

# Smart tips !

These are the important things with  
**manhole and shaft systems !**

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## Smart tip 1

**Shaft ladders in two widths:**  
Use of fall stop in wide construction



## Smart tip 2

**Shaft ladders made of steel, stainless steel and glass-fibre reinforced plastic:**  
Material suitable as required



## Smart tip 3

**Access aids:**  
Various options for safe entry and exit



## Smart tip 4

**Shaft covers:**  
With and without insulation, with and without extractor chimney, individually fillable or with cover plate for all requirements

## Manhole and shaft systems

Among other things, German standards DIN and GUV require as follows: Manhole steps have to be provided with a holding device at the access/exit to ensure safe ascent / descent, i.e. stanchions or supporting handles. The products described below are in keeping with the German standard DIN V 19572.

### Access aid (stanchion)

Made of special steel V4A (1.4571), pickled and passivated; especially economical due to mobile use; only the socket remains fixed inside the manhole.

Weight kg	Length m	Order No.
approx. 4.2	approx. 1.6	65001

### Socket

Made of special steel V4A (1.4571), pickled and passivated (round) or galvanised steel (square); suitable for the access aid described above.

Weight kg	Material	Order No.
approx. 0.3	V4A	65002
approx. 0.3	Galvanised steel	65005

### Access aid (stanchion) complete with socket

Made of special steel V4A (1.4571), pickled and passivated or galvanised steel; can be lowered for attachment to wall.

Weight kg	Material	Length m	Order No.
approx. 0.3	V4A	approx. 1.5	65003
approx. 4.2	Galvanised steel	approx. 1.5	65006

### Accessories:

For the attachment of sockets to the shaft wall, we recommend anchors ("Expressanker") (approved by the German building authorities); minimum concrete thickness: 220 mm.

Order No.
65165

### Access aid (stanchion) complete with socket

Made of special steel V4A (1.4571), pickled and passivated or galvanised steel; can be lowered for attachment to the side-rails of the ladder of 50 x 20 to 60 x 25 mm (not suitable for shaft ladders made of glass-fibre reinforced plastic).

Weight kg	Material	Length m	Order No.
approx. 4.6	V4A	approx. 1.5	65004
approx. 4.2	Galvanised steel	approx. 1.5	65007

### Double side-rail access aid

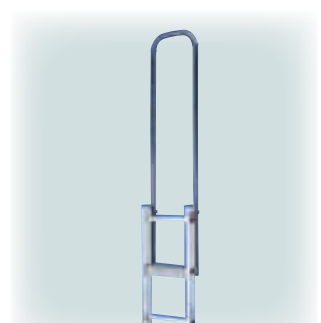
Made of special steel V4A (1.4571), pickled and passivated or galvanised steel; can be lowered; complete with fittings for ladder side-rails 50 x 20 mm; for ladder widths of 340 and 440 mm.

Access aids for ladders made of glass-fibre reinforced plastic to order.

Material	For ladder width	Working length m	Order No.
Galvanised steel	340 mm	approx. 1.1	65008
V4A	340 mm	approx. 1.1	65009
Galvanised steel	440 mm	approx. 1.1	65010
V4A	440 mm	approx. 1.1	65011



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## Manhole and shaft systems

In keeping with EN 14396; with design approval; in keeping with the German Accident Prevention Regulations BGV D 36 / GUV-V D36; for use in sewage plants, garbage tips, storage reservoirs, pump shafts, et cetera.

### Shaft ladder made of galvanised steel

Clear width 300 mm / 400 mm; rectangular tubes 50 x 20 mm; non-slip perforated rungs.

Number of rungs	Length approx. m	Outside width mm	Clear width mm	Order No.	Outside width mm	Clear width mm	Order No.
4	1.12	340	300	60004	440	400	61004
5	1.40	340	300	60005	440	400	61005
6	1.68	340	300	60006	440	400	61006
7	1.96	340	300	60007	440	400	61007
8	2.24	340	300	60008	440	400	61008
9	2.52	340	300	60009	440	400	61009
10	2.80	340	300	60010	440	400	61010
11	3.08	340	300	60011	440	400	61011
12	3.36	340	300	60012	440	400	61012
13	3.64	340	300	60013	440	400	61013
14	3.92	340	300	60014	440	400	61014
15	4.20	340	300	60015	440	400	61015



### Shaft ladder made of special steel V4A (1.4571), pickled and passivated

Clear width 300 mm / 400 mm; rectangular tubes 50 x 20 mm; non-slip perforated rungs.

Number of rungs	Length approx. m	Outside width mm	Clear width mm	Order No.	Outside width mm	Clear width mm	Order No.
4	1.12	340	300	62004	440	400	63004
5	1.40	340	300	62005	440	400	63005
6	1.68	340	300	62006	440	400	63006
7	1.96	340	300	62007	440	400	63007
8	2.24	340	300	62008	440	400	63008
9	2.52	340	300	62009	440	400	63009
10	2.80	340	300	62010	440	400	63010
11	3.08	340	300	62011	440	400	63011
12	3.36	340	300	62012	440	400	63012
13	3.64	340	300	62013	440	400	63013
14	3.92	340	300	62014	440	400	63014
15	4.20	340	300	62015	440	400	63015



### Shaft ladder made of glass-fibre reinforced plastic

Clear width 300 mm / 400 mm; rectangular tubes 58 x 25 mm; grooved rungs.

Number of rungs	Length approx. m	Outside width mm	Clear width mm	Order No.	Outside width mm	Clear width mm	Order No.
4	1.12	350	300	64004	450	400	64104
5	1.40	350	300	64005	450	400	64105
6	1.68	350	300	64006	450	400	64106
7	1.96	350	300	64007	450	400	64107
8	2.24	350	300	64008	450	400	64108
9	2.52	350	300	64009	450	400	64109
10	2.80	350	300	64010	450	400	64110
11	3.08	350	300	64011	450	400	64111
12	3.36	350	300	64012	450	400	64112
13	3.64	350	300	64013	450	400	64113
14	3.92	350	300	64014	450	400	64114
15	4.20	350	300	64015	450	400	64115

# Manhole and shaft systems



## Accessories for shaft ladders

Wall anchor, adjustable, 150 – 300 mm, galvanised steel\*  
 Wall anchor, adjustable, 150 – 300 mm, V4A\*  
 Ladder extension joints, V4A

Wall anchor standard, 150 mm, galvanised steel  
 Wall anchor, adjustable, 150 – 300 mm, galvanised steel  
 Wall anchor, adjustable, 200 – 250 mm, galvanised steel  
 Wall anchor, adjustable, 280 – 330 mm, galvanised steel  
 Wall anchor, adjustable, 360 – 410 mm, galvanised steel

Wall anchor standard, 150 mm, V4A  
 Wall anchor, adjustable, 150 – 300 mm, V4A  
 Wall anchor, adjustable, 200 – 250 mm, V4A  
 Wall anchor, adjustable, 280 – 330 mm, V4A  
 Wall anchor, adjustable, 360 – 410 mm, V4A  
 Foot plate V4A

Standard wall anchor, 150 mm, V4A, for ladders made of glass-fibre reinforced plastic  
 Wall anchor, adjustable, 150 – 300 mm, V4A, for ladders made of glass-fibre reinforced plastic  
 Ladder connection for extension, V4A, for ladders made of glass-fibre reinforced plastic  
 Wall anchor, adjustable, 150 – 300 mm, V4A, for ladders made of glass-fibre reinforced plastic  
 Wall anchor, adjustable, 200 – 250 mm, V4A, for ladders made of glass-fibre reinforced plastic  
 Wall anchor, adjustable, 280 – 330 mm, V4A, for ladders made of glass-fibre reinforced plastic  
 Wall anchor, adjustable, 360 – 410 mm, V4A, for ladders made of glass-fibre reinforced plastic

### Order No.

60019  
 62019  
 62020

60018  
 60021  
 60022  
 60023  
 60024

62018  
 62021  
 62022  
 62023  
 62024  
 65184

64018  
 64019  
 64020  
 64021  
 64022  
 64023  
 64024

For attachment to the shaft, dowels and bolts may be used instead of nuts and screw bolts if their suitability for the location of use has been substantiated. They have to be selected in keeping with the force acting on the point of anchorage of the ladder as stated by the manufacturer.

### Note:

Ladders with four to nine rungs require two sets (= 4 ea.) of wall anchors; ladders with ten to fifteen rungs three sets (= 6 ea.) of wall anchors; ladders with sixteen to twenty-four rungs five sets (= 10 ea.) of wall anchors. 1 set = 2 ea. (1 x right, 1 x left). Dowels and screws for wall attachment are not part of the scope of delivery. Please enquire with renowned dowel suppliers.

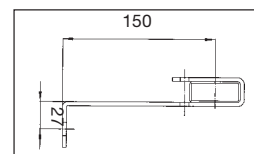


Fig. Order No.60018, 62018, 64018

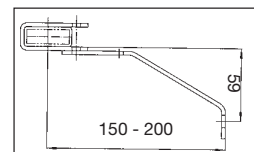


Fig. Order No.60021, 62021, 64021

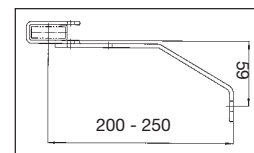


Fig. Order No.60022, 62022, 64022

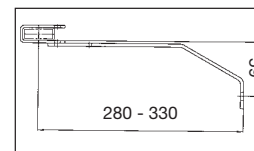


Fig. Order No.60023, 62023, 64023

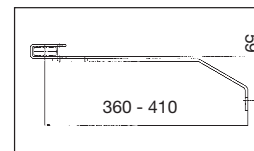


Fig. Order No.60024, 62024, 64024

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## Folding elements

For installation to existing shaft ladders; easy installation; for shaft diameters of 800 or 1,000 mm. Prices upon enquiry.

## Kit for float ladder

This kit can be used to make a float ladder out of a shaft ladder in next to no time. The kit consists of: 1 plastic float tank with a volume of 25 l, complete with attachment material; 1 set of fittings with joint for attachment to the ladder and the wall (attachment material for wall attachment is not included in the scope of delivery).

Prices upon enquiry.

## Ventilating chimney

Made of special steel V4A (1.4571); straight; completely pickled and passivated; nominal diameter 150 mm; complete with attached fume hat and stainless steel insect screen.

Welded or adjustable wall flanges are offered for installation; moreover there are additional adjustable pipe clamps for wall attachment.

Prices upon enquiry. Please include sketch with data on length and flanges to your order !



## Square shaft cover

Made of special steel 1.4301; completely pickled and passivated; rainproof in keeping with German standard DIN 1239; cover made of 2 mm special steel sheet, raised in the middle; with inside stiffeners; with spring-operated lock; manually releasable opener and special steel gas pressure damper; fully covered hinge; lid with replaceable gasket; lid to be doweled; key is part of the scope of delivery.

Optional: 25 mm **high-resistance foam insulation**; CFC free; bottom protected against moisture and damage by 1 mm sheet metal.

### Without insulation

Dimensions mm	Order No.
600 x 600	65100
800 x 800	65101
1000 x 1000	65102
1200 x 1200	65103

### With 25 mm high-resistance foam insulation

Dimensions mm	Order No.
600 x 600	65104
800 x 800	65105
1000 x 1000	65106
1200 x 1200	65107



## 10 Round shaft cover

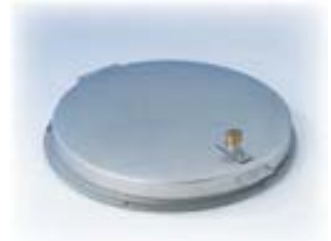
As above, however, lid attached to frame with stable hinge.

### Without insulation

Dimensions mm	Order No.
600	65108
800	65109
1000	65110
1200	65111

### With 25 mm high-resistance foam insulation

Dimensions mm	Order No.
600	65112
800	65113
1000	65114
1200	65115



## Square shaft cover

Made of special steel 1.4301; completely pickled and passivated; rainproof in keeping with German standard DIN 1239; cover made of 2 mm special steel sheet, raised in the middle; **with mist chimney welded on**; DN 150 approx. 350 mm in height; with special steel insect screen and air dome; with inside stiffeners; with spring-operated lock; manually releasable opener and special steel gas pressure damper; fully covered hinge; lid with replaceable gasket; lid to be doweled; key is part of the scope of delivery.

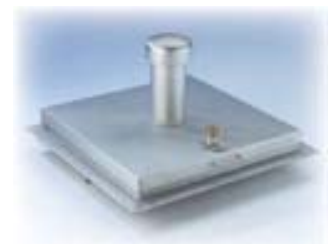
Optional: 25 mm **high-resistance foam insulation**; CFC free; bottom protected against moisture and damage by 1 mm sheet metal.

### Without insulation

Dimensions mm	Order No.
600 x 600	65116
800 x 800	65117
1000 x 1000	65118
1200 x 1200	65119

### With 25 mm high-resistance foam insulation

Dimensions mm	Order No.
600 x 600	65120
800 x 800	65121
1000 x 1000	65122
1200 x 1200	65123



## Round shaft cover

As above, however, lid attached to frame with stable hinge.

### Without insulation

Dimensions mm	Order No.
600	65124
800	65125
1000	65126
1200	65127

### With 25 mm high-resistance foam insulation

Dimensions mm	Order No.
600	65128
800	65129
1000	65130
1200	65131



## Accessories:

Cylinder lock insert with three keys; protective cap with pin including additional key.

	Order No.
Cylinder lock insert	65132
Protective cap	65133
Key	65134

# Manhole and shaft systems



## Shaft cover, selectable surface

In keeping with German standard DIN 1229 and European standard EN 124

Gasproof and waterproof; circumferential seal in the frame; four bolts; conical constructions, thus easy removal of the basin; basin with reinforcement; with pull-out handles; test load: 125 kN (= 12.5 tons) after filling the basin with cement B25; basin depth: 79.5 mm; structural height: 95.5 mm. **Other load classes and special sizes to order.**

### Galvanised steel

Clearance of the frame approx. mm	Outside diameter of frame approx. mm	Weight approx. kg	Order No.
450 x 450	610 x 610	14.5	65601
635 x 635	795 x 795	21.5	65602
800 x 800	960 x 960	35.5	65603
1000 x 1000	1160 x 1160	41.5	65604

### Stainless steel 1.4301

Clearance of the frame approx. mm	Outside diameter of frame approx. mm	Weight approx. kg	Order No.
450 x 450	610 x 610	14.5	65609
635 x 635	795 x 795	21.5	65610
800 x 800	960 x 960	35.1	65611
1000 x 1000	1160 x 1160	41.5	65612



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## Shaft cover with cover plate

Gasproof and waterproof; circumferential seal in the frame; four bolts; cover plate made of safe grooved steel sheet.

### Galvanised steel

Clearance of the frame approx. mm	Outside diameter of frame approx. mm	Weight approx. kg	Order No.
600 x 600	720 x 720	30.0	65605
800 x 800	920 x 920	46.0	65607
1000 x 1000	1120 x 1120	66.0	65608

### Stainless steel 1.4301

Clearance of the frame approx. mm	Outside diameter of frame approx. mm	Weight approx. kg	Order No.
600 x 600	720 x 720	30.0	65613
800 x 800	920 x 920	46.0	65614
1000 x 1000	1120 x 1120	66.0	65615



## Stirrup for single-flight manhole steps

Stirrup with seamless coating of high-density polyethylene (HDPE).

Colour: black with steel core; orange with special steel core.

Safe step with good grip.

Tested in keeping with German standard DIN V 19555 and DIN 1264-2.

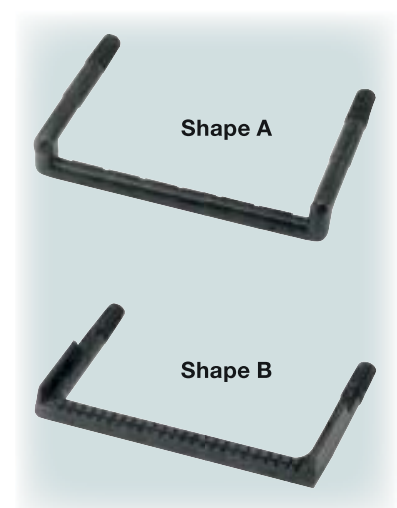
Suitable for direct insertion using compacting concrete and for retrofit.

### Shape A

Core material	Step width	Lateral edge setting	Mounting width	Hole diam.	Order No.
Steel	300 mm	57 mm	330 - 0.5 mm	25 mm	65170
Stainless steel	300 mm	57 mm	330 - 0.5 mm	25 mm	65171

### Shape B

Core material	Step width	Lateral edge setting	Mounting width	Hole diam.	Order No.
Steel	300 mm	57 mm	330 - 0.5 mm	25 mm	65172
Stainless steel	300 mm	57 mm	330 - 0.5 mm	25 mm	65173



# Smart tips !

These are the important things with  
**single-rail ladders !**



## Smart tip 1

**Single-rail ladders made of steel, stainless steel, aluminium with fall stop rail:**

Suitable material as required



## Smart tip 2

**Lateral side-slip protection at the rung:**

Additional safety



## Smart tip 3

**Single-rail ladders with foldable rungs:**

Optically unobtrusive, functional and nicely shapes



## Smart tip 4

**Accessories:**

Access aid, door, rest steps

# Single-rail ladders with fall stop rail

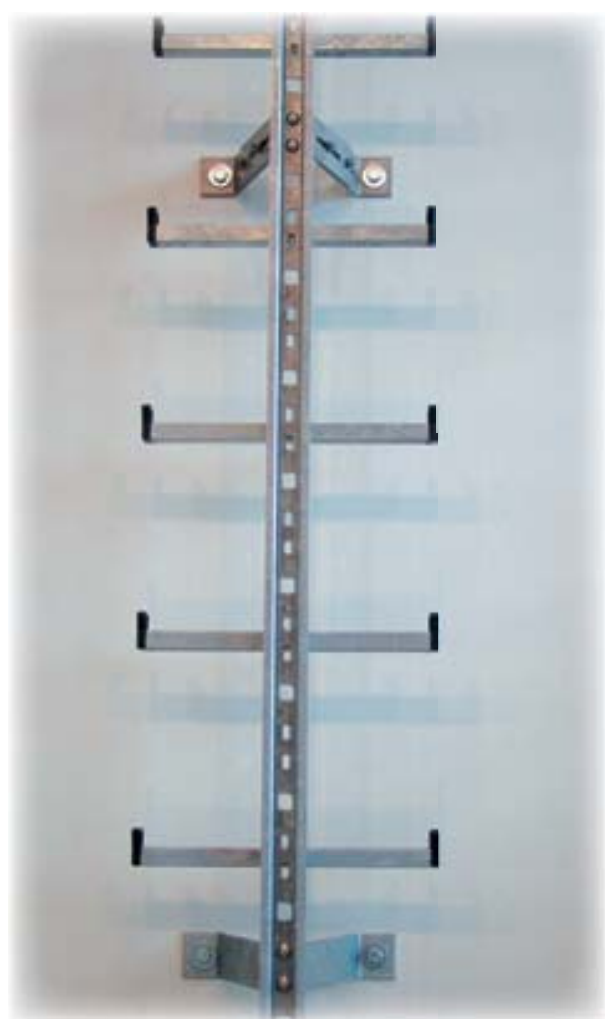
In keeping with European standard EN 353 and German standard DIN 18799-2

## Single-rail ladder

Fall stop rail welded to the rungs; all single-rail ladders complete with connection strap.

Lateral side-slip protection made of plastic attached to steel ladders; bevelled stainless steel side-slip protection attached to stainless steel ladders; aluminium side-slip protection screwed to the side of aluminium ladders

Ladder width 370 mm.



Material	Length m	Order No.
Galvanised steel	1.40	77533
	1.96	77534
	2.80	77535
Stainless steel V4A (1.4571)	1.40	77553
	1.96	77554
	2.80	77555
Aluminium	1.40	77056
	1.96	77080
	2.80	77055

## Wall anchor

Rigid; spacing between wall and bracket: 150 mm; borehole spacing 250 mm; borehole diameter: 16 mm.



Material	Order No.
Galvanised steel	77537
Stainless steel V4A (1.4571)	77557

## Wall anchor

Adjustable from 120 to 180 mm; borehole spacing 250 mm; borehole diameter: 16 mm.

Large adjustment ranges to order.



Material	Order No.
Galvanised steel	77538
Stainless steel V4A (1.4571)	77558

## Light-metal wall anchor

For attachment of single-rail ladders to masts; fastening boreholes: 18 x 65 mm



Material	Order No.
Aluminium	77019

Please observe the instructions for use during installation. We recommend fitting a wall anchor every 1.12 m; the maximum spacing between wall anchors may not exceed 1.40 m.

## Identification plate

Order No.
19007



# Single-rail ladders with fall stop rail

## Folding rest steps

Required for heights over 10 m in keeping with German law; attachable to any rung.



Material	Order No.
Galvanised steel	77539
Stainless steel V4A (1.4571)	77559

## Stud

For access aid; to be screwed to the topmost ladder.



Material	Order No.
Stainless steel V4A (1.4571)	77563

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## Access aid

Detachable, revolving with handle and turn lock.



Material	Order No.
Galvanised steel	77541
Stainless steel V4A (1.4571)	77561

## Safety strap runner

With spring hook snap; easy running and without sharp edges; tongue made of special steel.



Order No.	77562
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## Light-metal door

The door is simply hooked to a rung and secured by a padlock to be provided by the customer. Thus, the single-rail ladder is secured against unauthorised access.



Material	Order No.
Light metal	77569

## Safety harness

In keeping with European standard EN 361.



Order No.	77524
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All special steel parts are pickled and passivated.

## Single-rail ladders with folding rungs

Registered design No. 29914289.2 in keeping with German standards DIN 18799 and BGV D 36 / GUV-V D36

This service ladder is used where a ladder should be as unobtrusive as possible and should integrate with the building harmoniously. On account of its outside width of approx. 468 mm with unfolded rungs, the single-rail ladder can be fitted to almost every corner or niche. On account of the discreet design, the ladder is also suitable for indoor installation.

The base structure is made of aluminium; a fall stop rail is integrated as a standard feature. For safety strap runner and safety harness, please refer to previous page.

Rungs with lateral side-slip protection, E6 / EV1 anodised as a standard feature.

A folding mechanism has to be fitted after a maximum of five metres. The mechanism to fold the rungs up and down can be operated from the bottom or from the top. The operating lever with ball-type safety device can be attached. When the operating lever is removed, the ladder is secured against unauthorised use at the same time.

Single-rail ladders with folding rungs can also be used as an emergency ladder in keeping with German standard DIN 14094 up to a ladder length of 5 m.

The single-rail ladder can be powder-coated individually according to the RAL colour scale.

### Technical data:

Width of the rungs folded down: 468 mm

Width of the rungs folded up: 160 mm

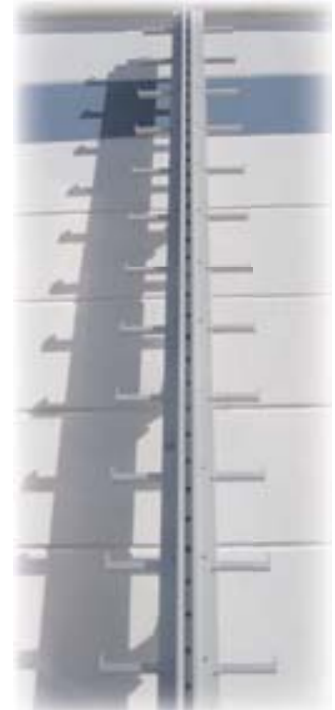
Wall to ladder spacing: 150 mm

Spacer: required every 1,400 mm

Connecting units: V4A

The installation length depends on the structural conditions.

### Prices upon request



Rungs folded down



Rungs folded up