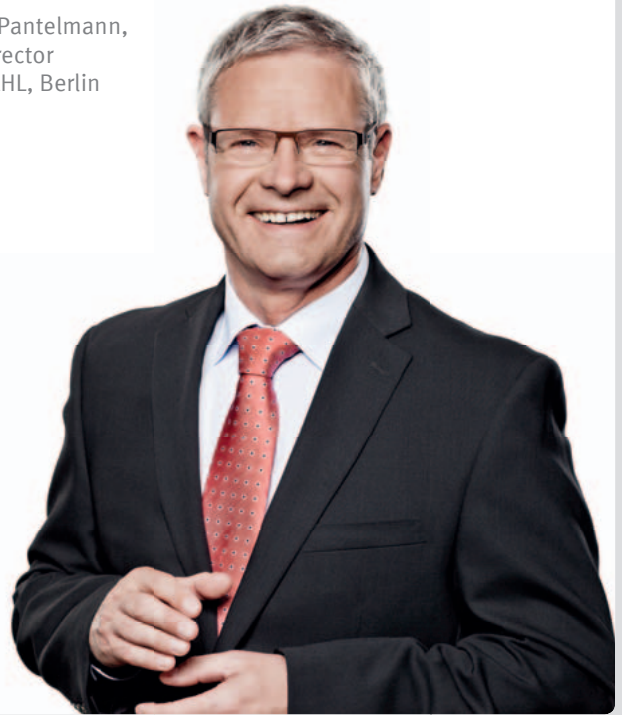


Michael Pantelmann,
Sales Director
at JORDAHL, Berlin



JORDAHL Products for Lift Construction

With us you move safely, quickly and flexibly.

Product Solutions

Quality since 1907.



The JORDAHL head office in Berlin in the building of their sister company, PUK

The JORDAHL Company

JORDAHL connects concrete, steel, heavy loads and a whole lot more. Numerous customers around the world who have already decided to use high quality and individual products from fastening, reinforcement and shear connection, mounting technology and facade connection systems. Customers who choose JORDAHL want more – higher quality, broader choice, better technical advice, wider experience. The company was founded in Berlin in

1907 and since that time we have been at the forefront of connection and shear reinforcement systems development. JORDAHL products such as anchor channels have become milestones in the evolution of structural engineering and have brought lasting changes to construction, shaping the way buildings are designed and making them safer, not only in Germany.

The JORDAHL Seal

JORDAHL has over 100 years of unique experience in the market. This experience forms the basis of our competence and high standards. Whether high quality products, service or consulting – we aim to do everything for our customers to the same demanding standard of excellence. This is what the JORDAHL seal stands for. It is a guarantee of quality for our customers and also the standard that we strive to adhere to each and every day.



The sign for excellent JORDAHL® quality.

Your JORDAHL Advantages

JORDAHL knows the needs of the lift industry. We therefore maintain our central store near Berlin, in order to react to your wishes quickly and efficiently. We have typical lift lengths in stock and available for immediate shipping. We supply individually configured packages for each building site – consisting of JORDAHL® anchor channels, PFEIFER slings and an extensive range of accessories. The advantages for you are clear. You have connection and securing accessories all in one place, simultaneous delivery without delays, products that exactly match and that form a system. And all of this, of course, in the best quality.



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Attachment Solutions for Lift Construction

In central Europe, more than 80% of lift designers choose anchor channels as the means of securing their lift anchoring in new concrete buildings. But we also have suitable and tested product solutions for installation in masonry shafts, for example. The hot rolled JORDAHL® JTA W anchor channels are suitable for dynamic loads or the toothed JORDAHL® anchor

channels JXA W are suitable for design loads along the channel axis. And because high quality also means high safety, we produce our anchor channels from high quality steel. And, of course, we also have the matching design software. Using our intuitive JORDAHL® EXPERT software, you can calculate your very specific application, simply and clearly.

JORDAHL® Anchor Channels

- reliable securing
- easily adjustable
- for securing the lift guide rails, doors and JORDAHL® frame shoes
- ready for installation complete with foam fill and nail holes
- see pages 6 – 7



JORDAHL® anchor channels

JORDAHL® Mounting Channels

- for welding or bolting onto steel structures, e.g. on glass lifts
- see pages 16 – 17



JORDAHL® mounting channels

JORDAHL® T-bolts

- suitable for JORDAHL® anchor and mounting channels
- see pages 18 – 19



JORDAHL® T-bolts

Accessories

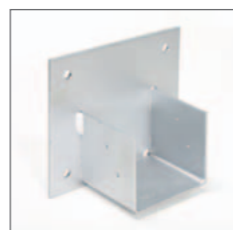
- slings
- personnel safety box
- see pages 20 – 21



Sling

JORDAHL® Frame Shoes

- for installing work platforms in lift shafts
- see pages 22 – 25



JORDAHL® frame shoes

Further information on JORDAHL® anchor channels, T-bolts, mounting channels and frame shoes can be found in our catalogues and on the internet at www.jordahl.de.

Channel Overview

Benefits at a Glance

W Profiles

- hot rolled from a single block;
- free of residual stresses: suitable for dynamic loads;
- optimised geometry with reinforced channel lips for high torques;
- fatigue-resistant up to working load limit;
- European Technical Approval (ETA-09/0338) for anchor channels.



Hot rolled anchor channels JTA W



K Profiles

- cold-formed profiles;
- constant material thickness;
- suitable for static loads;
- European Technical Approval (ETA-09/0338) for anchor channels.



Cold-formed anchor channels JTA K



Toothed W Profiles

- universal loading in all directions;
- free of residual stresses: suitable for dynamic loads;
- optimised geometry with reinforced channel lips for high torques;
- fatigue-resistant up to the serviceability limit state;
- anchor channels with national technical approval (Z-21.4-1690).



Hot rolled, toothed anchor channels JXA W



JORDAHL® T-bolts

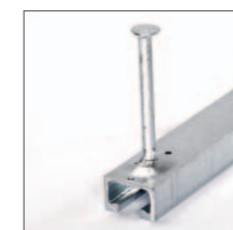
- Hammer-head and Hook-head T-bolts – made to match JORDAHL® profiles;
- galvanised;
- tight connections thanks to high T-bolt torques.



JORDAHL® T-bolts

Round Anchors

are cold-forged onto the back of the channel in a monitored production process. Weld-on anchors are also available for special applications.



JORDAHL® anchor channel with round anchor

JORDAHL® Anchor Channels JTA-CE

European Technical Approval ETA-09/0338

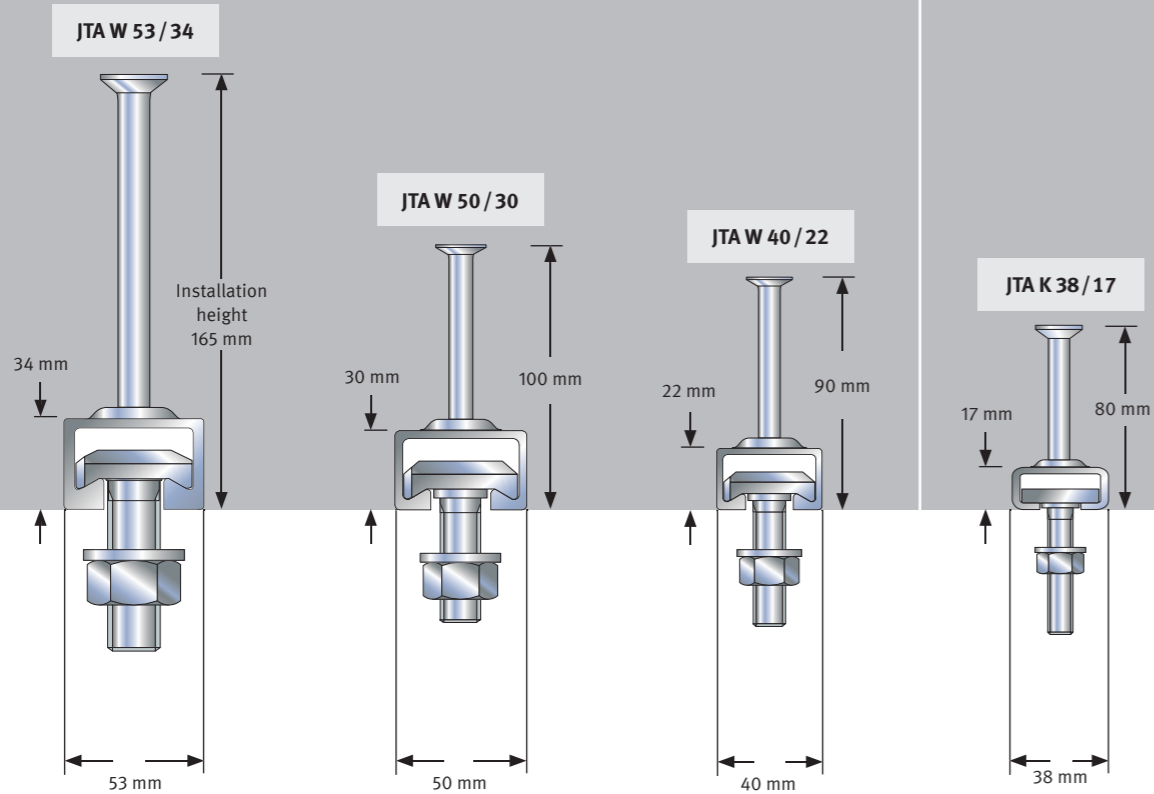


JORDAHL® Anchor Channels JXA

General Building Approval Z-21.4-1690

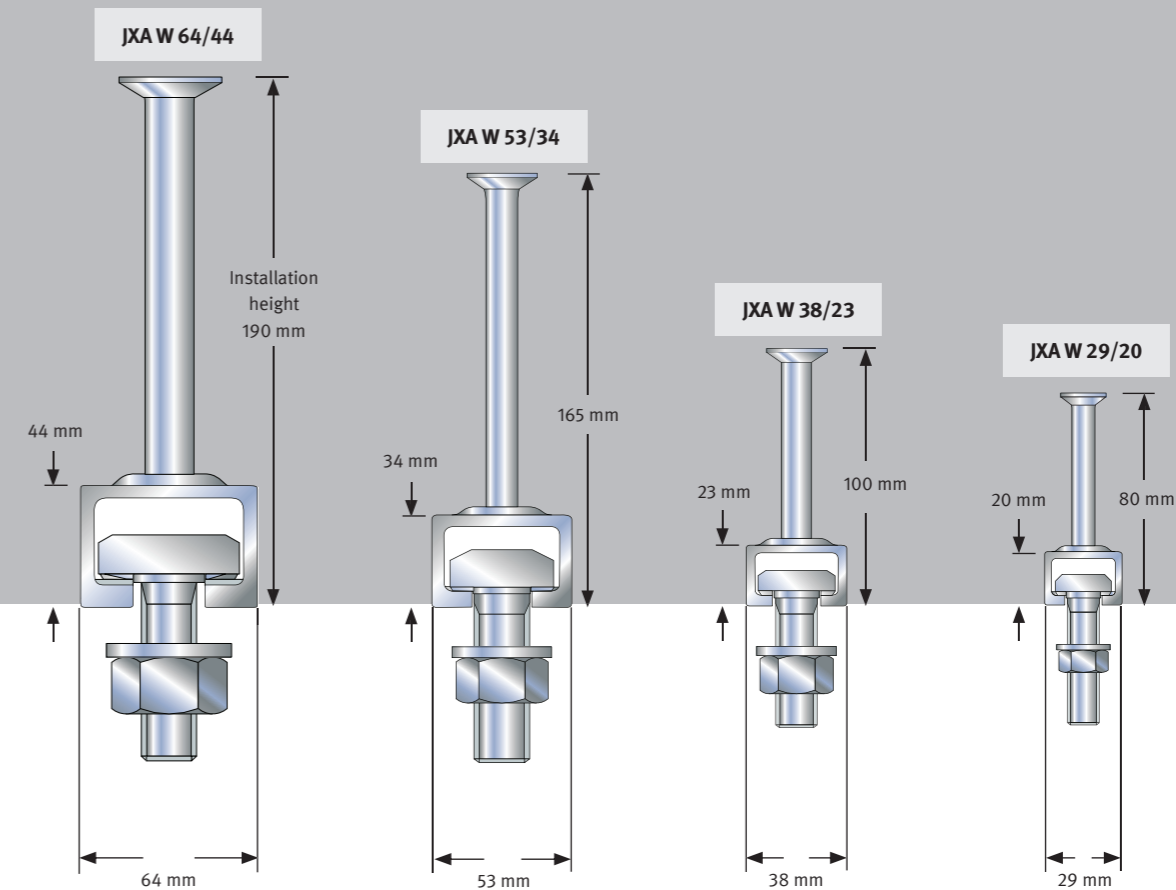


Hot Rolled Anchor Channels



Cold-formed Anchor Channels

Hot Rolled, Toothed Anchor Channels



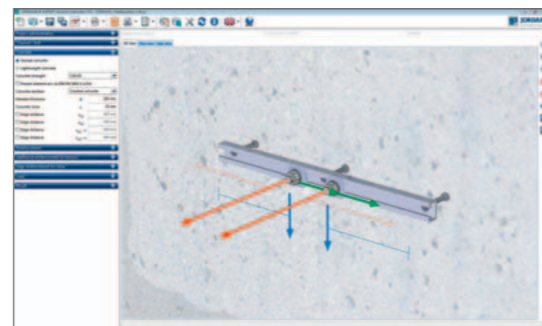
T-bolts¹⁾

Type	JB	JB	JC	JH
Thread	M 10	M 10	M 10	M 10
	M 12	M 12	M 12	M 12
	M 16	M 16	M 16	M 16
	M 20	M 20		

¹⁾ Only the channel and the corresponding T-bolt form a national technically approved system

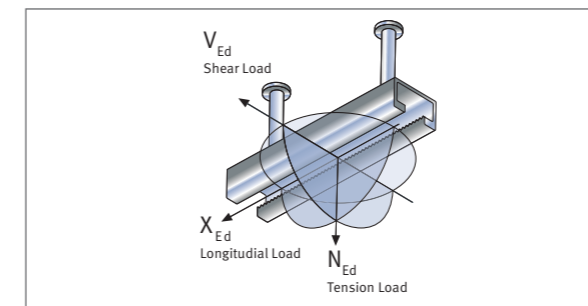
JORDAHL® anchor channel design examples can be found on pages 10 – 15.

You can design your individual installation situation using our JORDAHL® EXPERT anchor channel software.



Toothed T-bolts

JXE	JXB	JXH	JXD	Type
M 20	M 16	M 12	M 10	Thread
M 24	M 20	M 16	M 12	



Profile Material and Design

- hot-dip galvanised steel (fv);
- standard fill polyethylene (PE) or polystyrene (PS).

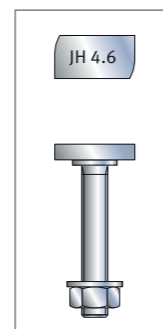
T-bolt Material and Design

- electro zinc plated (gv)
- or hot-dip galvanised steel (fv).

Materials and Markings

JORDAHL Product	Material	Standard
Profiles	S235JR = 1.0038 S275JR = 1.0044	DIN EN 10025
Anchors	S235JR = 1.0038	DIN EN 10025 DIN EN 10263
T-bolts	Strength grade 4.6 / 8.8	DIN EN ISO 898-1
Hexagonal Nuts	Strength grade 8	DIN EN 20898-2
Washers	St	DIN EN ISO 7089 DIN EN ISO 7093-1

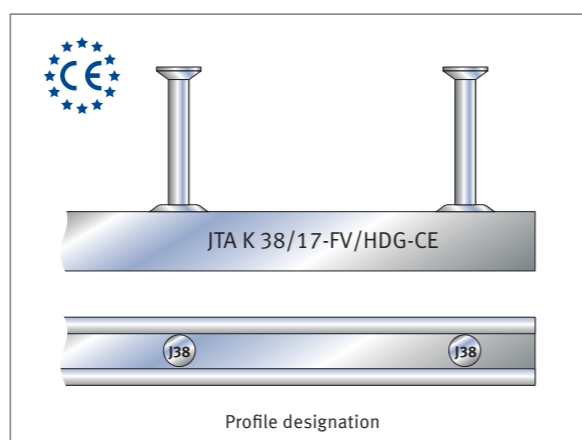
Identification of JORDAHL® T-bolts



JORDAHL® T-bolts have the type and strength grade embossed on the T-bolt head.

Identification of JORDAHL® Anchor Channels JTA-CE

- JORDAHL® anchor channels are permanently marked on the profile, showing the profile type and the material.
- JORDAHL® anchor channels JTA-CE designed to meet the European Technical Approval (ETA) are marked with 'CE'.
- JORDAHL® anchor channels with round anchors are additionally embossed with the profile designation on the rivet head in the inner channel chamber.



Corrosion Protection

The use of anchor channels in lift shafts means that the corrosive conditions of the structure need to be taken into consideration. The scope of use falls within

corrosivity classes C2 and C3 according to ISO 12944-2 as a result of the exposure to corrosion. Stainless steel anchor channels and T-bolts are available on request.

Corrosivity categories: ISO 12944-2	Profile	Anchor	T-bolt, Nut, Washer	Use
C2 moderate	Hot-dip galvanised (fv), coating ≥ 50 µm	Hot-dip galvanised (fv), coating ≥ 50 µm	Electro zinc plated (gv), coating ≥ 5 µm	Concrete elements in interior spaces, e.g. flats, offices, schools, hospitals, sale-rooms, with the exception of wet rooms.
C3 middle	Hot-dip galvanised (fv), coating ≥ 50 µm	Hot-dip galvanised (fv), coating ≥ 50 µm	Hot-dip galvanised (fv), coating ≥ 50 µm	Concrete elements in interior spaces with normal humidity (including kitchens, bathrooms and washrooms in flats) with the exception of permanent moisture.

Standard Product Range

(JTA-CE; JXA)

JXA W 64 / 44		JXA W 53 / 34		JTA W 53 / 34		JTA W 50 / 30		JTA W 40 / 22		JXA W 38 / 23		JTA K 38 / 17	
Length [mm]	No. of anchors	Length [mm]	No. of anchors	Length [mm]	No. of anchors	Length [mm]	No. of anchors	Length [mm]	No. of anchors	Length [mm]	No. of anchors	Length [mm]	No. of anchors
150	2	150	2	150	2	150	2	150	2	150	2	100	2
200	2	200	2	200	2	200	2	200	2	200	2	150	2
250	2	250	2	250	2	250	2	250	2	250	2	200	2
300	2	300	2	300	2	300	2	300	2	300	2	250	2
350	3	350	3	350	3	350	3	350	3	350	3	300	3
400	3	400	3	400	3	400	3	400	3	400	3	350	3
550	3	550	3	550	3	550	3	550	3	550	3	450	3
900	5	800	4	800	4	800	4	800	4	800	4	550	4
6000	25	1050	5	1050	5	1050	5	1050	5	1050	5	800	5
		6000	25	6000	25	3000	13	1300	6	6000	25	1050	6
						6000	25	1550	7			3000	16
								1800	8			6000	31
								2050	9				
								2300	10				
								2550	11				
								3000	13				
								6000	25				

Anchor spacing ≤ 250 mm	Anchor spacing ≤ 250 mm	Anchor spacing ≤ 250 mm	Anchor spacing ≤ 250 mm	Anchor spacing ≤ 250 mm	Anchor spacing ≤ 250 mm	Anchor spacing ≤ 200 mm



Profile Material and Design

- hot-dip galvanised steel (fv);
- standard fill polyethylene (PE) or polystyrene (PS);

Order Example for JORDAHL® Anchor Channels JTA-CE

Type	Profile size	Channel length [mm]	Anchor	Finish	ETA conform
JTA W	50/30	- 250	- 2A	- fv	- CE

Order Example for JORDAHL® Toothed Anchor Channels JXA

Type	Profile size	Channel length [mm]	Finish
JXA W	38/23	- 250	- fv



Application: Concrete Shaft

Securing Lift Guide Rails



People who build lifts know what the demands are: fast, adjustable and especially reliable securing, e.g. for lift guide rails and door attachments. We at JORDAHL have the best product solutions for your situation.

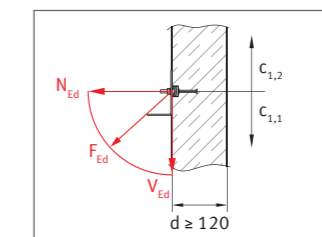
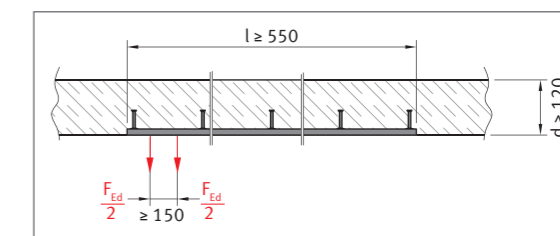
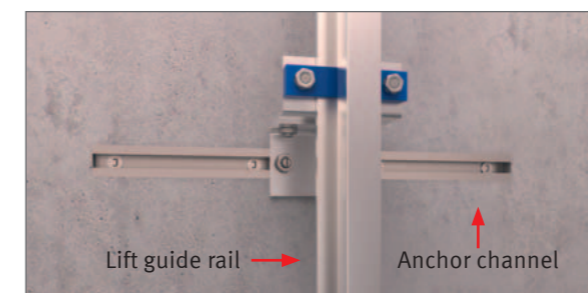
JORDAHL® anchor channels are characterized by their high quality and versatility. And by the multiple benefits they provide users with.

Benefits

- high quality products that meet all demands;
- in conjunction with JORDAHL® T-bolts, a system with national technical approval;
- fast and efficient securing;
- reliable transfer of static and dynamic loads;
- safe in any operating situation;
- individual design cases can be analysed using JORDAHL® EXPERT software.

Lift guide rails provide an exact lateral or rear guide for the lift cabin and counterweight when travelling and must accept the horizontal guide forces. But the vertical support forces – for example when safety catches engage – must also be safely and harmlessly accepted

and transferred to the structure. For this reason, it is very important to choose high quality and reliable products for installation – for example, our JORDAHL® anchor channels JTA W.



To make it really easy for you, we have compiled a design example below to help you select the correct anchor channel.

Application Example

The following parameters are assumed for determining the design resistances in this example:

- concrete C20/25, cracked;
- no edge distances $c_{1,1}$; $c_{1,2}$
- wall thickness ≥ 120 mm;
- channel length ≥ 550 mm.

The load is applied by a load pair. The T-bolt distance must be > 150 mm. The total effect per channel must be compared to the design resistance given in the table.

Profile	Wall thickness [mm]	F_{Rd} [kN]	T-bolt
JTA W 40/22 - CE	≥ 120	18.0	JC M 12 4.6
JTA W 50/30 - CE	≥ 120	28.0	JB M 12 4.6

Analysis

$$F_{Ed} = \sqrt{N_{Ed}^2 + V_{Ed}^2} \leq F_{Rd}$$

If your data deviate, you can analyse your specific case using our JORDAHL® EXPERT software.

Application: Masonry Shaft

Securing Lift Guide Rails in Masonry Shafts

In masonry lift shafts, where the quality and load-bearing capacity are difficult to specify, a securing means you can rely on is required. By installing a reinforced

concrete ring beam and using hot rolled anchor channels, lift guide rails can also be safely and reliably secured to masonry walls.

To make it really easy for you we have determined some exemplary nomograms of design resistance for typical ring beam heights of 250 and 200 mm.

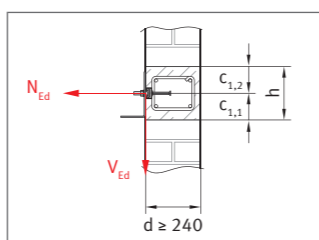
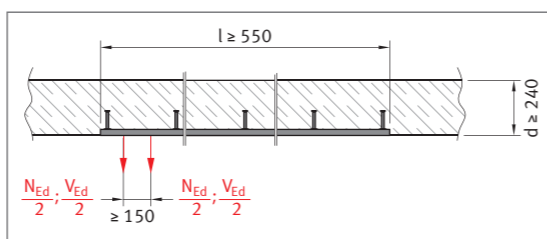
Application Example

The following parameters are assumed for determining the design resistance limiting curves:

- concrete C20/25, normal reinforcement;
- ring beam height 200 and 250 mm;
- wall thickness ≥ 240 mm;
- channel length ≥ 550 mm;
- calculation using edge distances $c_{1,1}$; $c_{1,2}$

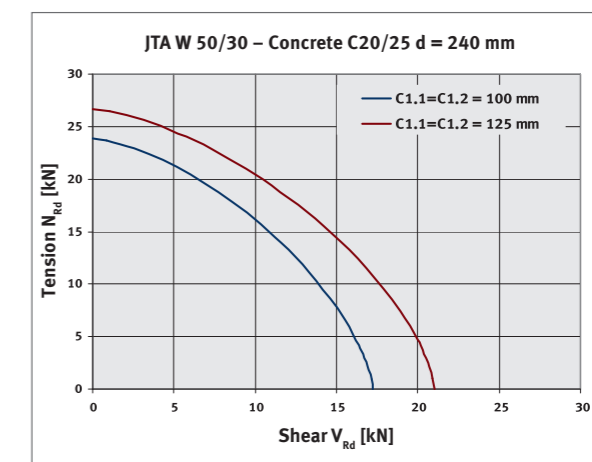
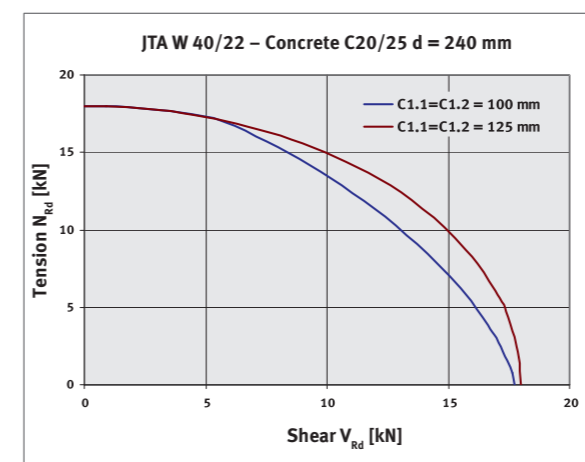
The load is applied by a load pair. The T-bolt distance must be ≥ 150 mm. The limiting curves are valid for the total load per channel.

If your data deviate, you can analyse your specific case using our JORDAHL® EXPERT software. The stability of the ring beam itself is not taken into account and has to be checked independently from the anchor channel design by the structural engineer.

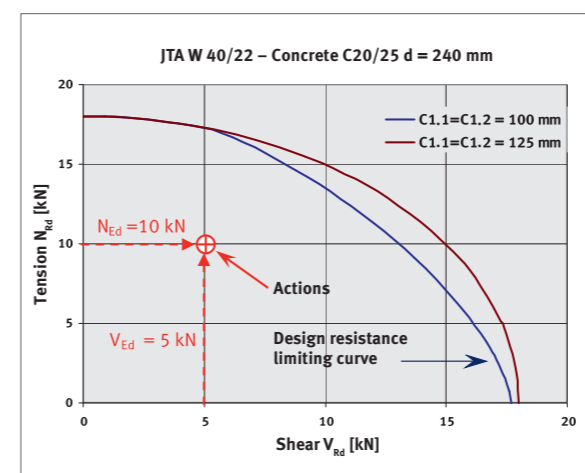


Profile	T-bolt
JTA W 40/22 - CE	JC M 12 4.6
JTA W 50/30 - CE	JB M 12 4.6

Nomograms of Design Resistance:



Design Example:



Used: W40/22-550-3A-fv-CE
 Channel length $l=550$ mm
 Concrete = C20/25, cracked
 Edge distance $c_{1,1} = c_{1,2} = 100$ mm
 Concrete thickness $d = 240$ mm load pairs with T-bolt distance = 150 mm

Total Load per Channel:
 Tensile load $N_{Ed} = 10$ kN
 Shear load $V_{Ed} = 5$ kN

Result:
 The action resulting from tension and shear lies within the design resistance limiting curve
 \Rightarrow Proof ok

Application: Shaft Openings

Securing Lift Doors

Lift doors can be easily attached to anchor channels concreted into the lift shaft. Continuous anchor channels or shorter pieces can be used, depending on the situation. The most critical parameter in this applica-

tion is the short edge distance between the anchor channel and the opening. All other edge distances in the lift shaft are generally so large that they are not relevant.

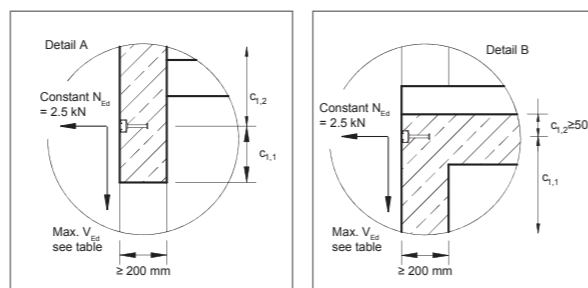
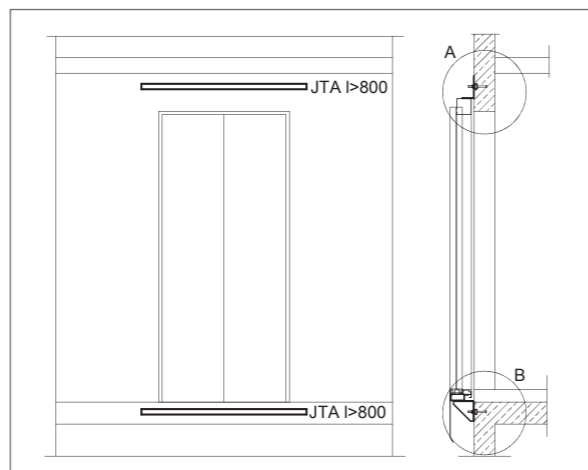
To make it really easy for you, we have determined some typical example anchor channel profiles and summarised them in the adjacent tables.

Application Example

The anchor channels JTA K 38/17 or JTA W 40/22 are often used to secure lift doors. The edge distances are particularly important here because the height of the running rails and the door securing frame is limited. In addition, a horizontal force acting on the door, for example as a result of impact or vandalism, must be taken into consideration. These are assumed to be fixed, conventional values. The result is the maximum vertical loads V_{Ed} as a function of the conditions given below and shown in the table. These must be compared to the relevant design loads per T-bolt.

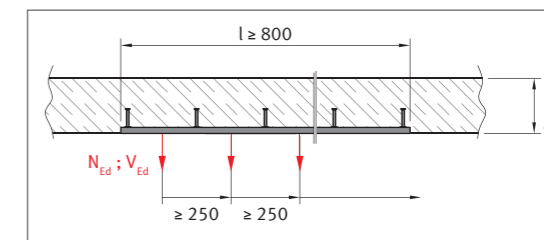
The following conditions apply when determining the maximum actions V_{Ed} ; N_{Ed} :

- concrete C20/25, cracked;
- edge distances $c_{1,1}$, variable as shown in table;
- wall thickness ≥ 200 mm
- horizontal action per T-bolt $N_{Ed} = 2.5$ kN



Securing Doors Using Continuous Anchor Channels (length $l \geq 800$ mm)

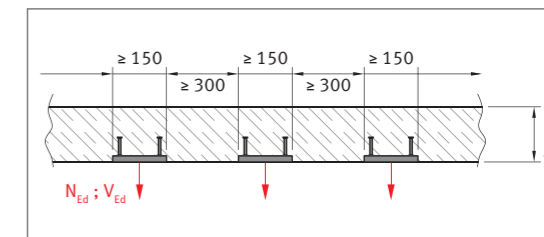
$c_{1,1}$ [mm]	JTA W 40/22 – CE			JTA K 38/17 – CE		
	at N_{Ed} [kN]	max. V_{Ed} [kN]	T-bolt [type, thread, strength grade]	at N_{Ed} [kN]	max. V_{Ed} [kN]	T-bolt [type, thread, strength grade]
50	2.5	3.6	JC M12 4.6	2.5	3.2	JH M12 4.6
60	2.5	4.4	JC M12 4.6	2.5	3.9	JH M12 4.6
70	2.5	5.2	JC M12 4.6	2.5	4.6	JH M12 4.6
80	2.5	6.0	JC M12 4.6	2.5	5.4	JH M12 4.6
90	2.5	6.5	JC M12 4.6	2.5	5.9	JH M12 4.6
100	2.5	7.0	JC M12 4.6	2.5	6.3	JH M12 4.6
125	2.5	8.2	JC M12 4.6	2.5	7.4	JH M12 4.6
150	2.5	9.3	JC M12 4.6	2.5	8.5	JH M12 4.6
≥ 200	2.5	10.4	JC M12 4.6	2.5	9.6	JH M12 4.6



If your data deviate, you can analyse your specific case using our JORDAHL® EXPERT software.

Securing Doors Using Short Anchor Channels (length $l \geq 150$ mm)

$c_{1,1}$ [mm]	JTA W 40/22 – CE			JTA K 38/17 – CE		
	at N_{Ed} [kN]	max. V_{Ed} [kN]	T-bolt [type, thread, strength grade]	at N_{Ed} [kN]	max. V_{Ed} [kN]	T-bolt [type, thread, strength grade]
50	2.5	5.4	JC M12 4.6	2.5	4.7	JH M12 4.6
60	2.5	7.2	JC M12 4.6	2.5	6.2	JH M12 4.6
70	2.5	8.9	JC M12 4.6	2.5	7.7	JH M12 4.6
80	2.5	10.0	JC M12 4.6	2.5	8.9	JH M12 4.6
90	2.5	10.7	JC M12 4.6	2.5	9.6	JH M12 4.6
100	2.5	11.4	JC M12 4.6	–	–	–
≥ 100	–	–	–	2.5	9.6	JH M12 4.6
≥ 125	2.5	12.6	JC M12 4.6	–	–	–



If your data deviate, you can analyse your specific case using our JORDAHL® EXPERT software.

JORDAHL® Mounting Channels

Together with the corresponding JORDAHL® T-bolts, JORDAHL® mounting channels form a flexible lift construction anchoring system. Hot rolled mounting channels are especially suitable for dynamic load-

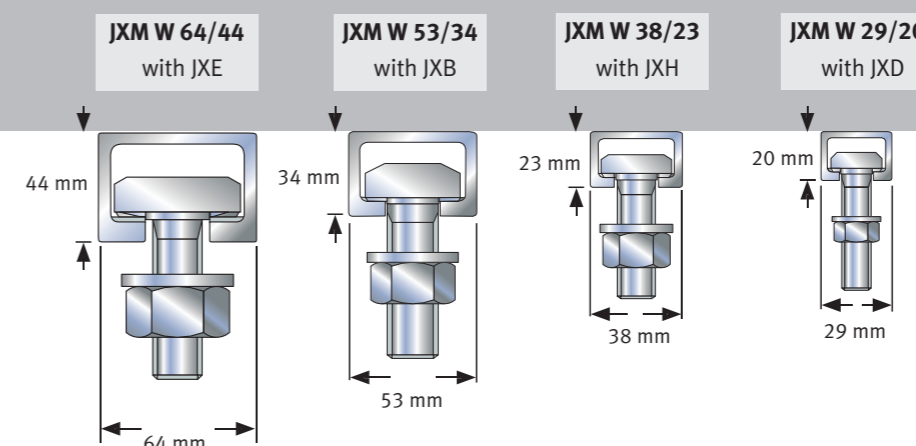
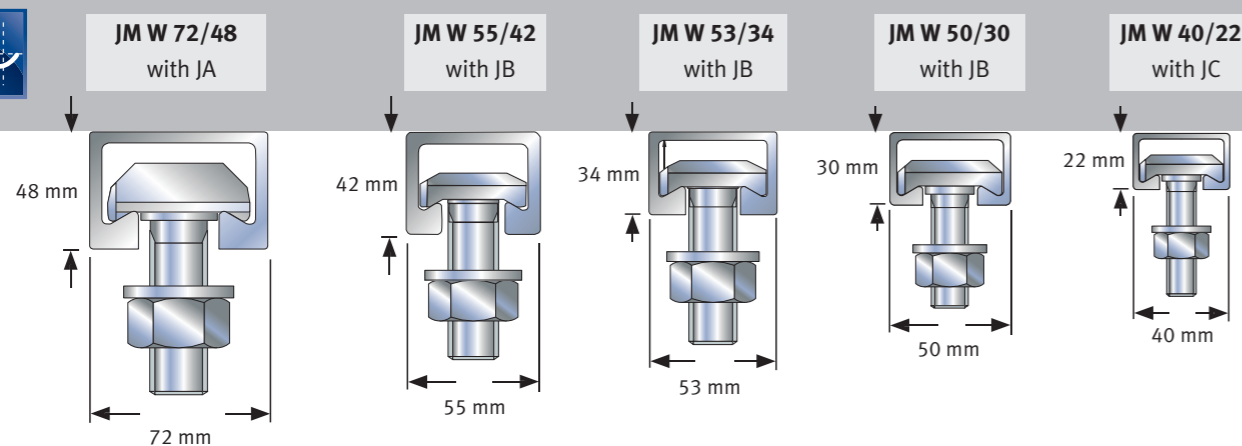
ing and welded constructions. Hot rolled, toothed mounting channels are suitable for loading along the channel axis.



Securing lift doors in a lattice girder shaft

Hot Rolled, Smooth Mounting Channels

Hot Rolled, Toothed Mounting Channels



Type	JA	JB JE	JB	JB	JC
Thread	M 20	M 16	M 10	M 10	M 10
	M 24	M 20	M 12	M 12	M 12
	M 27	M 24	M 16	M 16	M 16
	M 30		M 20	M 20	

JXE	JXB	JXH	JXD	Type
M 20	M 16	M 12	M 10	Thread
M 24	M 20	M 16	M 12	

Weight, Cross-sectional Values, Inertia and Resistance Moments

Hot rolled profiles	Cross-sectional Values							
	Weight ¹⁾	Cross-section	Center of Gravity	Moments of Inertia		Moments of Resistance		
	G [kg/m]	A [cm ²]	e [cm]	I _y [cm ⁴]	I _z [cm ⁴]	W _y [cm ³]	W _z [cm ³]	W _{pl,y} [cm ³]
JM W 72/48	8.84	11.27	2.40	34.97	83.27	14.57	23.13	18.28
JM W 55/42	6.76	8.61	2.21	18.75	36.27	8.49	13.31	11.72
JM W 53/34	4.98	6.34	1.74	9.33	23.70	5.35	9.03	7.18
JM W 50/30	3.23	4.12	1.60	5.19	13.89	3.24	5.67	4.34
JM W 40/22	2.10	2.68	1.22	1.97	5.87	1.62	2.97	2.15

¹⁾ Metre weights for mill-finish; metre weights for hot-dip galvanised x 1.1

Weight, Cross-sectional Values, Inertia and Resistance Moments

Hot rolled profiles	Cross-sectional Values							
	Weight ¹⁾	Cross-section	Center of Gravity	Moments of Inertia		Moments of Resistance		
	G [kg/m]	A [cm ²]	e [cm]	I _y [cm ⁴]	I _z [cm ⁴]	W _y [cm ³]	W _z [cm ³]	W _{pl,y} [cm ³]
JXM W 64/44	7.19	9.16	2.29	24.12	54.20	10.52	16.94	13.80
JXM W 53/34	4.64	5.91	1.85	9.25	23.19	5.01	8.83	6.86
JXM W 38/23	2.42	3.08	1.33	2.10	6.13	1.57	3.23	2.30
JXM W 29/20	1.55	1.97	1.12	1.01	2.39	0.90	1.65	1.30

¹⁾ Metre weights for mill-finish; metre weights for hot-dip galvanised x 1.1

Material and Design

- steel, mill-finish (welded construction);
- steel, hot-dip galvanised (bolttable frame construction with enhanced demands on corrosion protection).

JORDAHL® T-bolts

- made-to-match JORDAHL® profiles;
- for securely attaching anchor elements;
- available in lengths of 15 to 300 mm;
- thread diameters from M 10 to M 30;
- including the correct nuts;
- tight connections thanks to high bolt torques;
- embossed with type and strength grade on the T-bolt head;
- marked with notches at the shaft end to ensure correct assembly;

Material and Design:

- electro zinc plated steel (gv) (strength grades 4.6/8.8)
- hot-dip galvanised steel (fv) (strength grades 4.6/8.8)



electro zinc plated steel



hot-dip galvanised steel

Hammer-head and Hook-head T-bolts

In conjunction with the corresponding hammer-head and hook-head T-bolts, JORDAHL® anchor and mounting channels can transfer tension and shear loads.

- T-bolt head embossed with type and strength grade
- marked with a notch at the shaft end¹⁾

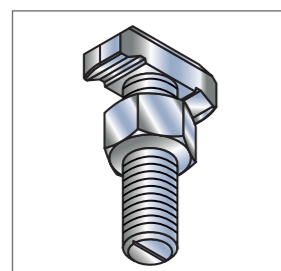


T-bolt JB

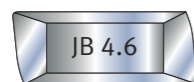


Hammer-head T-bolt JH

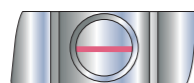
Hammer-head and Hook-head T-bolt Position Markings



A notch at the end of the shaft

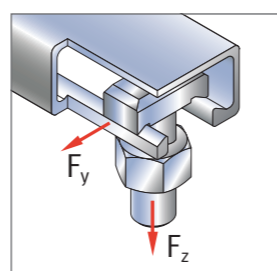


Top view, embossed with type and strength grades



Bottom view, notch marks correct orientation

¹⁾ Please note: Following installation, the notch must be oriented perpendicular to the channel axis.



Tension (F_z) and shear (F_y) loads; example: JB T-bolt

Toothed T-bolts

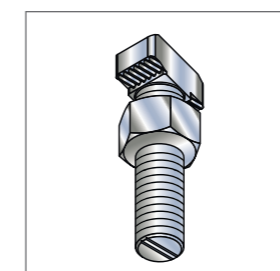
In conjunction with the corresponding toothed T-bolts, toothed JORDAHL® anchor and mounting channels can accept tension and shear loads, and loads longitudinal to the channel axis.

- T-bolt head embossed with type and strength class
- marked with two notches at the shaft end ²⁾

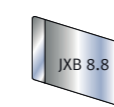


Toothed T-bolt JXB

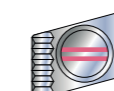
Toothed T-bolt Position Markings



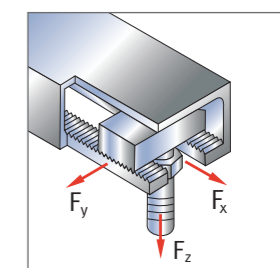
Two notches at the end of the shaft



Top view, embossed with type and strength grades



Bottom view, notches mark correct orientation



Tension (F_z), shear (F_y) and longitudinal loads (F_x); example: toothed T-bolt JXB

²⁾ Please note: Following installation, the notches must be oriented perpendicular to the channel axis.

Nuts and Washers

Hexagonal Nuts to ISO 4032

Finish gv; Strength grade 8				
Thread	e [mm]	s [mm]	m [mm]	
M 6	11.05	10.0	5.2	
M 8	14.38	13.0	6.8	
M 10	18.90	16.0	8.4	
M 12	21.10	18.0	10.8	
M 16	26.75	24.0	14.8	
M 20	32.95	30.0	18.0	
M 24	39.55	36.0	21.5	
M 27	45.20	41.0	23.8	
M 30	50.85	46.0	25.6	

Washers

Finish gv				
Washers	Size	d [mm]	D [mm]	s [mm]
ISO 7093-1 (DIN 9021)	M 6	6.4	18.0	1.6
	M 8	8.4	24.0	2.0
	M 10	10.5	30.0	2.5
	M 12	13.0	37.0	3.0
	M 16	17.0	50.0	3.0
ISO 7089 (DIN 125)	M 20	22.0	60.0	4.0
	M 6	6.4	12.0	1.6
	M 8	8.4	16.0	1.6
	M 10	10.5	20.0	2.0
	M 12	13.0	24.0	2.5
	M 16	17.0	30.0	3.0
	M 20	21.0	37.0	3.0
	M 24	25.0	44.0	4.0
M 27	28.0	50.0	4.0	
M 30	31.0	56.0	4.0	

Accessories

PFEIFER Products

- anchorage in concrete verified;
- correspond to EU machine directive 2006/42/EU regulations;
- CE conformity;
- very simple installation and safe use;
- complete instructions for installation and use for each product;
- made in Germany

Before concreting! LSF Sling for Inserting in Formwork

This consists of an anchor approved for permanent attachment to concrete, a cover plate and a permanently fixed wire sling, secured against loosening. The LSF sling is installed flush with the formwork before concreting, as described in the general installation instructions. Using this version, the formwork is slit open and the sling pushed through. After concreting and hardening, the sling can be used.

Properties: flexible quality steel cable, galvanised, capacity from 600 to 2250 kg, floor thicknesses of 140 – 250 mm.

Advantages: long life, safe lifting, TÜV SÜD tested.



Without penetrating the formwork! LSV Sling for Recessed Installation

This consists of an anchor approved for permanent attachment to concrete, a protective box and a permanently fixed wire sling, secured against loosening. The LSV sling is installed flush with the formwork before concreting, as described in the general installation instructions. The box is then simply nailed to the formwork, opened after concreting and the sling pulled out. The sling is then ready for use.

Properties: flexible quality steel cable, galvanised, capacity from 500 to 1750 kg, floor thicknesses of 135 – 180 mm.

Advantages: long life, safe anchoring, TÜV SÜD tested.



LSG Sling for Push through Installation

This consists of a push-through element with a permanently fixed wire sling, secured against loosening. The LSG sling is installed after concreting is complete, e.g. in refurbishment work, as described in the general installation instructions. The ceiling in the lift shaft must be drilled through completely for installation, the anchor pushed through from below and installation is then complete.

The sling can be used immediately after installation.

Properties: flexible quality steel cable, galvanised, capacity from 500 to 4000 kg.

Advantages: long life, safe anchoring, TÜV SÜD tested.



Subsequent installation!

LSP Sling for Wall Plug Installation

This consists of an anchoring element with a permanently fixed wire sling, secured against loosening. The LSP sling is installed after concreting is complete, e.g. for refurbishment work, as described in the general installation instructions. Before use, it is fastened to the ceiling from below using subsequently installed wall plugs. The sling can be used immediately after installation.

Properties: flexible quality steel cable, galvanised, capacity from 1000 to 4000 kg.

Advantages: long life, safe anchoring, TÜV SÜD tested.



Subsequent installation!

PSB Personnel Safety Box

The PFEIFER PSB personnel safety box serves as an anchor device compliant with EN 795:1996-08 as protection against falling. The personnel safety boxes are primarily intended for recessed installation in the reinforced concrete ceilings of lift shafts.

Properties: flexible quality steel cable, galvanised, ceiling thicknesses from 170 mm.

Advantages: long life, safe anchoring, Made in Germany.



Secures against falling!



Opernturm, Frankfurt am Main, photo: Pangamut



JG Frame Shoes
Erecting Installation Platforms in Lift Shafts

JORDAHL® frame shoes are used to safely erect installation platforms in lift shafts. The transmission of forces into the structure must be checked by the structural engineer. Follow the respective installation instructions.



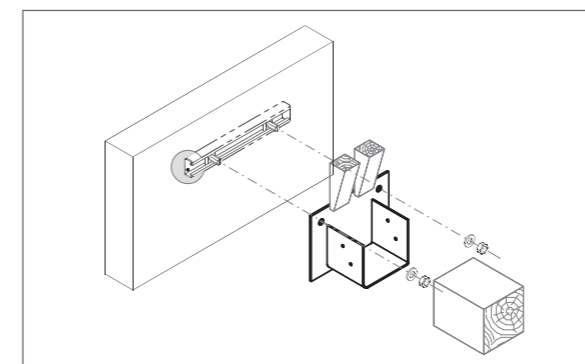
Type Approved
Safety
Regular Production
Surveillance



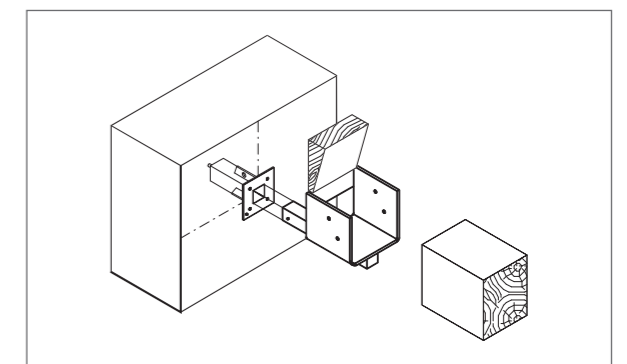
www.tuv.com
ID 0000039303

Advantages

- available in a variety of building types for diverse load classes;
- the standard building type is designed for squared timber widths of 10 cm; squared timber widths of 12 cm are available on request;
- the material is hot-dip galvanised or provided with a coloured corrosion protection coating corresponding to the load class;
- type-tested with certificate no. 60085529;






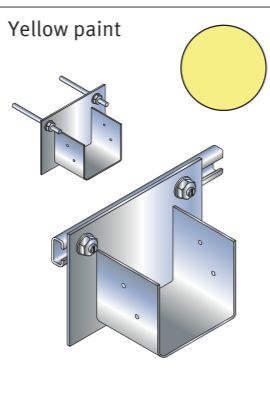
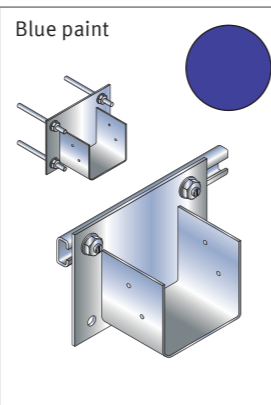
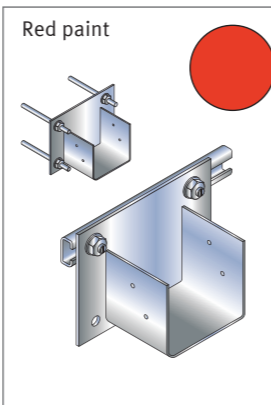
JORDAHL® frame shoe type K



JORDAHL® frame shoe type H

JG Frame Shoes

Type K (concrete ≥ C20/25; for 10 cm squared Timber Widths)

Type	K 4	K 9	K 12
Design resistance:	$V_{Rd} = 6,2 \text{ kN}^{1)}$	$V_{Rd} = 13,9 \text{ kN}^{1)}$	$V_{Rd} = 18,5 \text{ kN}^{1)}$
	Yellow paint 	Blue paint 	Red paint 
			
			¹⁾ incl. load increase factor 1.1

Baseplate

Dimensions: t x w x h	4x196x143	4x206x143	8x226x212
Connection dia. [mm]:	2 x 11 dia with drill distance spacing b 146	4 x 14 dia with drill distance spacing bxh 156x93	4 x 14 dia with drill distance spacing bxh 154x140

Secured to Anchor Channel Compliant with ETA-09/0338




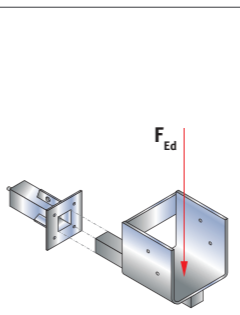
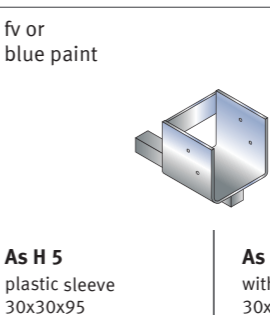
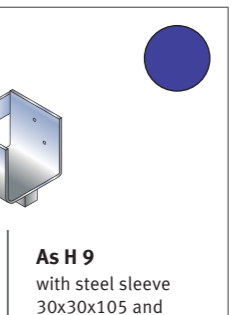
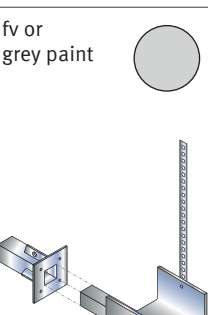
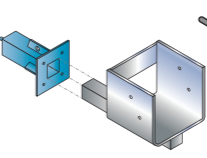
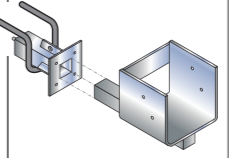
Anchor channels:	JTA W 40/22-CE, fv	JTA W 50/30-CE, fv
Minimum channel length:	$l \geq 250 \text{ mm}$	$l \geq 250 \text{ mm}$
T-bolts:	2x JC M10x30 gv 2x washers 10.5 EN ISO 7089	2x JB M12x40 gv 2x washers 13 EN ISO 7089
Anchor channel installation:	See JG/K installation instructions for minimum edge distances and minimum element thickness	

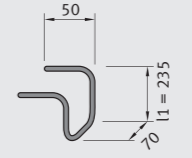
Secured with Anchor Bolts Compliant with ETA-05/0069

Anchor bolts:	2x FAZ II 10/10 gv including nuts and washers	4x FAZ II 12/10 gv including nuts and washers
	Use anchor bolts in accordance with the respective manufacturers instructions or approval	

See JG/K installation instructions for minimum edge distances for above selection

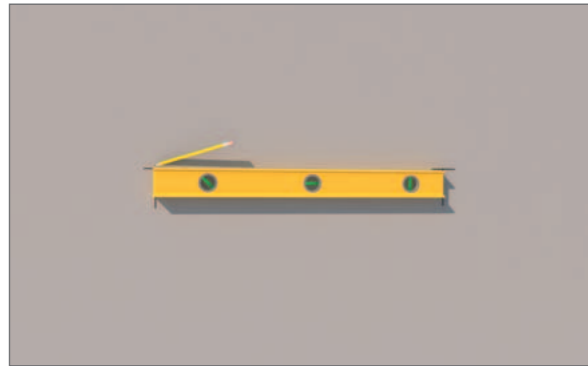
Type H (concrete ≥ C20/25; for 10 cm squared Timber Widths)

Type	H 2,5	H 5	H 9	L 2,5
Design resistance:	$V_{Rd} = 4,2 \text{ kN}^{1)}$	$V_{Rd} = 7,7 \text{ kN}^{1)}$	$V_{Rd} = 13,9 \text{ kN}^{1)}$	$V_{Rd} = 4,2 \text{ kN}^{1) 2)}$
	fv or grey paint 	fv or blue paint 		fv or grey paint 
				
		As H 5 plastic sleeve 30x30x95	As H 9 with steel sleeve 30x30x105 and additional retaining reinforcement	
				
				
				¹⁾ incl. load increase factor 1.1; ²⁾ for 12 cm squared timber widths

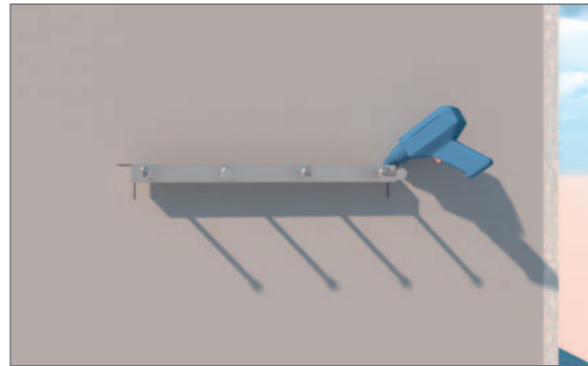
Dimensions square bar [mm]:	25x25	30x30	30x30	25x25
Corresponding frame sleeve:	Plastic sleeve 25x25x95	Plastic sleeve 30x30x95	Steel sleeve 30x30x105	Plastic sleeve 25x25x95
Additional reinforcement:	None	None	Req. $A_s = 1,32 \text{ cm}^2$ stirrup used dia. 10 with work. $A_s = 1,57 \text{ cm}^2$ (two-way)	None
			 provide on-site	

Installation

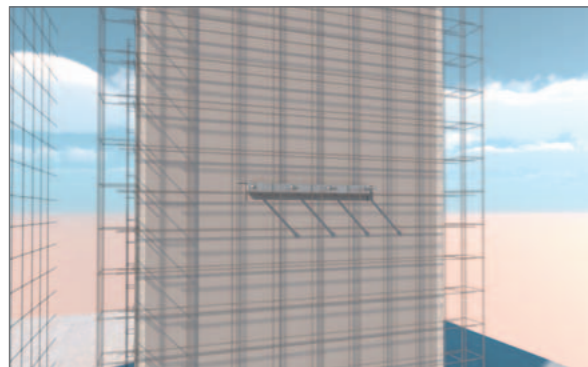
JORDAHL® Anchor Channels for Lift Construction



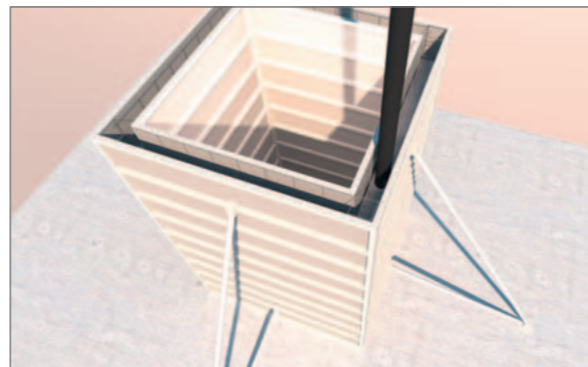
Position JORDAHL® anchor channels according to reinforcement and formwork drawings



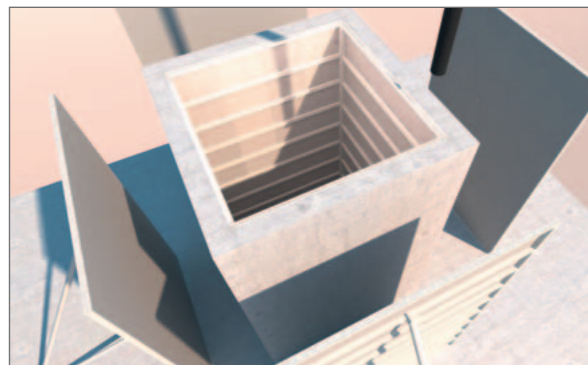
Attach the channels to the formwork to prevent movement during concreting



Reinforcing



Concreting and compacting



Removing the formwork after concrete hardening



Remove anchor channel foam fill with the aid of a suitable tool



Insert JORDAHL® T-bolts horizontally into the channel slot and rotate by 90°



After installation, check the correct seating of the T-bolt in the anchor channel – the marking slot must be perpendicular to the channel axis.

T-bolts may not be placed outside of the last anchor at the ends of the channels.

Recommended Torques T_{inst}

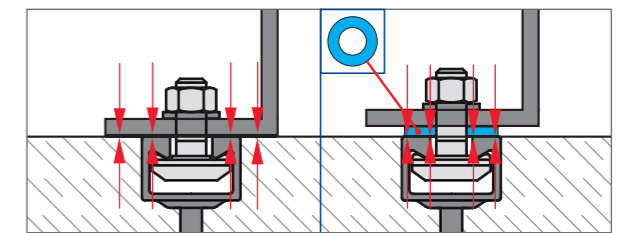
The JORDAHL® T-bolts are placed horizontally in the channel slot and tightened with the appropriate torque after being rotated by 90°.

General

- Secure the anchor element to the concrete or the anchor channel, or to the concrete and the anchor channel flush.

Steel-steel Contact

- Larger torques for T-bolts in strength grades 8.8, A4-70 and F4-70.



General (concrete contact)

Steel-steel contact

Hammer-head and Hook-head T-bolts (acc. to ETA-09/0338)

	Strength grade	T-bolt	For profile	Torque T_{inst} [Nm]			
				M 10	M 12	M 16	M 20
General	4.6 8.8	JH	K 38/17	15	25	40	–
		JC	W 40/22	15	25	45	–
		JB	W 50/30	15	25	60	75
		JB	W 53/34	15	25	60	120
Steel-steel	4.6	all	all ¹⁾	15	25	65	130
	8.8			40	70	180	360

¹⁾K 38/17 and W 40/22 only up to M16

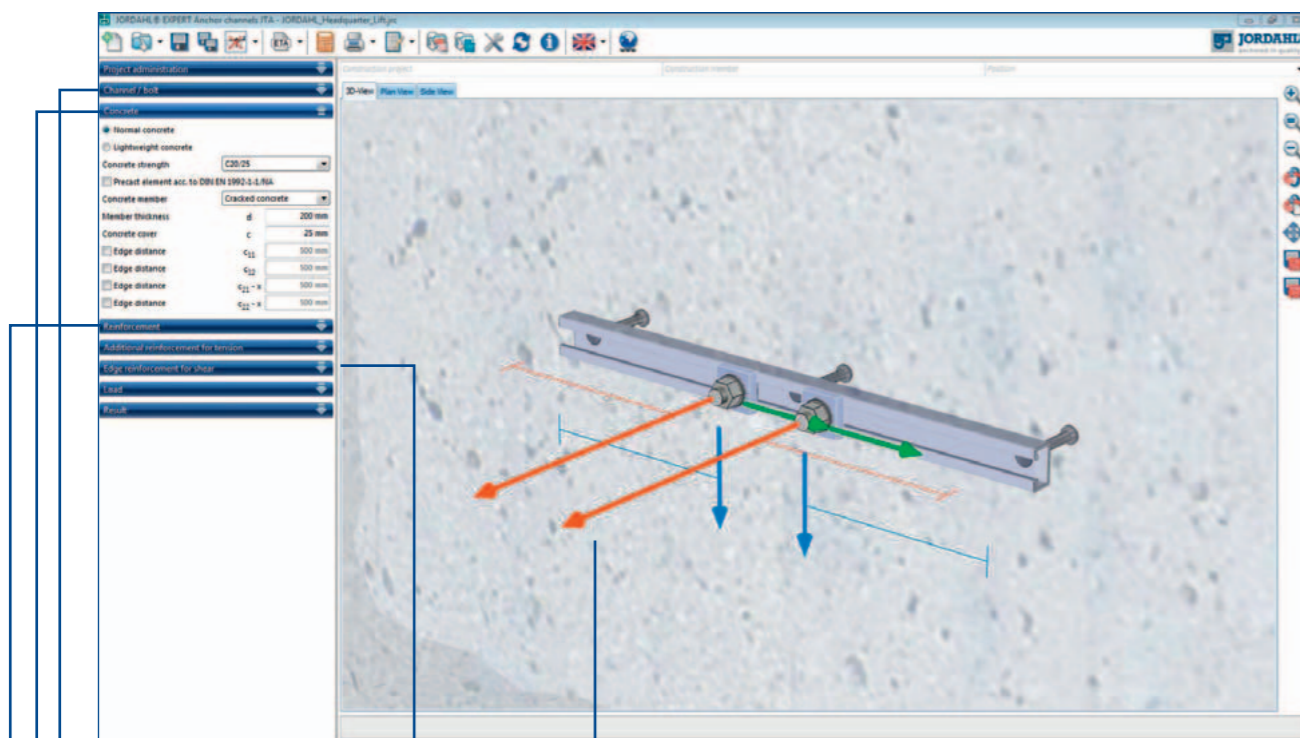
Toothed T-bolts (acc. to General Building Approval Z-21.4-1690)

	Strength grade	T-bolt	For profile	Torque T_{inst} [Nm]				
				M 10	M 12	M 16	M 20	M 24
Steel-steel	8.8	JXD	JXA W 29/20	40	80	–	–	–
		JXH	JXA W 38/23	–	80	120	–	–
		JXB	JXA W 53/34	–	–	200	350	–
		JXE	JXA W 64/44	–	–	–	350	450

JORDAHL® EXPERT Software

Our JORDAHL® EXPERT software makes analysis and verification of anchorages in concrete using anchor channels JTA-CE really easy. Design is adapted to the respective securing situation and allows technical and economical anchorage optimisation. Once input and analysis are complete the results of multiple

design for all available channel sizes are displayed. The design results are output both to the screen and as a verifiable print output. The program is based on the European Technical Approval ETA-09/0338. The JORDAHL® anchor channel design software is compatible with Eurocode.



Channel/T-bolt

- channel length
- galvanised or stainless steel material
- stand-off installation

Concrete

- concrete quality
- slab thickness
- edge distance
- concrete cover

Structural Reinforcement

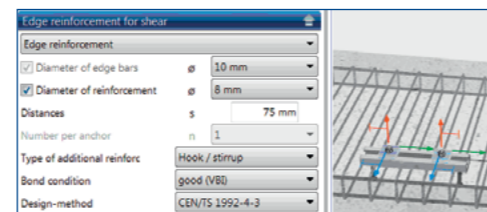
- normal or unreinforced concrete
- dense reinforcement

Graphics

The current input parameters are interactively displayed in clear 3D graphics. The view can be intuitively rotated, moved and enlarged using the mouse.

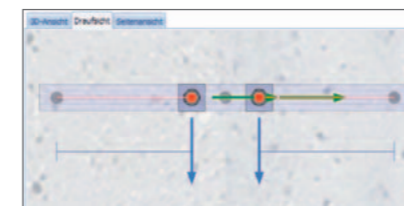
Edge Reinforcement

Using JORDAHL® EXPERT, it is possible to take existing reinforcement into consideration when designing the anchorage:



DXF/DWG graphics export to your CAD system

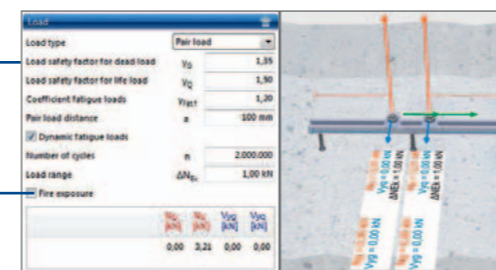
Optional switching to 2D view



Loads

- point loads
- paired loads
- regular loads
- user-defined loads

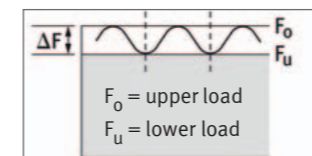
If no displacement range is defined, the program determines the most unfavourable load configuration acting on the channel. The load or the load spectrum are displaced as moving loads along the entire available channel length.



Load input with design loads or characteristic actions.

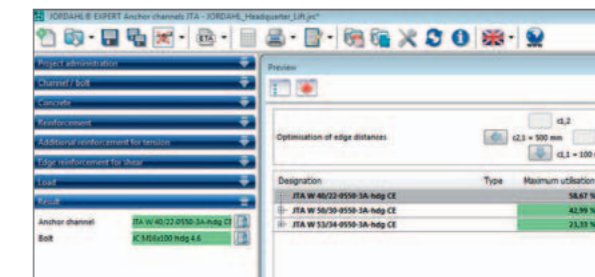
Dynamic Stresses

In addition to static loads, the serviceability can also be analysed, taking the amplitude into consideration.



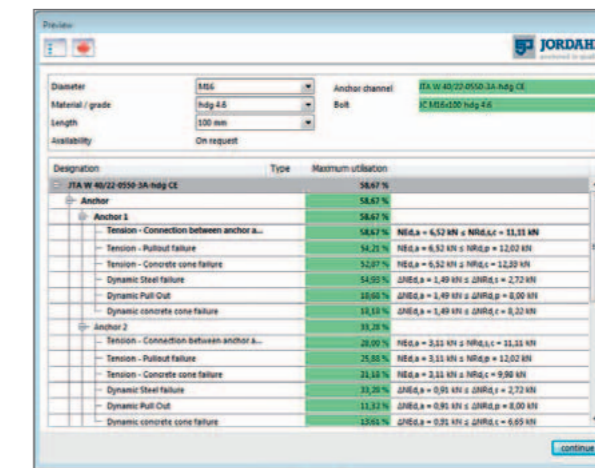
Results

The result overview provides an at-a-glance compilation of the results for all possible channel sizes.



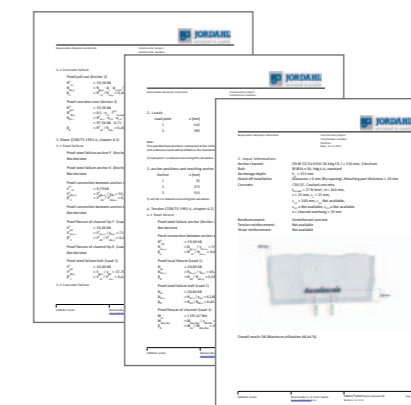
Detailed Results

Maximum utilisation and analysis details on screen



Result Printout

Clear and understandable design printout including all audit-relevant data

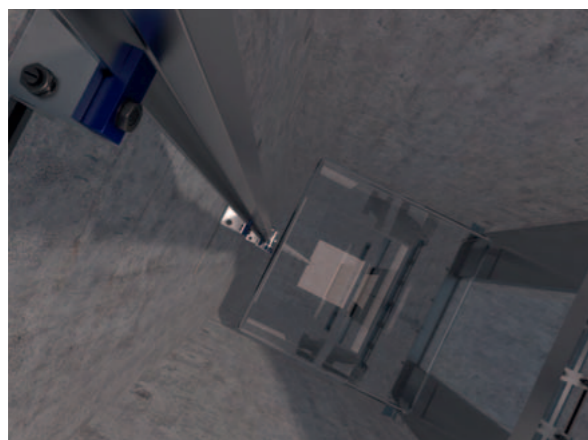


Free download at www.jordahl.de

Service

Installation Instructions/Videos

In order to achieve optimal results when using JORDAHL® anchor channels, a video, especially for lift construction, is available. This and other installation videos and instructions can be found at www.jordahl.de → Service.



Scan the code and view lift construction videos and references.

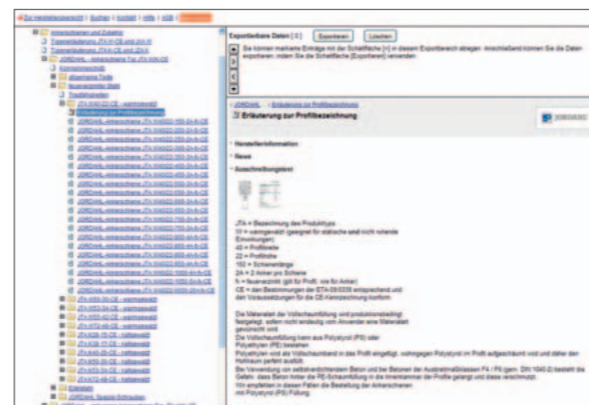


CAD Drawings

We offer complete 2D models to download to facilitate integration of our JORDAHL® anchor channels in your planning process. 2D models for the most common CAD programs can be downloaded free at www.jordahl.de → Downloads. Drawings of our mounting channels can also be downloaded there as 2D and 3D models.

Call for Tender Texts

Complete call for tender texts with all relevant technical data on material, load-bearing capacity, sizes and installation notes are available for all JORDAHL products at www.jordahl.de → Service. The data can be exported in GAEB format, for example, sent as email attachments or be saved to a file.



Catalogues

You are interested in other JORDAHL products or would like additional information on a certain product? Then take a look at our website. Numerous brochures are available for download at www.jordahl.de → Downloads.

Certified Quality

Our products are characterised by high quality and reliability. Quality is monitored by internal and external quality assurance:

- certified by Deutsche Institut für Bautechnik (DIBt)
- certified quality management (QM)/quality assurance (QA) programme to ISO 9001



Advisory Service



Some of the JORDAHL experts: Rolf Ratsch and Elisabeth Smith

The JORDAHL Experts

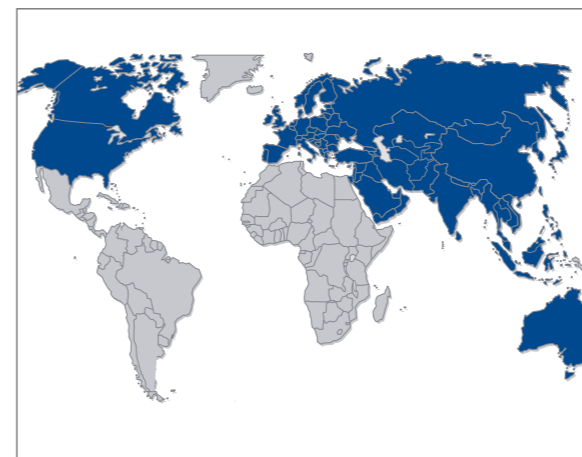
You are always well advised when you choose JORDAHL products. Whether from the point of view of static calculations, general technical advice/service or the development of customised solutions – competent and experienced JORDAHL product specialists offer you state-of-the-art, flexible and customised solutions for all your needs.



In Germany

We are in your neighbourhood anywhere in Germany. Please contact us if you are interested in our products.

JORDAHL GmbH
info@jordahl.de
 + 49 30 68283-02



Throughout Europe and around the World

JORDAHL products have proven themselves in use around the world because German quality standards are in demand everywhere. We can also guarantee perfect delivery of our products to you thanks to our reliable logistics partners and a perfectly functioning logistics chain (certified in accordance with DIN EN ISO 9001) because personalised, high-quality, customer-focused service is essential to us when it comes to delivery, too.

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