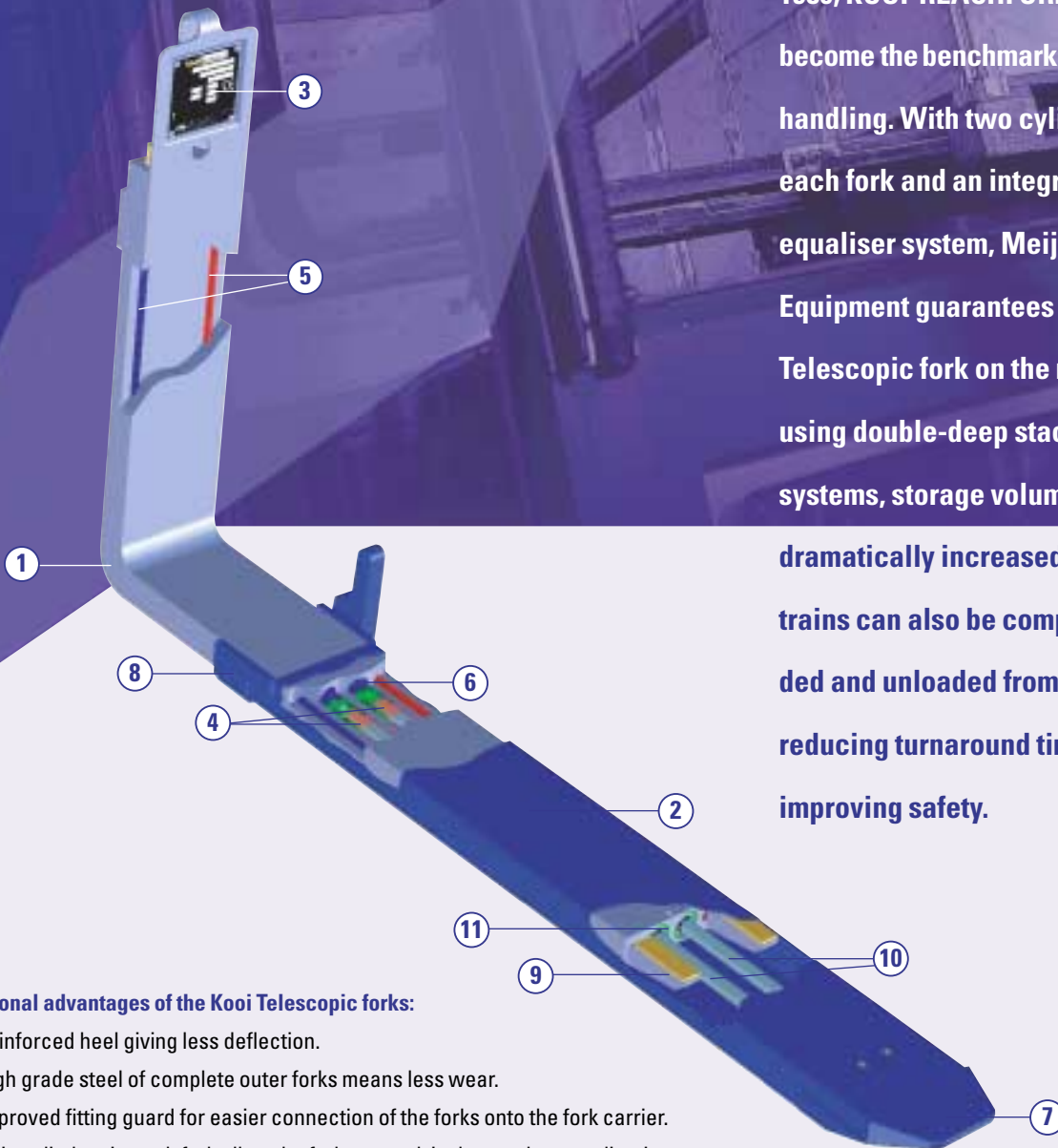
kooi Reachforks[®]

A trademark of Meijer Special Equipment

Kooi-Reachforks®

are attachments that can be used throughout industry to save time, space and money.

Meijer Special Equipment was the first to develop a hydraulic extending and retracting lift truck fork. Since their introduction in 1980, KOOI-REACHFORKS have become the benchmark in materials handling. With two cylinders in each fork and an integrated equaliser system, Meijer Special Equipment guarantees you the best Telescopic fork on the market. By using double-deep stacking systems, storage volumes can be dramatically increased. Trucks and trains can also be completely loaded and unloaded from one side, reducing turnaround times and improving safety.



Additional advantages of the Kooi Telescopic forks:

1. Reinforced heel giving less deflection.
2. High grade steel of complete outer forks means less wear.
3. Improved fitting guard for easier connection of the forks onto the fork carrier.
4. Twin cylinders in each fork allow the forks to work in the toughest applications.
5. Fully integrated oil channels and hydraulic parts mean no visible working part resulting a long life span.
6. Honed cylinder bores improve seal life.
7. Solid cast nose on outerforks further reduces wear.
8. The back of the outer forks are chamfered to prevent pallet damage.
9. Interchangeable wear resistant strips.
10. Hard chromed piston rods protected by outer forks.
11. Specially designed wiper ring protects the forks even in dirty conditions.

Equaliser Range

The equaliser range of Telescopic forks have one or two cylinders per fork and feature an integrated flow dividing system first developed by Meijer Special Equipment. The narrow fork section allow stillages and transport frames with fixed fork pockets to be handled more easily. This system guarantees 100% synchronisation of movement which is essential for safe handling in double-deep racking systems and fast turn around of wagons.

Power Range

The original twin cylinder telescopic design is still the most powerful fork and has standard capacities ranging up to 10500 kg. This Telescopic fork has proven reliable in even the most demanding conditions.

Thin Range

Developed for use with US and non-standard pallets where a thinner profile is needed for easier entry.

Slim Range

These very narrow Telescopic forks can be used to handle brick & block packs and are also frequently used in the beverage industry.

Slide Range

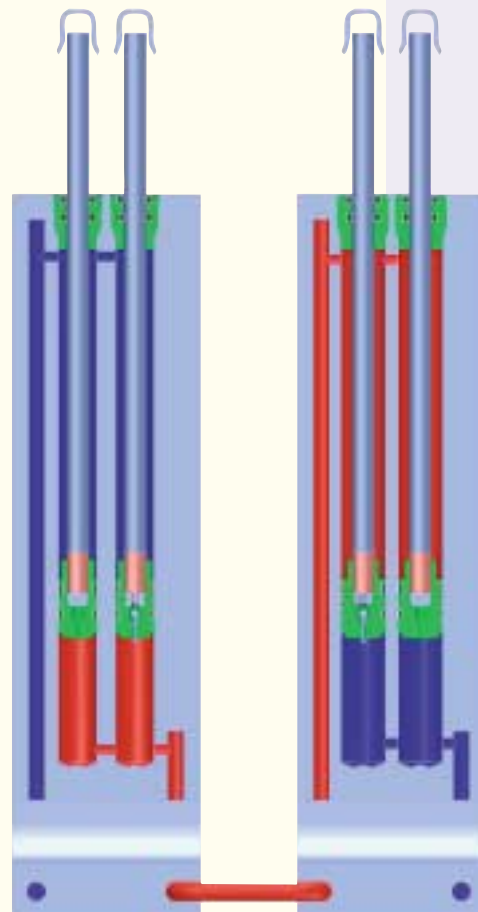
These Telescopic forks allow a variety of different pallet sizes to be handled safely without damage to pallets or goods. They also eliminate the manual handling problems associated with mechanical fork extensions.

The need for an Equaliser system.

Uneven movement is the most significant problem encountered when using any Telescopic forks. This can lead to twisting of pallets which can cause dangerous situations when loading or unloading and is particularly hazardous when working at height in double-deep racking systems. Meijer Special Equipment's self-equaliser system guarantees 100% synchronisation of movement.

Other advantages of the Equaliser Range

- Visibility is considerably improved through a reduction in the number of hoses and the absence of an external flow-dividing system.
- When the load is not centralised on the Telescopic forks the equaliser forks will compensate the force on the Telescopic forks automatically.
- Easy and quick connection onto the fork carrier.
- Lower fitting costs because of the absence of separate flowdivider.



Applications



The use of “double-deep” stacking increases warehouse capacity by up to 30% compared to “single-deep” warehouse operations. Accessibility is improved compared with drive-in and live storage racking. The investment costs of racking and handling equipment are relatively low.



Double pallet transport

Telescopic forks can be extended to transport two pallets at a time. This can generate considerable benefits involving large volumes or long distances. When compared to a double pallet clamp, the weight of the reachforks is much lower and visibility is not reduced in the same way, thereby enhancing safety. Another possibility is to load or unload two pallets at a time from wagons or trains.

Loading and unloading

Trucks as well as trains can be completely loaded and unloaded from one side. This means it is no longer necessary to turn vehicles or drive around both sides of a trailer. This saves time, space and also makes the operation much safer.

Kooi-Reachforks® are the best system for changing any type of forklift truck into a “double-deep” truck. In cold store applications where storage space is at a premium, “double-deep” has already generated considerable cost savings.



Single-deep stacking

Telescopic forks can also have some important benefits in “single-deep” applications. Compared to reach trucks with a pantograph or moving mast, the relatively light Telescopic forks result in a reach truck with better stability, visibility and higher lifting capacity.

Telescopic forks on fork positioners

Telescopic forks can be used with most fork positioners. This combination can save a lot of time when a variety of pallets types are being handled. One, two or even four pallets can be handled by special small telescopic forks mounted on a double fork positioner.



Telescopic forks on side-loaders

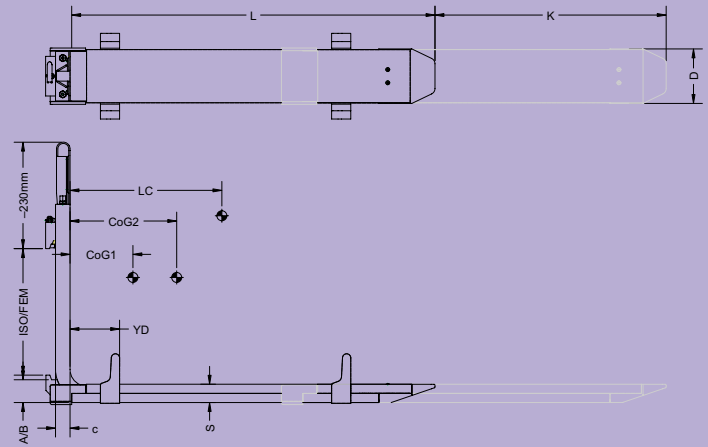
Telescopic forks are frequently used on side loaders for “double-deep” stacking operations and to help manoeuvre the load. They have the advantage over traditional pantograph attachments of not affecting platform width while adding little weight.

Telescopic forks on a piggy-back

A lot of piggyback lift trucks are equipped with Telescopic forks. The fixed mast in combination with the Telescopic forks provide a stable, lightweight machine with a relatively high capacity.



Specifications and options



Equaliser Telescopic forks: one or two cylinder per fork. Includes integrated equalisation system.

| Model | Capacity Kg./600 mm. | Section D x S mm. | Length mm. / Stroke mm. | Lost Load Thickness mm. | CoG1 mm. ± | CoG2 mm. ± | Mass Kg. ± | ISO/FEM |
|------------------|-------------------------|----------------------|----------------------------|----------------------------|---------------|---------------|---------------|----------|
| RG2 20 1100/0750 | | | 1100/0750 | | 370 | 540 | 160 | |
| RG2 20 1200/0850 | 2000 | 140 x 56 | 1200/0850 | 45 | 415 | 610 | 170 | II |
| RG2 20 1350/1000 | | | 1350/1000 | | 480 | 715 | 185 | |
| RG2 30 1100/0750 | | | 1100/0750 | | 340 | 500 | 165 | |
| RG2 30 1200/0850 | 3000 | 140 x 56 | 1200/0850 | 45 | 385 | 570 | 175 | II / III |
| RG2 30 1350/1000 | | | 1350/1000 | | 450 | 670 | 190 | |
| RG4 25 1100/0750 | | | 1100/0750 | | 355 | 535 | 175 | |
| RG4 25 1200/0850 | 2500 | 170 x 56 | 1200/0850 | 45 | 395 | 605 | 185 | II |
| RG4 25 1350/1000 | | | 1350/1000 | | 465 | 710 | 200 | |
| RG4 35 1100/0750 | | | 1100/0750 | | 345 | 515 | 200 | |
| RG4 35 1200/0850 | 3500 | 170 x 56 | 1200/0850 | 45 | 390 | 585 | 210 | II / III |
| RG4 35 1350/1000 | | | 1350/1000 | | 450 | 690 | 230 | |
| RG4 45 1100/0750 | | | 1100/0750 | | 330 | 495 | 205 | |
| RG4 45 1200/0850 | 4500 | 170 x 56 | 1200/0850 | 45 | 370 | 565 | 215 | III |
| RG4 45 1350/1000 | | | 1350/1000 | | 435 | 670 | 235 | |
| RG4 58 1100/0750 | | | 1100/0750 | | 335 | 515 | 230 | |
| RG4 58 1200/0850 | 5800 | 170 x 65 | 1200/0850 | 50 | 375 | 590 | 245 | IV |
| RG4 58 1350/1000 | | | 1350/1000 | | 440 | 695 | 265 | |

Power Range Telescopic forks: two cylinder per fork. Includes separate equaliser valve.

| | | | | | | | | |
|-------------------|-------|----------|-----------|----|-----|-----|-----|----|
| RE4 77 1100/0750 | | | 1100/0750 | | 325 | 480 | 360 | |
| RE4 77 1200/0850 | 7700 | 225 x 65 | 1200/0850 | 50 | 365 | 550 | 380 | IV |
| RE4 77 1350/1000 | | | 1350/1000 | | 430 | 650 | 430 | |
| RE4 105 1100/0750 | | | 1100/0750 | | 315 | 460 | 420 | |
| RE4 105 1200/0850 | 10500 | 225 x 75 | 1200/0850 | 60 | 360 | 525 | 445 | IV |
| RE4 105 1350/1000 | | | 1350/1000 | | 420 | 620 | 480 | |

Thin Range Telescopic forks: two cylinder per fork. Includes separate equaliser valve.

| | | | | | | | | |
|------------------|------|----------|-----------|----|-----|-----|-----|--------|
| RE4 32 1100/0750 | | | 1100/0750 | | 350 | 510 | 205 | |
| RE4 32 1200/0850 | 3200 | 170 x 47 | 1200/0850 | 45 | 410 | 580 | 220 | II/III |
| RE4 32 1350/1000 | | | 1350/1000 | | 480 | 680 | 240 | |

- Minimum operating pressure 10 MPa, maximum 20 MPa.
- Capacities shown are nominal. For heavy-duty applications please contact your dealer.
- Model RG2 30 is also available on special request with a section of 140 x 63 mm.
- Other capacities and dimensions on request.
- The capacities shown apply to the forks and not the lift truck.
- All forks have a 4mm thick wear pad at the heel for increased protection. This is in addition to the fork section stated in the table.
- The lift truck manufacturer must determine the combined Telescopic fork/truck capacity.
- Meijer Special Equipment reserves the right to modify and improve their products without prior notice being given.

Slim Range, specially designed to handle brick & block and beverage

| Model | Capacity | Section D x S mm. | Length mm. / | Lost Load | CoG1 mm. | CoG2 mm. | Mass Kg. | ISO/FEM |
|------------------|-------------|----------------------|--------------|---------------|----------|----------|----------|----------|
| | Kg./600 mm. | | Stroke mm. | Thickness mm. | | | | |
| RE2 27 1150/0700 | | | 1150/0700 | | ± 420 | ± 585 | ± 115 | |
| RE2 27 1250/0800 | 2700 | 89 x 60 | 1250/0800 | 60 | 460 | 660 | 125 | II |
| RE2 27 1400/0950 | | | 1400/0950 | | 530 | 770 | 135 | |
| RE2 37 1150/0700 | | | 1150/0700 | | 400 | 550 | 140 | |
| RE2 37 1250/0800 | 3700 | 89 x 70 | 1250/0800 | 60 | 448 | 620 | 150 | II / III |
| RE2 37 1400/0950 | | | 1400/0950 | | 515 | 725 | 160 | |

Slide Range, specially designed to replace manual fork extensions

| Model | Capacity | Section D x S mm. | Length mm. / | Lost Load | CoG1 mm. | CoG2 mm. | Mass Kg. | ISO/FEM |
|-------------------|-------------|----------------------|--------------|---------------|----------|----------|----------|----------|
| | Kg./600 mm. | | Stroke mm. | Thickness mm. | | | | |
| RGE2 20 0800/0400 | | | 0800/0400 | | ± 280 | ± 390 | ± 135 | |
| RGE2 20 1000/0200 | 2000 | 136 x 58 | 1000/0200 | 45 | 392 | 450 | 155 | II |
| RGE2 20 1200/0800 | | | 1200/0800 | | 445 | 680 | 165 | |
| RGE2 30 0800/0400 | | | 0800/0400 | | 250 | 350 | 145 | |
| RGE2 30 1000/0200 | 3000 | 136 x 58 | 1000/0200 | 45 | 360 | 410 | 165 | II / III |
| RGE2 30 1200/0800 | | | 1200/0800 | | 415 | 640 | 180 | |

Slim range Telescopic forks can be used as extension forks for handling 4-way pallets on the long or short side.

Advantages

- Reduce damage of pallets and goods.
- The Slide range needs an overlap (retracted length-stroke) of minimum 400 mm.
- The Slim range needs an overlap (retracted length-stroke) of minimum 450 mm.
- Minimum operating pressure 10 MPa, maximum 20 MPa.
- For optimal speed and minimum loss of pressure the recommended minimum hose diameter is 8 mm.
- In cold-storage applications K001-REACHFORKS® can be used down to - 30 degrees Celsius.
- Capacities given are for normal circumstances. For extreme applications contact your dealer.
- Other capacities and dimensions on request.
- Meijer Special Equipment reserve the right to modify and improve their products without prior notice.

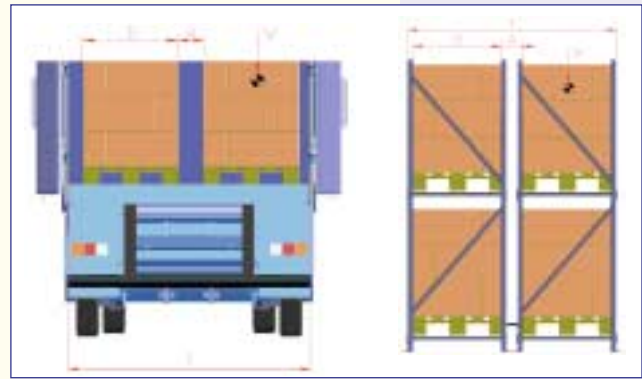
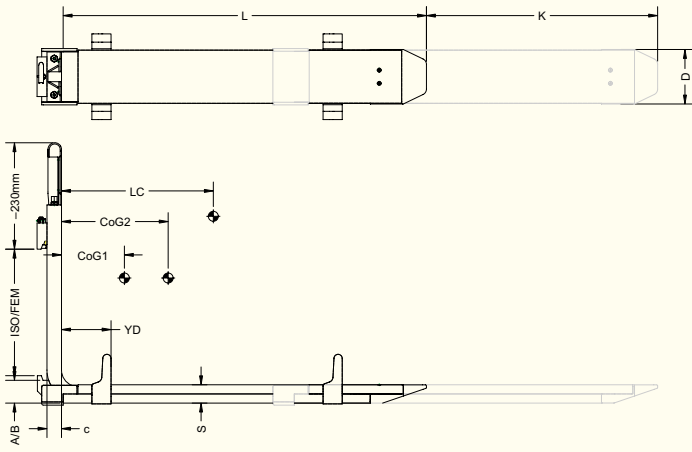


Important: Special ISO standard for Telescopic forks

Meijer Special Equipment confirm that all their telescopic forks comply fully with ISO 13284. This means that all inner sections of the Telescopic forks are tested to 3 times their rated capacity. In addition all outer forks are also tested to 3 times their rated capacity.

Finally a random selection of forks are subjected to a dynamic endurance test of 1.000.000 cycles with an overload of 25% which complies to ISO 2330 (Fork arms).

[NEW!]



Formula to determinate the measurements of the Telescopic forks

- T = total dept (mm.)
 - W = maximum weight of pallet (mm.)
 - D = dept of pallet (mm.)
 - A = space between the pallets (mm.)
 - O = standard overlap 350 mm.
 - LC1 = load center retracted 600 mm.
- Formule retracted length mm. (L): $(T - O) / 2 + O$
 Formule stroke mm. (K): $L - O$
 Formule distance palletstops mm. (YD): $L - D$
 Formule load center extended mm. LC2: $T - (0.5 \times D)$
 Formule capacity Telescopic forks RG: $W \times LC2 / LC1$

Example

- D = 1200 mm.
- T = D+A+D 2450 mm.
- W = 800 kg.
- A = 50 mm.
- L $(2450 - 350) / 2 + 350 = 1400$ mm.
- K $1400 - 350 = 1050$ mm.
- YD $1400 - 1200 = 200$ mm.
- LC2 $2450 - (0.5 \times 1200) = 1850$ mm.
- Capacity $800 \times 1850 / 600 = 2466$ kg.

Table 1

| Pallet weight kg. | Load centre of Telescopic forks mm. | | | | | | | |
|-------------------|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|
| | 1150 | 1250 | 1350 | 1450 | 1550 | 1650 | 1750 | 1850 |
| 100 | RG2 20 | RG2 20 | RG2 20 | RG2 20 | RG2 20 | RG2 20 | RG2 20 | RG2 20 |
| 200 | RG2 20 | RG2 20 | RG2 20 | RG2 20 | RG2 20 | RG2 20 | RG2 20 | RG2 20 |
| 300 | RG2 20 | RG2 20 | RG2 20 | RG2 20 | RG2 20 | RG2 20 | RG2 20 | RG2 20 |
| 400 | RG2 20 | RG2 20 | RG2 20 | RG2 20 | RG2 20 | RG2 20 | RG2 20 | RG2 20 |
| 500 | RG2 20 | RG2 20 | RG2 20 | RG2 20 | RG2 20 | RG2 20 | RG2 20 | RG2 20 |
| 600 | RG2 20 | RG2 20 | RG2 20 | RG2 20 | RG2 20 | RG2 20 | RG2 20 | RG2 20 |
| 700 | RG2 20 | RG2 20 | RG2 20 | RG2 20 | RG2 20 | RG4 25 | RG4 25 | RG4 25 |
| 800 | RG2 20 | RG2 20 | RG2 20 | RG2 20 | RG4 25 | RG4 25 | RG4 25 | RG4 25 |
| 900 | RG2 20 | RG2 20 | RG4 25 | RG4 25 | RG4 25 | RG4 25 | RG2 30 | RG2 30 |
| 1000 | RG2 20 | RG4 25 | RG4 25 | RG4 25 | RG2 30 | RG2 30 | RG2 30 | RG4 35 |
| 1100 | RG4 25 | RG4 25 | RG4 25 | RG2 30 | RG2 30 | RG4 35 | RG4 35 | RG4 35 |
| 1200 | RG4 25 | RG4 25 | RG2 30 | RG2 30 | RG4 35 | RG4 35 | RG4 35 | RG4 45 |
| 1300 | RG4 25 | RG2 30 | RG2 30 | RG4 35 | RG4 35 | RG4 45 | RG4 45 | RG4 45 |
| 1400 | RG2 30 | RG2 30 | RG4 35 | RG4 35 | RG4 45 | RG4 45 | RG4 45 | RG4 45 |
| 1500 | RG2 30 | RG4 35 | RG4 35 | RG4 45 | RG4 45 | RG4 45 | RG4 45 | RG4 45 |

Always round the capacity required up to the next model in the range. In the example above you would need the RG4-25-1400/1050. You can also use Table 1 to determine the Telescopic fork model you require.

Table 2

| Indication of residual capacity for the most common Telescopic forks. Lift truck manufacturer needs always to confirm measurements. | | | | | | | | | | | | | |
|-------------------------------------------------------------------------------------------------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Type Telescopic forks | RG2 20 | RG2 20 | RG2 20 | RG4 25 | RG4 25 | RG4 25 | RG4 25 | RG2 30 | RG2 30 | RG4 35 | RG4 35 | RG4 45 | RG4 45 |
| Lift truck capacity kg. | 1200 | 1600 | 1800 | 1200 | 1600 | 1800 | 2000 | 2000 | 2500 | 2000 | 2500 | 3000 | 3500 |
| Lift truck x mm. | 350 | 350 | 350 | 350 | 350 | 350 | 500 | 500 | 500 | 500 | 500 | 500 | 500 |
| LC 600 mm. | 950 | 1310 | 1485 | 935 | 1290 | 1470 | 1670 | 1650 | 2110 | 1670 | 2100 | 2180 | 3030 |
| LC 1350 mm. | 515 | 715 | 815 | 505 | 700 | 800 | 975 | 995 | 1230 | 975 | 1245 | 1515 | 1780 |
| LC 1450 mm. | 475 | 665 | 750 | 460 | 650 | 740 | 915 | 905 | 1150 | 910 | 1170 | 1425 | 1680 |
| LC 1750 mm. | 395 | 550 | 635 | 375 | 535 | 620 | 770 | 765 | 975 | 790 | 1015 | 1215 | 1435 |
| LC 1850 mm. | 375 | 530 | 605 | 360 | 515 | 590 | 740 | 735 | 945 | 730 | 950 | 1160 | 1370 |

Table 2 gives a rough indication of the residual capacity of your lift truck in combination with our Telescopic forks. Please be aware that the lift truck manufacturer always needs to confirm the measurements of residual capacity.

Standard options

Over many years Meijer Special Equipment has acquired a great deal of knowledge enabling us to offer Telescopic forks with specific customer options.

Palletstops

- Y1 palletstops are intended to stop the forks protruding too far through the pallet, thus preventing damage to goods and pallets standing behind.
- Y2 palletstops serve the same purpose and can also be used to support a separate load back rest.
- Y3 palletstops support the load and allow frequent repositioning of the forks on the carriage.

Extra wear protection

Through an extra height upgraded steel which is welded under the complete length of outerforks or integrated inside the taper of the nose.

Load back rest

The load back rest supports the load and moves forward with the outer fork. It is bolted onto the Y2 palletstops but still allows the distance between the forks to be changed. MSE supplies two types of load back rests, namely a standard design and a load back rest for reach lift-trucks.

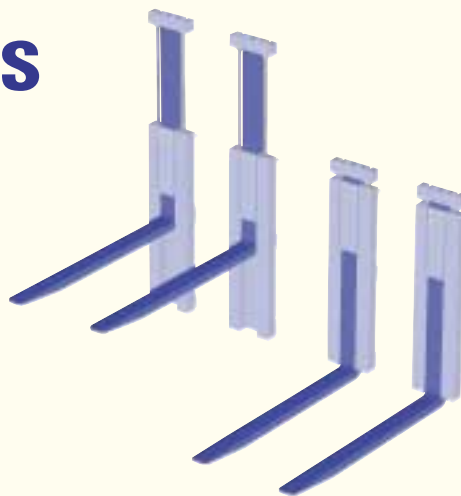
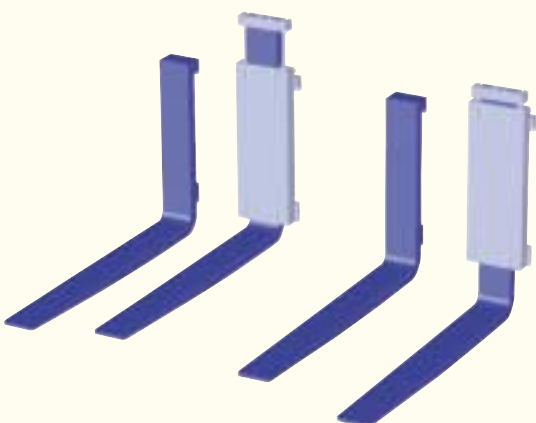
| Width under side | Width upper side | Height |
|------------------|------------------|--------|
| 700 | 700 | 1200 |
| 700 | 1000 | 1200 |
| 725 | 1000 | 1200 |

When the load back rest is used, the effective length of the telescopic forks is reduced by 25 mm. Where possible the pallet stops should be moved back 25 mm to prevent this.

Other products

Double Height Shift System

The double height shift system can be used to increase the lift height of a standard lift truck.



Single Height Shift System

The single height shift system is designed to adjust the height of one fork to compensate for the horizontal position of the load.



Production and safety standards

Meijer Special Equipment requires its reachforks to be of the highest quality and we can only guarantee this by complying with all applicable international standards:

ISO 9001-2000

Model for quality assurance in design/development, production, installation and servicing.

ISO 13284

Fork arm extensions and Telescopic fork arms. Technical characteristics and strength requirements. (Safety factor of 3 at all times).

ISO 2328

Hook on type fork arms and fork carrier. Mounting dimensions.

ISO 4406

Hydraulic fluid power – Fluids Method for coding level of contaminations by solid particles.

EN 729-2

Quality requirements for welding. Fusion welding of metallic materials.

CE

European Machinery Directives (98/37).



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Meijer Special Equipment

Oudebildtdijk 894
9079 NG St. Jacobiparochie
The Netherlands
Telephone: +31 (0) 518 - 49 29 29
Telefax: +31 (0) 518 - 49 29 15
Website: www.telescopicforks.com
E-mail: forks@meijerbv.nl